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## The Federal/Arkansas Water Pollution Control Programs: Past, Present, and Future

Walter G. Wright Jr.

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# THE FEDERAL/ARKANSAS WATER POLLUTION CONTROL PROGRAMS: PAST, PRESENT, AND FUTURE

Walter G. Wright, Jr.\*  
Albert J. Thomas III\*\*

*When you drink the water, remember the spring.<sup>1</sup>*

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I. INTRODUCTION .....	548
II. THE ARKANSAS SURFACE WATER RESOURCE: AVAILABILITY, USE, AND IMPAIRMENT .....	554
A. Availability of the Resource .....	554
B. Use of the Resource .....	554
C. Impairment of the Resource .....	555
III. WATER POLLUTANTS .....	556
A. Effects/Types/Sources of Surface Water Pollutants .....	556

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1. Chinese proverb.

1. <i>Effects</i> .....	556
2. <i>Types</i> .....	558
a. <i>Conventional Pollutants/Parameters</i> .....	558
1. <i>Biological Oxygen Demand/Chemical Oxygen Demand</i> .....	559
2. <i>Total Suspended Solids</i> .....	559
3. <i>Fecal Coliform</i> .....	560
4. <i>pH</i> .....	560
5. <i>Nutrients</i> .....	560
b. <i>Toxic Pollutants</i> .....	561
c. <i>Non-Conventional Pollutants</i> .....	561
3. <i>Sources</i> .....	562
a. <i>Point Sources</i> .....	563
1. <i>Public Owned Treatment Works</i> .....	563
2. <i>Non-POTW</i> .....	566
b. <i>Non-Point Sources</i> .....	566
c. <i>Atmospheric Deposition</i> .....	567
B. <i>Water Pollution Reduction/Prevention</i> .....	567
1. <i>Control/Treatment</i> .....	567
a. <i>Levels</i> .....	568
1. <i>Primary Treatment</i> .....	568
2. <i>Secondary Treatment</i> .....	569
3. <i>Advanced Treatment</i> .....	569
b. <i>Types/Techniques</i> .....	570
1. <i>Filters/Settling</i> .....	570
2. <i>Chemical</i> .....	570
3. <i>Pollution Prevention/Reduction/Recycling</i> .....	571
2. <i>Water/Wastewater Conditions Assessment/Prediction</i> .....	573
a. <i>Sampling/Monitoring</i> .....	573
1. <i>Sampling Methods/Techniques</i> .....	575
a. <i>Grab Sampling</i> .....	575
b. <i>Composite Sampling</i> .....	576
2. <i>Instrument Capabilities/Limitations</i> .....	576
b. <i>Modeling</i> .....	578
1. <i>Key Surface Water Characteristics</i> .....	581
a. <i>Oxygen Depletion/Recreation</i> .....	581
1. <i>Depletion</i> .....	581
2. <i>Recreation</i> .....	582
b. <i>Flow</i> .....	582
c. <i>Stratification</i> .....	584
d. <i>Temperature</i> .....	585

e. Seasonality .....	585
3. <i>Cross-Media Transfers</i> .....	586
a. Single-Media Focus .....	586
b. Cross-Media Water Pollution Control Transfers ....	587
IV. AN OVERVIEW OF THE BASELINE: THE FEDERAL CLEAN WATER ACT .....	588
A. Historical Development .....	588
1. <i>Pre-1972</i> .....	588
2. <i>1972 Legislation</i> .....	590
B. Current CWA .....	590
C. National Pollutant Discharge Elimination System .....	593
1. <i>Applicability of NPDES Permit Program</i> .....	593
a. Person/Permittee .....	593
b. Addition .....	597
c. Pollutant .....	598
d. Navigable Waters .....	600
e. Point Source .....	602
2. <i>Determination of Permit Effluent Limits</i> .....	603
a. Type of Permit Limits/Standards .....	605
1. <i>Numeric</i> .....	605
a. Concentration .....	605
b. Mass .....	605
2. <i>Narrative</i> .....	606
3. <i>Best Management Practices</i> .....	607
b. Categorical Effluent Limits .....	607
1. <i>The New/Existing Source Distinction</i> .....	609
2. <i>Direct/Indirect Discharger Distinction</i> .....	611
3. <i>Facility/Activity Categories</i> .....	613
a. Industrial .....	614
b. Public Owned Treatment Works .....	615
c. Water Quality Standards .....	617
1. <i>Waterbody Uses</i> .....	619
a. Designation of Uses .....	619
b. Use Attainability .....	620
2. <i>Water Quality Criteria</i> .....	621
a. Definition/Form .....	621
b. Role of WQC .....	622
c. Development of WQC .....	622
3. <i>Antidegradation/Antibacksliding</i> .....	623
4. <i>Water Quality Certification</i> .....	625
5. <i>Toxics/Toxicity</i> .....	625

a.	Toxic Hot Spots	626
b.	Whole Effluent Toxicity	626
6.	Mixing Zones	628
7.	Total Maximum Daily Load Requirements	629
8.	Effluent Trading	632
d.	Alternative Limits/Variances	634
1.	Best Professional Judgment	634
2.	Fundamentally Different Factors	634
3.	Secondary Treatment Variance	635
3.	Other Permit Conditions	635
a.	Facility Sampling/Reporting Requirements	635
b.	Sludge Management	636
4.	Stormwater Permits	637
5.	Combined Sewer Overflow	638
6.	Non-Point Source Provisions	639
7.	Permit Acquisition/Modification/Renewal	640
a.	Application Process	640
b.	Modification	640
c.	Renewal	641
D.	Enforcement	642
1.	Information Acquisition Provisions	642
a.	Investigative Authorities	642
b.	Discharge Monitoring Reports	643
2.	Enforcement Provisions	644
a.	Government Enforcement	644
1.	Civil Enforcement	644
a.	Administrative Enforcement	645
b.	Judicial Enforcement	645
1.	Forum/Monetary Penalty Calculation	645
2.	Injunctive Authority	647
3.	POTW/IU Enforcement Authorities	648
4.	CWA Judicial Settlement Procedures	648
a.	Settlement of Actions	648
b.	Monetary Penalty Alternatives/ Supplemental Environmental Projects	650
2.	Criminal Enforcement	652
3.	Scope of CWA Liability Provision	654
a.	Affiliate Entity Liability	654
b.	Individual Liability: The Responsible Corporate Officer Doctrine	659
c.	Service Companies/Contractors	661

d. Asset/Stock Purchase Liability .....	661
1. <i>Asset</i> .....	662
2. <i>Stock</i> .....	662
4. <i>Concurrent Federal/State Jurisdiction</i> .....	663
a. State Enforcement .....	663
b. Governmental Enforcement Overlap .....	663
c. Citizen Suit Provision .....	666
b. Defenses/Excused Exceedances .....	670
1. <i>Standing and Mootness</i> .....	670
2. <i>Permit Shield</i> .....	674
3. <i>Statute of Limitations</i> .....	677
4. <i>Impossibility</i> .....	677
5. <i>Upset/Bypass</i> .....	679
a. Upset .....	679
b. Bypass .....	680
3. <i>Environmental Audit/Violation Disclosure Policies</i> .....	681
V. THE ARKANSAS WATER POLLUTION CONTROL PROGRAMS .....	683
A. Legislative History .....	683
B. The Key Programs .....	689
1. <i>The Arkansas NPDES Program</i> .....	689
a. Acquisition of NPDES Permitting/Enforcement Authority .....	689
b. Incorporation of Federal NPDES Permit Provisions .....	690
c. Arkansas NPDES Permit Procedures/Contents .....	691
1. <i>Effluent Limits</i> .....	692
2. <i>Other Conditions</i> .....	693
a. Point Source/Outfalls .....	693
b. Flow .....	693
c. Toxicity Testing .....	694
d. Waters of the State .....	694
d. Determination of Effluent Limits .....	695
1. <i>Incorporation of Federal Categorical Standards/Limits</i> .....	695
a. Arkansas Water Quality Standards .....	696
1. <i>Ecoregion Approach</i> .....	696
2. <i>Arkansas Water Quality Criteria</i> .....	700
a. General .....	700
b. Metals .....	701
b. Designated Uses .....	704
1. <i>Categories</i> .....	704
2. <i>Use Attainability Analysis</i> .....	704

c. Antidegradation .....	705
d. Short-Term Activity Authorization/ Variance .....	705
e. Total Maximum Daily Loads .....	706
f. Mixing Zones .....	709
g. Water Quality Certification (Section 401) ..	709
2. <i>Continuing Planning Process</i> .....	710
3. <i>Water Quality Management Plan</i> .....	710
4. <i>Modeling</i> .....	711
5. <i>POTW Controls/Infrastructure</i> .....	712
a. Arkansas POTW Control Mechanisms ...	712
1. <i>Sewer Use Agreements</i> .....	713
2. <i>Permits</i> .....	713
3. <i>Ordinances</i> .....	713
b. Inter-Municipality Treatment Agreements	714
c. Storm/Sewer Drains .....	714
d. Stormwater Treatment .....	717
6. <i>Stormwater Permits</i> .....	718
a. Initial Requirements .....	718
1. <i>Stormwater Associated with Industrial         Activity</i> .....	718
2. <i>Construction-Related Stormwater Permit</i> ..	722
b. Phase II Requirements .....	724
e. No-Discharge Water Pollution Control Permits	725
1. <i>Permits</i> .....	725
2. <i>Sludge Management</i> .....	726
f. The AAWPCA Role As a Remediation Authority	726
g. Ancillary Provisions/Issues .....	728
1. <i>Compliance Deferral/Interim Authorizations</i>	728
a. Schedules of Compliance/Interim Limits	728
b. Interim Construction/Operating Authority	729
c. Consent Administrative Orders .....	730
d. Permit Appeal Resolution .....	731
2. <i>Permit Transfer</i> .....	732
a. Transactions Constitution Transfers	732
b. Procedural Requirements .....	733
c. Acquisition/Divestiture Liabilities .....	733
3. <i>Administrative Procedures</i> .....	734
a. Appeal Procedures .....	734
4. <i>Arkansas Enforcement</i> .....	735

a.	Acquisition of Federal CWA Enforcement Authority .....	735
b.	Information Acquisition Provisions .....	736
c.	Enforcement Authorities .....	738
1.	<i>Civil Enforcement</i> .....	739
a.	Administrative Enforcement .....	740
b.	Judicial Enforcement .....	746
2.	<i>Criminal Enforcement</i> .....	747
d.	Settlement .....	750
1.	<i>Procedure</i> .....	750
2.	<i>Monetary Penalty Alternatives—State Supplemental Environmental Project/In-Kind Payments</i> .....	751
e.	Federal Oversight: EPA Review of Permit Limits/Terms .....	752
f.	Arkansas Environmental Audit Privilege Statute .....	753
g.	Arkansas/EPA Overlap .....	754
h.	Wastewater Operator Licensing Requirements .....	756
i.	Treatment of Key Arkansas Agriculture/Silvicultural Activities .....	756
1.	<i>Swine</i> .....	758
2.	<i>Cattle</i> .....	760
3.	<i>Poultry</i> .....	760
4.	<i>Silviculture</i> .....	760
5.	<i>Aquaculture</i> .....	761
2.	<i>Funding Water Discharge Permitting/Pollution Control Activities</i> .....	762
a.	Funding ADEQ Water Permitting Activities .....	762
b.	Funding Pollution Control Activities .....	762
1.	<i>Federal/State POTW Grants/Loans</i> .....	763
a.	Federal Grants .....	763
b.	Non-Point Source Loans .....	767
c.	Arkansas Small Business Loan Program .....	768
d.	Arkansas Tax Credits .....	769
1.	<i>Pollution Control Equipment Sales Tax Exemption</i> .....	769
2.	<i>Wetland Creation/Restoration Tax Credit</i> .....	770
3.	<i>Surface Water Utilization Tax Credit</i> .....	770
VI.	CONCLUSION .....	771



## I. INTRODUCTION

Water is a vital resource.<sup>2</sup> Water, along with air, is, in fact, a resource without which life could not exist.<sup>3</sup> Access to acceptable air is arguably of greater immediate importance since one has no choice in whether to use this resource at a given location and point in time. Alternative sources of air are obviously not available. In contrast, another surface waterbody or subsurface aquifer could in theory be substituted for a particular source of water. Nevertheless, water is essential since it provides sustenance for all living things.<sup>4</sup>

Water is important to humanity for many other reasons. It supplies power, serves as a coolant,<sup>5</sup> is used in manufacturing processes,<sup>6</sup> provides a transportation corridor, facilitates recreational activities,<sup>7</sup> is an important source of protein,<sup>8</sup> and plays a role in various religious

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2. See Dennis R. Delaney, *Federal Guidance: A Middle of the River Approach to Water Conservation*, 76 B.U. L. REV. 375 (1996). "[W]ater is fundamental to the existence of the human race." *Id.*

3. The California Supreme Court noted: "The conservation of other natural resources is of importance, but the conservation of waters of the state is of transcendent importance. Its waters are the very life blood of its existence." *Chow v. City of Santa Barbara*, 22 P.2d 5, 16 (Cal. 1933). Also, the District of Columbia Circuit Court of Appeals in 1976 noted in part:

We, as human beings, are part of a complex array of living creatures that started to deploy on earth about three billion years ago and has never stopped diversifying. The only life system we know of and we are part of is based on carbon chemistry and cannot develop without water[.]

*Am. Frozen Food Inst. v. Train*, 539 F.2d 107 (D.C. Cir. 1976) (quoting Jacques-Yves Cousteau).

4. See generally U.S. ENVTL. PROTECTION AGENCY, OFFICE OF FEDERAL ACTIVITIES, *CONSIDERING ECOLOGICAL PROCESSES IN ENVIRONMENTAL IMPACT ASSESSMENTS* 31 (1999) [hereinafter EIA] (discussing the importance of water to the ecosystem).

5. See Letter from Jim Ross, Manager of Environmental Affairs, Eastman Chemical Company, to Mark Bradley, Engineer Supervisor, NPDES Permits Branch, Water Division, Arkansas Department of Pollution Control & Ecology (Dec. 13, 1995) (referencing a Batesville, Arkansas facility's use of White River water for cooling purposes) (on file with author). The Arkansas Department of Pollution Control & Ecology's ("ADPC&E") name was changed to the Arkansas Department of Environmental Quality ("ADEQ") in 1999. See 1997 Ark. Acts 1219 § 2(a).

6. See Letter from Jim Ross, Manager of Environmental Affairs, Eastman Chemical Company, to Mark Bradley, Engineer Supervisor, NPDES Permits Branch, Water Division, ADPC&E (Dec. 13, 1995) (referencing a Batesville, Arkansas facility's use of White River water in manufacturing process) (on file with author).

7. See *Save the Streams, Mine for Gravel Elsewhere*, ARK. DEMOCRAT-GAZETTE, Feb. 21, 1995, at 6B (noting that "[f]isherman spend \$286 million a year in Arkansas" and valuing "stream-based recreation" at \$4 million a year).

8. See Rudi Wild, *Aqua Culture Needed to Nourish World Demand for Protein*, AGRIBUSINESS WORLDWIDE, Nov. 1990, at 23 (referencing importance of water dwelling creatures as source of protein).

activities.<sup>9</sup> Water literally provides a home for countless creatures. These aquatic ecosystems are often self-regulating and self-sustaining units.<sup>10</sup> However, even a non-aquatic habitat may rely on water. It can often provide an interconnectedness among ecosystems.<sup>11</sup>

The importance of water is perhaps most obvious when it is in short supply. It is not uncommon for the volume of water available in a particular area to be insufficient to satisfy one or more uses. The inadequacy may be a function of a limited supply. There may, for example, simply be a historical shortage in an area or region. As likely is a shortage that develops because of an increase in one or more uses.<sup>12</sup> However, the water available in an area or region may be inadequate for a reason other than available volume.

Every surface waterbody receives pollutants resulting from human activities and/or natural events. A river, stream, or lake's ability to satisfy certain uses may be eliminated by the presence of one or more pollutants.<sup>13</sup> While waterbodies have the ability to naturally cleanse themselves, their capacity to do so will vary.<sup>14</sup> Consider the following example.

A waterbody must maintain a certain concentration of dissolved oxygen ("DO")<sup>15</sup> to support a cold water fishery. The concentration of

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9. See *State v. Sharp*, No. E 97-229-1 (Chancery Court, Marion County, June 8, 1999). The Arkansas chancellor's post-trial decision noted in a dispute regarding the ownership of certain portions of Crooked Creek in Newton and Marion Counties that "[i]t is known however, through cultural customs and patterns, that these tribes used waterways for drinking, cooking, fishing and for religious purposes." Decree at 5.

10. See generally *An Ecological Context for Biological Monitoring*, in *BIOLOGICAL MONITORING OF AQUATIC SYSTEMS 3* (Stanford L. Loeb et al. eds., 1994).

11. See EIA, *supra* note 4, at 32.

12. See Richard Orr, *Dwindling Water Supply Can't Keep Pace with Rising Demand*, *Study Says*, CHI. TRIB., May 12, 1997, at 3 (noting that "between 1950 and 1990 . . . water use increased by more than 200 percent in North and South America").

13. A Senate subcommittee noted in the 1960s:

Pollution degrades the physical, chemical, biological, bacterial, and aesthetic qualities of water, the degree depending upon the kind and amount of pollution in relation to the extent and nature of reuse. Pollution can be just as effective as a drought or a consumptive withdrawal in reducing or in eliminating a water resource.

Robert F. Blomquist, "To Stir Up Public Interest:" *Edmund S. Muskie and the U.S. Senate Special Subcommittee's Water Pollution Investigations and Legislative Activities, 1963-66—A Case Study in Early Congressional Environmental Policy Development*, 22 COLUM. J. ENVTL. L. 1, 24-25 n.60 (1997); see also Wild, *supra* note 8 (noting slowing growth of fishery production because of both water pollution and overfishing).

14. See *United States v. Johnson*, 886 F. Supp. 1057, 1066 (W.D. Nev. 1994). The same also may be true with air. See *id.*

15. Fish require the DO in the water to sustain respiration. See KAREL VERSCHUREN, *HANDBOOK OF ENVIRONMENTAL DATA ON ORGANIC CHEMICALS* 46 (2001).

DO will be reduced by the waterbody's receipt of organic materials. Organic materials consume oxygen at varying rates. If the rate of oxygen consumption exceeds the replenishment rate, the DO concentration will drop. A reduction of DO below a certain point will eliminate the waterbody's ability to support a cold water fishery. Therefore, in reality, a stream or river lacking the required DO concentration is unavailable for such use.

Regardless of the cause, a shortage of water can be a serious concern.<sup>16</sup> Activities and facilities in the area or region may compete for the finite supplies of usable water.<sup>17</sup> Conservation and/or more efficient use of water can expand the available supply. Equally important, however, is the maintenance or future attainment of the ambient water conditions or criteria necessary to support the desired uses (e.g., drinking water, recreation, fishery, etc.).<sup>18</sup>

The primary federal statute that addresses the protection and remediation of surface water is the Clean Water Act ("CWA").<sup>19</sup> Its focus has generally been the control of point source discharges of pollutants<sup>20</sup> by imposing limits and standards through a permitting

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As the Second Circuit noted:

DO is a water quality constituent that, in appropriate concentrations, is essential not only to keep organisms living but also to sustain species reproduction, vigor, and the development of populations. Organisms undergo stress at reduced DO concentrations. This stress makes them less competitive and less able to sustain their species within the aquatic community.

California & Hawaiian Sugar Co. v. EPA, 553 F.2d 280, 282-83 n.7 (2nd Cir. 1977).

16. See *Farmers Resort to Salty Water*, PRESS J., Aug. 15, 1998, at 14A (reference to Arkansas drought conditions forcing farmers to use potentially harmful salty well water on crops); *Water Shortages to Increase Worldwide Report Says*, WATER ENVTL. & TECH., Nov. 2000, at 17 (referencing a report which projects that the number of people living in countries facing severe or chronic water shortages will increase fourfold over the next twenty-five years).

17. See Gregory A. Thomas, *Conserving Aquatic Biodiversity: A Critical Comparison of Legal Tools for Augmenting Streamflows in California*, 15 STAN. ENVTL. L.J. 3 (1996) (referring to the conflict in California between water withdrawals for irrigation and municipal water with water volume needed to sustain native aquatic species). Competition is even possible between similar uses. James Splett, *Personal Watercraft Use: A Nationwide Problem Requiring Local Regulation*, 14 J. ENVTL. L. & LITIG. 185 (1999) (discussing the conflict between lake recreationalists such as personal watercraft users with those engaged in canoeing, fishing, and sailing).

18. See generally Delaney, *supra* note 2.

19. 33 U.S.C. §§ 1251-1387 (1994).

20. Water conservation has, to date, played a minimal role in the CWA programs. The statute does not specifically address water conservation. See generally Delaney, *supra* note 2. Cf. 64 Fed. Reg. 39,564, 39,568 (1999) (expressing EPA concern that CWA pretreatment concentration limits, as opposed to mass limits, impede an

program.<sup>21</sup> Likewise, Arkansas operated its own water permitting system for many years before assuming control of the federal CWA program.<sup>22</sup>

Since the 1972 enactment of the CWA, water quality has improved in many United States waterbodies.<sup>23</sup> In 1972 one-third of the country's lakes met water quality standards ("WQS").<sup>24</sup> A late 1980s report stated that 70% of rivers and 60% of lakes met WQS.<sup>25</sup> Tens of billions of dollars have been expended by both the government and industry to achieve these results.<sup>26</sup>

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industrial facility's effort to reduce water use).

21. In addition to its permitting system, the CWA includes several other programs. Further, other federal statutes may either directly or indirectly protect surface water. This article does not address in a comprehensive manner all of the CWA or non-CWA programs developed to protect surface water. The excluded CWA programs include the Spill, Prevention, Control and Countermeasure ("SPCC") regulations and the oil spill response and reporting program. The SPCC regulations are found at 40 C.F.R. §112 (2000). Section 311 of the CWA addresses the oil spill reporting program. See 33 U.S.C. § 1321 (1994). It requires that the National Response Center be notified of certain releases of oil that enter surface water. The same section of the CWA provides the federal government the authority to remediate releases of oil and recover the costs of such work from persons or entities designated as "responsible parties." This program has been used to remediate sites in Arkansas. See, e.g., *United States v. Gurley Refining Co.*, 788 F. Supp. 1473, 1476 (E.D. Ark. 1992) (referencing use of section 311 of the CWA to address an Edmondson, Arkansas site). Likewise, the section 404 CWA program regulating the discharge of dredge or fill (primarily administered by the United States Corps of Engineers ("Corps")) is not addressed in any detail. See 33 U.S.C. § 1344 (1994). Section 404 of the CWA requires that a permit be obtained from the Corps prior to the discharge of dredge or fill into a "water of the United States." *Id.* The term "water of the United States" includes areas deemed by Corps regulations to constitute "wetlands." See 33 C.F.R. § 328 (2000). The breadth of jurisdictional terms such as "dredge or fill" and "wetland" have required that a 404 permit be obtained prior to the initiation of a variety of activities. An overview of the section 404 program is found in Walter G. Wright, Jr. & Travis J. Morrissey, *Arkansas Facility/Real Property Redevelopment in the Year 2000: Tools Available to Resolve Environmental Issues*, 52 ARK. L. REV. 751, 818-27 (2000).

22. Various portions of the Arkansas Water Pollution Control Program are found in ADEQ Reg. Nos. 2, 5, and 6.

23. See Michael P. Vandenberg, *An Alternative to Ready, Fire, Aim: A New Framework to Link Environmental Targets in Environmental Law*, 85 KY. L.J. 803, 811, 815 (1997) (discussing scientific indicators of water quality that demonstrate reductions in discharges from point sources have led to improvements in several water quality indicators and citing COUNCIL OF ENVTL. QUALITY, 1992 REPORT).

24. See *id.* at 815.

25. See *id.*

26. See Richard A. Smith et al., *Water Quality Trends in the Nation's Rivers: Effects of Municipal Waste Treatment, Highway Salt, Nitrogen Fertilizer, Leaded Gas Consumption*, 235 SCIENCE 1067 (1987) (referencing the expenditure of more than \$100 billion in the United States for control of oxygen demanding wastes from POTWs and industrial point sources).

The federal and state water pollution control activities have arguably increased the amount of water available for various uses. Despite the improvement in water quality, many lakes, rivers, and streams do not meet designated "WQS." The 1998 EPA National Water Quality Inventory Report to Congress states that of the 23% of the United States' rivers and streams that have been assessed, 35% do not fully support water quality standards or uses.<sup>27</sup> The federal agency has also stated that 42% of the lakes, ponds, and reservoirs (excluding the Great Lakes) do not fully support water quality standards or use.<sup>28</sup>

There are three issues often cited as impediments to additional progress. First, while various activities and facilities are discharging less pollutants, national increases in both population and gross national product have off-set those reductions.<sup>29</sup> In other words, the individual reductions are mitigated to some extent by an aggregate increase in the number of facilities or facility activities that cause the discharge of water pollutants. Second, future additional incremental discharge reductions<sup>30</sup> may in many instances be much more difficult and/or costly. The initial controls placed on many sources resulted in significant discharge reductions. Further reductions may in some instances be significantly more expensive because of the law of diminishing returns.<sup>31</sup> Also generating significant costs are the more intractable sources such as combined sewer and sanitary sewer overflows. Finally, several of the activities excluded from the CWA's mandatory controls affect water quality. For example, diffuse discharges denominated as

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27. See 65 Fed. Reg. 43,587 (July 13, 2000) (to be codified at 40 C.F.R. pts. 9, 122-24, 130). EPA states an additional 10% are "threatened." See *id.*

28. See *id.* Nine percent are also stated to be "threatened." See *id.*

29. See generally Debra S. Knopman & Richard A. Smith, *20 Years of the Clean Water Act*, 35 ENV'T 16 (1993) (arguing CWA has generated benefits by keeping water quality constant in view of population and gross national product increases).

30. One commentator notes in regard to these initial controls: "The day of pointing the finger at a given stack or a given industry and blaming it as the culprit are largely behind us. We have picked the low hanging fruit with regard to stationary sources and point sources." Michael Zagata, *25th Anniversary of the New York State Department of Environmental Conservation: Past and Future Challenges and Directions: Commissioner's Comments*, 7 ALB. L. J. SCI. & TECH. 149, 151-52 (1996).

31. See *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1047 (D.C. Cir. 1978) "As one would expect from the law of diminishing returns, each successive increment of waste treatment was less efficient." *Id.* The court in *SDC/Pullman Partners v. Tolo Inc.*, 60 Cal. App. 4th 37, 48 (1997), noted: "Yet the elimination of pollution is subject to the law of diminishing returns. The cost of eliminating every last molecule otherwise toxic in larger quantities is necessarily prohibitive." *Id.*

non-point sources fall outside the scope of the CWA permitting program.<sup>32</sup>

The CWA has since the early 1970s had a structure in place that, in theory, forces the attainment of WQS by all waterbodies. Regardless, the complexities and costs associated with the attainment of WQS for some waterbodies have made it difficult to implement these standards. Because of recent developments, the federal and state agencies might no longer have a choice. Various groups are utilizing the CWA citizen suit authorities to force the agencies to attempt to undertake the research necessary to determine the reason for a waterbody's impairment and execute a plan for its recovery. Agencies will have to decide how pollutant loadings entering the waterbody will be reduced. This previously under-utilized ambient component of the CWA is analogous to the Clean Air Act's approach to addressing air pollution.<sup>33</sup>

The process in some instances generates tension between various types of pollutant sources concerning who can and should be forced to assume some or all of this responsibility. Arkansas will be participating in this renewed effort to attain WQS in impaired waterbodies. The participation of Arkansas groups such as environmental organizations, agricultural operations, municipalities, industrial facilities, etc., will be critical in the process. Decisions such as the application of particular water quality criteria, designation of certain uses, allocation of loadings, and judgments about the impacts of particular pollutants can affect activities in a particular watershed.

To put these issues in context, an examination of both the federal and Arkansas water pollution control programs is appropriate. This article will therefore examine both the federal and Arkansas water pollution control statutes and regulations. To better understand the rationale for the various programs and their operation, Part II of this article provides an overview of the associated technical issues. The types and sources of water pollutants along with the applicable methods of control, monitoring, and assessment are also addressed. Because changes to the baseline federal regulations and policies determine key aspects of the Arkansas program, they will be addressed in Part III. To provide some historical context, Part IV will chronicle the evolution of

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32. See Smith, *supra* note 26, at 1607 (referencing assessments indicating pollution, from diffuse sources (i.e., non-point sources) such as urban and agricultural runoff, may prevent achievement of national water quality goals even after complete implementation of planned point source controls).

33. See generally Robert W. Adler, *Integrated Approaches to Water Pollution: Lessons from the Clean Air Act*, 23 HARV. ENVTL. L. REV. 203 (1999).

the Arkansas water pollution control program. This part will also discuss various issues associated with the current program. The relevant statutory provisions, regulations, policies, and judicial decisions will therefore be examined.

## II. THE ARKANSAS SURFACE WATER RESOURCE: AVAILABILITY, USE, AND IMPAIRMENT

### A. Availability of the Resource

Arkansas is generally divided into six major river basins: (1) Red River Basin; (2) Ouachita River Basin; (3) White River Basin; (4) Arkansas River Basin; (5) St. Francis River Basin; and (6) Mississippi River Basin.<sup>34</sup> The state has approximately 87,000 miles of rivers and streams and 514,245 acres of lakes and reservoirs.<sup>35</sup>

### B. Use of the Resource

Arkansas is known for the abundance and quality of its surface water. These surface water resources are important state assets.<sup>36</sup> Various activities important to the state's economy occur only because of the presence of this high quality surface water. These activities include tourism<sup>37</sup> and agriculture.<sup>38</sup> By way of example, it is unlikely that Arkansas would be a major rice producer without high quality

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34. ADPC&E, ARKANSAS NON-POINT SOURCE POLLUTION ASSESSMENT REPORT 6, 12 (undated).

35. ADEQ, STRATEGIC PLAN DRAFT 14 (2000) [hereinafter Strategic Plan].

36. See Duane C. Wolf, *Impact of Human and Animal Waste*, PROCEEDINGS OF THE SECOND ANNUAL AGRICULTURAL ISSUES SYMPOSIUM (1990) "[A]bundances and quality of water in Arkansas have been major assets for the development of all areas of the state's economy." *Id.*

37. The importance of certain surface waterbodies to tourism is evidenced by an agreement entered into by Arkansas and Missouri. The two states executed a Memorandum of Agreement to address water quality issues in the Upper White River Watershed. See Memorandum of Agreement between the Arkansas Department of Environmental Quality, the Missouri Department of Natural Resources, and the Arkansas Soil and Water Conservation Commission, Cooperative Agreement to Address Water Quality in the Upper White River Watershed (1999) [hereinafter White River MOA]. The agreement notes the economic importance of the river. See *id.*

38. See Wolf, *supra* note 36 (referencing agricultural usage of surface water). Many Arkansas surface waterbodies support multiple uses. Such uses may on occasion conflict. See *Taylor Bay Protective Ass'n v. Ruckelshaus*, 687 F. Supp. 1319, 1326 (E.D. Ark. 1988) (addressing allegations by White River Taylor Bay residents and recreational users that levee district pumping stations impaired fishing, boating, and skiing because of increase of silt and sediment).

surface water.<sup>39</sup> Approximately 47% of the state's population use surface water as a drinking water source.<sup>40</sup>

### C. Impairment of the Resource

There is concern that threats hang over some waterbodies or watersheds.<sup>41</sup> A May 2000 EPA report summarized the number of shoreline miles of streams/ivers and acres of lakes/wetlands in Arkansas that it believes are not meeting applicable CWA WQS.<sup>42</sup> The report also included a state-by-state breakdown of the data. Arkansas streams/ivers were stated to be impaired by:

- Sedimentation; 910 shoreline miles
- Nutrients; 213 shoreline miles
- Pathogens; 218 shoreline miles
- Toxics/Metals/Inorganics; 45 shoreline miles
- Toxics/Organics; 79 shoreline miles
- Mercury; 555 shoreline miles
- Pesticides; 0 shoreline miles.<sup>43</sup>

Arkansas lakes/wetlands were stated to be impaired by:

- Sedimentation; 3,045 acres
- Nutrients; 4,924 acres
- Pathogens; 35 acres
- Toxics/Metals/Inorganics; 4,413 acres
- Toxics/Organics; 0 acres
- Mercury; 25,853 acres
- Pesticides; 0 acres.<sup>44</sup>

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39. See D.C. Wolf & T.C. Daniel, *Water Quality*, ARK. FARM RES., Nov.-Dec. 1989, at 4 (referring to Arkansas' role as a leading rice producer because of high quality ground and surface water).

40. See Strategic Plan, *supra* note 35, at 14.

41. The degradation of Upper White River Watershed water quality motivated Arkansas and Missouri to enter into an agreement to work together to protect it. See White River MOA, *supra* note 37. The agreement notes, "[w]hile water quality in the Upper White River Watershed is generally good, some signs of degradation have been appearing during recent years." *Id.*

42. See U.S. ENVTL. PROTECTION AGENCY, ATLAS OF AMERICA'S POLLUTED WATERS 4 (EPA 840-B-00-002) (2000). The report based its conclusions on 1998 data that section 303(d) of the CWA requires all states to generate. See *id.* at preface page.

43. See *id.* at 4.

44. See *id.*



### III. WATER POLLUTANTS

The contamination or pollution of surface water by human activities is not a strictly modern phenomenon. References to the loss or impairment of waterbodies due to the activities of man are found throughout recorded history. Nevertheless, arguably only since the beginning of the second half of the twentieth century has there been a general recognition of the aggregate effect of various pollutant sources on surface water resources.<sup>45</sup>

#### A. Effects/Types/Sources of Surface Water Pollutants

Countless types of substances or materials continuously enter United States surface water. Such substances may be in the form of liquids, solids, or even gasses. They are generated or discharged directly or indirectly by almost any human activity. The only difference between washing one's hands and manufacturing automobiles in terms of water pollution is likely the degree of impact. Both activities will result in the discharge of pollutants into area surface water.

##### 1. *Effects*

The physical effect or impact of a given discharge on surface water quality will depend on the quantity and characteristics of both the pollutant and the body of water/environment it enters.<sup>46</sup> Adverse

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45. For example, a Florida appellate court noted in 1970:

Historically, the legislative, executive and judicial branches of the State of Florida have dealt rather gingerly with industries and governmental agencies who have been guilty of defiling our environment. An applicable aphorism, "Sometimes things have to get worse before they can get better," is appropriate when considering the problems of today's environment. Ecology is the "IN" subject of today's citizenry, as well it should be. An airplane pilot can readily recognize the tremendous increase of smoke and haze over the cities of Florida, which only a few years ago enjoyed clear and unlimited visibility. A fisherman in the streams of this state has difficulty escaping floating garbage, noxious odors, and beer cans by the grass. Our beaches, especially those situated in an area where a city pumps its sewage into the ocean, are uninhabitable. These are conditions that confront us today. Man, of all animals, pollutes his habitat the greatest.

St. Regis Paper Co. v. Florida Air & Water Pollution Control Comm'n, 237 So. 2d 797, 798 (Fla. Dist. Ct. App. 1970).

46. A waterbody can also be affected by activities that do not involve the discharge of pollutants. Withdrawals from a waterbody and/or their reconfiguration or manipulation can cause impacts. See Joanna M. Miller, *City's Thirst Poses Threat to*

waterbody impacts may range from depletion of oxygen<sup>47</sup> or a change in pH,<sup>48</sup> to the receipt of substances which pose a hazard to various organisms (including humans) if ingested. These conditions may respectively stress an aquatic ecosystem,<sup>49</sup> make it uninhabitable for certain species of fish,<sup>50</sup> or eliminate a waterbody as a drinking water source.

The severity of the impact on a waterbody of a given discharge will vary. Some discharges may have no effect on a waterbody habitat or species that occupy it. In contrast, a series of discharges, or in some instances a single spill,<sup>51</sup> can reduce or eliminate one or more species in a particular waterbody habitat. Even small spills of common substances can have significant impacts in some circumstances.<sup>52</sup>

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*Waterway; Environment: The Ventura River Serves Urban Water Needs, but Siphoning Affects the Life It Supports*, L.A. TIMES, Mar. 21, 1994, at 1A (discussing the potential impact of Ventura, California water withdrawals on Ventura River fish population). An example might be withdrawals from a waterbody that threaten one or more species. See *id.* (referring to impact on steelhead in Ventura River). Likewise, the construction of a dam can affect flow patterns adversely affecting a river ecosystem.

47. If oxygen levels are reduced below a certain point in a body of water, the survival of the fish inhabiting it may be threatened. See *Nat'l Wildlife Fed. v. Gorsuch*, 693 F.2d 156, 161 (D.C. Cir. 1982). The level of oxygen a particular fish needs to survive is dependent on the species. See *id.* at 163.

48. See Seth Norman, *Seven Great Comebacks: River Comebacks*, OUTDOOR LIFE, Apr. 1, 1999, at 48 (noting coal-burning plants' emissions affected pH of Cranberry River).

49. One author notes:

A stress on an aquatic ecosystem can be categorized into one of three types: (1) physical, (2) chemical, or (3) biological alterations. Physical alterations include changes in water temperature, water flow, substrate/habitat type, and light availability. Chemical alterations include changes in the loading rates of biostimulatory nutrients, oxygen consuming materials and toxins. Biological alterations include the introduction of exotic species. Activities that result in a change in any of these environmental characteristics can lead to the deformation of an organism's niche space, possibly leading to its extinction.

Loeb, *supra* note 10, at 4.

50. See Norman, *supra* note 48, at 48 (noting emissions lowered pH at Cranberry River to mid-4 levels).

51. Some spills have had dramatic impacts. An example is a large spill that occurred on January 31, 2000 in Baia Mare, Romania. One hundred thousand cubic meters of cyanide contaminated water flowed into three European rivers when a gold mine tailings dam ruptured. See Aaron Schwabach, *The Tisza Cyanide Disaster on International Law*, 30 ENVTL. L. REP. 10,509 (2000). The Tisza River was reportedly rendered lifeless for a distance of over 1,000 kilometers. See *id.* at 10,519.

52. An example is a fish kill (150,000 fish) that occurred in Rock Creek in Washington, D.C. See Harry Jaffe, *Sanctuary*, WASHINGTONIAN, August 2000, at 62. Federal and local officials determined a pesticide mix used to kill termites had entered Rock Creek from an unknown source. See *id.* at 145. A federal agency official noted

Water pollution control programs generally recognize that a particular stream or lake will receive some amount of pollutants.<sup>53</sup> Therefore, they tend to focus on the amount and types of pollutants a given waterbody can receive and still support certain designated uses. For example, what amount of a particular metal can be discharged without threatening the aquatic life inhabiting the waterbody?<sup>54</sup> Likewise, an assessment of the various discharges' effect on a stream's fecal coliform count will determine whether it is suitable for certain recreational activities. Whether these and other uses can be maintained depend upon both the characteristics of the discharge and the physical aspects of the waterbody. The quantity of pollutants that a waterbody can accept and still maintain the desired or designated uses is known as its assimilative capacity. Assimilative capacity is therefore an important component of the calculation that is undertaken to determine the controls that the federal or state water pollution control programs may impose on a discharging facility.

## 2. *Types*

The CWA generally places pollutants or parameters into three categories: conventional, toxic, and non-conventional.

### a. Conventional Pollutants/Parameters

Total suspended solids ("TSS"), biological oxygen demand ("BOD"), fecal coliform, high or low pH, oil, and grease are denominated conventional pollutants or parameters.<sup>55</sup> These substances absorb oxygen from water.<sup>56</sup> Parameters such as BOD, chemical oxygen demand ("COD"), or TSS are indicators or markers for the presence of certain pollutants.<sup>57</sup>

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in regard to the amount of pesticide mix involved: "It didn't take much," says Park Service resource specialist Bill Yeman. "It could have been somebody cleaning out a bucket." *Id.*

53. The federal CWA language referencing the elimination of all discharges by 1985 is a goal as opposed to a binding mandate. See 33 U.S.C. § 1251(a)(1) (1994).

54. See, e.g., *Lake Cumberland Trust, Inc. v. EPA*, 954 F.2d 1218 (6th Cir. 1992) (determining impact of wastewater containing copper on waterbody).

55. See 33 U.S.C. § 1314(a)(4) (1994); John C. Dernbach, *The Unfocused Regulation of Toxic and Hazardous Pollutants*, 21 HARV. ENVTL. L. REV. 1, 8 n.20 (1997).

56. See Dernbach, *supra* note 55, at 8.

57. In explaining the term "parameter," the District of Columbia Court of Appeals noted that the term:

has been used to describe BOD, TSS, pH and similar measures because of

### 1. *Biological Oxygen Demand/Chemical Oxygen Demand*

Organic materials consume oxygen as they break down or decay in a waterbody. Organic compounds in various oxidation states may be referred to as "total organic carbon" ("TOC").<sup>58</sup> Carbon compounds can be oxidized further by biological or chemical processes.<sup>59</sup> The term BOD refers to a measurement of the oxygen requirement exerted by microorganisms,<sup>60</sup> and COD refers to the amount of an oxidant that reacts with a sample of the water under laboratory conditions.<sup>61</sup> It quantifies the amount of oxygen consumed by various microorganisms in metabolizing organic matter in wastewater.<sup>62</sup>

### 2. *Total Suspended Solids*

The measurement of TSS is used as an indicator of the physical quality of the waterbody.<sup>63</sup> The term TSS refers to the amount of solid matter suspended in the water.<sup>64</sup> An excessive amount of TSS can inhibit light transmission in the waterbody which is needed for photosynthesis.<sup>65</sup>

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their function. In mathematics, a parameter is defined as an "arbitrary constant," a variable that keeps a constant role in a formula as it takes on different (arbitrary) numerical values . . . . For all EPA regulations, BOD and the like keep a constant role in what they are, and how they are measured, stay the same even as they take on different numerical values for the acceptable level in each industrial category depending on the available technology for that category.

Weyerhaeuser Co. v. Costle, 590 F.2d 1011, 1022 (D.C. Cir. 1978). Tests for BOD or other parameters are often used to develop engineering criteria in the design of wastewater treatment plants. See VERSCHUEREN, *supra* note 15, at 46.

58. See AM. PUBLIC HEALTH ASS'N, AM. WATER WORKS ASS'N, WATER ENV'T FED'N, STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER 5-18 (20th ed. 1998) [hereinafter STANDARD METHODS].

59. See *id.*

60. See *id.* at 5-1. For example, BOD<sub>5</sub> is a reference to the oxygen-depleting capacity of effluent over a five day period. See *id.* at 5-3 to 5-6.

61. See *id.* at 5-13.

62. See *id.*

63. See *id.* at 2-54.

64. See STANDARD METHODS, *supra* note 58, at 2-54.

65. See *id.* at 2-8.

### 3. *Fecal Coliform*

Fecal coliform are bacteria that indicate the presence of pathogenic microorganisms.<sup>66</sup> Such microorganisms are associated with waterborne diseases such as typhoid fever, amebic dysentery, gastroenteritis, and cholera.<sup>67</sup>

### 4. *pH*

The parameter pH is a measure of the activity of the hydrogen-ions in solution.<sup>68</sup> The pH range is usually represented as ranging from 0 to 14.<sup>69</sup> It is desirable to control pH within a range favorable to the organisms involved in the wastewater treatment process and the discharge's receiving stream.

### 5. *Nutrients*

Algae are a naturally occurring component of the aquatic community.<sup>70</sup> They depend on nitrogen, phosphorus, and other nutrients in a waterbody.<sup>71</sup> An algae population may expand as nutrient loadings are increased.<sup>72</sup> Nutrients pose a problem if a waterbody receives excess amounts of them.<sup>73</sup> The excess nutrients may stimulate excessive plant growth. Problems may also develop when the algae die.<sup>74</sup> The

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66. See Letter from Marysia Jastrzebski, Engineer Supervisor, NPDES Branch, Water Division, ADPC&E, to L. Garrison, Lieutenant Malvern Water Works, NPDES Permit No. AR0034126 (June 5, 1995) (pointing out presence of fecal coliform bacteria is an indicator of potentially dangerous bacterial contamination) (on file with author).

67. See *id.* Chlorination is a commonly used method to reduce fecal coliform levels. *Id.* at 1203. See also *Michigan v. City of Allen Park*, 501 F. Supp. 1007, 1009 (E.D. Mich. 1980).

68. See STANDARD METHODS, *supra* note 58, at 4-86. The measurement reflects the negative base ten log of the hydrogen ion concentration. See *id.* Consequently, lower values correspond to higher hydrogen ion concentrations, or the water is more acidic; and higher values correspond to lower concentrations, or the water is more basic, or alkaline. See *id.* at 4-87.

69. See *id.* Obviously, other pH values are possible, albeit unusual in environmental settings. See *id.*

70. See STANDARD METHODS, *supra* note 58, at 8-41.

71. See *id.* at 8-46.

72. See *id.*

73. See Gabriel Calvo, Comment, *Voluntary Public-Private Source Pollution Projects: A Welcome Response to Regulatory Shortcomings Under the Clean Water Act*, 3 GREAT PLAINS NAT. RESOURCES J. 159, 161 (1999).

74. An article describing concern about the potential effect of a growing suburban population on the Fox River in Illinois notes: "[w]e've seen intense algae bloom from

decomposing plants will utilize some portion of the waterbody's oxygen.<sup>75</sup> Therefore, DO concentrations may be lowered to unacceptable concentrations as the population dies.<sup>76</sup>

Strategies to control or manage algae growth often focus on the "limiting nutrient."<sup>77</sup> This refers to a nutrient needed for plant growth that is in the least supply.<sup>78</sup> Consequently, management strategies focus on reducing inputs of the least available nutrient as opposed to the one in greatest supply.<sup>79</sup>

#### b. Toxic Pollutants

The CWA denominates toxic pollutants as those that, alone or in combination with other substances, will cause death, disease, behavioral abnormalities, genetic mutations, or similar problems in organisms or their offspring.<sup>80</sup>

#### c. Non-Conventional Pollutants

Non-conventional pollutants are those which are neither conventional nor toxic.<sup>81</sup> The term includes ammonia, chlorine, color, and iron.<sup>82</sup>

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all the phosphorous that's passing through. All those dams slow the water and increase temperature. In summer especially, this allows the nutrients to stew, the algae to bloom and the water's oxygen to decline. John Husar, *Fox River Has Improved, but Trouble May Lurk Upstream*, CHI. TRIB., May 2, 1999, at 8.

75. *See id.*

76. *See id.* The effect will obviously vary depending upon several factors including the size and nature of the waterbody, size of the algae population, weather conditions, presence of toxins, and many other variables. *See* STANDARD METHODS, *supra* note 58, at 10-1.

77. *See* Husar, *supra* note 74, at 8.

78. *See id.*

79. *See id.*

80. *See* 33 U.S.C. § 1362(13) (1994); *see also* Dembach, *supra* note 55, at 8.

81. *See* Roy A. Hoagland & Jean G. Watts, *Federal Minimums: Insufficient to Save the Bay*, 29 U. RICH. L. REV. 635, 646 (1995).

82. *See id.*; *see also* Mary Liz Brenninkmeyer, Comment, *The Ones That Got Away: Regulating Escaped Fish and Other Pollutants from Salmon Fish Farms*, 27 B.C. ENVTL. AFF. L. REV. 75, 100 (1999).

### 3. Sources

A perception persists that pipes extending from the stereotypical factories or manufacturing facilities represent the overwhelming source of water pollutants in a given lake, river, or stream. In reality, such facilities are not the sole, or in some instances, even the primary source of pollutants entering a particular waterbody.<sup>83</sup> Agricultural,<sup>84</sup> silvicultural, construction,<sup>85</sup> service,<sup>86</sup> medical,<sup>87</sup> food preparation/

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83. An example of the array of activities that can to varying degrees affect a particular waterbody is found in a study undertaken by Oklahoma of the Illinois River/Baron Fork Watershed. The sources determined to affect this watershed included:

- Poultry litter and poultry production;
- Production of other livestock (cattle, hogs);
- Reduced or poorly maintained riparian zones;
- Streambank erosion;
- Poorly functioning private septic systems;
- Municipal permitted point source dischargers;
- Nutrient loadings from soil erosion;
- Recreational users (primarily canoers and swimmers on the river);
- Gravel mining operations;
- Commercial nurseries operating within the watershed;
- Solid waste disposal.

OKLAHOMA CONSERVATION COMMISSION, WATERSHED RESTORATION ACTION STRATEGY (WRAS) FOR THE ILLINOIS RIVER/BARON FORK WATERSHED 13 (1999).

84. An interesting example is a winery. Wineries generate wastewater during barrel washing and bottling. See Glenn Wensloff, *Winery Wastewater Update*, WINES & VINES, Sept. 1, 2000, at 68, 68. The wash-down water contains sugars from the grapes which raises its BOD levels. See *id.*

85. See Joel Kirkland, *Biologists Give Mud Creek a Check, Runoff from Construction Sites Fuels Fears for Overall Health of Waterways*, ARK. DEMOCRAT-GAZETTE, June 29, 1999, at 8B (discussing impact of construction activities on northwest Arkansas creek).

86. See James Salzman, *Beyond the Smokestack: Environmental Protection in the Service Economy*, 47 UCLA L. REV. 411 (1999) (discussing generally the environmental consequences of shift from manufacturing to service economy).

87. For example, some hospital wastewater discharges may include a toxic substance such as mercury. See James Harvie, *Eliminating Mercury Use in Hospital Laboratories: A Step Toward Zero Discharge*, PUB. HEALTH REPORTS, July 1, 1999, at 353. An overview of the various environmental regulatory programs applicable to healthcare facilities is found in Margaret M. Menicucci & Cheryl L. Coon, *Environmental Regulation of Health Care Facilities: A Prescription for Compliance*, 47 SMU L. REV. 537 (1994).

processing,<sup>88</sup> mining,<sup>89</sup> transportation,<sup>90</sup> and even recreational<sup>91</sup> facilities/activities can be the source of pollutants entering some waterbodies.

a. Point Sources

1. *Public Owned Treatment Works*

The United States has invested<sup>92</sup> heavily in water pollution treatment facilities known as public owned treatment works ("POTW").<sup>93</sup> Many municipalities have had rudimentary collection and treatment systems in place since the late 1880s or early 1900s.<sup>94</sup> The

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88. See Andrew W. Donaldson et al., *Pollution Prevention, Industrial Wastewater*, May/June 2000, at 27 (referring to wastewater discharged by deli food and condiment producer).

89. See Julie Titone, *Mines Must Decrease Metals Runoff: Rules Set for CDA River*, THE SPOKANE SPOKESMAN REV., Aug. 22, 2000, at 1A (discussing limits placed on mine wastewater discharges).

90. Aircraft maintenance and service facilities are an example of transportation sector activities that generate wastewater. See Ratana Kanluen & Sultan I. Amer, *Friendly Skies and Waters*, 11 ENVTL. PROTECTION 52 (2000). The wastewater may contain kerosene, jet fuel, emulsified oils, acid/alkaline cleaners, solvents, suspended solids, and heavy metals. See *id.*

91. See Splett, *supra* note 17, at 190 (referring to discharges of unburned fuel by personal watercraft).

92. One estimate is that more than \$76 billion has been spent in the United States on new or expanded sewage treatment. Ross Anderson, *Millions for New Sewage Plant, and Nobody's Making a Stink*, SEATTLE TIMES, Jan. 17, 1999, at 1A. The United States' need for POTW treatment capacity has not been satisfied. A 1987 article noted that \$118 billion dollars needed to be expended on POTW treatment capacity during the remaining years of the twentieth century. Smith, *supra* note 26, at 607 (citing 1978 and 1982 EPA reports). One Congressman noted that deteriorating drinking water and wastewater infrastructure will be a priority in the 107th Congress. See *Congress to Address Infrastructure Crisis Through Bipartisan Initiative, Boehart Says*, 31 ENV'T REP. 2026 (2000) (noting the Congressman's concern that over the next two decades the gap between current expenditures and the amount required to continue similar efforts is \$23 billion).

93. The reference to "public" is not always accurate. Besides municipalities, a POTW owner or operator could include quasi-government authorities and private companies. Martin Darrell, *Criminal Prosecution at POTWs and the Environmental Regulatory Partnership: Effective Deterrence but at a Cost*, NATL ENVTL. ENFORCEMENT J., Dec. 1999-Jan. 2000, at 3. The EPA submitted a 1992 report to Congress providing an estimate of the future investment required to address the nation's POTW treatment needs. See U.S. ENVTL. PROTECTION AGENCY, 1992 NEEDS SURVEY REPORT TO CONGRESS (EPA 832-R-93-002) (1993) [hereinafter 1992 Report]. POTW infrastructure/treatment processes that were identified included secondary treatment, advanced treatment infiltration/inflow correction, replacement/rehabilitation, new collector sewers, new interceptor sewers, combined sewer overflows, and stormwater. See *id.* at 7.

94. See *Federal Policies: From Add-on to Innovative*, TECH. REV., Feb. 1983, at 62 [hereinafter *Innovative*].



facilities receive, treat, and subsequently discharge a significant percentage of the wastewater generated in this country.<sup>95</sup>

POTWs have a unique operational challenge. The wastewater they receive arrives from numerous or different off-site sources,<sup>96</sup> and it varies in its volume and characteristics. The sources of the POTW's influent are many of the industrial, commercial, and other facilities generating wastewater in the community or region. These facilities have chosen<sup>97</sup> to discharge into a POTW as opposed to an area waterbody.<sup>98</sup> This circumstance might pose a problem because many POTWs were initially designed to treat domestic or residential sewage.<sup>99</sup> A POTW might be unable to effectively treat other types of wastewater without adding or expanding certain controls/processes.<sup>100</sup>

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95. An EPA attorney noted another unique aspect of POTW operation: "... while they have one foot in the regulated community due to their discharges to surface waters, they also regulate the wastes entering their systems for treatment." Darrell, *supra* note 93, at 3.

96. Facilities are allowed to discharge into the POTW in accordance with a permit, authorization, or agreement that contains various limits and monitoring requirements. However, a particular concern is individuals or companies illegally discharging pollutants and contaminants into the sewer system. Wastes and contaminants are sometimes illegally released into the system to avoid the costs of legal disposal or treatment options. *See, e.g.,* United States v. Eidson, 108 F.3d 1336 (11th Cir. 1997) (addressing criminal CWA prosecution of individual dumping petroleum substances into sewer). Illicit discharges do not solely originate from dumping materials into the system. POTWs occasionally have to contend with facilities that are authorized to use the system but surreptitiously discharge prohibited materials. *See* Dan Herbeck, *Troubled Waters; Polluter Awaiting Jail Admits He 'Made Mistakes'*, BUFFALO NEWS, Apr. 24, 2000, at 1A (reporting that facility bypassed its monitoring system through installation of hoses and pipes to discharge acid waste into sewer system).

97. Some facilities might have an incentive to discharge certain materials to a POTW because their disposal by this method may exempt them from being classified as a Resource Conservation and Recovery Act ("RCRA") hazardous waste. Section 1004(27) of RCRA exempts from the scope of the statute "solid or dissolved materials in domestic sewage." 42 U.S.C. § 6903(27) (1994). This provision is known as the Domestic Sewage Exclusion. *See* Natural Resources Defense Council v. Reilly, No. 89-2980, 1991 U.S. Dist. LEXIS 5334 at \*7-8 (D.D.C. Apr. 23, 1991). The exemption includes industrial wastes that are domestic sewage and discharged into POTWs. *See id.* at \*8. The exemption's purpose is to avoid redundancy of subjecting hazardous waste mixed with domestic sewage to RCRA management requirements if the materials are already subject to appropriate CWA pretreatment. *See id.* at \*8 n.16.

98. *See* Tod A. Gold, *EPA's Pretreatment Program*, 16 B.C. ENVTL. AFF. L. REV. 459, 460 (1989). The term POTW encompasses treatment facilities and sewers and pipes that convey wastewater to the treatment facility. *See* 40 C.F.R. § 403.3(o) (2000).

99. The term "domestic sewage" means "untreated sanitary wastes that pass through a sewer system." 40 C.F.R. § 261.4(a)(1)(ii) (2000).

100. *See* Gold, *supra* note 98, at 462. Basic POTW processes are generally designed to treat so-called conventional pollutants such as BOD, TSS, pH, fecal coliform, and oil and grease. *See id.* Some compounds may be toxic to the microorganisms used in

A POTW's sewer and drain system may also receive significant amounts of stormwater and snowmelt.<sup>101</sup> This series of pipes and drains is known as a combined sewer system ("CSS").<sup>102</sup> The combined receipt of both wastewater and wet weather flows may exceed the capacity of the CSS in some municipalities and other areas. These systems utilize overflow discharge points known as combined sewer overflows.<sup>103</sup> Such overflows can have a significant impact on water quality.<sup>104</sup> The discharge from these points may include untreated wastewater during some wet weather events.<sup>105</sup>

Eliminating such overflows does not necessarily require a technologically advanced system or fix. An overloaded system may simply be replaced with separate conduits for wastewater and precipitation runoff.<sup>106</sup> Such work is, however, expensive;<sup>107</sup> it can involve extensive construction and demolition.<sup>108</sup> Municipalities and other governmental entities may therefore have to pass significant costs to system users.<sup>109</sup> EPA has estimated that nationwide replacement of CSS's would cost \$40 billion.<sup>110</sup>

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certain POTW treatment processes. See VERSCHUEREN, *supra* note 15, at 49.

101. See Jeff Mann, *Economic Infeasibility and EPA's 1994 Combined Sewer Overflow Polity: A Successful Solution in Massachusetts Still Leaves a Turbid Understanding Between State and Federal Officials*, 26 B.C. ENVTL. AFF. L. REV. 857, 858 (1999).

102. See *id.*

103. See *id.*

104. Other local conditions such as the presence of a high water table can contribute to overflows. See Andrew G. Wright, *Miami Looks for Alternatives to Blue-Chip Sewer Overhaul*, ENGINEERING NEWS-RECORD, Jan. 1, 1996, at 22 (reporting shallow depth of groundwater is likely to make compliance more difficult).

105. See Mann, *supra* note 101, at 858.

106. See Ross Sandler, *Environmental Mandates: Water and Sewer Fees Rise as Capital Costs Increase*, CITYLAW, July/Aug. 1998, at 73, 76. Another option is the construction of large holding tanks. See *id.*

107. See *id.* (noting that the high costs of New York City's water and sewer improvement program made even environmentalists "fret").

108. See *id.*

109. See Wright, *supra* note 104, at 22. The City of Miami expected to spend \$1.1 billion to rehabilitate its wastewater collection and treatment system, doubling city residents' water and sewer bills. See *id.*

110. See *id.* The size of municipal POTWs and their associated collection system will vary. The City of Los Angeles POTW and its associated collection system consists of four plants and 6,500 miles of mainline sewers with a treatment capacity of 550 million gallons per day. See Farhana Mohamco et al., *VOHAP Emissions from a Wastewater Collection System*, Presentation at the Air & Waste Management Association's 93rd Annual Meeting (June 2000). A small community may simply have a few miles of sewer pipes. See *id.*

## 2. *Non-POTW*

Countless numbers of facilities and activities discharge pollutants into surface waterbodies. However, not all point source discharges are a result of a planned process or activity. An example might be small spills of petroleum products that occasionally occur when transferred between above-ground tanks at a bulk storage plant.<sup>111</sup> The spillage can mix with rainwater to become part of a discharge.<sup>112</sup> Such discharges are unplanned but nevertheless occur.<sup>113</sup>

### b. Non-Point Sources

The EPA has stated that non-point source pollutants are normally associated with agricultural, silvicultural, and urban runoff.<sup>114</sup> A substantial portion of such discharges tend to be generated by soil disturbance and sedimentation.<sup>115</sup> A 1992 EPA report noted non-point source pollution “generally results from land runoff, atmospheric deposition, drainage, or seepage of contaminants.”<sup>116</sup> The stormwater runoff or flow can mobilize various pollutants such as metals, oil and grease, and nutrients.<sup>117</sup>

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111. *See, e.g.*, *Public Interest Research Group, Inc. v. Powell Duffryn Terminals, Inc.*, 913 F.2d 64, 68 (3rd Cir. 1990).

112. *See id.*

113. Many rivers and streams are occasionally impacted by pollutants caused by accident or mishap. A National Park Service official noted the variety of substances released by accidents that affect the Buffalo River in Arkansas: “[i]n the past few years, vehicle wrecks along the riverway have sent gasoline, diesel, liquified chicken fat and blood into the water . . .” Jason B. Harmon, *Officials Scramble to Halt Sludge from Entering River*, ARK. DEMOCRAT-GAZETTE, Dec. 13, 2000, at 5B.

114. *See Calvo, supra* note 72, at 110 (citing U.S. ENVTL. PROTECTION AGENCY, REGULATIONS AND STANDARDS, NON-POINT SOURCE GUIDANCE 3 (1987)).

115. *See id.* For example, non-point source stormwater runoff can cause the discharge of a nutrient such as phosphorous by dislodging sediment and organic matter from pervious and impervious surfaces. *See Bryan G. Wigginton, Dealing With the Deluge*, ENVTL. PROTECTION, Nov. 2000, at 26. The discharges will include material from the urban/residential setting such as fertilizers, decaying yard debris, and animal wastes. *See id.*

116. *See Calvo, supra* note 73, at 160 (citing U.S. ENVTL. PROTECTION AGENCY, NATIONAL WATER QUALITY INVENTORY (1992)).

117. *See Debra K. Rubin et al., U.S. Faces a Draining Experience*, ENGINEERING NEWS-RECORD, Sept. 21, 1992, at 34.

### c. Atmospheric Deposition

The insertion of pollutants into surface water by atmospheric deposition is significant in some areas.<sup>118</sup> Atmospheric pollutants can deposit on the land surface and migrate into a waterbody and/or mobilize the migration of pre-existing surface contaminants.<sup>119</sup> They can also deposit directly into a waterbody.<sup>120</sup>

## B. Water Pollution Reduction/Prevention

### 1. Control/Treatment

A variety of control and/or treatment techniques are available to reduce or eliminate the discharge of pollutants into surface water. The technique or process used depends upon the type of pollutant(s) to be recovered and/or collected. Further, the complexity of the technology can range from simplistic treatment ponds to a complicated metals removal process.

Many water pollution control techniques are not new. Various facilities were required to install initial controls years ago by both federal and state programs. These controls and techniques have eliminated or reduced the discharge of a significant amount of pollutants. Nevertheless, the federal and state programs continue to press for the removal of a greater percentage and/or additional types of pollutants from various discharges of wastewater. Achieving these advanced rates or expanded removal can entail disproportionately greater costs. In other words, the ability to remove additional increments of pollutants can be expensive.<sup>121</sup>

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118. See, e.g., Robinson Shaw, *Acid Rain Eats Away at Virginia Trout Streams* (visited Feb. 2, 2001) <[http://www.enn.com/enn-news-archive/2000/10/10252000/acidstream\\_39541.asp](http://www.enn.com/enn-news-archive/2000/10/10252000/acidstream_39541.asp)> (suggesting that acid rain caused by nitrogen oxide and sulfur dioxide emissions is adversely affecting trout in Virginia streams).

119. See, e.g., *General Motors Corp. v. EPA*, 168 F.3d 1377 (D.C. Cir. 1998). The General Motors Corporation ("GM") alleged that atmospheric deposition of metals (copper, lead, and zinc) was causing one of its plants to exceed its NPDES stormwater permit limits for these parameters. See *id.* at 1379. Specifically, GM alleged that some of the metals in the plant stormwater originated in part from atmospheric deposition and/or caused metals to leach from the roof of the building and gutters. See *id.*

120. See *id.*

121. See *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1047 (D.C. Cir. 1978). The court noted in regard to BOD removal: "The first step treated a pound of BOD most cheaply; each successive step removed a pound of BOD in a more costly manner than the previous step." *Id.*

This discussion primarily addresses efforts to remove specified pollutants from wastewater prior to being discharged in a lake or stream. Any discussion of water pollution control techniques cannot, however, overlook the ability of a waterbody or other natural media to assimilate pollutants.<sup>122</sup> Every river, creek, or lake has the ability to treat or assimilate some amount of pollutants. Unfortunately, a waterbody's ability to maintain the desired ambient conditions may be overwhelmed by the volume and/or type of pollutants received. Therefore, the assimilative capacity of a waterbody will be an important determinant of the types of controls applied to various sources discharging into it.

a. Levels

1. *Primary Treatment*

Primary treatment is generally understood to mean the lowest level of wastewater treatment.<sup>123</sup> It usually denominates the physical treatment of effluent through screening and gravity settling.<sup>124</sup> The treatment process is initiated after wastewater flows through a pumping station into the facility.<sup>125</sup> Both screening and grit removal operations are typically employed to remove debris and other unwanted

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122. Natural bodies or media can assist in removing pollutants from wastewater generated by a public or private wastewater. For example, some municipalities have used the pollutant removal capabilities of a marsh or wetlands as a component of their POTW's wastewater treatment system. See Lynn MacDonald, *Water Pollution Solution: Build a Marsh*, AM. FORESTS, July 1994, at 26 (discussing municipalities' nationwide use of system of marshes to treat wastewater). The 1994 article estimated that more than 300 municipalities use natural treatment systems. See *id.* Some POTWs and other facilities utilize natural media such as wetlands to treat to some extent their effluent; for example, in Arkansas there are approximately twenty facilities that have constructed wetlands as part of the treatment process. See Memorandum from David Ramsey, Water Division, ADEQ, to authors (Dec. 5, 2000) (on file with author). The majority of the facilities are small municipalities. See *id.* There are also several treatment systems at small non-municipal facilities. See *id.* The importance of natural cleansing is illustrated by the consequences of paving or otherwise covering large areas with an impervious surface. One author notes that such coverage prevents percolation, thereby impeding the natural pollutant processing that normally occurs in the soil. See Chester L. Arnold, Jr. & James C. Gibbons, *Impervious Surface Coverage: The Emergence of a Key Environmental Indicator*, J. OF THE AM. PLANNING ASS'N, Mar. 22, 1996, at 243.

123. See *Hawaii's Thousand Friends v. Honolulu*, 821 F. Supp. 1368, 1373 (D. Ha. 1993).

124. See *id.*

125. See *Howard County v. Davidsonville Area Civic & Potomac River Ass'ns, Inc.*, 527 A.2d 772, 776 n.12 (Md. App. 1987).

materials.<sup>126</sup> Larger solids, BOD, and some nitrogen removal will occur.<sup>127</sup>

## 2. *Secondary Treatment*

Secondary treatment generally involves the use of biological techniques (i.e., digestion by microorganisms) subsequent to the primary (i.e., physical) treatment.<sup>128</sup> The biological treatment process may take place in a lagoon or other containment<sup>129</sup> facility.<sup>130</sup> The effectiveness of these biological systems will vary depending on factors such as the ability to aerate incoming wastewater.<sup>131</sup>

## 3. *Advanced Treatment*

Advanced treatment procedures encompass efforts to further reduce pollutants in the wastewater such as nutrients.<sup>132</sup> The additional processes might include the addition of chemicals for purposes of settling and coagulation of suspended solids.<sup>133</sup> In addition, the procedure might include a nitrification process to convert ammonia into nitrates and nitrites to reduce the discharge of oxygen demanding material.<sup>134</sup> Another component might be an advanced phosphorous removal process.<sup>135</sup>

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126. *See id.*

127. *See id.*

128. *See Hawaii's Thousand Friends*, 821 F. Supp. at 1373.

129. One can utilize a variety of containment devices or enclosures. *See* Wensloff, *supra* note 84, at 68 (referring to biological treatment systems known as bioreactors which utilize cement vaults or tanks).

130. *See* Steven M. Lane, *Muddy Waters*, WATER ENV'T & TECH., Nov. 2000, at 57-60 (discussing use of lagoon systems by small to medium sized wastewater treatment facilities).

131. *See id.*

132. *See* *City of Sarasota v. EPA*, 813 F.2d 1106, 1108 n.4 (11th Cir. 1987).

133. *See Hawaii's Thousand Friends*, 821 F. Supp. at 1373.

134. *See* *Howard County*, 527 A.2d at 777 n.12.

135. *See id.*

## b. Types/Techniques

### 1. *Filters/Settling*

Treatment techniques involving filters and/or settling are often used to remove solids suspended in the wastewater.<sup>136</sup> POTWs and other facilities usually employ a biological treatment process<sup>137</sup> whereby primary clarified sewage is applied to a filter bed filled with stone media.<sup>138</sup> This process is called a trickling filter.<sup>139</sup> Pollutants are converted into a form that will settle out in clarifiers.<sup>140</sup> The clarifiers are designed to remove suspended solids and organic materials through sedimentation to the bottom of a tank and move floatables to the surface.<sup>141</sup>

A plant's biological treatment activity is affected by various factors: cold temperatures slow bacterial activity,<sup>142</sup> supplies of air and food must also be adequate; and the pH of the wastewater is also important.<sup>143</sup>

### 2. *Chemical*

Wastewater may be treated by the addition of chemicals to remove or destroy certain contaminants.<sup>144</sup> An example of this process is

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136. See R.F. Becker, *Sustainable Development Through Recycling Wastewater and Achieving Zero Discharge by Using a Unique Distillation*, Presentation at the 93rd Annual Air and Waste Management Association Meeting 2 (June 2000). Another common treatment technique is air stripping. See VERSCHUEREN, *supra* note 15, at 51. Examples might include the use of an air-sparged vessel or dispersed air flotation. See *id.*

137. The court in *Natural Resources Defense Council, Inc. v. Texaco Refining & Marketing, Inc.*, 800 F. Supp. 1 (D. Del. 1992), noted in referencing a facility's biological treatment process that it: "... actually eats the pollutants contained in the water."

138. See *In re Application for a Renewal and Modification of a State Pollutant Discharge Elimination System ("SPDES") Permit (NY 0020265) pursuant to Article 17 of the Environmental, Conservation Law ("ECL") by the Village of Delhi, DEC Project No. 41850397, 1987 N.Y. ENV LEXIS 27 (October 23, 1987).*

139. See *id.*

140. See *id.*

141. See *Hawaii's Thousand Friends*, 821 F. Supp. at 1373.

142. See *Texaco*, 800 F. Supp. at 5.

143. "The measure of pH provides an estimate of the acidic agent (hydrogen ion) and the basic agent (hydroxide ion)." *United States v. WCI Steel, Inc.*, 72 F. Supp. 2d 810, 813 n.1 (N.D. Ohio 1999). See also *supra* notes 68-69.

144. See generally Becker, *supra* note 136, at 2. For example, because solvents are less soluble than water they may be used to extract certain organic compounds from wastewater. See VERSCHUEREN, *supra* note 15, at 51.

chlorination. It is often used by POTWs and other facilities to remove fecal coliform bacteria.<sup>145</sup>

### 3. *Pollution Prevention/Reduction/Recycling*

Various costs<sup>146</sup> and/or liabilities<sup>147</sup> are associated with the discharge of wastewater by a facility or activity. Consequently, an increasing number of agencies or industries are questioning whether in certain circumstances it may be more prudent to invest in the process changes or equipment modifications necessary to reduce or eliminate such discharges.<sup>148</sup> The motivation to reduce or eliminate a discharge may increase if the regulatory or permit limits applicable to a facility's discharges are tightened.<sup>149</sup> However, more stringent limits may entail greater treatment costs. Regardless, the cost-savings derived from pollution prevention/reduction efforts will be compared to the financial outlay necessary to achieve it.<sup>150</sup>

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145. See *In re* Borough of Naugatuck, Connecticut NPDES Permit: CT0100641, 1998 EPA ALJ LEXIS 67, at \*5 (Aug. 26, 1998).

146. See E. Susan Roothaan et al., *Pollution Prevention in the Metal Finishing Industry*, EM, Dec. 2000, at 23 (estimating that environmental expenses are typically 10-25% of a facility's total production costs).

147. Liabilities might include penalties for regulatory violations or common law actions for damages related to the discharge.

148. See generally Ted Wett, *Entering Zero Limits; Chemical Companies Increasingly Rely on Special Chemicals to Eliminate Wastewater Effluent; Water Treatment '96*, CHEMICAL MARKETING REP., Oct. 2, 1996, at SR12. "Other factors encouraging zero discharge involve higher costs for freshwater makeup sources, pretreatment and discharge, and local regulations, which may dictate that a given facility not discharge any waste process streams." *Id.*

149. For example, the Ohio Environmental Protection Agency noted in a 2000 guidance document that a new federal EPA analytical method had the capability to measure mercury at very low levels in wastewater. See OHIO EPA, DIVISION OF SURFACE WATER, THE USE OF BEST MANAGEMENT PRACTICES AS INDUSTRIAL LOCAL PRETREATMENT LIMITS, PRETREATMENT GUIDANCE 1 (2000) (citing EPA Method 1631). This enhanced detection capability was believed to allow the agency to determine compliance with much lower effluent limits. See *id.* The Ohio agency therefore noted: "[w]ith the limits becoming more restrictive, Ohio EPA is looking for alternative methods of regulating pollutants of concern. Ohio EPA promotes pollution prevention rather than high-priced end-of-pipe treatment technologies that may or may not meet the desired limits." *Id.*

150. See Roothaan, *supra* note 146, at 23.

Even with the economic benefits, many metal finishers have yet to make full use of pollution prevention in their day-to-day business processes. There are two main reasons for the general lack of implementation: First, there is a lack of available capital; and second, the complexity of metal finishing operations and the multitude of available pollution prevention options make implementation difficult.



Pollutants may be eliminated in a number of ways. For example, a facility might reconfigure its process to recycle the wastewater which results in a closed loop system.<sup>151</sup> In the alternative, a plant might determine it is possible to produce the product or provide the service without generating wastewater.<sup>152</sup>

Congress has mandated that EPA ensure its programs encourage the prevention or reduction of pollution whenever feasible.<sup>153</sup> The agency has interpreted this requirement to include an assessment of whether a particular CWA categorical effluent limit will encourage pollution, prevention, or reduction.<sup>154</sup> Such activities reflect the agency's attempt to integrate source reduction into its programs.<sup>155</sup> If prevention or reduction is not feasible from a technical or economic standpoint, recycling or reuse of the captured material is encouraged.<sup>156</sup>

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151. See Rick Marette et al., *Growth Without Discharge*, Sept./Oct. 2000, at 25 (describing a power tool manufacturer that eliminated discharge by reusing the wastewater). In order for a facility to reuse or recycle wastewater treatment may still be required. See *id.* (referring to treatment needed to reuse wastewater in facility process). However, a facility may be able to treat the wastewater to less stringent standards if recycled as opposed to discharging to an adjacent stream or POTW where WQS or pretreatment requirements apply respectively. See *id.* (providing motivation for POTW's water reuse to avoid the stringent POTW pretreatment standards).

152. Examples include various hospitals' efforts to address mercury discharges. The hospital will capture the substances and/or use less harmful alternatives. See *id.*

153. See Pollution Prevention Act of 1990, 42 U.S.C. § 13101 (1994).

154. See, e.g., 63 Fed. Reg. 50,388, 50,390, 50,391 (Sept. 21, 1998) (discussing an EPA review of pollution prevention/reduction opportunities associated with pharmaceutical manufacturing category effluent limits).

155. See *id.* at 50,391.

156. The subsequent handling, reuse, and/or recycling of such materials can potentially trigger other federal or state environmental regulatory programs. For example, in *American Petroleum Institute v. EPA*, 216 F.3d 50 (D.C. Cir. 2000) (per curiam), the petroleum industry and EPA disagreed as to whether oil-bearing wastewaters from which some amount of oil is recovered constitute "solid wastes" under the Resource Conservation and Recovery Act ("RCRA"). See *id.* at 54-58. See also 42 U.S.C. § 6901 (1976). The term "solid waste" is defined at 40 C.F.R. § 261.2(a)(1) (2000). The classification of such wastewaters as solid waste potentially triggers the application of RCRA permitting requirements to the recycling or recovery of such substances. Various issues associated with the recycling and/or combustion of RCRA hazardous waste are addressed in Walter G. Wright, Jr. & Mary Ellen Henry, *Hazardous Waste Combustion: Key Regulatory Developments*, Presentation at the Air and Waste Management Association's 89th Annual Meeting (June 1996).

## 2. *Water/Wastewater Conditions Assessment/Prediction*

### a. *Sampling/Monitoring*

The identification of both the type and amount of substances in a facility's wastewater is an important component of any water pollution control program. Sampling results may be used to determine regulatory requirements and/or compliance with applicable laws. The sampling and testing methods used will vary depending upon the type of substance being assessed.

Not all sampling takes place at the end of the pipe.<sup>157</sup> Waterbodies themselves are also often sampled. Both EPA and the states use waterbody sampling data to make programmatic decisions.<sup>158</sup> Agencies may, for example, sample a waterbody to determine whether it has benefitted from previously imposed limits on dischargers.<sup>159</sup> The reasons for sampling a river, stream, or lake are varied.<sup>160</sup> A typical objective is the determination of the ambient conditions in the waterbody at a particular point in time. There may also be interest in

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157. One author notes that most sampling has traditionally taken place at the end of the pipe. See Ruth Patrick, *What Are the Requirements for an Effective Biomonitor?*, in *BIOLOGICAL MONITORING OF AQUATIC SYSTEMS* 23 (Sanford L. Loeb et al. eds., 1994).

158. The agency may undertake the sampling itself or rely on sampling results from other sources if the resources are not available to undertake the desired work.

159. See generally Debra S. Knopman & Richard A. Smith, *20 Years of the Clean Water Act: Federal Water Pollution Control Act Amendments of 1972*, 35 ENV'T 16 (1993) (referring to a United States General Accounting Office report noting that the federal government had no reliable method of measuring environmental effect of spending \$130 billion to construct POTWs).

160. An Ohio Environmental Protection Agency guidance document lists a number of situations it deems appropriate for placing a mandate to sample upstream/downstream in a facility NPDES permit:

1. Where "net" limitations are included in the permit the entity will need to monitor upstream intake water;
2. Where tiered permit limits are included in the permit the entity will need to monitor the upstream or downstream flow in the receiving stream;
3. Where biomonitoring (bioassay) requirements are included in the permit and the testing protocols include upstream and/or downstream stations;
4. Where there is a need to assess upstream water quality that is related to the permit (e.g., hardness and metal limits);
5. Where there is a need to assess downstream water quality that is related to the permit (e.g., mixing zones); or
6. The other central office directives that recommend upstream and/or downstream sampling stations for specific parameters (such as hexavalent chromium) that are included in the permit.

See OHIO EPA, DIVISION OF SURFACE WATER, NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM; UPSTREAM/DOWNSTREAM SAMPLING REQUIREMENTS, PERMIT GUIDANCE 3 (1988).

assessing the impact of point and non-point sources. In addition, sampling of a lake or stream may be undertaken to identify the presence of substances associated with an individual or multiple discharges or other activities in a waterbody.

Ambient surface water assessment techniques utilized to determine waterbody quality may include: (1) physical measurements (flow,<sup>161</sup> temperature, depth, etc.); (2) constituent/parameter measurements (DO, metals, fecal coliform, etc.); and (3) toxicity/biological measurements.<sup>162</sup>

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161. The source or destination of water in a particular area may need to be determined. One method used to make such a determination is known as a tracer test. The Southwestern Electric Power Company ("SWEPCO") proposed a tracer program to determine the source of certain waters captured by its Arkansas Flint Creek Power Plant's water recovery system. See Letter from Jay A. Pruet, Manager of Environmental Affairs, SWEPCO, to Director of ADPC&E (March 26, 1984) (comprising a Permit Modification Request) (on file with author). An inflow water source determination tracer evaluation was therefore undertaken. See *id.* The tracer was a waterbody that had high sulfate levels as compared to those typically found in that region of Arkansas. See *id.* See also Donald Gayla, *Permitting and Compliance Programs for Toxic Discharges: National Pollutant Discharge Elimination System*, POWER ENGINEERING, Feb. 1992, at 35 (describing the use of dye to determine flow for purposes of determining mixing zone).

162. See Gayla, *supra* note 161, at 35. "Toxicity monitoring" refers to "whole effluent testing" ("WET"). It involves assessing the impact of a wastewater discharge mixed with the receiving waters on certain organisms (minnows, etc.). See *id.* See also Oliver A. Houck, *Why Do We Protect Endangered Species and What Does That Say About Whether Restrictions on Private Property to Protect Them Constitute "Takings"?*, 80 IOWA L. REV. 297, 321 (1995). This monitoring can be useful when it is difficult or expensive to assess effluent that contains multiple chemicals or substances. See *id.* It helps clarify the fate and ecological effects of one or multiple pollutants. See Arthur J. Stewart & James M. Loar, SPATIAL BIOLOGICAL MONITORING OF AQUATIC SYSTEMS 94 (Sanford L. Loeb et al., 1994). The information generated enables an agency, facility, or other parties to make more accurate predictions about relationships between contaminants and ecological risk. See *id.* "Biological monitoring" refers to a comparison of the abundance and diversity of organisms in one waterbody with similar waters elsewhere. See, e.g., Public Interest Research Group, Inc. v. Magnesium Elektron, Inc., 1995 U.S. Dist. LEXIS 20748, at \*6-7 (D. N.J., March 9, 1995) *rev'd on other grounds*, 123 F.3d 111 (3rd Cir. 1997) (referring to a biological study undertaken to determine the impact of a facility's effluent, if any, on a creek). See also Pier Francesco & Oscar Ravera, *European Perspective on Biological Monitoring*, in BIOLOGICAL MONITORING OF AQUATIC SYSTEMS 35 (Sanford Loeb et al., 1994). An aquatic biologist contrasted the role of biological monitoring with sampling of single chemical and physical parameters:

The long-term effects of non-point source pollution have often been determined through chemical monitoring. But recently, research has pointed to the importance of biological monitoring . . . . Traditional water quality sampling methods have emphasized analyses of physical and chemical parameters such as dissolved oxygen, pH, temperature, nitrates and phosphates. We still do this, but a single chemical sample can only provide

### 1. *Sampling Methods/Techniques*

The EPA or a state agency will often mandate the type of sampling and analytical method<sup>163</sup> that must be undertaken to measure a particular substance, discharge,<sup>164</sup> or condition.<sup>165</sup> A method will specify various techniques or activities associated with the task. For example, different preservation techniques are used to prepare a sample for analysis depending on whether it is a grab or composite sample.<sup>166</sup>

#### a. *Grab Sampling*

A grab sample is an individual sample collected at a specified period of time.<sup>167</sup> An analysis of a grab sample provides a measurement of pollutant concentrations in the wastewater at a particular point in time.<sup>168</sup> Grab samples are typically used in the wastewater context when the characteristics do not vary significantly during the day, and where there is a need to measure these parameters quickly before the value of the parameters can rapidly change due to time and temperature conditions.<sup>169</sup> Examples of such parameters include DO and pH.<sup>170</sup>

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a snapshot of water quality on the day of the sampling, and may provide no information on recent degraded conditions that have since cleared up.

Melinda Tuhus, *Checking on Bugs to Test the Health of the Qinnipiac*, N.Y. TIMES, Feb. 15, 1998, at 17.

163. Different sampling and analytical methods are specified for various analytes. For example, an atomic absorption spectrophotometer analytical method can measure metals concentrations in samples taken by sampling methods that include acid preservation. See Michael C. Newman, *Measuring Metals and Metalloids in Water*, in *SEDIMENT AND BIOLOGICAL TISSUES IN TECHNIQUES IN AQUATIC TOXICOLOGY* 493 (Gary K. Ostrander ed., 1996). Flame and flameless capabilities allow measurement of elements present in mg/g to ug/kg. See *id.*

164. For example, stormwater requires that a facility be prepared to sample immediately after initiation of a wet weather event. See Rubin, *supra* note 117, at 34.

165. For example, EPA regulations specify that "grab samples" of volatile organic compounds must be collected almost instantaneously (i.e., less than 30 seconds of elapsed time) and properly preserved. 64 Fed. Reg. 39,564, 39,580 (July 22, 1999) (citing U.S. ENVTL. PROTECTION AGENCY, *COMPARISON OF VOLATILE ORGANIC ANALYSIS COMPOSITING PROCEDURES* (EPA 821/R-95-035) (1995)).

166. See *Int'l Union v. Amerace Corp., Inc.*, 740 F. Supp. 1072, 1077 (D.N.J. 1990).

167. 40 C.F.R. § 403.7(b)(2)(iv) (2000).

168. 64 Fed. Reg. 39,564, 39,580 (July 22, 1999).

169. See also *In re Application of the Superintendent of Fish Culture*, Bureau of Fisheries, 1999 N.Y. ENV LEXIS 21, at \*42 (New York State Department of Conservation 1999).

170. See *id.*

## b. Composite Sampling

A composite sample is formed by mixing discrete samples.<sup>171</sup> In the wastewater context, the number of discrete samples necessary for a composite sample to be representative of the discharge depends upon the variability of the pollutant concentration and the flow.<sup>172</sup>

### 2. Instrument Capabilities/Limitations

A limiting factor for a particular sampling procedure or method may be the minimum amount of the substance that can be measured analytically with some degree of accuracy.<sup>173</sup> Laboratory analytical techniques have both detection<sup>174</sup> and quantification limitations.<sup>175</sup> Whether an analytical result exceeds either an established detection or quantification limit can have regulatory consequences.<sup>176</sup> A result that exceeds the detection as opposed to the quantification limit may arguably only indicate a substance's presence. CWA enforcement or regulatory decisions tied to conditions which require accurate measure-

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171. 64 Fed. Reg. 39,564, 39,580 (1984). A discrete sample may also be referred to as an "aliquot." *See id.*

172. *Id.*

173. An Ohio Environmental Protection Agency guidance document notes:

All analytical methods and systems have a certain level of "noise" associated with them. This "noise" is due to random variations in the analytical and detection components of the system. When testing for contaminants at low concentrations there is a point where the method's test results cannot be distinguished from the "noise" level of the analytical system. The NPDES permitting program needs a defined technique to determine whether a contaminant has been detected, or whether the result may have just been "noise."

OHIO EPA, DIVISION OF SURFACE WATER, LIMITS BELOW QUANTIFICATION LEVELS, PERMIT GUIDANCE 91 (1998).

174. Inaccuracy or variability may occur near the detection levels. *See* Harry F. Klodowski, Jr., *Complying With Water Quality Permit Limits: The Role of Analytic Variability*, JOURNAL OF ENVTL. REGULATION, Spring 1993, at 293.

175. *See id.* *See also* American Iron & Steel Inst. v. EPA, 115 F.3d 979 (D.C. Cir. 1996) (per curiam).

176. *See* Klodowski, *supra* note 174, at 293. The author notes:

Because of the legal implications of National Pollution Discharge Elimination System (NPDES) compliance monitoring, the uncertainty of data is a legitimate concern. Determination of noncompliance, which could result in enforcement actions, must be based on data that are highly reliable. For example, if unavoidable analytical variability causes a true concentration of 4 to be measured as 6 and then compared with a present limit of 5, that variability causes a false impression of non-compliance.

*Id.*

ments are occasionally challenged as inappropriate.<sup>177</sup> If the quantification limit is exceeded there is some confidence that the identified substance can also be accurately measured. Therefore, there may be greater comfort in using such results to determine compliance.<sup>178</sup>

The tendency toward lowering the permissible levels of toxics and other pollutants has required corresponding analytical techniques that can accurately identify them. The detection capability of various analytical techniques has progressed over the past twenty-five years.<sup>179</sup> Detection capabilities continue to advance.<sup>180</sup> However, the available analytical techniques might not in some instances be capable of accurately measuring a substance.

A discussion of analytical method capabilities may reference two terms: Method Detection Limit (“MDL”) and Quantification Level (“QL”). The term MDL denominates the testing method’s ability to identify the substance at a particular concentration.<sup>181</sup> QL is the concentration at which the analytical method can both identify and reliably quantify the amount of pollutant in the sample.<sup>182</sup>

The detection capability of an analytical method may be an issue in an enforcement action. For example, how are results that are deter-

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177. In *United States v. Marine Shale Processors*, 81 F.3d 1329, 1336 (5th Cir. 1996), a facility opposed an enforcement action by arguing in part that a number of the alleged NPDES stormwater exceedances were within the range of measurement error of its NPDES permit. The court responded that the measurement error was “plus or minus” and therefore many of the sample results reading below permit limits could have been exceedances. See *id.* at 1338.

178. See Klodowski, *supra* note 174, at 294.

179. See Clem Lay, *Environmental Risk Target, Moving*, GRAND RAPIDS J., Feb. 1, 1993, at 2.

Back in the 1950s, we were patting ourselves on the back because our analytical methods could detect a chemical at a one part-per-million (ppm) concentration. Fifteen years later, we were detecting parts per billion. Methods that are now in place or under development measure parts per million and in a few instances parts per quadrillion. I cannot conceive anything that small. I’m not even sure how many zeros that would be.

*Id.*

180. 64 Fed. Reg. 39,564, 39,578 (July 22, 1999) (noting the lowered detection limits resulting from modern analytical methods).

181. See OHIO EPA, *supra* note 173, at 296. “It’s the minimum concentration at which we can be confident that the effluent concentration is greater than zero.” *Id.* EPA defines MDL as “the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte.” *Id.*

182. 65 Fed. Reg. 31,682, 31,701 (May 18, 2000).

mined to be below the QL treated for enforcement purposes? Agency positions on this issue may vary.<sup>183</sup>

### b. Modeling

Both the EPA and state water pollution control programs use water quality models.<sup>184</sup> They answer various questions, support watershed planning and analysis, and determine the effect of particular pollutants on a waterbody.<sup>185</sup> A model might, for example, assess wastewater discharges by modeling BOD and resulting in-stream DO concentrations.<sup>186</sup>

Models can in some instances save time and expense by simulating or predicting certain ambient conditions. If so, an agency or other group might avoid some or all of the field work or measurements<sup>187</sup> necessary to reach certain conclusions.<sup>188</sup> In particular, models are often used to predict the impact of a discharge<sup>189</sup> on a particular waterbody.<sup>190</sup> This technique enables one to determine with various degrees of accuracy the facility effluent limits necessary to support the uses that have been designated for a waterbody.<sup>191</sup>

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183. The Ohio Environmental Protection Agency position on this question is: For the purposes of assessing compliance, all sample results less than the QL are considered to be in compliance. Detected concentrations less than the QL should be reported on the monthly operating report as the concentration given by the laboratory. To assess compliance with average limits, consider all reported values less than the QL as zero.

See OHIO EPA, *supra* note 173, at 296.

184. Charles D. Case, *Problems in Judicial Review Arising from the Use of Computer Models and Other Quantitative Methodologies in Environmental Decisionmaking*, 10 B.C. ENVTL. AFF. L. REV. 251, 265 n.54 (1982) (referencing U.S. ENVTL. PROTECTION AGENCY, SIMPLIFIED MATHEMATICAL MODELING OF WATER QUALITY (1971)). See also U.S. ENVTL. PROTECTION AGENCY, COMPENDIUM OF TOOLS FOR WATERSHED ASSESSMENT AND TMDL DEVELOPMENT (EPA 841-3-97-006) (1997).

185. See Case, *supra* note 184, at 265.

186. See *id.*

187. There are a variety of reasons that field measurements or sampling are not undertaken. They include, but are not limited to, cost or timing issues.

188. See Case, *supra* note 184, at 275. "A computer model can be used to overcome or at least alleviate difficulties in decisionmaking caused by this lack of data." *Id.*

189. They can also determine the impact of a structure such as a dam or a waterbody. The use of Streater-Phelps model to make such a determination was referenced in *City of Springfield v. Illinois EPA*, PCB No. 93-135, 1993 Ill. ENV LEXIS 1511, at \*15 (Dec. 16, 1993) (Illinois Pollution Control Bd.).

190. A model has been defined as "an abstract, formal representation of a theory about or empirical observation of, a defined set of facts or system." Case, *supra* note 184, at 254.

191. For example, modeling played an important role in the development of a

Models do have limitations. Various types of data must be incorporated into the model in order to run a simulation.<sup>192</sup> While desk top models are appropriate,<sup>193</sup> the model may need to be calibrated and verified prior to use.<sup>194</sup> The greater the uncertainty or variability<sup>195</sup> associated with one or more model data components<sup>196</sup> the more likely the results will contain errors.<sup>197</sup> The accuracy of a model will therefore generally increase as data obtained by sampling/measurement replaces projections/estimates.<sup>198</sup> An agency may in certain circumstances

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proposed trading program for reduction of nitrogen loads discharging into the Long Island Sound Watershed. See WATER ENVIRONMENT FEDERATION RESEARCH FOUNDATION, NITROGEN CREDIT TRADING IN THE LONG ISLAND SOUND WATERSHED (PROJECT 97-IRM-5B) [hereinafter LONG ISLAND]. A hydrodynamic model (LIS 3.0) established the relationship between the impact of nitrogen sources and the resultant water quality in this waterbody. See *id.* at I-4. The analysis includes the determination of the differential impact of both point and non-point sources in the watershed. See *id.*

192. The Ohio Environmental Protection Agency notes in regard to DO modeling: "DO models require project-specific information and very little can be prescribed in rules; thus, the rules are very basic." OHIO EPA, DIVISION OF SURFACE WATER, NH<sub>3</sub>-N TOXICITY AND DO MODELING, MODELING GUIDANCE 6 (1998).

193. See *Dawson v. Alabama Dept. of Env'tl. Mgt.*, No. 85-09, 1986 AL ENV LEXIS 1 (Ala. Jan. 8, 1986).

194. See *Hanks v. Costle*, 501 F. Supp. 195, 201 (E.D. Va. 1980) (referencing EPA position that the verification and calibration of a model to predict water quality impact is desirable but not always practical).

195. See William M. Lewis, Jr., "A New Era for the Western Public Lands:" *The Ecological Sciences and the Public Domain*, 65 U. COLO. L. REV. 279, 288-89 (1994). In discussing models in an ecosystem context the author notes:

Because ecosystems consist of dozens of sets of interactions that must be combined to produce equations representing natural processes, uncertainty of estimation is propagated along with the calculations. The consequence for large, integrative models is excessive uncertainty. Various techniques can be used to suppress variance, but they are unlikely to be successful in containing it within realistic bounds in complex models involving large numbers of coupled equations.

*Id.*

196. A modeling method may specify the number or range of numbers that should be used for various components of the calculation. For example, EPA specifies in its National Guidance for the Simplified Method model that the NH<sub>3</sub>-N concentration for a POTW's influent should be assumed to range from 12-35 milligrams per liter. See OHIO EPA, *supra* note 192, at 1. See also *In re* Petition for a Site Specific Rule for the East Side of Joliet Wastewater Treatment Facility, 1989 Ill. ENV LEXIS 721, at \*16 (Illinois Pollution Control Bd. 1989) (noting state agency criticisms of BOD model based on inaccurate assumptions regarding DO in effluent and failure to consider periodic low flow conditions).

197. See *Case*, *supra* note 184, at 275. "[A] lack of data can hamper the accurate application of a model." *Id.*

198. An EPA Environmental Appeals Board decision alluded to the difficulty of determining the impact of two power plants on a river:

The quality of the river water also varied, and there are indications that



specify or recommend sampling of the effluent or waterbody to confirm one or more model data components.<sup>199</sup>

Like many technical decisions, the agencies' selection of a particular methodology is generally given some deference by a reviewing court.<sup>200</sup> A searching review of many models in the water or other environmental context clearly requires a sophisticated technical/factual analysis.<sup>201</sup> Regardless, the courts have occasionally rejected an agency's choice of model.<sup>202</sup>

several factors which adversely affect water quality, such as nitrates, hardness and BOD, were on the rise. However, Dr. Gammon's own efforts to determine water quality in the course of his studies were described by him as "sporadic." With all these variables at work, it is evident that the task of isolating and measuring the impact of the two power plants on the aquatic community was extremely difficult. According to Dr. Gammon:

. . . [Y]ou begin with a very hazy concept of what that system is down there. You are up here, it's down there, and you are not living in that system. The only way you can find out something about it is to sample, and then try to put little pieces of information together in a coordinated way, and learn something about that model.

. . . If I see something in one year or one time, only, that's interesting. If I go back the next year and I see it again, well, that's—that reemphasizes my feeling that I am getting a pretty good picture of what actually is there and is happening, and if I can do this the third year, it reinforces it still more, so each year we had that sort of thing.

*In re Pub. Serv. Co., Inc. Wabash River Generating Station Cayuga Generating Station*, 1979 EPA App. LEXIS 4, 1 EAB ((U.S. E.P.A. App. Bd.) Nov. 29, 1979). *See also* *Hanks v. Costle*, 501 F. Supp. 195, 200 (E.D. Va. 1980) (noting that a water quality model may be improved by verification); *Gayla*, *supra* note 161, at 35 (pointing out that "[f]ield studies and near field mathematical modeling are generally used to determine the extent of mixing zone"); *Lewis*, *supra* note 195, at 289 (noting that field studies of even well known ecosystems can reveal insights indicating the difficulty of representing such as equations).

199. *See, e.g.*, *OHIO EPA*, *supra* note 192, at 2 (describing the relationship between BOD, COD, and TOC as highly variable and best determined with site-specific stream or effluent sampling).

200. *See* *Marathon Oil Co. v. EPA*, 830 F.2d 1346, 1355 (5th Cir. 1987) (rejecting challenge to EPA choice of surface water mixing zone methodology for assessment of WQS compliance); *Amax, Inc. v. Colorado Water Quality Control Comm'n*, 790 P.2d 879 (Colo. 1989) (upholding methodology selected by Colorado agency). *See generally* *Case*, *supra* note 184.

201. One commentator argues that an agency's use of a model makes it more difficult to engage in a thorough inquiry of the factual basis of the environmental decision. *See Case*, *supra* note 184, at 274. Therefore, the commentator argues models may increase the danger that incorrect environmental decisions may not be detected and corrected by reviewing courts. *Id.*

202. *See Ex parte Fowl River Protective Ass'n, Inc.*, 572 So. 2d 446, 458 (Ala. 1990) (criticizing Alabama agency use of a two-dimensional model to describe a three-

1. *Key Surface Water Characteristics*

- a. Oxygen Depletion/Reaeration

DO is obviously a critical component of a river, stream, lake or other waterbody. Aquatic organisms need varying levels of oxygen to survive.<sup>203</sup> Higher DO concentrations reduce crowding of fish which lessens their susceptibility to disease and toxicants. An assessment of the oxygen available in a stream or lake to support aquatic organisms will focus on what is known as the “sag point,”<sup>204</sup> the period when oxygen levels are the lowest.<sup>205</sup> The sag point represents heightened stress for the aquatic ecosystem’s occupants.<sup>206</sup>

1. *Depletion*

The concentration of oxygen<sup>207</sup> in a waterbody is affected by both natural conditions and human activities. Oxygen levels in a waterbody will be reduced by the receipt of various materials that consume it. Natural conditions affecting oxygen levels include temperature, water depth, and stream velocity. The United States Court of Appeals for the District of Columbia has noted:

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dimensional environment).

203. The *Fowl River* court noted that “[d]issolved oxygen in water is necessary for marine life, much as oxygen in the air is necessary to life on land . . . .” See *id.* at 457. The animals inhabiting well oxygenated waterbodies are the most sensitive to reduction of DO concentrations. See 65 Fed. Reg. 2,954, 2,955 (Jan. 19, 2000).

204. Nearly eighty years ago the United States Supreme Court found that DO measurements serve as an index of the extent to which a waterbody is polluted. *New York v. New Jersey*, 256 U.S. 296, 311 (1921). The court stated:

There is only one point upon which all the experts called for the opposing parties agree, viz.: that in the present state of learning upon the subject the amount of dissolved oxygen in water is the best index or measure of the degree to which it is polluted by organic substances, it seemingly being accepted by them all that upon the oxygen content in water depends its capacity for digesting sewage—that is for converting organic matter into inorganic and harmless substances by direct oxidation and by sustaining bacteria which assist in such conversion.

*Id.*

205. The term hypoxia refers to low DO concentrations. 65 Fed. Reg. 2,954, 2,955 (Jan. 19, 2000).

206. See *Mississippi Comm’n on Natural Resources v. Costle*, 625 F.2d 1269, 1273 (5th Cir. 1980).

207. Biochemical oxygen demand (“BOD”) is the amount of oxygen required to oxidize organic matter present in water; it is therefore an indirect measure of organic water contamination. See STANDARD METHODS, *supra* note 58, at 5-2.

The rate of oxygen depletion depends primarily on the volume of water in the hypolimnion (the more water, the more oxygen is available for decomposition), its temperature (decomposition occurs more slowly in cold water and colder water also contains more dissolved oxygen), and the quantity of organic matter it contains (the more organic matter, the greater the oxygen demands for decomposition).<sup>208</sup>

## 2. Reaeration

Certain natural events<sup>209</sup> and conditions tend to increase oxygen levels in a waterbody. This increase is known as reaeration.<sup>210</sup> Reaeration involves the transfer of oxygen from the atmosphere to a waterbody. The factors affecting the rate of reaeration include the depth, temperature, and velocity of the waterbody.<sup>211</sup> Estimates of the rate of natural reaeration in a waterbody can be a subject of disagreement.<sup>212</sup>

### b. Flow

The volume<sup>213</sup> of the waterbody and the characteristics and quantity of the material<sup>214</sup> entering it will determine whether a discharge will

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208.. Nat'l Wildlife Fed'n v. Gorsuch, 693 F.2d 156, 162 (D.C. Cir. 1982).

209. However, techniques can artificially increase DO concentrations. See, e.g., Metro. Dade County v. Coscan Florida, Inc., 609 So. 2d 644 (Fla. 1992) (proposing aeration system to increase DO concentrations in waterbody). A detailed discussion of the various natural activities and conditions that affect DO is found in *Alabama Electric Cooperative, Inc. v. ADEM*, 1987 AL ENV LEXIS 1 (Ala. Dec. 16, 1987).

210. This process is also referred to as oxygenation.

211. For example, a state agency concluded shallow streams with high slopes usually have relatively high rates of reaeration. See OHIO EPA, DIVISION OF SURFACE WATER, ANTIDEGRADATION AND THE WASTELOAD ALLOCATION PROCESS, MODELING GUIDANCE 5 (1999).

212. See Dawson v. Alabama Dept. of Env'tl. Mgt., No. 85-09, 1986 AL ENV LEXIS 1 (Jan. 8, 1986).

213. In some instances, a facility plays a significant role in a river or stream's physical flow. The flow in some waterbodies consists wholly or in part of the discharge of wastewater from one or more plants. Other facilities may divert and return some or all of a river or stream's flow instead of originating it. See *In re Champion Int'l Corp.*, NPDES No. NC000272, 1992 EPA ALJ LEXIS 516, at \*4 (Feb. 12, 1992) (referring to a diversion of virtually all of a river's flow through a plant's production process).

214. See OHIO EPA, DIVISION OF SURFACE WATER, NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM, DETERMINATION OF SAMPLING FREQUENCY FORMULA FOR INDUSTRIAL WASTE DISCHARGES, PERMIT GUIDANCE 2 (1988).

adversely impact a waterbody or otherwise be diluted<sup>215</sup> to the extent necessary to meet applicable WQS. The flow value applied to a stream or river will determine the amount of dilution a given discharge receives. Reducing or increasing the amount of dilution may therefore affect the stringency of the effluent limits imposed upon a discharger. Consequently, the flow in a river or stream is a key component of calculating the impact of a particular discharge. The measurements used in the calculation will not be limited to normal or average flow conditions. Water-quality-based limits are to be achieved at a particular design flow.<sup>216</sup> This is to ensure the desired water quality protection exists even at low flow levels.<sup>217</sup> The “critical” or “low” flow that the stream or river periodically experiences is an important consideration.<sup>218</sup> The obvious reason for making this determination is the need to ensure the minimum water conditions necessary to support a particular use will be in place 365 days a year.<sup>219</sup> In other words, the maintenance of a warm water fishery, for example, requires a minimum concentration of DO at all times for the fish to survive in a waterbody.<sup>220</sup>

The periodic minimum flow of a river or stream will often be described by representative numbers and letters. For example, 7Q10 is

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215. See generally *In re Applications of SCA Chemical Waste Services, Inc.*, Permit No. NY - 0072061 Protection of Waters Application No. 932-99-0091, 1980 N.Y. ENV LEXIS 13, at \*136, ((N.Y. Dep’t Env’tl. Conservation) Jan. 14, 1980). “[T]he availability of sufficient flow in the Niagra River is the critical factor to achieve adequate dilution and not the volume of the discharge itself.” *Id.*

216. For example, 7Q10 is the relevant flow used in the calculations undertaken in *Chevron U.S.A., Inc. v. Pennsylvania Dept. of Env’tl. Resources*, EHB Docket No. 85-410-M, 1991 Pa. ENV LEXIS 107 (June 24, 1991).

217. See *id.* at \*38.

218. See generally *City of Harrisburg v. Pennsylvania*, No. 88-120-R, 1996 Pa. ENV LEXIS 94 (Dec. 9, 1996). A key issue in this administrative decision was whether the “low flow” of a particular creek had been correctly determined. See also *Alabama Elec. Coop., Inc. v. Alabama Dept. of Env’tl. Mgt.*, No. 85-28, 1987 AL ENV LEXIS 1 (Ala. Dec. 16, 1987).

219. However, some ecosystems have adapted to a variable flow—therefore, they need this type of flow. Many species either use or avoid natural high and low flows for egg hatching, rearing, feeding, or reproduction. See EIA, *supra* note 4, at 33. For example, fish in the American Southwest desert can thrive in flash flood conditions through avoidance of displacement. See *id.* Fish in seasonal streams that gradually evaporate are able to emigrate to safety. See *id.* A stream channel that evaporates during certain periods may in fact provide habitat for specialized species. See *id.* at 32.

220. In other words, fish cannot hold their breath for the period of time when DO concentrations drop below a critical level during a sag or low flow. Stated differently, will conditions in the waterbody during both the worst time of the year and worst time of the day support the desired organisms? If not, the conditions preclude this desired use.

the "minimum 7-day low-flow that occurs once in 10 years."<sup>221</sup> Other flow criteria may be used in some scenarios.<sup>222</sup>

Flow information for various rivers or streams is often generated by either federal or state agencies or others.<sup>223</sup> For example, the United States Geological Survey maintains stream gage records which provide flow information.<sup>224</sup> Such data is a key variable in calculating a waterbody's assimilative capacity.

### c. Stratification

"Stratification" can occur if water of different densities interact.<sup>225</sup> The term refers to the tendency of deeper waterbodies to separate into different layers during warmer months.<sup>226</sup> The upper layer may be warmer and is known as the epilimnion.<sup>227</sup> This layer is more likely to be aerated by wind mixing and photosynthesis.<sup>228</sup> The lower level may be too deep to be affected by wind or support photosynthesis.<sup>229</sup> It is known as the hypolimnion.<sup>230</sup> Colder weather will cause the two layers to break up and return to full aeration.<sup>231</sup>

Stratification must be considered in any calculation undertaken to assess the impact of a wastewater discharge on water quality. Stratified conditions may impede the mixing of wastewater from top to bottom.<sup>232</sup> Mixing may be limited to a single layer.<sup>233</sup> This may reduce in certain circumstances the volume of water available to dilute a discharge.<sup>234</sup>

221. This standard is referenced in *Marshall Durbin & Co. v. Envtl. Mgmt. Comm'n*, 519 So. 2d 962 (Ala. Civ. App. 1987).

222. *See id.* (referencing a proposed use of 30Q5, which is "the minimum 30-day low flow that occurs once in five years"). *See* ADEQ Reg. No. 2 (referencing 1Q10) (1984).

223. *See* *Wyant v. Pennsylvania Dept. of Envtl. Resources*, No. 84-422-M, 1988 Pa. ENV LEXIS 160 (Oct. 24, 1988) at \*15. Design can be measured using various devices.

224. *See* EIA, *supra* note 4, at 33.

225. *See Ex parte Fowl River Protective Ass'n, Inc.*, 572 So. 2d 446, 457 (Ala. 1990).

226. *National Wildlife Fed'n v. Gorsuch*, 693 F.2d 156, 162 (D.C. Cir. 1982).

227. *See id.*

228. *See id.*

229. *See id.*

230. *See id.*

231. *See id.*

232. *See Fowl River*, 572 So. 2d at 457. *See also* 65 Fed. Reg. 2,954, 2,955 (Jan. 19, 2000) (mentioning low seasonal DO levels due to water column stratification which prevents mixing of well oxygenated surface water with deeper water).

233. *See Fowl River*, 572 So. 2d at 457.

234. *See id.*

An example of the impact of stratification on a waterbody's capacity to dilute effluent is found in an Alabama Supreme Court decision. The court in *Fowl River* concluded that the Alabama Department of Environmental Management overestimated how much effluent could be discharged into a waterbody without violating applicable WQS.<sup>235</sup> This alleged error was blamed on the agency's failure to consider the effect of stratification.<sup>236</sup>

#### d. Temperature

An atmospheric temperature increase will elevate a waterbody's temperature. Higher water temperatures can affect water quality in various ways. For example, it can reduce DO solubility or affect degradation of a pollutant in a waterbody.<sup>237</sup> Temperature can also stimulate algae growth.<sup>238</sup> The temperature of a waterbody will therefore affect the type of fish and other species that can occupy it.

#### e. Seasonality

A waterbody's assimilative capacity can change with the seasons. This is because temperature, rainfall, and other natural conditions affect a waterbody's capacity to assimilate certain pollutants. These conditions obviously vary with the season.<sup>239</sup> An agency may therefore in some instances be willing to structure seasonal water quality based permit effluent limits for relevant pollutants.<sup>240</sup> Such seasonal limits

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235. *See id.*

236. *See id.* *See also* Metropolitan Dade County v. Coscan Florida, Inc., 609 So. 2d 644 (Fla. 1992). This decision involved the potential impact of a proposed marina expansion on DO concentrations. *See id.* The role of stratification and the flushing action in and out of the marina on DO concentrations were assessed. *See id.* at 646. The proponent of the marina expansion proposed to increase DO concentrations by installing an aeration system which would supposedly break up the stratification and increase flushing, positively impacting DO concentrations. *See id.*

237. *See* Adler, *supra* note 33, at 221-22; City of Springfield v. Illinois EPA, PCB No. 93-135, 1993 Ill. ENV LEXIS 1511 at \*14 ((Ill. Pollution Control Bd.) Dec. 16, 1993).

238. *See* Husar, *supra* note 74, at 8.

239. For instance, ammonia can be less toxic in winter due to lower pH and temperature, along with higher streamflows. *See* OHIO EPA, DIVISION OF SURFACE WATER, NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM: TIERED PERMITS, DSW-0100.016 (1999).

240. *See id.* For example, see *Amended Ammonia Water Quality Criteria Allow for Aquatic Life Sensitivity Variances*, 31 ENV'T REP. 2434, 2434-35 (2000) (referencing Iowa's amendment of WQS for ammonia to consider seasonal variances in the sensitivity of aquatic life).

may in some situations allow the design and/or operation of a more cost-effective facility since some treatment costs would decrease as conditions permit.

### 3. *Cross-Media Transfers*

#### a. *Single-Media Focus*

The various federal and state environmental statutes have traditionally focused on a single environmental medium or a particular activity.<sup>241</sup> The programs often require the installation and operation of equipment to protect the water, air,<sup>242</sup> or other media. Such pollution control technologies may themselves transfer captured contaminants to other media.<sup>243</sup> The single media focus of many of the environmental statutes and regulations tend to shuffle pollutants between media.<sup>244</sup> In other words, the various environmental programs, practices, or controls may not reduce the net amount of pollution entering the environment.<sup>245</sup> Regardless, Congress has not to date seriously considered proposals to

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241. See Pamela Hill, *Emerging Policy and Legal Directions at EPA*, 33 NEW ENG. L. REV. 625, 626 (1999) (noting laws enacted early in the 1970s were generally structured on a media-specific basis. For example, Subtitle I of the Resource Conservation and Recovery Act regulates petroleum underground storage tanks ("USTs") while the Federal Insecticide, Fungicide and Rodenticide Act, 7 U.S.C. § 136-136Y, addresses the manufacture and distribution of insecticides and related products.) See also Scott R. Dismukes & Terry L. Schnell, *Emerging Issues of Sustainability and Environmental Trading*, Presentation at the 93rd Annual Meeting of the Air & Waste Management Association (June 2000); Wright & Henry, *supra* note 156, at 285-87. The RCRA UST program is discussed in Walter G. Wright, Jr., *In Storage Tank Funds We Trust: An Analysis of Their Role in Protecting the Environment and Small Business*, 13 U. ARK. LITTLE ROCK L.J. 417 (1991).

242. See generally Wright & Henry, *supra* note 156 (providing an overview of both the federal and Arkansas air pollution control programs).

243. See Becker, *supra* note 136, at 3. An example is the treatment and disposal of sewage sludge. Sewage sludge is the material extracted from the wastewater by a treatment or removal process. Robert K. Bastian & Jay Benforado, *Waste Treatment: Doing What Comes Naturally*, TECH. REV., Feb. 1983, at 58. Among other things, sewage sludge may be sent to an incinerator, placed in a landfill, or dumped in the ocean. See *id.* The combustion of sludge will result in air emissions.

244. One author notes that "[t]here is a growing understanding within the environmental community and the EPA that the past and present regulatory efforts to control pollutants in one environmental medium often merely transfer them to other environmental media." Peter J. Fontaine, *EPA's Multimedia Enforcement Strategy: The Struggle to Close the Environmental Compliance Circle*, 18 COLUM. J. ENVTL. L. 31, 33 (1993).

245. See generally Arnold W. Reitze, Jr., *A Century of Air Pollution Control Law: What's Worked. What's Failed. What Might Work.*, 21 ENVTL. L. 1549 (1991).

consolidate or integrate environmental statutory/regulatory authorities.<sup>246</sup>

b. Cross-Media Water Pollution Control Transfers

Various water pollution control processes can themselves constitute a potential source of environmental impacts. Many wastewater treatment processes generate waste. This waste is the material that is removed from the effluent or wastewater.<sup>247</sup> The material is often shipped off-site for disposal or reused in some manner.

Wastewater treatment processes may also be a source of emissions into the ambient air.<sup>248</sup> The air pollutants emitted depend upon the type of effluents treated. However, wastewater emissions are not simply generated by POTWs and manufacturing facilities.<sup>249</sup> For example, the treatment of groundwater generated by soil or groundwater remediation activities also generates such emissions.<sup>250</sup>

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246. See Fontaine, *supra* note 244, at 37. The creation of a single integrated environmental statute has been discussed. See *id.* The passage of such legislation is considered unlikely in view of the conflicts that arise from the amendment or enactment of even a single media statute. See *id.* EPA has, however, utilized a multi-media approach in its enforcement program. See generally Fontaine, *supra* note 244.

247. The same is true of many air pollution control devices. Bags or filters capture and remove pollutants from the air. See generally Wright & Henry, *supra* note 156, at 285-87.

248. See 63 Fed. Reg. 66,084 (Dec. 1, 1998) (discussing various emissions from POTWs and their collection systems).

249. In the last quarter century soil and groundwater have been added as environmental media that require protection. A patchwork of federal and state statutes, regulations, and policies address the prevention of contamination of such surface and subsurface media. These authorities often require the investigation and removal of contaminants that enter the soil or groundwater. Remediation can involve the removal or treatment of groundwater. The treatment of groundwater will usually include its removal and subsequent discharge to an adjacent waterbody or a sewer connected to a POTW. The impact of such discharges can be a concern. See, e.g., *Williams Pipeline Co. v. Bayer Corp.*, 964 F. Supp. 1300 (S.D. Iowa 1997) (describing various issues associated with remediation of hydrocarbon contamination including NPDES permitted discharges of treated groundwater); *Petitions on the Permit Issued to Pall/Gelman Sciences, Inc.*, NPDES No. MI0048453, 2000 Mich. ENV LEXIS 10 (April 5, 2000) (challenging the permit issued for discharge from groundwater treatment system involving 1, 4 - dioxane); OHIO EPA, DIVISION OF WATER, NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM; WASTEWATER DISCHARGES RESULTING FROM CLEAN-UP OF RESPONSE ACTION SITES CONTAMINATED WITH VOLATILE ORGANIC COMPOUNDS, DSW-0100.027 (1999).

250. See Wright & Henry, *supra* note 156, at 287 (referencing use of air stripping to remove certain contaminants from soil or groundwater, resulting in air emissions).



#### IV. AN OVERVIEW OF THE BASELINE: THE FEDERAL CLEAN WATER ACT

##### A. Historical Development

###### 1. *Pre-1972*

The current version of the CWA was enacted in 1972.<sup>251</sup> The primary focus of its immediate statutory predecessor<sup>252</sup> had been an attempt to force the states to adopt ambient standards for their surface waterbodies.<sup>253</sup> These ambient objectives were (and still are) known as WQS.<sup>254</sup> The WQS did not identify and directly regulate pollutants.<sup>255</sup>

251. The 1970s is the decade in which Congress enacted many of the principal federal environmental statutes. See Lynn E. Blais, *Beyond Cost/Benefit: The Maturation of Economic Analysis of the Law and its Consequences for Environmental Policymaking*, 2000 U. ILL. L. REV. 237 (referencing the late 1960s/early 1970s enactment of the Clean Air Act, National Environmental Policy Act, and Endangered Species Act). The federal agency possessing the primary authority to implement and enforce most CWA programs is EPA. It was created in 1970 by Reorganization Plan No. 3 of 1970. See 35 Fed. Reg. 15,623 (1970).

252. The Water Quality Act of 1965, Pub. L. No. 89-234. Congress previously enacted federal water pollution control legislation in 1948. See Federal Water Pollution Control Act of 1948, ch. 758, 62 Stat. 1155. See Scott D. Anderson, *Comment: Watershed Management and Nonpoint Source Pollution: The Massachusetts Approach*, 26 B.C. ENVTL. AFF. L. REV. 339 (1999). The federal legislation enacted in 1948 primarily focused on preventing water pollution by providing states funds for technical grants and construction of POTWs. See *id.* A detailed discussion of the work of the United States Senate Special Subcommittee on Air and Water Pollution's 1960s work on air and water pollution control investigation is found in Blomquist, *supra* note 13.

253. See Vandenberg, *supra* note 23, at 82 (noting 1965 federal water pollution control legislation's requirement that states set ambient WQS). A detailed discussion of this approach is found in Jeffrey M. Gaba, *Federal Supervision of State Water Quality Standards Under the Clean Water Act*, 36 VAND. L. REV. 1167 (1983). See also John Harleson, *What Is Antidegradation Policy: Does Anyone Know?*, 5 S.C. ENVTL. L.J. 33, 37, 39 (1996). A federal district court described the 1965 statute's approach by noting in part:

The 1965 Act required each state to classify its streams (or stream segments) and waters according to their intended uses, such as agriculture, municipal water supply, fish and wildlife, or recreation; and set water quality standards, such as the allowable concentration of dissolved oxygen or suspended solids, appropriate for each category of use. The method of controlling water pollution was to work backwards from the desired water quality for the waterbody, and taking into account its capacity to assimilate pollutants, attempt to determine which sources were responsible for pollution causing violation of the standards.

Nat'l Wildlife Fed'n v. Gorsuch, 530 F. Supp. 1291, 1295 (D. D.C. 1982).

254. A WQS is a pollution standard based on the resulting quality or condition of a body of water. See Scott v. Hammond, 741 F.2d 992, 995 n.5 (7th Cir. 1984). In

Instead, they simply described the desired condition of the waterbody.<sup>256</sup>

This approach had several flaws. First, the states were “slow to develop”<sup>257</sup> the required WQS.<sup>258</sup> Second, the enforcement of such standards was difficult. An agency was required to demonstrate that a particular facility was responsible for a waterbody’s exceedance of a WQS.<sup>259</sup> Establishing causation between the discharge of certain pollutants and the waterbody’s failure to meet WQS was and still is a complex task.<sup>260</sup>

Finally, the prior statutory scheme focused primarily on a determination of the tolerable effects or level of water pollution.<sup>261</sup> Minimal attention was paid to the preventable causes of water pollution.<sup>262</sup> Consequently, facilities were provided few incentives to reduce their discharges.<sup>263</sup>

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contrast, compliance with an effluent limitation is measured only by the amount of a pollutant entering the body of water. *See id.* A WQS prescribes the maximum amount of pollutants which should be present in a sample of water from the waterbody. *See id.* An effluent limitation regulates the amount of pollutant which may be legally discharged into the body of water. *See id.*

255. *See* *Pronsolino v. Marcus*, 91 F. Supp. 2d 1337, 1341 (N.D. Cal. 2000).

256. *See id.*

257. *Id.* *See also National Wildlife Fed’n*, 530 F. Supp. at 1295. “[The] process was inherently difficult and uncertain, combined with the slow progress at the states in setting the standards.” *Id.*

258. However, a number of state WQS have been in existence for many years prior to the 1965 enactment. *See, e.g., Mississippi Comm’n of Natural Resources v. Costle*, 625 F.2d 1269, 1273 (5th Cir. 1980) (referencing Mississippi Game & Fish Commission’s adoption in 1946 of a minimum DO water quality standard). *See also Blomquist, supra* note 13, at 8 (referencing a 1957 Maine stream classification system to upgrade water quality).

259. *See Columbus & Franklin County Metro. Park Dist. v. Shanks*, 600 N.E.2d 1042, 1052 (Ohio 1992). *See also National Wildlife Fed’n*, 530 F. Supp. at 1295. “Pollution discharges did not violate the law unless they could be shown to cause the waterbody to fail water quality standards.” *Id.*

260. *See Gaba, supra* note 253, at 1179.

261. *See EPA v. California*, 426 U.S. 200, 202 (1976) (noting that the problem with the approach taken by 1965 Act “stemmed from the character of the standards themselves, which focused on the tolerable effects rather than the preventable causes of water pollution”).

262. *See id.*

263. *Natural Resources Defense Council v. EPA*, 915 F.2d 1314, 1316 (9th Cir. 1990). Discharges into a stream or river were ignored if the waterbody was meeting WQS. *See id.*

## 2. 1972 Legislation

The 1972 legislation represented a major shift in direction; after 1972, Congress amended the CWA significantly in 1977, 1981,<sup>264</sup> and 1987.<sup>265</sup> The primary water pollution control focus changed from encouraging state ambient WQS to forcing individual facilities to comply with national technology-based effluent limits. The legislation established a federal baseline for the first time in the area of water pollution control. As a result, a facility discharging into a small brook in Alabama must at a minimum meet the same categorical effluent limits as a similar type of plant discharging into a large river in New York. This preemptive federal floor prevents to some extent a state from sacrificing water quality in order to entice industrial development.<sup>266</sup>

The revised CWA's approach to water pollution control had some advantages. Both enforcement and the determination of baseline effluent limits were less complex. A regulated facility or activity must obtain a permit which includes both effluent limits and a requirement to assess compliance. To determine the facility's baseline effluent limits the agency incorporates the applicable federal categorical limits or standards into the permit. The direct restrictions on discharges facilitated enforcement because the agencies were no longer required to work backward from a waterbody that was violating WQS to attempt to identify one or more responsible sources.<sup>267</sup>

### B. Current CWA

The CWA allocates responsibility for the abatement of water pollution between EPA and the states.<sup>268</sup> The federal government is deemed responsible for promulgation of the national technology-based standards. The term "technology-based" means the limits or standards are set based on the capability of specific wastewater treatment

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264. See Municipal Wastewater Treatment Construction Grant Amendments of 1981, Pub. L. No. 97-117, 95 Stat. 1623. See also Water Quality Act of 1987, Pub. L. No. 100-4, 101 Stat. 7.

265. An overview of the 1987 amendments is found in Lawrence R. Liebsman & Elliott P. Laws, *The Water Quality Act of 1987: A Major Step in Assuring the Quality of the Nation's Waters*, 17 ENVTL. L. REP. 10, 311-12 (1987).

266. See Oliver A. Houck, *Of Bats, Birds and B-A-T: The Convergent Evolution of Environmental Law*, 63 MISS. L.J. 403, 410 (1994).

267. See *Ford Motor Co. v. EPA*, 567 F.2d 661 (6th Cir. 1977).

268. See *Municipal Auth. of St. Mary's v. EPA*, 945 F.2d 67 (3rd Cir. 1991).

technology or series of technologies to reduce pollutant discharges.<sup>269</sup> These limits or guidelines are developed for categories of point source dischargers.<sup>270</sup> Consequently, identical plants located in different states would be required to meet the same national categorical effluent limits.

The WQS continue to be the primary responsibility of the states.<sup>271</sup> States, therefore, develop and maintain ambient standards for jurisdictional waterbodies. Nevertheless, the CWA requires that state WQS attain surface water cleanliness that is protective of public health and/or the environment.<sup>272</sup> The states have some discretion in the WQS choices they make.<sup>273</sup> EPA, however, is tasked to oversee this process. In fact, the agency is provided the authority to replace state WQS deemed deficient.

The CWA created the need for a federal or state permitting bureaucracy by simply banning the discharge into most waterbodies of a large universe of substances.<sup>274</sup> There is an exception to this apparent absolute prohibition. Section 402(a)(1) authorizes a discharge if EPA incorporates into a permit all applicable CWA requirements or such conditions necessary to carry out the requirements of the statute. The mechanism for ensuring that only CWA-compliant discharges are authorized is the National Pollution Discharge Elimination System ("NPDES") permit. Facilities or activities encompassed by the relevant CWA jurisdictional terms must obtain an NPDES permit.<sup>275</sup>

The statutory prohibition of non-permitted discharges cannot be waived. Neither EPA nor the states have any discretionary authority to exempt sources fitting within the scope of the statute. Prior EPA attempts to defer or exempt individual or classes of sources have generally been invalidated by the courts.<sup>276</sup> Consequently, a significant

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269. See Gold, *supra* note 98, at 465 n.25.

270. They are often denominated categorical limits or standards.

271. See 33 U.S.C. § 1311(b)(1)(C) (1994); *Scott v. City of Hammond*, 741 F.2d 992, 995 (7th Cir. 1994).

272. See *Scott*, 741 F.2d at 995.

273. See 65 Fed. Reg. 31,682, 31,684 (May 18, 2000). "The CWA allows some flexibility and differences among states in their adopted and approved water quality standards, but it should be implemented in a manner that ensures a level playing field among states." *Id.*

274. Section 301(a) states "[e]xcept as in compliance with this section and Sections 1312, 1316, 1317, 1328, 1342, and 1344 of this title, the discharge of any pollutant by any person shall be unlawful." 33 U.S.C. § 1311(a) (1994).

275. See 33 U.S.C. § 1342 (1994). Only the receipt of a permit authorizes a discharge. A facility that has applied for a permit is nevertheless in non-compliance if it is already discharging. *United States v. Sharon Steel Corp.*, 1989 U.S. Dist. LEXIS 16736 (N.D. Ohio 1989).

276. See *Committee to Save the Mokolunne River v. East Bay Mun. Util. Dist.*,

number of processes, facilities, and activities must obtain a permit prior to startup if a jurisdictional discharge will occur.

The EPA utilizes both rulemaking and guidance documents to implement its various CWA programs. The preambles accompanying federal rulemaking often include information useful in interpreting a rule or regulation. However, EPA also uses guidance documents to provide information about a rule or program.<sup>277</sup> The advantage to the agency is the ability to issue the document without going through a formal rulemaking process.<sup>278</sup> These documents can therefore be important sources of information about various issues that arise in the EPA's programs.

The frequency of EPA's use of policy or guidance memoranda in various programs has been criticized<sup>279</sup> and occasionally challenged.<sup>280</sup> The primary complaint has been that such documents are developed without public notice and comment.<sup>281</sup> However, a contrary view is that the expeditious issuance of such documents better enables EPA to disseminate needed information.<sup>282</sup>

Many state environmental protection programs also use guidance or policy documents. They are also occasionally challenged. An example in the water pollution control context was South Carolina's development of a trophic state index ("TSI"). The South Carolina

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1993 U.S. Dist. LEXIS 8364 at \*17 (E.D. Cal. 1993) (citing *Carr v. Alta Verde Indus., Inc.*, 931 F.2d 1055, 1060 (5th Cir. 1991) (holding EPA has no discretion under the Act to exempt classes or point sources from the permit requirement)); *Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369, 1377 (D.C. Cir. 1977) (holding EPA lacks statutory authority to exempt entire classes of "point sources" just because they represent insignificant sources of pollution or are not amenable to numeric effluent standards).

277. See *Agency Needs Ability to Communicate Policy Without Rulemaking*, *Official Says*, 31 ENV'T REP. 2267 (2000) [hereinafter *Communicate*].

278. See *id.*

279. See Robert A. Anthony, *Interpretive Rules, Policy Statements, Guidances, Manuals, and the Like—Should Federal Agencies Use Them to Bind the Public?*, 41 DUKE L.J. 1311 (1992); Jonathon Martel, *The Perils of EPA Lawmaking Through Guidance*, 31 ENV'T REP. 2285 (2000).

280. See *Appalachian Power Co. v. EPA*, 208 F.3d 1015, 1017 (D.C. Cir. 2000).

281. See *id.* Regulated entities have on occasion challenged their validity. *Appalachian Power* invalidated a key Clean Air Act guidance document. The EPA stated that the Periodic Monitoring Guidance document had been issued to clarify the monitoring requirements applicable to Clean Air Act Title V permittees. See *id.* at 1024. Various industry groups disagreed, arguing the policy amended existing monitoring rules without proceeding through notice and comment rulemaking. See *id.* The District of Columbia Circuit agreed. See *id.* at 1028.

282. See *Communicate*, *supra* note 277, at 2267. The article cites testimony of EPA General Counsel Gary Buzy before the United States House of Representatives Government Reform and Oversight Committee. See *id.*

agency's use of this document was challenged. In the 1999 administrative decision in *Western Carolina Regional Sewer Authority*,<sup>283</sup> a South Carolina administrative law judge invalidated the use of the TSI by the agency because it had not been adopted pursuant to a rulemaking. The challengers complained that the TSI was used to determine whether to place waterbodies on a CWA 303(d) list.<sup>284</sup>

### C. National Pollutant Discharge Elimination System

An NPDES permit must be acquired if five jurisdictional elements are present: (1) a person (2) adds a (3) pollutant (4) to navigable waters (5) from a point source. The prohibition of point source discharges in the absence of an NPDES permit is an obligation separate and distinct from the requirement that the facility discharge comply with applicable effluent limitations.<sup>285</sup> The permit effluent limitations<sup>286</sup> generally constitute the restrictions applicable to a facility's discharge.

Congress gave EPA authority to issue NPDES permits. Nevertheless, it provided the federal agency the ability to delegate this program to the various states, and in fact, encouraged them to do so. Therefore, EPA will delegate the NPDES permitting authority if it determines the state has developed an acceptable program.<sup>287</sup> Once the EPA delegates the program, applicants must obtain NPDES permits from the relevant state agency.<sup>288</sup>

#### 1. *Applicability of NPDES Permit Program*

##### a. Person/Permittee

Facilities utilizing NPDES permits are often owned or operated pursuant to commercial arrangements involving multiple parties. For example, one entity might own a facility while another operates it. The entity operating the facility might do so pursuant to a management

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283. 1999 S.C. ENV LEXIS 102 ((ALJ Div. 1999) Sept. 22, 1999).

284. *See id.* at 55.

285. *See Sierra Club v. Cedar Point Oil Co.*, 73 F.3d 549, 550 (5th Cir. 1996).

286. *See id.* The CWA defines the term "effluent limitation" in part as "any restriction established by a state or the administration on quantities, rates and concentrations of chemical, physical, biological and other constituents which are discharged from point sources into navigable waters . . ." 33 U.S.C. § 1362(ii) (1994).

287. *See American Paper Inst. v. EPA*, 890 F.2d 869, 873 (7th Cir. 1989).

288. *See* 33 U.S.C. § 1342(c)(1) (1994); *Gwaltney v. Chesapeake Bay Found.*, 484 U.S. 49 (1987).

agreement. This arrangement resembles a principal/contractor relationship.<sup>289</sup> In the alternative, an entity operating a plant may occupy it as a lessee. The plant is operated for the lessee's own benefit. The facility owner may not play a role in its operation and/or management. Also, in some scenarios, a facility may utilize contractors to service or manage equipment and/or processes encompassed by or related to the NPDES permit. A number of other commercial relationships or arrangements are of course possible.

An issue that must often be addressed in a given arrangement is which entity or entities constitute the NPDES permittee(s). This is a key question since the permittee is at a minimum<sup>290</sup> held responsible for facility CWA non-compliance.<sup>291</sup> Responsibility for such non-compliance can be allocated among multiple parties pursuant to warranty and indemnity provisions. Nevertheless, such contractual provisions do not pose an obstacle to the initial imposition of liability on the indemnified party through CWA enforcement if the entity is or should have been a permittee.

An initial question is whether facility ownership is a prerequisite for liability or responsibility for a discharge. The answer in most scenarios is no. For example, the fact that a facility discharged pollutants through a conveyance owned by another party has been deemed irrelevant.<sup>292</sup> The more important question is who controls the discharge.<sup>293</sup> This may include more than one entity.

The issue of multi-party control was addressed in the 1999 Mississippi Court of Appeals decision in *Barrett Refining Corp. v. Mississippi Commission of Environmental Quality*.<sup>294</sup> In *Barrett*, the Mississippi Commission of Environmental Quality ("Commission") issued an order assessing penalties and ordering that certain actions be undertaken at a refinery that had allegedly violated the CWA, Mississippi Air and Water Pollution Control Law, and other federal and Mississippi statutes and regulations.<sup>295</sup> The crude oil refining facility

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289. For example, a private for-profit entity might operate a municipal POTW.

290. Non-permittees involved in the operation or ownership of the facility may be subject to CWA enforcement. The court in *U.S. v. Smithfield Foods, Inc.*, 965 F. Supp. 769 (D. Va. 1979), noted that "Section 309(a)(3), 33 U.S.C. § 1319(a)(3), clearly states that 'person[s]'—not permit holders—are liable for permit violations." *Id.* at 781.

291. See *United States v. Municipality of Penn Hills*, 6 F. Supp. 2d 432, 437 (W.D. Pa. 1998) (holding that municipality owning the POTW's NPDES permit is an appropriate target for CWA enforcement action).

292. See *Dague v. City of Burlington*, 935 F.2d 1343, 1355 (2d Cir. 1991).

293. See *Friends of Sakonnet v. Dutra*, 738 F. Supp. 623, 629 (D.R.I. 1990).

294. 751 So. 2d 1104 (1999).

295. See *id.* at 1106.

was owned by Barrett Refining Corporation (“Barrett”).<sup>296</sup> Barrett held both the NPDES and other permits.<sup>297</sup>

Barrett had entered into a refining agreement in 1995 with M&S Petroleum, Inc. (“M&S”).<sup>298</sup> The agreement obligated M&S to buy crude oil feedstock which Barrett would then process at the refinery.<sup>299</sup> The crude oil was processed according to M&S’s specifications, for which Barrett was paid a per barrel fee.<sup>300</sup> M&S would subsequently sell the finished product.<sup>301</sup> The refining agreement also provided that M&S would give Barrett monthly information concerning the amount/type of feedstocks to be supplied, delivery date, and the products that would be refined.<sup>302</sup>

The agreement stated that Barrett retained control over refinery operations.<sup>303</sup> However, in October of 1995, most of the Barrett refinery employees left the facility.<sup>304</sup> M&S assumed responsibility for refining operations through an oral agreement with a Barrett management employee.<sup>305</sup> Barrett employees became M&S employees and plant safety and other operations became the responsibility of M&S.<sup>306</sup>

Thereafter, the Mississippi Department of Environmental Quality (“MDEQ”) performed an inspection of the refinery.<sup>307</sup> The agency was told that while M&S was leasing the facility, Barrett continued to have

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296. *See id.*

297. *See id.* at 1106-07.

298. *See id.* at 1107. The decision stated that M&S was a Texas petroleum brokerage company. *See id.*

299. *See id.*

300. *See Barrett*, 751 So. 2d at 1107.

301. *See id.*

302. *See id.* at 1107-08. Barrett retained the “right to reject and refuse delivery of any Feedstocks which, in Barrett’s sole discretion, may not be suitable for refining or may contain contaminants which are harmful to machinery or personnel or which Barrett may deem an environmental hazard beyond normal considerations applicable to the straight distillation refining process.” *Id.* at 1107-08.

303. *See id.* Item 18 of the Barrett/M&S agreement provided:

(c) Barrett Operations. Except as otherwise provided in this Refining Agreement, Barrett and M&S agree and acknowledge that M&S has no right whatsoever pursuant to the Refining Agreement, or otherwise, to direct, control or otherwise affect Barrett’s management and operation of the Refinery, Storage Facilities or any procedures or methodology utilized by Barrett in the Refining of Feedstock or other feedstock in or about the Refinery.

*Id.*

304. *See id.* at 1109.

305. *See id.* at 1109.

306. *See Barrett*, 751 So. 2d at 1109.

307. *See id.* at 1110.



operating control of the facility.<sup>308</sup> Additional MDEQ inspections were undertaken.<sup>309</sup> Ultimately, the MDEQ found the facility to be in violation of various federal and Mississippi environmental statutes and regulations.<sup>310</sup> The statutes allegedly violated included the CWA and Mississippi Air and Water Pollution Control Law.<sup>311</sup>

MDEQ held both M&S and Barrett responsible for various alleged violations.<sup>312</sup> M&S argued it should not be held responsible because Barrett was the permittee (i.e., held the various NPDES and other permits) and owner of the refinery.<sup>313</sup> In assessing M&S's potential responsibility, the decision noted that M&S described itself as a subcontractor of Barrett.<sup>314</sup> M&S argued that Barrett was therefore responsible for facility compliance, and penalties could not be imposed against parties other than the permittee.<sup>315</sup> The Commission responded that liability was not precluded because M&S did not have a permit.<sup>316</sup>

The Mississippi Court of Appeals held that the amount of control a company has over the operations of the facility determines whether it may be held liable as an operator.<sup>317</sup> The court noted that M&S operated the refinery after the Barrett employee walkout.<sup>318</sup> It also cited a Mississippi statute which provided:

[A]ny person who causes pollution of the air or waters of the state or places or causes to be placed any waste or other products or substances in a location where they are likely to cause pollution or

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308. *See id.*

309. *See id.* at 1112-19.

310. *See id.*

311. *See id.* at 1117-19.

312. *See Barrett*, 751 So. 2d at 1117-19.

313. *See id.* at 1120.

314. *See id.* at 1120 n.6.

315. *See id.* at 1120.

316. *See id.*

317. *See id.* The court cited *Edward Hines Lumber Co. v. Vulcan Materials Co.*, 861 F.2d 155, 157 (7th Cir. 1988). This Seventh Circuit Court of Appeals decision involved an unsuccessful argument by a former owner of a Mena, Arkansas wood preserving plant that a supplier of chemicals fit within the phrase "operator" as it is defined by the Comprehensive Environmental Response Compensation and Liability Act ("CERCLA"), 42 U.S.C. §§ 9601-75 (Supp. II 1994). *See id.* at 157-58.

318. *See Barrett*, 751 So. 2d at 1120. The court noted that M&S admitted hiring the employees, "taking responsibility for safety, buying and controlling the feedstocks and products, directing how feedstocks should be refined and paying all utilities." *Id.* The court also cited a federal CWA regulation that provides "owner or operator means the owner or operator of any 'facility or activity' subject to regulation under the NPDES permit program." 40 C.F.R. § 122.2 (2000). *Id.*

discharge of substances into the air or water that exceed any applicable federal or state standards has violated state law.<sup>319</sup>

Consequently, the Mississippi Court of Appeals held that M&S bore some responsibility for violations that occurred while it operated the refinery from October 3, 1995 through January 30, 1996.<sup>320</sup> M&S was therefore deemed liable for various penalties and other remedies.<sup>321</sup>

Similar issues can arise in the operation of public facilities. In *San Francisco Baykeeper v. Friends of Santa Clara County Creeks*,<sup>322</sup> discharges from storm drains were determined to be responsible for multiple CWA violations. A federal district court determined that the City of Saratoga, California was not liable for these violations because it did not own the stormdrains.<sup>323</sup> The United States Court of Appeals for the Ninth Circuit reversed, noting that EPA regulations may still impose liability if the city "operates" the storm outfall.<sup>324</sup>

#### b. Addition

The CWA does not define what constitutes the "addition" of a pollutant. An issue that has arisen in various scenarios is whether the return of a pollutant to the body of water from which it was withdrawn fits within the term "addition." A corresponding question is whether an agency issuing an NPDES permit must make "allowance" for pollutants found in a facility's intake water.

The agencies and courts have periodically considered whether a facility's atmospheric or stack emissions trigger NPDES permitting.<sup>325</sup> In *Chemical Weapons Working Group v. United States Department of the Army*,<sup>326</sup> the court rejected an argument that a discharge into the air by a chemical weapons incinerator is encompassed by the CWA stating in part that "common sense dictates that Tooele's stack emissions

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319. See *Barrett*, 751 So. 2d at 1120. The statute cited was Mississippi Code Annotated section 49-17-29 (Rev. 1990).

320. See *Barrett*, 751 So. 2d at 1120.

321. See *id.*

322. 1998 U.S. App. LEXIS 3942 (9th Cir. 1998).

323. See *id.* at \*2.

324. See *id.* at \*3. See also 40 C.F.R. § 122.26(a)(3)(vi) (2000). This provision states "Co-permittees need only comply with permit conditions relating to discharges from the municipal separate storm sewers for which they are operators." *Id.*

325. See *In re Florida Power & Light Co., Manatee Orimulsion Project*, Application No. 94-35, 1998 Fla. ENV LEXIS 208 at \*44 (Fla. Siting Bd. 1998) (discussing issue of whether power plant nitrogen oxide emissions are subject to WQS).

326. 111 F.3d 1485 (10th Cir. 1997).

constitute discharges into the air—not water—and are therefore beyond § 301(f)'s reach.<sup>327</sup> A 2000 Florida administrative decision cited *Chemical Weapons Working Group*<sup>328</sup> in holding that air pollutants emitted from a cement plant into an adjacent waterbody were not encompassed by CWA.<sup>329</sup>

### c. Pollutant

The term “pollutant” is broadly defined and interpreted<sup>330</sup> to include:

Dredged spoil, solid waste, incinerator residue, sewage, garbage . . . wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rocks, sand,<sup>331</sup> cellar dirt, and industrial, municipal and agricultural waste discharge into water.<sup>332</sup> A substance does not have to be encompassed by any of the substances listed in the definition to be included.<sup>333</sup>

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327. *Id.* See also *Harris v. Oil Reclaiming Co.*, 94 F. Supp. 2d 1210, 1212 (D. Kan. 2000); *No Spray Coalition, Inc. v. City of New York*, 2000 U.S. Dist. LEXIS 13919 (S.D.N.Y. 2000) (rejecting argument that spraying as part of mosquito eradication program violated CWA because sprayed pesticide moved into water).

328. *Florida Chapter of the Sierra Club v. Suwannee American Cement Co.*, DOAH Case No. 99-309, 2000 Fla. ENV LEXIS 85 at \*46-47 (Fla. Dep't Env'tl. Protection 2000).

329. *See id.* In dismissing the argument for application of the CWA to airborne emissions, the decision cited the absurdity of the possibility that automobile emissions would likewise require a permit. *See id.*

330. One commentator noted that the term includes “virtually anything that humans discharge into water.” John C. Dembach, *The Unfocused Regulation of Toxic and Hazardous Pollutants*, 21 HARV. ENVTL. L. REV. 1, 7 (1997).

331. The reference to various natural earthen materials has meant that construction clearing/land development activities will often cause the discharge of pollutants. In *Driscoll v. Adams*, 181 F.3d 1285, 1290 (11th Cir. 1999), the court noted that sand and silt were two of the constituents deposited in an off-site pond by timber harvesting and land development. The discharge of these constituents triggered the need to obtain an NPDES permit.

332. *See* 33 U.S.C. § 1362(b) (1994).

333. Various decisions have applied the term to non-listed substances. *See, e.g.*, *Concerned Area Residents for Env't v. Southview Farm*, 34 F.3d 114, 117 (2nd Cir. 1994) (finding that liquid manure is a pollutant because definitional list includes solid waste, sewage, biological materials, and agricultural waste), *cert. denied*, 514 U.S. 1082 (1995) (internal quotations omitted); *United States v. Plaza Health Laboratories, Inc.*, 3 F.3d 643, 645 (2nd Cir. 1993) (finding that human blood is a pollutant because definitional list includes biological materials), *cert. denied*, 512 U.S. 1245 (1994); *United States v. Schallom*, 998 F.2d 196, 199 (4th Cir. 1993) (finding that shotcrete and cement are pollutants because definitional list includes solid waste, chemical waste, and sand), *cert. denied*, 510 U.S. 902 (1993); *National Wildlife Fed'n v. Consumers Power Co.*, 862 F.2d 580, 583 (6th Cir. 1988) (finding that dead fish and fish remains

A few materials are excepted from the term pollutant. Uranium mill tailings are "by product material" under the Atomic Energy Act<sup>334</sup> and therefore deemed outside the scope of the term pollutant.<sup>335</sup> The term pollutant also excludes certain materials associated with oil and gas production.<sup>336</sup> However, EPA has determined that drinking water contaminants that are regulated under the Safe Drinking Water Act are still encompassed by the term "pollutant."<sup>337</sup>

The courts have clarified that most water conditions are not a "pollutant." These conditions include low DO, cold, supersaturation,

are pollutants because definitional list includes biological materials); *United States v. M.C.C. of Florida, Inc.*, 722 F.2d 1501, 1505-06 (11th Cir. 1985) (finding that redeposited vegetation and sediment are pollutants because definitional list includes dredged spoil), *vacated and remanded on other grounds*, 481 U.S. 1034 (1987); *United States v. Hamel*, 551 F.2d 107, 110 (6th Cir. 1977) (finding that gasoline is a pollutant because generic terms of definitional list evince congressional intent to encompass substances covered under the Refuse Act of 1899, and Supreme Court had held that gasoline was covered by the earlier statute); *Higbee v. Starr*, 598 F. Supp. 323, 330 (E.D. Ark. 1984) (finding that hog waste is a pollutant because definitional list includes agricultural waste), *aff'd*, 782 F.2d 1048 (8th Cir. 1985).

334. 42 U.S.C. § 2014(e)(2).

335. *See generally* *Waste Action Project v. Dawn Mining Corp.*, 137 F.3d 1426 (9th Cir. 1998). The court noted that EPA had excluded radioactive materials regulated under the AEA from the definition of pollutant by looking at 38 Fed. Reg. 13,528, 13,530 (1973). *See id.* at 1428. A 1990 federal district court decision addressed a possible conflict between the CWA and the SDWA. *See Hudson River Fishermen's Ass'n v. New York*, 751 F. Supp. 1088, 1099 (S.D.N.Y. 1990).

336. The exclusion includes:

(B) water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil or gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the State in which the well is located, and if such State determines that such injection or disposal will not result in the degradation of ground or surface water resources.

33 U.S.C. § 136.2(b) (1994).

337. 65 Fed. Reg. 43,586, 43,591 (July 13, 2000). "EPA interprets the CWA definition of pollutant to include in most cases, drinking water contaminants that are regulated under section 1412 of the Safe Drinking Water Act." *See id.* *See also* *Hudson River Fishermen's Ass'n v. City of New York*, 751 F. Supp. 1088 (S.D.N.Y. 1990). In *Hudson River*, the City of New York argued it was not required to obtain a NPDES permit for pollutants discharged into a reservoir from a drinking water treatment plant. It argued that the CWA was preempted by the SWDA, 42 U.S.C. §§ 300f, and that beneficial chemicals (used in the water purification process) such as chlorine and alum are not "pollutants." *See id.* at 1099. The court determined that requiring the acquisition of an NPDES permit for these discharges would not conflict with any SDWA objectives. *See id.* The court also found that despite their beneficial properties, chlorine and alum still constituted CWA pollutants. *Id.* at 1100-01.

and flow.<sup>338</sup> An exception is heat. It is specifically included within the statutory definition of "pollutant."<sup>339</sup>

#### d. Navigable Waters

The CWA defines the term "navigable waters" as "waters of the United States, including territorial seas."<sup>340</sup> EPA has generally interpreted this term to include any surface waterbody capable of affecting interstate commerce.<sup>341</sup> Both the EPA and the courts have broadly construed this term. It is, for example, irrelevant that a stream only flows intermittently.<sup>342</sup> A tributary to a "water of the United States" is covered by the statute.<sup>343</sup> Further, a drainage ditch<sup>344</sup> and an irrigation canal<sup>345</sup> are encompassed within this definition as well.

The applicability of this definition to some scenarios is not always clear. For example, a key question has been whether the CWA encompasses groundwater. A few judicial decisions have found CWA jurisdiction if the groundwater affects or is directly connected to surface water.<sup>346</sup> A contrary view has been that the CWA's permitting provisions do not apply to groundwater regardless of a connection to surface

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338. EPA has noted in regard to low flow: "EPA does not believe that flow, or lack of flow, is a pollutant as defined by CWA Section 502(6)." 65 Fed. Reg. 43,586, 43,592 (July 13, 2000).

339. 33 U.S.C. § 1362(6) (1994).

340. *Id.* § 1362(7).

341. See *Leslie Salt Co. v. Froelke*, 578 F.2d 742, 754-55 (9th Cir. 1978) (defining the term navigable waters for the purposes of the CWA as the the broadest possible interpretation under the Commerce Clause); *Umatilla Water Quality Protective Ass'n, Inc. v. Smith Frozen Foods, Inc.*, 962 F. Supp. 1312, 1314 (D. Ore. 1997). A detailed definition of the term "waters of the United States" is found in the federal regulations. 40 C.F.R. § 122.2 (1999).

342. See *Driscoll v. Adams*, 181 F.3d 1285 (11th Cir. 1999).

343. See *United States v. Edison*, 108 F.3d 1336, 1341 (11th Cir. 1997) (citing *United States v. Ashland Oil & Transportation Co.*, 504 F.2d 1317, 1325 (6th Cir. 1974)).

344. See *Edison*, 108 F.3d at 1341.

345. In *Headwaters, Inc. v. Talent Irrigation District*, 1999 U.S. Dist. LEXIS 21569 (D. Or. 1999), a federal district court found irrigation canals to be "waters of the United States" because they were tributaries.

346. See *Sierra Club v. Colorado Refining Co.*, 834 F. Supp. 1428, 1434 (D. Colo. 1993) (holding that discharges into "navigable waters" include discharges that reach such waters through groundwater). See also *Friends of Santa Fe County v. LAC Minerals, Inc.*, 892 F. Supp. 1333, 1357-58 (D.N.M. 1995); *Washington Wilderness Coalition v. Hecla Mining Co.*, 870 F. Supp. 983, 989-90 (E.D. Wash. 1994). The federal district court in *Williams Pipeline Co. v. Bayer Corp.*, 964 F. Supp. 1300, 1318 (S.D. Iowa 1997), noted that the Eighth Circuit Court of Appeals had not addressed the issue.

water.<sup>347</sup> EPA has not squarely addressed the issue in its regulations or guidance.<sup>348</sup>

An occasional question is whether a plant's internal waste stream is encompassed by the term "waters of the United States." In other words, does EPA have the authority to impose effluent limitations upon internal wastewater streams? EPA stated in a 1979 policy document that it has the authority to regulate the discharge of pollutants into internal wastewaters if they are an integral part of the plant's treatment system.<sup>349</sup> A 1999 federal district court decision stated that the majority position among the United States Circuit Courts of Appeals is that EPA has the authority to impose effluent limitations on internal wastewater streams.<sup>350</sup>

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347. See *Kelley v. United States*, 618 F. Supp. 1103, 1106-07 (W.D. Mich. 1985) (holding that Congress' intent was to leave regulation of contaminated groundwater to states); *Town of Norfolk v. United States Army Corps of Engineers*, 968 F.2d 1438, 1451 (1st Cir. 1992). In *Coopers Indus., Inc. v. Abbott Laboratories*, the court refused to entertain a CWA citizen suit where the allegations cited the pollution of groundwater. The groundwater was stated to, in part, circulate from a point source on the defendant's property that was hydrologically connected to the pollution of a river. See *id.*

348. EPA in a 1990 preamble promulgating stormwater regulations did state that "this rulemaking only addresses discharges to waters of United States, consequently discharges to ground waters are not covered by this rulemaking unless there is a hydrological connection between the ground water and a nearby surface water body." 55 Fed. Reg. 47,990, 47,997 (1990).

349. See, e.g., *Texas Mun. Power Agency v. EPA*, 836 F.2d 1482 (5th Cir. 1988) (noting that the term "waters of the United States" could include discharges into utility plant settling ponds). However, the EPA has exempted by regulation "[w]aste treatment systems, including treatment ponds or lagoons designed to meet the requirements of [the] CWA." 40 C.F.R. § 122.2 (1999).

350. See *United States v. Gulf States Steel, Inc.* 54 F. Supp. 2d 1233 (N.D. Ala. 1999) (comparing *Texas Mun. Power Agency v. EPA*, 836 F.2d 1482 (5th Cir. 1988), and *Public Service Co. of Colorado v. EPA*, 949 F.2d 1063 (10th Cir. 1991), with *American Iron & Steel Inst. v. EPA*, 115 F.3d 979, 995-96 (D.C. Cir. 1997)).

e. Point Source<sup>351</sup>

The CWA defines the term "point source" to include:

[A]ny discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stack, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural storm-water discharges and return flows from irrigated agriculture.<sup>352</sup>

Certain devices, structures, and equipment clearly constitute point sources.<sup>353</sup> Nevertheless, the term "point source" has been interpreted to include devices, structures, or conditions that bear little similarity to a pipe.<sup>354</sup> This is illustrated by scenarios involving non-agricultural stormwater discharges.

Precipitation can mobilize soil/debris at construction/development sites and substances on the ground or on outdoor equipment/inventory at industrial/commercial facilities. These substances may migrate into a waterbody that falls within the jurisdictional scope of the CWA. The movement of these substances can differ, however, from active processes because there may be no pipe or conveyance. Regardless, the

351. One commentator articulates a rationale for certain dischargers being denominated "point" sources: "[t]hey are termed point sources because the point of discharge is known; that is, discharges and potential contaminants the rein, can be traced to a particular point, location, facility or activity." Janet K. Baker, *Tribal Water Quality Standards: Are There Any Limits*, 7 DUKE ENV. L. & POL'Y F. 367 (1997). The same commentator contrasts "non-point source."

Non-point source pollution, on the other hand, is pollution that occurs as water drains across the land and picks up contaminants along the way. For example, sheet flow across a golf course where pesticides are used may pickup and carry residue, which will then continue to follow the drainage of the watershed. Those pollutants will be added to contaminants from stock yards or pasture land or urban runoff. It is difficult to trace a particular contaminant to a particular point in the watershed, thus the terms, non-point source pollution.

*Id.* See also Calvo, *supra* note 73, at 160 (describing non-point source pollution).

352. 33 U.S.C. § 1362(14) (1994). The term excludes return flows from irrigated agriculture. See *id.*

353. Two examples identified by the courts include man holes and sewer pipes. See *Georgia v. City of East Ridge*, 949 F. Supp. 1571, 1578 (N.D. Ga. 1996).

354. In *United States v. Earth Sciences, Inc.*, 599 F.2d 368 (10th Cir. 1979), the United States Court of Appeals for the Tenth Circuit noted that "[t]he concept of a point source was designed to further this scheme (to eliminate pollution of the nation's waters) by embracing the broadest possible definition of any identifiable conveyance from which pollutants might enter the waters of the United States." *Id.* at 373.

courts and EPA have on occasion determined that such passive movement can constitute a point source discharge.

There are limits to the scope of the term "point source." For example, in *United States v. Plaza Health Laboratories*,<sup>355</sup> the United States Court of Appeals for the Second Circuit had to determine whether a human being could constitute a "point source." An individual was prosecuted for knowingly violating the CWA by placing vials of human blood adjacent to a river.<sup>356</sup> The vials were eventually washed into the river.<sup>357</sup> The individual was convicted.<sup>358</sup> On appeal, the court decided that the placement of this material by a human was not a discharge from a point source.<sup>359</sup>

## 2. *Determination of Permit Effluent Limits*

An NPDES permit will specify limits for various "parameters" for each outfall at a facility. A parameter is a particular attribute or characteristic of a facility's wastewater discharge. The permit will generally include parameters for specific chemicals or substances (such as ammonia or copper, etc.). It will also likely contain generic pollutant parameters such as BOD, COD, or color which simultaneously measure the "effect" of specific pollutants.

The permit will restrict the quantity, rate, and/or concentration of pollutants that the point source can discharge into the waterbody.<sup>360</sup> A schedule for compliance with the applicable effluents will be included. Further, the permit is likely to contain provisions requiring various measurements of the wastewater stream such as temperature or flow rate.

The NPDES permits "transform generally applicable effluent limitations and other standards . . . into the obligations . . . of the individual discharger."<sup>361</sup> The application of a particular parameter limit or condition to a facility is driven by two CWA programs. They are the

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355. 3 F.3d 643 (2d Cir. 1993).

356. *See id.* at 644.

357. *See id.*

358. *See id.*

359. *See id.* at 649-50. The decision has been criticized. *See generally* Stephanie L. Herperger, *A Point Source of Pollution Under the Clean Water Act: A Human Being Should Be Included*, 5 DUKE J. ENVTL. L. POL'Y F. 97 (1996).

360. *See* National Resources Defense Council v. EPA, 822 F.2d 104, 110 (D.C. Cir. 1987).

361. EPA v. California, 426 U.S. 200, 205 (1976).



national categorical standards (technology-based limits) and state WQS (water quality-based limits).

The CWA categorical standards generally represent the minimum limits the facility's effluent must attain regardless of ambient waterbody conditions. Some waterbodies will not attain compliance with the applicable state WQS after implementation of the categorical limits.<sup>362</sup> Sections 301<sup>363</sup> and 302<sup>364</sup> of the CWA would therefore require the imposition of more stringent effluent limits if the applicable categorical standard(s) cannot ensure compliance with the WQS.<sup>365</sup> To determine whether more stringent limits will be required, an agency will simulate or model the impact of the proposed discharge on the receiving stream.<sup>366</sup> The calculation will attempt to determine the maximum amount of various pollutants that the receiving waters can assimilate without violating the applicable WQS.<sup>367</sup>

A facility aggrieved by an agency's determination of the limits or conditions to be included in a new or modified NPDES permit is typically provided the opportunity to challenge them in an administrative appeal process.<sup>368</sup> The failure to identify and appeal one or more objectionable conditions or limits can preclude subsequent challenges. A facility may not, for example, be able to contest the validity of such limits or conditions in a subsequent enforcement proceeding.<sup>369</sup>

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362. See Vandenberg, *supra* note 25, at 837. See also *Westvaco, Corp. v. EPA*, 899 F.2d 1383, 1385 (4th Cir. 1990).

363. 33 U.S.C. § 1311(b)(C) (1994).

364. *Id.* § 1312(a).

365. See Vandenberg, *supra* note 23, at 837.

366. See *Ex parte Fowl River Protective Ass'n, Inc.*, 572 So. 2d 446, 457 (Ala. 1990).

367. See *id.*

368. In *General Motors Corp. v. EPA*, 168 F.3d 1377 (D.C. Cir. 1999), the Michigan Department of Natural Resources issued a NPDES permit encompassing stormwater discharges to a General Motors Corporation facility. A subsequent enforcement action was instituted against the facility for violation of the NPDES permit. See *id.* at 1379. The court held that the facility was precluded from challenging the validity of the permit limits because it had failed to appeal them when initially issued. See *id.*

369. See *Public Research Group of New Jersey, Inc. v. Powell Duffryn Terminals, Inc.*, 913 F.2d 64, 77-78 (3d Cir. 1990) (by failing to challenge state-issued NPDES permit under applicable state law, permittee lost "forever the right to do so, even though [an enforcement action] might eventually result in the imposition of [substantial] penalties"); *United States v. CPS Chemical Co.*, 779 F. Supp. 437, 453-54 (E.D. Ark. 1991) (demonstrating that failure to appeal 1984 federal permit limits precludes subsequent challenge on grounds they were impossible to meet).

a. Type of Permit Limits/Standards

An NPDES permit will contain various types of effluent limits, standards and conditions.<sup>370</sup> Permit “limits” are not always numeric restrictions. Narrative language describing unacceptable conditions or toxicity testing requirements may be included in a permit. The choice of both the type<sup>371</sup> and stringency of the permit limits can be an issue.<sup>372</sup>

1. *Numeric*

Numerical limitations in a permit will usually restrict either the concentration or mass of a particular pollutant in a facility’s wastewater discharge.

a. Concentration

Concentration limitations restrict the concentration of pollutants in facility wastewater.<sup>373</sup> They may be used if production and achievable wastewater flow cannot be correlated nationally.<sup>374</sup> These limits can become important during low flow volume because high concentration levels would not otherwise be restricted by mass limits.<sup>375</sup>

b. Mass

Mass limitations restrict the total mass of pollutants that are discharged.<sup>376</sup> The rationale for the use of mass limits is the possibility that a facility could augment or dilute wastewater to attain permit

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370. The EPA is given the ability to place conditions in the permit it deems necessary to assure compliance with applicable CWA requirements. *See* 33 U.S.C. § 1342(a)(2) (1994).

371. In *Puget Soundkeeper Alliance v. Washington*, 9 P.3d 892 (Wash. Ct. App. 2000), an environmental group argued that a state NPDES permit should not include numeric limits because of Washington state statutory language requiring use of all known, available, and reasonable pollution control methods. *See id.* at 893.

372. However, the EPA or state will have to include any applicable categorical limits.

373. *See Hercules, Inc. v. EPA*, 598 F.2d 91, 103 (D.C. Cir. 1978).

374. 64 Fed. Reg. 39,564, 39,570-71 (1999) (to be codified at 40 C.F.R. pt. 403).

375. *See id.*

376. *See Hercules*, 598 F.2d at 102.

concentration limits.<sup>377</sup> Such limits discourage permittees from diluting<sup>378</sup> wastewater to meet concentration limits.<sup>379</sup>

The regulations require that certain NPDES permits include effluent limitations expressed in terms of mass.<sup>380</sup> These types of limits may be based on the establishment of an allowable quantity of mass pollutant per unit of production at a facility.<sup>381</sup> The development of national production-based standards requires that production rates be correlated to achievable wastewater flows.<sup>382</sup>

## 2. Narrative

Criteria established by a narrative standard do not have fixed values. They are generally set by an agency on a case-by-case basis in accordance with certain procedures, data assessment methods, and test protocols.<sup>383</sup> Agencies often apply narrative standards to those substances for which it is difficult to set numeric limits.<sup>384</sup>

Examples of narrative standards include: (1) "No toxic pollutants in toxic amounts;" (2) "Waters shall be free of substances that are

377. See *In re AT&T Teletype Corp.*, 1986 EPA App. LEXIS, 202 E.A.D. 167 (Apr. 23, 1986) which notes that 40 C.F.R. § 433.13(c) and § 433.14(c) provide "no user subject to the provisions of this subpart shall augment the use of process wastewater or otherwise dilute the wastewater as a partial or total substitute for adequate treatment to achieve compliance with these limitations." *Id.* at 12.

378. Dilution involves increasing the amount of process water to achieve compliance with a concentration-based standard. See Gold, *supra* note 98, at 484 (defining dilution in pretreatment categorical standard context). The words of former EPA Administrator William Ruckelshaus are sometimes cited to succinctly summarize the agency's position on the issue: "We don't believe that the solution to pollution is dilution." See *id.*

379. See *id.*

380. See 40 C.F.R. § 122.45 (f)(1) (2000). Note that pollutants such as pH, temperature, and radiation cannot be measured by mass. See OHIO EPA, *supra* note 214.

381. See 64 Fed. Reg. 39,654, 39,570 (1999). "EPA has used mass limits to encourage flow reduction and to prevent dischargers from meeting concentration limits by diluting their wastewater." *Id.*

382. See *id.* Some agencies will recommend the use of continuous flow monitoring or totalizing if the permit will contain mass limits. See OHIO EPA, *supra* note 214.

383. An example might include a toxicity limit for which compliance is determined through biomonitoring or toxicity testing of the point source's effluent.

384. By way of example, EPA stated 20 years ago that toxicity limitations are useful when specific chemical limits are inadequate or infeasible. 45 Fed. Reg. 33,523 (1980) (to be codified at C.F.R. pts. 122-25). The Illinois Supreme Court has noted "[t]he Agency has proposed, and we accept, what we believe to be an innovative and constructive approach to defining what constitutes a 'toxic amount' for those substances for which we cannot yet realistically specify a numeric standard." *Granite City Div. of Nat'l Steel Co., v. Illinois Pollution Control Bd.*, 613 N.E.2d 719, 723 (Ill. 1993).

putrescent or otherwise objectionable bottom deposits;" (3) "Waters shall be free of materials that cause odor, color or other conditions in such a degree to cause a nuisance;" and (4) "Waters shall be free from substances in concentrations or combinations harmful to humans or aquatic life."<sup>385</sup>

### 3. *Best Management Practices*

Best management practices may be appropriate in situations where it is impractical or economically infeasible to meet numerical effluent limits.<sup>386</sup>

#### b. *Categorical Effluent Limits*

Section 301(b) of the CWA authorizes the EPA to promulgate national categorical standards or limits<sup>387</sup> to restrict discharges of specific pollutants on an industry-by-industry basis.<sup>388</sup> The effluent limits are derived from research regarding the pollution control technology used in the industry.<sup>389</sup> The analysis will include the degree of reduction of a pollutant that can be achieved through the use of various levels of technology.<sup>390</sup> The applicable standard is dictated by

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385. These examples were listed by the court in the context of a discussion of WQS issues in *American Iron & Steel Inst. v. EPA*, 115 F.3d 979, 990 (D.C. Cir. 1997).

386. See OHIO EPA, *supra* note 149 (referencing desirability of using BMPs in pretreatment context because of lowered limits (i.e., WQC) and improved analytical methods).

387. These standards are sometimes called "guidelines." *Georgia-Pacific Corp. v. EPA*, 671 F.2d 1235 (9th Cir. 1982). Such a description is misleading; they are mandatory requirements.

388. See 33 U.S.C. § 1311(b) (1994).

389. *Id.* See also *National Resources Defense Council v. EPA*, 822 F.2d 104 (D.C. Cir. 1987). In *Georgia-Pacific*, 671 F.2d at 1237, the court noted that in establishing effluent limitation guidelines for a segment of the pulp and paper industry it had examined the pollution control practices in the "bleached" segment of the industry. See *id.*

390. An important issue is the ability of a facility to consistently attain a limit. A facility in a particular industry category using the same treatment system may achieve different pollutant removal efficiencies at various points in time. The United States Court of Appeals for the Fifth Circuit noted the reason for such variability: "[a] test conducted one day may show a different concentration of the same toxic than are shown by the same test the next day. This variability may be due to the inherent inaccuracy of analytical testing, i.e., 'analytical variability,' or to routine fluctuations in a plant's treatment performance." *Chemical Mfrs. Ass'n v. EPA*, 870 F.2d 177, 228 (5th Cir. 1989). EPA must take such variability into account when establishing effluent limits. See *id.* The issue of variability in the Clean Air Act context is discussed in *Wright & Henry*, *supra* note 156, at 314.

the kind of pollutant discharged (i.e., toxic, conventional, or non-conventional)<sup>391</sup> and whether a new or existing point source is involved.<sup>392</sup>

Facilities may on occasion use means other than pollution controls to achieve prescribed limits. Pollutant reduction or minimization are examples. A plant may in some circumstances eliminate or reduce a wastewater discharge by fuel substitution, process redesign, and waste minimization.<sup>393</sup>

EPA estimated that as of June 2000, it had promulgated effluent limitations guidelines for more than fifty industrial categories affecting 30,000 facilities.<sup>394</sup> The industrial categories are often further divided into subcategories. An example is a categorical standard promulgated in 2000 for transportation equipment cleaning ("TEC") facilities.<sup>395</sup> The TEC category was divided into subcategories which include: (1) Tank Trucks and Intermodal Tank Containers Transporting Chemical and Petroleum Cargos; (2) Rail Tank Cars Transporting Chemical and Petroleum Cargos; (3) Tank Barges and Ocean/Sea Tankers Transporting Chemical and Petroleum Cargos; and (4) Tanks Transporting Food Grade Cargos.<sup>396</sup> The effluent limits/conditions will be tailored to the performance capabilities of the wastewater treatment or control technologies utilized by the subcategory.

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391. Few effluent guidelines include pollutants that are not encompassed by these three categories. See Dernbach, *supra* note 55, at 9.

392. See *id.* at 61.

393. See Mark C. Van Putten & Bradley D. Jackson, *The Dilution of the Clean Water Act*, 19 U. MICH. J.L. REFORM 863, 877 n.60 (1986). The Supreme Court of Washington noted in the 1970s:

Pollution problems are usually an integral part of the production process. Their control requires a plan carefully integrated into the entire operation of the business. Nearly all industrial pollution can be controlled, and effective control is best managed if the production process is designed to minimize waste. Some methods of control are to substitute fuels or power sources; substitute raw materials; use different production processes; change the design of the product; capture pollutants before they leave the plant; change disposal practices so as to encourage reclamation of waste products; and recycle either waste products or resources used in the productive process.

Weyerhaeuser Co. v. Department of Ecology, 545 P.2d 5 (Wash. 1976) (citing 1 A. REITZE, JR., ENVIRONMENTAL LAW 77-78 (1972)).

394. See 65 Fed. Reg. 37,783, 37,784 (2000). If the pretreatment effluent guidelines are counted the total increases to 45,000. See 65 Fed. Reg. 53,008, 53,009 (2000).

395. TEC facilities are defined by EPA as those engaged in cleaning the interiors of tanks, including tank trucks, rail tank cars, intermodal tank containers, tank barges, and ocean/sea tankers used to transport commodities that come into direct contact with the tank or container interior. See 65 Fed. Reg. 49,666, 49,671 (2000) (to be codified at 40 C.F.R. pt. 442).

396. See *id.*

EPA's development of categorical effluent limits is an ongoing process.<sup>397</sup> The federal agency continues to promulgate categorical standards for facilities that have not been addressed.<sup>398</sup> Existing categorical standards are also assessed to determine if revisions are warranted. The motivation for a change to an existing standard will often be the need to incorporate technological developments in a given industry.<sup>399</sup>

EPA has been criticized by some groups for the pace of this program. In the late 1980s, the Natural Resources Defense Council ("NRDC") sued EPA arguing the agency failed to comply with section 304(m) of the CWA.<sup>400</sup> NRDC and EPA entered into a consent decree in 1992 that identified various point source categories for which final action related to the establishment of effluent limitation guidelines must be taken.<sup>401</sup> EPA argued for: (1) a schedule for revision of existing effluent guides; (2) identification of categories of sources discharging toxic or non-conventional pollutants for which EPA has not established effluent guidelines; and (3) a schedule for promulgation of effluent guidelines for sources identified in the prior category.<sup>402</sup>

### 1. *The New/Existing Source Distinction*

The CWA categorical effluent limits applied to existing and new point sources will typically differ. The effluent limits imposed upon existing facilities tend to be less stringent than those applied to new facilities.<sup>403</sup> New sources are subject to new source performance

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397. Section 304(m) requires EPA to publish an "Effluent Guideline Plan" every two years. 33 U.S.C. § 1314(m) (1994). For example, EPA is developing effluent guidelines for printed wiring board facilities. *See Proposed Limits for Metal Industries Called Costly, Threat to Voluntary Program*, 32 ENV'T REP. 396 (2000) (referencing industry disagreement with EPA regarding the cost of meeting proposed effluent limit guidelines). However, EPA may on occasion decide not to issue effluent limits after studying an industry. *See, e.g.*, 64 Fed. Reg. 45,072 (1999) (withdrawal of proposed limits for industrial laundries category).

398. A discussion of proposed future EPA activities to establish categorical standards for previously unregulated facilities is found at 65 Fed. Reg. 37,783 (2000). The proposal was finalized on August 31, 2000. *See* 65 Fed. Reg. 53,008 (2000).

399. A discussion of future EPA activities to revise certain existing categorical standards is found at 65 Fed. Reg. 37,783 (June 16, 2000).

400. *See* 65 Fed. Reg. 37,783, 37,785 (2000) (discussing NRDC lawsuit).

401. *See id.*

402. The decree's schedule has been modified several times. *See id.* The decree also required EPA to establish an Effluent Guidelines Task Force to make recommendations for improvement to the effluent guidelines program. *See id.*

403. *See, e.g.*, *South Holland Metal Finishing Co. v. Browner*, 97 F.3d 932 (7th Cir.

standards promulgated pursuant to section 306 of the CWA, which reflects the greatest degree of effluent reduction achievable through the application of best available demonstrated control technology.<sup>404</sup> In contrast, existing sources are often subject to effluent limitations representing the best practicable control technology, best available technology, or best conventional technology.

The Congressional and agency rationale for this differentiation has been the greater difficulty often involved in retrofitting new or additional pollution controls onto existing facilities. Incorporating pollution control equipment into the initial design of facility processes tends to reduce the cost and/or effort needed to attain certain limits.<sup>405</sup> Whether a particular modification or change in the relevant components of an existing facility will result in its reclassification as a new source<sup>406</sup> is

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1996). An electroplating facility was required to meet more stringent categorical pretreatment standards because it relocated. EPA and the State of Illinois took the position that this relocation changed it from an "existing source" to a "new source." *See id.* at 934.

404. 33 U.S.C. § 1306 (1994).

405. Facilities constructed after the promulgation of a categorical standard have the opportunity to design and install the best and most efficient production processes and wastewater treatment technologies. *See* 65 Fed. Reg. 3,008, 3,010 (2000) (to be codified at 40 C.F.R. pts. 136 and 445). The legislative history of the section 306 "new source" provision was discussed in *National Resources Defense Council v. EPA*, 822 F.2d 104 (D.C. Cir. 1987).

406. The term "new source" is defined in 40 C.F.R. 403.3(k) as:

(1) [A]ny building, structure, facility or installation from which there is or may be a Discharge of pollutants, the construction of which commenced after the publication of proposed Pretreatment Standards under Section 307(c) of the [Clean Water] Act which will be applicable to such source if such Standards are thereafter promulgated in accordance with that section, provided that:

(i) The building, structure, facility or installation is constructed at a site at which no other source is located; or

(ii) The building, structure, facility or installation totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or

(iii) The production of wastewater generating processes of the building, structure, facility or installation are substantially independent of an existing source at the same site. In determining whether these are substantially independent, factors such as the extent to which the new facility is integrated with the existing plant, and the extent to which the new facility is engaged in the same general type of activity as the existing source should be considered.

(2) Construction on a site at which an existing source is located results in a modification rather than a new source if the construction does not create a new building, structure, facility or installation meeting the criteria of paragraphs (k)(1)(ii), or (k)(1)(iii) of this section but otherwise alters,

therefore a material issue. Consequently, facilities will usually attempt to structure plant or process changes to avoid a reclassification as a "new source" if possible.

A CWA reclassification issue can also arise when a facility changes locations. In *South Holland Metal Finishing Co. v. Browner*,<sup>407</sup> an electroplating facility disassembled its four existing process lines and the corresponding pretreatment equipment.<sup>408</sup> The process lines and equipment were reassembled at the new location.<sup>409</sup> The EPA and the State of Illinois took the position that the facility should be reclassified from an "existing" to a "new" source for purposes of the categorical pretreatment standards.<sup>410</sup>

## 2. *Direct/Indirect Discharger Distinction*

Categorical standards are established for both direct and indirect discharges. They include standards for facilities discharging directly into a jurisdictional waterbody (i.e., "direct dischargers") and those whose effluent is routed to a POTW (i.e., "indirect dischargers" ["IU"] discharging effluent into a POTW). The CWA required EPA to establish "pretreatment standards"<sup>411</sup> that an IU's wastewater must meet

replaces or adds to existing process or production equipment.

(3) Construction of a new source as defined under this paragraph has commenced if the owner or operator has:

(i) Begun, or caused to begin as part of a continuous onsite construction program:

(A) Any placement, assembly or installation of facilities or equipment; or

(B) Significant site preparation work including clearing, excavation, or removal of existing buildings, structures or facilities which is necessary for the placement, assembly or installation of new source facilities or equipment; or

(ii) Entered into a binding contractual obligation for the purchase of facilities or equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility, engineering and design studies do not constitute a contractual obligation under this paragraph.

See 40 C.F.R. § 403.3(k) (2000).

407. 97 F.3d 932 (7th Cir. 1996).

408. See *id.* at 933.

409. See *id.*

410. See *id.* at 934.

411. Pretreatment is defined as:

The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of the pollutant properties in wastewater prior to



prior to introduction into a POTW.<sup>412</sup> Their purpose is to prevent the discharge of pollutants that "pass through," "interfere with," or are otherwise "incompatible" with the operation of a POTW or which are not susceptible to treatment by the POTW.<sup>413</sup> Pretreatment standards are designed to ensure that wastewater from direct and indirect industrial dischargers are subject to similar levels of treatment.<sup>414</sup>

EPA has promulgated two types of pretreatment standards that are applicable to indirect discharges.<sup>415</sup> One set of pretreatment standards establishes a general prohibition (i.e., non-numerical limit) on the release of any pollutants by any non-domestic if these pollutants interfere with or pass through a POTW.<sup>416</sup> This prohibition "serves as a back-up standard to address localized problems that occur."<sup>417</sup> It also "establishes specific prohibitions which apply to all non-domestic users and are designed to guard against common types of pollutant discharges that may (1) create POTW fire/explosion hazards; (2) cause POTW structural damage,<sup>418</sup> (3) obstruct POTW flow; (4) cause excessive flow; or (5) cause excessive heat."<sup>419</sup>

The other set of pretreatment provisions are national categorical standards.<sup>420</sup> The EPA has promulgated such standards for a number of categories of industrial users. The categorical standards constitute numerical, technology-based discharge limits derived from an assessment of the types and amounts of pollutants discharged that typically interfere with or pass through POTWs with secondary treatment processes.<sup>421</sup> POTWs are required to implement local pretreatment

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or in lieu of discharging or otherwise introducing such pollutants into a POTW. The reduction or alteration may be obtained by physical, chemical, or biological processes, process changes, or by other means.

40 C.F.R. § 403.3(q) (2000).

412. See 33 U.S.C. § 1317(b)(1) (1994).

413. *Id.*

414. See 65 Fed. Reg. 3,008, 3,009 (2000) (to be codified at 40 C.F.R. pts. 136 and 445).

415. EPA's development of the pretreatment categorical standards is discussed in Gold, *supra* note 98, at 479-90.

416. See 40 C.F.R. § 403.5 (2000).

417. See 52 Fed. Reg. 1,586 (1987) and 40 C.F.R. § 403.5(a) (2000).

418. For example, the receipt of wastewater that is acidic may corrode some sewer pipes. See 64 Fed. Reg. 1999 (Nov. 22, 1999). Consequently, the pretreatment regulations specify a minimum pH for effluent. See *id.* See also 40 C.F.R. § 403.5(b)(2) (2000).

419. See 52 Fed. Reg. 1586 (1987). See also 40 C.F.R. § 403.5(b) (2000).

420. See 40 C.F.R. § 403.6 (2000).

421. See 52 Fed. Reg. 1,586 (1987).

limits applicable to their industrial indirect dischargers to satisfy any local requirement.<sup>422</sup>

Congress revised the CWA in 1977 to establish a discretionary program for POTWs to grant removal credits under certain circumstances to IUs.<sup>423</sup> A POTW's removal credit authority enables a POTW to grant to an IU a "credit"—in the form of a less stringent wastewater pretreatment standard<sup>424</sup>—to the extent that the POTW consistently removes certain regulated pollutants from the indirect discharger's waste stream.<sup>425</sup> These removal credits may be awarded only if (1) the POTW "removes all or any part of such toxic pollutant," (2) the POTW's ultimate discharge would "not violate that effluent limitation, or standard which could be applicable to such toxic pollutant if it were discharged directly rather than through a POTW," and (3) the POTW's discharge would "not prevent sludge use or disposal by such [POTW] in accordance with section 1345."<sup>426</sup>

### 3. *Facility/Activity Categories*

National categorical standards establish effluent limits for facilities in specific industrial categories or on POTWs. Each categorical standard describes the type of facility which it is intended to encompass. The category may be further subdivided. For example, the "coil coating" category is further subdivided into steel basis materials, aluminum basis materials, galvanized basis materials, and cans.<sup>427</sup>

The applicability of a category to a particular facility is sometimes unclear.<sup>428</sup> Both the preamble<sup>429</sup> accompanying the promulgation of the

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422. See 40 C.F.R. § 403.5 (2000).

423. See 33 U.S.C. § 1317(b)(1) (2000).

424. In other words, the IU's discharge may be allowed to exceed the applicable categorical pretreatment effluent limits. See 64 Fed. Reg. 39,564, 39,583 (1999).

425. See 40 C.F.R. § 403.7 (2000). See also 64 Fed. Reg. 39,564, 39,583 (1999) (to be codified at 40 C.F.R. pt. 403).

426. 33 U.S.C. § 1345 (1994).

427. See 40 C.F.R. § 465(A)-(D) (2000). This category was discussed in *United States v. Roll Coater, Inc.*, No. 89-828C, 1991 U.S. Dist. LEXIS 8790, at \*2 (S.D. Ind. 1991).

428. EPA has in some instances frankly noted the difficulty in determining the applicability of a categorical standard to one or more facilities. See Memorandum from Mark Ingle, Project Officer, U.S. Environmental Protection Agency to Jeff Cullen, Beverage & Diamond, EPA Applicability Interpretation Regarding Silk Screen Printing and the Printed Circuit Board Manufacturing Process (May 31, 1996) (on file with author) [hereinafter *Interpretation Memorandum*]. EPA noted in relevant part in this memorandum: "[t]he applicability interpretation for the subject silk screen cleaning process is not easily defined because the 40 C.F.R. § 433 regulation utilizes PCB

effluent guidelines and the background<sup>430</sup> or development documents<sup>431</sup> may be used to interpret the applicability of the categorical standard. If there is doubt about the applicability of a category, EPA may in some circumstances provide a determination.<sup>432</sup> Facilities that disagree with the agency's view of the applicability of a particular categorical standard may on occasion challenge the decision.<sup>433</sup>

#### a. Industrial

The EPA in the mid-1970s commenced a new program to regulate toxic discharges on an industry-by-industry basis.<sup>434</sup> Standards would be established based on the feasibility of control technology.<sup>435</sup> The toxics categorical effluent approach was sanctioned in a judicial decree.<sup>436</sup> This program was subsequently adopted by Congress as part of the 1977 amendments to the CWA.<sup>437</sup>

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manufacture as a "trigger" process for regulation." *Id.*

429. See *In re Goodyear Tire & Rubber Co.*, NPDES Appeal No. 92-5, 1993 EPA LEXIS 21, at \*16 (1993) (referring to preamble in assessing the application of effluent guideline to a facility).

430. A background document in the categorical standard context may be denominated a "development document." See *National Ass'n of Metal Finishers v. EPA*, 719 F.2d 624, 657-59 (3d Cir. 1983).

431. Both the term "background" and "development" document are used. See *Goodyear*, 1993 EPA LEXIS at \*12 (referencing Tire and Synthetic Segment of the Rubber Processing Service Category of Development Document). Various other documents may be prepared in developing the categorized standard. For example, in promulgating a categorical standard for a class of landfills, EPA prepared an "Economic Analysis for Final Effluent Limitations Guidelines and Standards for the Landfills Point Source Category," "Statistical Support Document for Final Effluent Limitations Guidelines and Standards for the Landfills Point Source Category," and "Environmental Assessment for Final Effluent Limitations Guidelines and Standards for the Landfills Point Source Category." See 65 Fed. Reg. 3,008 (2000).

432. 40 C.F.R. § 173.6(a) (2000).

433. See *Modine Mfg. Co. v. EPA*, 791 F.2d 267 (3d Cir. 1986) (considering a challenge to the application of electroplating and metal finishing categorical standards to facilities manufacturing automobile radiators and other heat transfer products).

434. See *Hercules Inc. v. EPA*, 598 F.2d 91, 101 (D.C. Cir. 1978).

435. See *id.*

436. *National Resources Defense Council v. Train*, 8 ERC (BNA) 2120, 2122 (D.D.C. 1976), *rev'd in part on other grounds*, *National Resource Defenses Council v. Costle*, 561 F.2d 904 (D.C. Cir. 1977).

437. See 33 U.S.C. § 1317(a)(2) (1994).

### b. Public Owned Treatment Works

A separate set of categorical standards were developed for discharges from POTWs.<sup>438</sup> The CWA requires that all POTWs achieve effluent limitations based upon secondary treatment.<sup>439</sup> EPA determines what constitutes "secondary treatment."<sup>440</sup> However, the 1981 amendments<sup>441</sup> to the CWA provide that certain biological treatment processes constitute the equivalent of secondary treatment.<sup>442</sup>

POTWs with larger flows are required to develop and implement an industrial pretreatment program ("IPP").<sup>443</sup> The IPP is a binding component of the POTW's NPDES permit.<sup>444</sup> If an existing POTW subsequently becomes subject to this program, its NPDES permit must be re-issued or modified to incorporate the IPP.<sup>445</sup> POTWs are required to exercise some oversight over indirect dischargers classified as significant industrial users ("SIU").<sup>446</sup>

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438. A "POTW" is defined as "any device or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial waste of a liquid nature which is owned by a 'state' or 'municipality.'" This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment. Whether a particular process or facility fits within the scope of the term "POTW" is occasionally a contested issue. *See, e.g., In re City & County of San Francisco*, 1993 EPA App. LEXIS 24 (1993).

439. *See* 33 U.S.C. §§ 1311(b)(1)(B), 1314(d)(1) (1994). POTW secondary treatment requirements are addressed at 40 C.F.R. § 133.102 (2000). These requirements were promulgated at 49 Fed. Reg. 36,986 (1984).

440. *See* 33 U.S.C. § 1311(b)(1)(B) (1994).

441. *See* Municipal Wastewater Treatment Construction Grant Amendments of 1981, Pub. L. No. 97-117, 95 Stat. 1623 (1981).

442. *See* 33 U.S.C. § 1314(d)(4) (1994). The phrase "biological treatment facilities" means oxidation ponds, lagoons, ditches, and trickling filters. 49 Fed. Reg. 36,986 (1984). Whether a particular treatment process was equivalent to secondary treatment was discussed in a New York Department of Environmental Conservation administrative decision. *See In re Application for a Renewal and Modification of a State Pollutant Discharge Elimination System Permit (NY 0020265)* 1987 NY ENV LEXIS 27 (Oct. 23, 1987).

443. An important EPA administrative decision addressing whether a POTW was required to have developed an IPP is *In re City of Yankton*, 1994 EPA LEXIS 44 (1994). *See also* *United States v. City of Bearmont*, 786 F. Supp. 634 (E.D. Tex. 1992).

444. *See* *United States v. City of Detroit*, 940 F. Supp. 1097, 1098 (E.D. Mich. 1996).

445. In *City of Detroit*, the city argued an IPP that had not yet been incorporated into the permit was not an "enforceable condition." *Id.* at 1099. The court agreed, holding that such a pretreatment program may only be enforced when incorporated in the permit. *See id.* at 1100.

446. *See* 40 C.F.R. § 403.8 (2000). The required oversight includes sampling and analysis of IU effluent and inspection of their facilities. *See* Letter to Larry Tharnish, Manager, Batesville Water Utilities from Myron O. Knudson, Director, Water

The IPP must include the development and imposition of limits on IU's that are unrelated to categorical standards. These specific "Local Limits" are intended to implement the general and specific pretreatment standards.<sup>447</sup> This can be a complex exercise because of the stringency of certain WQS or the possibility that a target pollutant originates from domestic background sources.<sup>448</sup>

Most municipal sewage systems, or POTWs, were designed and constructed to treat domestic sewage and other biological waste. However, IUs may discharge wastes into the POTW in concentrations or volumes that cannot be adequately treated by its treatment process. Such discharges can inhibit or disrupt a POTW, causing it to violate its NPDES permit limits. The problems may include physical disruption or inhibition of the treatment process. It is also possible to hydraulically overload the plant so that proper settlement does not occur or wastes are retained for too short a time to receive adequate treatment before discharge.

Pollutants discharged by IUs which cannot be treated by the POTW may pass through the plant in amounts or concentrations that exceed its NPDES permit limits. Some pollutants may also contaminate the sewage sludge that is a by-product of the POTW's treatment processes. Such contamination may prevent the POTW from disposing or reusing the sewage sludge in certain ways.

Congress recognized these threats. The CWA requires IUs to pretreat wastes before discharging them into POTWs. Section 307(b) requires the establishment of pretreatment standards "to prevent the discharge of any pollutant through [POTWs], which pollutant interferes with, passes through, or is otherwise compatible with such works."<sup>449</sup>

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Management Division, EPA Region VI, Notice of Proposed Assessment of Class I Civil Penalty Docket No. VI-91-1647 (July 24, 1991) (on file with the author) (referencing alleged violations by Batesville, Arkansas POTW, including failure to sample/analyze IU effluent and to inspect such facilities).

447. See Gold, *supra* note 98, at 468.

448. The Ohio Environmental Protection Agency has stated "[t]he complexity of permitting industrial users with extremely low limits is not limited to mercury. POTWs have also faced problems with issuing local limits for silver due to the low water quality criteria, and sometimes for copper, due to elevated domestic background concentrations." OHIO EPA, *supra* note 149, at 2.

449. 33 U.S.C. § 1317(b)(1) (1994). The Arkansas Poultry Federation challenged the definitions of "pass-through" and "interference" promulgated by EPA arguing they were inconsistent with the CWA and unconstitutionally vague. Arkansas Poultry Fed'n v. EPA, 852 F.2d 324 (8th Cir. 1988). The definitions were upheld. *Id.* See also EPA v. City of Green Forest, 921 F.2d 1394, 1405 (8th Cir. 1990) (holding "interference" and "pass through" are not unconstitutionally vague terms but adequately advised IU that it was not to cause the POTW to violate its NPDES terms); 64 Fed. Reg. 39,564

### c. Water Quality Standards

Section 303 of the CWA requires that each state develop WQS for jurisdictional waters of the United States within their borders.<sup>450</sup> WQS serve a dual purpose. They establish the water quality goals for a specific body of water and also serve as the regulatory basis for the development of water-quality based effluent limits<sup>451</sup> and strategies for individual point source discharges.<sup>452</sup> The particular WQS deemed applicable to a waterbody can therefore be an important determinant of the effluent limits a discharging facility will need to attain.<sup>453</sup>

A WQS consists of three parts: (a) the designated uses of a waterbody; (b) the water quality criteria ("WQC") that are necessary to protect existing uses and to attain the beneficial uses designated by the state; and (c) an antidegradation statement or policy to protect existing uses and high quality water.<sup>454</sup> WQS may be expressed either as a numeric concentration level or a narrative standard.<sup>455</sup> They are effective immediately upon promulgation.<sup>456</sup>

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(1999) (to be codified at 40 C.F.R. pt. 403) (revising pretreatment regulations); 60 Fed. Reg. 3,008, 2,009 (2000) (to be codified at 40 C.F.R. pts. 136 and 445) .

450. See 33 U.S.C. § 1313 (1994). A detailed discussion of WQS is found in David S. Baron, *Water, Rivers and Lakes: Emerging Issues*, 27 ARIZ. ST. L.J. 559 (1995). The WQS in some states may be applied to a broader media denominated "waters of the state." See, e.g., *Upper Chattahoochee River Keeper Fund, Inc. v. City of Atlanta*, 986 F. Supp. 1406 (N.D. Ga. 1997) (applying Georgia WQS to culverts from combined sewer overflow treatment facility because of the breadth of the term "waters of the state").

451. For example, an author illustrates the importance of the EPA recommended DO WQC by noting that EPA and the states use it to set effluent limits for approximately 15,000 POTWs. See Lewis, *supra* note 195, at 279 (citing ENVTL. PROTECTION AGENCY, OFFICE OF WATER REG. AND STANDARDS, PUB. NO. 440/5-86/003, AMBIENT WATER QUALITY CRITERIA FOR DISSOLVED OXYGEN (1986)).

452. 40 C.F.R. § 131.2 (2000). For example, in *City of Brighton Wastewater Treatment Plant*, 2000 Mich. ENV LEXIS 19 (Mich. Dep't Nat'l Res. 2000), a state administrative law judge was required to decide whether an increase in a POTW's discharge would threaten the recipient waterbody's ability to sustain its uses.

453. See *In re Travenol Laboratories, Inc.*, NPDES Appeal No. 87-7, 1990 EPA App. LEXIS 48, (EPA 1990). In *Travenol*, a facility challenged EPA's use of Puerto Rico provisions restricting consideration of background pollutants/dilution in setting permit limits. See *id.* The facility argued these provisions were not encompassed or part of the Puerto Rico WQS. See *id.* at \*8. The decision concluded the provisions were part of the WQS and therefore lawfully considered by EPA in the determination of the NPDES permit limits. See *id.* at \*\*10-11.

454. See 40 C.F.R. § 131.6 (2000).

455. WQS are not themselves directly enforceable. Instead, the NPDES permits issued for point source discharges on a waterbody will include the effluent limits necessary to maintain applicable WQS. See *id.*

456. See *Miccosukee Tribe of Indians v. United States*, 1998 U.S. Dist. LEXIS

Section 303(c) specifies that the adoption of WQS is primarily the responsibility of the states.<sup>457</sup> The state must adopt uses consistent with CWA objectives and WQS sufficient to protect the chosen uses.<sup>458</sup> However, EPA is required to ensure that state WQS, along with any changes, meet the minimum requirements of the CWA. EPA will assess whether the WQS protect state criteria and/or designated uses<sup>459</sup> have taken into account the water's use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, navigation, and other purposes.<sup>460</sup> The CWA regulations provide for EPA review of any state WQS changes. Therefore any state WQS changes must be submitted to EPA.<sup>461</sup>

The agency is required to make a determination of the legality of the state standards within sixty days of submission. In the absence of objections they become the standards for applicable waters of the United States.<sup>462</sup> EPA may promulgate WQS to supersede disapproved state standards after providing the state notice and an opportunity to make necessary revisions.<sup>463</sup> The agency has utilized this authority on a number of occasions.<sup>464</sup>

A state may decide on its own initiative to add or revise WQS. However, they are mandated by the federal CWA regulations to assess their WQS at least every three years. This assessment is called a

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15838, at \*46 (S.D. Fla. 1998). The state of Florida enacted a statute that allowed delayed compliance with certain WQS. *See id.* at \*20 The court held that neither the CWA nor Florida law authorized compliance schedules for WQS. *See id.* at \*\*45-47.

457. *See* 33 U.S.C. § 1313(c) (1994).

458. *See* 40 C.F.R. §§ 131.5 (2000).

459. *See* 65 Fed. Reg. 31,682, 31,687 (2000).

460. *See* 33 U.S.C. § 1313(c)(2)(A) (1994).

461. *See id.*

462. *See id.*

463. *See* 33 U.S.C. § 1313(c)(4) (1994). The federal agency's authority to disapprove state WQS was upheld in *Mississippi Comm'n on Natural Resources v. Costle*, 625 F.2d 1269 (5th Cir. 1980) (disapproving Mississippi DO standard).

464. For example, note EPA's promulgation of a WQS for Arizona. *See* 61 Fed. Reg. 20,686 (1996). EPA designated fish as a use for certain Arizona waterbodies. EPA had disapproved of various Arizona WQS pursuant to 40 C.F.R. § 131.21 (2000). EPA's alleged failure to promulgate superceding WQS for certain Arizona WQS was the subject of a citizen suit challenge in *Defenders of Wildlife v. Browner*, 909 F. Supp. 1342 (D. Az. 1995). *See also* 65 Fed. Reg. 41,216 (2000) (to be codified at 40 C.F.R. pt. 131). EPA proposed a superseding WQS for the State of Kansas. It included a requirement that all discharges to stream segments for which continuous flow is sustained primarily through discharge of treated effluent protect the designated uses. *See also* 65 Fed. Reg. 31,682, 31,719 (2000) (to be codified at 40 C.F.R. pt. 131). EPA promulgated aquatic life criterion for 23 priority toxic pollutants and numeric human health criterion for 57 primary toxic pollutants.

triennial review. The review is to include a determination of whether new WQS should be promulgated or existing ones modified.<sup>465</sup>

1. *Waterbody Uses*

a. *Designation of Uses*

Section 303(c) of the CWA requires that the states specify one or more uses for all waterbodies within their jurisdiction.<sup>466</sup> States have some latitude in specifying uses for various waterbodies.<sup>467</sup> Further, states often adopt subcategories of uses for different ecosystems and conditions.<sup>468</sup> A typical example is the establishment of use classifications for warm water and cold water fisheries.<sup>469</sup>

A use classification can either be an existing use<sup>470</sup> or a higher quality use that has not yet been attained (i.e., a "designated use").<sup>471</sup> The designation of a higher quality use will require that water quality conditions improve to the extent necessary to meet the applicable WQC or standards necessary to support that use.<sup>472</sup> A state may designate several compatible uses for the same waterbody.<sup>473</sup>

The designation of a particular use or uses for a waterbody can have consequences for those facilities or activities whose discharges will enter it. Some uses may have corresponding WQC or standards that require the imposition of effluent limits on point source dischargers more stringent than those imposed by applicable categorical standards.<sup>474</sup> Consequently, the standards or criteria associated with the designated use will be a key determinant of the assimilative capacity available in

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465. See 33 U.S.C. § 1313(c) (1994).

466. See *id.*

467. See Adler, *supra* note 33, at 209. This designation requires that certain minimum beneficial uses be applied. *Id.*

468. See Baron, *supra* note 450, at 570.

469. See *id.*

470. An "existing use" is one that has actually been attained on a given body of water after November 28, 1975.

471. See 40 C.F.R. § 131.3(f) (2000).

472. See 33 U.S.C. § 1313(c)(2)(A) (1994); 40 C.F.R. § 131.10 (2000).

473. See Western Carolina Regional Sewer Authority, 1999 S.C. ENV LEXIS 102 (S.C. ALJ Div. Sept. 22, 1999), at \*19 (referencing the fact that states may designate several compatible uses for the same waterbody). For example, a waterbody might have public water supply, primary and secondary contact recreation, and fishable/swimmable as designated uses.

474. Those circumstances would include waterbody conditions (flow, etc.), other facilities or activities discharging into the waterbody, etc.



the waterbody. The potential consequences that arise from a state's choice will therefore occasionally trigger a challenge<sup>475</sup> or debate.<sup>476</sup>

b. Use Attainability

The CWA permits a state to remove a designated use if it can be demonstrated that the attainment of this use is not feasible for certain reasons.<sup>477</sup> Uses are considered to be attainable if they can be achieved (1) when certain effluent limitations are imposed on point sources, and (2) when cost effective and reasonable best management practices are imposed on nonpoint sources.<sup>478</sup> The use attainability analysis ("UAA") involves evaluation of the physical, chemical and biological factors through a waterbody survey and assessment.<sup>479</sup> EPA reviews state UAA determinations.<sup>480</sup>

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475. See, e.g., *Northeast Ohio Reg. Sewer Dist. v. Shank*, 1988 Ohio ENV LEXIS 21 (Oct. 20, 1988) (setting out unsuccessful challenge to Ohio Environmental Protection Agency's designation of a segment of the Cuyahoga River as "Warmwater Habitat").

476. See Letter from Steve Hallstrom, Carnation, Washington, to the Seattle Times (Aug. 1, 1991) [hereinafter *Hallstrom Letter*] (addressing disagreement related to impact on City of Snoqualumie, Washington of reclassifying Snoqualumie River to a higher use). City officials argued the proposed use would require costly upgrades to its POTW. See Louis T. Consalett, *Cities Fear Snoqualmie River Upgrade Would Slow Growth*, SEATTLE TIMES, July 29, 1991, at C1. An opposing argument was that preservation of the river's water quality was a necessary cost because it was an amenity that attracted people to the area. See Hallstrom Letter, *supra*. See also *City of Albuquerque v. Browner*, 97 F.3d 415, 426 (10th Cir. 1996) (addressing Albuquerque's challenge to EPA approval of tribal WQS based on argument they were unattainable and would place an excessive burden on the city's POTW). The *Albuquerque* decision is discussed in Baker, *supra* note 351.

477. See 40 C.F.R. § 131.10(g) (2000). See also *In re* Petition of Town of Sherburne, 581 A.2d 274 (Vt. 1990) (addressing challenge to Vermont's use reclassification of river).

478. See 40 C.F.R. § 131.10(d) (2000). The process for making this determination is known as a use attainability analysis ("UAA"). EPA defines a UAA as a "structured scientific assessment of the factors affecting the attainment of the use which may include physical chemical, biological, and economic factors." 40 C.F.R. § 131.3(g) (2000).

479. See 65 Fed. Reg. 41,216, 41,221 (July 3, 2000) (to be codified at 40 C.F.R. pt. 131).

480. See *id.* (disapproving Kansas waterbody use designations because UAA is inadequate).

## 2. *Water Quality Criteria*

### a. Definition/Form

Water quality criteria ("WQC") are ambient<sup>481</sup> water quality conditions that are deemed protective of the uses established for a waterbody.<sup>482</sup> States are required to adopt WQC protective of the designated uses.<sup>483</sup> The WQC must specify the maximum concentration of pollutants that may be present in the water without impairing its suitability for certain uses.<sup>484</sup> For example, a state could require that a specific waterbody have a chloride concentration of no more than 250 milligrams per liter of water if its use designation is a fishing area.<sup>485</sup>

WQC generally assume three forms. They include: (1) numerical terms reflecting maximum concentration of a particular pollutant in the receiving water;<sup>486</sup> (2) bioassay or biomonitoring results which reflect mortality rates of certain waterborne organisms relative to the concentrations of particular pollutants; or (3) terms narrative in nature.<sup>487</sup> EPA has indicated that biomonitoring or narrative WQC should only be used "where numerical criteria cannot be established or to supplement numerical criteria."<sup>488</sup> Some numeric criteria might be expressed as short-term and long-term averages. For example, EPA sets two-number aquatic life criterion for the stated purpose of identifying average concentrations which: (a) will produce water quality generally suited to maintenance of aquatic life and designated areas; and (b) restricting the

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481. Ambient standards should be contrasted with end of the pipe discharge limits.

482. In other words, criteria are the technical judgments as to the specific pollution levels that are compatible with those uses. An example by an author is an EPA recommended WQC for cyanide in drinking water which sets a maximum concentration of 200 micrograms per liter. See Baron, *supra* note 450, at 572.

483. See 33 U.S.C. § 1313(c) (1994); 40 C.F.R. § 131.11 (2000).

484. See 33 U.S.C. § 1313(c)(2)(A) (1994); 40 C.F.R. § 131.11 (2000).

485. See *Mississippi Comm'n on Natural Resources v. Costle*, 625 F.2d 1269 (5th Cir. 1980).

486. Numerical limits are used most frequently. See *Costle*, 625 F.2d at 1271. "For most pollutants, criteria are expressed as specific numerical concentration limits." *Id.* One author notes that the choice of numeric WQC is influenced by EPA criteria documents. See Baron, *supra* note 450, at 572.

487. Gaba, *supra* note 253, at 1205. See also *Environmental Defense Fund, Inc. v. Costle*, 657 F.2d 275, 288 (D.C. Cir. 1981). Examples of narrative phrases are "produce objectionable color, odor, taste or turbidity," Baron, *supra* note 450, at 575 and "no floatable wastes," Adler, *supra* note 34, at 210.

488. See Baron, *supra* note 450, at 524 (citing 40 C.F.R. § 131.11(b) (2000)).

duration of excursions over the average so that total exposures will not cause unacceptable effects.<sup>489</sup>

### b. Role of WQC

NPDES permits must incorporate the limitations necessary to ensure the maintenance of the WQS applicable to the waterbody receiving the wastewater.<sup>490</sup> The complexity of this task will vary depending upon the form of the WQS. For example, the establishment of the limits necessary to meet numeric WQS is less complex. EPA has noted that numeric WQC provide a more precise basis for deriving water quality-based effluent limitation in NPDES permits and wasteload allocations for total maximum daily loads to control toxic pollutant discharges.<sup>491</sup> The NPDES permit will limit the facility's effluent discharge to the extent necessary to keep the concentration of the relevant pollutant at or below the numeric benchmark.

Translating narrative standards or criteria into permit limits can be more difficult. For example, what limits are necessary to ensure that a waterbody has "no toxics in toxic amounts?" Likewise, the enforcement of narrative standards can present a challenge.

### c. Development of WQC

The scientific underpinning or rationale for a particular WQC is obviously important.<sup>492</sup> The WQC represent a judgment as to what levels, concentrations, or conditions can support a desired use. An indication of the importance of the WQC is the CWA's requirement that EPA periodically issue new or revised WQC.<sup>493</sup>

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489. 65 Fed. Reg. 31,862, 31,688-31,689 (May 18, 2000) (to be codified at 40 C.F.R. pt. 131).

490. See *Westvaco Corp. v. EPA*, 899 F.2d 1383, 1385 (4th Cir. 1990).

491. See 65 Fed. Reg. 31,682, 31,683 (May 18, 2000) (to be codified at 40 C.F.R. pt. 131).

492. Concern has been expressed as to whether WQC are adequate to support some aspects of certain uses. See Lewis, *supra* note 195, at 280. The author argues that an EPA DO WQC is "based on solid information for only about a dozen of the 800 species of the freshwater fishes that occur in the United States." *Id.* at 281. He also argues that the "pool of information" supporting that particular WQC has changed very little in 20 years. *Id.*

493. See 33 U.S.C. § 1304 (1994). See, e.g., 63 Fed. Reg. 68,354 (Dec. 10, 1998) (compilation of national recommended WQC for 157 pollutants). See also 64 Fed. Reg. 71,974 (1999). The 1999 update of ambient WQC for ammonia contains the most recent freshwater aquatic life criterion. See *id.*

The WQC developed by EPA under section 304(d) of the CWA are based solely on the relationship between pollutant concentrations and environmental and human effects.<sup>494</sup> They do not reflect consideration of economic impacts or the technological feasibility<sup>495</sup> of meeting the required ambient concentrations.<sup>496</sup> The EPA WQC are frequently used by the states in establishing or revising their WQS.<sup>497</sup> However, since they are not rules or regulations, states are free to adopt or develop their own WQC.<sup>498</sup> Further, states can promulgate WQS that are more stringent than necessary to achieve relevant CWA requirements.<sup>499</sup>

Whatever their source, once a state adopts WQC, they must be reviewed and approved by EPA.<sup>500</sup> The EPA often uses its model or recommended WQC to assess the adequacy of state WQS. If the state WQC are approved, they become enforceable components of the state WQS.

### 3. Antidegradation/Antibacksliding

The federal CWA has provisions restricting to a significant extent the ambient degradation of waterbodies.<sup>501</sup> These restrictions are

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494. See 63 Fed. Reg. 68,354 (Dec. 10, 1998).

495. See *id.* See also 33 U.S.C. § 1314(a) (1994). WQC are required to reflect the most recent scientific knowledge. See *id.* See also 40 C.F.R. § 131.11 (2000).

496. See 63 Fed. Reg. 68,354 (Dec. 10, 1998).

497. See *In re Town of Rockland Sewer Comm'n*, NPDES Appeal No. 93-8, 1994 EPA App. LEXIS at 46 (EPA Aug. 19, 1994) (referencing Massachusetts incorporation by reference of EPA "Gold Book" WQC in its WQS for chlorine and copper). See also Baron, *supra* note 450, at 572 (discussing EPA "Gold Book"). Section 304(a) of the CWA requires EPA to periodically issue new or revised WQC documents. See 33 U.S.C. § 1314(a) (1994).

498. State decisions and the accompanying rationale addressing various WQC issues are often memorialized in their policy or guidance documents. See, e.g., COLORADO WATER QUALITY CONTROL COMMISSION POLICY, STATE HUMAN HEALTH-BASED WATER QUALITY CRITERIA AND STANDARDS POLICY 96-2 (1996) (addressing Colorado's methodology and rationale for establishing human health based WQC and standards for state surface water and groundwater).

499. See *City of Albuquerque v. Browner*, 97 F.3d 415, 426 (10th Cir. 1996) (limiting EPA review of WQS to a determination of whether they are stringent enough to comply with the federal agency's recommended standards and criteria); Baron, *supra* note 450, at 570.

500. In *Mississippi Comm'n on Natural Resources v. Costle*, 625 F.2d 1269 (5th Cir. 1980), the EPA questioned the adequacy of Mississippi's DO criteria. See *id.* at 1273. The state refused to revise the DO criteria. See *id.* at 1274. EPA ultimately promulgated replacement DO criteria. See *id.*

501. The CWA antidegradation policy is addressed at 40 C.F.R. § 131.12 (1999). See generally John A. Chilson, Note, *Keeping Clean Waters Clean: Making the Clean Water Act's Antidegradation Policy Work*, 32 U. MICH. J.L. REFORM 545 (1999).

variously referenced as “antidegradation” provisions.<sup>502</sup> An Ohio court succinctly stated the purpose of the CWA antidegradation provisions: “[i]n essence, the antidegradation rule serves the purpose of ensuring that bodies of water which have had their quality improved through years of anti-pollution efforts are not permitted to backslide, reversing those years of improvements, except under limited circumstances.”<sup>503</sup>

Every state’s WQS is required to include a statewide antidegradation policy.<sup>504</sup> The policy must ensure the maintenance of the level of water quality necessary to protect the existing uses.<sup>505</sup> Limited degradation of ambient water may be allowed if certain procedural requirements required by the state’s planning process are undertaken.<sup>506</sup> The amount of degradation permitted depends upon the “tier”<sup>507</sup> applied to the lake or stream.<sup>508</sup> The tiers include: (1) existing in-stream water uses, and the level of water quality necessary to protect

502. Antibacksliding provisions restrict to a certain extent the increase in the amount of a pollutant that can be discharged over previous NPDES permit limits. See 33 U.S.C. § 1342(o) (1994). A permit may not be renewed, reissued, or modified with less stringent comparable effluent limits except in limited circumstances. See *id.* EPA has opined that a reduction in monitoring might in some instances constitute backsliding of a permit condition. See 65 Fed. Reg. 30,886, 90,893 (May 15, 2000). The antibacksliding program is described in Melissa A. Thorne, *Antibacksliding: Understanding One of the Most Misunderstood Provisions of the Clean Water Act*, 31 ENVTL. L. REP. 10,322 (2001). A very detailed discussion of the legislative/regulatory history of the antidegradation requirements is found in the Appendix in *Columbus & Franklin County Metro. Park Dist. v. Shank*, 600 N.E.2d 1042 (Ohio 1992). The antidegradation portion of the 1987 amendments are discussed in *Rivers Unlimited, Inc. v. Schregardus*, 685 N.E.2d 603 (Ohio Ct. Cm. Pl. 1997). EPA promulgated antibacksliding regulations subsequent to the enactment of the CWA. See 8 Fed. Reg. 14,146 (1983); 45 Fed. Reg. 33,516 (1980) (codified at 40 C.F.R. pts. 122-25) (establishing consolidated NPDES permit requirements). The agency subsequently revised the antibacksliding regulatory requirements to implement the 1987 amendments to the CWA. See 54 Fed. Reg. 246 (1989).

503. *Rivers Unlimited, Inc. v. Schregardus*, 685 N.E.2d 603, 608 (Ohio Ct. Cm. Pl. 1997).

504. See 40 C.F.R. § 131.12(a)(1) (2000). A detailed discussion of how several states address several common antidegradation issues is found in John Harelston, *What Is Antidegradation Policy: Does Anyone Know?*, 5 S.C. ENVTL. L.J. 33 (1996).

505. See *id.* See also *American Wildlands v. Browner*, 2000 U.S. Dist. LEXIS 68400 (Apr. 27, 2000); *PUD No. 1 v. Washington Dep’t of Ecology*, 511 U.S. 700 (1994).

506. See 40 C.F.R. § 131.12 (2000). The correct application of the antidegradation regulations to a proposed discharge were addressed in *Save the Lake v. Shregardus*, 2000 Ohio ENV LEXIS 5 (Ohio Env’tl. Bd. Rev. Apr. 13, 2000).

507. The “tiers” are discussed in Baron, *supra* note 450, at 576-577.

508. See generally Chilson, *supra* note 501. The CWA antibacksliding provisions support the antidegradation program by prohibiting the renewal, reissuance, or modification of an existing NPDES permit that contain effluent limits, permit terms, limitations and conditions, or standards that are less stringent than those established in the previous permit. See 40 C.F.R. § 122.44(1) (2000).

them; (2) requires water quality better than necessary to protect fishable and swimmable uses; and (3) protection of outstanding national resource waters.<sup>509</sup>

#### 4. *Water Quality Certification*

Section 401 of the CWA requires states to provide a water quality certification before a federal license or permit can be issued for activities that may result in any discharge into jurisdictional waters.<sup>510</sup> Specifically, section 401 requires one applying for a federal license or permit<sup>511</sup> for an activity “which may result in any discharge into the navigable waters” to obtain state certification “that any such discharge will comply with the applicable provisions of Sections 301, 302, 303, 306 and 307.”<sup>512</sup> Section 401(d) further provides that “any certification . . . shall set forth any effluent limitations and other limitations, and monitoring requirements necessary to assure that any applicant . . . will comply with any applicable effluent limitations, under section 301 or 302 . . . and with any other appropriate requirement of State law set forth in such certification.”<sup>513</sup> The limitations included in the certification become a condition on any federal license.<sup>514</sup>

#### 5. *Toxics/Toxicity*

The CWA requires each state to develop WQS which include standards for all toxic pollutants for which EPA has published criteria.

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509. See Adler, *supra* note 33, at 213. Whether Michigan should have designated a waterbody as an outstanding national resource water was addressed in *National Wildlife Federation v. Browner*, 1996 U.S. Dist. LEXIS 15321 ((D.D.C.) Oct. 11, 1996). The type of tier applicable to a waterbody will affect the amount of assimilation capacity available for the discharges.

510. See 33 U.S.C. § 1341 (2000). A detailed discussion of section 401 is found in Kristi Johnson, *The Mythical Giant: Clean Water Act Section 401 and Nonpoint Source Pollution*, 29 ENVTL. L. 417 (1999); Debra L. Donahue, *The Untapped Power of Clean Water Act Section 401*, 23 ECOLOGY L.J. 201 (1996).

511. The three federal permits and licenses typically affected by section 401 are CWA sections 402 and 404 and Federal Energy Regulatory Commission permits. See Johnson, *supra* note 510, at 422.

512. See 33 U.S.C. § 1341(a) (1994).

513. See 33 U.S.C. § 1341(d) (1994).

514. Section 401 prevents the federal government from ignoring or overriding state WQS. See Johnson, *supra* note 510, at 419.

### a. Toxic Hot Spots

Section 304(1) of the CWA requires the states to identify and control toxic hot spots.<sup>515</sup> The states must submit to EPA lists of polluted navigable waters and of dischargers of toxic pollutants. The submitted information must generally include:

1. A list of all waters that, after the application of effluent limitations, cannot reasonably be anticipated to attain water quality for state designated uses due to toxic pollutants;
2. A list of all navigable waters that, after application of federal and state effluent limitations, the state does not expect to meet the prescribed water quality standards due to listed point sources;
3. A list of those point sources that are impairing the achievement of those water quality goals as well as the amount of pollutant each of those point sources produces; and
4. A list of waters that cannot be anticipated to maintain water quality that will assure protection of public health, public water supply, agricultural and industrial uses, as well as the protection of shellfish and recreational uses.<sup>516</sup>

### b. Whole Effluent Toxicity

Whole effluent toxicity ("WET") is a term used to describe the aggregate toxic effect of an aqueous sample<sup>517</sup> as measured according to the impact on an organism upon exposure to the sample.<sup>518</sup> The test may be used to address the fact that individual numeric criteria do not take into account synergistic impacts of combinations with other contami-

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515. See 33 U.S.C. § 1314 (1994). See also 133 CONG. REC. 1287 (1987) (statement of Sen. Moynihan). An example of the application of this process to a particular facility is found in *Culbertson v. Coats Am., Inc.*, 913 F. Supp. 1572 (N.D. Ga. 1995) (discussing ICS developed for Georgia textile facility alleged to be source of copper and zinc impairing a creek's water quality).

516. See 33 U.S.C. § 1314 (1994). Issues associated with this program are addressed in *In re J & L Specialty Products Corp.*, NPDES Appeal No. 92-22, 1994 EPA App. LEXIS 42 (EPA June 20, 1994).

517. The term "aqueous sample" refers to a whole effluent wastewater discharge or ambient receiving water.

518. Examples of WET test methods promulgated by EPA are found at 40 C.F.R. § 136 (2000).

nants.<sup>519</sup> The WET test fills a potential gap.<sup>520</sup> It uses organisms as indicators or surrogates for the waterbody community that is to be protected. The chosen organisms (fathead minnows, brine shrimp, or similar creatures) are placed into the wastewater which has been diluted to equate its mixing into the receiving waterbody.<sup>521</sup> After a specified period of time a determination is made as to the number of organisms that survived the exposure.<sup>522</sup> WET tests therefore attempt to reproduce the total effect of actual environmental exposure of aquatic life to effluent toxicants without requiring the identification of specific toxicants.

There are two basic types of WET tests: an acute test (ninety-six hours or less, endpoint: mortality), and a chronic test (seven day life-cycle test, endpoints: growth, reproduction and mortality). WET testing may be useful if all the pollutants entering a waterbody have not been identified or if the combined effect of contaminants needs to be determined.<sup>523</sup> Another motivation for such testing is the need to ensure the protection of aquatic life and other uses if the categorical effluent limits will not do so in relation to a particular waterbody.<sup>524</sup>

WET testing may be included in NPDES permits to ensure certain toxicity WQC (numeric or narrative) are attained. WQC for WET may be expressed as either a numeric criterion or a narrative criterion (e.g., no toxics in toxic amounts). In the alternative, WET monitoring requirements may be included in NPDES permits to generate WET data for use in determining when the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the narrative or numeric WQC for WET. The possible inclusion of WET testing requirements has generated various issues. They have included:

1. Are the inclusion of WET testing requirements appropriate, necessary, or justified for a particular discharger?<sup>525</sup>
2. Should the testing requirement be included as a permit limit or an information gathering requirement?

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519. See Adler, *supra* note 33, at 211.

520. See *id.*

521. See Houck, *supra* note 162, at 321.

522. See *id.*

523. See Houck, *supra* note 266, at 411.

524. See *id.*

525. See generally U.S. ENVTL. PROTECTION AGENCY, UNDERSTANDING AND ACCOUNTING FOR METHOD VARIABILITY IN WHOLE EFFLUENT TOXICITY APPLICATIONS UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PROGRAM (EPA 833-R-00-003) (2000).



3. If testing is included as a permit limit, what results (i.e., one or multiple failures) constitute a violation or exceedance?<sup>526</sup>
4. Can WET results be translated into reductions in the volume or characteristics of certain effluents?<sup>527</sup>

A facility that fails a specified number of WET tests may be required to undertake a toxicity reduction evaluation ("TRE"). A TRE represents a facility's attempt to identify measures that can reduce effluent toxicity.<sup>528</sup> Those measures might involve process changes, material substitutions, etc.<sup>529</sup>

### 6. *Mixing Zones*

State WQS often include a provision known as a "mixing zone."<sup>530</sup> Mixing zones are an area or volume of water in which a point source's discharge is permitted to exceed the applicable WQS. This is the area or zone in which the initial effluent dilution occurs. The United States Court of Appeals for the Fifth Circuit described the rationale for mixing zones in a 1987 decision:

We pause at this point to explain briefly the crucial notion of a "mixing zone." Environmental agencies do—and under present

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526. The EPA administrative decision *In re American Cyanamid Co.*, 1993 EPA App. LEXIS 33 (EPA Sept. 27, 1993), involved facilities that objected to certain WET requirements included in their NPDES permits. *See id.* at \*4. The challenged permit language included a provision stating "that greater than 50% mortality in any single test with any single species conclusively establishes that the mill's effluent is toxic and that the permit and Florida rules are violated." *Id.* at \*5. A petitioner argued that toxicity testing "cannot properly be applied as effluent limitation" because a test failure "does not necessarily establish the lethality or toxicity of the wastewater effluent." *Id.* at \*13. The decision upheld these conditions, citing *Miami-Dade Water & Sewer Authority Dept.*, NPDES Appeal No. 91-14 (EAB, July 1992) decision. *Id.* at \*7. The City of Miami-Dade in the previously cited decision had argued that toxicity testing is inherently imprecise and the failure of a test does not necessarily mean that the effluent is toxic. *Id.* at \*15. The municipality believed the test should instead be used as a screening device for assessing the need for additional treatment or a wasteload allocation as opposed to a limit. *See id.* This position was rejected because the toxicity test was incorporated in the Florida WQS. *See id.* *See also In re City of Jacksonville, District II Wastewater Treatment Plant*, 1992 EPA App. LEXIS 53 (EPA Aug. 4, 1992).

527. *See Adler, supra* note 33, at 222.

528. *See id.*

529. Telephone Interview with Doug Ford, P.E., Pollution Management, Inc. (Dec. 21, 2000).

530. *See Lake Cumberland Trust v. EPA*, 954 F.2d 1218, 1220 (6th Cir. 1992) (referencing Kentucky mixing zone regulation).

technology, must—permit polluted effluents to be discharged into natural bodies of water. By definition, the effluent itself does not meet water quality standards; otherwise, it would not be considered polluted. But the receiving water dilutes the effluent, and this dilution increases as the plume of effluent gradually diffuses in the receiving water. The “mixing zone” is simply the area of dispersal in the receiving waters where the pollutants in the effluent are not sufficiently diluted to meet water quality standards. It necessarily follows, then, that the edge or outer circumference of the mixing zone is defined as the boundary at which water quality standards are first met. The size and configuration of the mixing zone is a crucial variable in determining whether or not a given effluent can be discharged. If the permitted mixing zone is tiny—say, one meter in diameter—any effluent whatever will violate water quality standards; if the permitted mixing zone is huge—say, 100 kilometers—a tremendously toxic effluent can be discharged without violating water quality standards.<sup>531</sup>

A state generally has the discretion to determine whether mixing zones are available, and if so the conditions for their use.<sup>532</sup> Nevertheless, an agency will attempt to locate and size a zone to minimize its impact on the waterbody. Models and/or dye studies may be used to determine initial effluent dilution.<sup>533</sup> Dilution may be affected by factors such as outfall location, discharge velocity, water depth, and stream velocity.

### 7. *Total Maximum Daily Load Requirements*

A waterbody can only assimilate a finite amount or “load” of various pollutants before it will fail to attain the applicable WQS. This pollutant loading limit is referred to as the total maximum daily load (“TMDL”). The EPA defines a TMDL in part as “a written, quantitative

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531. *Marathon Oil Co. v. EPA*, 830 F.2d 1346, 1349 (5th Cir. 1987). The mixing of the effluent and the receiving water may be facilitated by a device at the end of the outfall known as a “diffuser.” See Anderson, *supra* note 92 (describing diffuser as bottom end of outfall consisting of 600 feet of pipe riddled with 200 holes about 4 1/2 inches round).

532. See 65 Fed. Reg. 47,871 (August 4, 2000) (noting states have discretion to change mixing zone requirements as long as they ensure attainment of designated uses). Note, however, an agency may not allow the use of a mixing zone for every pollutant. For example, see 65 Fed. Reg. 67,638 (Nov. 13, 2000) (EPA rule amending the Final Water Quality Guidance for the Great Lakes System prohibiting mixing zones for bioaccumulative chemicals of concern).

533. See generally Gayla, *supra* note 161.

plan and analysis for attaining and maintaining water quality standards in all seasons for a specific waterbody and pollutant . . . .”<sup>534</sup> Some TMDLs must include the following elements:

- The name and geographic location of the impaired waterbody;
- Identification of the pollutant and the applicable water quality standard;
- Quantification of the pollutant load that may be present in the waterbody and still ensure attainment and maintenance of water quality standards;
- Quantification of the amount or degree by which the current pollutant load in the waterbody, including the pollutant load from upstream sources that is being accounted for as background loading, deviates from the pollutant load needed to attain and maintain water quality standards;
- Identification of source categories, source subcategories, or individual sources of the pollutant;
- Wasteload allocations;
- Load allocations;
- A margin of safety;
- Consideration of seasonal variations;
- Allowance for reasonably foreseeable increases in pollutant loads including future growth; and
- An implementation plan.<sup>535</sup>

Section 303 of the CWA requires each state to identify those waters within its boundaries for which the technology-based effluent limitations required by the CWA and defined by EPA are not stringent enough to attain the applicable WQS.<sup>536</sup> Waters so designated are known as “water quality limited segments” (“WQLS”) or “impaired waters.”<sup>537</sup> Each state is required to submit this list of waters to EPA biennially, on April 1 of every even-numbered year (accompanied by listing determinations).<sup>538</sup>

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534. 40 C.F.R. § 130.2(h) (2000).

535. *Id.*

536. See 33 U.S.C. § 1313(d)(1)(a) (1994).

537. 40 C.F.R. § 130.2(j) (2000).

538. See 40 C.F.R. § 130.7(d) (2000).

The list of WQLSs must consider all existing and readily available information including any discharge dilution calculations or water quality modeling information, available information from local, public and academic organizations, and the state's section 319 nonpoint source assessment reports.<sup>539</sup> The state must also prioritize the identified waters, "taking into account the severity of the pollution and the uses to be made of such waters."<sup>540</sup> EPA is required to review and approve/disapprove the submitted lists.<sup>541</sup>

The development and implementation of TMDLs provide a link between WQS and effluent limitations. A TMDL quantifies the maximum allowable loading of a pollutant to a waterbody and allocates this maximum load to contributing point and nonpoint sources.<sup>542</sup> The purpose of such allocations is to ensure WQC are not exceeded, thereby protecting the waterbody's designated uses. A margin of safety is included to account for uncertainty about the relationship between pollutant loads and water quality.

In July 2000, EPA promulgated extensive revisions and clarifications to the regulatory requirements for establishing TMDLs.<sup>543</sup> EPA expressed concern that a significant percentage of the nation's surface waterbodies were not meeting applicable WQS.<sup>544</sup> The federal agency viewed the TMDL revisions as necessary to improve the program and water quality.<sup>545</sup>

A potential problem occurs if a waterbody's impairment is due in large part to nonpoint source contributions. The nonpoint sources may

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539. See 40 C.F.R. § 130.7(b)(5) (2000). It has been noted that the proper development of a TMDL requires extensive information involving the fate, transport, and attenuation of a particular pollutant in the relevant waterbody. See *Western Carolina Regional Sewer Authority*, 1999 S.C. ENV LEXIS 102, at \*29 (S.C. ALJ Div. Sept. 22, 1999).

540. 33 U.S.C. § 1313(d) (1994).

541. See *id.*

542. See *Case*, *supra* note 184 (discussing various models used in the TMDL process).

543. See 65 Fed. Reg. 43,586 (July 13, 2000) (to be codified at 40 C.F.R. pts. 9, 122-124, 130).

544. See *id.* at 43,587.

545. See *id.* at 43,588. The adequacy of various states' compliance with TMDL requirements and EPA's supervision of their efforts have been challenged by environmental and other groups over the past several years. A number of these actions have resulted in agreed or court-ordered expedited TMDL support activities. See *NRDC v. Fox*, 93 F. Supp. 2d 531 (S.D.N.Y. 2000) (discussing alleged deficiencies of New York TMDL program). A South Carolina administrative decision notes that this allocation has been analogized to a distribution by the government of frequencies on the radio spectrum. See *Western Carolina Regional Sewer Authority*, 1999 S.C. ENV LEXIS, at \*29.

not be subjected to enforceable state control mechanisms. If so, further loading reductions must be obtained from the point sources. Many of these point sources are already subject to effluent limits. Some incremental reduction may be costly.

A key question has therefore been how TMDLs address waterbodies that are polluted solely or partially by non-point sources. In *Pronsolino v. Marcus*,<sup>546</sup> a federal district court noted that the CWA applied TMDLs to point and non-point sources differently.<sup>547</sup> The court concluded that TMDLs were authorized for non-point sources.<sup>548</sup> The Department of Justice and EPA viewed the decision as an indication that the CWA can provide a comprehensive solution to water quality issues.<sup>549</sup>

### 8. *Effluent Trading*

The renewed focus on ensuring that point source discharge permits include effluent limits that are protective of WQS has generated interest in "effluent trading." This is a type of a "tradable pollution allowance" regime for which the government issues "allowances," authorizing the holders to emit a certain amount of a pollutant over a given time.<sup>550</sup> These allowances would be bought and sold pursuant to governmental rules.<sup>551</sup> Allowances are used in the Clean Air Act sulfur dioxide trading program.

Effluent trading involves an agreement between a point source that must meet WQS driven limits and another source discharging into the same waterbody. One source<sup>552</sup> reduces its discharge of certain pollutants more than required by law or its permit. This generates a "credit." A point source with WQS limits would under certain circumstances be able to use this credit to achieve compliance.

Several effluent trading programs have been proposed or adopted to address conditions in various watersheds. One example is a plan that

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546. 91 F. Supp. 2d 1337 (N.D. Cal. 2000).

547. *See id.* at 1356.

548. *See id.* at 1355 (finding a TMDL prepared for the Garcia River in California calling for the reduction of sediment by 60% as proper).

549. *See* U.S. Dept. of Justice & Env'tl. Protection Agency, *Federal Court Issues Landmark Clean Water Decision, Press Release* (April 5, 2000) (noting that the court found that the CWA is designed to provide a comprehensive solution to the nation's water quality problems without regard to sources of pollution).

550. *See* Jonathan Remy Nash, *Too Much Market? Conflict Between Tradable Pollution Allowances and the "Polluter Pays" Principle*, 24 HARV. ENVTL. L. REV. 465 (2000).

551. *See id.*

552. The other source could be a point or nonpoint source.

Connecticut and New York have considered to reduce nitrogen in the Long Island Sound Watershed ("Sound").<sup>553</sup> Nitrogen loadings are a significant problem in the watershed. A survey found that point sources<sup>554</sup> were responsible for 79% of the nitrogen and nonpoint sources 21% of the nitrogen received by the watershed.<sup>555</sup>

Modeling was subsequently undertaken to determine the differential impact of the various point and nonpoint sources discharged into the Sound.<sup>556</sup> Connecticut identified point sources within its CWA program that were the primary contributors of nitrogen.<sup>557</sup> The state therefore decided to require various point sources to reduce nitrogen discharges by 70% and nonpoint sources by 10%.<sup>558</sup>

Connecticut, New York, and EPA engaged a firm to develop a program for incorporating market-based incentives into geographic targeting of nitrogen reduction actions for the Sound.<sup>559</sup> The study outlined a possible nitrogen credit trading system.<sup>560</sup> A nitrogen "credit" would be created if a source reduced the amount of nitrogen it discharged in excess of its permit limits.<sup>561</sup> The credits generated would be available for purchase by other sources.<sup>562</sup> The sale of a credit could be transacted by the facilities themselves or through an organization that would be denominated the "Nitrogen Credit Exchange."<sup>563</sup> Some facilities were expected to be motivated to purchase credits in lieu of constructing additional treatment capacity to meet the reduced permit limits.<sup>564</sup>

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553. See LONG ISLAND, *supra* note 191. A 58.5% reduction of nitrogen loadings into this area over a 15 year period is an objective. See *id.* at ES-1. Long Island Sound is located in a densely populated urban area between New York and Connecticut. See *id.* at 1-1. Nitrogen reduction is deemed necessary to address low DO levels in the Sound. See *id.* at 1-2. The two states have concluded that a reduction in the amount of nitrogen entering the waterbody will increase DO levels. See *id.*

554. The term point source includes atmospheric deposition. See *id.* at 1-3.

555. See *id.*

556. See *id.* at 1-4.

557. See *id.* at 1-5. Eighty-four municipal wastewater treatment dischargers were identified as key sources of nitrogen. *Id.* at ES-1.

558. See LONG ISLAND, *supra* note 191, at ES-1. This reduction will be implemented through the adoption of a TMDL for nitrogen. See *id.*

559. See *id.* at 1-6.

560. See *id.* at 2-1.

561. See *id.*

562. See *id.*

563. See LONG ISLAND, *supra* note 191, at 2-10.

564. See *id.* at 2-1.

The trading participants were projected to include all major municipal wastewater treatment facilities discharging into the Sound.<sup>565</sup> The program would also compare the impact values of the various sources in determining exchange ratios.<sup>566</sup> The relevant point source NPDES permits would be reissued to incorporate phased nitrogen reductions over a fifteen year period.<sup>567</sup> If a facility exceeded the annual limit, it would be required to obtain the necessary amount of credits to offset the exceedance or reduce the actual discharge.<sup>568</sup>

#### d. Alternative Limits/Variances

##### 1. *Best Professional Judgment*

Categorical effluent limits have not been developed for every type or class of facility that discharges wastewater. How are technology-based limits established for these facilities? Section 402(a)(i) of the CWA provides that EPA, in the absence of categorical effluent guidelines or regulations, may establish effluent limitations on a case-by-case basis.<sup>569</sup> The CWA regulations list the factors that the agency permit engineer must consider in specifying the control requirements applicable to a particular facility.<sup>570</sup> They include: age of the equipment and facilities involved, the process employed, engineering aspects of control techniques, process changes, the cost of achieving such effluent reduction, and non-water quality environmental impacts (including energy requirements).<sup>571</sup>

##### 2. *Fundamentally Different Factors*

The development of the technology-based categorical standards requires the collection and analysis of significant information about

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565. See *id.* at 2-5.

566. See *id.*

567. See *id.* 2-6, 2-7. Consequently, credits are created by the reduction of total nitrogen below the annual limit. *Id.* at 2-9.

568. See LONG ISLAND, *supra* note 191, at 2-9 to 2-10. Trading a reservoir and a river basin respectively are described in Esther Bartfeld, *Point-Nonpoint Trading: Looking Beyond Potential Cost Savings*, 23 ENVTL. REP. 43 (1993). The described programs involve trading between point and nonpoint sources. See *id.*

569. See 33 U.S.C. § 1342(a)(1) (1994). The EPA's authority to apply such judgment is discussed in *In re AT&T Teletype Corp.*, 1986 EPA App. LEXIS 20 (EPA Apr. 23, 1986). See also *Trustees for Alaska v. EPA*, 749 F.2d 549 (9th Cir. 1984).

570. See 40 C.F.R. § 125.3(d) (2000).

571. See *id.*

various aspects of the target industry.<sup>572</sup> All relevant industry information cannot always be obtained.<sup>573</sup> Consequently, section 301(n) of the CWA authorizes the development of effluent limits or standards different from the otherwise applicable categorical requirements in certain circumstances.<sup>574</sup> Alternative limits may be developed if a facility is fundamentally different with respect to factors considered in establishing the categorical limitations or standards.<sup>575</sup> This procedure is known as a “fundamentally different factors” variance.<sup>576</sup>

A facility may only obtain alternative limits if it demonstrates it is fundamentally different from the “range of circumstances considered by the agency . . . .”<sup>577</sup> Further, the alternative limitations or standards must be not less stringent than justified by the difference. Also, the variance must not cause markedly more adverse non-water quality environmental impacts than the national limitations or standards.

### 3. *Secondary Treatment Variance*

In 1997 Congress amended the CWA to allow municipalities in limited circumstances to forego secondary treatment if discharging through deep ocean outfalls.<sup>578</sup>

#### 3. *Other Permit Conditions*

##### a. *Facility Sampling/Reporting Requirements*

The NPDES permit will require the facility to periodically sample its effluent and report the results to the agency. This requirement provides the federal and/or state agency some assurance that at a given point in time the facility is compliant with the NPDES permit limits. Such testing can, however, be manipulated. For example, in *United*

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572. See Gold, *supra* note 98, at 495; *Georgia-Pacific Corp. v. EPA*, 671 F.2d 1235 (9th Cir. 1982). “EPA examined a broad range of mills within the industry, including Georgia-Pacific’s Bellingham Complex, looked at the mills with the best pollution control systems, and set BPT guidelines according to the average performance of those exemplary mills.” *Id.*

573. See Gold, *supra* note 98, at 496.

574. See 33 U.S.C. § 1311(n) (1994).

575. See *id.*

576. A request by an Arkansas facility for an FDF variance is described in *United States v. CPS Chemical Co.*, 779 F. Supp. 437 (E.D. Ark. 1991).

577. *Georgia Pacific*, 671 F.2d at 1243.

578. See 33 U.S.C. § 1311(h) (1994).



*States v. Sinskey*,<sup>579</sup> a meat packing plant doubled the number of hogs it slaughtered.<sup>580</sup> The production increase apparently caused the facility to exceed its ammonia nitrate NPDES permit limit.<sup>581</sup>

The projected exceedances allegedly motivated the facility's wastewater treatment plant manager and assistant manager to attempt to mask it by manipulating the required testing in three ways. First, facility flow was regulated so that low levels of effluent (and ammonia nitrate) would be discharged when the required tests were undertaken.<sup>582</sup> Higher levels were discharged later in the week.<sup>583</sup> Second, the plant effluent was sampled more frequently than required by the permit.<sup>584</sup> Only the results identifying acceptable levels of ammonia nitrate were reported to the agency.<sup>585</sup> Third, reports showing false results were submitted to the agency.<sup>586</sup>

#### b. Sludge Management

The various control or treatment processes remove pollutants or contaminants from the wastewater. The extracted material is often known as sludge.<sup>587</sup> The material must be dealt with in some manner. Disposal or reuse of POTW sludge is regulated by section 405 of the CWA.<sup>588</sup> The CWA required EPA to promulgate regulations addressing this material.<sup>589</sup> The part 503 regulations were promulgated to establish general requirements, pollutant limits, operational standards, and management practices as well as frequency of monitoring, record keeping, and reporting requirements that apply to sewage sludge that is land applied, placed on a surface disposal site, or combusted in a sewage sludge incinerator.<sup>590</sup>

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579. 119 F.3d 712 (8th Cir. 1997).

580. *See id.* at 714.

581. *See id.*

582. *See id.*

583. *See id.*

584. *See id.*

585. *See Sinskey*, 119 F.3d at 714.

586. *See id.* The manager and assistant manager were convicted of a criminal violation of section 309(c)(4) of the CWA which penalizes a "person who knowingly falsifies, tampers with or renders inaccurate any monitoring device or method required to be maintained" by the CWA. 33 U.S.C. § 1319(c)(4) (1994).

587. Sludge is also known as "biosolids."

588. *See* 33 U.S.C. § 1345 (1994).

589. *See* 40 C.F.R. § 503 (2000). *See also* 58 Fed. Reg. 9,248 (1993).

590. *See* 40 C.F.R. § 503 (2000). The Part 503 regulations for sewage sludge do not cover all types of sludge. They encompass scum or solids removed from primary, secondary, or advance wastewater treatment processes, material derived from sewage

#### 4. Stormwater Permits

Subsequent to the 1972 enactment of the CWA, EPA resisted applying NPDES permitting requirements to stormwater discharges.<sup>591</sup> The agency expressed concern that application of this program to such discharges would potentially require the issuance of millions of additional NPDES permits.<sup>592</sup> EPA therefore attempted to exempt uncontaminated stormwater from the NPDES permit program.<sup>593</sup>

The 1987 amendments to the CWA resolved the issue.<sup>594</sup> They confirmed that “storm water” discharges are encompassed by the NPDES permitting program.<sup>595</sup> However, because of the challenges posed by including such discharges,<sup>596</sup> Congress adopted a phased approach. The purpose of this approach was to allow EPA and the states to first focus their attention on the most serious stormwater discharges.<sup>597</sup>

The phased approach established a moratorium until October 1, 1992, on requiring permits for most stormwater discharges.<sup>598</sup> However, “discharges associated with industrial activity” were excepted from this

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sludge, and domestic septage. Other types of sludge are regulated under other federal rules. For example, non-hazardous sludge generated during the treatment of industrial process wastewater at an industrial facility, sludge generated at an industrial facility during the treatment of industrial wastewater combined with domestic sewage, drinking water treatment sludge, and grit or screenings generated during the treatment of domestic sewage are regulated at 40 C.F.R. § 257 (2000). Some sludge fits within the RCRA definition of “hazardous waste” and must be managed as required by that program. See 40 C.F.R. §§ 261, 264, 268 (2000). Finally, sewage sludge with PCB concentrations of 50 ppm or greater is addressed by 40 C.F.R. § 761 (2000).

591. See generally *Hughey v. JMS Dev. Corp.*, 28 F.3d 1523 (11th Cir. 1996).

592. See *id.* at 1524.

593. See *id.* A detailed history of EPA’s prior attempts to address stormwater is found at 53 Fed. Reg. 49,416 (1988).

594. See 33 U.S.C. § 1342(p) (1994).

595. See *id.*

596. Stormwater often differs from process discharges in the timing of the release of the pollutants. The unique aspect of stormwater is the fact that the highest pollutant concentrations occur during the early part of the runoff event (also known as the “first flush”). R.A. Allison, *Innovative Technology Reduces Stormwater Trash*, PUBLIC WORKS, Feb. 1, 1999, at 28. See also *United States v. City of Niagra Falls*, 706 F. Supp. 1053, 1062 (W.D.N.Y. 1989) (noting the first flush flows typically contain a higher concentration of pollutants than later stormwater flows).

597. See *National Resources Defense Council v. EPA*, 966 F.2d 1292, 1296 (9th Cir. 1992). Congress subsequently extended the exemption to October 1, 1994. See Public Law No. 102-580, cited in *Defenders of Wildlife v. Browner*, 191 F.3d 1159 (9th Cir. 1999).

598. See 33 U.S.C. § 1342(p) (1994).

moratorium.<sup>599</sup> Section 402(p)(2)(B) required that EPA, no later than February 4, 1989, establish regulations setting forth permit application requirements for industrial storm water discharges. Those seeking such permits were to file an application no later than February 4, 1990, and permit applications were to be rejected or accepted by February 4, 1991.<sup>600</sup>

Uncontrolled stormwater discharges can sometimes threaten water quality. An example is described in *Buchholz v. Dayton International Airport*.<sup>601</sup> The decision involved an airport that allegedly discharged deicing chemical into a nearby stream.<sup>602</sup> Downstream property owners sought CWA and RCRA injunctive relief from the discharges.<sup>603</sup> They alleged the discharges caused fish kills, strong odors, and discolored water.<sup>604</sup> The court enjoined the airport from further discharge except as allowed by its NPDES stormwater permit.<sup>605</sup>

### 5. Combined Sewer Overflow

A combined sewer system ("CSS") is a wastewater collection system owned by a state municipality or other entity that conveys domestic, commercial, and industrial wastewaters together with stormwater through a single-pipe system to a POTW facility.<sup>606</sup> To protect the POTW from being inundated beyond its capacity by stormwater during wet weather, CSSs typically have outfalls at various points upstream of the POTW, where excess flow within the system can be discharged.<sup>607</sup>

A combined sewer overflow ("CSO") is a discharge from one of these outfalls. Because CSSs mix stormwater with wastewater, CSOs often contain high levels of untreated sewage and other pollutants, the discharge of which can cause exceedances of WQS in the receiving

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599. See 33 U.S.C. § 1342(p)(2)(B) (1994).

600. See *id.*

601. No. C-3-94-435, 1995 U.S. Dist. LEXIS 9490 (S.D. Ohio June 26, 1995). The chemicals were ethylene glycol and propylene glycol used for deicing aircraft and potassium acetate and urea used for deicing runways. See *id.* at \*9.

602. See *id.* at \*12.

603. See *id.* at \*1.

604. See *id.* at \*12.

605. *Id.* at \*63. The court also found that the discharges by the airport were an imminent and substantial endangerment to the environment and health within the meaning of RCRA. *Id.* at \*59.

606. See *In re* District of Columbia, No. 95-5, 1996 EPA App. LEXIS 10, at \*5 (EPA May 3, 1996).

607. See *id.* at \*5.

waterbody. CSOs are treated as point sources subject to NPDES permit requirements.<sup>608</sup> Therefore, these discharge points are subject to the technology-based and water-quality-based requirements of the CWA.<sup>609</sup>

In 1994 EPA issued a policy statement titled "Combined Sewer Overflow (CSO) Control Policy."<sup>610</sup> The policy's stated purpose was to establish a consistent national approach for controlling discharges from CSOs.<sup>611</sup> The 1994 policy addresses the actions a POTW can undertake to establish compliance with applicable WQS.<sup>612</sup> It also outlined the framework for establishing the technology-based requirements.<sup>613</sup>

### 6. *Non-Point Source Provisions*

Only point source discharges are required to obtain NPDES permits.<sup>614</sup> The responsibility for addressing pollutants associated with activities other than point sources resides principally with the states.<sup>615</sup> However, Congress has not required states to establish federally enforceable nonpoint source controls.<sup>616</sup>

The 1987 CWA amendments did focus additional attention on nonpoint source pollution. They required that nonpoint source control "programs" be "developed and implemented in an expeditious manner so as to enable the goals of [the CWA] to be through the control of both point and nonpoint sources of pollution."<sup>617</sup> The amendments also added a state planning component for nonpoint source pollution. Specifically, section 319 of the CWA required that states prepare reports that:

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608. See *id.* at \*\*5-6; see also Mann, *supra* note 101, at 865 (noting 1989 EPA policy clarifying that CSOs are considered CWA point source discharges).

609. See *In re* District of Columbia, No. 95-5, 1996 EPA App. LEXIS 10, at \*5 (EPA May 3, 1996). See also Ahearn v. Charter Township of Bloomfield, 879 F. Supp. 766 (E.D. Mich. 1995) (describing application of NPDES permit requirements to CSOs).

610. See 59 Fed. Reg. 18,688 (1994).

611. See *id.*

612. See Mann, *supra* note 101, at 866.

613. See *id.* at 867.

614. See 33 U.S.C. § 1342 (1994).

615. See 33 U.S.C. § 1329 (1994). See *American Wildlands v. Browner*, 94 F. Supp. 2d 1150 (D. Colo. 2000).

616. See *Natural Resources Defense Council v. EPA*, 915 F.2d 1314, 1318 (9th Cir. 1990). However, one author suggests that the Prosolino TMDL decision may signal the application of other CWA mechanisms to nonpoint source discharges. See Robert W. Adler, *Controlling Nonpoint Sources Water Pollution: Is Help on the Way (from the Courts or EPA)?*, 131 ENVTL. L. REP. 10270 (2001).

617. 33 U.S.C. § 1251(a)(7) (1994).

1. Identify waters which cannot reasonably be expected to achieve state ambient water quality standards "without additional action to control nonpoint sources of pollution;"
2. Describe a process for identifying "best management practices" and other measures for reducing nonpoint source pollution; and
3. Identify existing state and local programs for controlling nonpoint source pollution.<sup>618</sup>

Various states either initiated or expanded their efforts to encourage nonpoint sources to implement or improve best management practices.<sup>619</sup>

## 7. *Permit Acquisition/Modification/Renewal*

### a. Application Process

Acquisition of an initial NPDES permit or modification of an existing one requires submitting an application to EPA or the delegated state agency. The application form that will be used depends on the type of facility seeking a permit.<sup>620</sup> EPA recently extensively revised the forms that POTWs and other facilities treating domestic sewage are required to utilize.<sup>621</sup>

### b. Modification

A facility's NPDES permit provides it some certainty as to the conditions and limits that it must attain for a specified term. The EPA or a delegated state agency may, however, unilaterally modify the permit under certain circumstances. An agency has, for example, the authority to revise the permit effluent limits to reflect the identification of additional water quality impacts caused by a facility.

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618. See 33 U.S.C. § 1329(a) (1994).

619. See, e.g., Nita Chilton McCann, *DEQ Hears Evidence of Water Pollution Caused by Tree Farming*, 16 MISS. BUS. J., Aug. 15, 1999, at 14 (referencing Mississippi's initiation of an aggressive silvicultural BMP education program subsequent to the 1987 CWA amendments).

620. See 40 C.F.R. § 122.21(a)(2) (2000).

621. The final rule was published in the *Federal Register* at 64 Fed. Reg. 42,434 (Aug. 4, 1999). The revisions were originally proposed on December 6, 1995. See 60 Fed. Reg. 62,546 (1995).

The facilities themselves sometimes seek permit modifications.<sup>622</sup> A facility may, for example, experience an increased demand for its product or a request for a product it does not currently offer. Accommodating such demands may change the quantity or type of wastewater discharged. This could necessitate the modification of the permit. The facility's desire to expeditiously change or add a process can conflict with the time it takes to acquire a modified permit.<sup>623</sup> The permitting process may increase in complexity if the process involves other programs such as air emissions permitting or multiple sources.<sup>624</sup>

### c. Renewal

An NPDES permit generally has a term of five years.<sup>625</sup> A permittee must apply for a renewal of the permit at least 180 days prior to its expiration to ensure a timely continuation.<sup>626</sup> A renewal application must be fully completed within this time period to ensure the continuance of the existing permit if the agency is unable to issue a renewal prior to expiration.<sup>627</sup> It has not been unusual for either EPA or the states to be unable to grant a renewal prior to the existing permit's expiration. Agency staffing has often been insufficient<sup>628</sup> to address the volume of applications.<sup>629</sup>

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622. An example is an Arkansas manufacturing facility's request to modify its NPDES permit to accept wastewater from an independent cogeneration plant being built on its property. See Letter from Dale Herendeen, EHS Manager, International Paper Company, to Brent Kent Finch, Water Division, Arkansas Department of Environmental Quality (Aug. 4, 1999) (on file with author). The application for an NPDES permit modification will typically trigger an examination of only those conditions which are proposed to be modified. See *Dawson v. Alabama Dep't of Env'tl. Mgmt.*, 1986 AL ENV LEXIS 1 (Ala. Dep't Env'tl. Mgmt. Jan. 8, 1986). See also *Costle v. Pacific Legal Found.*, 445 U.S. 198 (1980), *reh'g denied*, 446 U.S. 947 (1980).

623. See Jody Freeman, *Collaborative Governance in the Administrative State*, 45 UCLA L. REV. 1, 15 (1997). "The slow pace of permitting makes it particularly burdensome to industries in which production processes change rapidly and require modified or new permits." *Id.*

624. See *id.*

625. See 33 U.S.C. § 1342(b)(1)(B) (1994).

626. See 40 C.F.R. § 122.21(d)(2) (2000).

627. See 40 C.F.R. § 122.61(a) (2000). The EPA refers to this as an "administrative continuance." See 64 Fed. Reg. 46,058, 46,079 (1999).

628. Some state agency staffing levels have been insufficient to issue permits in a timely manner. See, e.g., Richard T. Sale, *Are the Feds Coming?*, HAW. INVESTOR, May 1995 (discussing how insufficient state resources slowed down wastewater permit approval process in Hawaii).

629. The applications are for a permit for a new facility, permit renewal, permit modification, and permit termination.

A related issue has been the number of expired state NPDES permits that are allowed to remain in place awaiting renewal. EPA has expressed concern about its inability to exercise its veto authority in the case of an expired permit that a state has failed to renew for some time.<sup>630</sup> In 1999, the federal agency proposed a mechanism that would allow it to trigger the federal review procedures<sup>631</sup> for state permits that have been expired for more than ninety days.<sup>632</sup>

#### D. Enforcement

##### 1. *Information Acquisition Provisions*

###### a. Investigative Authorities

Section 308 of the CWA provides EPA the authority to investigate the discharge of pollutants from a point source into jurisdictional waterbodies.<sup>633</sup> The agency is required to ensure that point sources collect and maintain records, use monitoring equipment, sample effluent, and submit reports on all compiled data.<sup>634</sup> The CWA provides EPA personnel the right of entry and access to records upon presentation of credentials.<sup>635</sup> This authority is utilized by EPA to conduct routine or random inspections to determine NPDES permit compliance.<sup>636</sup> However, EPA occasionally conducts multimedia inspections that encompass a number of permit programs (air, water, etc.).<sup>637</sup>

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630. See 64 Fed. Reg. 46,058, 46,079 (Aug. 23, 1999). “[A] lengthy administrative continuance of a permit for a discharge into an impaired water can greatly delay the implementation of needed water quality-based effluent limitations.” *Id.*

631. The EPA review procedures are found at 40 C.F.R. § 123.44 (2000).

632. See 64 Fed. Reg. 46,058, 46,079 (Aug. 23, 1999).

633. See 33 U.S.C. § 1318 (1994).

634. See *id.* § 1318(a)(A).

635. See *id.* § 1318(a)(B). The ability of EPA to obtain certain information with or without an administrative search warrant has been challenged on occasion. See *In re Alameda County Assessor’s Office, Parcel Nos. 537-801-2-4-537-859-9*, 672 F. Supp. 1278 (N.D. Cal. 1982) (authorizing EPA to enter property to determine existence of “wetlands” as defined by section 404 of the CWA).

636. See Bill S. Forcade & Elizabeth D. Anderson, *How to Minimize Civil Penalties in Environmental Enforcement*, 30 ENVTL. L. REP. 11031 (2000).

637. See *id.*

### b. Discharge Monitoring Reports

A key federal CWA enforcement tool is the requirement that facilities periodically prepare comprehensive self-monitoring reports.<sup>638</sup> These documents are denominated Discharge Monitoring Reports (“DMRs”). Most facilities are required by their permit to sample or test their effluent to determine the presence and quantity of various pollutants. The DMRs identify the applicable facility NPDES permit limits and compare them to the actual amount of discharges.<sup>639</sup> These documents are periodically submitted to the EPA or delegated state agency as specified in the NPDES permit. The DMRs must be signed by a responsible corporate officer.<sup>640</sup> The information contained within the DMRs is analyzed by the receiving agency to determine if the discharges are compliant with permit limits.<sup>641</sup> The CWA requires that the permitting agency make the DMRs available to the public.<sup>642</sup>

DMRs play an important role in both federal/state and citizen suit enforcement actions. Agencies, individuals, and organizations typically use such documents to support arguments that permit limits have been exceeded.<sup>643</sup> DMRs indicating permit limit exceedances will often accompany motions for summary judgment on the issue of facility permit non-compliance.<sup>644</sup> Facilities have periodically argued that

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638. See 40 C.F.R. § 122.41(l)(4) (2000); Atlantic States Legal Found., Inc., v. Tyson Foods, Inc., 897 F.2d 1128, 1130 (1990).

639. See 40 C.F.R. § 122.41(l)(4) (2000).

640. See 40 C.F.R. § 122.22 (2000). The officer must certify that the reported information was prepared by qualified personnel under his or her direction or supervision and that the information is true, accurate, and complete. See *id.*

641. EPA may categorize CWA violations in terms of their seriousness. The serious violations are designated Significant Non-Compliance (“SNC”). See U.S. PUBLIC INTEREST, DIRTY WATER SCOUNDRELS: STATE BY STATE VIOLATIONS OF THE CLEAN WATER ACT BY THE NATION’S LARGEST FACILITIES (1997). Four violations which will place a facility in SNC status are (1) exceeding an effluent limitation, (2) failing to file a DMR, (3) violating a compliance schedule, and (4) failing to submit a compliance schedule report. See *id.* at 9-10. SNC enforcement is applicable only to major industrial, municipal, and federal facilities. See *id.* at 10. It is estimated that approximately 1,346 major facilities earned a SNC status during a fifteen month span between the years of 1995-96, with over 100 of those entities maintaining its SNC status for the duration of that time period. See *id.*

642. See 40 C.F.R. § 122.41(j) (2000).

643. Environmental organizations may systematically review such DMRs in some instances. See *Sierra Club v. Shell Oil Co.*, 817 F.2d 1169 (5th Cir. 1987) (referencing systematic research program in Louisiana by Sierra Club in which DMRs submitted by major industrial dischargers are examined).

644. See *Sierra Club v. Union Oil Co.*, 813 F.2d 1480, 1492 (9th Cir. 1987), *vacated on other grounds*, 485 U.S. 931 (1988), *judgment reinstated*, 853 F.2d 667 (9th Cir. 1988).



despite the results reported in its DMRs, laboratory errors render the sampling results inconclusive. The success of this argument varies with the jurisdiction.<sup>645</sup> Facilities also occasionally challenge DMR results by arguing the exceedances were the results of upsets/bypasses or were caused by another source.<sup>646</sup>

## 2. *Enforcement Authorities*

### a. Government Enforcement

CWA violators may be subject to civil penalties<sup>647</sup> or criminal sanctions<sup>648</sup> in appropriate circumstances. The civil and criminal enforcement provisions are designed to promote both specific and general deterrence of future violations.<sup>649</sup> Lead enforcement responsibility is allocated between EPA and the Department of Justice depending on the CWA enforcement authority being utilized.

#### 1. *Civil Enforcement*

The CWA civil enforcement regime utilizes a strict liability standard for determination of violations.<sup>650</sup> Consequently, whether conduct was intentional, knowing, or negligent is irrelevant in the

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645. See *Public Interest Research Group of New Jersey, Inc. v. Elf Atochem N. Am., Inc.*, 817 F. Supp. 1164 (D.N.J. 1993) (recognizing lab error as a partial defense); *Sierra Club v. Union Oil Co.*, 813 F.2d 1480, 1491-93 (9th Cir. 1987), *vacated on other grounds*, 485 U.S. 931 (1988) (disallowing permittee to impeach its own reports by showing sampling error).

646. See *Tennessee v. Duromatic Prod. Corp.*, 1993 Tenn. App. LEXIS 807 (Tenn. Ct. App. 1993) (discussing facility opposition to Tennessee environmental agency's motion for summary judgment on certain NPDES permit exceedances on the basis that drought conditions caused increase in concentrations and that another source discharging into the stream affected the results).

647. See 33 U.S.C. § 1319(b) (1994).

648. See *id.* § 1319(c).

649. See *United States v. Municipal Auth. of Union Township*, 929 F. Supp. 800, 806 (M.D. Pa. 1996). In *Union Township*, the court declared that a penalty exacted in the pursuit of deterring future conduct must prevent a violator from receiving an economic benefit as well as send a message to the general public. See *id.*

650. See *United States v. Earth Sciences, Inc.*, 599 F.2d 368, 374 (10th Cir. 1979) (applying strict liability for unlawful discharge of pollutants into navigable waters); *United States v. Brace*, 41 F.3d 177, 182 (3d Cir. 1994) (holding plaintiff is not required to prove willfulness or negligence since liability is strict).

context of CWA civil enforcement.<sup>651</sup> Further, the fact that a facility is in substantial compliance is immaterial.<sup>652</sup>

The federal government has a choice of two forums to pursue CWA civil penalties. Penalties may be imposed either administratively<sup>653</sup> or judicially.<sup>654</sup> EPA has the discretion to determine which penalty provisions would be more appropriate.

a. Administrative Enforcement

EPA is empowered to administratively assess penalties. The penalties can be deemed either Class I<sup>655</sup> or Class II.<sup>656</sup> If the agency elects to pursue the administrative assessment of penalties, it may not subsequently pursue civil penalties through a judicial action.<sup>657</sup> The administrative order will give the defendant notice of the pending administrative order and an opportunity to request a hearing.<sup>658</sup> The failure to request a hearing renders the administrative order final thirty days after the date it was issued.<sup>659</sup>

b. Judicial Enforcement

1. *Forum/Monetary Penalty Calculation*

The CWA also provides the federal government the opportunity to seek penalties or injunctive relief through a judicial action.<sup>660</sup> Jurisdiction for such actions lies with the federal district court in which the facility is located or does business.<sup>661</sup> A federal district court can both assess penalties and provide injunctive relief.

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651. See *Sierra Club v. Abston Constr. Co.*, 620 F.2d 44 (5th Cir. 1980).

652. See *Union Oil Co.*, 813 F.2d at 1491.

653. See 33 U.S.C. § 1319(g)(1) (1994).

654. See *id.* § 1319(b).

655. 33 U.S.C. § 1319(g)(1)(A) (1994) reads: "[t]he amount of a class I civil penalty under paragraph (1) may not exceed \$10,000 per violation, except that the maximum amount of any class I civil penalty under this subparagraph shall not exceed \$25,000."

656. 33 U.S.C. § 1319(g)(1)(B) (1994) reads: "The amount of a class II civil penalty under paragraph (1) may not exceed \$10,000 per day for each day during which the violation continues, except that the maximum amount of any class II civil penalty under this subparagraph shall not exceed \$125,000."

657. See *id.* § 1319(g)(6).

658. See *id.* § 1319(g)(2)(A)-(B).

659. See *id.* § 1319(g)(5).

660. See *id.* § 1318.

661. See *id.* § 1319(b).

In determining the appropriate amount of a penalty, a court is required to consider the seriousness of the violation(s), the economic benefit, the gravity of the violation, past violations, the economic impact of the penalty, and any good-faith efforts to attain compliance.<sup>662</sup> The United States Supreme Court noted in *Tull v. United States*<sup>663</sup> that the prescribed formula delegates wide discretion to the trial judge to fix the amount of the civil penalty to be imposed.<sup>664</sup>

EPA utilizes both general and statute-specific policies to determine the penalty amount it deems appropriate for one or more CWA violations.<sup>665</sup> The agency's stated purpose in developing these policies was to provide its staff a logical penalty calculation methodology and to ensure consistent application of the statutory penalty provisions.<sup>666</sup> An important focus has traditionally been ensuring that a violator did not gain an economic advantage over its competitors. Therefore, EPA noted in its 1995 Interim Clean Water Act Settlement Penalty Policy that a minimum penalty should be formulated to recover the economic benefit gained from noncompliance<sup>667</sup> as well as to establish a deterrent for future violations,<sup>668</sup> subject to a \$25,000 per day maximum.<sup>669</sup> The penalty amount is also affected to varying degrees in these policies by the significance of the violation, health and environmental harm, number of violations, duration of noncompliance, history of recalci-

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662. See 33 U.S.C. § 1319(b) (1994). See, e.g., GAO ENVIRONMENTAL ENFORCEMENT: PENALTIES MAY NOT RECOVER ECONOMIC BENEFITS GAINED BY VIOLATORS (GAO/RCED-91-166); U.S. ENVTL. PROTECTION AGENCY, INTERIM CLEAN WATER ACT SETTLEMENT PENALTY POLICY (1995); *United States v. Municipal Auth. of Union Township*, 150 F.3d 259 (1998).

663. 481 U.S. 412 (1987).

664. There are various methods used by the courts to determine an appropriate penalty. See *United States v. Smithfield Foods, Inc.*, 972 F. Supp. 338, 353-54 (E.D. Va. 1997). The top down approach first determines the maximum penalty allowable under the CWA then reduces this amount upon the presence of mitigating factors as set forth in § 1319(d). See *id.* at 353. In contrast, in the bottom up approach, the economic benefit derived from noncompliance is calculated and adjusted accordingly upon a finding of mitigating or aggravating factors as established in § 1319(d). See *id.*

665. See generally Jon S. Paletto, *Negotiating Resolution of Environmental Enforcement Actions*, 18 W. ILL. U. L. REV. 527 (1998).

666. See *id.* at 533.

667. See *Smithfield Foods*, 972 F. Supp. at 348 (explaining that often a company incurs a financial gain when it violates its permit limitations by reinvesting the money in itself instead of in the operations which would bring them into compliance).

668. See U.S. ENVTL. PROTECTION AGENCY, INTERIM CLEAN WATER ACT SETTLEMENT PENALTY POLICY (1995).

669. See 33 U.S.C. § 1318(a)(A) (1994). A subsequent CWA specific penalty policy was issued in 1986. See Memorandum from Lawrence J. Jensen, Administrator for Water, EPA, to General Counsel, New Clean Water Act Civil Penalty Policy (Feb. 1, 1986).

trance, ability to pay a penalty, and litigation considerations (i.e., risks).<sup>670</sup> The CWA enforcement provisions have been interpreted as authorizing the imposition of a separate penalty for each specific effluent limitation violated on a single day.<sup>671</sup>

## 2. *Injunctive Authority*

Section 309(b) provides the authority to request “appropriate relief, including a permanent or temporary injunction,” and grants the federal district court “jurisdiction to restrain such violations and to require compliance.”<sup>672</sup> The CWA has been held to provide at a minimum a full range of traditional injunctive relief.<sup>673</sup> The scope of the court’s discretion to fashion an equitable remedy can be an issue.

In *United States v. Alcoa*,<sup>674</sup> EPA brought a judicial enforcement action against a facility seeking both penalties and injunctive relief for alleged CWA violations.<sup>675</sup> The requested injunctive relief included remediation of contaminated sediment.<sup>676</sup> The court concluded that under the circumstances:

[T]he court’s authority to grant an injunction “to require compliance” in Section 309(b) is mandated cleanup of contaminated sediments where the sediments are contaminated as a direct result of NPDES permit violations. However, for an injunction to issue for sediment remediation under Section 309(b), the EPA must first establish that the sediments are contaminated with a substance that was released by the Defendant in an amount in excess of its NPDES permit. In addition, it must show that the substance is hazardous to human health and the environment; that it will not naturally break down over time; and that it will continue to be released into the “waters of the United

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670. See Memorandum from Lawrence J. Jensen, Administrator for Water, EPA, to General Counsel, New Clean Water Act Civil Penalty Policy (Feb. 1, 1986).

671. See *Atlantic States Legal Found. v. Tyson Foods, Inc.*, 897 F.2d 1128, 1137-39 (11th Cir. 1990), cited with approval in *Hawaii’s Thousand Friends v. City & County of Honolulu*, 821 F. Supp. 1368, 1393-94 (D. Haw. 1993). The CWA does provide a “single operational upset defense” which imposes a single violation for multiple parameter exceedances related to such an event. See 33 U.S.C. § 1319(c)(5), (d), (g)(3) (1994). This provision is discussed in *Public Interest Research Group of New Jersey, Inc. v. Powell Duffryn Terminals, Inc.*, 913 F.2d 64 (3d Cir. 1990). The term “single operational upset” in the context of this section has been interpreted to mean an “unusual or extraordinary event.” *Id.* at 77.

672. See 33 U.S.C. § 1319(b) (1994).

673. See *United States v. Alcoa, Inc.*, 98 F. Supp. 2d 1031, 1036 (N.D. Ind. 2000).

674. 98 F. Supp. 2d 1031 (N.D. Ind. 2000).

675. See *id.*

676. See *id.*

States” at such a level as to contaminate the water and make it unsafe for its designated uses.<sup>677</sup>

### 3. *POTW/IU Enforcement Authorities*

The CWA enforcement scheme was amended in 1977 to address situations in which an IU violates local limits or other restrictions applicable to its discharge into a POTW. Section 309(f)<sup>678</sup> extended the CWA enforcement authorities to such “indirect” discharges. An action may be brought under this section in some circumstances against both the POTW and IU.<sup>679</sup> Prior to filing such an action, the government must notify the POTW that pollutants are being discharged in violation of section 307(d)<sup>680</sup> and that the facility has not undertaken enforcement within thirty days.<sup>681</sup> Section 309(f) is intended to ensure the availability of an enforcement mechanism if a POTW is reluctant to take action against a company or facility. Many IUs are an important employer or economic force in their community or region.

### 4. *CWA Judicial Settlement Procedures*

#### a. Settlement of Actions

CWA civil enforcement actions are often settled or resolved through the execution of a consent decree or order that is executed by the federal government and the alleged violator.<sup>682</sup> The federal district court may only approve a judicial settlement if it determines the matter is being resolved in a manner consistent with the public interest.<sup>683</sup> The court must also determine “whether the decree comports with the goals of Congress.”<sup>684</sup>

677. *See id.* at 1039.

678. *See* 33 U.S.C. § 1309(f) (1994). *See* Gold, *supra* note 98, at 466.

679. *See* Gold, *supra* note 98, at 467.

680. *See id.*

681. *See id.*

682. Many consent decrees will encompass the settlement of other federal and state environmental statutory causes of action in addition to the alleged CWA violations. *See* 65 Fed. Reg. 69,338 (2000) (discussing Department of Justice notice of proposed consent decree resolving alleged CWA, RCRA, SDWA, CAA, and CERCLA violations, along with Mississippi environmental statutory violations).

683. *See* *United States v. Georgia-Pacific Corp.*, 960 F. Supp. 298, 299 (N.D. Ga. 1996).

684. *See* *Sierra Club v. Coca-Cola Corp.* 673 F. Supp. 1555, 1556 (M.D. Fla. 1987).

The public will be given notice or an opportunity to comment on a proposed consent decree. The comments submitted do not always originate solely from individuals and citizen groups. For example, competitors have on occasion critiqued the remedial measures and penalties that the federal government has proposed to impose upon a settling defendant.<sup>685</sup>

The consent decree will contain provisions assessing penalties and/or requiring the settling defendant to undertake certain actions.<sup>686</sup> The agreed actions may include remedial measures or other actions to bring a facility or process into compliance.<sup>687</sup> This will include a commitment to undertake the actions by a specific date or on a phased schedule.<sup>688</sup> The settling defendant may be required to periodically report progress on the required activities or actions and pay stipulated penalties for failing to adhere to the schedule.<sup>689</sup>

The consent decree will often involve the control or supervision of work required to be undertaken by the settling defendant. These post-settlement activities can generate disagreements.<sup>690</sup> The consent decree

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685. See *Georgia-Pacific*, 960 F. Supp. at 300 (discussing objections of competing wood products facilities to a proposed settlement of CWA enforcement action against competitor).

686. See *Coca Cola*, 673 F. Supp. at 1556 (providing an example of a CWA consent decree).

687. The consent decree may simply provide that the party attain a particular CWA requirement. See, e.g., *United States v. Quanex Corp.*, Consent Decree, H-99-1633 (S.D. Tex. 1999). Paragraph V(9)(f) required that the company submit a stormwater pollution prevention plan to the Region 6 Office of EPA within 90 days of the entry of the consent decree. Other consent decree provisions may require that the facility itself determine the appropriate method to attain compliance with a CWA requirement. For example, paragraph V(9)(h) of the *Quanex* Consent Decree required that the company conduct a feasibility study to determine the most appropriate means to optimize the acid neutralization treatment system to meet relevant permit requirements. See *id.* The *Quanex* consent decree provides EPA the opportunity to review the company's recommendations. *Id.* Implementation of the recommendations are required to take place within a specific time period after EPA Region 6's approval of the submission. See *id.* See also 65 Fed. Reg. 64,235 (Oct. 26, 2000) (referencing consent decree's inclusion of provision requiring Maryland Aviation Administration to reduce use of deicing fluid as part of settlement of federal CWA enforcement action).

688. See, e.g., *San Francisco Baykeeper v. Pinole-Rodeo Auto Wreckers, Inc.*, 1997 U.S. Dist. LEXIS 5016 (N.D. Cal. Jan. 23, 1997) (illustrating requirement to prepare and implement CWA stormwater pollution prevention plan); *United States v. Eagle-Picher Indus., Inc.*, 1990 U.S. Dist. LEXIS 13206 (D. Mo. Sept. 29, 1990) (discussing a consent decree that required the phased construction of a wastewater treatment system).

689. See, e.g., *Eagle-Picher*, 1990 LEXIS 13206, \*\*17-18.

690. See *United States v. Puerto Rico Elec. Power Auth.*, 106 F. Supp. 2d 216 (D.P.R. 2000) (resolving dispute between utility and EPA subsequent to execution of consent decree over correct interpretation of federal Clean Air Act provisions).

may include some type of dispute resolution provision.<sup>691</sup> It is also not unusual for the consent decree to be amended to reflect a change in circumstances that all parties agree necessitates a change.<sup>692</sup>

b. Monetary Penalty Alternatives/Supplemental Environmental Projects

Supplemental Environmental Projects ("SEP") have been a component of consent decrees resolving a number of federal CWA enforcement actions.<sup>693</sup> A SEP is a project or action performed in lieu of penalties to settle a filed or threatened enforcement action.<sup>694</sup> EPA and many states allow the use of SEPs in settlements.<sup>695</sup> However, a proposed SEP can only be used at the federal level if it meets certain criteria. These criteria are identified in a 1998 EPA SEP policy.<sup>696</sup> EPA's use of SEPs to resolve enforcement actions involving many of its programs is increasing.<sup>697</sup>

Some CWA SEPs are fairly straightforward. They may involve the voluntary installation of pollution control equipment not already required by law, or a donation of property or cash for conservation or other purposes. A few CWA SEPs appear to be designed to address more complex or intractable problems. For example, the federal government and Hudson Foods, Inc., executed a consent decree in 1998 to resolve alleged violations relating to a Maryland poultry processing facility.<sup>698</sup> The document included a requirement that the company fund a "Nutrient Management Plan Project ("NMPP")."<sup>699</sup> The NMPP's

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691. The *Puerto Rico* decision reviews a dispute resolution provision found in a consent decree that had settled an enforcement action against the utility. *See id.*

692. *See* Cape Ann Citizens Ass'n v. City of Gloucester, 1997 U.S. App. LEXIS 21315, at \*2 (1st Cir. Aug. 13, 1997) (addressing CWA consent decree requiring municipality to extend sewer amended to allow construction of alternative type of system).

693. SEPs are discussed in Wright & Henry, *supra* note 156 at 322-28.

694. *See id.* at 322.

695. *See id.*

696. *See* 63 Fed. Reg. 24,796-804 (May 5, 1998). The traditional federal SEP criteria are addressed in Wright & Henry, *supra* note 156, at 322-28.

697. *See* Clifford Rechtschaffen, *Competing Visions: EPA and the States Battle for the Future of Environmental Enforcement*, 30 ENVTL. L. REP. 10803, 10812 (2000). A discussion of various SEP issues in the CWA context is found in Quan B. Nghiem, Comment, *Using Equitable Discretion to Impose Supplemental Environmental Projects Under the Clean Water Act*, 24 B.C. ENVTL. AFF. L. REV. 561 (1997).

698. *See* United States v. Hudson Foods, Inc., Consent Decree, CCB-98-1468 (D. Md. 1998).

699. *See id.* at 914(d).

focus was the reduction of nutrient run-off into receiving waters in portions of a three state area. Of particular interest is the fact that the scope of the NMPP included both the Hudson Foods poultry processing facility and its contract poultry growers in the area.<sup>700</sup> The company committed to provide staff and materials to contract growers to assist them in preparing and implementing nutrient management plans.<sup>701</sup> Further, the obligation to provide such assistance was automatically extended to growers entering into contracts with Hudson Foods within thirty-five months after the entry of the consent decree.<sup>702</sup>

SEP proponents argue that these mechanisms are more likely to benefit the environment than penalties.<sup>703</sup> They note that penalties are simply deposited into the treasury.<sup>704</sup> Further, a settling defendant may benefit from the substitution of a SEP for penalties in some circumstances. The advantages may be the goodwill derived from certain projects<sup>705</sup> and reduced future environmental compliance costs.<sup>706</sup> Some settlements may even include multiple SEPs of various types.<sup>707</sup>

The use of SEPs in settlements is not universally supported.<sup>708</sup> Critics argue that SEPs may cost violators less than monetary

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700. *See id.*

701. *See id.*

702. *See id.*

703. *See* Nghiem, *supra* note 697, at 566. An example of a SEP that arguably benefits the environment is a \$90,000 fish study that the Maryland Aviation Administration agreed to perform as a component of a 2000 CWA consent decree. *See* 65 Fed. Reg. 64,235 (Oct. 26, 2000).

704. *See* Nghiem, *supra* note 697, at 566.

705. *See id.* An example is a SEP the Denver Water Board agreed to perform to settle CWA violations. *See* 64 Fed. Reg. 38,694 (Aug. 11, 1999). The Denver agency committed to revegetate certain banks of the South Platte River. *See id.*

706. *See* Nghiem, *supra* note 697, at 566. The facility will incur the costs necessary to redesign a process to eliminate or reduce the volume or toxicity of a wastewater discharge. However, the changes enable the facility to avoid the CWA compliance costs (sampling, treatment, etc.) that are associated with this wastewater discharge. For example, Texmark Chemicals, Inc. agreed to perform a SEP involving the replacement of two steam jets at a facility with two vacuum pumps. *See* 64 Fed. Reg. 43,719 (Aug. 11, 1999). The benefits from this change were stated to be the fact that process wastewater would no longer be generated in the production of a particular chemical. *See id.* This was expected to reduce the average flow through facility outfall by between 50% and 78%. *See id.* This reduction would presumably benefit both the facility and the environment.

707. For example, Gulf States Steel, Inc. settled a CWA action by in part agreeing to at least \$206 million dollars in SEPs which included facility pollution prevention measures, acquisition, and preservation of ecologically valuable property, and paying for the cleanup of two waterbodies. *See* 65 Fed. Reg. 18,351 (Apr. 7, 2000).

708. *See generally* David A. Dana, *The Uncertain Merits of Environmental Enforcement Reform: The Case of Supplemental Environmental Projects*, 1998 WIS. L. REV. 1181.



penalties.<sup>709</sup> For example, a violator may propose a SEP that involves the installation of pollution prevention or reduction equipment.<sup>710</sup> This equipment may provide the facility energy savings or reduced waste disposal costs.<sup>711</sup> Thus, the facility receives a prospective operational cost reduction.<sup>712</sup>

## 2. Criminal Enforcement

Almost every federal environmental statute contains criminal penalty provisions.<sup>713</sup> The CWA provides criminal penalties for negligent violations,<sup>714</sup> knowing violations,<sup>715</sup> or knowing endangerment<sup>716</sup> violations.<sup>717</sup> Negligence means acts or omissions in violation of an objective that were not knowingly performed or permitted to occur.<sup>718</sup>

Criminal environmental enforcement is a significant component of the CWA and other federal pollution control programs. The EPA values such actions because criminal penalties cannot be simply quantified as a cost of doing business.<sup>719</sup> The number of federal criminal environmental

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709. *See id.*

710. *See id.* at 1192.

711. Some would view reduced demand for energy and pollution disposal as laudable goals.

712. One group criticized the use of SEPs by the Texas Natural Resource Conservation Commission. *See TEXAS CENTER FOR POLICY STUDIES, TNRCC ENFORCEMENT: RECORDS OR RHETORIC?* (1996). The organization alleged that some Texas SEPs "merely involve renovation of the polluters' own facilities." *Id.* at 3.

713. *See* Kevin A. Gaynor & Thomas R. Bartman, *Criminal Enforcement of Environmental Laws*, 10 *COLO. J. INT'L ENVTL. L. & POL'Y* 39, 46-47 (1999) (detailing federal criminal environmental enforcement program and associated issues).

714. *See* 33 U.S.C. § 1319(c)(1) (1994). *See generally* *United States v. Freeze Bros.*, 602 F.2d 1123, 1129 (3rd Cir. 1979) (holding failure to construct holding tank large enough to accommodate wastewater causing surface runoff constitutes negligent violation).

715. *Businessman Gets Prison Sentence for Clean Water Act Violations at Plant*, *ENV'T REP.*, June 6, 2000, at 1167. The article reports that in *United States v. Marshall*, No. IP00-31-CR/F (S.D. Ind. 2000), the court imposed a five month prison sentence, a five month home detention period, a \$5,000 fine, and one year supervised release for a businessman's knowing violations of the CWA.

716. *See* 33 U.S.C. § 1319(c)(3) (1994) (defining knowing endangerment).

717. *See* 33 U.S.C. § 1319(c) (1994).

718. *See* Jay G. Martin, *Conducting a Successful Internal Investigation*, 6 *ENVTL. LAW.* 673, 684 (2000). The author states that "negligent acts that manifest carelessness, rather than an unlawful intent, are usually not aggressively pursued by EPA." *Id.*

719. *See* Katherine C. Kellner, Comment, *Separate but Equal: Double Jeopardy and Environmental Enforcement*, 28 *ENVTL. L.* 169, 189 (1998) (citing Daniel J. Gibby & Daniel L. Edie, *Criminal Enforcement of Environmental Regulations*, *FLA. B.J.*, May 1993, at 2).

actions had trended upward for much of the past decade.<sup>720</sup> A survey of federal environmental prosecutions from 1984 to 1990 found that twenty-five percent involved CWA violations.<sup>721</sup>

The statutory maximum for criminal sanctions for first time CWA offenders is \$25,000 per day for negligent violations,<sup>722</sup> \$50,000 per day for knowing violations,<sup>723</sup> and \$1,000,000 for knowing endangerment violations.<sup>724</sup> All subsequent convictions yield ceilings which double the previously referenced statutory maximums.<sup>725</sup> Felony penalties of up to three years and fifteen years imprisonment are potentially imposed for knowing and knowing endangerment violations, respectively.<sup>726</sup>

The type of CWA violations triggering criminal environmental enforcement have not been limited to NPDES permit effluent limit exceedances. A significant percentage of the cases prosecuted have involved violations of monitoring, sampling, and/or reporting requirements.<sup>727</sup> Examples of conduct of this type that have triggered prosecution include: (a) deliberate tampering with a facility's wastewater testing;<sup>728</sup> (b) manipulating facility wastewater flow to achieve desired sampling results;<sup>729</sup> and (c) falsification of DMRs and supporting lab records.<sup>730</sup>

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720. See *id.* at 169 (citing EPA enforcement statistics noting the cases initiated from 525 in 1994 to 562 in 1995).

721. See Gaynor, *supra* note 712, at 42 (citing Mark A. Cohen, *Environmental Crime & Punishment: Legal/Economic Theory and Empirical Evidence on Enforcement of Federal Environmental Statutes*, 82 J. CRIM. L. & CRIMINOLOGY 1054, 1073 (1992)).

722. See 33 U.S.C. § 1319(c)(1)(B) (1994).

723. See *id.* § 1319(c)(2)(B).

724. See *id.* § 1319(c)(3)(A).

725. See *id.* § 1318(a)(B).

726. See *id.* § 1319(c).

727. Other scenarios have simply involved the alleged release of material in a manner that causes it to enter a jurisdictional waterbody. See, e.g., *United States v. Curtis*, 988 F.2d 946 (9th Cir. 1993) (addressing allegation that fuels manager at airbase directed the pumping of jet fuel into pipeline knowing it would leak). This decision is also of interest because it rejected an argument that the CWA does not apply to federal employees whose alleged violations occurred in the course of their employment. See *id.* at 948.

728. See *United States v. Hopkins*, 53 F.2d 533 (2d Cir. 1995) (addressing the discarding of undesired sampling results and dilution of zinc sample with tap water to reduce concentration).

729. See *United States v. Sinskey*, 119 F.3d 712 (8th Cir. 1997) (sampling when flow was reduced and subsequently increasing flow).

730. See *United States v. Brittain*, 931 F.2d 1413 (10th Cir. 1991) (addressing the recording of false sampling results); *Sinskey*, 119 F.3d at 714 (addressing sampling when flow was reduced and subsequently increasing flow).

### 3. *Scope of CWA Liability Provision*

The CWA provides that a "person,"<sup>731</sup> "responsible corporate officer,"<sup>732</sup> or "owner or operator"<sup>733</sup> may be liable for a violation of the statute. A "person" is defined as an "individual, corporation, partnership, association, State, municipality, commission, or political subdivision of a State, or any interstate body."<sup>734</sup> A "responsible corporate officer" is included within the definition of "person" pursuant to the 1987 CWA Amendments.<sup>735</sup> Finally, an "owner or operator" includes "any person who owns, leases, operates, controls, or supervises a source."<sup>736</sup>

An important question is the scope of these CWA and other similar environmental statutory definitions. The focus is often the apportionment of liability among individuals, companies, and affiliated entities. Parties are motivated to discern the breadth of these provisions because this will determine their risk of being a legitimate target of CWA enforcement.

The interpretation of the cited terms has primarily occurred in the context of CERCLA<sup>737</sup> litigation.<sup>738</sup> Because several CWA terms are somewhat similar, the interpretations given to these CERCLA provisions are relevant. Various decisions have focused on the impact of CERCLA on parent and subsidiary corporations, given the interpretation of "owner or operator" and the difference between direct and indirect liability under the statute.<sup>739</sup> Similar attention has been paid to the potential liability of individuals.

#### a. *Affiliate Entity Liability*

The CWA and CERCLA cases agree that while the general rule in American corporation law provides for limited liability in the corporate context, there are recognized equitable exceptions. For example, where a parent totally dominates and controls its subsidiary, "operating the subsidiary as its business conduit or agent," courts have been willing to

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731. 33 U.S.C. § 1362(5) (1994).

732. *Id.* § 1319(c)(6).

733. *Id.* § 1316(a)(4).

734. *Id.* § 1362(5).

735. *Id.* § 1319(c)(6).

736. *Id.* § 1316(a)(4).

737. *See* 42 U.S.C. §§ 9601-9607 (1994).

738. The disproportionate percentage of decisions involving CERCLA is likely due to the significant liabilities typically imposed upon a party determined to fit within the scope of the statute.

739. Stephanie M. Irby, Note, *United States v. Bestfoods: CERCLA's Effect On Climbing the Corporate Ladder of Liability*, 52 ARK. L. REV. 613, 614 (1999).

disregard the corporate entity in the interests of public convenience, fairness, and equity.<sup>740</sup> In such cases, the parent is so closely intertwined with the subsidiary that the two should be treated as a single entity.<sup>741</sup> This doctrine is traditionally known as piercing the corporate veil, an indirect form of liability. Piercing has also been said to be appropriate when the court must “prevent fraud, illegality or injustice, or when recognition of the corporate entity would defeat public policy or shield someone from public liability for a crime.”<sup>742</sup>

Different jurisdictions employ various methods to determine if the corporate veil should be pierced, thereby subjecting the parent corporation to liability for the subsidiary’s violative acts. Cases and articles involving CERCLA litigation have focused upon the various means used to justify piercing. The method of piercing the corporate veil based upon federal common law has been used by a majority of courts to hold shareholders of a corporation that owns a facility liable as “owners” under CERCLA.<sup>743</sup> This allows for veil piercing to occur in two situations: first, when the corporation is found to perpetuate a fraud or an illegal purpose; and second, when the corporation is dominated by the shareholder to the extent that the corporation is deemed to be merely an “alter ego or an instrumentality” of the shareholder.<sup>744</sup>

This doctrine considers several factors that are often considered by state courts as well in determining whether to pierce the corporate veil. These factors include, but are not limited to, the following:

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740. *United States v. Gulf Park Water Co.*, 972 F. Supp. 1056, 1061 (S.D. Miss. 1997) (citing *United States v. Jon-T Chemicals, Inc.*, 768 F.2d 686, 691 (5th Cir. 1985), *cert. denied*, 475 U.S. 1014 (1986)).

741. *See United States v. Municipal Auth. of Union Township*, 929 F. Supp. 800, 808 (D.C. Pa. 1996), *aff’d*, 150 F.3d 259 (3rd Cir. 1998).

742. *Id.*; *see also* *Beartooth Alliance v. Crown Butte Mines*, 1995 U.S. Dist. LEXIS 16850, at \*7 (D. Mont. May 24, 1995) (pointing out where the corporate veil could be pierced to curb injustices resulting from the improper use of a corporate entity). Montana has a two-prong standard for determining if the corporate veil should be pierced. First, the party charged must be either the alter ego, instrumentality, or agent of the corporation. Second, the corporate entity must be utilized as a subterfuge to wrong, inconvenience, or otherwise perpetrate a fraud on the public. *See id.* Montana’s standard mirrors the federal common law approach. The Arkansas Supreme Court has held that “one who seeks to disregard the corporate entity must show that the corporate form has been abused to the injury of a third party.” *National Bank of Commerce v. HCA Health Serv. of Midwest, Inc.*, 304 Ark. 55, 59, 800 S.W.2d 694, 697 (1990).

743. *See* Eric B. Rothenburg, et al., *Environmental Issues in Business Transactions Under U.S. Law*, 5 WIS. ENVTL. L.J. 121, 122 (1998).

744. *Id.*

1. Adequacy of capitalization of the corporation or subsidiary;
2. Extensive or pervasive control by the shareholder or parent;
3. Intermingling of assets, properties, or accounts between the entities;
4. Failure by the corporation or subsidiary to separately observe corporate formalities;
5. Siphoning of funds from the corporation or subsidiary;
6. The absence of corporate records; and
7. Nonfunctioning officers or directors of the corporation or subsidiary.<sup>745</sup>

The specific facts within each case are examined closely in this determination. No single factor is dispositive.

Several jurisdictions look to individual state law, as opposed to the federal common law, in making the piercing decision. In *United States v. Bestfoods*,<sup>746</sup> the United States Supreme Court specifically found that nothing within CERCLA requires or indicates that state corporation law is to be disregarded "simply because a plaintiff's cause of action is based upon a federal statute."<sup>747</sup> Therefore, the Court found that as long as the elements are present allowing for piercing the corporate veil, either according to federal common law or individual state corporate law, a parent corporation may be held indirectly liable under CERCLA for the acts of its subsidiary.<sup>748</sup>

Two of the four categories of potentially responsible parties under CERCLA involve owners or operators. The first includes the current owner and operator of the facility, and the second consists of any person or persons who owned or operated the facility at the time of disposal of any hazardous substances.<sup>749</sup> As such, the question of parent/subsidiary liability and the apportionment of such liability was the subject of much

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745. *Id.* at 122. A Kansas district court, in a recent case, also examined the subsidiary's business outside that with the parent, the treatment of the subsidiary by the parent (as a division or department or as a true subsidiary), the ownership of the subsidiary's stock, and the payment of expenses and losses of the subsidiary by the parent, in addition to other factors, in determining whether to pierce the corporate veil. *See Harris v. Oil Reclaiming Co.*, 94 F. Supp. 2d 1210, 1212 (D. Kan. 2000). The Fifth Circuit includes an examination of whether the parent or shareholder uses the subsidiary or corporation's property as its own. *See Gulf Park*, 972 F. Supp. at 1061-62. The cost-effectiveness of any of the mentioned factors is irrelevant to the piercing issue. *See id.* at 1062.

746. 524 U.S. 51 (1998).

747. *See id.* at 63 (citing *Burks v. Lasker*, 441 U.S. 471, 478 (1979)).

748. *See id.*

749. *See Irby, supra* note 738, at 618.

litigation due to the vague and circular CERCLA definition of “owner or operator”—“any person owning or operating such facility.”<sup>750</sup> The relevant CWA definitions are somewhat more clear, meaning that there are fewer cases interpreting their applicability to parent and subsidiary companies. Therefore, some understanding of CWA liability can be better understood by reviewing the treatment of the analogous CERCLA terms.

An unpublished 1996 case decided by a Florida district court cited a distinction between the CWA and CERCLA in terms of the liability that may be encountered as an “operator” of a facility under these statutes. In *United States v. Avatar Holdings, Inc.*,<sup>751</sup> the district court stated that CERCLA and the CWA employ different standards in finding a parent corporation<sup>752</sup> liable for the acts of its subsidiary based on the interpretation of “operator” liability.<sup>753</sup> In so finding, the court held that the standard articulated under section 107 of CERCLA,<sup>754</sup> where a parent corporation is liable as an “operator” when it “directly and pervasively” controlled the subsidiary’s actions to the extent of actual involvement in the day-to-day operations of the subsidiary, does not apply to violations under the CWA.<sup>755</sup>

The exercise of control was deemed a factor by the Florida federal district court.<sup>756</sup> It determined that parent liability under the CWA is predicated on a stricter standard of “directing or causing” the violations in such a way so as to be considered a “person who violates” under section 309(d) of the CWA,<sup>757</sup> despite the expansive definition given to

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750. 42 U.S.C. § 9607(a)(2) (1994).

751. 1996 U.S. Dist. LEXIS 12312 (M.D. Fla. Aug. 20, 1996).

752. The various references to “corporations” in this discussion is not intended to overlook the fact that businesses operate through a number of other entities such as limited liability companies, limited partnerships, and limited liability partnerships. With the exception of limited partnerships, these entities have simply not been the subject of a body caselaw in which their status under the federal environmental statutes is addressed. A discussion of these entities in the CERCLA context is found in Wright & Morrissey, *supra* note 21, at 773-78.

753. See *Avatar Holdings*, 1996 U.S. Dist. LEXIS 12312 at \*45.

754. See 42 U.S.C. § 9707(a)(2) (1994).

755. See *id.* (citing *Jacksonville Elec. Auth. v. Bernuth Corp.*, 996 F.2d 1107, 1110 (11th Cir. 1993)). The *Bestfoods* decision found that an “operator” under CERCLA must “manage, direct, or conduct operations specifically related to pollution.” *Bestfoods*, 524 U.S. at 67. In a proceeding below, the Florida district court specifically stated that the “mere fact of being a parent exercising control over a violating subsidiary does not properly subject the parent company to liability” under the CWA. *Avatar Holdings*, 1996 U.S. Dist. LEXIS 12312 at \*45 (quoting *Bernuth*, 996 F.2d at 1110).

756. See *Avatar Holdings*, 1996 U.S. Dist. LEXIS 12312 at \*46.

757. See *id.*

“operator” by the CWA.<sup>758</sup> In finding that the actions of the defendant in that case did not rise to the level of being considered a “person who violates,” the court noted that the parent corporation’s role was limited to that of overall financial review and long-term strategic planning, with no operational decisions being made amounting to “directing or causing” CWA violations.<sup>759</sup> Subsequent cases cite *Avatar Holdings*, holding parent corporations liable for their actions that transform them into a “person who violates” under the CWA.<sup>760</sup>

*United States v. Tropical Fruit, S.E.*,<sup>761</sup> is a decision in which partners were determined not to be the equivalent of an “owner” subject to CERCLA liability. However, the court found that the partnership was a potentially responsible or covered person under CERCLA, and the partners could be held liable under the “operator” standard.<sup>762</sup> To be liable under this standard, the court held that the government must show that the partner either “actually participated in operating the Site or in the activities [that] result[ed] in the [pollution], or [a]ctually exercised control over, or were intimately involved in the operations of the [partnership].”<sup>763</sup> The court’s holding equated derivative suits involving partnerships to those involving corporate entities,<sup>764</sup> with an analogy to the liability that can be imputed to the parent for the wrongful acts of the subsidiary.<sup>765</sup>

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758. *Harris v. Oil Reclaiming Co.*, 94 F. Supp. 2d 1210, 1213 (D. Kan. 2000).

759. *Id.* Furthermore, performance of a service by an entirely separate entity for someone considered to be an owner or operator under the CWA, for which that owner or operator is separately billed, does not expose the separate entity performing these services to owner or operator liability under the CWA. See *Beartooth Alliance v. Crown Butte Mines*, No. CV-93-154-BLG-JDS, 1995 U.S. Dist. LEXIS 16850, at \*7 (D. Mont. 1995).

760. *United States v. Smithfield Foods, Inc.*, 965 F. Supp. 769, 781 (E.D. Va. 1997) (clarifying also that a corporation is a “person” liable under the CWA).

761. 96 F. Supp. 2d 71, 83 (D.P.R. 2000).

762. *See id.*

763. *Id.*

764. *See id.* at 84.

765. The potential criminal liability under the environmental statutes of an affiliate for parent or subsidiary activities is not a common issue. However, it has been suggested that criminal liability may be imposed upon a parent for the illegal activities of its subsidiary, particularly in cases where the subsidiary is considered to be the mere agent of the parent. Although published case law supporting this theory is virtually nonexistent, the well-known Exxon Valdez spill settlement likely was partially predicated on threats of pursuing this theory as against Exxon Corporation for the acts of Exxon Shipping Company. As discussed above, this type of liability is normally reserved for civil actions, based upon either actions as an “owner or operator” or through piercing the corporate veil when the subsidiary acts as an alter ego of the parent. However, it appears that there is at least potential for the courts to allow criminal liability to attach to the corporate parent for the violations of its subsidiary.

It is also important to note that it has been held proper to consider the financial condition of the parent corporation in evaluating the economic impact of the CWA penalty imposed due to the actions of the subsidiary. In *United States v. Municipal Authority of Union Township*,<sup>766</sup> the financial statements of the parent were analyzed to ensure that the penalty assessed would not be set at a level above the subsidiary's ability to pay.<sup>767</sup> The subsidiary did not retain its revenues.<sup>768</sup> Instead, it forwarded them to the parent company, which made the finances of that entity especially relevant.<sup>769</sup> Furthermore, the court noted the distinction between examining the parent's financial condition and actually piercing the corporate veil, as the subsidiary was the only entity penalized.<sup>770</sup>

b. Individual Liability: The Responsible Corporate Officer Doctrine

The common law has not generally held officers, directors, and employees individually liable for the wrongful acts of the corporation.<sup>771</sup> Various federal environmental statutes including the CWA have, however, increased the instances in which officers, directors, and employees may themselves be penalized for violations.<sup>772</sup> The relevant federal environmental statutes provide descriptive terms that specify upon which individual liability may be imposed.<sup>773</sup> Those terms include "person," "person in charge," or "owner or operators."<sup>774</sup>

The responsible corporate officer doctrine<sup>775</sup> has been employed to impose federal environmental statutory liability in the criminal context. Three essential elements are required before this doctrine may be invoked: first, the individual must be in a position of responsibility, able to influence corporate affairs; second, there must be a link between the individual's corporate position and the CWA violation so that the individual could have influenced the corporation's actions leading to the violation; and third, the individual's actions or inactions must facilitate the

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766. 929 F. Supp. 800 (M.D. Pa. 1996), *aff'd*, 150 F.3d 259, 268 (3rd Cir. 1998).

767. *See id.* at 805-06.

768. *See id.* at 805.

769. *See id.*

770. *See id.*

771. *See Martin, supra* note 717, at 689.

772. *See id.*

773. *See id.* at 691-92.

774. *Id.* at 691.

775. The responsible corporate officer doctrine was first introduced in *United States v. Dotterwich*, 320 U.S. 277 (1943).



violation.<sup>776</sup> The doctrine contravenes general agency law which prohibits individual or personal liability of an agent of a corporation when the agent is acting on behalf of the corporation. Even using the doctrine, mere knowledge of a violation of an environmental statute has been held insufficient to impose personal liability.<sup>777</sup> The officer must be shown to have been "actively involved" in the alleged violation.<sup>778</sup>

Two of the state environmental statutory decisions that have addressed this doctrine have reached different results. In *RLG, Inc.*,<sup>779</sup> the Indiana Court of Appeals addressed whether an individual that was the sole officer and shareholder of a company operating a landfill could be held personally liable under certain state environmental statutes.<sup>780</sup> The Indiana Department of Environmental Management had sought civil penalties under a state environmental statute against both the officer and corporation.<sup>781</sup> The court held that the state did not present evidence to establish a nexus between the officer and the violations.<sup>782</sup> The argument that the "responsible corporate officer" should be imposed was rejected.<sup>783</sup>

A different result was reached in *Washington Dept. of Ecology v. Lundgren*,<sup>784</sup> which represents a state appellate decision imposing liability upon an individual for state statutory water pollution control violations. The Washington Court of Appeals found that a corporate officer of a private sewage treatment facility was personally liable for state statutory violations because it was established that he "controlled" the facility.<sup>785</sup> He was held to be a responsible corporate officer.<sup>786</sup>

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776. See *Commissioner, Ind. Dep't of Env'tl. Management v. RLG, Inc.*, 735 N.E.2d 290, 297 (Ind. Ct. App. 2000).

777. See *id.* at 298.

778. See *id.* In fact, the government must show that the officer actually directed, ordered, ratified, approved, or consented to the improper disposal. See *id.*

779. 735 N.E.2d 290 (Ind. Ct. App. 2000).

780. See *RLG, Inc.*, 735 N.E.2d at 293.

781. See *id.*

782. See *id.* at 299. In other words, the decision suggests that the officer must have had some personal involvement in the relevant activity. The absence of such involvement by this individual is interesting since the individual was the only corporate officer and shareholder. The opinion does not supply the facts necessary to understand the role of the officer.

783. See *id.* at 298-99.

784. 971 P.2d 948 (Wash. Ct. App. 1999).

785. See *id.* at 953.

786. See *id.* See also *People ex rel. James E. Ryan v. Bishop*, 735 N.E.2d 754 (Ill. Ct. App. 2000) (holding individual liable for penalty assessment involving landfill violations).

c. Service Companies/Contractors

EPA has on occasion targeted service entities or contractors in CWA enforcement actions. An example is an EPA section 404 CWA enforcement action referenced in a consent agreement styled *In re Pollack* ("RPS").<sup>787</sup> EPA alleged in the RPS consent agreement that jurisdictional wetlands were filled without acquiring the required 404 permit during the construction of a house.<sup>788</sup> A subsequent CWA action sought penalties from the property owner. However, EPA also targeted other parties who were allegedly involved to some degree in the design or construction activity. Those parties included an architect,<sup>789</sup> contractor,<sup>790</sup> and excavator.<sup>791</sup> The consent agreement alleges each of the three parties "exercised responsibility, authority or control over performance of the work and/or directly performed the work resulting in the discharge of pollutants."<sup>792</sup> Each of the three parties agreed to pay a penalty.<sup>793</sup>

d. Asset/Stock Purchase Liability

Companies or facilities are often cited for multiple violations allegedly occurring over a period of months or years. A company cited for such alleged violations may not have owned the plant when some or all of the violations allegedly occurred. Is the new owner of the company

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787. No. CWA-8-2000-12, 2000 EPA Consent LEXIS 174 (EPA July 11, 2000).

788. See *id.* at \*4; see also 33 U.S.C. § 404 (1994).

789. The RPS consent agreement stated in paragraph 5:

Roger Strout of RPS architects was the local architect hired by Ms. Pollak to plan and design the Pollak residence. Mr. Strout acted as Ms. Pollak's agent in obtaining local building permits and overseeing construction on her behalf. As part of his general duties, Mr. Strout signed the building permit application which disclosed the requirement for corps permits if the project in question is in a wetland. The building permit application stated that it is the responsibility of the builder to ensure compliance with corps requirements.

See *RPS*, 2000 EPA Consent LEXIS 174 at \*\*2-3.

790. The RPS consent agreement stated: "Goddard Construction, Inc., was hired by Ms. Pollak as the General Contractor for construction of the Pollak residence. Goddard Construction, Inc., is a Wyoming corporation . . . . Goddard performed a portion of the earth work and subcontracted the rest to Schupman Excavation, Inc." *Id.* at \*3.

791. The RPS consent agreement stated in "Note 1" of paragraph 6: "[O]n April 6, 2000, the EPA and Schupman Excavation, Inc., filed a Consent Agreement wherein Schupman Excavation, Inc., agreed to pay a cash penalty of \$20,000 for its role in the CWA violations associated with the construction of the Pollak residence." *Id.*

792. See *id.* at \*4.

793. See *id.* at \*2 n.1, \*7.

or facility liable for the CWA violations that allegedly occurred prior to the acquisition? Does it make any difference whether the facility was acquired through the purchase of stock or assets?

### 1. *Asset*

An asset purchaser generally does not acquire the liabilities of the company that sold the assets. Therefore, an acquisition may be structured as an asset purchase at least in part to attempt to minimize potential environmental liabilities.<sup>794</sup> There are four commonly accepted exceptions to this principle: (1) the parties agree to that effect; (2) the transaction amounts to a de facto merger; (3) the transaction is fraudulently entered into to escape liability; or (4) the purchasing company is merely a continuation of the business enterprise of the seller.<sup>795</sup>

The likelihood of a company being held liable for CWA violations that occurred at a facility it purchased prior to the transfer is uncertain. Agency enforcement personnel and the courts will analyze the details of both the transaction and the purchaser's subsequent operation of the facility.<sup>796</sup>

### 2. *Stock*

A purchaser that acquires a company or facility by transfer of stock<sup>797</sup> as opposed to assets is likely to assume the predecessor's liabilities and obligations.<sup>798</sup>

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794. See Charles P. Efflandt, *When the Tail Wags the Dog: Environmental Considerations and Strategies in Business Acquisitions, Sales and Merger Transactions*, 39 WASHBURN L.J. 28, 36 (1999).

795. See *id.* at 37; see also *In re Heating Oil Partners, L.P.*, No. CWA-III-199, 1998 EPA ALJ LEXIS 81 at \*7 (1998); *In re Gold Crest Chemical Corp.*, No. EPCRA-III-0160, 1992 EPA ALJ LEXIS 676, at \*\*9-10 (1992).

796. See *United States v. Gulf States Steel, Inc.*, 154 F. Supp. 2d 1233, 1237 (N.D. Ala. 1999) (referencing government "doubts" as to whether asset transfer is "bonafide" and should therefore shield subsequent purchaser of steel mill from pre-transfer violations).

797. The same principles are also applicable to both a merger and consolidation. See Efflandt, *supra* note 794, at 36. This means the purchaser will likely assume responsibility for facility environmental statutory/regulatory that occurred prior to the acquisition, and a facility's CWA compliance history can therefore constitute a material issue for a potential purchaser.

798. See *id.*

#### 4. *Concurrent Federal/State Jurisdiction*

##### a. State Enforcement

State agencies are encouraged to develop their own CWA enforcement programs.<sup>799</sup> Once EPA determines a state's enforcement procedures are adequate, it may delegate such authority to the appropriate agency.<sup>800</sup> If the state agency fails to maintain the requisites as set forth by the CWA, EPA is empowered to revoke the program.<sup>801</sup> Revocation of a state-administered program is an unlikely response in most instances. The EPA resources that would be diverted would probably make the assumption of a state program an unwelcome prospect.<sup>802</sup>

##### b. Governmental Enforcement Overlap

An NPDES permittee is potentially subject to both federal and state enforcement actions. A federal CWA action filed against a facility that is already the subject of delegated state's enforcement is often denominated overfiling.<sup>803</sup> The federal government may choose to file an enforcement action in a delegated state if it believes a violation has not

799. The state can develop their own inspection program. The section 308 provisions are simply a floor. Section 308(c) notes:

If the Administrator finds that the procedures and the law of any State relating to inspection, monitoring, and entry are applicable to at least the same extent as those required by this section, such State is authorized to apply and enforce its procedures for inspection, monitoring, and entry with respect to point sources located in such State (except with respect to point sources owned or operated by the United States).

33 U.S.C. § 1318(c) (1994).

800. *See id.* The state must have in place the authorities "[t]o abate violations of the permit on the permit program, including civil and criminal penalties and other ways and means of enforcement . . ." 33 U.S.C. § 1342(b)(7) (1994).

801. *See* Victor B. Flatt, *A Dirty River Runs Through It (The Failure of Enforcement in the Clean Water Act)*, 25 B.C. ENVTL. AFF. L. REV. 1 (1997).

802. *See id.* at 16. *See generally* U.S. PUBLIC INTEREST, *supra* note 641.

803. *See* Ellen R. Zahren, Comment, *Overfiling Under Federalism: Federal Nipping at State Heels to Protect the Environment*, 49 EMORY L.J. 373 (2000); Derek A. Yeo & Roy A. Hoagland, *United States v. Smithfield: A Paradigmatic Example of Lax Enforcement of the Clean Water Act by the Commonwealth of Virginia*, 23 WM. & MARY ENVTL. L. & POL'Y REV. 513 (1999); Calvo, *supra* note 73, at 412 (describing overfiling as "when the EPA either steps into fix, change, undo, or add to what a state has already done or takes action after a state has failed to act"). A discussion of overfiling under the RCRA, CWA, and CAA is found in Jerry Organ, *Environmental Federalism Part I: The History of Overfiling Under RCRA, the CWA, and the CAA Prior to Harmon, Smithfield, and CLEAN*, 30 ENVTL. L. REP. 10615 (2000).

been adequately addressed.<sup>804</sup> There is some belief that overfiling in the CWA and other programs has increased in recent years.<sup>805</sup> A contrary view is that overfilings remain rare.<sup>806</sup>

A 1999 United States Court of Appeals for the Eighth Circuit decision examined overfiling in the context of the Resource Conservation and Recovery Act ("RCRA").<sup>807</sup> In *Harmon Industries, Inc. v. Browner*,<sup>808</sup> the court found that under RCRA a state authorized enforcement program operates "in lieu of" the federal government's enforcement authority.<sup>809</sup> The EPA had filed a RCRA action for civil penalties against Harmon Industries, Inc. ("Harmon") after the company and the Missouri state agency had already reached a settlement agreement.<sup>810</sup> The agreement with the Missouri state agency had been approved by a Missouri state court.<sup>811</sup>

The Eighth Circuit affirmed the federal district court's grant of summary judgment for Harmon. The court reasoned that RCRA grants the states the right to act "in lieu of" the EPA. Therefore, the court held the federal agency could not overfile since the state is authorized to administer and enforce the RCRA program. The court also found that the Missouri requirements for claim preclusion were satisfied.<sup>812</sup> The court found that the EPA's right to revoke the state's authority to administer and enforce the statute is the federal agency's remedy, as opposed to a separate later action.<sup>813</sup> It therefore concluded that RCRA prohibited an overfiling under this set of facts.<sup>814</sup> The decision has been the subject of significant comment.<sup>815</sup> One view is that *Harmon* could impede EPA

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804. See John H. Cushman, Jr., *Virginia Seen as Undercutting U.S. Environmental Rules*, NY TIMES, Jan. 19, 1997, at 22 (referencing EPA CWA enforcement action against facility that had already entered into consent order with State of Virginia).

805. See Scott R. Disnukes & Terry L. Schnell, *Are You Prepared If EPA Demands an Inspection of Your Plant?*, HYDROCARBON PROCESSING, Aug. 1, 1999, at 105 (stating that "since 1997, EPA has shown an increased willingness to overfile in delegated states, apparently in response to a perceived inadequacy in state enforcement efforts").

806. See Robert Worth, *Asleep on the Bent*, WASHINGTON MONTHLY, Nov. 1, 1999, at 36 (stating that overfiling only happens a few times a year); Forcade & Anderson, *supra* note 636, at 11032 ("overfiling has been an extremely rare event"); Calvo, *supra* note 73, at 412 (suggesting "half-dozen involve overfiling" annually).

807. See *Harmon Indust., Inc. v. Browner*, 191 F.3d 894 (8th Cir. 1999).

808. 191 F.3d 894 (8th Cir. 1999).

809. See *id.* at 904.

810. See *id.* at 897.

811. See *id.*

812. See *id.* at 902-04.

813. See *id.* at 899-900.

814. See *Harmon Indust.*, 191 F.3d at 902.

815. See generally Worth, *supra* note 805.

enforcement in states failing to address serious environmental violations.<sup>816</sup>

A key question is whether the rationale for the *Harmon* decision will affect the functionality of the current federal-state enforcement relationship under the CWA.<sup>817</sup> The relevant language of RCRA and the CWA are different.<sup>818</sup> The RCRA statute specifically provides that a state program is to act “in lieu of” the federal program, whereas the CWA enforcement provisions do not contain such language. Section 309(a)(1) of the CWA provides that an authorized state agency is to have primary enforcement powers, making the EPA’s enforcement authority secondary and contingent upon the state’s failure to initiate the appropriate enforcement action.<sup>819</sup> Unlike RCRA, the CWA states that “nothing in this section shall be construed to limit the authority of the Administrator to take action pursuant to Section 1319 of this title.”<sup>820</sup> The future of the current federal-state enforcement overlap under the CWA depends on whether its statutory structure is viewed as equivalent to the language of RCRA. Consequently, it is unclear whether the rationale of *Harmon* will apply to CWA overfilings.<sup>821</sup> Regardless, there will certainly be attempts to apply the *Harmon* rationale to CWA EPA overfilings.<sup>822</sup>

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816. *See id.* Note, however, that it is unclear whether *Harmon* will be followed in other jurisdictions in similar RCRA enforcement scenarios. *See, e.g.,* United States v. Power Eng’g Co., 125 F. Supp. 2d 1050 (D. Colo. 2000) (court declined to follow *Harmon* and held federal RCRA enforcement proceeding against facility was proper despite prior state action); *In re Bil-Dry Corp.*, 2001 EPA App. LEXIS 1 (2001) (EPA RCRA action could proceed because scenario was different than *Harmon* and did not involve overfiling).

817. A 1999 article noted “Kansas City lawyer, Terry Satterlee, who represented *Harmon* in the litigation, said some lawyers are speculating whether the case might also affect the way EPA enforces its federal clean-air and clean-water laws. ‘But that is yet to be determined,’ Satterlee said.” Michael Mansur, *Court Bars EPA from Acting Against Blue Springs, Mo.-Based Manufacturer*, KANSAS CITY STAR, Sept. 21, 1999, at B1. The potential effect of *Harmon* on similar issues in the CWA context are addressed in Calvo, *supra* note 73.

818. *See* Zahren, *supra* note 802, at 404 (noting that the CWA does not contain the RCRA “in lieu of” and “same force and effect” language).

819. *See* 33 U.S.C. § 1309(a)(1) (1994).

820. *See* Calvo, *supra* note 73, at 403.

821. *See generally* Zahren, *supra* note 802, at 403. The same question will arise in Clean Air Act scenarios. *See, e.g.,* United States Steel v. LTV Steel Co., 116 F. Supp. 2d 624 (W.D. Pa. 2000) (holding that a facility’s settlement with a local air authority did not preclude a subsequent federal CAA enforcement action).

822. *See* Forcade & Anderson, *supra* note 636, at 11032. The authors note that the defendant in a CWA and CAA citizen suit action raised a *Harmon* type issue (i.e. res judicata and privity from a prior completed state enforcement action). *See id.* (citing Citizens Legal Envtl. Action Network v. Premium Standard Farms, Inc., 2000 WL 220464 (W.D. Mo. 2000)). The authors also note the United States opposed the

The dual enforcement authorities found in the federal and state environmental statutes can generate other potential conflicts. For example, the criminal component of these statutes can pose a potential constitutional problem. Specifically, does the double jeopardy provision of the Fifth Amendment of the United States Constitution<sup>823</sup> prohibit a state statutory criminal action against a facility that has already been subject to a similar federal action?<sup>824</sup> A similar issue potentially arises if the timing of the federal and state actions are reversed.<sup>825</sup> The application of the double jeopardy provision to such actions may be permitted by the “dual sovereignty exception.”<sup>826</sup> However, at least one commentator argues the exception is inapplicable because the source of the authority for federal and state actions is the same.<sup>827</sup> The argument is that the authority to undertake both actions is derived from the federal statute.<sup>828</sup> This exception applies where the actions involve “two sovereigns, drawing power from different sources.”<sup>829</sup>

### c. Citizen Suit Provision

Almost every federal environmental statute provides that in certain circumstances a non-governmental entity or person may bring an action in federal district court seeking various remedies against a violator.<sup>830</sup> The

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motion. *See id.* The challenge to EPA overfilings has not been limited to the judiciary. Some states have viewed such actions as unjustified interference. *See Calvo, supra* note 73, at 410. A state organization known as the “Environmental Council of the States” issued a resolution in 1998 that “calls on the EPA to consistently implement its policies and agreements with state governments that are charged with enforcing the laws.” *Id.* A scenario that is arguably the reverse of the *Harmon* decision involved a state’s attempt to undertake CWA enforcement subsequent to a federal action against the same violator. *See Virginia Cannot Enforce Clean Water Act Following Federal Ruling. Company Says*, 31 ENV’T REP. 2382 (2000). The Virginia Supreme Court ruled that the Virginia Water Control Board was barred from pursuing a CWA action because it was in privity with EPA. *See State Water Control Bd. v. Smithfield Foods, Inc.*, 2001 Va. LEXIS 37 (Va. Mar. 2, 2001).

823. “. . . Nor shall any person be subject for the same offense to be twice put in jeopardy of life or limb.” U.S. CONST. amend. V.

824. This question is addressed in Katherine C. Keller, *Comment: Separate but Equal: Double Jeopardy and Environmental Enforcement Actions*, 28 ENVTL. L. 169 (1998).

825. *See id.*

826. *See id.* at 177-78.

827. *See id.* at 169.

828. *See id.*

829. *Id.* at 178 (quoting *United States v. Lanza*, 260 U.S. 377 (1922)).

830. Barton H. Thompson, Jr., *The Continuing Innovation of Citizen Enforcement*, 2000 U. ILL. L. REV. 185, 192.

primary source of citizen suit activity has traditionally been the CWA.<sup>831</sup> The CWA requirement that a facility periodically prepare discharge monitoring reports and submit the results to an agency in a publically available format eased the difficulties in proving violations.<sup>832</sup>

There is perhaps an additional reason for the disproportionately greater number of CWA citizen suits. Local and regional groups are often formed to monitor and protect a particular waterbody. Various rivers, streams, creeks,<sup>833</sup> estuaries, and bays<sup>834</sup> may be the focus of such organizations. CWA citizen suit actions may be employed by such groups to address perceived current or potential threats to the waterbody.

The CWA and other federal environmental statutes provide for two potential citizen suit causes of action.<sup>835</sup> One provision is utilized by individuals or groups to compel agency compliance with statutory duties.<sup>836</sup> Also, frequently employed is an action against an alleged violator of certain CWA provisions in which the plaintiffs ask for injunctive relief and/or monetary damages.<sup>837</sup> Citizen suit defendants that prevail in an action may be entitled to recover their attorneys fees and costs.<sup>838</sup>

Prior to the commencement of an action, the CWA requires that a citizen plaintiff give at least sixty days notice to the EPA, the state, and the alleged violator.<sup>839</sup> Some courts have dealt with the notice requirement in a liberal manner, allowing a suit to continue even though the sixty day requirement had not been met, while others strictly adhered to the notice requirement.<sup>840</sup> The United States Supreme Court addressed this issue in

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831. *See id.* at 203.

832. *See id.*

833. An example is the Tobyhanna Conservation Association which is dedicated to preserving and protecting the Tobyhanna Creek watershed in Pennsylvania. *See Tobyhanna Conservation Ass'n v. Country Place Waste Treatment Facility*, 769 F. Supp. 739, 741 (M.D. Pa. 1991).

834. An example is the San Francisco Baykeeper organization which was formed to address threats to San Francisco Bay. Telephone Interview with Hank Bates, McMath Law Firm, in Little Rock, Ark. (Dec. 12, 2000). Mr. Bates served as an associate attorney with the Earth Justice Legal Defense Fund (formerly the Sierra Club Legal Defense Fund) from 1995 to 1997.

835. Wright & Henry, *supra* note 156, at 328.

836. *See* 33 U.S.C. § 1365(a)(2) (1994).

837. *See id.* § 1365(a)(1).

838. *See id.* § 1365(d).

839. *See id.* § 1365(b)(1)(A).

840. *See* DAVID SIVE & FRANK FRIEDMAN, A PRACTICAL GUIDE TO ENVIRONMENTAL LAW 308 (1987). These cases have repeatedly held that the notice requirement itself is more crucial than the time span between notice and actual filing. *See id.*



1989. The Court expressly held in *Hallstrom v. Tillamook County*<sup>841</sup> that where a party fails to meet the required sixty day notice period, a court must dismiss the action as barred by the terms of the statute.<sup>842</sup>

The notice must contain certain information. The regulatory language promulgated pursuant to the CWA requires that the notice contain the following:

[S]ufficient information to permit the recipient to identify the specific standard, limitation, or order which has allegedly been violated, the activity alleged to be in violation, the person or persons responsible for the alleged violation, the location of the alleged violation, the date or dates of such violation, and the full name, address, and telephone number of the person giving notice.<sup>843</sup>

The Eighth Circuit in *Washington Trout v. McCain Foods*<sup>844</sup> held that a notice that does not contain all the necessary information prevents a plaintiff from bringing a cause of action.<sup>845</sup>

Another prerequisite for a citizen suit is that it may not be commenced if the EPA or the state is diligently prosecuting an enforcement action against the alleged violator.<sup>846</sup> The issue of whether an agency is diligently prosecuting a violator has been a source of much debate in citizen suit actions.<sup>847</sup> A Texas federal district court has outlined a two-part analysis for determining whether a state or agency is diligently prosecuting a case.<sup>848</sup>

The first part of the analysis requires the court to initially determine whether an action against the alleged violator is pending in a state or federal court at the time the citizen suit was commenced.<sup>849</sup> If there is a pending action, the court must determine whether the two separate actions seek compliance with the same regulation.<sup>850</sup> If the two actions seek

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841. 493 U.S. 20 (1989).

842. See *Hallstrom*, 493 U.S. at 33 (dismissing a citizen suit brought under the Resource Conservation and Recovery Act when the plaintiff sufficiently notified the defendant but failed to notify the EPA and the State sixty days prior to filing suit).

843. 40 C.F.R. § 135.3(a).

844. 37 F.3d 1334, 1337 (8th Cir. 1994)

845. See *Washington Trout*, 37 F.3d at 1337 (dismissing an action because the notice to the landfill-compost station did not include the results of the plaintiff's odor tests).

846. Miller, *supra* note 6, at 8.

847. See *id.*

848. See *Glazer v. American Ecology Env'tl Serv. Corp.*, 894 F. Supp. 1029, 1035 (E.D. Tex. 1995) (setting forth the analysis of diligent prosecution without making a final determination of whether the state was diligently prosecuting the action).

849. See *id.*

850. See *id.* (stating that a comparison of the pleadings from the two actions would be sufficient for making this determination).

compliance with the same regulation, the court may lack jurisdiction depending upon the second part of the analysis. The second part of the analysis requires the court to determine whether the previous actions were diligently prosecuted.<sup>851</sup> The court stated that diligent prosecution by the state or the EPA is presumed and that this presumption can only be rebutted by persuasive evidence that the state's or the EPA's prosecution of the defendant could be considered dilatory, collusive, or in bad faith.<sup>852</sup> The court also stated that primary reliance must be placed on the objective evidence from the state's court file in order to resolve the issue of diligent prosecution.<sup>853</sup>

*Texans United for a Safe Economy Education Fund v. Crown Central Petroleum Corp.*<sup>854</sup> is an example of a court undertaking the first part of the above analysis. The lower court had held that an administrative proceeding was considered a court proceeding because there was substantial equivalence between the remedy the administrative body could award and the remedy that a court could award.<sup>855</sup> On appeal, the United States Court of Appeals for the Fifth Circuit reversed the district court's ruling and held that an administrative proceeding does not constitute a court proceeding for purposes of this Clean Air Act citizen suit.<sup>856</sup>

*Citizens Legal Environmental Action Network, Inc. v. Premium Standard Farms, Inc.*<sup>857</sup> examined, under the second part of the above analysis, whether two actions were diligently prosecuted. The plaintiff had sued the defendant alleging violations of the CWA and the CAA. The defendant had previously settled a CWA suit with the State.<sup>858</sup> In the settlement, the State signed a document that released the defendant from "any claims arising from facts known to the State at the time of the settlement . . . ."<sup>859</sup> In determining whether the release precluded the plaintiff's citizen suit, the court examined whether the State's action was diligently prosecuted.<sup>860</sup> The court divided the plaintiff's claims into two categories, those alleged by the State in its petition and those broadly resolved based upon any facts known to the State at the time of

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851. *See id.*

852. *See id.* at 1037.

853. *See id.*

854. 207 F.3d 789 (5th Cir. 2000).

855. *See id.* at 794.

856. *See id.* at 795.

857. No. 97-6073-CV-SJ-6, 2000 U.S. Dist. LEXIS 1990 (W.D. Mo. Feb. 23, 2000).

858. *See id.* at \*\*2-3.

859. *See id.* at \*3.

860. *See id.* at \*\*43-44.

settlement.<sup>861</sup> The court found that the State diligently prosecuted the claims in the former category. However, with regard to the claims in the latter category, the court reasoned that, because the document released the defendant from obligations that the State's suit never sought to enforce, the release's provision "evidences no prosecution at all, much less a diligent one."<sup>862</sup> Additionally, the court pointed out that the defendant may not have paid any penalties for the "purportedly 'resolved' violations."<sup>863</sup>

## b. Defenses/Excused Exceedances

Various statutory provisions, common law theories, and policies may in appropriate circumstances excuse or provide an affirmative defense in the event of an NPDES violation. A few of the defenses, policies, and theories are addressed in the following section. This list is not, however, exhaustive.<sup>864</sup>

### 1. *Standing and Mootness*

Among the many judicial restraints placed on filing a viable suit in the federal court system are the constitutional requirements of "standing" and "mootness." In order to satisfy the standing requirement, a plaintiff must show (1) it has suffered an "injury in fact" that is (a) concrete and particularized and (b) actual or imminent, not conjectural or hypothetical; (2) the injury is fairly traceable to the challenged action of the defendant; and (3) it is likely, as opposed to merely speculative, that the injury could

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861. See *id.* at \*\*46-47.

862. See *id.* at \*48.

863. See *Premium Standard Farms*, No. 97-6073-CV-SJ-6, 2000 U.S. Dist. LEXIS 1990 at \*49.

864. Examples are the doctrines of "laches" and "fair notice." See *Allen's Creek/Corett's Glen Pres. Group, Inc. v. Louis Caldera*, 88 F. Supp. 2d 77 (W.D.N.Y. 2000) (discussing potential application of laches doctrine to CWA section 404 wetland permitting issue). The use of this doctrine in environmental cases is disfavored. See *id.* at 85 (citing *Steubing v. Brinegar*, 511 F.2d 489, 495 (2d Cir. 1975)). See also *United States v. CPS Chemical Co.*, 779 F. Supp. 437 (E.D. Va. 1991) (refusing to apply laches in CWA enforcement case). Defendants have attempted to invoke this doctrine in CWA enforcement actions. See *United States v. Edison*, 108 F.3d 1336, 1342 (11th Cir. 1997) (dismissing attempt to argue that CWA definition of pollution is unconstitutional because it did not provide fair notice that discharging petroleum-based products is prohibited); *United States v. Oxford Royal Mushroom Prod., Inc.*, 487 F. Supp. 852, 854 (E.D. Pa. 1980) (finding CWA gave adequate notice that "addition of any pollutant from any discrete container or conveyance to a water of the United States is a prohibited act").

be redressed should the plaintiff prevail.<sup>865</sup> Just as standing seeks to ensure that the plaintiff has a valid case at the outset of litigation, the mootness requirement enforces the idea that there must be a case or controversy throughout the litigation. If, during the course of the plaintiff's action, it becomes obvious that there is no longer any harm to the plaintiff and that the wrongful behavior could not reasonably recur, then the case has become moot.

Defendants have used these constitutional requirements to keep some actions brought under citizen suit provisions out of federal court. The United States Supreme Court has held that citizen-suit actions were improper where the violations complained of had ceased by the time the complaints were filed.<sup>866</sup> Likewise, the Court has held that citizen suits presented no case or controversy where complaints could only aver that statutory violations resulted in ambiguous harm to an unspecified portion of a large geographical area or that the violations damaged an area that the plaintiff may someday want to use.<sup>867</sup>

In 1985, the United States Supreme Court's decision in *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Foundation, Inc.*<sup>868</sup> addressed a key CWA citizen suit issue.<sup>869</sup> The specific issue was whether past violations could support a valid cause of action under the citizen suit provision, or whether the violations must be ongoing. The defendant argued that the citizen suit could not be properly heard by the Court because it was based on past violations of the NPDES permit.<sup>870</sup> The Supreme Court reversed the decision of the United States Court of Appeals for the Fourth Circuit that had found the plaintiff's case valid and held that "citizen suits . . . may be maintained only to enjoin or otherwise abate ongoing violations."<sup>871</sup> The Court supported this decision by reasoning that the intent of the citizen suit provision was to protect the "forward-looking" interests of the plaintiff.<sup>872</sup> Therefore, the Court found that the citizen suit complaint must allege ongoing violations.<sup>873</sup>

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865. See *Friends of the Earth v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167 (2000).

866. See *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., Inc.*, 484 U.S. 49, 56-63 (1987).

867. See *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 562-67 (1992).

868. 484 U.S. 49 (1987).

869. See Brett A. Williams, *Citizen Suits and the Clean Water Act: Has Article II Become a Permanent Roadblock to Private Enforcement?*, 7 MO. ENVTL. L. & POL'Y REV. 1, 3 (1999).

870. See *Gwaltney*, 484 U.S. at 58-59.

871. See *id.* at 59.

872. See *id.*

873. See *id.* at 64.

The United States Supreme Court addressed significant citizen suit standing issues in *Steel Co. v. Citizens for a Better Environment*.<sup>874</sup> The *Steel Co.* decision represents a concerted effort by the Court to lay down a concrete approach for addressing Article III issues arising in environmental suits brought by private citizens under the federal citizen suit provisions.<sup>875</sup> The Court held that an environmental group failed to satisfy the redressability requirement of standing because the plaintiff could not show any ongoing violations as a result of the defendant's actions.<sup>876</sup> The Court also said that a private plaintiff's request for civil penalties did not satisfy the redressability requirements of standing if there were no ongoing violations, because the money damages went to the government and, therefore, provided no relief for the alleged injuries.<sup>877</sup> The *Steel Co.* decision laid down a new precedent under which a more clearly defined approach to the lingering standing issues was hammered out and by which citizen suits would subsequently be measured before the door of the federal courts would open wide.

*Steel Co.* left several questions unanswered. Defendants argued that citizen suit plaintiffs failed to meet the redressability requirements of standing, citing *Steel Co.* for the proposition that civil penalties paid to the federal government can never redress their injury for Article III purposes because the penalties are not paid to the plaintiff.<sup>878</sup> Some courts distinguished *Steel Co.* by stating that it only applied to claims alleging wholly past injuries and noting that *Gwaltney* held that a citizen suit plaintiff may seek civil penalties if there was an allegation of continuous or intermittent violations.<sup>879</sup>

Subsequently, the United States Supreme Court addressed the redressability controversy. In *Friends of the Earth v. Laidlaw Environmental Services (TOC), Inc.*,<sup>880</sup> the plaintiffs, asking the Court to award civil penalties, alleged ongoing violations of the CWA. Laidlaw, the defendant, asserted that because the plaintiffs were no longer seeking injunctive relief, their injury was not redressable because civil penalties, which are

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874. 523 U.S. 83 (1998).

875. *See id.* at 106-07.

876. *See id.* at 108-09.

877. *See id.* at 106-09.

878. *See San Francisco Baykeeper v. Vallejo Sanitation & Flood Control Dist.*, 36 F. Supp. 2d 1214, 1215 (E.D. Cal. 1999); *L.E.A.D. Group of Berks v. Exide Corp.*, No. 96-3030, 1999 U.S. Dist. LEXIS 2672 at \*47 (E.D. Pa. 1999); *Natural Resources Defense Council v. Southwest Marine, Inc.*, 39 F. Supp. 2d 1235, 1237 (S.D. Cal. 1999).

879. *See, e.g., San Francisco Baykeeper*, 36 F. Supp. 2d at 1215, *L.E.A.D.*, No. 96-3030, 1999 U.S. Dist. LEXIS 2672 at \*47; *Southwest Marine*, 39 F. Supp. 2d at 1237.

880. 528 U.S. 167 (2000).

paid to the government under a citizen suit, provide no relief to the private citizen.<sup>881</sup> However, the Court found that the imposition of civil penalties adequately redressed the plaintiffs' injuries in the sense that the monetary fine encouraged the defendant to discontinue the violations and deterred it from committing future infractions.<sup>882</sup>

*Friends of the Earth* was distinguished from *Steel Co.* because it involved a plaintiffs' standing to seek penalties for violations that presented current threats of harm.<sup>883</sup> The Court held that private plaintiffs had standing to file a citizen suit and seek money damages where the violations were ongoing at the time of the complaint and may continue into the future if undeterred.<sup>884</sup>

Laidlaw also argued that the plaintiffs had demonstrated no injury in fact in light of the district court's finding that no proof of harm to the environment could be shown to have resulted from its discharge violations.<sup>885</sup> However, the Court stated that the injury relevant for purposes of constitutional standing was not a demonstrable injury to the environment but an injury to the plaintiff.<sup>886</sup> While acknowledging the plaintiff's had only expressed "reasonable concerns" regarding Laidlaw's permit violations, the Court nevertheless held they directly affected the aesthetic, recreational, and economic enjoyment of the area, which was sufficient to establish adequate injury in fact for environmental plaintiffs.<sup>887</sup>

The *Steel Co.* decision has also been cited for the proposition that, once injunctive and declaratory relief were addressed, a plaintiff's request for civil penalties under the citizen suit provision became moot. A few courts have addressed this argument.<sup>888</sup> For example, the Fourth Circuit in *Friends of the Earth* held that Laidlaw's actions, which brought its facility into compliance after the commencement of citizen suit litigation, combined with the plaintiff's failure to appeal the district court's denial of injunctive relief, rendered the civil penalty claim moot.<sup>889</sup> Other courts have held that the sole request for penalties does not cause a citizen suit

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881. See *id.* at 185.

882. See *id.* at 185-86; see also *Texans United for a Safe Econ. Educ. Fund v. Crown Central Petroleum Corp.*, 207 F.3d 789, 794 (5th Cir. 2000) (citing *Friends of the Earth* in support of its ruling that civil penalties adequately redress a plaintiff's injuries).

883. See *Friends of the Earth*, 528 U.S. at 187-88.

884. See *id.*

885. See *id.* at 181.

886. See *Friends of the Earth*, 528 U.S. at 181.

887. See *id.* at 183.

888. See *Manuel Anderson v. Farmland Indus., Inc.*, 70 F. Supp. 2d 1218 (D. Kan. 1999).

889. See *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 149 F.3d 303, 306-07 (4th Cir. 1998), *rev'd*, 528 U.S. 167 (2000).

to become moot where the plaintiff claims continuing violations that contribute to the alleged injuries.<sup>890</sup> These courts reasoned that money damages distributed to the United States Treasury were sufficient to deter ongoing and continuous violations causing harm to the plaintiff such that it would have the equivalent concrete effect of an injunction.<sup>891</sup> *Friends of the Earth* presented the Court with the factual situation in which to address this confusion.

On appeal from the Fourth Circuit's ruling, Laidlaw asserted that either its substantial compliance with permit limitations pursuant to the action brought by the state agency or its subsequent complete shutdown of the facility supported a finding that the case had become moot.<sup>892</sup> The Court, however, stated that "a defendant's voluntary cessation of a challenged practice does not deprive a federal court of its power to determine the legality of the practice."<sup>893</sup> The Court stated the defendant must demonstrate "that the allegedly wrongful behavior could not reasonably be expected to recur" in order to prevail on an assertion that voluntary cessation of the activity will cause the citizen suit to become moot.<sup>894</sup> The Court's determination that Laidlaw had maintained its permit led it to conclude that a viable case and controversy existed, presenting circumstances in which the defendant could engage in or resume the harmful conduct.<sup>895</sup> Furthermore, the Court held that the denial of injunctive relief did not necessarily present mootness obstacles for an environmental plaintiff, because this does not mean there is no prospect of a future violation for which civil penalties might provide deterrence.<sup>896</sup>

## 2. *Permit Shield*

Section 402(k) of the CWA protects compliant NPDES permittees from enforcement actions involving various provisions of the CWA.<sup>897</sup>

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890. See *Natural Resources Defense Council v. Southwest Marine, Inc.*, 39 F. Supp. 2d 1235 (S.D. Cal. 1999).

891. See *id.* at 1240.

892. See *Friends of the Earth*, 528 U.S. at 189.

893. See *id.* (citing *City of Mesquite v. Aladdin's Castle, Inc.*, 455 U.S. 283, 289 (1982)).

894. See *id.* (citing *United States v. Concentrated Phosphate Export Ass'n*, 393 U.S. 199, 203 (1968)).

895. See *id.* at 190.

896. See *id.* at 189. A detailed discussion of this decision is found in Daniel A. Farber, *Environmental Litigation After Laidlaw*, 30 ENVTL. L. REP. 10516 (2000).

897. See 33 U.S.C. § 1342(k) (1994). "[C]ompliance with a permit issued pursuant to [section 402] shall be deemed compliance . . . with [the CWA] . . ." *Id.*

This provision is often denominated the "shield provision." EPA has noted that the availability of the 402(k) shield is predicated on: (1) issuance of a NPDES permit; (2) compliance with all applicable application requirements; (3) satisfaction of agency information requests; and (4) satisfaction of any applicable notification requirements.<sup>898</sup> The United States Supreme Court has stated that the purpose of section 402(k) is

[T]o insulate permit holders from changes in various regulations during the period of a permit and to relieve them of having to litigate in an enforcement action the question whether their permits are sufficiently strict. In short, § 402(k) serves the purpose of giving permits finality.<sup>899</sup>

Therefore, section 402(k) shields a facility from CWA liability if the discharges remain compliant with the NPDES permit.<sup>900</sup>

EPA guidance interpreting this provision has concluded that a permit provides a shield for certain pollutants resulting from a facility's processes and waste streams discharged from specified outfalls if they were identified during the application process.<sup>901</sup> The three categories of pollutants are said to include the following: (1) those limited in the permit or which the permit, fact sheet, or administrative record explicitly identify as controlled through indicator parameters; (2) those for which the agency has not established limits or conditions but are identified in the permit application as present in facility discharges; and (3) those which are unidentified but which are constituents of waste streams or operations or processes cleanup identified during the permit application process.<sup>902</sup> EPA

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898. 40 C.F.R. §§ 122.41, 122.42 (2000). EPA addressed the CWA permit shield in a 1994 memorandum. See Memorandum from Robert Perciasepe, Assistant Administrator for Water et al. to Regional Administrators and Regional Administrators, (July 1, 1994).

899. *E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 138 n.28 (1977).

900. See *id.* This provision does not apply to toxic pollutants addressed in Section 307 of the CWA. See 33 U.S.C. § 1317(c) (1994).

901. See Perciasepe, *supra* note 896, at 2. The EPA guidance notes that the application process requires that the applicant provide various information about the presence and quantity of a number of specific pollutants in the effluent. See *id.* The section 402(k) shield is predicated on meeting all application requirements and subsequent information requests. See *id.* EPA has noted that the information in the permit application provides permit waters the information necessary to determine what pollutants are likely to be discharged in significant amounts and set appropriate permit limits. See 49 Fed. Reg. 37,988 (1984).

902. See *id.* EPA has also discussed the scope of the permit shield in the preamble accompanying a final rule in which the agency revised the NPDES application forms. See also 64 Fed. Reg. 42,440-42,442 (Aug. 4, 1999).



indicates that the more detailed the NPDES permit application/associated data, the greater the protection provided by the shield provision.<sup>903</sup>

Several judicial decisions have addressed the status of discharged pollutants which were not identified in the facility's NPDES permit. *Atlantic States Legal Foundation, Inc. v. Eastman Kodak Co.*,<sup>904</sup> rejected the contention that only pollutants listed in the permit could be legally discharged.<sup>905</sup> The court found that the discharge of pollutants not specifically identified in the permit is permissible if the appropriate reporting requirements are met and there is compliance with any subsequent limits.<sup>906</sup>

The permit shield was addressed in a different scenario in *Williams Pipeline Company v. Bayer*.<sup>907</sup> In *Williams*, a company held an NPDES permit that encompassed to some extent discharges associated with soil/groundwater hydrocarbon remediation activities.<sup>908</sup> An industry CWA citizen suit plaintiff argued in part that the remediation activities caused discharges to a swamp which were unpermitted.<sup>909</sup> The argument was premised on the fact that the NPDES permit "[r]egulates only the discharge from the swamp to outfall No. 001, not the discharges of pollutants into the swamp itself. . . ."<sup>910</sup> The defendant responded that the NPDES permit encompassed the entire remediation system<sup>911</sup>

The *Williams* court held that the activities were part of the remediation system since "its design assume[d] that water discharges into the swamp require[d] treatment."<sup>912</sup> The court noted that the state NPDES permitting authority was entitled to use its expertise in pollution control in establishing outfall locations and other permit restrictions/conditions.<sup>913</sup> Consequently, the remediation activities' compliance with the permit were held to trigger the shield provision.<sup>914</sup>

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903. See Perciasepe, *supra* note 896, at 3.

904. 12 F.3d 353 (2d Cir. 1993).

905. See *id.* at 357. This issue is also discussed in Amy E. Fortenberry, Comment, *Moving Violations: Violations of the Clean Water Act and Implications for CERCLA's Federally Permitted Release Exception*, 24 B.C. ENVTL. AFF. L. REV. 821 (1997).

906. See *Atlantic States*, 12 F.3d at 357-58. A federal district court in Maryland reached a different conclusion. See *The Piney Run Pres. Soc'y v. County Comm'rs of Carrol County, Md.*, 85 F. Supp. 2d 464 (D. Md. 2000). The alleged unpermitted parameter was effluent that exceeded a specific temperature.

907. 964 F. Supp. 1300 (S.D. Iowa 1997).

908. See *id.* at 1310.

909. See *id.* at 1325.

910. *Id.*

911. See *id.* (referencing inclusion of swamp discharges).

912. *Id.* at 1326.

913. See *Williams*, 964 F. Supp. at 1326.

914. See *id.*

### 3. *Statute of Limitations*

The CWA does not specify a limitations period for enforcement actions. As a result, the federal statutory default limitations provision for fines and penalties applies to certain CWA enforcement actions.<sup>915</sup> The statute of limitations for CWA violations has therefore been held to be five years.<sup>916</sup> This federal limitation provision applies to “actions, suits or proceedings for the enforcement of any civil fine, penalty, or forfeiture, pecuniary or otherwise.”<sup>917</sup> In *United States v. Telluride Co.*,<sup>918</sup> the Tenth Circuit determined that the limitation provision did not apply to a government CWA enforcement action seeking injunctive relief.<sup>919</sup>

The limitations period begins to run when the DMRs listing the violations are filed with the agency.<sup>920</sup> In the case of citizen suit actions, there is authority for tolling the limitations period sixty days before the filing of the complaint to accommodate the required notice period.<sup>921</sup>

### 4. *Impossibility*

A few cases have considered whether liability for an unpermitted discharge can be excused or avoided if it would have been impossible to obtain a permit. In *United States v. CPS Chemical Co.*,<sup>922</sup> the court rejected an impossibility argument in a CWA enforcement case. In a few unique scenarios, the concept of impossibility has been accepted. *Hughey v. JMS Development Corp.*<sup>923</sup> involved a situation in which land development activities clearly triggered a requirement to obtain a NPDES permit for the

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915. See 28 U.S.C. § 2462 (1994).

916. See, e.g., *United States v. Telluride Co.*, 146 F.3d 1241, 1243 (10th Cir. 1998); *Louisiana Env'tl. Action Network, Inc. v. Evan Indust., Inc.*, No. 95-3002, 1997 U.S. Dist. LEXIS 23573 (E.D. La. Sept. 30, 1997).

917. 28 U.S.C. § 2642 (1994). The limitations period is also applicable to citizen suits. See *Sierra Club v. Chevron U.S.A., Inc.*, 834 F.2d 1517, 1522, (9th Cir. 1987); *Atlantic States Legal Found. v. Al Tech Specialty Steel Corp.*, 635 F. Supp. 284, 287 (N.D.N.Y. 1986).

918. 146 F.3d 1241 (10th Cir. 1998).

919. See *id.*; see also *United States v. Banks*, 115 F.3d 916 (11th Cir. 1997). The injunctive relief sought in *Telluride* included the restoration of 45 acres of illegally filled wetlands. See *Telluride*, 146 F. Supp. at 1243.

920. See *Atlantic States Legal Found.*, 635 F. Supp. at 287; *American Canoe Ass'n v. City of Wilson Wastewater Treatment Plant*, Nos. 5:96-CV-838-BR(2), 5:97-CV-471-BR(2), 5:97-CV-665-BR(2), 1998 U.S. Dist. LEXIS 7766 at \*22 (E.D.N.C. Mar. 31, 1998).

921. See *Sierra Club*, 834 F.2d at 1524.

922. 779 F. Supp. 437 (E.D. Va. 1991).

923. 78 F.3d 1523 (11th Cir. 1996).

resulting stormwater discharges. The State of Georgia at that point in time did not have in place a viable CWA permitting mechanism for this discharge.<sup>924</sup> The court noted that a county permit (unrelated to the CWA) obtained by the developer required that various pollution control measures be undertaken and that the stormwater discharge would be minimized.<sup>925</sup> In refusing to penalize the developer, the court held:

Congress did not intend (surely could not have intended) for the zero discharge standard to apply when: (1) compliance with such a standard is factually impossible; (2) no NPDES permit covering such discharge exists; (3) the discharger was in good-faith compliance with local pollution control requirements that substantially mirrored the proposed NPDES discharge standards; and (4) the discharges were minimal. *Lex non cogit ad impossibilia*: The law does not compel the doing of impossibilities.<sup>926</sup>

*Driscoll v. Adams*<sup>927</sup> reached a different result. Stormwater was generated by the harvesting of timber and other activities associated with the development of a property.<sup>928</sup> These activities resulted in discharges that required an NPDES permit. No permit was obtained.<sup>929</sup>

The property owner in *Driscoll* argued that he did not violate the CWA because the Georgia Environmental Protection Division had not been able to issue the type of NPDES permit (i.e., a general NPDES stormwater discharge permit) that would authorize such activity.<sup>930</sup> The court noted that the defendant failed to meet the *Hughey* exception. The court cited the CWA ban on unpermitted discharges and indicated the failure to comply with the narrow safe harbor provided by *Hughey* defeats the impossibility argument.<sup>931</sup>

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924. *See id.* at 1524.

925. *See id.* at 1526.

926. *See id.* at 1530 (quoting BLACK'S LAW DICTIONARY 912 (6th ed. 1990)).

927. 181 F.3d 1285 (11th Cir. 1999).

928. *See id.* at 1287. These activities included grading roads, installation of storm pipes, building culverts, etc. *See id.*

929. *See id.*

930. *See id.*

931. *See id.* at 1289. Various groups and the Georgia Environmental Protection Division subsequently entered into a settlement agreement which apparently now provides for a general permit for construction activities generating stormwater. *See Georgians for Responsible Growth v. Reheis*, Nos. OSAH-DNR-WQ-00-04568-060-JRA, OSAH-DNR-WQ-00-04563-060-JRA, OSAH-DNR-WQ-00-04571-060-JRA, 2000 Ga. ENV LEXIS 1 (Ga. Feb. 23, 2000). *See also* Mississippi River Revival, Inc. v. Administrator, 107 F. Supp. 2d 1008 (D. Minn. 2000) (addressing *Hughey* and *Driscoll* decisions).

### 5. *Upset/Bypass*

The CWA and its implementing regulations excuse permit limit exceedances if they fall within the scope of the terms “upset” or “bypass.”<sup>932</sup> These provisions potentially provide an affirmative defense to imposition of CWA liability. However, these affirmative defenses or other provisions are narrow in scope and do not apply unless the permittee complies with certain notification/procedural requirements within specified time periods.

#### a. Upset

The CWA regulations define an “upset” as:

An exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventive maintenance, or careless improper operation.<sup>933</sup>

Permittees sometimes attempt to invoke this provision to excuse exceedances.<sup>934</sup> The upset defense has been held to not apply to exceedances of water quality-based permit limitations.<sup>935</sup> It is also inapplicable to non-compliance caused by operator error.<sup>936</sup> Improperly designed facilities and/or inadequate treatment is likewise beyond the scope of this provision.<sup>937</sup>

Permittees occasionally argue that exceedances caused by temperatures during a particular season constitute upsets. Such arguments have had limited success.<sup>938</sup> The courts have generally declined to classify such conditions as “exceptional incidents,” especially if they are recurring.<sup>939</sup> Concern has been expressed that classifying such conditions as upsets could discourage facilities from taking steps to prevent future non-

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932. 40 C.F.R. §§ 403.16, 403.17 (2000).

933. 40 C.F.R. § 122.41(n)(1) (2000).

934. *See, e.g., United States v. Gulf States Steel, Inc.*, 54 F. Supp. 2d 1233, 1246-47 (N.D. Ala. 1999).

935. 40 C.F.R. § 122.41(n)(1) (2000).

936. 40 C.F.R. § 122.41(n) (2000).

937. 40 C.F.R. § 122.41(n)(1) (2000).

938. *See, e.g., Gulf States Steel, Inc.*, 54 F. Supp. 2d at 1233; *Public Interest Research Group v. U.S. Metals Refining Co.*, 681 F. Supp. 237 (D.N.J. 1987); *Student Public Interest Research v. Jersey Central Power & Light Co.*, 642 F. Supp. 103 (D.N.J. 1986).

939. *See, e.g., Gulf Steel, Inc.*, 54 F. Supp. 2d at 1247.

compliance.<sup>940</sup> To qualify for the upset defense, the permittee must also comply with certain procedural requirements. Specifically, the incident must be reported to the agency within twenty-four hours.<sup>941</sup>

b. Bypass

A "bypass" is generally defined as the intentional diversion of wastewater from any portion of the treatment facility.<sup>942</sup> A bypass is prohibited unless:

1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
3. The permittee submitted notices as required under paragraph (m)(3) of this section.<sup>943</sup>

There has been little success in arguing that an action was a permitted bypass if it was caused by inadequate capacity.<sup>944</sup> Notice of a bypass must be provided to the appropriate agency. Failure to provide such notice can nullify the availability of the bypass provision.<sup>945</sup>

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940. See *U.S. Metals*, 681 F. Supp. at 244.

941. 40 C.F.R. § 122.41(n)(3)(iii) (2000).

942. 40 C.F.R. § 122.41(m) (2000).

943. 40 C.F.R. § 122.41(m)(4)(i) (2000).

944. See, e.g., *Hawaii's Thousand Friends v. City & County of Honolulu*, 821 F. Supp. 1368, 1342 (D. Ha. 1993) (noting that if recent plant expansion had been in place, bypasses would not have occurred at the flow levels experienced). *United States v. Mun. of Penn Hills*, 6 F. Supp. 2d 432, 437 (W.D. Pa. 1998) (stating preference for construction of flow equalization tanks as alternative to bypasses).

945. See *United States v. City of Toledo*, 867 F. Supp. 603, 609 (N.D. Ohio 1994).

### 3. *Environmental Audit/Violation Disclosure Policies*

Various types of facilities or plants undertake non-routine and/or systematic internal investigations of their operations.<sup>946</sup> A key focus of an audit or assessment may be a determination of a facility's environmental compliance status.<sup>947</sup> Identification of violations and/or adverse conditions through a voluntary audit or assessment may facilitate their correction prior to governmental or private party interest. The facility may be able to avoid some or all of the costs and/or expenses associated with a government or third-party action.<sup>948</sup>

Different risks and benefits are associated with various types of internal audits or investigations.<sup>949</sup> Issues involving confidentiality and conflict of interest (between the business and employees) must be addressed in planning or executing such investigations.<sup>950</sup> Many industries and facilities considering undertaking an environmental audit or assessment therefore recognize that these activities pose some degree of risk.

The primary concern in the environmental audit context is the possibility the information generated might be used by the government in an environmental enforcement proceeding or a common law plaintiff in a third-party action.<sup>951</sup> The audit's usefulness to these potentially adverse parties is derived from the fact that it will by definition delineate violations and/or adverse conditions. Further, an audit provides the facility owner or operator constructive or actual knowledge of violations.<sup>952</sup> Such knowledge can potentially generate criminal enforcement exposure under the CWA and other federal environmental statutes unless the violations are expeditiously corrected. In other words, the audit results (i.e., violations) are brought to the attention of the company and its management. If the non-compliance is not corrected, the argument can be made that the identified non-compliance constitutes "knowing violations." Finally, the discovery of certain conditions may trigger a self-executing statutory or regulatory reporting requirement.<sup>953</sup>

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946. See generally Martin, *supra* note 717.

947. A variety of federal and Arkansas environmental audit issues are addressed in Timothy T. Jones, Walter G. Wright, Jr. & Mary Ellen Ternes, *Environmental Compliance Audits: The Arkansas Experience*, 21 U. ARK. LITTLE ROCK L. REV. 191 (1999).

948. See *id.* at 194-195.

949. See *id.* at 197-98.

950. See *id.* at 205-09.

951. See Keith M. Casto & Tiffany Billingsly Potter, *Environmental Audits: Barriers, Opportunities and a Recommendation*, 5 HASTINGS W.-NW. J. ENVTL. L. & POL'Y, 233, 234 (1999).

952. See *id.*

953. Examples are the CERCLA requirement to notify the National Response

There is general agreement that voluntary auditing should be encouraged. Therefore, there has been interest in addressing some of the perceived disincentives to auditing. The means of doing so is the subject of debate. Both EPA and the Department of Justice have tried to some extent to address industry concerns. In 1995 EPA issued a policy titled *Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations*.<sup>954</sup> The policy's stated purpose is to encourage regulated entities to detect, disclose, and correct environmental non-compliance.<sup>955</sup> The policy provides incentives for auditing by potentially forgiving one hundred percent of the gravity-based penalties that could be assessed for the violations. Eligibility for penalty mitigation is dependent upon meeting various conditions detailed in the policy.

The practical applicability of this audit policy to potential CWA NPDES effluent limit exceedances is unclear. The impediment is Condition 2 in the policy, which disallows the use of the policy if a violation was identified because of monitoring, sampling, or auditing required by a permit, statutory, or regulatory requirement.<sup>956</sup> A facility's NPDES permit requires the identification and reporting of effluent limitations through periodic submission of DMRs. Exceedances identified by these activities may therefore violate Condition 2.<sup>957</sup>

Other NPDES permit requirements or conditions not encompassed by these reporting provisions may therefore be eligible. Also, facilities

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Center if there is a release of a reportable quantity of a hazardous substance, 42 U.S.C. §§ 9601-9626 (1994 & Supp. IV 1998), or the RCRA UST regulations requirement to report the discovery of a petroleum release to the implementing agency within 24 hours of discovery. The CERCLA reporting requirements are found at 42 U.S.C. § 9603 (1994 & Supp. IV 1998). These provisions are described at Wright & Morrissey, *supra* note 21, at 764 n.41. The RCRA UST reporting requirements are found at 40 C.F.R. § 280.10 (2000). *See also* Wright, *supra* note 241, at 417 (addressing various UST issues).

954. 60 Fed. Reg. 66,706 (1995) [hereinafter Audit Policy]. It was revised in 2000. 65 Fed. Reg. 19,618 (2000) [hereinafter Revised Audit Policy].

955. *See* Revised Audit Policy, 65 Fed. Reg. at 19,618 (April 11, 2000).

956. *See id.* at 19,621.

957. *See id.* However, facilities sometimes undertake additional sampling that is not required by a permit. *See* telephone interview with Doug Ford, P.E., Pollution Management, Inc. (Oct. 19, 2000). The reasons for such sampling might include but are not limited to verification of elimination of an exceedance or to confirm reliability of a laboratory used for compliance monitoring through split sampling. *See id.* A key question is whether such voluntary sampling results must be reported to the agency. Some agencies have taken the position that such results must be reported. *See, e.g.,* OHIO EPA, *supra* note 214. The Ohio Environmental Protection Agency stated, "[i]n all cases with no exceptions, a permittee who monitors more often than required by his permit must report the results, provided only that samples are collected, preserved, and analyzed in accordance with approved methods." *Id.* at 5.

subject to non-NPDES CWA programs have used this policy.<sup>958</sup> These non-NPDES programs have included the SPCC regulations.

## V. THE ARKANSAS WATER POLLUTION CONTROL PROGRAMS

The various Arkansas permitting programs that involve surface water represent the principal command and control mechanisms the state has developed to protect this resource. However, the state's efforts to encourage water pollution prevention are not limited to mandatory standards and controls. Non-prescriptive incentives to encourage water pollution prevention include sales tax exemptions for the acquisition of water pollution control equipment and tax credits for the creation of wetlands.

### A. Legislative History

The statutory forerunner of Arkansas' current water pollution control authorities was enacted over fifty years ago.<sup>959</sup> Prior to the Arkansas General Assembly's 1949 legislative foray into water pollution control, the Arkansas Supreme Court had recognized the state government's power of intervention to protect its citizens from water pollution. For example, almost twenty years before the first major state legislation addressing the issue,<sup>960</sup> the Arkansas Attorney General sought a permanent injunction against a gravel miner who was allegedly polluting a stream.<sup>961</sup>

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958. See, e.g., 64 Fed. Reg. 55,477 (1999) (providing public notice of settlement between U.S. West and EPA related to CWA SPCC violations in which gravity component of penalty was eliminated because of voluntary notification pursuant to Audit Policy).

959. See J.W. Looney, *Handling Administrative Proceedings Before the Arkansas Pollution Control and Ecology Department and Commission*, ARK. L. NOTES 23 (1998). One commentator has questioned whether the statutory regime has completely replaced the common law "reasonable use" right to pollute explicated in the Arkansas Supreme Court's earlier decisions. See John S. Grimes, *Lex Aquae Arkansas*, 27 ARK. L. REV. 429, 450-51 (1973). See also *Arkansas v. Dow Chemical Co.*, 981 F. Supp. 1170 (E.D. Ark. 1997) (referencing 1949 enactment of legislation now known as Arkansas Water and Air Pollution Control Act).

960. See Act of Mar. 29, 1949 Ark. Acts 472 (codified as amended at ARK. CODE ANN. §§ 8-4-101 to -409 (LEXIS 2000)). The official title of the bill was "An Act to Control, Prevent and Abate Pollution of the Streams, Lakes, Ponds, and Other Surface and Underground Waters of the State; for the Establishment of a Water Pollution Control Commission, and for Other Purposes." *Id.*

961. See *Meriwether Sand & Gravel Co. v. State ex rel. Attorney General*, 181 Ark. 216, 219, 26 S.W.2d 57, 60 (1930). The court described the situation:

The water is no longer limpid and pure, but muddy and turbid, to the extent that fish are unable to live there, and those that reach this stream from



The court held in favor of the Attorney General and the state's right to intervene on the grounds that the state's power extended beyond simply regulating the taking of fish, but included the water in which the fish lived.<sup>962</sup>

The enactment of the State Water Pollution Control Act in 1949 was Arkansas' first major pollution control effort.<sup>963</sup> This early legislation continues to influence Arkansas pollution control in the sense that it was the foundation for the general procedural framework for rulemaking, enforcement, and appeals.<sup>964</sup> The Act created the Water Pollution Control Commission ("WPCC") which was placed within the State Board of Health.<sup>965</sup> It also granted the new Commission broad powers of administration, enforcement, investigation, and regulation over water pollution within Arkansas.<sup>966</sup>

The General Assembly directed the WPCC to create new pollution standards and modify existing ones,<sup>967</sup> develop a detailed program for the reduction of water pollution,<sup>968</sup> issue requirements for the discharge of sewage, industrial, and other wastes,<sup>969</sup> and approve or deny permits for

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below must come to the surface to obtain necessary oxygen, and, after a time, sink into the water only to die and be cast upon the shore. The pools and lakes . . . discolor and coat the bodies of bathers with an unpleasant slime.

*Id.*, 26 S.W.2d at 60.

962. *See id.* at 225, 26 S.W.2d at 261. The court reasoned that "[s]uch power has been recognized from earliest times to inhere in the State . . . . 'When the unrestrained right to run a sawmill on the bank of a stream conflicts with the right of the public to have fish live and increase in the water, the right of the mill proprietor must give way to the right of the public . . . .'" *Id.*

963. *See* Looney, *supra* note 958, at 23.

964. *See* ARKANSAS ENVIRONMENTAL LAW HANDBOOK SERIES: WATER 9 (Allan Gates & Walter G. Wright, Jr. eds., 1990). The Act granted circuit courts the power to hear appeals of WPCC decisions using a *de novo* standard of review. *See* 1949 Ark. Acts 472, § 5(7). In 1984, however, the Arkansas Supreme Court ruled that the provision violated the Arkansas Constitution and that the circuit court could consider only whether the agency decision was arbitrary, capricious, or unreasonable. *See* Arkansas Comm'n on Pollution Control & Ecology v. Land Developers, Inc., 284 Ark. 179, 181, 680 S.W.2d 909, 910 (1984). "If the interests are constitutionally or statutorily preserved, or preserved by private agreement, *de novo* review is appropriate. If the interests are less than fixed and their existence primarily depends on executive or legislative wisdom, *de novo* review is inappropriate." *Id.* at 180-81, 608 S.W.2d at 910 (citations omitted). The General Assembly amended the statute to limit the circuit court's ability to review agency decisions. *See* 1985 Ark. Acts 284.

965. *See* 1949 Ark. Acts 472 § 2(a).

966. *See id.* § 3.

967. *See id.* § 3(4).

968. *See id.* § 3(5).

969. *See id.* § 3(6).

the discharge of such wastes.<sup>970</sup> The WPCC had therefore been operating a water discharge permitting program for many years prior to the ADEQ acquisition of the CWA NPDES permit program. The program required that a facility submit an application to the WPCC which would include information about facility construction/plans, project cost, the waterbody receiving the discharge, pollutants to be discharged, and planned pollution controls.<sup>971</sup>

The original WPCC was the predecessor to the modern Arkansas Pollution Control and Ecology Commission (“APCEC”), and the makeup of agency representatives serving as commission members remains relatively similar to the 1949 statute.<sup>972</sup> The substance, and in some cases the exact wording, of the broad definitional language of the Act continues today.<sup>973</sup> The foundation of the 1949 Act serves as the basis for the continued regulation of pollution discharged into virtually any water in the State.<sup>974</sup>

Only minor statutory changes were made to the WPCC during its first decade.<sup>975</sup> The first major change occurred in 1961. The legislature sought to clarify ambiguous and inadequate provisions of the Act.<sup>976</sup> In addition to reconfiguring the definitions of “pollution”<sup>977</sup> and “waters of

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970. See *id.* § 3(8). See also ARKANSAS DEPARTMENT OF POLLUTION CONTROL & ECOLOGY PROGRAM DESCRIPTION FOR PHASED APPROVAL OF FEDERAL NPDES PERMITTING PROGRAM 18 (describing goals of the 1949 legislation) [hereinafter PHASED APPROVAL].

971. See ALLIED CHEMICAL & DYE CORP., GENERAL CHEMICAL DIVISION, WPCC APPLICATION FOR PERMIT (1957).

972. Compare 1949 Ark. Acts 472 § 2 with ARK. CODE ANN. § 8-4-104 (LEXIS Repl. 2000)

973. For example, the Act continues to utilize the identical definitions for “disposal system” and “treatment works” it used in 1949. Compare 1949 Ark. Acts 472 § 1(8) with ARK. CODE ANN. § 8-4-102(2) (LEXIS Repl. 2000); 1949 Ark. Acts 472 § 1(7) with ARK. CODE ANN. § 8-4-102(9) (LEXIS Repl. 2000).

974. See ARKANSAS ENVIRONMENTAL LAW HANDBOOK SERIES: WATER 9 (Allan Gates & Walter G. Wright, Jr. eds., 1990).

975. For example, the General Assembly added a representative from the State Forestry and Parks Commission to the WPCC, which brought the total number of commissioners to eight. See 1959 Ark. Acts 232 § 1.

976. See 1961 Ark. Acts 120 § 9.

977. See *id.* § 1. The statute modified the term pollution to include the following: such contamination, of other alteration of the physical, chemical or biological properties, or any waters of the State, or such discharge of any liquid, gaseous or solid substance in any waters of the State as will or is likely to create a nuisance or render such waters harmful or detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life.

the state"<sup>978</sup> to the current statutory language,<sup>979</sup> the 1961 amendment granted the Commission the authority to require construction of new sewage disposal systems and alteration of existing systems.<sup>980</sup> The statute also authorized the Commission to set WQS<sup>981</sup> and established a general procedural and appellate framework governing the agency's administrative actions.<sup>982</sup>

During the first fifteen years of these water pollution control efforts, the growing scope of the WPCC's activities made Commission oversight of the agency staff activities increasingly difficult.<sup>983</sup> Two years later, the General Assembly began the centralization of decision-making at the WPCC by requiring the Commission to appoint a director to serve as the chief executive officer of pollution control activities within Arkansas.<sup>984</sup>

During the mid-1960s through the mid-1970s major structural changes in pollution control took place in Arkansas.<sup>985</sup> In 1965, the General Assembly undertook an overhaul of all state agencies. One result was the creation of the ADPC&E and the transfer of WPCC powers to the agency.<sup>986</sup> However, the General Assembly ensured that the WPCC and other commissions retained their statutory powers.<sup>987</sup> The 1965 overhaul also reflected the increased specialization in pollution control by dividing the Act into separate sections—one for air and one for water—and

978. *See id.* § 2. The General Assembly defined "waters of the state" to include "all streams, lakes, marshes, ponds, water courses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water." *Id.*

979. *See* ARK. CODE ANN. § 8-4-102 (LEXIS Repl. 2000).

980. *See* 1961 Ark. Acts 120 § 3. A 1992 United States Court of Claims decision makes reference to the activities of this agency in the 1960s: "[i]n the early 1960's, Van Buren's sewage collection system was very old and inadequately served the city's needs. The original system discharged raw sewage without treatment directly into the Arkansas River. The Arkansas State Water Pollution Control Commission and the Arkansas State Health Department [directed] Van Buren to stop discharging raw sewage into the river." *City of Van Buren v. United States*, No. 298-75, 1982 U.S. Cl. Ct. LEXIS 2495 (Mar. 9, 1982).

981. *See* 1961 Ark. Acts 120 § 3.

982. *See id.* § 6.

983. *See* ARKANSAS ENVIRONMENTAL LAW HANDBOOK SERIES: WATER (Allan Gates & Walter G. Wright, Jr. eds., 1990).

984. *See* 1963 Ark. Acts 503 § 1.

985. The agency continued to operate an inspection and permitting program. *See, e.g.,* Memorandum from A. De Guzman, Engineer, Division of Water Pollution Control, Arkansas Department of Pollution Control & Ecology, to Hugh G. Hannah, Division of Water Pollution Control, Arkansas Department of Pollution Control & Ecology, Wastewater Discharges of Ark-La Pineply at Gurdon, Arkansas (March 28, 1979) (discussing facility inspection report noting unpermitted discharges).

986. *See* ARKANSAS ENVIRONMENTAL LAW HANDBOOK SERIES: WATER 7 (Allan Gates & Walter G. Wright, Jr. eds., 1990).

987. *See id.*

changed the name of the Act from the State Water Pollution Control Act to the Arkansas Water and Air Pollution Control Act.<sup>988</sup> In addition, the Arkansas General Assembly gave the Soil and Water Conservation Commission a seat on the newly named Arkansas Pollution Control Commission ("APCC"), formerly the WPCC.<sup>989</sup> The authority to address water pollution was split between the ADPC&E and the APCC.<sup>990</sup> However, after the 1965 amendments, the APCC retained the authority to select the Director of the ADPC&E.<sup>991</sup> A 1973 statute nevertheless arguably decreased APCC's influence over the ADPC&E.<sup>992</sup> This statutory revision provided that the Director would be appointed by and serve at the pleasure of the Governor.<sup>993</sup>

As part of an effort to qualify Arkansas for delegation of the federal CWA NPDES program,<sup>994</sup> the General Assembly expanded the duties of the ADPC&E and segmented its increasing responsibilities into divisions.<sup>995</sup> One of the divisions created was the Division of Water Pollution Control.<sup>996</sup> The statute also removed the Chief Sanitary Engineer of the State Board of Health from the position of Technical Secretary to the Commission<sup>997</sup> and renamed the APCC the Arkansas Pollution Control and Ecology Commission ("APCEC").<sup>998</sup>

The 1973 statute mandated that the ADPC&E develop administrative procedures which would provide notice and a public hearing prior to adopting new rules.<sup>999</sup> It also granted the ADPC&E the power to implement rules and regulations regarding effluent matters, contaminant discharge monitoring, and water quality standards.<sup>1000</sup>

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988. See 1965 Ark. Acts 183, pt. 1 § 6.

989. See *id.* §§ 1, 3.

990. See ARKANSAS ENVIRONMENTAL LAW HANDBOOK SERIES: WATER 7 (Allan Gates & Walter G. Wright, Jr., eds. 1990).

991. See *id.* This provided some degree of ultimate control over agency decisions.

992. See 1973 Ark. Acts 262.

993. See *id.* § 2.

994. See *id.* §§ 1,5. See generally Martha L. Noble & J.W. Looney, *The Emerging Legal Framework for Animal Agricultural Waste Management in Arkansas*, 47 ARK. L. REV. 159, 168 (1994). The Environmental Protection Agency granted Arkansas authority to administer its own NPDES program in 1986. See *id.* (citing federal approval of Arkansas' NPDES Program).

995. See 1973 Ark. Acts 262 § 2.

996. *Id.* The other divisions included the Division of Air Pollution Control, Division of Solid Waste Management, Division of Environmental Preservation, Division of Administration, and "such other divisions as may be hereafter established." *Id.*

997. See *id.* § 3.

998. See *id.* § 2.

999. See *id.* § 4.

1000. See *id.* Specifically, the 1973 amendment provided that, among other things,

In 1975, the General Assembly again amended the Act to clarify that "wastes" and "pollutants" included "sewage, industrial waste, and other waste."<sup>1001</sup> Perhaps most significantly, the 1975 amendment granted the Director broad power in regulating effluent limitations and set the minimum standard for issuing a discharge permit at the federal standard.<sup>1002</sup> Furthermore, the amendments increased the maximum fine for violation of the Act from \$5,000 to \$10,000.<sup>1003</sup>

In 1991, the General Assembly significantly increased the criminal and civil penalties for violating state environmental laws<sup>1004</sup> and applied the Arkansas Criminal Code to violations of the Arkansas Water and Air Pollution Control Act.<sup>1005</sup> In 1995, the Environmental Variances Act granted the Director of the ADPC&E authority to issue temporary variances from the regulatory permit requirements, unless prohibited by federal law.<sup>1006</sup>

In 1997, the General Assembly further delineated the roles of the ADPC&E and the APCEC, the two governmental bodies which, through historical evolution, had become primarily responsible for surface water pollution control in Arkansas.<sup>1007</sup> The General Assembly delegated water pollution control enforcement and investigatory power to the ADPC&E and rule-making authority to APCEC.<sup>1008</sup> Finally, the 1999 statute renamed the ADPC&E the Arkansas Department of Environmental Quality ("ADEQ").<sup>1009</sup>

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the ADPC&E had the authority to:

[P]rescribe (a) effluent standards specifying the maximum amounts or concentrations, and the physical, thermal, chemical, biological, and radioactive nature of the contaminants that may be discharged into the waters of the State or into publicly owned treatment facilities; (b) requirements and standards for equipment and procedures for monitoring contaminant discharges at their sources (including publicly owned treatment facilities and industrial discharges into such facilities), the collection of samples and the collection, reporting and retention of data resulting from such monitoring; and (c) water quality standards, performance standards, and pre-treatment standards.

*Id.*

1001. 1975 Ark. Acts 743 § 2.

1002. *See id.* § 5.

1003. *See id.* § 8.

1004. *See* 1991 Ark. Acts 1057 § 3.

1005. *See id.* § 5.

1006. *See* 1995 Ark. Acts 943 § 1.

1007. *See* 1997 Ark. Acts 1219.

1008. *See id.* § 5.

1009. *See id.* § 2(a).

## B. The Key Programs

### 1. *The Arkansas NPDES Program*

#### a. Acquisition of NPDES Permitting/Enforcement Authority

Arkansas facilities had been required since the early 1970s to obtain both a federal NPDES<sup>1010</sup> and an Arkansas water permit.<sup>1011</sup> However, Arkansas obtained delegation of the CWA NPDES program in November 1986.<sup>1012</sup> Therefore, since 1986 Arkansas facilities have obtained NPDES permits from the ADEQ as opposed to EPA.

In November 2000, the ADEQ issued a draft Strategic Plan identifying various guiding principles, goals, objectives, and strategies for the next ten years.<sup>1013</sup> The Strategic Plan noted that the agency's efforts in the past have focused on controlling point sources.<sup>1014</sup> Nevertheless, the agency believes that point source pollution control does not address the majority of water quality impacts in Arkansas.<sup>1015</sup> Therefore, ADEQ stated in the draft Strategic Plan that it will work with communities to address the more complex and diffuse effluent sources such as waste management practices, along with urban and agricultural run-off.<sup>1016</sup>

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1010. The EPA Region 6 office in Dallas, Texas issued NPDES permits.

1011. See Letter to Dwight L. Fincher, Lectra Circuit, Inc., from Frank J. Stephens, Inspection Engineer, ADPC&E (June 14, 1984) (stating "[w]astewater discharges from manufacturing facilities to streams are governed by both Arkansas and federal laws and regulations").

1012. See 51 Fed. Reg. 44,518 (1986). Arkansas had to develop various program elements to obtain delegation. A key hurdle was acquisition of sufficient funding to add the staff necessary to operate a delegated program. See *id.* The development of these program elements is described in PHASED APPROVAL, *supra* note 969. The state's commitment to implement and maintain the program elements necessary to operate a NPDES permitting program were documented in a Memorandum of Agreement ("MOA") entered into with EPA. See Memorandum of Agreement Between the Arkansas Department of Pollution Control & Ecology and the United States Environmental Protection Agency, Region VI Concerning Approval of the National Pollutant Discharge Elimination System Program (1986) [hereinafter MOA]. EPA/State MOAs are discussed in Calvo, *supra* note 73, at 175-76. A CWA MOA executed with EPA was discussed in *Ohio Valley Environmental Coalition v. Miano*, 66 F. Supp. 2d 805 (S.D. W. Va. 1998). The ADEQ issues NPDES permits pursuant to the authority of the Arkansas Water and Air Pollution Control Act.

1013. Strategic Plan, *supra* note 35, at 1.

1014. The Strategic Plan notes that ADEQ will work to refine and optimize the point source control program. See *id.*

1015. See *id.*

1016. See *id.*

The draft Strategic Plan identifies three objectives that are relevant to ADEQ's CWA programs. Those objectives include:

1. Ninety percent of assessed surface water in Arkansas will meet WQS for all beneficial uses by 2010;
2. Issue all required Water Quality Management Plans by 2010; and
3. Develop voluntary watershed management systems for all impaired rivers and streams by 2010 to support the TMDL implementation program.<sup>1017</sup>

EPA Region 6 personnel have characterized their post-CWA delegation relationship with Arkansas as one of oversight and review.<sup>1018</sup> This role is defined by both the MOA the regional EPA office executed with Arkansas and the CWA regulations addressing permit oversight and review.<sup>1019</sup>

#### b. Incorporation of Federal NPDES Permit Provisions

A substantial portion of the substantive and procedural framework for the Arkansas NPDES permit program is found in ADEQ Regulation No. 6. The regulation incorporates by reference<sup>1020</sup> the majority of the federal

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1017. *See id.* at 15-16.

1018. *See* Letter from Renea Ryland, Assistant Regional Counsel, United States Environmental Protection Agency, Region 6, to Ellen Carpenter, Attorney, Legal Division, ADEQ (Oct. 4, 2000) (noting that after Arkansas' acquisition of NPDES program in 1986, EPA's role in the permitting process has largely become "one of oversight and review") [hereinafter Region 6 Letter] (on file with author).

1019. *See id.* The applicable CWA regulations are found at 40 C.F.R. § 123 (2000). This oversight review includes the requirement that ADEQ provide EPA Region 6 a copy of each draft permit it prepares. The EPA permit oversight regulations contemplate the review of "proposed" permits. *See* MOA, *supra* note 1011, § II.B.7, *cited in* Region 6 Letter, *supra* note 1017. In 2000, Arkansas State Representative Jim Milum submitted a series of questions to Arkansas Attorney General Mark Pryor concerning the authority of EPA to regulate activities such as wastewater discharges in the state of Arkansas. *See* Ark. Att'y Gen. Op. No. 1999-441, 2000 Ark. AG LEXIS 90 (Feb. 28, 2000). The Arkansas Attorney General's opinion outlined the constitutional and federal statutory basis for EPA regulation of such activities on privately owned property.

1020. The federal regulations are specifically incorporated by reference as opposed to being cited as guidance. A rule or regulation will not constitute a reference regulation unless words manifesting such intent are used. *See* Land v. Arkansas Dept. of Health, 282 Ark. 191, 193, 667 S.W.2d. 651, 653 (1984) (addressing argument that Arkansas Department of Health should not have approved water intake system because alleged violated standard is identified in regulation as "guide").

NPDES regulatory provisions. Consequently, the Arkansas NPDES regulatory provisions track to a great extent the federal program. Regardless, the state's operation of the CWA program places it in the position of addressing interpretational questions<sup>1021</sup> or making policy decisions<sup>1022</sup> that inevitably arise on a periodic basis.

c. Arkansas NPDES Permit Procedures/Contents

The construction and operation of an activity and/or process subject to the NPDES program requires the issuance of a two-part permit.<sup>1023</sup> One permit authorizes the construction of the regulated machinery or equipment. The other permit authorizes the discharge from the process and/or activity.<sup>1024</sup> This document is the NPDES permit.<sup>1025</sup> Both permit applications are typically submitted simultaneously.<sup>1026</sup>

The ADEQ NPDES permit applications are identical to those developed by EPA.<sup>1027</sup> The information in the application is used by the

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1021. For example, ADEQ answered a facility's query as to whether a particular activity constitutes a "point source" discharge. *See* Letter from Jim Ross, Eastman Chemical Company, to Mark Bradley, ADPC&E (discussing discharge from traveling screens at river water pump station) (Dec. 13, 1995) (on file with author). A Batesville, Arkansas chemical processing facility asked the Arkansas agency to agree with its conclusion that screens used to remove debris from White River water prior to being pumped into plant pump wells were not subject to NPDES permitting requirements. *See id.* The facility noted that a high pressure spray was used to dislodge captured debris which then re-entered the river through a 12-inch pipe 100 feet downstream of the intake structure. *See id.* The ADPC&E confirmed that the activity did not require an NPDES permit. *See* Letter from Mark Bradley, Engineering Supervisor, ADPC&E, to Jim Ross, Eastman Chemical Company (Dec. 27, 1995) (on file with author). *See also In re* North Little Rock Wastewater Utility, Permit Appeal Resolution, Docket No. 99-012-P (Oct. 17, 1999) (discussing ADEQ and municipality agreement that a "waste stabilization pond" constitutes secondary treatment under 40 C.F.R. § 133.103(c)).

1022. For example, ADEQ stated in 1993 correspondence that it "discouraged" the use of a copper sulfate as an algicide because of its belief that it posed potential toxicity in receiving streams. *See* Letter from Carrie McWilliams, Staff Engineer, Water Division, ADEQ, to Mike Luers, Pine Bluff Wastewater Utility (Oct. 20, 1993) (on file with author).

1023. *See id.*

1024. *See id.*

1025. *See id.*

1026. *See id.* If the application is for a permit renewal, it must be submitted in suitable form prior to expiration of existing permit to maintain compliance. *See* Letter from Mostafa Mehran, Water Division, ADPC&E, to Roger Q. Mills, City of Conway (Jan. 4, 1996) (describing deficiencies in application that must be resolved to continue expiring permit) (on file with author).

1027. The forms are available from the Water Division portion of the ADEQ website at [http://www.adeq.state.ar.us/water/npdes/npdes\\_dat.htm](http://www.adeq.state.ar.us/water/npdes/npdes_dat.htm). The CWA regulations addressing permitting procedures were a part of a recently issued final rule that



ADEQ to determine appropriate limits, conditions, etc.<sup>1028</sup> The facility may begin construction prior to the issuance of the NPDES permit under the authority of a state construction permit.<sup>1029</sup> However, the facility may not discharge until the NPDES permit is issued.<sup>1030</sup>

The Director is in theory the senior employee at ADEQ that determines whether an NPDES permit will be issued and the limits/conditions it will contain. However, the ADEQ Director typically delegates authority for signing a permit to the appropriate division chief.<sup>1031</sup> The Chief of the Water Division is the ADEQ employee responsible for issuing NPDES permits.<sup>1032</sup>

### 1. *Effluent Limits*

A permit may contain a condition requiring that a facility monitor a parameter and provide ADEQ the results for a period of time in lieu of an effluent limit.<sup>1033</sup>

### 2. *Other Conditions*

A permit will include conditions or requirements in addition to effluent limits. The following discussion identifies a few examples.

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streamlined various NPDES provisions. See 65 Fed. Reg. 30,886 (2000) (to be codified at 40 C.F.R. pts. 117, 122-125, 144, 270-271). Consolidated permit application forms were published by EPA on May 19, 1980. See 45 Fed. Reg. 33,516 (1980) (codified at 40 C.F.R. pts 122-125).

1028. For example, see Letter from Mostafa Mehran, Water Division, ADPC&E, to Roger Q. Mills, City of Conway (Jan. 16, 1997) (explaining that during permit renewal process, ADPC&E suggests that POTW retest treated effluent because high concentration of zinc was noted in priority pollutant scan submitted with application for permit renewal).

1029. See *id.*

1030. See 33 U.S.C. § 1311(a) (1994).

1031. See *In re* United States Dept. of the Army Pine Bluff Arsenal, Arkansas Pollution Control & Ecology Commission, Docket No. 99-002-P, Recommended Decision, Order No. 16, § K, ¶ 115 (May 8, 2000).

1032. See, e.g., City of North Little Rock Wastewater Utility NPDES Permit No. AR0038288 (Aug. 31, 1999).

1033. See *In re* City of Malvern Water Works, No. 96-005-P, Arkansas Pollution Control & Ecology Commission, Order No. 6 (Sept. 11, 1996) (referencing Malvern POTW permit condition requiring facility to monitor and report fecal coliform bacteria numbers).

a. Point Source/Outfalls

A facility may have multiple outfalls or point sources. One or more outfalls may serve a single process unit, multiple units, or one or more treatment facilities. The permit will identify these discharge points.

b. Flow

The permit application will initially seek information regarding what processes contribute pollutants to water in the facility.<sup>1034</sup> Some quantification of flows will also have to be provided.<sup>1035</sup> The identification of processes contributing to wastewater effluent will provide information necessary to identify the standards applicable to the discharge.<sup>1036</sup> These estimates may be based on current operation as opposed to potential increases.<sup>1037</sup> Flow requirements and measurements will be required to verify compliance with such conditions. These measures may also be used to evaluate compliance with effluent loading.<sup>1038</sup>

c. Toxicity Testing

The permit may contain a condition requiring WET testing. The precise manner in which such testing is conducted may be the subject of discussion between the ADEQ and the facility.<sup>1039</sup> The ADEQ also has

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1034. For example, a permit application used by ADEQ will require the applicant to supply information on flows, sources of pollutants, treatment technologies, effluent characteristics, etc. See Letter from Dale Herendeen, EHS Manager, International Paper Company, to Bernie Kent Finch, Water Division, Arkansas Department of Environmental Quality (Aug. 24, 1999) (on file with author) (request for permit modification enclosing EPA for 2C). See 45 Fed. Reg. 33,516, 33,534 (1980) (codified at 40 C.F.R. pts. 122-125).

1035. See *id.*

1036. See *id.*

1037. See *id.* at 33,535.

1038. See OHIO EPA, *supra* note 214. The Ohio EPA guidance also notes the use of these measurements in determining the impact of the effluent and for water quality modeling purposes. Another aspect of flow may be addressed in the permit. The facility may be required to ensure a consistent discharge or flow. The purpose of such a mandate may be to ensure the maintenance of a consistent effluent flow. See, e.g., Memorandum from David Orr, ADPC&E to Sam Ledbetter, ADPC&E (July 21, 1980) (referencing requirement in Arkansas facility permit that it maintain "a release of at least 2 cfs flow through spillway overflow, seepage, or pumping into Little Flint Creek") (on file with author).

1039. See, e.g., Letter from C.S. Knott, Remington Arms Company, Inc. to William Keith, NPDES Branch, ADPC&E (Aug. 7, 1990) (on file with author).

some discretion as to how to interpret toxicity test results and the appropriate response to them.<sup>1040</sup>

#### d. Waters of the State

The breadth of the term "waters of the state" is such that facilities sometimes seek to delineate the plant areas encompassed by this term for NPDES permitting purposes.<sup>1041</sup> An express finding by the ADEQ of the scope of "waters of the state" may in relevant circumstances eliminate the need for one or more internal outfalls for a stormwater discharge into a drainage ditch on the facility property.<sup>1042</sup> This delineation may simplify monitoring of stormwater discharges under the Arkansas General Stormwater Permit by requiring sampling at one discharge point just above the "waters of the state."<sup>1043</sup>

A variety of Arkansas surface waters receive permitted discharges. For example, a "losing stream" is one in which all or a portion of a waterbody's volume moves subsurface to groundwater.<sup>1044</sup> They may be found in areas that have porous topography. An example of such an area is found in northwest Arkansas.<sup>1045</sup> This area of the state includes geologic formations that are readily penetrated by surface water.<sup>1046</sup>

1040. See Letter from Nathaniel P. Nehus, Water Division, ADEQ to Sammy Bates, Remington Arms Company, Inc. (Nov. 18, 1999) (granting a request to suspend a facility's toxicity reduction evaluation program) (on file with author).

1041. See, e.g., *In re Minnesota Mining & Mfr. Co.*, No. 99-129, ADEQ Consent Administrative Order (May 26, 1999).

1042. See *id.* at 2, 4.

1043. See *id.* at 4.

1044. *United States v. Gila Valley Irrigation Dist.*, 920 F. Supp. 1444, 1450 (D. Ariz. 1996). An Illinois Pollution Control Board decision discussed the potential importance of an intermittent stream:

The headwaters of a basin, even if an intermittent stream, as here, can be an important part of the ecosystem. For example, they provide spawning areas and nutrient loading. Many intermittent streams in northern Illinois "support a variety of aquatic organisms," and "just because there is an absence of visible water does not necessarily mean that the stream has no aquatic organisms." In fact, a diverse aquatic community could be expected.

*In re Proposed Site Specific Water Pollution Rules and Regulations Applicable to Citizens Utilities Company of Illinois' Discharge to Lily Cache Creek*, No. R81-19, 1983 Ill. ENV LEXIS 278 at \*6 (Ill. Pollution Control Bd. May 5, 1983).

1045. See generally *EPA v. City of Green Forest*, 921 F.2d 1394, 1399 (8th Cir. 1990). The court described a sinkhole in a northwest Arkansas creek that consumed the 1,000,000 gallons a day discharged from the Green Forest POTW. See *id.*

1046. See *id.* The *Green Forest* court noted, "[s]treams frequently submerge and reemerge. Streams having an intimate contact with the groundwater system through sinkholes or other means are called 'losing streams.'" *Id.* at 1399.

d. Determination of Effluent Limits

1. *Incorporation of Federal Categorical Standards/Limits*

The federal CWA categorical standards are intended to constitute minimum baseline limits regardless of the state in which a facility is located. Therefore, ADEQ has limited authority to grant variances from limits based on the categorical based standards.<sup>1047</sup> Consequently, Arkansas has for the most part incorporated by reference these technology-based limits into its regulations.<sup>1048</sup> However, as a practical matter, the Arkansas operation of the program places ADEQ in the position of interpreting the scope of these categorical provisions.

The computation of a technology-based permit limit based on plant production levels is a relatively simple process. However, this categorical standard is the minimum baseline limit for the facility. The CWA requires that the facility NPDES permit incorporate more stringent effluent limits if necessary to maintain the Arkansas WQS applicable to the receiving waterbody.<sup>1049</sup> Calculation of water-quality-based effluent limits is a lengthier and more complex process.<sup>1050</sup>

a. Arkansas Water Quality Standards

1. *Ecoregion Approach*

In 1975 the ADEQ promulgated the Arkansas Water Quality Standards for Surface Waters pursuant to the authority of the Arkansas Water and Air Pollution Control Act.<sup>1051</sup> The original Arkansas WQS contained three use classifications.<sup>1052</sup> They also included specific

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1047. See, e.g., Letter from Carrie McWilliams, Staff Engineer, Water Division, ADEQ to Mike Luers, Pine Bluff Wastewater Utility (Oct. 20, 1993) (stating that the 30 mg/L BOD effluent standard for POTW is a technology-based limit which ADEQ cannot vary.)

1048. See ADEQ Reg. No.

1049. Specifically, the CWA regulations provide that if a point source discharge causes, has the reasonable potential to cause, or contributes to an exceedance of a numeric or narrative WQS, the agency must develop permit limits as necessary to meet the applicable WQS. See 40 C.F.R. § 122.44 (2000).

1050. Telephone Interview with Doug Ford, P.E., Pollution Management, Inc. (Dec. 5, 2000).

1051. See ADEQ Reg. No. 2 (1975).

1052. *Id.* Class AA (extraordinary recreational and aesthetic value); Class A (suitable for priority contact recreation); Class B (suitable for desirable species of fish, wildlife and other aquatic life and semi-aquatic life, raw water source for public water supplies, secondary contact recreation and other uses).

standards for temperature,<sup>1053</sup> color, turbidity, taste and odor, solids, floating material and deposits, oil and grease, pH, DO, radioactivity, bacteria, and toxic substances.<sup>1054</sup> In addition, various waterbodies were assigned individual mineral quality guidance concentrations grouped according to state's six river basins.<sup>1055</sup>

The first significant revisions to the 1975 WQS were promulgated in 1984.<sup>1056</sup> The 1984 revisions to the WQS primarily modified the use classifications by expanding the number of uses from three to nine and adding nutrient standards.<sup>1057</sup> The revisions also added a Use Attainability Analysis methodology that could be utilized to remove or modify in appropriate circumstances a designated use classification.<sup>1058</sup>

In January 1988, Arkansas revised its WQS in a manner that at the time was considered somewhat novel.<sup>1059</sup> The focus of the WQS was changed from individual stream segments or waterbodies to "ecoregions."<sup>1060</sup> Ecoregions are defined as "mapped regions of relative homogeneity in land surface form, soil, potential natural vegetation and

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1053. The temperature of a waterbody will affect the species of fish that can inhabit a given waterbody. The court in *Public Interest Research Group, Inc. v. Magnesium Elektron, Inc.*, No. 89-3193, 1995 U.S. Dist. LEXIS 20748 at \*\*26-27 (D.N.J. Mar. 9, 1995,) *rev'd on other grounds*, 123 F.3d 111 (3rd Cir. 1997) noted:

Temperature has a number of effects. One of course is as you warm or change the temperature of a water body, you change what lives in it. The classic example is taking a cold water fisheries, trout, salmon, adding warm water, and making it impossible to maintain that fishery. It switches over to bass and other fish of that type.

*Id.*

1054. See ADEQ Reg. No. 2 (1975).

1055. See ADEQ Reg. No. 2 §§ 3, 5, App. A (1975). The six river basins in Arkansas are the Arkansas River Basin, the White River Basin, the St. Francis River Basin, the Ouachita River Basin, the Red River Basin and the Mississippi River Basin.

1056. See ADEQ Reg. No. 2 §§ 4, 6 (1984). In 1980 Georgia Pacific sought to modify the use designation of Coffee Creek, a tributary to the Ouachita River located near Crossett, Arkansas. Georgia Pacific successfully reclassified a stream which lacked natural flow and was comprised of runoff from precipitation events and wastewater from where the head waters extended through Georgia Pacific's mill complex and the City of Crossett. See ADPC&E Regulation No. 2, Interim Revisions (Jan. 25, 1980).

1057. See ADEQ Reg. No. 2 §§ 4, 6 (1984).

1058. See *id.*

1059. Telephone interview with Vince Blubaugh, GBMc Associates (July 6, 2000). Mr. Blubaugh was the ADEQ Water Division Chief from 1984 until 1989. See also *PC&E Outlines Possible Changes in State's Water Quality Standards*, ARK. DEMOCRAT-GAZETTE, Sept. 15, 1997. The article noted, ". . . the preliminary water quality proposals will be 'precedent-setting on a national scale' since Arkansas is one of the first states to complete the studies." *Id.*

1060. See ADEQ Reg. No. 2 (1975).

general land use."<sup>1061</sup> Ecoregions group waterbodies in a manner to stratify variability across the state.<sup>1062</sup> The ecoregions correspond to fish, water quality, and physical habitat in Arkansas streams.<sup>1063</sup> The ADEQ proposed the revised WQS in December of 1987, and the APC&EC adopted them the following month.<sup>1064</sup> The expeditious adoption of such significant changes was due to extensive ADEQ assessment of Arkansas surface waters during the previous seven years.<sup>1065</sup>

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1061. Robert M. Hughes et al., *Use of Ecoregions in Biological Monitoring*, in *BIOLOGICAL MONITORING OF AQUATIC SYSTEMS* 126 (Sanford L. Loeb & Anne Spacie eds., 1994). A draft 1993 EPA reported noted:

Biologists have long noted that assemblages and communities can be classified according to distinct geographical patterns (e.g. Wallace, 1969, Arthur, 1972). We observe areas of the country within which there is consistency and similarity in the types of ecosystems and their attributes when compared to that of other areas. . . . Ecological regionalization (as one type of regionalization) results in a map of ecological regions, or ecoregions. Such maps bring spatial organization to ecological variability. They are useful in a variety of ways. For example, to summarize the condition of resources in a particular area, to identify potential or achievable ecological conditions (e.g. regionally achievable biocriteria), to characterize typical impact types and impairments, to develop protective and remedial procedures that are tailored to unique regional characteristics, and to present scenarios of conditions in particular regions.

U.S. ENVTL. PROTECTION AGENCY, OFFICE OF SCIENCE AND TECHNOLOGY, *BIOLOGICAL CRITERIA: TECHNICAL GUIDANCE FOR STREAMS AND SMALL RIVERS—DRAFT 30* (1993).

1062. See Hughes, *supra* note 1061, at 126. Various issues associated with the ecoregion approach to setting WQS are discussed. See *id.*

1063. See *id.* at 126-27.

1064. See ADEQ Reg. No. 2 (draft 1987).

1065. Telephone Interview with Chuck Bennett, Chief, Water Division, ADEQ, (Nov. 9, 2000). ADEQ and its predecessor agency have in the past and continue to devote substantial resources to the assessment of ambient conditions of the state's streams, lakes, and rivers. These efforts have included the employment of chemists, biologists, and other professionals to perform sophisticated sampling, analysis, and associated interpretational activities. See *id.* ADEQ's investment has included the establishment and operation of a laboratory. See *id.* This facility has enabled ADEQ to analyze significant amounts of samples in a cost effective manner. See *id.* A substantial portion of the water quality data utilized by ADEQ is obtained from its operation of a monitoring network of over 200 sites. The agency has used the monitoring network to gather data on a continuing basis for a number of years. Approximately \$400,000 is expended annually on these monitoring activities. See *id.* ADEQ's monitoring network has provided several benefits. See *id.* First, the expansive coverage of the network enables ADEQ to assess long-term water quality trends. See *id.* Second, the data is used by the ADEQ to determine whether a stream segment is compliant with applicable WQS. See *id.*

The primary impetus for the ecoregion approach were DO<sup>1066</sup> criteria promulgated by EPA.<sup>1067</sup> The EPA announced the final WQC for DO in 1986.<sup>1068</sup> EPA set WQC for DO at 5.0 mg/L for a seven day mean for cold water, while the warm water criteria was 4.0 mg/L for a seven day mean. EPA had previously promulgated other WQC specifically for toxics pursuant to section 307(a)(1) of the CWA.<sup>1069</sup>

The ADEQ staff biologists determined through EPA funded studies and prior experience that various areas of the state had DO concentrations different than the criteria proposed by EPA.<sup>1070</sup> The agency observed that the size of a water basin had a significant effect on DO concentrations.<sup>1071</sup> The ADEQ staff believed that the ecoregion approach was appropriate for Arkansas because of the state's many small river basins.<sup>1072</sup> Such waterbodies become stagnant during the hot/dry season. However, certain species were found to survive in such waterbodies even though they contained DO levels lower than the WQC established by EPA.<sup>1073</sup> As a result, ecoregions arguably classify fish assemblages more accurately and consistently than delineations based on riverbasins.<sup>1074</sup>

EPA funding enabled the ADEQ to develop the background data to implement ecoregion-based WQS.<sup>1075</sup> The ADEQ initially had difficulty convincing EPA Region 6 of the value of the ecoregion approach.<sup>1076</sup> Support from scientists from the EPA Research Center in Corvallis,

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1066. Sufficient quantities of DO must be present in the waterbody to support a fish population. *Public Interest Research Group, Inc. v. Magnesium Elektron, No. 89-3193*, 1995 U.S. Dist. LEXIS 20748 at \*18 (D.N.J. Mar. 9, 1995), *rev'd on other grounds*, 123 F.3d 111 (3rd Cir. 1997). DO is also important to protection of the aesthetic aspects of a waterbody. *See id.*

1067. *See id.* *See also* ADPC&E, MINERAL QUALITY STANDARDS PROJECT TEAM INTERIM REPORT AND PRESENTATIONS OF ALTERNATIVES 1 (1996) (primary driving force for initiative was Arkansas POTW limits) [hereinafter Mineral].

1068. *See* 51 Fed. Reg. 22,978 (1986).

1069. 33 U.S.C. § 1317(a)(1) (1994). *See, e.g.*, 45 Fed. Reg. 79,318 (1980); 49 Fed. Reg. 5,831 (1984).

1070. Telephone Interview with Vince Blubaugh, Principal, GBMc & Associates (July 6, 2000).

1071. *See id.*

1072. *See id.*

1073. *See id.* Consequently, the CWA allows a state any EPA recommended WQC upward or downward to reflect local environmental conditions and human exposure patterns. *See Western Regional Sewer Authority v. South Carolina Dep't of Health & Env'tl. Control*, 1999 S.C. ENV LEXIS 102 at \* 21 (S.C. ALJ Div. Sept. 22, 1999).

1074. *See Hughes, supra* note 1055, at 132-33.

1075. *See id.* The work was funded by set-aside funds in ADEQ construction grants program. *See Mineral, supra* note 1061, at 1.

1076. Interview with Chuck Bennett, Chief, ADEQ Water Division (Nov. 9, 2000).

Oregon aided the ADEQ.<sup>1077</sup> Ultimately, EPA agreed to support the effort.<sup>1078</sup>

The ADEQ ecoregion research provided the agency a tremendous amount of data about the state's surface waters.<sup>1079</sup> Arkansas developed data for the least-disturbed streams in each ecoregion.<sup>1080</sup> The least-disturbed reference streams are used to assure that biological species and populations are maintained in a stream in an ecoregion when compared to reference streams.<sup>1081</sup> The least disturbed streams offer a realistic goal for improved water quality.<sup>1082</sup> However, reliance upon least disturbed streams may be hindered by ecoregion heterogeneity.<sup>1083</sup> The ecoregions were devised based upon the physiographic influence of each region. While a stream or river may cross several ecoregions, the ADEQ staff found that there were distinct characteristics for each ecoregion.<sup>1084</sup>

Very few states have based their water quality standards on ecoregions. The ecoregion approach benefits the Arkansas program because the data is based upon least-disturbed reference streams in each ecoregion.<sup>1085</sup> The least-disturbed reference streams provide a historical baseline of the health of streams based upon physical parameters and biological data.<sup>1086</sup> It becomes increasingly difficult to find and measure undisturbed streams in developing areas. However, Arkansas already has this data in place for the entire state.<sup>1087</sup> In contrast, many states lack a state-wide monitoring program and others are now having difficulty finding undisturbed streams.<sup>1088</sup>

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1077. *See id.*

1078. *See id.* ADEQ and EPA did subsequently debate the federal agency's desire to include more referenced streams for each ecoregion. Telephone Interview with Dr. Robert Blanz, CH2M Hill (Nov. 21, 2000). Dr. Blanz served as Deputy Director of the ADPC&E from 1980-1987. EPA ultimately approved the regulation with the ADEQ preferred number of referenced streams for each ecoregion. *See* 54 Fed. Reg. 18,696 (1989) (providing notice of EPA's approval of the ADEQ ecoregions on May 6, 1988).

1079. Interview with Vince Blubaugh, GBMc (July 6, 2000). Research began in 1984 using CWA section 205(j) funding provided by EPA. *See id.*

1080. *See id.*

1081. *See id.* The least-disturbed reference streams are representative of the health of biological and physical-chemical water quality ecoregion. *Id.* Streams serve as a reference point for future permitting decisions. *Id.*

1082. *See* Hughes, *supra* note 1055, at 139.

1083. *See id.* at 138.

1084. *See* Blubaugh, *supra* note 1069.

1085. *See id.*

1086. *See id.*

1087. *See id.*

1088. *See id.*



The ecoregion approach arguably benefits Arkansas in other ways. First, it provides specific data for seasonal influence on the various uses designated for surface waters.<sup>1089</sup> Second, when Arkansas was delegated the NPDES program in 1986, it was able to justify the criteria it believed was necessary to support WQS in the state.<sup>1090</sup> Consequently, it was not forced to adopt EPA's WQS that it believed were inappropriate for certain areas of state.<sup>1091</sup> Third, the use of ecoregion-based WQS have arguably better ensured consistent decisionmaking for similar surface water throughout the state.<sup>1092</sup>

## 2. *Arkansas Water Quality Criteria*

### a. General

The WQC developed for the WQS include both narrative general standards and numerical standards.<sup>1093</sup> Narrative limits exist for color, taste and odor, solids, floating materials and deposits, toxic substances, and oil and grease.<sup>1094</sup> The general and specific standards permit mixing zones for all parameters except for bacteria or oil and grease.<sup>1095</sup> The mixing zone will allow the effect of the wastewater on the receiving stream to be determined after it has thoroughly mixed with the designated area of the waterbody.<sup>1096</sup>

The purpose of the general standards is to prevent interference with the present or projected future uses of waters by the parameters subject to the standards.<sup>1097</sup> Specific standards provide numerical limitations for temperature, turbidity, pH, DO, radioactivity, bacteria, toxic substances, nutrients, oil and grease, and mineral quality.<sup>1098</sup>

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1089. *See id.*

1090. *See* Blubaugh, *supra* note 1070.

1091. *See id.* An ADPC&E Water Division official, John Giese, noted that "[o]ur baseline of knowledge is something we have measured now and it is a real world situation, not something developed in Washington . . ." *PC&E Outlines Possible Changes in State's Water Quality Standards*, ARK. DEMOCRAT-GAZETTE, Sept. 15, 1987, at B1.

1092. *See* Blubaugh, *supra* note 1070.

1093. *See* ADEQ Reg. No. 2 §§ 2.401 to 2.511 (1984).

1094. *See id.* §§ 2.406 to 2.410.

1095. *See id.* § 2.404. General standards for toxic substances require consideration of the zone of initial dilution as well as the mixing zone and critical flow conditions.

1096. *See id.*

1097. *See, e.g.*, ADEQ Reg. No. 2 §§ 2.406, 2.407 (1984).

1098. *See id.* §§ 2.502 to 2.511. Temperature has a specific numeric limit while, pH provides a range of acceptable values. On the other hand, DO concentration limits vary based upon size of the watershed, flow and seasonal differences. *See id.* §§ 2.502, 2.504, 2.505.

For example, EPA has promulgated WQC for ammonia that may affect NPDES permits issued by the ADEQ.<sup>1099</sup> The WQC for ammonia is extremely stringent for small streams with low critical flows.<sup>1100</sup> The projected numerical limitations could require additional treatment for industries that pretreat prior to discharge into a POTW and direct dischargers.<sup>1101</sup>

#### b. Metals

EPA's determination of what it considers appropriate WQC for various substances occasionally generates disagreements with the state determinations. An example is the debate about the appropriate WQC for metals. After the 1987 amendments to the CWA, EPA assessed<sup>1102</sup> whether the states complied with the requirement to include toxics WQC in their WQS.<sup>1103</sup> EPA ultimately alleged that Arkansas and eleven other states were not in compliance with section 303(c)(2)(B) of the CWA.<sup>1104</sup> Consequently, EPA published the National Toxics Rule ("NTR") which became effective February 5, 1993.<sup>1105</sup>

The EPA stated in the NTR that it had previously approved Arkansas' WQS containing human health criteria.<sup>1106</sup> Nevertheless, the EPA disapproved of certain Arkansas WQS for failing to adopt WQC for toxic pollutants adequate to protect aquatic life.<sup>1107</sup> The NTR included numeric WQC expressed for metals.<sup>1108</sup>

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1099. See 64 Fed. Reg. 71,974 (1999) (updating for 1999 the WQC for ammonia).

1100. Telephone Interview with Vince Blubaugh, Principal, GBMc & Associates (Dec. 19, 2000).

1101. See *id.*

1102. See 57 Fed. Reg. 60,848, 60,854 (1992). This effort by EPA allowed states time to incorporate changes in water quality standards through the triennial review process.

1103. See 33 U.S.C. § 1313(c)(2)(B) (1994).

1104. See 57 Fed. Reg. 60,848, 60,856 (Dec. 22, 1992). The other states and territories include the following: Alaska, California, Florida, Idaho, Kansas, Michigan, Nevada, New Jersey, Rhode Island, Vermont, and Puerto Rico.

1105. See 57 Fed. Reg. 60,848 (1992).

1106. See 52 Fed. Reg. 60,848, 60,897 (1992).

1107. See *id.*

1108. See *id.* Specifically, the NTR included aquatic life WQC for cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, and cyanide. See *id.* The EPA did not promulgate aquatic life criterion for arsenic because Arkansas monitoring data did not indicate that this substance would interfere with designated aquatic life uses. See *id.*

In response to legal challenges, EPA modified the NTR.<sup>1109</sup> The rule based the numeric WQC on "dissolved" metals to more accurately reflect the portion of the substances that could affect aquatic life.<sup>1110</sup> EPA also issued an administrative stay during the time it received comments on the 1995 modified rule for the numeric criteria.<sup>1111</sup> The modified rules were necessary because NPDES permits were required to express metals in terms of total recoverable.<sup>1112</sup> The revised NTR rule provided a means to implement the federal standards by employing translator mechanisms to convert the dissolved metals WQC to total recoverable.<sup>1113</sup>

The Region 6 office of EPA provided an interim-final implementation guidance to the ADEQ to address these issues.<sup>1114</sup> EPA informed the ADEQ that it would not object to NPDES permits prepared according to the guidance document provisions.<sup>1115</sup> EPA recognized that the final implementation guidance document would be utilized to establish relevant effluent limits in Arkansas until approved state WQS were adopted.<sup>1116</sup>

The publication of the guidance raised various implementation issues. For example, concern was expressed about the critical flow provisions applicable to metals WQC.<sup>1117</sup> Other issues involved the applicability to stormwater discharges and questions regarding the role of mixing zones for lakes and reservoirs.<sup>1118</sup> EPA subsequently modified the guidance document to address some Arkansas concerns.<sup>1119</sup> The changes included the exclusion of stormwater, use of 7Q10 as a critical flow, recognition of site-specific mixing zones for lakes and reservoirs, and site-specific partitioning coefficients.<sup>1120</sup>

The ADEQ subsequently incorporated these metals WQC into the Arkansas WQS.<sup>1121</sup> Nevertheless, ADEQ believes that more research is

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1109. See 60 Fed. Reg. 22,228 (1995).

1110. See *id.*

1111. See *id.*

1112. See 40 C.F.R. § 122.45(c) (1999).

1113. See 60 Fed. Reg. 22,228 (1995).

1114. See 40 C.F.R. § 131.36 (1995).

1115. See Letter from Jack V. Ferguson, Chief, EPA Region 6 NPDES Permit Branch, to Chuck Bennett, Chief, ADEQ Water Division (Jan. 31, 1996) (on file with author).

1116. See *id.*

1117. See Letter from Forrest E. Payne, Ph.D., Aluminum Company of America, to Ellen Caldwell, Operations Support Office, EPA (Apr. 2, 1996) (on file with author).

1118. See Letter from Randy Thurman, Executive Director, Arkansas Environmental Federation, to Ellen Caldwell, Operations Support Office, EPA (March 24, 1996) (on file with author).

1119. See 40 C.F.R. § 131.36 (1997).

1120. See *id.*

1121. See ADEQ Reg. No. 2 § 2.508 (1998).

needed to refine various metals WQC.<sup>1122</sup> It has been the state agency's experience that several metals do not cause toxicity in some Arkansas waterbodies at the concentrations specified by the federal WQC.<sup>1123</sup> The ADEQ has not, however, determined whether further research or modification to such WQC will be undertaken.<sup>1124</sup>

The determination of appropriate metal limits to be included in an NPDES permit (if any) can be a contentious issue for some facilities. For example, in 1994 the Arkansas Wildlife Federation questioned the ADEQ's proposed removal of zinc limits from a North Little Rock herbicide and pesticide repackaging facility's individual stormwater permit.<sup>1125</sup> The organization questioned the agency's assumption of a zinc background concentration of zero.<sup>1126</sup> The ADEQ ultimately determined that the background zinc concentration of zero in stormwater was representative and defensible if stormwater data was not available.<sup>1127</sup>

## b. Designated Uses

### 1. Categories

The establishment of Arkansas WQS are based upon present, future, and potential uses of the surface waters of the state and WQS developed from physical evaluations of past water quality conditions, along with a comprehensive study of least-disturbed ecoregion reference streams. They are designed to enhance the quality, value, and beneficial uses of the water resources of the State of Arkansas, to aid in the prevention, control and abatement of water pollution, to provide for the protection and propagation of fish and wildlife, and to provide for recreation in and on

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1122. See Interview with Chuck Bennett, Chief, ADEQ Water Division (Nov. 9, 2000).

1123. See *id.*

1124. See *id.*

1125. See Letter from James M. Hecker, Arkansas Wildlife Federation, to Rhonda Sharp, ADEQ (Jan. 13, 1994) (on file with author).

1126. See Mo Shafii, ADPC&E, Response to Comments Final Permit Decision, Permit No. AR0042901, 7 (Feb. 19, 1997).

1127. See *id.* The Arkansas Wildlife Federation also contested the wasteload allocation calculations for zinc loading from the facility's discharge. See Hecker, *supra* note 1124. ADEQ maintained that it had correctly calculated the zinc limit in accordance with its March 10, 1993, implementation strategy for water quality based permit limits. See Shafii, *supra* note 1125, at 8. The calculation of the wasteload allocation using the highest reported zinc concentration from three years of monitoring by the permittee indicated the in-stream waste concentration of zinc was less than the zinc WQS. See *id.* at 5. ADEQ therefore removed the zinc limits from the NPDES permit. See *id.*

the water.<sup>1128</sup> The Arkansas WQS include waterbody uses, criteria, and an antidegradation policy.<sup>1129</sup>

The Arkansas WQS identify the designated uses for each jurisdictional waterbody in the state.<sup>1130</sup> Eight different types of uses have been designated.<sup>1131</sup> They include extraordinary resource waters, ecologically sensitive waterbody, natural and scenic waterways, primary contact recreation, secondary contact recreation, fisheries, domestic water supply, industrial water, agricultural water supply, and other uses (e.g., hydroelectric power generation and navigation).<sup>1132</sup> The designated use for a waterbody may be altered/modified on a temporary or permanent basis.<sup>1133</sup>

## 2. *Use Attainability Analysis*

The Arkansas program allows the permanent modification of a use designation in certain circumstances. The primary means to effect such a change is a use attainability analysis ("UAA").<sup>1134</sup> A UAA is a scientific assessment of whether it is feasible for a particular waterbody to attain a particular use.<sup>1135</sup>

UAAs have been submitted to the ADEQ to address WQS for a variety of Arkansas waterbodies. They have addressed, for example,

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1128. ADEQ Reg. No. 2 § 2.102 (1984).

1129. *See supra* notes 1051 and 1097 and accompanying text. *See also infra* note 1140 and accompanying text.

1130. *See* ADEQ Reg. No. 2, App. A (1998). Appendix A identifies designated uses for the streams in each of the six ecoregions of the state. *See id.*

1131. ADEQ Reg. No. 2 § 2.302 (1998).

1132. *See id.* These uses may be referenced in other ADEQ programs. For example, ADEQ Regulation Number 15 (Arkansas Open-Cut Mining and Land Reclamation Code) prohibits mining in streams designated as "Extraordinary Resource." *See* ADEQ Reg. No. 15 § 15.301(c) (2000). The inability to construct a dam on an Arkansas waterbody designated "Extraordinary Resource Waters" prompted some legislators to introduce a bill in the 83rd General Assembly that attempts to remove this classification from a portion of Lee Creek. *See* H.B. 2342, 83rd General Assembly, Reg. Sess. (Ark. 2001).

1133. *See* ADEQ Reg. No. 2 §§ 2.303, 2.305, 2.306, 2.309 (1998). *See also* ADEQ Reg. No. 2 § 2.105, App. B (1998).

1134. *See* ADEQ Reg. No. 2 § 2.303 (1998).

1135. *See* 40 C.F.R. § 131.3(g), 131.10(j) (1999).

temperature<sup>1136</sup> in receiving streams and site-specific seasonal variation to the DO, WQS to reflect natural and existing background conditions.<sup>1137</sup>

### c. Antidegradation

Chapter 2 of Regulation No. 2 represents Arkansas' response to the CWA requirement that each state establish an antidegradation policy.<sup>1138</sup> The regulation includes an anti-degradation prohibition.<sup>1139</sup> It protects existing uses and the water quality conditions necessary to support existing uses.<sup>1140</sup> However, the anti-degradation policy allows lowering water quality in certain instances where necessary to accommodate economic and social development.<sup>1141</sup> Water quality may not be lowered unless existing uses will be fully protected.<sup>1142</sup>

### d. Short-Term Activity Authorization/Variance

Regulation No. 2 includes a procedure that under certain circumstances enables a facility to initiate a discharge without a permit for a limited period of time. This procedure is denominated a "short term authorization." Such activities may be authorized for a time period of ninety days or less.<sup>1143</sup> The ADEQ may in certain circumstances authorize

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1136. Southwestern Electric Power Company submitted a UAA to ADEQ to revise the Arkansas WQS temperature of 89.6 degrees Fahrenheit for a particular stream. A SWEPCO letter referencing this request noted in part:

In November, 1990, Mr. Jay Pruett, Director of Environmental Affairs, submitted the above mentioned Use Attainability Analysis to ADPC&E in order to secure approval to elevate the established temp use of 89.6° F. The UAA effectively demonstrated that the alternative limit would ensure protection and propagation of a balanced indigenous population of fish and wildlife in and on the waterbody.

Letter from Patrick Miller, Environmental Specialist, SWEPCO to Maria Jastrzebski, ADPC&E (June 12, 1992) (on file with author).

1137. See GEORGIA PACIFIC, DISSOLVED OXYGEN USE ATTAINABILITY ANALYSIS (1996) (addressing DO WQS for Ouachita River).

1138. See 40 C.F.R. § 131.12 (1999).

1139. See ADEQ Reg. No. 2 §§ 2.201 to 2.204 (1984).

1140. See *id.* § 2.201.

1141. See *id.* § 2.202.

1142. See *id.*

1143. For example, the Remington Arms Company, Inc. facility in Lonoke, Arkansas requested a short term authorization to change the location of an outfall prior to receipt of a modified NPDES permit. See Letter from Sammy R. Bates, R.E.M., Remington Arms Company, Inc. to Mark Bradley, P.E., NPDES Permits Supervisor, ADPC&E (Jan. 28, 1995) (on file with author). The request to bypass was granted by ADEQ. See Letter from Martin Maner, P.E., Interim Deputy Director, ADPC&E, to Sam R. Bates, R.E.M., Environmental Coordinator, Remington Arms Company, Inc., Lonoke,

a short-term activity which might cause a violation of the Arkansas WQS.<sup>1144</sup> The authorization will not be granted if it could impair beneficial uses on a permanent or long-term basis. The short-term activity authorization does not supersede existing state and federal permitting processes.<sup>1145</sup>

A temporary variance may be approved for a two or three year period for specified constituents.<sup>1146</sup> The general and specific standards may be modified and subcategories of use may be established to allow a long-term environmental improvement project that will significantly improve the effects caused by industrial or mining activities.<sup>1147</sup>

#### e. Total Maximum Daily Loads

On February 18, 1999, the Sierra Club and several other citizen groups filed a complaint in the United States District Court for the Eastern District of Arkansas alleging that EPA had failed to establish any TMDL in water quality limited segments ("WQLS") in the state.<sup>1148</sup> Arkansas consequently joined a group of approximately twenty-five states in which EPA was alleged to have failed to address TMDL issues.<sup>1149</sup> The

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Arkansas (Feb. 20, 1995) (on file with author). The ADEQ was willing to grant the request because it determined the wastewater discharge was of "minimal toxic importance" and that the existing monitoring would continue. See Memorandum from Bernie Kent Finch, NPDES Staff Engineer, ADPC&E to Mark Bradley, Engineering, NPDES Permits, ADPC&E (Feb. 17, 1995) (on file with author).

1144. See ADEQ Reg. No. 2 § 2.305 (1998). Activities eligible for the Director's short-term activity authorization include wastewater treatment facility maintenance, fish eradication projects, mosquito abatement projects, algae and weed control projects, dredge and fill projects, construction activities, tracers used for hydrological studies, and activities which result in overall enhancement or maintenance of beneficial uses. See, e.g., Letter from Randall Mathis, Director, ADPC&E to Thomas Gathright, Environmental Engineer, Georgia-Pacific Corporation, (Nov. 26, 1997) (authorizing facility's exceedance of BOD and TSS NPDES permit limits during three week dredging project) (on file with author); Letter from Randall Mathis, Director, ADPC&E to Eugene Townsley, Batesville Wastewater Treatment Plant (July 29, 1998) (authorizing POTW to bypass filters in order to effect their repair within a 90-day period) (on file with author).

1145. See ADEQ Reg. No. 2 § 2.305 (1998).

1146. See *id.* § 2.309. The variance must be approved by both ADEQ and EPA and applies to the applicant only, and not other discharges into the same waterbody. See *id.*

1147. See ADEQ Reg. No. 2, App. B (1998).

1148. See Complaint, *Sierra Club v. EPA*, Case No. LR-C-99-114 (E.D. Ark. Feb. 18, 1999) [hereinafter Complaint]. In addition to the allegations related to TMDLs, the complaint also contained allegations of the failure to establish total maximum daily thermal loads ("TMDTL"). The following discussion of TMDLs includes TMDTLs.

1149. Telephone Interview with Hank Bates, McMath Law Firm, Little Rock, Ark. (Dec. 12, 2000). While neither ADEQ nor the State of Arkansas was a named

gravamen of the complaint was the alleged inadequacy of the list of WQLSs ADEQ submitted to EPA in 1998 pursuant to section 303(d) of the CWA.<sup>1150</sup> The focus was the absence of TMDLs.<sup>1151</sup> The plaintiffs alleged that EPA had failed to perform its nondiscretionary duties under the CWA by: (1) not disapproving the ADEQ's 1998 section 303(d) submission; (2) not identifying and prioritizing all WQLSs in Arkansas; (3) not disapproving ADEQ's submission of no TMDLs; and (4) not establishing TMDLs for WQLSs in Arkansas.<sup>1152</sup> They asked that the court order EPA to correct these deficiencies.<sup>1153</sup>

The plaintiffs requested that the court order modification, revocation and reissuance, or termination of permits issued by the ADEQ as necessary to establish TMDLs. In addition, they requested a prohibition on discharges from new sources and new discharges from existing sources in WQLSs unless sufficient load allocations existed in the stream segment.<sup>1154</sup> The potential effect of the TMDLs is unresolved. However, they may significantly affect existing municipalities and industries as well as future economic development.

After a series of negotiation sessions between the plaintiffs and EPA, the lawsuit was ultimately settled.<sup>1155</sup> The parties executed a consent decree and settlement agreement which included specific requirements for the approval or disapproval of Arkansas' next section 303(d) list.<sup>1156</sup> The

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defendant in the case, ADEQ did attend almost all of the meetings between the parties for settlement purposes. *See id.* ADEQ did assist EPA in the litigation since much of the information at issue related to submissions to EPA for which ADEQ would be responsible. *See id.*

1150. *See* Complaint, *supra* note 1147. However, ADEQ believes its extensive stream monitoring network will enable it to more accurately identify WQLSs than contiguous states. Telephone Interview with Chuck Bennett, Chief, Water Division, ADEQ (Nov. 9, 2000). The plaintiffs' counsel acknowledged that Arkansas has an above-average monitoring network for ambient stream conditions focused on point source discharges. Telephone Interview with Hank Bates, McMath Law Firm, Little Rock, Ark. (Dec. 12, 2000). However, counsel views ADEQ monitoring as lacking for lakes and nonpoint source pollution. *See id.*

1151. The *Sierra Club* complaint included a request for an order vacating EPA's approval of the ADEQ's 1998 section 303(d) list. *See* Complaint, *supra* note 1147.

1152. *See* Complaint, *supra* note 1147.

1153. *See id.*

1154. *See id.*

1155. *See* Order and Consent Decree, *Sierra Club v. EPA*, No. LR-C-99-114 (E.D. Ark. Feb. 18, 1999). According to the plaintiffs' counsel, the plaintiffs' expectations were realistic and sought settlement of the matter to promote the preparation of TMDLs in the state. Telephone Interview with Hank Bates, McMath Law Firm, Little Rock, Ark. (Dec. 12, 2000).

1156. *See* Consent Decree, *Sierra Club v. EPA*, No. LR-C-99-114 at 6 (E.D. Ark. Feb. 18, 1999). The consent decree specifies a 60 day time limit for EPA to approve or disapprove Arkansas's next section 303(d) list. *See id.* The consent decree also



decreed also included a schedule for establishment of TMDLs in Arkansas.<sup>1157</sup> EPA agreed to add thirty stream segments in the next section 303(d) list. The decree requires the development of TMDLs within two or three years of the listing depending upon how the stream segment is identified in the consent decree.<sup>1158</sup> EPA is required to report annually on its progress in meeting the requirements of the consent decree.<sup>1159</sup>

#### f. Mixing Zones

Arkansas defines mixing zones as areas where an effluent discharge undergoes mixing with the receiving waterbody.<sup>1160</sup> "For toxic discharges[,] a zone of initial dilution may be allowed within the mixing zone."<sup>1161</sup> Mixing zones are allowed for most parameters.<sup>1162</sup> Regulation No. 2 prohibits a mixing zone from including any domestic water supply

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specifies studies and specific lists of waters and pollutants that ADEQ must consider. *See id.* The section 303(d) list in the consent decree places specific requirements for justifying the omission of any waters specified in the Attachment A or B to the consent decree. *See id.*

1157. *See id.* at 10. Arkansas must submit 10 TMDLs each year and at least 50 by January 15, 2003. *See id.* The first submission was due January 15, 2001. *See id.* EPA must take steps to ensure completion of the TMDLs within one year of the scheduled deadline for Arkansas. *See id.* Arkansas must complete 180 TMDLs by January 15, 2009. *See id.* Since signing the Consent Decree, ADEQ has proposed TMDLs for the L'Anguille River, Holman Creek, Hicks Creek, and Whig Creek. *See* Richard A. Weiss, ADEQ Interim Director, Notice of Proposed Total Maximum Daily Load Plans for Holman Creek, Hicks Creek, and Whig Creek (Jan. 25, 2001); Richard A. Weiss, ADEQ Interim Director, Notice of Proposed Total Maximum Daily Load Plan for L'Anguille River (Dec. 11, 2000). The TMDLs proposed for Holman Creek in Madison County, Hicks Creek in Baxter County, and Whig Creek in Pope County address nitrate issues. ADEQ found stream segments of the creeks impaired due to excessive nitrate values in water quality data collected from the creeks. The contaminate level in the stream segments impaired the domestic water supply use of the three streams. The TMDLs proposed to limit discharges under the NPDES permit process to no more than 10 mg/L nitrate nitrogen in each stream segment.

1158. *See* Consent Decree, *Sierra Club v. EPA*, No. LR-C-99-114 at 12-13 (E.D. Ark. Feb. 18, 1999).

1159. The report must be provided to both the plaintiffs and the court. *See id.* at 14.

1160. ADEQ Reg. No. 2 § 2.106 (1998).

1161. *Id.* Zone of initial dilution is defined as an area within the mixing zone where a toxic effluent discharge initiates mixing in the receiving waterbody. This is an area where acute water quality criteria may be exceeded, but acute toxicity may not occur.

1162. ADEQ Reg. No. 2 § 2.404 (1998). Mixing zones are not allowed for the parameters of bacteria or oil and grease, or where the background flow is less than the critical flow or where the background concentration of a waste parameter exceeds the specific criteria for that waste parameter. *See id.*

intake.<sup>1163</sup> In lakes and reservoirs, the size of the mixing zones are defined by the ADEQ on an individual basis and may be determined by site-specific studies or using appropriate dispersion or jet-mix models.<sup>1164</sup> An Administrative Hearing Officer Recommended Decision addressed whether a mixing zone could be applied to the fecal coliform found in a POTW's discharge into the Ouachita River.<sup>1165</sup>

g. Water Quality Certification (Section 401)

Section 401 of the CWA requires that the State of Arkansas must certify that a federal license or permit resulting in discharge is compliant with WQS.<sup>1166</sup> ADEQ supplies the 401 certification in Arkansas.<sup>1167</sup> The primary federal permitting activities triggering certification in Arkansas are section 404 (wetlands) permits<sup>1168</sup> issued by the Corps of Engineers and permits issued by the Federal Energy Regulatory Commission for dams.<sup>1169</sup> The federal agency will forward a request to ADEQ for 401 certification.<sup>1170</sup> ADEQ will then review the proposed project to determine whether it would violate the applicable WQS.<sup>1171</sup> The number of requests for 401 certifications have declined in the past several years.<sup>1172</sup> Most projects receive the required certification from ADEQ.<sup>1173</sup>

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1163. *See id.*

1164. *See* ADEQ, CONTINUING PLANNING PROCESS DOCUMENT, APPENDIX D, D-12 (1999).

1165. *See* Malvern Letter, *supra* note 68, at 10.

1166. *See* 33 U.S.C. § 1341 (1994).

1167. *See id.* § 1341(A)(1).

1168. *See id.* § 1344.

1169. *See* 42 U.S.C. § 7172(a)(1)(A) (1994).

1170. *See* Letter from Randall Mathis, Director, ADEQ, to the Hon. Parker Johnston, Saline County Judge (July 27, 1990) (on file with author).

1171. *See id.*

1172. Telephone Interview with Steve Drown, ADEQ (Nov. 27, 2000). The State of Arkansas generally receives approximately three hundred 401 certification requests per year. The decline in requests is believed to be due to the expansion of the Corps of Engineers' wetlands nationwide permits. The CWA section 404 nationwide permit program is addressed in Wright & Morrissey, *supra* note 21, at 821.

1173. Telephone Interview with Steve Drown, Project Support Manager, ADEQ (Nov. 22, 2000). There are notable exceptions. In 1992, the ADEQ refused to provide a 401 certification for the Saline County Rural Development Authority for the construction of a dam in the North Fork Saline River. *See* Letter from Randall Mathis, Director ADEQ, to Col. Stephenson W. Page, District Engineer, Vicksburg District Corps of Engineers (April 29, 1992) (on file with author). The state denied the certification because the stream's classification under the Arkansas WQS as an extraordinary resource and ecologically sensitive waterbody. *See id.*

## 2. *Continuing Planning Process*

The federal CWA requires that each state operate a continuing planning process approved by EPA.<sup>1174</sup> The plan components must include limitations upon effluents, schedules of compliance and incorporation of the elements of applicable area wide waste management plans.<sup>1175</sup> ADEQ developed a Continuing Planning Process ("CPP") document a number of years ago. This document provides guidance for the methods ADEQ uses to calculate limits for NPDES permits.<sup>1176</sup> The CPP is not a regulation. Nevertheless, ADEQ believes it provides a framework for ensuring the permits it issues meet the Arkansas WQS and the Water Quality Management Plan.<sup>1177</sup>

## 3. *Water Quality Management Plan*

Pursuant to section 208<sup>1178</sup> of the CWA, ADEQ maintains a Water Quality Management Plan ("WQMP").<sup>1179</sup> The federal CWA regulations define a WQMP as a state waste treatment management plan that identifies water quality problems and contains the state's choices of measures necessary to control specific sources of pollution.<sup>1180</sup> The WQMP is a compilation of all oxygen demanding point source discharges in Arkansas.<sup>1181</sup> The compilation is revised each time a new modified or renewed NPDES permit is issued. The WQMP does not include non-oxygen demanding discharges. ADEQ and EPA use the WQMP to examine the cumulative effects of point source discharges on water quality.<sup>1182</sup> Draft permits that are submitted to EPA for their review will include relevant modeling information.<sup>1183</sup>

1174. See 33 U.S.C. § 1315(b)(1) (1994). The federal continuing planning process is described in Adler, *supra* note 33, at 219.

1175. See *id.* See Jarack v. EPA, 513 N.E.2d 1007 (Ill. Ct. App. 1987) (resolving dispute over amendment to Illinois Water Quality Management Plan).

1176. Telephone Interview with Mark Bradley, NPDES Permits Branch, Water Division, ADEQ (Sept. 18, 2000).

1177. See *id.* The Arkansas CPP was discussed in an Administrative Hearing Officers Recommended Decision. See *In re* City of Malvern Water Works, No. 96-005-P, Arkansas Pollution Control & Ecology Commission, Order No. 6 (Sept. 11, 1996).

1178. See 33 U.S.C. § 1288 (1994).

1179. ADEQ, WATER QUALITY MANAGEMENT PLAN EFFLUENT LIMITS (2000) [hereinafter WQMP].

1180. See 40 C.F.R. §§ 130.2(k), 130.0(c) (2000).

1181. Telephone Interview with Bob Singleton, ADEQ Water Division (Oct. 9, 2000).

1182. See *id.*

1183. See *id.*

#### 4. *Modeling*

ADEQ uses a desktop-type modeling software that is not widely used elsewhere.<sup>1184</sup> The software used to enter data is fairly straightforward and basic.<sup>1185</sup> However, EPA has begun to encourage the use of a more comprehensive model.<sup>1186</sup>

The WQMP will be examined when an application for a new, modified, or renewal NPDES permit is sought. An NPDES permit cannot conflict with an approved WQMP.<sup>1187</sup> If a facility requests that ADEQ add a discharge, it will be included in the WQMP.<sup>1188</sup> Despite the lack of a permit for the proposed discharge, it may continue to be listed on the WQMP.<sup>1189</sup> Therefore, proposed discharges that were never permitted may in theory be considered or be a factor when a facility seeks a new or modified NPDES permit.

The WQMP identifies the critical limits and seasonal limits<sup>1190</sup> for both large and small facilities.<sup>1191</sup> It also identifies the method by which each facility's NPDES permit limits are justified.<sup>1192</sup> As of October 10, 2000, the Arkansas WQMP identified 934 facilities.<sup>1193</sup>

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1184. Telephone Interview with Vince Blubaugh, Principal, GBMc & Associates (Dec. 19, 2000). ADEQ and permittees model oxygen demanding wastes using multi-SMP, which was developed by Limno-Tech, Inc., in 1986 and revised in 1992. *See id.*

1185. *See id.*

1186. *See id.* The BASINS model, which can account for point source and nonpoint source influences, includes subprograms for modeling minerals (through QUAL2E) and metals and organics (through HSPF). Also, EPA promotes the use of its program, WASP5, for modeling metals and organics. *See id.*

1187. *See* 40 C.F.R. § 130.12(a) (2000).

1188. *See* WQMP, *supra* note 1178.

1189. *See id.*

1190. *See id.* For example, the Hamilton facility discharging into Champanolle Creek in Calhoun County represents one of the larger differences in critical and seasonal limits. *See* WQMP, *supra* note 1178. The critical limits for May through October are 10 mg BOD/L, 15 mg TSS/L, while the seasonal limits for November through April are 25 mg BOD/L and 90 mg TSS/L. *See id.*

1191. An example of a small facility is the Arkansas Highway Transportation Department Rest Area at McGehee, with a flow of 0.001 million gallons per day. *See id.* The Little Rock Adams Field treatment facility is at the other end of the spectrum with a permitted flow of 36 million gallons per day. *See id.*

1192. *See id.* The WQMP identifies justification for the permit limits based upon a calibrated model, design criteria, a desktop model, effluent policy, or a field verified desktop model. *See id.*

1193. *See* WQMP, *supra* note 1178.

## 5. POTW Controls/Infrastructure

### a. Arkansas POTW Control Mechanisms

Arkansas POTWs use various mechanisms to control facilities discharging into their system.<sup>1194</sup> They include permits, agreements, and ordinances.<sup>1195</sup> These mechanisms will condition use of the system on compliance with the relevant CWA pretreatment and other requirements. The POTW will assure compliance by the use of various inspection,<sup>1196</sup> IU self-reporting, and enforcement procedures. This collection of requirements and procedures is arguably analogous to a state NPDES program. The number of IUs (i.e., non-domestic wastewater discharges, etc.) in a given municipality will vary.<sup>1197</sup>

#### 1. Sewer Use Agreements

A POTW may simply enter into an agreement or contract with facilities desiring to use the facility.<sup>1198</sup> The contract will address the responsibilities of the facility desiring to use the POTW.

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1194. POTWs are in some circumstances subject to restrictions in addition to requirement to obtain an NPDES permit. The construction of a POTW may in some circumstances trigger programs in addition to the requirement to obtain an NPDES permit. For example, Arkansas prohibits the construction of POTWs outside a municipality's corporate limits unless certain conditions are fulfilled. The City of Russellville challenged the City of Dover's construction of a sewage treatment facility outside the Dover municipal limits on the basis that it violated Act 1336 of 1997. *See City of Dover v. A.G. Barton*, 337 Ark. 186, 188, 987 S.W.2d 705, 707 (1999). The court reversed and remanded, finding that the statute did not apply to the Dover project because that would constitute a retroactive application. *See id.* at 191-92, 987 S.W.2d at 709.

1195. A detailed discussion of the various aspects of the mechanisms, procedures, and documents used by POTWs to control system users such as IUs is found in U.S. ENVTL. PROTECTION AGENCY, GUIDANCE MANUAL FOR POTW PRETREATMENT PROGRAM DEVELOPMENT (1993) [hereinafter Manual].

1196. *See, e.g.*, Letter from Kim Redo, Industrial Pretreatment Coordinator, Van Buren Municipal Utilities to Waste Management Systems (Aug. 4, 1997) (enclosing copy of pretreatment inspection report of IU conducted by City of Van Buren, Arkansas POTW) (on file with author).

1197. For example, the Batesville, Arkansas POTW reported 7 "permitted industries" in a 1997 report to ADPC&E. *See* Letter from Eugene Townsley, Superintendent, Batesville Wastewater Treatment Plant to Allen Gilliam, NPDES Pretreatment Coordinator, ADPC&E (Sept. 30, 1996) (on file with author).

1198. *See* Manual, *supra* note 1194, at 3-4.

## 2. *Permits*

Many Arkansas POTWs use permitting programs to regulate discharges by IU into their systems. These permits or authorizations are denominated by titles such as "waste contribution permit."<sup>1199</sup> They are often somewhat similar in form and purpose to NPDES permits.

## 3. *Ordinances*

An Arkansas municipality will at a minimum have enacted an ordinance authorizing the various inspection, reporting, and enforcement requirements.<sup>1200</sup> This ordinance will provide the authority for imposing various responsibilities on system users and/or serve as codified requirements that must be met. An ordinance will often include a surcharge that is imposed if a facility's discharge into the POTW exceeds a certain volume.<sup>1201</sup>

### b. Inter-Municipality Treatment Agreements

Some Arkansas POTWs treat sewage generated by residents and facilities in other municipalities or areas.<sup>1202</sup> Such relationships occasionally present difficulties. For example, the question has arisen as to whether a POTW is responsible for overflows released from a collection system located in another municipality. In response, the ADEQ stated that the POTW must report the bypass regardless of the fact it did not own the collection system.<sup>1203</sup>

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1199. For example, El Dorado Water Utilities utilizes a document titled "Wastewater Contribution Permit." See El Dorado Utilities Wastewater Contribution Permit (Apr. 1, 1999).

1200. An example is Van Buren, Ark., Ordinance No. 3-1997 (Jan. 27, 1997). The thirty-nine page ordinance establishes a detailed set of requirements for IUs using the POTW.

1201. See Letter from James D. Fredrick, Green Forest Municipal Water and Sewer Department to Director, ADEQ (Nov. 16, 1999) (referencing City of Green Forest ordinance sewer surcharge) (on file with author).

1202. Letter from Eugene Lewis, NPDES Enforcement Section, Water Division, ADEQ to Mike Luers, Pine Bluff Wastewater Utility (Aug. 27, 1978). See also *City of Dover*, 337 Ark. at 188, 98 S.W.2d at 707 (referencing City of Russellville's contract to treat City of Dover sewage) (on file with author).

1203. ADEQ noted in 1998 correspondence in response to a query from the Pine Bluff Wastewater Utility:

The Department has received your letter to Eric Fleming dated August 25, 1998. This letter is to clarify an apparent misconception as to the responsibilities under the National Pollutant Discharge Elimination System.

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The Pine Bluff Wastewater Utility's sewer system is permitted to discharge under NPDES permit AR0033316. Your attention is directed to Part II, Section A, Paragraph 1, *Duty to Comply*, which states "The permittee must comply with *all* the conditions of the permit. Your attention is further directed to Part II, Section D, Paragraph 6, which requires that the permittee report all bypasses of the system to the Department.

Your attention is further directed to the Definitions Section §8-4-102 page 13 of the Arkansas Water and Air Pollution Control Act (the Act) paragraph (5) which defines "Sewer system" to mean "pipelines or conduits, pumping stations, and force mains, and *all* other constructions, devices, and appliances appurtenant thereto, which are used for conducting sewage or industrial waste or other wastes to a point of disposal". [sic]

While we understand that you have entered into an agreement with White Hall, this does *not relieve* PBWU of the permit requirement to report *all* bypasses of their system.

In the state of Arkansas, it is not unusual for one municipality to treat the waste from another municipality. Much in the manner of Pretreatment Agreements between permittees and the Industrial Users, each arrangement is by agreement between the municipalities. Since there is no current way for the Department to keep track of all the variables of the various agreements (nor any current inclination to do so) the NPDES tracking system holds the permittee responsible for the reporting of overflows. For the system to work, overflow reporting must fall under a NPDES permit number. By the way, this convention also crosses state lines. The municipal treatment system in Texarkana, Texas is responsible to report some overflows occurring in Arkansas.

For your information, many interjurisdictional agreements contain language that requires the serviced city to report overflows to the servicing city, so that they may be reported to meet NPDES requirements.

Letter from Eugene Lewis, NPDES Enforcement Section, Water Division, ADEQ to Mike Luer, Pine Bluff Wastewater Utility (Aug. 27, 1998) (on file with author). The ADEQ letter was in response to a letter from Pine Bluff Wastewater Utility correspondence which noted in part:

This letter is in response to your August 19, 1998 letter concerning the bypasses within the City of White Hall. Currently, the City of Pine Bluff only accepts wastewater from the City of White Hall through their pump stations. Our intergovernmental agreement with White Hall delineates the responsibilities of the two cities with regard to maintenance of their respective collection systems. Under the agreement, the City of Pine Bluff has no authority to move crews and equipment or contract for services to enter into or work on the White Hall collection system. Similarly, we have no responsibility for maintenance, point repairs, cleaning, damage, or failures of the White Hall collection system.

The Pine Bluff Wastewater Utility outlined this arrangement in our letter dated April 5, 1998. If ADPC&E wishes to take action or order repairs of the White Hall system it has ample authority under Act 472 of 1949, as amended, and need not attempt to coerce the City of Pine Bluff to undertake illegal acts outside our jurisdiction.

Letter from Mike Luer, Pine Bluff Wastewater Utility, to Eric Fleming, Water Division, ADPC&E (Aug. 25, 1998) (on file with author). The State of Ohio specifically requires that its environmental agency approve contracts between such entities for purpose of sharing an existing on proposed sewage treatment or disposal system. See OHIO EPA,

c. Storm/Sewer Drains

A recurring problem in some municipalities in Arkansas and other states are overflows from the sewer system. Discharges can originate from parts of the system such as manholes, sewer inlets, or CSO outfalls.<sup>1204</sup> Such unauthorized overflows or discharges may include solids, raw sewage, and other floatables.<sup>1205</sup> These discharges are likely to draw attention from area residents and businesses.<sup>1206</sup>

The infrastructure associated with POTWs includes lines and drains. Their purpose is to collect and transport the wastewater, stormwater and other contaminants. An occasional problem for some POTWs and municipalities is the tendency of lines, drains, and other conveyances to collect contaminants from sources other than permitted discharges. In *Westfarm Associates Limited Partnership v. International Fabricare Institute*,<sup>1207</sup> a Maryland POTW's sewer lateral was found to have received the chemical perchloroethylene ("PCE"). The PCE allegedly originated from a drycleaner whose personnel had poured the material into a sink drain.<sup>1208</sup> This drain was attached to a sewer line.<sup>1209</sup> The contaminated line allegedly released PCE onto an adjacent property through sags, cracks, and other openings.<sup>1210</sup> The owner of the adjacent property brought CERCLA cost recovery and common law actions against the POTW.<sup>1211</sup>

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DIVISION OF SURFACE WATER, PROCEDURE FOR THE REVIEW AND PROCESSING OF JOINT SEWER SERVICE CONTRACTS, PERMIT TO INSTALL GUIDANCE 1 (1996).

1204. See *Community of Cambridge Env'tl. Health & Cmty. Dev. Group v. City of Cambridge*, 115 F. Supp. 2d 550 (S.D.N.Y. 2000). This decision references such alleged discharges from the City of Cambridge, Maryland sewer system. See *id.* at 552.

1205. See *id.*

1206. See *id.*

1207. 66 F.3d 669 (4th Cir. 1995).

1208. See *id.* at 674.

1209. See *id.*

1210. See *id.*

1211. See *id.* at 678. The plaintiff argued that the federal CERCLA statute applied to this scenario because the sewer infrastructure was allegedly "a facility" that released a "hazardous substance" as those terms are defined by that statute. See *id.* See also *Lincoln Props., Ltd. v. Higgins*, 823 F. Supp. 1528 (E.D. Cal. 1992) (addressing allegation that California county's ownership of a portion of leaking sewers and wells renders it a responsible party under CERCLA for remediation of hazardous substances). These issues are addressed in Peter R. Hinckley, *State and Municipal Sewer System Authority Liability Under CERCLA: Who Should Pay for the Cleanup of Hazardous Industrial and Commercial Sewer Discharges*, 22 ENVTL. AFF. L. REV. 89 (1994). See also Wright & Morrissey, *supra* note 21, at 763.



Other infrastructure problems include flooding or overflows during stormwater events. A related problem is leakage or infiltration from or through holes, cracks, or other openings.<sup>1212</sup> The advanced age of pipes and drains can increase the likelihood of movement into or out of these systems.<sup>1213</sup> Underfunding and/or inadequate maintenance can also lead to infiltration and inflow.<sup>1214</sup>

The construction, operation, and maintenance of such lines and drains can be expensive. Inflow and infiltration are often addressed by replacement of the affected system.<sup>1215</sup> Inflow and infiltration can cause overflows.<sup>1216</sup>

#### d. Stormwater Treatment

In 1999, Arkansas House Bill 1987 proposed a facility user's fee for each user's actual or estimated proportionate contribution to stormwater runoff.<sup>1217</sup> The proposed legislation was primarily drafted by the City of Little Rock to address its ongoing concerns with its separate storm sewer discharges.<sup>1218</sup> The legislation authorized municipalities to collect fees from the stormwater users, and granted the power of eminent domain to condemn property for stormwater facility and flood control improvements. The bill also allowed municipalities to develop regulations to accomplish these purposes.<sup>1219</sup> The bill attracted the attention of commercial and residential development interests.<sup>1220</sup> It failed to receive enough

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1212. See Alexander Reid, *Along Wollaston Beach, Optimism Rides Waterfront Rebound*, BOSTON GLOBE, June 11, 2000, at 1 (reporting on sewage leaks that had threatened a Massachusetts recreational area).

1213. See *id.* (referencing replacement of aging infrastructure).

1214. See *id.* (reporting on Miami, Florida system problems stemming from deferred maintenance).

1215. See Letter from John Lamb, Water Division, ADEQ to Steve Rand, Manager, Warren Water and Sewer Commission (July 27, 2000) (referencing Warren, Arkansas POTW's commitment to address inflow and infiltration by replacement of pipe, smoke testing, and employment of additional personnel for sewer collection) (on file with author). Smoke detection is used to identify leaks. Letter from Steve Rand, Warren Water to Eugene Lewis, Enforcement Supervisor, Water Division, ADEQ (Oct. 11, 1999) (on file with author). Another technique used to identify inflow and infiltration is televised line inspections. See Wright, *supra* note 104.

1216. See Letter from James E. Rice, P.E., NRS Consulting Engineers to John W. Lamb, Water Division (Aug. 23, 1999) (on file with author).

1217. See H.B. 1987, 82nd Gen. Ass., Reg. Sess. (Ark. 1999).

1218. Telephone Interview with Steve Napper, Arkansas State Representative (Aug. 24, 2000).

1219. H.B. 1987, 82nd Gen. Ass., Reg. Sess. (Ark. 1999).

1220. Telephone Interview with Steve Napper, Arkansas State Representative (Aug. 24, 2000).

votes to exit a House Committee, but the proposal is indicative of the pressure that many Arkansas municipalities experience with regard to stormwater discharges.<sup>1221</sup>

Arkansas municipalities face the same challenges in maintaining and/or rehabilitating their sewer systems. A recent illustration is a CWA citizen suit by the Sierra Club<sup>1222</sup> which alleged that the City of Little Rock<sup>1223</sup> violated the CWA through unlawful discharges of untreated sewage from the city's sanitary sewer collection system.<sup>1224</sup> The discharges, commonly called sanitary sewer overflows ("SSOs"), allegedly occurred 375 times between 1994 and 1999.<sup>1225</sup> In its complaint, the plaintiff alleged CWA violations for the SSOs, failure by the defendants to report violations, and failure to perform an annual review of the Storm Water Management Program.<sup>1226</sup> The plaintiff also alleged that the SSOs created an imminent and substantial endangerment to health and the environment under RCRA.<sup>1227</sup>

## 6. *Stormwater Permits*

### a. *Initial Requirements*

#### 1. *Stormwater Associated with Industrial Activity*

Pursuant to section 402(p) of the CWA<sup>1228</sup> and the AWAPCA<sup>1229</sup> owners and operators of facilities discharging stormwater associated with industrial activity located in Arkansas must obtain permits for such discharges. The Water Quality Act of 1987 added section 402(p) to the CWA to provide a comprehensive framework for EPA to address stormwater discharges.<sup>1230</sup> The 1987 amendments listed five types of

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1221. *See id.*

1222. *See* Sierra Club v. City of Little Rock, No. 4:00CV022 WRW (E.D. Ark., complaint filed Jan. 13, 2000).

1223. *See id.* The original defendants were the City of Little Rock, Little Rock Public Works Department, Little Rock Sanitary Sewer Committee, and Little Rock Wastewater Utility. *See id.*

1224. *See id.*

1225. *See id.* at 5.

1226. *See id.* at 7-9.

1227. *See id.* at 9-10.

1228. *See* 33 U.S.C. § 1342(b) (1994).

1229. *See* ARK. CODE ANN. § 8-4-101 (LEXIS 2000).

1230. *See* 33 U.S.C. § 1342 (1994).

stormwater discharges that were required to obtain a permit<sup>1231</sup> before October 1, 1992.<sup>1232</sup>

EPA subsequently promulgated proposed rules for NPDES general permits and reporting requirements for stormwater discharges associated with industrial activity.<sup>1233</sup> The agency determined that the issuance of individual NPDES permit for many of these facilities would be burdensome. It therefore proposed using "general permits" to initially cover the majority of stormwater discharges associated with industrial activity.<sup>1234</sup> The proposed rule for general permit requirements was finalized in April 1992.<sup>1235</sup> A general permit for covered construction sites was issued in September 1992.<sup>1236</sup> The final NPDES general permits for stormwater discharges associated with industrial activity were promulgated on September 25, 1992.<sup>1237</sup> The language of both permits was adopted in substantial part by DEQ.<sup>1238</sup>

The owner/operator of an affected Arkansas facility has three permitting options for stormwater discharges. First, the facility may address the stormwater discharge through acquisition of an NPDES individual permit.<sup>1239</sup> Acquiring an NPDES permit is more time consum

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1231. See 33 U.S.C. § 1342(p)(2) (1994). The five types of stormwater discharges are as follows: a discharge with respect to which a permit had been issued prior to February 4, 1987; a discharge associated with industrial activities; a discharge from a municipal separate storm sewer system serving a population of 250,000 or more; a discharge from a municipal separate storm sewer system serving a population of 100,000 or more but less than 250,000; or a discharge for which EPA or the state determines that the stormwater discharge contributes to a violation of a WQS or is a significant contributor of pollutants to the waters of the United States. See *id.*

1232. Congress later amended the Water Quality Act to change the date to October 1, 1994. See Pub. L. No. 102-580, 106 Stat. 4797 (1992).

1233. See 56 Fed. Reg. 40,948 (1991).

1234. See 56 Fed. Reg. 40,948, 40,954 (1991).

1235. See 57 Fed. Reg. 11,394 (1992).

1236. See 57 Fed. Reg. 41,176 (1992).

1237. See 57 Fed. Reg. 44,438 (1992). A detailed discussion of a dispute over whether two facilities were in compliance with stormwater general permits is found in *Ecological Rights Foundation v. Pacific Lumber Co.*, 61 F. Supp. 2d 1042 (N.D. Cal. 1999), *rev'd*, 230 F.3d 1141 (9th Cir. 2000).

1238. Telephone Interview with Chuck Bennett, Chief, Water Division, ADEQ (Nov. 9, 2000).

1239. See Arkansas NPDES Permit No. ARR00A000, Part I.C. (Aug. 31, 1998). Apart from a facility seeking an NPDES individual permit for stormwater discharges, the ADEQ director may require the facility to apply for an obtain an individual NPDES permit. See *id.* In *Scott Tie Co. v. Missouri Clean Water Commission*, 972 S.W.2d 580 (Mo. Ct. App. 1998), the court affirmed the finding of the Missouri Clean Water Commission and the Missouri Department of Natural Resources denying an application for a general permit for a stormwater discharge at a facility that treats railroads with creosote. Under Missouri regulations, the state agency could require a site specific permit if the stormwater discharge is not in compliance with the conditions of the

ing than the other two options.<sup>1240</sup> A second option is to obtain authorization for the discharge through a general NPDES permit. A general NPDES permit affords coverage to discharges that meet certain eligibility criteria.<sup>1241</sup> Finally, the facility may seek a general permit that covers owners and operators of facilities discharging stormwater associated with industrial activity.<sup>1242</sup> There are, however, limitations on coverage for the Arkansas general stormwater permit.<sup>1243</sup> For example, stormwater discharges that are mixed with sources of non-stormwater are not covered by the Arkansas general stormwater permit except where the non-stormwater discharge is in compliance with a different NPDES permit and is an authorized non-stormwater discharge.<sup>1244</sup>

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general permit. *See id.* at 586.

1240. Telephone Interview with Doug Ford, Pollution Management, Inc. (Nov. 15, 2000).

1241. The eligibility criteria are specified in each general permit. The ADEQ has the following general permits currently available: coal mining and coal exploration, ARG040000; sanitary landfills, ARG160000; petroleum storage, ARG340000; individual treatment, ARG550000; water treatment, ARG640000; hydrostatic testing, ARG670001; car/truck wash, ARG750000; groundwater cleanup, ARG790000; self-service laundry, ARG850000.

1242. The term "storm water associated with industrial activity" has an extensive definition with eleven different subparts. The primary manner in which facilities are identified is the standard industrial classification number for the facility. *See* Arkansas NPDES Permit No. ARR00A000, Part I.B.4.

1243. *See* NPDES General Permit No. ARR00A000, Part I.B.3. Facilities which are subject to existing effluent guideline limitations addressing stormwater where a combination of stormwater and process water are ineligible for the Arkansas General Stormwater Permit. These include cement manufacturing, feed lots, fertilizer manufacturing, petroleum refining, phosphate manufacturing, steam electric, coal mining, mineral mining and processing, or mining and dressing and asphalt emulsion. If a facility has an existing NPDES individual or general permit where numeric limitations exist, the facility is not eligible for the NPDES general permit. For example, minor POTWs are not required to obtain a general stormwater permit. *See* Letter from Steven G. Burghart, Engineer, ADEQ Water Division, to Jim Beazley, City of Forrest City (Oct. 1, 1998) (on file with author).

A stormwater discharge associated with industrial activity from construction activities are not eligible for this general permit. Stormwater discharges determined to be contributive to a violation of a water quality standard are ineligible for coverage. Stormwater discharges associated with industrial activities from inactive mining, inactive landfills, or inactive oil and gas operations occurring on federal lands where an operator cannot be identified are also ineligible. The general permit is not applicable to discharges that would adversely affect listed endangered or threatened species or its critical habitat. Finally, the stormwater discharges associated with industrial activity that would effect property listed on or eligible for listing on the National Register for Historic Places.

1244. *See, e.g., In re Liquid Air Puerto Rico Corp.*, NPDES Appeal No. 92-1, 1994 EPA App. LEXIS 41 at \*23 (May 5, 1994).

In order to obtain coverage under the general permit for a stormwater discharge associated with industrial activity, the applicant must submit a Notice of Intent ("NOI") forty-eight hours prior to the desired coverage period.<sup>1245</sup> The NOI provides ADEQ with basic information about the facility such as its location and the existence of a stormwater pollution prevention plan ("SWPPP").<sup>1246</sup> The SWPPP incorporates the various measures the facility is undertaking to manage and/or otherwise control facility stormwater discharges.<sup>1247</sup> Many of the required measures are best management practices as opposed to numerical effluent limits.<sup>1248</sup> Dischargers are given the discretion to choose best management practices to address the stormwater discharges for their site or facility.<sup>1249</sup> A facility must amend its SWPPP whenever a change in design, construction,

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1245. See Arkansas NPDES Permit No. ARR00A000, Part II.A. (Aug. 31, 1998). Note that oil and gas exploration, production, processing, treatment operations or transmission facilities must submit an NOI within at least fourteen calendar days of a discharge of reportable quantity of oil or hazardous substance where notification is required pursuant to federal regulations. See *id.* Part II.A.2.

1246. See *id.* Part III.C. (Aug. 31, 1998). Except for oil and gas operations, the SWPPP must be developed within 60 days of submitting and NOI. See *id.* Part III.C.1.a.1.

1247. See *id.* Part III.C. (Aug. 31, 1998). At a minimum the plan includes the following: identification of a pollution prevention team; description of potential pollution sources; implementation of measures and controls for the facility; comprehensive site evaluation; and consistency with other regulatory stormwater management programs. There are additional requirements for discharges associated with industrial activity to municipal separate storm sewers systems serving a population of 100,000 or more; facilities subject to SARA Title III, section 313 requirements; and facilities with salt storage piles. See *id.*

1248. See Telephone Interview with Doug Ford, Pollution Management, Inc. (Nov. 10, 2000). The only numeric limits contained in the general stormwater permit are for coal pile runoff. See Arkansas NPDES Permit No. ARR00A000, Part IV (Aug. 31, 1998). Stormwater runoff containing any coal pile runoff shall not exceed total suspended solids concentrations of 50 mg/l and must have a measured pH of 6 to 9 standard units. The permit does require that certain facilities undertake whole effluent toxicity testing. In 1998, the ADEQ revised the permit to allow facilities to forego whole effluent toxicity testing if it passes two consecutive testing periods. See *id.* Part V.B. (August 31, 1998). Cf. Arkansas NPDES Permit No. ARR00A000, Part V.B. (October 1, 1992). There was some amount of controversy regarding toxicity testing requirements during the renewal of the Arkansas general stormwater permit for industrial activity. Some commenters objected to the requirement of continued testing for facilities that had failed to pass biomonitoring when new facilities were not subject to the same requirements. The ADEQ disagreed. See Jim Floyd, ADEQ Response to Comments; Final Permit Decision, Permit No. ARR00A000 (July 24, 1998). See also *Defenders of Wildlife v. Browner*, 191 F.3d 1159 (9th Cir. 1999). For example, municipal stormwater dischargers are not required to meet numeric limitations to ensure strict compliance in meeting the WQS.

1249. See Telephone Interview with Doug Ford, Pollution Management, Inc. (Nov. 10, 2000).

operation, or maintenance has a significant effect on the discharge of pollutants in stormwater.<sup>1250</sup>

The Arkansas general stormwater permit also provides specific monitoring and reporting requirements.<sup>1251</sup> They vary depending upon the type of facility. However, all facilities are required to report certain events. For example, a release of a hazardous substance or oil in stormwater in an amount equal to or in excess of a reporting quantity established pursuant to the CWA<sup>1252</sup> or CERCLA<sup>1253</sup> requires specific responses of the discharger.<sup>1254</sup> The general permit mandates notification to the National Response Center and submission to ADEQ of a description of the release and the circumstances leading to the release. The facility must also modify the SWPPP within fourteen days of the release to prevent recurrence of such a release.<sup>1255</sup>

## 2. Construction Related Stormwater Permit

ADEQ issued a separate general stormwater permit for discharges from construction sites. Permit coverage must be obtained if construction will disturb five or more acres of total land area.<sup>1256</sup> The owner or operator must obtain an Arkansas NPDES general stormwater permit for stormwater associated with industrial activity from construction sites (hereinaf-

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1250. See Arkansas NPDES Permit No. ARR00A000, Part III.C.3. (Aug. 31, 1998).

1251. See *id.* Part V (Aug. 31, 1998). Generally, sampling must occur at least once per year and a discharge monitoring report is required for facilities identified in Part V.B.1 through V.B.12 once per year. The monitoring and reporting requirements are considered key components of the permit. The failure to monitor and report stormwater discharges for the presence of SARA section 313 water priority chemicals has therefore been a focus of federal enforcement. See *In re Industrial Chemicals Corp.*, No. CWA-02-99-3402, 2000 EPA ALJ LEXIS 58 (June 16, 2000). Note, however, many Arkansas facilities are not required to perform sampling and/or monitoring.

1252. See 40 C.F.R. §§ 110.3-110.6 (2000).

1253. See 40 C.F.R. § 302(4) (2000).

1254. See ARKANSAS GENERAL STORMWATER PERMIT FOR INDUSTRIAL ACTIVITY, PERMIT NO. ARR00A000, Part III.B. (Oct. 1, 1998).

1255. See *id.* See also Letter from Robert I. Van Heuvelen, Director, EPA Office of Regulatory Enforcement to Robert Van Voorhees and Carol Lynn Green, Bryan Cave, LLP (Aug. 2, 1996) (discussing CERCLA reporting requirements of releases for ethylene glycol during deicing operations at airports with NPDES general stormwater permits) (on file with author).

1256. See NPDES Permit for Discharges of Stormwater Associated with Industrial Activity from Construction Sites Located in the State of Arkansas, Permit No. ARR10A000 Part I(b)(1) (July 1, 1998). However, a stormwater permit for construction may not be necessary where the discharge from the construction site is directed through a treatment system covered by an individual NPDES permit. See, e.g., Letter from J.W. Ross, Environmental Associate, Eastman Chemical Company to Mark Bradley, Water Division, ADEQ (May 3, 1996) (on file with author).

ter "general stormwater construction permit"). The permit not only covers construction sites but also stormwater discharges from support activities, e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, and excavated material disposal areas.<sup>1257</sup>

An owner or operator desiring coverage from the general stormwater permit must submit a NOI to the ADEQ.<sup>1258</sup> The NOI must be submitted at least forty-eight hours prior to the commencement of work at the construction site.<sup>1259</sup> Prior to the submittal of a NOI, the facility must prepare a SWPPP in accordance with good engineering practices.<sup>1260</sup> Like the industrial general stormwater permit, the owner or operator using the Arkansas general stormwater permit for construction activity must keep the SWPPP current.<sup>1261</sup> The requirements of the NOI and the SWPPP generally mirror those continued in the Arkansas General Stormwater Permit for Industrial Activity.<sup>1262</sup>

The Arkansas general stormwater permit requires the SWPPP to contain a description of the following: site characteristics, appropriate controls, measures to control pollutants in stormwater discharges and other controls, requirements specified in approved state or local plans for sediment and erosion control, maintenance, and inspection.<sup>1263</sup> The required controls typically constitute best management practices.<sup>1264</sup>

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1257. See NPDES Permit No. ARR10A000, Part I(B)(2). Eligibility for the general stormwater construction permit for support activities requires that the support activity (i) be directly related to the construction site, (ii) is not a commercial operation serving multiple unrelated construction projects, and (iii) identify appropriate control measures in the stormwater pollution prevention plan for discharges from the support activity areas. See *id.*

1258. See *id.* Part II.

1259. See *id.*

1260. See *id.* Part III.D.

1261. See *id.* Part III.D.3 (May 31, 1998).

1262. See Telephone Interview with Doug Ford, P.E., Pollution Management, Inc. (Nov. 10, 2000).

1263. See NPDES Permit No. ARR10A000, Part III.D.4. The erosion and sediment controls required in the SWPPP include stabilization and structural practices. Examples of stabilization practices include temporary seeding, mulching, geotextiles, and sod stabilization. Examples of structural practices are silt fences, dikes, swales, check dams, and sediment traps. See *id.* at Part III.D.4.b.

1264. A detailed discussion of various BMPs used in the stormwater context is found in *City of New York v. Anglebrook L.P.*, 891 F. Supp. 908 (S.D.N.Y. 1995). In *City of New York*, the city opposed construction of a private golf club near two of the city's many reservoirs that serve as its water supply. The city objected to practically every portion of the SWPPP the golf course developer had prepared for the general stormwater permit issued by the New York Department of Environmental Conservation. Specifically, the city challenged the provisions of the SWPPP calling for sodding on steep slopes, the use of diversions, the spacing and length of silt fences and the amount of exposed soil at any one time. In addition, the city objected to the stormwater management controls

The construction stormwater permit requires the SWPPP to contain a description of the same items as the Arkansas general stormwater permit.<sup>1265</sup> If a party opposes the construction activity allowed by the general permit, the party may question the implementation or suitability of the various elements of the SWPPP.<sup>1266</sup>

The responsibility for the preparation of the SWPPP and compliance with the other applicable CWA stormwater requirements must be allocated between the parties involved in the project or activity. These regulated requirements have been in place for enough time that they are now generally and routinely addressed in construction contracts.<sup>1267</sup> Regardless, issues can still arise in various contexts. For example, in *United States ex rel. Ashok Bhatnagar v. Kiewitt Pacific Co.*,<sup>1268</sup> a qui tam action was filed against a California state agency and a contractor under the federal False Claims Act<sup>1269</sup> for allegedly improper claims arising out of payment for stormwater pollution prevention measures. A key issue was whether the contractor was due additional compensation under contract because CWA SWPPP amendments were required during the course of the project.<sup>1270</sup>

#### b. Phase II Requirements

The Phase II stormwater controls require all small municipal sewer systems (“MSS”) to establish a stormwater discharge control program that meets six minimum control measures.<sup>1271</sup> The minimum control measures

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such as the use of the proper runoff coefficient and the methods of first flush control. Finally, the city questioned the contents of the SWPPP for failing to protect against thermal pollution from stormwater discharged into a trout designated stream, and the inspection and monitoring requirements during the construction. *See id.* at 916-23. Ultimately, the court rejected each of the issues the city raised. *See id.*

1265. *See* NPDES Permit No. ARR10A000, Part III.D.4. The erosion and sediment controls required in the SWPPP include stabilization and structural practices. Examples of stabilization practices include temporary seeding, mulching, geotextiles, and sod stabilization. Examples of structural practices are silt fences, dikes, swales, check dams, and sediment traps. *See id.* Part III.D.4.b.

1266. *See, e.g., Anglebrook*, 891 F. Supp. at 916-23.

1267. *See* Telephone Interview with Doug Ford, P.E., Pollution Management, Inc. (Dec. 13, 2000). Contractual provisions addressing stormwater compliance on a construction site are described in *United States v. Kiewitt Pacific Co.*, 2000 U.S. Dist. LEXIS 14400 at \*\*17-20 (N.D. Cal. 2000).

1268. 2000 U.S. Dist. LEXIS 14400 at \*\*17-20 (N.D. Cal. 2000).

1269. *See* 33 U.S.C. § 3279 (1994).

1270. *See Kiewitt*, 2000 U.S. Dist. LEXIS 14400 at \*\*17-20.

1271. *See* 64 Fed. Reg. 68,722, 68,748 (1999) (to be codified at 40 C.F.R. pts. 9, 122, 123, and 124).



are public education outreach on stormwater impacts, public involvement and participation, discharge protection and elimination, construction site stormwater runoff control, post-construction stormwater management in new development and redevelopment, and pollution prevention/good-housekeeping for municipal operations.<sup>1272</sup> If a governmental entity operates a small MSS within an urbanized area, it is subject to the Phase II regulations. There are several counties and cities in Arkansas that may be subject to these regulations. These governmental entities include cities and towns within the following counties: Benton, Crawford, Crittenden, Jefferson, Miller, Pulaski, Saline, Sebastian, and Washington.<sup>1273</sup>

Concern has been expressed about the impact of this program on Arkansas.<sup>1274</sup> ADEQ's ability to staff and administer the program has been questioned.<sup>1275</sup> Also, the direct cost to cities for implementation and administration of the program is thought to be significant.<sup>1276</sup> The concern has focused in particular on smaller communities because of their limited tax base.<sup>1277</sup>

This program will also potentially affect smaller Arkansas municipalities. ADEQ will be required to examine several Arkansas cities for potential designation as small MSSs.<sup>1278</sup> The following municipalities have been identified based upon the 1990 census: Arkadelphia, Benton, Blytheville, Conway, El Dorado, Hot Springs, Magnolia, Rogers, Searcy, and Stuttgart. As a result of the possible impact on Arkansas municipalities, the Arkansas House of Representatives Committee on City, County, and Local Affairs has requested that the Arkansas congressional delegation seek a delay of the implementation of the Phase II regulations.<sup>1279</sup> The

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1272. *See id.*

1273. *See id.* at 68,812.

1274. *See* Hearing before the Arkansas House and Senate Interim Committee on City, County and Local Affairs (Sept. 29, 2000) (statement of Jim Beavers, City Engineer, Fayetteville, Arkansas) [hereinafter Hearing]. Some cities believe that they may have many other requirements for developing a stormwater management plan already in place. *See, e.g.,* Jean Bolduc, *Carrboro Has Lead on New Stormwater Rules*, CHAPEL HILL HERALD, Oct. 9, 2000, at 1A.

1275. *See* Hearing, *supra* note 1273.

1276. In 1995, former United States Representative Blanche Lambert Lincoln of Arkansas quoted National League of Cities figures that estimated the cost for some cities to obtain a permit at \$625,000. *See* 141 Cong. Rec. E 63 (daily ed. Mar. 16, 1995).

1277. *See id.*

1278. *See* 64 Fed. Reg. 68,722, 68,835 (1999).

1279. *See* Arkansas House and Senate Interim Committee on City, County and Local Affairs, Minutes (Sept. 29, 2000).

committee suggested that a study of the financial impact be undertaken in lieu of implementation.<sup>1280</sup>

e. No-Discharge Water Pollution Control Permits

1. *Permits*

The AAWPCA provides ADEQ broader statutory authority for permitting purposes than found within the CWA. The agency may in some circumstances require that permits be obtained for activities that will not necessarily discharge pollutants directly into a waterbody. ADEQ refers to these requirements as “no discharge” permits. A wide variety of facilities undertake activities that necessitate obtaining such permits. They include operations as diverse as car washes<sup>1281</sup> and hog farms.

2. *Sludge Management*

In Arkansas, most sewage sludge is managed pursuant to a state no-discharge water permit issued by ADEQ.<sup>1282</sup> Many Arkansas POTWs transfer sludge to farming operations for application to crops pursuant to a state permit.<sup>1283</sup> The state uses the no-discharge water permit, which incorporates many of the requirements of part 503 of the federal regulations.<sup>1284</sup> However, EPA has proposed that ADEQ administer the sewage sludge program pursuant to the CWA.<sup>1285</sup> Consequently, EPA proposed an NPDES general permit and reporting requirements for the beneficial reuse or disposal of municipal sewage sludge in Arkansas.<sup>1286</sup> The ADEQ

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1280. *See id.*

1281. *See, e.g.*, Letter from Chuck Bennett, Chief, Water Division, ADEQ to Ira Sims, Ira Sims Car Wash and Convenience Store (May 15, 1995) (enclosing permit to operate car wash and waste disposal system). The four bay carwash projected a 2,300 gallon per day wastewater flow that would be treated by sediment basins, grease traps, 48-hours of storage in septic tanks, and a leach field. *See* Letter from Mark A. Gross, Ph.D., Rural Engineering Services, Inc., to Harold Seifert, Arkansas Department of Health (Jan. 13, 1995).

1282. *See* Telephone Interview with Keith Brown, Manager, State Permits Branch, ADEQ Water Division (Dec. 12, 2000).

1283. *See* Robert J. Smith, *Fayetteville Weighs Options for Sewage Sludge Disposal*, ARK. DEMOCRAT-GAZETTE, Nov. 21, 2000, at 1B (referencing sludge management practices of various Arkansas cities).

1284. *See, e.g.*, Wilcox Land & Cattle Co., Permit No. 4497-WR-2 (May 5, 2000).

1285. *See* 33 U.S.C. § 1345(c) (1994).

1286. *See* 63 Fed. Reg. 45,241 (1998).

has submitted an application<sup>1287</sup> to EPA to administer the program according to the requirements of the federal regulations.<sup>1288</sup>

f. The AAWPCA Role As a Remediation Authority

The AAWPCA's role is not limited to simply authorizing the Arkansas NPDES and other permitting programs. The jurisdictional reach of this statute is broader than that provided by the CWA. The Arkansas statute provides that "[i]t shall be unlawful to place any . . . wastes in a location where it is likely to cause pollution of any waters of the state."<sup>1289</sup> "Waters of the state" is defined as "all streams, lakes, marshes, ponds, watercourses, waterways, wells, springs, irrigations systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private which are contained within, flow through, or border upon this state or any portion of the state."<sup>1290</sup>

The key difference between the AAWPCA and the CWA is jurisdiction. Arkansas and other similar state statutes have greater jurisdictional reach than found in the CWA. The AAWPCA encompasses any location containing contaminants that may pollute or impact waters of the state. Unlike the CWA, waters of the state will usually not be limited to surface waterbodies. The term may include groundwater and other subsurface water. Also, the contaminants or pollutants do not necessarily have to physically enter the waters of the state. Phrases such as "likely to render such waters harmful" or "may cause pollution of waters of the state" means a pollutant does not have to be present in a waterbody to fall within the scope of the statute. For example, contaminants located on surface soil could constitute a violation if it can be demonstrated they may migrate laterally to surface water or downward to groundwater.<sup>1291</sup>

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1287. Telephone Interview with Doug Ford, P.E., Pollution Management, Inc. (Dec. 14, 2000).

1288. See 40 C.F.R. § 503 (2000).

1289. See ARK. CODE ANN. § 8-4-217 (LEXIS Repl. 2000).

1290. A number of states have similar statutory authorities. See *Cadlerock Properties Joint Venture, L.P. v. Commissioner of Env'tl. Protection*, 757 A.2d 1 (2000) (describing Connecticut's use of state statute to address activities allegedly affecting "waters of the state").

1291. The scope of these state statutory authorities is not unlimited. In *Jerry Russell Bliss, Inc. v. Pollution Control Board*, 485 N.E.2d 1154 (Ill. Ct. App. 1985), the Illinois Environmental Protection Agency ("IEPA") alleged violation of such an Illinois statute. It cited a company whose truck had sprayed liquids containing 10,000 parts per million trichloroethylene into an area. See *id.* at 1156-57. The court, reviewing the propriety

The breadth of the AAWPCA is an important tool for the ADEQ. Agencies can only address those activities or conditions for which the jurisdictional elements of one or more environmental statutes exist. For example, the discharge of a CWA pollutant will not be encompassed by the NPDES program if it simply results in subsurface soil contamination. Two subtitles of the RCRA might be applicable to such subsurface contamination in certain circumstances. Subtitle C of RCRA may be applicable to the liquids that are released if they constitute "hazardous waste."<sup>1292</sup> If this jurisdictional element (i.e., "hazardous waste") is absent, the program does not apply. However, if the source of the subsurface contamination was a release of petroleum from an underground storage tank, subtitle I of RCRA may be triggered.<sup>1293</sup> If instead the petroleum is released from an aboveground storage tank, Subtitle I is inapplicable.<sup>1294</sup>

These scenarios demonstrate that the absence of any one jurisdictional element precludes the CWA's and other statutes' use in addressing certain activities and/or environmental conditions. These federal statutory gaps and/or limitations tend to magnify the importance of state statutes such as the AAWPCA since they often have broader jurisdictional coverage. The AAWPCA terms "pollutant" and "waters of the state"<sup>1295</sup>

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of this action, noted:

Although TCE is listed by the Board as a toxic hazardous substance, a principal draftsman of the Environmental Protection Act recognized that the mere presence of a potential source of water pollutants on the land does not necessarily constitute a water pollution hazard. In the present case it was shown that TCE contaminated oil was deposited in a quantity sufficient to puddle on the surface of the ground in an area which is located 1,200 feet from the Mississippi River and which is prone to leaky artesian conditions. It was also shown that this oil contained a TCE concentration in excess of 10,000 parts per million. However, no effort was made to establish that this particular quantity and concentration of TCE was likely to create a nuisance or to render the waters harmful, detrimental, or injurious. We therefore conclude that the finding of the Pollution Control Board that respondents were guilty of violations of sections 12(a) and 12(d) of the Environmental Protection Act must be reversed.

*See id.* at 1156-57 (internal citations omitted). *See also* EPA v. Ayshire Coal Co., 1972 Ill. ENV LEXIS 278 \*1 (clarifying by the Illinois Control Board that its holding should not be read to mean mere presence of water pollutants on the land necessarily constitutes a "threat" of water in violation of section 12(a)).

1292. The term "hazardous waste" is defined at 40 C.F.R. § 261.3 (2000).

1293. Subtitle I regulations are found at 40 C.F.R. § 280 (2000) The corresponding Arkansas regulations are found in ADEQ Regulation No. 12. *See also* Wright, *supra* note 241; Wright & Morrissey, *supra* note 21, at 290.

1294. There is neither a federal nor Arkansas investigation/remediation program for AST petroleum releases analogous to the Subtitle I UST provisions.

1295. The agency believes that any number of water quality changes or conditions

are more likely to encompass the activities and/or conditions described in the previous scenarios. Consequently, ADEQ considers the AA WPCA a key state environmental protection authority.<sup>1296</sup> The agency will use this statutory authority in its broadest context to prevent degradation of state water quality.<sup>1297</sup>

g. Ancillary Provisions/Issues

1. *Compliance Deferral/Interim Authorizations*

a. Schedules of Compliance/Interim Limits

An NPDES permit issued by ADEQ will specify a point in time by which various effluent limits and other requirements must be met. Permittees sometimes seek to defer compliance or reduce the stringency of effluent limits after a permit is issued. An important question is whether ADEQ can grant such a request.

Some courts have declined to characterize the issuance of an order allowing reduced effluent limits as a permit modification.<sup>1298</sup> Instead, the action has been deemed an exercise by the agency of its enforcement discretion.<sup>1299</sup> A key question is whether EPA or another party could enforce the underlying permit limits despite ADEQ's exercise of such enforcement discretion.<sup>1300</sup>

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such as pH, BOD, turbidity, etc. can potentially constitute pollution to waters of the state.

1296. Telephone Interview with Michelle Kinder and Ellen Carpenter, Attorneys, Legal Division, ADEQ (Sept. 25, 2000).

1297. *See id.* It should be noted that the use of this authority is not limited to the investigation and/or remediation of spills, releases, discharges, etc. that have or are currently taking place. Instead, ADEQ believes it may in appropriate circumstances order actions or measures that it deems necessary to prevent such events. *See id.* The standard by which such mandates will presumably be measured is whether they were necessary to prevent pollution to waters of the state. *See id.*

1298. *See generally* *Citizens for a Better Env't v. Union Oil Co.*, 861 F. Supp. 889 (N.D. Cal. 1994).

1299. *See id.* at 898-99.

1300. A related issue has been addressed in *United States v. Smithfield Foods, Inc.*, 965 F. Supp. 769 (E.D. Va. 1997) and *United States v. City of Toledo*, 867 F. Supp. 603 (N.D. Ohio 1994).

b. Interim Construction/Operating Authority

In 1995, amendments to the Arkansas Water and Air Pollution Control Act<sup>1301</sup> by the Arkansas General Assembly authorized ADEQ to grant interim authority (to construct and/or operate) or variances during the permit issuance process.<sup>1302</sup> In 1999, the General Assembly provided ADEQ criteria with which to consider requests for interim authority or variances.<sup>1303</sup> Unless the request is prohibited by federal law, the ADEQ Director may grant “temporary variances from the requirements of any permit issued by the Department; or interim authority to construct or operate during the pendency of any applicable public notice period, application review and permit issuance process.”<sup>1304</sup>

The ADEQ Director must consider “the environmental and public health effects of the temporary variance; and any economic advantage obtained by the party requesting the variance over other similarly situated facilities operating in accordance with similar permit conditions which did not request a variance.”<sup>1305</sup> The ADEQ Director may consider the avoidability of the compliance problem, the effect denial of the request would have on the business, the compliance history of the requesting party, and whether the request is in the public interest.<sup>1306</sup> This interim authority and power to grant variances provides new or existing businesses a valuable tool to adjust for market and production fluctuations during the permit application process. ADEQ also can be flexible in crafting solutions by granting conditional variances that mandate some additional action.

c. Consent Administrative Orders

NPDES permittees and their supervising agencies sometimes negotiate and execute documents known as consent administrative orders (“CAO”) to address compliance difficulties and/or resolve enforcement actions. The ADEQ uses CAOs for these and other purposes. Of particular relevance, however, is their use to defer<sup>1307</sup> compliance with

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1301. See ARK. CODE ANN. § 8-4-101 (LEXIS Repl. 2000).

1302. See ARK. CODE ANN. § 8-4-230 (LEXIS Repl. 2000). See Wright & Morrissey, *supra* note 21, at 816-817 (discussing statute).

1303. See ARK. CODE ANN. § 8-4-230(B)(3)(b) (LEXIS Repl. 2000).

1304. See *id.*

1305. See *id.*

1306. See *id.*

1307. See *Culbertson v. Coats American, Inc.*, 913 F. Supp. 1572 (N.D. Ga. 1995) (discussing Georgia Environmental Protection Division’s modification of certain

certain NPDES permit conditions/limits and/or revise<sup>1308</sup> them.<sup>1309</sup> A CAO or similar mechanism may be the only option for a facility seeking to modify its obligations under an NPDES permit condition or limitation based on an Arkansas or federal regulation.<sup>1310</sup>

Questions have arisen in other jurisdictions regarding the ability or legality of a CAO provision that attempts to defer or revise federal CWA provisions.<sup>1311</sup> In *Culbertson v. Coats American, Inc.*,<sup>1312</sup> a facility argued that copper and zinc discharges that exceeded the corresponding permit limits were not violations.<sup>1313</sup> The basis for the argument was that the Georgia Environmental Protection Division had extended the compliance date for such limits through a unilateral order and a subsequent CAO.<sup>1314</sup> The court ruled that the compliance extensions did not operate as a bar to a citizen action for violation of the zinc and copper limits.<sup>1315</sup> It noted that

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effluent limits contained in agency unilateral order (which previously modified NPDES permit)).

1308. See, e.g., Letter from Sammy R. Bates, R.E.M., Remington Arms Company, Inc. to Eugene P. Lewis, NPDES Enforcement Supervisor, ADPC&E, Draft CAO (Feb. 5, 1998) (requesting that draft consent administrative order include interim/revised limits for BOD).

1309. An administrative order was utilized to provide an Arkansas facility certain interim effluent limits (BODs) during the pendency of an EPA evidentiary hearing. See Memorandum from Myron O. Knudson, Director, Water Management Division, EPA Region 6, to Cynthia C. Daugherty, Director of Permits Division, EPA Region 6, CPS Chemical Company, Evidentiary Hearing Negotiations (Oct. 21, 1994). The facility apparently appealed an EPA denial of its request for a FDF variance. See *id.*

1310. An example is the Southwestern Electric Power Company's ("SWEPSCO") request to extend the compliance date for a permit condition setting a temperature requirement for the facility's wastewater discharge. See Letter from Patrick Miller, Environmental Specialist, Southwestern Electric Power Company, to Maria Jastrzebski, ADEQ (June 12, 1992). ADEQ was unwilling to grant the request stating in part:

SWEPSCO requested that "monitoring and reporting only" requirement be extended. However, based on Section 1(D) of the Arkansas Water Quality Standards 2, "... compliance with new water quality standards at the earliest practicable time; but not to exceed three years from effective date of permit." Since the existing permit already gave the permittee two years and nine months to achieve compliance, the Department must deny your request for an extension of temperature requirements at outfall 401.

... However, your request may be considered and may be granted through the issuance of a Consent Administrative Order.

See Letter from Chuck C. Bennett, Chief, Water Division, ADEQ to Patrick Miller, Environmental Specialist, SWEPSCO (July 1, 1992) (on file with author).

1311. See, e.g., *United States v. Wayne County*, 1994 U.S. Dist. LEXIS 18775 (Dec. 22, 1994) (illustrating the ability of a CAO to dictate the inclusion of certain provisions in an applicable NPDES permit).

1312. 913 F. Supp. 1572 (N.D. Ga. 1995).

1313. See *id.* at 1579.

1314. See *id.* at 1579-80.

1315. See *id.* at 1579.

the NPDES permit modification procedures<sup>1316</sup> must be followed to extend the compliance date.<sup>1317</sup> Otherwise, such actions are simply statements by the agency as to how it will exercise their prosecutorial discretion.<sup>1318</sup>

#### d. Permit Appeal Resolution

Parties may on occasion appeal one or more terms/conditions found in an NPDES, air, or other permit issued by ADEQ. These appeals are usually resolved prior to a hearing on the merits of the appeal.<sup>1319</sup> The ADEQ and the facility may agree to alter some of the permit terms/conditions.<sup>1320</sup> A document denominated a "Permit Appeal Resolution" is often used to provide the facility the authority to operate under the different terms/conditions until the issuance of a modified permit.<sup>1321</sup>

### 2. Permit Transfer

The ownership and/or control of facilities holding NPDES and other ADEQ water program permits often changes because of a sale, lease, or other commercial transaction. A change in ownership and/or operational control of the facility may require the transfer of the permits to the new owner or operator. However, such transfers may only occur after certain notification, disclosure, and other procedural requirements are met.

#### a. Transactions Constituting Transfers

In *EnviroClean, Inc. v. Arkansas Pollution Control & Ecology Commission*,<sup>1322</sup> an Arkansas air permit was issued to a company that allowed it to

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1316. See *id.* at 1580.

1317. See *id.*

1318. See *Culbertson*, 913 F. Supp. at 1580. See also *United States v. City of Toledo*, 867 F. Supp. 603 (N.D. Ohio 1994) (pointing out state agency suspension of permit limits does not affect federal enforcement).

1319. Interview with Mary Ellen Ternes (Dec. 7, 2000).

1320. See *id.*

1321. See, e.g., *In re El Dorado Chemical Co.*, No. 99-013-P, 2000 AR ENV LEXIS 15 (APCEC Mar. 15, 2000). Paragraph 4 of the "Agreement" section of the document notes, "[b]eginning Monday, May 1, 2000 and until a final agency decision regarding the draft permit attached hereto as Attachment 'A' is issued by ADEQ, EDCC shall operate in accordance with the terms and provisions of the draft permit attached hereto as Attachment 'A.'" *Id.* at \*3. See also *In re North Little Rock Wastewater Utility*, No. 99-012-P (Oct. 17, 2000) (revising TSS limits by Permit Appeal Resolution).

1322. 314 Ark. 98, 858 S.W.2d 116 (1993).



construct a medical waste incinerator. Condition 12 of the air permit specified that it was issued to the applicant and could not be transferred to another party.<sup>1323</sup> One hundred percent of the stock of the company holding the air permit was subsequently sold.<sup>1324</sup> Also, there was a change in directors and officers.<sup>1325</sup> Because of the changes in ownership and control, ADPC&E revoked the permit based on a violation of condition 12.<sup>1326</sup>

The company challenged this decision arguing that the transfer of all of its stock did not result in a transfer of the permit.<sup>1327</sup> It cited caselaw stating that the distinct identity of a corporation (separate from its shareholders) is not lost because all stock is owned by a single shareholder.<sup>1328</sup> ADPC&E responded that it was not necessary to apply corporate law concepts and that the corporate entity could be disregarded.

The Arkansas Supreme Court held that the corporate form was abused in order to transfer the permitted facility in violation of condition 12.<sup>1329</sup> It noted condition 12 enables the ADPC&E to determine who is responsible for operational decisions of the facility. The court cited various circumstances that it believed supported the state agency's decision such as the fact that a practical change in control occurred.<sup>1330</sup> ADPC&E's decision was therefore upheld.

#### b. Procedural Requirements

ADEQ regulations require that a thirty day notice be given to ADEQ if a facility proposes to transfer an ADEQ permit.<sup>1331</sup> This notification requirement can pose a practical problem in a transactional context. The date on which title or operational control will shift may not allow for a thirty day notification to ADEQ. Therefore, the applicant for a permit

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1323. Condition 12 of the permit stated, "[t]his permit is issued to the applicant alone. It may not be transferred to another party. In the event of the sale of the permitted facility, this permit shall expire and the purchaser must apply for a new permit." *Id.* at 100, 858 S.W.2d at 117.

1324. *See id.*, 858 S.W.2d at 117.

1325. *See id.*, 858 S.W.2d at 117.

1326. *See id.*, 858 S.W.2d at 117.

1327. *See id.*, 858 S.W.2d at 117.

1328. *See id.* at 101, 858 S.W.2d at 118.

1329. *See Enviroclean*, 314 Ark. at 102-03, 858 S.W.2d at 119.

1330. As opposed to a simple change in shareholders.

1331. *See* ADEQ Reg. No. 8 (2000).

transfer may be required to request a variance<sup>1332</sup> to continue operations during the pendency of the permit transfer process.<sup>1333</sup>

c. Acquisition/Divestiture Liabilities

The status of ADEQ water program permits can be a material issue in some transactions. First, the permits obviously authorize activities that are critical to the successful operation of the plant or facility. If the permits are not properly transferred, the new buyer or lessee may not hold the permits necessary to operate the business.

It is equally important that the buyer determine whether the facility will be able to comply with the permit limitations under future operating scenarios. This assessment will include the projected capital and operating costs to attain and/or maintain compliance with the permit limits/conditions. The failure to do so presents the risk of acquiring a plant that is more expensive to operate than expected. Of equal concern is the possibility that a future operational scenario will require a permit modification that is difficult to obtain.<sup>1334</sup>

Costs may also be generated by a facility or operation where a permitted activity or process is or has been discontinued. Some water and other permitting programs require that certain decontamination, investigation, and/or closure activities be undertaken when the permitted activity is discontinued. An example might be a dairy that discontinues its waste disposal system (pond) system. The system may be subject to an Arkansas non-discharge water pollution control permit. A buyer that acquires a dairy with a discontinued operation should ensure that closure of the pond has been accomplished or budget for these expenses.<sup>1335</sup>

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1332. See ARK. CODE ANN. § 8-4-230 (LEXIS Repl. 2000).

1333. See, e.g., Letter from Randall Mathis, Director, ADEQ, to Christopher Childres, Garrison Operating, LLC, Request for Variance (Aug. 8, 2000) (granting variance to continue facility operations during permitting process for transfer of air permit from Garrison Industries to Garrison Operating, LLC).

1334. For example, assume a buyer is proposing to modify or expand a facility process that will increase the amount of organic material that must be discharged into an adjacent stream. ADEQ's willingness to modify this NPDES permit to allow the increase will depend in part on the applicable WQS and the stream's assimilative capacity. The amount of assimilative capacity will depend in part on the WQS involved and the amount of relevant pollutants already being discharged into this waterbody.

1335. See, e.g., Letter from Samuel P. Sawyer, Enforcement Administrator, Water Division, ADEQ, to Bill Duncan, Hap Teter Dairy Farm, Closure Plan for Old Hap Teter Dairy Property (May 30, 1997) (on file with author). ADEQ notified the buyer of an inactive dairy farm with a permitted waste pond that certain closure activities may need to be undertaken. See *id.* The APCEC has considered proposing legislation that would

### 3. *Administrative Procedures*

#### a. *Appeal Procedures*<sup>1336</sup>

Parties other than applicants are provided the right to appeal ADEQ permitting decisions.<sup>1337</sup> Actions by such parties are known as third-party appeals. However, such an appeal may only be prosecuted if the third party participated in the notice and comment period associated with the permit. Whether a third party petitioner complied with the prerequisites for requesting review before the APCEC is often the initial issue contested during an appeal. The prerequisites include a requirement to include in the request for hearing “a complete and detailed statement identifying the legal and factual objections to the permit action.”<sup>1338</sup>

An issue that sometimes arises is whether incorporating comments by reference into a Request for Commission Review and Adjudicatory Hearing sufficiently identifies the legal and factual objections to a permit with the specificity and detail required by the applicable statute and regulations.<sup>1339</sup> Consequently, a petitioner may raise all issues identified in its public comments and attach the public comments to the pleading requesting commission review to ensure that every issue raised by the petitioner is considered in the appeal.

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establish a trust fund to close such ponds or lagoons that are “abandoned.” See, e.g., Kim McGuire, *Ecology Panel Rejects Animal-Waste Fund*, ARK. DEMOCRAT-GAZETTE, Oct. 27, 2000, at 11B. ADEQ staff has stated: “[T]hey can’t find any proof that farmers are abandoning waste lagoons since it’s in their best interest to clean up any messes before they sell the land in order to preserve property values.” *Id.* No agreement has been reached by the APCEC to propose such legislation. See *id.*

1336. Various issues associated with the judicial review of federal and state administrative actions are found in Wright & Henry, *supra* note 156, at 355-363.

1337. Note that a party must exhaust administrative remedies to pursue challenges in a judicial forum. See *Romine v. Arkansas Dept. of Env’tl. Quality*, 342 Ark. 380, \_\_\_ S.W.3d \_\_\_ (Oct. 18, 2000).

1338. See ARK. CODE ANN. § 8-4-205(b)(3) (LEXIS Repl. 2000); ADEQ Reg. 8 § 2.5.3(b)(2)(C) (2000).

1339. See *In re Wilcox Land & Cattle Co.*, No. 00-003-P, Order No. 4 (Aug. 2, 2000) (finding petitioners incorporation by reference of its comments and the attachment of the comments adequately identifies issues in conformance with the statutory requirements); *In re United States Dept. of the Army Pine Bluff Arsenal*, No. 99-002-P, Order No. 4 (June 3, 1999) (finding petitioners failed to properly raise two issues when they were incorporated from over 100 pages of public comments attached to the pleading requesting Commission review).

#### 4. *Arkansas Enforcement*

##### a. Acquisition of Federal CWA Enforcement Authority

The 1972 amendments initially allocated CWA enforcement responsibilities to EPA. Consequently, beginning in the late 1970s and continuing through the 1980s, the federal government had the primary role for CWA enforcement in Arkansas and other states. The federal government's CWA enforcement targets in Arkansas included both municipalities and industrial/commercial facilities.<sup>1340</sup>

ADEQ assumed responsibility for CWA enforcement on the date of program delegation.<sup>1341</sup> However, Arkansas' acquisition of the CWA NPDES program did not end federal enforcement activity in the state. The federal government retained control of investigations it had begun on or before the 1986 delegation of the program to ADEQ.<sup>1342</sup> Regardless,

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1340. Representative examples of these actions include *United States v. Hudson Foods, Inc.*, 77-4088, 1978 EPA Consent LEXIS 34 (W.D. Ark. 1978) (addressing alleged CWA violations by Hope, Arkansas poultry processing facility); *United States v. Missouri Pac. R.R. Co.*, No. LR-C-78-398, 1981 EPA Consent LEXIS 64 (E.D. Ark. 1981) (addressing alleged CWA violations by North Little Rock, Arkansas facilities); *United States v. Fort Smith*, No. 83-2121, 1983 EPA Consent LEXIS 41 (W.D. Ark. 1983) (specifying various remedial actions that must be undertaken by POTW to improve treatment processes); *United States v. City of W. Memphis*, No. 84-356, 19885 EPA Consent LEXIS 181 (E.D. Ark. 1985) (specifying various remedial actions that must be undertaken by POTW to improve and expand treatment processes).

1341. See Telephone Interview with Vince Blubaugh, Principal, GBMc & Associates (Nov. 15, 2000).

1342. See *id.* Representative examples of post-delegation EPA enforcement actions included *United States v. City of Berryville*, No. 87-3010, 1987 EPA Consent LEXIS 340 (W.D. Ark. 1987) (requiring that POTW expand and upgrade treatment processes and refuse acceptance of IU influent non-compliant with certain standards); *United States v. Georgia-Pacific Corp.*, No. 87-443, 1987 EPA Consent LEXIS 166 (E.D. Ark. 1987) (addressing alleged CWA violations by Fordyce, Arkansas industrial facility); *United States v. Lennox Indus.*, No. 86-378, 1988 EPA Consent LEXIS 176 (E.D. Ark. 1988) (addressing alleged CWA violations by Stuttgart, Arkansas commercial heating and air-conditioning equipment manufacturing facility); *United States v. City of Harrison*, No. 88-3007, 1988 EPA Consent LEXIS 108 (W.D. Ark. 1988) (addressing alleged CWA violations by Harrison, Arkansas POTW and requiring improvement of treatment plant processes); *United States v. City of Blytheville*, No. J-C-85-125, 1988 EPA Consent LEXIS 142 (E.D. Ark. 1988) (addressing alleged CWA violations by Blytheville, Arkansas POTW and requiring improvement of treatment plant processes); *United States v. City of Monticello*, No. PB-C-89-403, 1989 EPA Consent LEXIS 588 (E.D. Ark. 1989) (addressing alleged CWA violations by Monticello, Arkansas POTW and requiring improvement of treatment plant processes); *United States v. Tyson Foods, Inc.*, No. 87-3010, 1989 EPA Consent LEXIS 202 (W.D. Ark. 1989) (addressing alleged CWA violations by Berryville, Arkansas chicken processing facility discharging into POTW); *United States v. Pine Bluff Wastewater Util. Comm'n*, No. PB-C-89-461, 1989 EPA Consent

the vast majority of NPDES and all other water pollution control governmental enforcement actions have been undertaken by the State of Arkansas since 1986.

ADEQ's authority and responsibility to assure compliance with both the CWA and non-CWA requirements is found in the AWAPCA. The AWAPCA charges ADEQ with the responsibility to enforce laws and regulations regarding the pollution of waters in Arkansas.<sup>1343</sup> ADEQ has several tools at its disposal to fulfill this duty. They include authority to obtain information, assess penalties, and order that certain actions be undertaken.

#### b. Information Acquisition Provisions

ADEQ has the authority to conduct investigations and gather data to ensure that facilities<sup>1344</sup> are complying with applicable regulations and permit requirements.<sup>1345</sup> Specifically, the ADEQ Water Division conducts investigations concerning water pollution measures through its inspection branch.<sup>1346</sup> District field supervisors and inspector supervisors employed within the ADEQ Inspection Branch inspect facilities to ensure permit compliance,<sup>1347</sup> investigate citizens' complaints against industries, respond to chemical spills, investigate fish kills when environmental causes are suspected, and collect water samples from Arkansas waters.<sup>1348</sup>

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LEXIS 587 (E.D. Ark. 1989) (addressing alleged CWA violations by Pine Bluff Wastewater Utility Commission and requiring improvement of treatment plant processes); *United States v. Piper Indus.*, No. H-C-89-95, 1989 EPA Consent LEXIS 589 (E.D. Ark. 1989) (addressing alleged CWA violations by Clarendon, Arkansas electroplating facility); *United States v. CPS Chemical Co., Inc.*, No. J-C-90-43, 1992 EPA Consent LEXIS 45 (E.D. Ark. 1992) (addressing alleged CWA violations by West Memphis chemical manufacturing facility).

1343. See ARK. CODE ANN. § 8-4-201(a)(1) (LEXIS Repl. 2000). State statutory enforcement provisions other than the AWAPCA are utilized on occasion to protect surface water. For example, the enforcement provisions of the Arkansas Solid Waste Management Act ("ASWMA") were used in an enforcement action against an individual that allegedly dumped waste near a waterway. See ARK. CODE ANN. §§ 8-6-201 to -222 (LEXIS 2000). See also *Renfro v. State*, 331 Ark. 253, 962 S.W.2d 745 (1998).

1344. "Facility" means "the public or private area, premises, curtilage, building or conveyance described as the subject of administrative inspection. See ARK. CODE ANN. § 8-1-107(b)(2) (LEXIS Repl. 2000).

1345. See ARK. CODE ANN. § 8-4-201(a)(2)(B) (LEXIS Repl. 2000).

1346. See ADEQ Water Division, *Inspection Branch* (visited Feb. 9, 2001) <[http://www.adeq/water/branch\\_inspection.htm](http://www.adeq/water/branch_inspection.htm)>.

1347. To verify compliance with its permit, a facility must submit monitoring reports to ADEQ. See *id.*

1348. See ADEQ Water Division, *Citizen On-line Complaint Form* (visited Feb. 9,

Owners and operators of facilities that discharge wastewater into Arkansas waters must furnish relevant information after a request by ADEQ.<sup>1349</sup> To enforce any law under the jurisdiction of ADEQ, authorized employees of the agency may obtain records and conduct inspections at facilities.<sup>1350</sup> ADEQ Water Division inspectors may randomly inspect permitted facilities.<sup>1351</sup> Also, if the agency has a reasonable belief that a facility is violating a law under jurisdiction of ADEQ, it may demand entry onto any property to inspect that facility.<sup>1352</sup> In general, a rebuttable presumption exists that ADEQ has jurisdiction to inspect a facility.<sup>1353</sup> Entities that deny the agency consent to enter their property may be subject to prosecution if it is forced to obtain an administrative inspection warrant from a judicial officer.<sup>1354</sup> When imminent danger to the environment or public health and safety is present, the AWAPCA provides that ADEQ can enter a facility without an administrative warrant.<sup>1355</sup>

### c. Enforcement Authorities

The ADEQ may pursue an enforcement action against a facility that commits an unlawful action as defined in the AWAPCA.<sup>1356</sup> A person acts unlawfully by causing pollution of any waters of the state<sup>1357</sup> or by

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2001) <[http://www.adeg/water/forms/complaint\\_online.htm](http://www.adeg/water/forms/complaint_online.htm)>.

1349. See ARK. CODE ANN. § 8-4-216(a) (LEXIS Repl. 2000).

1350. See ARK. CODE ANN. § 8-1-107(a) (LEXIS Repl. 2000). The amount and frequency of inspections depend on the nature of the permitted company and the complexity of the plant's operation. See Mark Waller, *Strategy: Give Firms Freer Rein, Polluters Can Find, Fix Problems, Avoid Fines*, ARK. DEMOCRAT-GAZETTE, Feb. 23, 1997, at 1A.

1351. See ARK. CODE ANN. § 8-1-107(c)(3) (LEXIS 2000).

1352. See ARK. CODE ANN. § 8-1-107(c)(1)(A) (LEXIS Repl. 2000). ADEQ's investigation must be limited in scope; only inspection of those parts of the property that are vital to determine the cause which prompted the investigation is permitted. See ARK. CODE ANN. § 8-1-107(c)(1)(B) (LEXIS Repl. 2000). However, the statute states "nothing in this section shall be construed as requiring the department to forfeit the element of surprise in its inspection efforts." ARK. CODE ANN. § 8-1-107(c)(2) (LEXIS Repl. 2000).

1353. See ARK. CODE ANN. § 8-1-107(c)(4) (LEXIS Repl. 2000).

1354. See ARK. CODE ANN. § 8-1-107(d)(f) (LEXIS Repl. 2000). One who exercises "willful and unjustified refusal" to admit department employees may be charged with a misdemeanor and subject to civil penalties. ARK. CODE ANN. § 8-1-107(f) (LEXIS Repl. 2000).

1355. See ARK. CODE ANN. § 8-1-107(e)(3) (LEXIS Repl. 2000).

1356. See generally ARK. CODE ANN. § 8-4-103 (LEXIS Repl. 2000).

1357. See ARK. CODE ANN. § 8-4-217(a)(1) (LEXIS Repl. 2000). AWAPCA defines "pollution" as:

Such contamination or other alteration of the physical, chemical, or

depositing wastes or causing wastes to be placed in an area likely to result in pollution of any state waters.<sup>1358</sup> Further, violating any of the following provides valid grounds for ADEQ enforcement: provisions of AWAPCA; any rule, regulation, or order promulgated by the APCEC under AWAPCA; or conditions of a permit issued under AWAPCA by ADEQ.<sup>1359</sup> Similarly, any person that discharges sewage or other wastes into state waters without first obtaining a permit from the agency engages in an unlawful act in violation of AWAPCA.<sup>1360</sup> ADEQ may pursue corrective action against any person who knowingly misrepresents any information in documents submitted to the department under AWAPCA<sup>1361</sup> or who falsifies, tampers with, or inaccurately maintains a monitoring device knowingly.<sup>1362</sup>

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biological properties of any waters of the state or such discharge of any liquid, gaseous, or solid substance in any waters of the state as will, or is likely to, render the waters harmful, detrimental, or injurious to public health, safety, or welfare; to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses; or to livestock, wild animals, birds, fish, or other aquatic life[.]

ARK. CODE ANN. § 8-4-102(6) (LEXIS Repl. 2000).

1358. See ARK. CODE ANN. § 8-4-217(a)(2) (LEXIS Repl. 2000). Randall Mathis, former ADEQ Director, stated at agency administrative hearing that waters collected at any point are "waters of the state." See *In re* Fred Eggeston, No. 97-014-NOV, 1988 AR ENV LEXIS 37 at \*15 (APCEC Apr. 30, 1998).

1359. See ARK. CODE ANN. § 8-4-217(a)(3) (LEXIS Repl. 2000).

1360. See *id.* § 8-4-217(b)(1)(E).

1361. See *id.* § 8-4-217(a)(4).

1362. See *id.* § 8-4-217(a)(5).

### 1. *Civil Enforcement*

ADEQ has expressed a preference for encouraging facility compliance through cooperative assistance as opposed to the assessment of penalties.<sup>1363</sup> The stated basis for this policy is the principle that the ideal method of balancing economic growth with environmental excellence is to work cooperatively with the regulated community.<sup>1364</sup> Nevertheless, ADEQ has the authority to assess penalties and obtain other relief through the court system<sup>1365</sup> or an administrative action.<sup>1366</sup>

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1363. See Mark Waller, *Pollution Regulators Offer 'Customer' Aid, but Critics Say Enforcement of Rules Suffers*, ARK. DEMOCRAT-GAZETTE, Jan. 19, 1998, at 1A. By creating a customer service division, ADEQ furthered its mission to increase compliance with the environmental rules. See *id.* Part of the goal of the Customer Service Division is to prevent violations that warrant fines. See *id.* Companies contact the division with questions or complaints concerning enforcement. See *id.* The division then directs businesses to the proper experts in the regulatory sections of ADEQ to help the companies understand the regulations applying to them. See *id.* The tendency of many of the states to utilize compliance assistance in lieu of traditional enforcement in some is reviewed in Clifford Rechtschaffer, *Competing Visions: EPA and the States Battle for the Future of Environmental Enforcement*, 30 ENVTL. L. REP. 10803 (2000). See J.W. Looney, *Handling Administrative Proceedings Before the Arkansas Pollution Control and Ecology Department and Commission*, 1988 ARK. L. NOTES 23, 25. ADEQ has stated that punishing violators is not the goal of the agency. See John Magsam, *Contractor's Alleged Hog Waste Dumping Costs Tyson*, ARK. DEMOCRAT-GAZETTE, July 29, 1999, at B5. The statutes regarding water pollution are remedial in nature, seeking to correct the recognized mistakes of the violators to advance public welfare. See *Arkansas Dep't of Pollution Control & Ecology v. B.J. McAdams, Inc.*, 303 Ark. 144, 147, 792 S.W.2d 611, 613 (1990) (Hays, J., dissenting). In furthering its aim to protect the environment and promote compliance rather than collect penalties, Arkansas has passed laws to shield companies from prosecution when the facilities find and remedy their own environmental problems. See Michelle Boorstein, *Industry Finds Relief, Rebuke in Laws Shielding Environmental Violators*, BUS. NEWS, Aug. 11, 1997, at 1. Under the 1995 Arkansas Environmental Audit Report Act, company self-audits are treated as privileged information to encourage businesses to report violations to the state. See Seth Blomely, *State Risking \$3 Million Loss as Law Stands*, ARK. DEMOCRAT-GAZETTE, Aug. 31, 1998, at A1. Instead, ADEQ has stated it seeks to ensure that the environment is protected and that the violations are corrected and not repeated. See *id.*

1364. See ADEQ, *Customer Service Division* (visited Feb. 9, 2001) <<http://www.adeq.state.ar.us/custsvs/default.htm>>. ADEQ asserts that the environment ultimately benefits from this cooperative approach. See Waller, *supra* note 1362, at 1A. Former ADEQ Deputy Director Jim Shirrel stated ADEQ performs its job of protecting the environment more effectively by working with facilities than assessing penalties. See *id.*

1365. See ARK. CODE ANN. § 8-4-103(b) (LEXIS Repl. 2000).

1366. See ARK. CODE ANN. § 8-4-103(c) (LEXIS Repl. 2000). Former ADEQ Director Randall Mathis opined, "I think penalties have some deterrent effect[, b]ut they may also have an effect we don't want them to—a company that may have violations out there may be reluctant to report and start correcting them." See Gaynell Terrell, ARK. DEMOCRAT-GAZETTE, Jan. 31, 1996, at 1B.



ADEQ frequently employs these authorities. During the period July 1, 1999 through June 30, 2000, the agency assessed penalties totaling \$1,041,998.69.<sup>1367</sup> The ADEQ collected 418 penalties which totaled \$797,648.78 during the same period.<sup>1368</sup> The assessments are, however, not the sole focus of ADEQ enforcement. Almost every action will include a request that the facility remedy the alleged violations.<sup>1369</sup>

#### a. Administrative Enforcement

Two separate entities, ADEQ and APCEC, play roles in CWA administrative civil enforcement actions.<sup>1370</sup> Administrative enforcement actions are initiated by ADEQ.<sup>1371</sup> Appeals of ADEQ decisions are decided by APCEC.<sup>1372</sup> Consequently, APCEC's role is analogous to that of an appellate tribunal reviewing ADEQ decisions involving enforcement and other matters.<sup>1373</sup>

ADEQ may assess administrative civil penalties against persons who violate permit conditions, provisions of AWAPCA, or regulations or rules that are promulgated pursuant to the AWAPCA.<sup>1374</sup> An administrative enforcement action<sup>1375</sup> against a facility is initiated by the issuance of a

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1367. See Memorandum from Lisa McGuire, ADEQ to PC&E Commissioners, ADEQ Penalty Assessment and Collections for Fiscal Year 2000 (July 6, 2000) [hereinafter *Penalty*].

1368. See *id.*

1369. See Telephone Interview with Doug Ford, P.E., Pollution Management, Inc. (Dec. 14, 2000).

1370. See David F. Kern, *Incinerator Spat Tests PC&E's Power to Appeal Panel Rulings*, ARK. DEMOCRAT-GAZETTE, Dec. 6, 1994, at B2. APCEC is charged with the duty to "promulgat[e] . . . rules and regulations governing administrative procedures for challenging or contesting department actions." See ARK. CODE ANN. § 8-4-201(b)(3) (LEXIS Repl. 2000). ADEQ must provide the right to contest an administrative action or an emergency order. See ARK. CODE ANN. § 8-4-201(b)(5) (LEXIS Repl. 2000). It therefore promulgated Regulation No. 8 to provide needed administrative procedures. All matters of procedure that are not addressed in Regulation No. 8 are governed by the Arkansas Rules of Civil Procedure. See APCEC Reg. No. 8 § 2.5.11 (2000).

1371. See Meredith Oakley, *Clarifying PC&E*, ARK. DEMOCRAT-GAZETTE, Apr. 11, 1997, at B9. This split of duties between ADEQ and the APCEC stems from the theory that the same entity that issues administrative enforcement actions cannot impartially hear an appeal on the same offense. See *id.*

1372. See *id.*

1373. See Looney, *supra* note 958, at 24.

1374. See ARK. CODE ANN. § 8-4-103(c) (LEXIS Repl. 2000).

1375. "'Administrative enforcement action' means any administrative proceeding instituted by the Department against a person charged with violation of any law, regulation, permit, or order administered by the Department." APCEC Reg. No. 8 § 1.2.3 (2000).

Notice of Violation (“NOV”).<sup>1376</sup> The NOV notifies a person in writing of the suspected violations<sup>1377</sup> and requires that the person correct the violations or answer the charges through the administrative hearing process.<sup>1378</sup> ADEQ must include the following in the NOV: the alleged violations committed by the facility, the proposed civil penalty for each violation, corrective actions which must be performed to remedy the violations, any other proposed measure to be taken against the violator, and the procedures that the alleged violator must follow to contest the penalties.<sup>1379</sup>

A person who commits a violation of AWAPCA provisions, a water permit, or rules and regulations promulgated pursuant to AWAPCA may be penalized by up to \$10,000 per violation.<sup>1380</sup> Each day that the violation continues may be considered a separate violation in assessing the penalty.<sup>1381</sup> ADEQ also has the authority to require a facility that derived economic benefits from the violation to pay a civil penalty equal to the related pecuniary gain.<sup>1382</sup>

Several methods are employed in determining the amount of penalty a violator should be assessed.<sup>1383</sup> ADEQ utilizes the Enforcement Penalty Policy and Level System Penalty Calculation Guidelines, which classifies violations and determines penalty amounts.<sup>1384</sup> The purpose of this policy is to ensure consistent treatment of all violators in determining the amount of a penalty.<sup>1385</sup> According to this system, the gravity of the violation determines its class: Class I violations are the most severe, Class II

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1376. See ARK. CODE ANN. § 8-4-218(a) (LEXIS Repl. 2000).

1377. See ADEQ Reg. No. 8 § 1.2.20 (2000).

1378. See ARK. CODE ANN. § 8-4-218(b) (LEXIS Repl. 2000).

1379. See ADEQ Reg. No. 8 § 2.3.2(b) (2000). The recipient of the NOV is required to file a written response within 20 days after the NOV is received or ADEQ may issue a Default Administrative Order (“DAO”), which formally affirms the assessment of civil penalties. See ADEQ Reg. No. 8 § 2.3.2(b)(5) (2000). The NOV is required to explain that the violator must file a written response to the NOV within the designated time to receive adjudicatory review of the allegations in the NOV. See ADEQ Reg. 8 § 2.3.2(b)(6) (2000).

1380. See ARK. CODE ANN. § 8-4-103(c) (LEXIS Repl. 2000).

1381. See *id.*

1382. See ARK. CODE ANN. § 8-4-103(e) (LEXIS Repl. 2000).

1383. See *In re Jerry Jay*, No. LIS 93-028, 1994 AR ENV LEXIS 3 at \*2 (APCEC Jan. 7, 1994). However, when the policy behind the penalty assessment method and the facts of the particular case are inapplicable, ADEQ may deviate from the penalty assessment guidelines and exercise its own judgment. See *id.*

1384. See *In re Larry Hughes Swine Farm—Lower Massey Unit*, No. 97-015-NOV, 1998 AR ENV LEXIS 31 at \*9 (APCEC June 12, 1998).

1385. See *id.* at \*\*12-13. According to APCEC, “the Department may develop and utilize formulas for the calculation of penalties for specific offenses, in an effort to uniformly assign penalty amounts where practicable.” ADEQ Reg. No. 7 § 9 (1992).

violations are less serious, and Class III violations are the least serious.<sup>1386</sup> These classes are used by the ADEQ as guidelines for determining the maximum penalty amount.<sup>1387</sup> The maximum allowable penalties for each class are \$10,000 for Class I, \$5,000 for Class II, and \$1,000 for Class III.<sup>1388</sup>

ADEQ must subsequently place the violation within a certain level of the class to decide the penalty amount within the parameters of the maximum dollar amount of the class.<sup>1389</sup> The level system utilizes a percentage of the maximum dollar amount in the class to more closely evaluate the penalty amount.<sup>1390</sup> Five different levels ranging from 20% to 100% constitute the allowable penalties within each class.<sup>1391</sup>

In the final determination of the amount of civil penalty to assess a violator, the ADEQ Water Division must also consider the criteria in ADEQ Regulation No. 7.<sup>1392</sup> These represent APCEC criteria for assessing penalties in various programs.<sup>1393</sup> This regulation requires that the following factors be evaluated to determine whether the penalty should be increased or decreased due to other circumstances: seriousness of the noncompliance, including risk of public health caused by the alleged violation; whether the violation was an accident that was impossible to avoid; whether the violator cooperated promptly to correct the violation; the person's history in correcting past noncompliance; the person's history of past documented violations, even if formal proceedings were never initiated; whether the violator committed the problem intentionally; whether the person benefitted monetarily from the noncompliance; whether enforcement action costs to the public have been extraordinary; whether the noncompliance is due in part to the action of state government; and finally, whether the violator has prolonged action to correct the problem.<sup>1394</sup> Ideally, the answers to the questions in

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1386. See *In re* Larry Hughes Swine Farm—Lower Massey Unit, No. 97-015-NOV, 1998 AR ENV LEXIS 31 at \*9 (APCEC June 12, 1998).

1387. See *id.*

1388. See *id.*

1389. See *id.*

1390. See *id.* at \*\*9-10.

1391. See *id.* at \*10.

1392. See ADEQ Reg. No. 7 § 9 (1992).

1393. See *In re* Jerry Jay, 1994 AR ENV LEXIS 3, at \*9. In fact, when ADEQ cannot produce evidence that the factors in Regulation No. 7 were considered in determining the amount of penalties assessed, the Administrative Hearing Officer must evaluate whether the penalties should be reduced according to the Regulation No. 7 factors. See *id.* at \*11.

1394. See ADEQ Reg. No. 7 § 9(a)-(j) (2000). See *In re* Larry Hughes Swine Farm—Lower Massey Unit, 1998 AR ENV LEXIS 31 at \*10.

Regulation No. 7 should be used to determine the class and level of each violation.

After ADEQ serves the person with the NOV, the violator may opt to respond in writing to the notice.<sup>1395</sup> If the violator files no response to the NOV during the required period of time, then the allegations within the NOV “will be deemed proven” and ADEQ may issue a Default Administrative Order (“DAO”).<sup>1396</sup> The DAO formally verifies the NOV allegations as findings of fact, affirms the assessment of penalties, and orders the violator to take the corrective actions stated in the NOV.<sup>1397</sup> As a final order of ADEQ, the DAO is immune from review on its merits by APCEC unless APCEC elects to consider the DAO<sup>1398</sup> or the violator files a Request for Commission Review and Adjudicatory Hearing and “proves that his failure to respond to the [NOV] was due to excusable neglect.”<sup>1399</sup>

The violator’s response in writing to the NOV initiates the APCEC review procedure. This response enables the alleged violator to contest the ADEQ action.<sup>1400</sup> The alleged violator is provided an opportunity for a hearing.<sup>1401</sup>

An Administrative Hearing Officer (“AHO”)<sup>1402</sup> presides over all adjudicatory hearings.<sup>1403</sup> The AHO generally performs the same duties

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1395. See ADEQ Reg. No. 8 § 2.3.3(a) (2000). The written response may be a general denial or may admit and deny separate allegations, as well as contest proposed penalties or corrective actions listed in the NOV. See ADEQ Reg. No. 8 § 2.3.3(b) (2000).

1396. See ADEQ Reg. No. 8 § 2.3.3(a) (2000).

1397. See *id.*

1398. “The Commission may, by majority vote within thirty (30) days of the effective date of . . . a Default Administrative Order, initiate adjudicatory review of the order, even if the parties thereto do not.” ADEQ Reg. No. 8 § 2.3.5(a) (2000).

1399. See ADEQ Reg. No. 8 § 2.3.4 (2000).

1400. See ARK. CODE ANN. § 8-1-203(b)(5) (LEXIS Repl. 2000).

1401. See ARK. CODE ANN. § 8-4-103(c) (LEXIS Repl. 2000). “The [APCEC] shall afford an opportunity for a fair hearing to the alleged violator[.]” ARK. CODE ANN. § 8-4-219(a) (LEXIS Repl. 2000). The only circumstance in which ADEQ does not have to provide opportunity for a hearing to issue an order is in the case of an emergency order. See ARK. CODE ANN. § 8-4-220 (LEXIS Repl. 2000). When ADEQ determines that “an emergency exists requiring immediate action to protect the public health or welfare it may, without notice or hearing, issue an order reciting the existence of such emergency and requiring that such action be taken as it deems necessary to meet the emergency.” ARK. CODE ANN. § 8-4-220(a) (LEXIS Repl. 2000). The emergency order is effective immediately, but the person to whom the order was issued must be afforded a hearing within ten days after the violator requests a hearing. See ARK. CODE ANN. § 8-4-220(b)-(c) (LEXIS Repl. 2000).

1402. As an employee of APCEC. See ARK. CODE ANN. § 8-1-204(b) (LEXIS Repl. 2000).

1403. See ADEQ Reg. No. 8 § 2.5.8(a) (2000). “The AHO shall be subject to disqualification for bias, prejudice, interest, or for any cause for which a judge may be

as a judge in a hearing<sup>1404</sup> and possesses the power to “administer oaths, examine witnesses, and issue, in the name of the commission, subpoenas requiring the . . . testimony of witnesses and the production of evidence . . . .”<sup>1405</sup> The AHO advises the APCEC on matters of law and procedure.<sup>1406</sup> The standard of proof in the hearing is preponderance of the evidence.<sup>1407</sup> ADEQ must establish by a preponderance of the evidence that the alleged violator is liable and that the proposed administrative penalty is justified.<sup>1408</sup>

The AHO issues a “Recommended Decision” to the APCEC.<sup>1409</sup> APCEC will enter a minute order stating whether it should be adopted, modified, reversed, or remanded to the AHO for further proceedings.<sup>1410</sup> The APCEC’s review of the AHO’s recommended decision is *de novo*.<sup>1411</sup> However, it may vote to consider additional evidence under certain circumstances.<sup>1412</sup> APCEC’s order is binding on all parties unless appealed within thirty days after it is served.<sup>1413</sup>

Parties with standing may appeal the APCEC order to the circuit court of the county in which the facility is located.<sup>1414</sup> The appellant and APCEC are the original parties to the appeal.<sup>1415</sup> The State, through the Attorney General or

disqualified.” ADEQ Reg. No. 8, § 2.5.8(b) (2000).

1404. See Looney, *supra* note 958, at 26.

1405. See ARK. CODE ANN. § 8-4-210(b) (LEXIS Repl. 2000). In addition, the AHO may hold settlement conferences; conduct preliminary hearings; and rule on interlocutory and evidentiary matters, discovery, and objections. See APCEC Reg. No. 8 § 2.5.8(c)(5)-(6) (2000).

1406. See ARK. CODE ANN. § 8-1-204(a) (LEXIS Repl. 2000).

1407. See *In re Larry Hughes Hog Farm—Lower Massey Farm*, No. 95-011-NOV, 1996 AR ENV LEXIS 45 at \*1 (APCEC June 12, 1998).

1408. See *id.*

1409. See APCEC Reg. No. 8 § 2.5.17 (2000).

1410. See APCEC Reg. No. 8 § 2.5.18(c) (2000). See also *City of Malvern Water Works*, No. 95-020P, 1996 AR ENV LEXIS 8 at \*1 (May 31, 1996).

1411. See APCEC Reg. No. 8 § 2.5.18(a) (2000).

If a party of record requests an opportunity to supplement the record with additional evidence and is able to satisfactorily demonstrate to a majority of the Commission that the evidence is material to the issues and was unavailable at the time of the adjudicatory hearing despite the best efforts of the party to procure the evidence, then the Commission may remand the matter to the Administrative Hearing Officer to take further testimony and evidence in the matter or direct that the Director reconsider the matter based on the additional evidence before the matter is considered by the Commission.

APCEC Reg. No. 8 § 2.5.20(a) (2000).

1412. See APCEC Reg. No. 8 § 2.5.18(a) (2000).

1413. See ARK. CODE ANN. § 8-4-221 (LEXIS Repl. 2000).

1414. See ARK. CODE ANN. § 8-4-222 (LEXIS Repl. 2000).

1415. See ARK. CODE ANN. § 8-4-224(a)(1) (LEXIS Repl. 2000). The Attorney General may represent the APCEC on appeals unless he or she intervenes pursuant to

another person affected, may become a party by intervention in the appeal when cause is shown.<sup>1416</sup> APCEC must file a response to the notice of appeal within thirty days after service of the notice of appeal upon the APCEC.<sup>1417</sup>

The circuit court review of the appeal is conducted without a jury.<sup>1418</sup> Generally, the court's review is limited to the record from the administrative action. The party appealing the action of the APCEC has the burden of proof in the proceeding.<sup>1419</sup> The APCEC decision is *prima facie* reasonable and valid, and a presumption exists that it has complied with all legal requirements regarding the taking of evidence.<sup>1420</sup> Further, all factual findings of APCEC are *prima facie* evidence of the matters at issue.<sup>1421</sup>

The Circuit Court may affirm, vacate, or suspend the decision in whole or in part.<sup>1422</sup> However, it may only vacate or suspend APCEC's decision and remand for further action under certain circumstances.<sup>1423</sup> Specifically, the court may reverse an action of the APCEC which violates constitutional or statutory provisions<sup>1424</sup> or exceeds the body's authority under the statutes.<sup>1425</sup> Also, an APCEC decision employing an unlawful procedure to reach the result<sup>1426</sup> or that is in error according to other provisions of law may merit reversal by the circuit court.<sup>1427</sup> Finally, the court may vacate or suspend APCEC's decision if it is not supported by substantial evidence in the record,<sup>1428</sup> or if the action is "arbitrary, capricious, or characterized by abuse of discretion."<sup>1429</sup>

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ARK. CODE ANN. § 8-4-224(a)(2) (LEXIS Repl. 2000). See ARK. CODE ANN. § 8-4-224(a)(3) (LEXIS Repl. 2000).

1416. See ARK. CODE ANN. § 8-4-224(a)(2) (LEXIS Repl. 2000).

1417. See ARK. CODE ANN. § 8-4-226(a)(1) (LEXIS Repl. 2000). Upon cause shown for the delay, the court may extend the period for filing a response for a maximum of an additional 60 days. See ARK. CODE ANN. § 8-4-226(a)(2) (LEXIS Repl. 2000).

1418. See ARK. CODE ANN. § 8-4-227(c)(1) (LEXIS Repl. 2000).

1419. See ARK. CODE ANN. § 8-4-229(c) (LEXIS Repl. 2000).

1420. See *id.* § 8-4-229(a).

1421. See *id.* § 8-4-229(b).

1422. See ARK. CODE ANN. § 8-4-227(d) (LEXIS Repl. 2000).

1423. See *id.*

1424. See *id.* § 8-4-227(d)(1).

1425. See *id.* § 8-4-227(d)(2).

1426. See *id.* § 8-4-227(d)(3).

1427. See *id.* § 8-4-227(d)(4).

1428. See ARK. CODE ANN. § 8-4-227(d)(5) (LEXIS Repl. 2000). The court must review the record to determine if the decision of the administrative agency "is supported by relevant evidence that a reasonable mind might accept as adequate to support a conclusion" to decide whether the administrative action is supported by substantial evidence. See *Enviroclean, Inc. v. Arkansas Pollution Control and Ecology Comm'n*, 314 Ark. 98, 102, 858 S.W.2d 116, 119 (1993) (citing *Wright v. Arkansas State Plant Bd.*, 311 Ark. 125, 842 S.W.2d 42 (1992)).

1429. See ARK. CODE ANN. § 8-4-227(d)(6) (LEXIS 2000). The standard of review in an appeal from the APCEC

### b. Judicial Enforcement

ADEQ may initiate a judicial action against a violator in a court of competent jurisdiction.<sup>1430</sup> The civil action may be used to enforce any rule, regulation, order, or permit issued according to AWAPCA.<sup>1431</sup> A civil action could include a request to “affirmatively order that remedial measures be taken as may be necessary or appropriate to implement” the goals of AWAPCA,<sup>1432</sup> as well as to recover state expenses in enforcing the provisions of AWAPCA.<sup>1433</sup> A civil action may be undertaken if the person is violating the AWAPCA at the time ADEQ seeks the penalty.<sup>1434</sup> If the violation is no longer occurring, the APCEC must assess a penalty administratively instead of filing a civil action.<sup>1435</sup>

The statute of limitations applicable to Arkansas statutory environmental actions has been an issue. In *Arkansas v. Dow Chemical Co.*,<sup>1436</sup> a federal district court concluded that since the civil and criminal penalty provisions within the AWAPCA are separate and distinct, and the civil penalties serve a remedial rather than a penal function, the statute of limitations for actions on penal statutes is inapplicable in civil actions under the statute.<sup>1437</sup>

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is limited in scope. Such decisions will be upheld if they are supported by substantial evidence and are not arbitrary, capricious, or characterized by an abuse of discretion. Administrative action may be regarded as arbitrary and capricious only when it is not supportable on any rational basis . . . . [A]dministrative agencies are better equipped by specialization, insight through experience, and more flexible procedures than courts, to determine and analyze legal issues affecting their agencies.

*Enviroclean*, 314 Ark. at 101-02, 858 S.W.2d at 118 (quoting *In re Sugarloaf Mining Co.*, 310 Ark. 772, 840 S.W.2d 172 (1992)).

1430. See APCEC Reg. No. 8 § 2.3.1(b) (2000). “Nothing contained herein shall in any manner abridge or interfere with the Department’s ability to initiate civil proceedings in courts of competent jurisdiction to restrain or abate any violation . . . without first having instituted administrative enforcement proceedings hereunder.” *Id.*

1431. See ARK. CODE ANN. § 8-4-103(b)(1) (LEXIS Repl. 2000).

1432. See *id.* § 8-4-103(b)(2).

1433. See *id.* § 8-4-103(b)(3).

1434. See *B.J. McAdams, Inc.*, 303 Ark. at 147, 792 S.W.2d at 612. “The plain wording of ARK. CODE ANN. § 8-4-103(b) only grants the trial court jurisdiction to hear civil actions filed by the department ‘to restrain any violation of, and to compel compliance with, provisions of this chapter and any rules, regulations, orders, or permits issued pursuant thereto.’” *Id.* (quoting ARK. CODE ANN. § 8-4-103(b)(1) (LEXIS Repl. 2000)).

1435. See *id.* The administrative penalty must be assessed according to ARK. CODE ANN. § 8-4-103(c)(1) (LEXIS Repl. 2000). See *id.*

1436. 981 F. Supp. 1170 (E.D. Ark. 1997).

1437. See *State v. Dow Chem. Co.*, 981 F. Supp. 1170, 1176 (E.D. Ark. 1997).

The maximum amount of civil penalties recoverable in a civil action for violations of AWAPCA or rules, regulations, or permits issued under AWAPCA is \$10,000 per day.<sup>1438</sup> In addition, the violator may be penalized an amount equal to any pecuniary gain from the violation.<sup>1439</sup> Civil actions may also be utilized to recover the penalty amount assessed by ADEQ in administrative actions.<sup>1440</sup>

ADEQ may bring an action for natural resources damages as a civil remedy against a violator to recover costs to ADEQ in enforcing violations under AWAPCA.<sup>1441</sup> Natural resources damages include damages to "land, fish, wildlife, biota, air, surface water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the State of Arkansas or local government."<sup>1442</sup>

## 2. Criminal Enforcement

The AWAPCA<sup>1443</sup> provides that criminal penalties may be assessed against any person who commits an unlawful act.<sup>1444</sup> Also, persons who violate a provision of AWAPCA or an order of ADEQ or APCEC may be

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1438. See ARK. CODE ANN. § 8-4-103(b)(4) (LEXIS Repl. 2000).

1439. See ARK. CODE ANN. § 8-4-103(e) (LEXIS Repl. 2000). Perhaps the legislature was attempting to provide for a form of restitution to prevent unjust enrichment of violators.

1440. See ARK. CODE ANN. § 8-4-103(b)(5) (LEXIS Repl. 2000).

1441. See ARK. CODE ANN. § 8-4-103(b)(3) (LEXIS Repl. 2000). In *State v. Dow Chem. Co.*, the court explicitly stated that the State may institute claims for natural resource damages under AWAPCA. See *Dow Chem. Co.*, 981 F. Supp. at 1174. The court reasoned that "the language of the statutes, the subject matter, the object to be accomplished, the purpose to be served, as well as the remedy provided all evince the legislative intent that the State may bring claims for natural resources damages under . . . AWAPCA." *Id.*

1442. See ARK. CODE ANN. § 8-12-102(3) (LEXIS Repl. 2000). A "Natural Resources Damages Trust Fund" is established as a collection of payments to the state for "restoration, rehabilitation, replacement, or acquisition" of natural resources. See ARK. CODE ANN. § 8-12-103(2) (LEXIS Repl. 2000). The money in the fund is used to restore, rehabilitate, replace, or acquire natural resources according to the will of the Natural Resources Damages Advisory Board. See ARK. CODE ANN. § 8-12-103(3) to (4) (LEXIS Repl. 2000).

1443. See ARK. CODE ANN. § 8-4-103(a)(1)(A) (LEXIS Repl. 2000).

1444. Note that there have been several federal criminal prosecutions in Arkansas involving various statutes. See, e.g., *United States v. Goodner Bros. Aircraft, Inc.*, 966 F.2d 380 (8th Cir. 1992) (reference to federal RCRA and CERCLA prosecution involving Arkansas aircraft painting facility). Other Arkansas environmental statutes are sometimes used to address threats to surface water. In *Renfro v. State*, the ASWMA was used to charge an individual for allegedly dumping rotten potatoes near connecting waterways. See *Renfro v. State*, 331 Ark. 253, 962 S.W.2d 745 (1993).



prosecuted.<sup>1445</sup> These violations are punishable as misdemeanors.<sup>1446</sup> The AWAPCA also provides for felony penalties for certain violations.<sup>1447</sup> The maximum penalty is five years imprisonment and/or a fine of up to \$50,000.<sup>1448</sup> Unlawful acts potentially constituting felonies include the following: leaving the state after the violation of a provision of AWAPCA or of any order or regulation promulgated by ADEQ or APCEC; “purposely, knowingly, or recklessly”<sup>1449</sup> polluting state waters in an unlawful manner, creating a “substantial likelihood of adversely affecting human health, animal or plant life, or property;” and “purposely or knowingly” misrepresenting the facts in any document submitted to ADEQ, falsifying records, or rendering a device required for maintenance inaccurate.<sup>1450</sup>

Criminal penalties are also applicable to those who “purposely, knowingly, or recklessly” cause water pollution unlawfully, “plac[ing] another person in imminent danger of death or serious bodily injury.”<sup>1451</sup> Such conduct is punishable by a maximum penalty of twenty years imprisonment and/or a fine of \$250,000.<sup>1452</sup>

1445. See ARK. CODE ANN. § 8-4-103(a)(1)(A)-(a)(1)(B) (LEXIS Repl. 2000).

1446. See *id.* The maximum punishment is one year imprisonment or a fine of \$25,000. For purposes of the fine, each day or part of the day that the violation continues to occur or is repeated is considered a separate offense. See ARK. CODE ANN. § 8-4-103(a)(1)(B) (LEXIS Repl. 2000).

1447. See ARK. CODE ANN. § 8-4-103(a)(2)(B)(i) (LEXIS Repl. 2000).

1448. See ARK. CODE ANN. § 8-4-103(a)(2)(B)(ii) (LEXIS Repl. 2000). Again, each day or part of the day that the violation occurs constitutes a separate offense for purposes of the fine. See *id.*

1449. These mental states are defined by ARK. CODE ANN. § 5-2-202 (LEXIS Repl. 2000). See also ARK. CODE ANN. § 8-4-103(h) (LEXIS Repl. 2000). Culpable mental states are defined as follows:

A person acts purposely with respect to his conduct or a result thereof when it is his conscious object to engage in conduct of that nature or to cause such a result. . . . A person acts knowingly with respect to his conduct or the attendant circumstances when he is aware that his conduct is of that nature or that such circumstances exist. A person acts knowingly with respect to a result of his conduct when he is aware that it is practically certain that his conduct will cause such a result. . . . A person acts recklessly . . . when he consciously disregards a substantial and unjustifiable risk that the circumstances exist or the result will occur. The risk must be of a nature and degree that disregard thereof constitutes a gross deviation from the standard of care that a reasonable person would observe in the actor's situation.

ARK. CODE ANN. § 5-2-202(1)-(3) (LEXIS Repl. 2000).

1450. See ARK. CODE ANN. § 8-4-103(a)(2)(A) (LEXIS Repl. 2000).

1451. See *id.* § 8-4-103(a)(3)(A).

1452. See *id.* § 8-4-103(a)(3). Each day or part of a day when the violation is continued or repeated is a separate offense for purposes of the fine. See *id.*

The AWAPCA provides guidelines for penalties to be assessed based upon the severity of the violation.<sup>1453</sup> A person convicted criminally under AWAPCA may be sentenced to pay a fine of up to twice the amount of monetary gain derived from commission of the offenses, regardless of the limits expressly placed on the fines in the statute.<sup>1454</sup>

Various Arkansas agencies in addition to ADEQ may become involved in the criminal enforcement of Arkansas environmental statutes. For example, the Arkansas State Police may play an investigative role.<sup>1455</sup> Further, the appropriate prosecuting attorney's office may be asked to prosecute the alleged violations.<sup>1456</sup> A Senior Deputy Prosecuting Attorney of the 6th Judicial District noted "[t]he decision to criminally prosecute an Arkansas environmental statutory violation is subject to the same decisionmaking process as any other alleged crime."<sup>1457</sup>

Several Arkansas and federal agencies recently developed a procedure for investigating and instituting proceedings against possible criminal violators in Arkansas.<sup>1458</sup> The basic process is initiated when a citizen or a department of the state informs a state agency of a problem.<sup>1459</sup> An organization known as the Arkansas Environmental Crimes Task Force ("Task Force")<sup>1460</sup> meets periodically to vote on whether civil or criminal enforcement should be undertaken.<sup>1461</sup> The Task Force consists

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1453. *See id.* § 8-4-103(a).

1454. *See id.* § 8-4-103(a)(4). This section applies if a person is convicted of either a felony or a misdemeanor under AWAPCA. *See id.*

1455. *See* Don Chaney, ARK. DEMOCRAT-GAZETTE, March 3, 1996, at A1 (referencing Mountain Home, Arkansas facility investigation).

1456. *See, e.g.*, Letter from Julia Mehyou, Legal Division, ADPC&E to Larry Jegley, Senior Prosecutor, Pulaski County Prosecuting Attorney (Dec. 13, 1994) (referring file for possible CWA criminal prosecution).

1457. Telephone Interview with John Johnson, Senior Deputy Prosecuting Attorney, Office of the Prosecuting Attorney, 6th Judicial District (Nov. 16, 2000).

1458. Telephone Interview with Eric Estes, Assistant Attorney General, Office of the Arkansas Attorney General (Nov. 17, 2000). A Memorandum of Understanding was apparently executed between the Arkansas Office of Attorney General, Arkansas Department of Environmental Quality, Federal Bureau of Investigation, United States Environmental Protection Agency, the United States Attorney for the Eastern District of Arkansas, and the United States Attorney for the Western District of Arkansas to establish the Environmental Crimes Task Force. *See* Memorandum of Understanding (Apr. 1, 2000).

1459. *See* Arkansas Environmental Crimes Task Force Environmental Crimes Awareness Seminar, Arkansas Crimes Task Force Protocols/Operations Plan, at 2-3 (Sept. 27, 2000).

1460. The Task Force meets bi-monthly to address activities that may warrant criminal prosecution. *See* Arkansas Environmental Crimes Task Force Environmental Crimes Awareness Seminar, Arkansas Crimes Task Force Protocols/Operations Plan, at 4 (Sept. 27, 2000).

1461. Telephone Interview with Eric Estes, Assistant Attorney General, Office of the

of the Office of the Arkansas Attorney General, ADEQ, EPA Criminal Investigation Division, the United States Attorney for the Eastern District of Arkansas, the United States Attorney for the Western District of Arkansas, and the Federal Bureau of Investigation.<sup>1462</sup>

The Task Force determines if criminal enforcement is warranted and whether an Arkansas prosecuting attorney should be asked to initiate proceedings against the alleged violator.<sup>1463</sup> The Arkansas Attorney General may be able to initiate the prosecution if the prosecuting attorney uses the Arkansas Prosecutorial Assistance Statute to substitute that office.<sup>1464</sup> In the alternative, the prosecuting attorney may choose to jointly prosecute the alleged violator in conjunction with the Arkansas Attorney General's office.<sup>1465</sup>

#### d. Settlement

##### 1. Procedure

Many enforcement actions are settled both prior to or subsequent to the filing of an NOV. These settlements are usually documented by the execution of a CAO.<sup>1466</sup> The CAO is basically an administrative order to which ADEQ and the APCEC must review and approve and the alleged violator consent.<sup>1467</sup> The CAO may assess penalties and/or require the facility to undertake certain actions to achieve compliance. It may also provide interim relief for the facility from certain permit limits or

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Arkansas Attorney General (Nov. 17, 2000).

1462. See Arkansas Environmental Crimes Task Force Environmental Crimes Awareness Seminar, Memorandum of Understanding, at 2 (Sept. 27, 2000). The representatives from each of the agencies are responsible for identifying allegations of environmental crimes and referring the allegations to the agency which can most appropriately assess the risk to the environment and public health. *Id.* at 3.

1463. Telephone Interview with Eric Estes, Assistant Attorney General, Office of the Arkansas Attorney General (Nov. 17, 2000). "The ultimate decisions and authority to prosecute remains with the appropriate attorney for either the State of Arkansas or the United States." Arkansas Environmental Crimes Task Force Environmental Crimes Awareness Seminar, Arkansas Crimes Task Force Protocols/Operations Plan, at 4 (Sept. 27, 2000).

1464. See ARK. CODE ANN. § 16-21-149 (LEXIS Repl. 2000).

1465. Telephone Interview with Eric Estes, Assistant Attorney General, Office of the Arkansas Attorney General (Nov. 17, 2000).

1466. See ADEQ Reg. No. 8 § 2.3.3(c) (2000).

1467. See ADEQ Reg. No. 8 § 1.2.11 (2000). For example, Tyson Foods, Inc. entered into a CAO with ADEQ in which it agreed to pay civil penalties but neither admitted nor denied the allegations in the order. See Magsam, *supra* note 1363, at B5. See ADEQ Reg. No. 8 § 2.3.5(a) (2000).

conditions.<sup>1468</sup> The failure to comply with commitments made in the CAO is a violation of the law.<sup>1469</sup>

## 2. *Monetary Penalty Alternatives—State Supplemental Environmental Project/In-Kind Payments*

Generally, ADEQ follows the EPA SEP guidelines in determining whether a proposed project is an acceptable SEP.<sup>1470</sup> The agency is not, however, bound by the EPA's SEP guidelines and therefore may vary from them.<sup>1471</sup> Therefore, ADEQ may have more flexibility to consider innovative SEPs than EPA.<sup>1472</sup>

ADEQ recognizes two forms of projects which violators may implement to mitigate cash penalties: SEPs and in-kind services.<sup>1473</sup> Occasionally, in-kind services are considered to be SEPs.<sup>1474</sup> More often, in-kind services are separate and distinct mitigation projects from SEPs.<sup>1475</sup>

The AWAPCA,<sup>1476</sup> the Solid Waste Management Act,<sup>1477</sup> and the Hazardous Waste Management Act<sup>1478</sup> do not reference SEPs.<sup>1479</sup> Instead, they reference in-kind services.<sup>1480</sup> Because SEPs are not specifically addressed by the relevant Arkansas statutes, ADEQ requires that a

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1468. See *In re* City of Batesville, LIS 90-023 (Feb. 26, 1990) (allowing POTW to meet less stringent NPDES effluent limits for an interim period).

1469. See *In re* Salem Sewer Improvement District #10 of Saline County, No. 93-111, 1995 AR ENV LEXIS 91 at \*5 (APCEC Feb. 28, 1995). The ADEQ may attempt to assess stipulated penalties if the requirements of the CAO are not met. See Letter from Dennis Benson, NPDES Enforcement Section, ADEQ to Kelton Jones, Shirley Car Wash & Laundry (Mar. 1, 2001) (on file with author) (referencing possible imposition of stipulated penalties if required penalty payments are not made).

1470. See Telephone Interview with Michelle Kinder, Attorney, Legal Division, ADEQ (March 15, 1997) [hereinafter Kinder Interview]; Telephone Interview with Nelson Jackson, Attorney, Legal Division, ADEQ (March 15, 1997) [hereinafter Jackson Interview].

1471. See Jackson Interview, *supra* note 1470.

1472. See *id.*

1473. See *id.* An example of an SEP negotiated in 2000 by a facility and the ADEQ was the construction of a concrete wall to reduce fugitive dust. See *In re* Frit Indus., Inc., LIS 00-167 (Sept. 15, 2000). Note, however, that the ADEQ has accepted consent orders that allow a facility to propose an SEP at a later date. See *In re* World Color Press, Inc., LIS 00-188 (Oct. 2, 2000).

1474. See Kinder Interview, *supra* note 1469.

1475. See *id.*

1476. See ARK. CODE ANN. §§ 8-4-101 to -314 (LEXIS Repl. 2000).

1477. See ARK. CODE ANN. §§ 8-6-201 to -222 (LEXIS Repl. 2000).

1478. See *id.* §§ 8-7-201 to -226.

1479. See ARK. CODE ANN. §§ 8-4-103; 8-6-204; 8-7-204 (LEXIS Repl. 2000).

1480. See *id.*

proposed SEP meet the same statutory criteria as that of in-kind services in order for a project to qualify as a SEP.<sup>1481</sup> ADEQ negotiated twenty-three SEPs during the period July 1, 1999 to June 30, 2000.<sup>1482</sup>

e. Federal Oversight: EPA Review of Permit Limits/Terms

Despite its delegation of the NPDES program to Arkansas, the Region 6 office of EPA retains the right to review and reject permits issued by the state. Both the CWA regulations<sup>1483</sup> and the MOA<sup>1484</sup> executed by EPA Region 6 and ADEQ address the federal review of Arkansas permits. The EPA has periodically used this authority to object to the issuance of NPDES permits because they contain certain provisions.<sup>1485</sup>

EPA retains the right to object to a delegated state's decision to grant a NPDES permit<sup>1486</sup> if it does so within ninety days of its issuance.<sup>1487</sup> EPA must solicit comments on its decision to object.<sup>1488</sup> The agency must subsequently modify, withdraw, or reaffirm its objections.<sup>1489</sup> If the EPA reaffirms its objections, the state and the EPA may proceed in either of two ways. The state may modify the terms of its proposed permit within thirty days of EPA's decision to stand by its objections. If the state agrees to modify the permit, it must again allow a comment period before issuing

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1481. See Kinder Interview, *supra* note 1469. Those requirements are: (1) The project can only be used to partially mitigate cash penalties. In-kind services and/or SEPs cannot be performed by the violator to mitigate the entire cash penalty amount; (2) neither the violator nor the ADEQ can retain any monetary benefit from the project, however remote; (3) the in-kind services and/or SEPs cannot duplicate or augment services already provided by the ADEQ through appropriations of the General Assembly. See ARK. CODE ANN. §§ 8-4-103(f)(3); 8-6-204(e)(3); 8-7-204(e)(3) (LEXIS Repl. 2000).

1482. See Penalty, *supra* note 1366. In-kind service projects totaling \$131,000 and SEPs totaling \$202,891 were negotiated during a period from the July 1, 1997 through June 30, 1998. See Memorandum from Orr Dean, ADPC&E to PC&E Commissioners (July 15, 1998).

1483. See 40 C.F.R. § 123.44 (2000).

1484. See MOA, *supra* note 1011.

1485. See, e.g., Letter from Jack V. Ferguson, P.E., Chief, NPDES Permits Branch, EPA Region 6 to Maria Jastrzebski, Manager, NPDES Program, ADEQ (Nov. 27, 2000) (objecting to ADEQ's issuance of NPDES permit to North Little Rock, Arkansas POTW).

1486. See 33 U.S.C. § 1342(d)(2) (1994).

1487. See 33 U.S.C. § 1342(d)(2) (1994).

1488. See 40 C.F.R. § 123.44(e) (2000).

1489. See *id.* § 123.44(g).

the permit. The EPA may assume the exclusive authority to issue the permit if the state refuses to modify it.<sup>1490</sup>

f. Arkansas Environmental Audit Privilege Statute

Arkansas has an environmental audit privilege statute.<sup>1491</sup> It allows a facility to conduct a voluntary "environmental audit,"<sup>1492</sup> the product of which is privileged information providing the statutory guidelines are followed. The "environmental audit report" can contain such things as "[f]ield notes, records of observations, findings, opinions, suggestions, conclusions, drafts, [and] memoranda"<sup>1493</sup> in addition to other types of information. An audit report compiled by the auditor may also be included in the protected "environmental audit report." This audit report can contain: "(1.) [t]he scope of the audit; (2.) [t]he information gained in the audit; (3.) [c]onclusions and recommendations; and (4.) [e]xhibits and appendices[.]"<sup>1494</sup> The only other requirement is that the formal "environmental audit report" be labeled "ENVIRONMENTAL AUDIT REPORT: PRIVILEGED DOCUMENT."<sup>1495</sup>

The audit privilege is not absolute. An owner or operator may under a variety of situations choose to waive the privilege in part or in whole.<sup>1496</sup> In addition, the privilege may not be asserted in a civil action for a fraudulent purpose or when the "environmental audit report" indicates violation of a federal or state provision and the person asserting the privilege has not made a diligent effort to correct the violation.<sup>1497</sup>

The Arkansas Environmental Audit Privilege statute was addressed by a court for the first time in *Carr v. El Dorado Chemical*.<sup>1498</sup> In *Carr*, the

1490. See 33 U.S.C. § 1342(d)(1) & (4) (1994).

1491. See ARK. CODE ANN. § 8-1-301 (LEXIS Repl. 2000). The Arkansas legislature noted "that protection of the environment is enhanced by the public's voluntary compliance with environmental laws and that the public will benefit from incentives to identify and remedy environmental compliance issues." *Id.* The statute is addressed in Wright & Morrissey, *supra* note 21, and Jones et al., *supra* note 946.

1492. "Environmental Audit" is defined in Arkansas Code Annotated section 8-1-302(3)(A) as "a voluntary, internal, and comprehensive evaluation of one (1) or more facilities or an activity at one (1) or more facilities regulated under this chapter, or federal, regional, or local counterparts or extensions thereof, or of management systems related to that facility or activity, that is designed to identify and prevent noncompliance and to improve compliance with statutory or regulatory requirements."

1493. See ARK. CODE ANN. § 8-1-302(4)(A) (LEXIS Repl. 2000).

1494. See *id.* § 8-1-302(4)(B).

1495. See *id.* § 8-1-302(4).

1496. See ARK. CODE ANN. § 8-1-304 (LEXIS Repl. 2000).

1497. See ARK. CODE ANN. § 8-1-307 (LEXIS Repl. 2000).

1498. No. 96-1081 (W.D. Ark. 1997) (mem.).

plaintiffs filed a motion to compel production of two documents relating to problems with the defendant's wastewater treatment system.<sup>1499</sup> The defendant inadvertently produced a portion of the first document.<sup>1500</sup> The plaintiffs then requested that the defendant produce the entire document for in camera review by the court to determine whether the material was privileged. This request subsequently became moot upon discovering that what was thought to be a portion of the document was actually the entire document.<sup>1501</sup>

The defendant refused to produce the second document asserting that "an environmental audit conducted by Monsanto relating to the EDCC [defendant] facility is a privileged communication and protected from disclosure by virtue of the Arkansas statutory environmental audit privilege codified at A.C.A. § 8-1-301 *et seq.*, and the common law critical self-analysis privilege . . ."<sup>1502</sup> The environmental audit privilege statute was enacted in 1995, while the audit document in question was produced March 29, 1993.<sup>1503</sup> The ultimate issue for the court was whether the privilege statute could be retroactively applied to a document produced prior to its enactment. The court examined the statute's stated purpose and found no evidence indicating an intent by the legislature for retroactive application. In addition, the court found that the audit "could not have been performed in reliance upon the fact that it would not be subject to discovery."<sup>1504</sup>

#### g. Arkansas/EPA Overlap

EPA's monitoring of Arkansas NPDES activities includes its enforcement activities.<sup>1505</sup> On August 29, 2000, ADEQ and the Region 6 office of EPA executed a Memorandum of Agreement titled *ADEQ—EPA Continuing Statement of Shared Principles* ("MOA").<sup>1506</sup> The MOA was

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1499. *See id.* at 2.

1500. *See id.*

1501. *See id.*

1502. *Id.* at 3. The court also opined that the Eighth Circuit does not recognize a "self-critical analysis privilege." *Id.* Such a finding tends to magnify the importance of the Arkansas statutory privilege to companies undertaking environmental compliance audits. *See id.*

1503. *See id.* at 6.

1504. *See Carr*, No. 96-1081 at 7.

1505. *See Forcade & Anderson*, *supra* note 636, at 11034 (noting EPA/state partnership extends to monitoring the compliance status of facilities, identifying non-compliance, etc.).

1506. Memorandum from Senior Managers to All Staff (Aug. 29, 2000). The memo notes that four general principles will guide both agencies' actions. *See id.* They

apparently the result of a July, 2000 meeting between senior management of both agencies.<sup>1507</sup> The document stated that the meeting was intended to reaffirm a mutual commitment with an effective working relationship between the agencies.<sup>1508</sup>

The MOA also identified various issues that both EPA Region 6 and ADEQ agree will be priority issues for cooperative efforts.<sup>1509</sup> Of particular relevance is the document's reference to the Arkansas TMDL program.<sup>1510</sup> The MOA listed the following priority actions for the Arkansas water program:

1. Conduct TMDL studies;<sup>1511</sup>
2. Secure funding for TMDL studies;<sup>1512</sup>
3. Build interstate cooperation on TMDL issues;<sup>1513</sup> and
4. Reduce non-point water pollution.<sup>1514</sup>

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include:

- (1) We will seek solutions based on our shared goals and values;
- (2) We will enter into interviews presuming agreement rather than disagreement;
- (3) We will seek cooperative solutions to issues, in lieu of "winning" for agencies;
- (4) We will continue developing and strengthening the ADEQ-EPA partnership.

*Id.*

1507. *See id.*

1508. The EPA Region 6 Administrator stated the memo was part of an effort to "solve environmental problems rather than defend the bureaucratic interests of individual organizations." *See EPA Pact with Arkansas Seeks to Provide Program Flexibility, Enhance Cooperation*, 31 ENVTL. REP., Sept 1, 2000, at 1836 [hereinafter *EPA Pact*]. The former Director of ADEQ, Randall Mathis, noted he hoped the agreement would give the ADEQ the flexibility to concentrate resources and efforts on the most pressing environmental problems rather than satisfying a range of EPA programs, some of which may have marginal benefit to Arkansas. *See id.*

1509. *See id.*

1510. *See id.*

1511. EPA agreed to provide guidance for administration of the TMDL program and to perform a portion of the initial studies necessary to identify Arkansas water quality concerns. *See id.*

1512. EPA pledged to attempt to secure funding for the TMDL assessment to be undertaken by ADEQ. *See id.*

1513. EPA indicated it will attempt to foster interstate/inter-regional cooperation for resolution of issues involving the Illinois River in northwestern Arkansas/northeastern Oklahoma and the Upper White River System located in Arkansas and Missouri. *See id.*

1514. EPA has pledged to assist the low interest loan program ADEQ developed to address non-point source pollution. *See EPA Pact, supra* note 1508.



#### h. Wastewater Operator Licensing Requirements

It is unlawful in Arkansas to operate a public or private wastewater treatment plant without an operator licensed by the ADEQ.<sup>1515</sup> Licensure requirements vary based upon the rating of the treatment plant.<sup>1516</sup> For licensure, the operator must pass an exam applicable to corresponding classification.<sup>1517</sup> Yearly renewal of the license requires continuing education.

#### i. Treatment of Key Arkansas Agricultural/Silvicultural Activities

Many activities related to agriculture are not subject to NPDES permitting requirements. Under the CWA, a permit is not required for discharges composed entirely of return flows from irrigated agriculture.<sup>1518</sup> In addition to returns from irrigated agriculture, the CWA excludes agricultural stormwater discharges from the definition of "point source."<sup>1519</sup> Since agricultural stormwater discharges are distinguished from point source discharges, the NPDES permitting requirements are inapplicable to most, if not all, agricultural activities.<sup>1520</sup>

In an effort to address the safe and proper disposal of abandoned agricultural pesticides, the 1999 Arkansas legislature enacted the Abandoned Agriculture Pesticide Disposal Act.<sup>1521</sup> The act provides a method for the Abandoned Agriculture Pesticide and Plant Regulator Disposal Trust Fund to pay for contractors to collect and dispose of abandoned agricultural pesticides.<sup>1522</sup> Pesticides are "abandoned" where there are chemicals which are no longer used and for which there is no planned use.<sup>1523</sup> The removal of some abandoned agricultural pesticides will presumably help eliminate to some extent a possible threat to surface water.

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1515. See ARK. CODE ANN. § 8-5-203 (LEXIS Repl. 2000).

1516. See ADEQ Reg. No. 3 § 3.502 (2000). The rating is based upon the total points accumulated by the classification factors applicable to the treatment plant. See *id.*

1517. See *id.* at § 3.301.

1518. See 33 U.S.C. § 1342(l)(1) (1994). Specifically, the CWA provides as follows: "The Administrator shall not require a permit under this section for discharges composed entirely of return flows from irrigated agriculture, nor shall the administrator directly or indirectly, require any state to require such a permit." *Id.*

1519. See 33 U.S.C. § 1362(14) (1994).

1520. See *id.*

1521. See ARK. CODE ANN. §§ 8-7-1201 to -1206 (LEXIS Repl. 2000).

1522. See ARK. CODE ANN. §§ 8-7-1206 (LEXIS Repl. 2000).

1523. See ARK. CODE ANN. §§ 8-7-1203(1) (LEXIS Repl. 2000).

Arkansas does have some important agricultural and silvicultural activities that receive attention from either the federal or Arkansas water pollution control programs. The activities include swine, cattle, and poultry operations as well as silvicultural practices. Discharges from agricultural and silvicultural activities may be regulated under NPDES categorical effluent limitations,<sup>1524</sup> an NPDES General Permit<sup>1525</sup> or an Arkansas state permit.<sup>1526</sup>

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1524. See, e.g., 40 C.F.R. § 412 (1999) (outlining effluent guidelines and standards for feedlots).

1525. The NPDES General Permit (ARG010000) is required for all concentrated animal feeding operations ("CAFOs"). To be considered a CAFO the facility must first meet the NPDES definition of animal feeding operation, identified as a lot or facility where "(i) animals . . . have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12 month period, and (ii) [where] [c]rops, vegetation[,] forage growth or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility." 40 C.F.R. § 122.23(b)(1) (2000). A CAFO is an animal feeding operation where more than 1,000 animal units are confined at the facility. 40 C.F.R. Part 122, App. B (2000) [hereinafter CAFO]. One thousand animal units are defined as follows:

One thousand slaughter or feeder cattle; 700 mature dairy cattle (whether milkers or dry cows); 2,500 swine weighing over 55 pounds; 500 horses; 10,000 sheep or lambs; 55,000 turkeys; 100,000 laying hens or broilers when the facility has unlimited continuous flow watering systems; 30,000 laying hens or broilers when facility has liquid mature handling systems; 5,000 ducks; or 1,000 animal units from a combination of slaughterers, steers and heifers, mature dairy cattle, swine over 55 pounds and sheep.

*Id.* In addition, a facility which discharges pollutants into navigable waters either through a man-made ditch, flushing system or other similar man-made device, or directly into waters of the United States is a CAFO if 300 to 1,000 animal units are confined at the facility. The facility is a CAFO when discharging in the manner identified above if it is an animal feeding operation with more than the following:

Three hundred slaughter or feeder cattle; 200 mature dairy cattle (whether milkers or dry cows); 750 swine weighing over 55 pounds; 150 horses; 3,000 sheep or lambs; 16,000 turkeys; 30,000 laying hens or broilers when the facility has unlimited continuous flow watering systems; 9,000 laying hens or broilers when the facility has a liquid manure handling system; 1,500 ducks; or 300 animal units (from a combination of slaughter steers and heifers, mature dairy cattle, swine over 55 pounds and sheep).

*Id.* A federal district court decision involving a citizen suit action against a dairy is notable because it broadly constructed the activities encompassed by the CWA at this CAFO. *Community Ass'n for Restoration of the Env't v. Henry Bosman Dairy*, 65 F. Supp. 2d 1129 (E.D. Wash. 1999).

1526. The state permit may be in the form of a state general permit or an individual state permit. The state permits are for facilities that do not satisfy the criteria for CAFO classification. The permits are issued pursuant to ADEQ Reg. No. 5 (2000), which requires that all confined animal operations, regardless of size, utilizing a liquid waste management system in Arkansas obtain a permit from the ADEQ. At this point, confined animal operations that utilize a dry waste management system, e.g. poultry litter, are not required to obtain a permit from the ADEQ but are subject to enforcement actions for improper waste handling, storage, or disposal. Telephone interview with

### 1. *Swine*

The operation of certain swine farms are subject to some regulatory requirements.<sup>1527</sup> All confined<sup>1528</sup> feeding animal facilities that utilize waste management systems are required to be covered under a permit issued by ADEQ, despite the size of the facility.<sup>1529</sup> All new and existing concentrated animal feeding operations (“CAFO”)<sup>1530</sup> may be covered under Arkansas’ NPDES General Permit after submitting a Notice of Intent.<sup>1531</sup> Permits are not, however, required for dry waste management systems.<sup>1532</sup> In addition to the permit issued by the ADEQ, a swine CAFO may be subject to the federal CWA effluent categorical standard for feedlots.<sup>1533</sup>

Occasionally, land owners and residents near a proposed swine growing facility will contest the issuance of an ADEQ permit for such a facility.<sup>1534</sup> The appeal of the permitting decision often focuses on the

Keith Brown, P.E., Manager, State Permits Branch, Water Division, ADEQ (Dec. 11, 2000).

1527. *See, e.g.*, Higbee v. Starr, 598 F. Supp. 323 (W.D. Ark. 1984); *In re* Larry Hughes Swine Farm-Lower Massey Unit, No. 97-0150-NOV, 1998 AR ENV LEXIS 31 (APCEC June 12, 1998); *In re* Kent O’Neal Swine Farm, No. 95-018-P, 1996 AR ENV LEXIS 22 (APCEC Apr. 4, 1996); *In re* Kenny Munn Pork III Farm, No. 95-016-P, 1996 AR ENV LEXIS 38 (APCEC Mar. 21, 1996).

1528. The term “confined” is an indication that there has been a trend over the past two decades of concentrating the livestock (hog, cattle, etc.) operation. *See EPA Wants Tighter Animal Feedlot Rules*, WASH. POST, Dec. 16, 2000, at A15. This tends to concentrate the waste from the animal enclosures. *Id.* For an article that posits a spatial model of regional livestock production and certain environmental effects, see Robert Innes, *The Economics of Livestock Waste and its Regulation*, 82 AM. J. OF AGRIC. ECON., Feb. 1, 2000, at 97.

1529. *See* ADEQ Reg. No. 5 (2000).

1530. *See id.*

1531. *See* Telephone interview with Keith Brown, P.E., Manager, State Permits Branch, Water Division, ADEQ (Dec. 11, 2000).

1532. *See id.*

1533. *See* 40 C.F.R. § 412 (1999).

1534. *See, e.g.*, *In re* R Gold Quarters, No. 94-017 (Aug. 26, 1994); *In re* Anna Carden Farm, No. 95-021-P (July 9, 1996). The challenges to the issuance of these permits has generated some interesting issues. For example, in one scenario, an applicant was denied a permit to operate a liquid animal waste management system pursuant to ADEQ Regulation No. 5, the applicant may later apply for a new permit for a different type of operation. *See Hampton v. Ark. Pollution Control & Ecology Comm’n*, 333 Ark. 370, 969 S.W.2d 653 (1998) (finding the denial of the first permit application for an “adult” hog farm would not bar a second permit application for a “nursery-pig” hog farm at the same location based upon claim preclusion). The Arkansas Supreme Court acknowledged that despite the fact that the second application would be located at the same proposed site, it was an entirely different business operation involving less waste and better retention in the larger waste-holding basins. *See id.*

operational requirements<sup>1535</sup> and siting requirements.<sup>1536</sup> These facilities are also subject to ADEQ enforcement for improper waste handling, storage, or disposal.<sup>1537</sup>

On December 15, 2000, EPA proposed regulations that would both expand the number of animal (hogs, cattle, etc.) feedlots regulated and impose stricter controls on them.<sup>1538</sup> A unique aspect of the proposal is an attempt to impose some regulatory responsibility on the supplier of the animals to independent growers for compliance with the applicable CWA requirements.<sup>1539</sup> The proposed rule is likely to be hotly debated by the interested parties.<sup>1540</sup> The fate of the proposal will also depend on the views of the Bush administration, which will make the final decision on its fate.<sup>1541</sup>

Under the proposed rule, an animal feeding operation is subject to the CAFO regulations if it has 500 animal units.<sup>1542</sup> The principal changes affecting Arkansas' procedures include the addition of dry manure handling poultry operations and immature swine and heifer operations.<sup>1543</sup> The changes will also modify the efficient guidelines for CAFOs accordingly.<sup>1544</sup> If the proposed regulation is finalized, it will be several

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1535. See *In re Kent O'Neal Swine Farm*, No. 95-018-P, 1996 AR ENV LEXIS 22 (APCEC Apr. 4, 1996) (questioning the acreage available for land application of the wastes); *In re Fred Hale Hog Farm*, No. 91-163 (June 8, 1992) (canceling the permit due to concerns over contamination of local groundwater and surface water).

1536. See *In re Anna Carden Farm*, No. 95-021-P (July 9, 1996) (challenging the availability of fresh groundwater and siting within 100-year floodplain); *In re Kenny Munn Pork III Farm*, No. 95-016-P, 1996 AR ENV LEXIS 38 (APCEC Mar. 21, 1996) (dismissing permit request of permittee because liquid animal waste facilities sited in 100-year flood plain).

1537. See, e.g., *In re Larry Hughes Swine Farm-Lower Massey Unit*, No. 97-0150-NOV, 1998 AR ENV LEXIS 31 (APCEC June 12, 1998); *In re Early Fay Jackson*, No. 95-007-NOV, 1995 AR ENV LEXIS 3 (APCEC July 27, 1995).

1538. See H. Josef Hebert, *EPA Seeks Stricter Control of Feedlots, Poultry Farms*, ARK. DEMOCRAT-GAZETTE, Dec. 16, 2000, at 2D.

1539. See *id.*

1540. A national environmental group criticized the proposal, stating, "[i]t will be business as usual for industrialized agribusiness." *Id.* (quoting a director of the Clean Water Project for the Natural Resources Defense Council). An industry group responded to the proposal with a statement noting that its members are "already spending millions of dollars to find scientific answers to deal with pollution concerns" and recognize their environmental responsibilities. *Id.* (referencing a statement by the National Pork Producers Council).

1541. *Id.*

1542. See U.S. ENVTL. PROTECTION AGENCY, FACT SHEET: PROPOSED REGULATIONS TO ADDRESS WATER POLLUTION FROM CONCENTRATED ANIMAL FEEDING OPERATIONS, EPA 833-F-00-016 (2000) [hereinafter FACT SHEET]. For discussion of animal units, see CAFO, *supra* note 1525.

1543. See FACT SHEET, *supra* note 1542.

1544. See *id.* For example, the effluent guidelines will include provisions for dry

years before operations that are not subject to the CAFO regulations must comply.<sup>1545</sup>

## 2. *Cattle*

Non-NPDES Arkansas authorities may also apply to some cattle operations. A facility may be subject to ADEQ Regulation No. 5 if it has a liquid waste disposal system.<sup>1546</sup> In addition, if the operation is large enough to be classified as a CAFO<sup>1547</sup> it may be subject to the federal CWA effluent guidelines for feedlots.<sup>1548</sup>

## 3. *Poultry*

For the most part, poultry operations in Arkansas are not encompassed by ADEQ Regulation No. 5.<sup>1549</sup> Major poultry companies have sought to address potential issues by participating in voluntary programs to prevent water pollution from manure disposal practices.<sup>1550</sup> As a way of encouraging proper practices, the poultry companies have placed manure-disposal policies in their contracts with growers.<sup>1551</sup> Nevertheless, a facility may be subject to effluent guidelines for feedlots if it has a point source discharge and the minimum number of animals subject the facility to regulation.<sup>1552</sup>

## 4. *Silviculture*

Traditionally, silvicultural activities in Arkansas have not been subject to mandatory water pollution control requirements. However, on August 23, 1999, EPA issued proposed rules establishing TMDLs that would have affected forestry in Arkansas and elsewhere.<sup>1553</sup> The rule

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manure handling for layer and broiler operations. *See id.*

1545. *See id.* As proposed, newly defined CAFOs will not be required to obtain a permit until three years after the final regulation is published. This date is approximately January 2006. *See id.*

1546. *See* ADEQ Reg. No. 5 (2000).

1547. *See* CAFO, *supra* note 1525.

1548. *See* 40 C.F.R. § 412.10 (2000).

1549. *See* ADEQ Reg. No. 5 (2000). Dry waste management systems for confined animal operations are not required to obtain a permit under Regulation No. 5. *See id.*

1550. *See* Carol Griffee, *Playing Chicken: Poultry Companies, Growers and Government Agencies Square Off As Animal Wastes Pile Up*, ARK. BUS., May 11, 1992, at 16.

1551. *See id.*

1552. *See* 40 C.F.R. § 412.10 (2000).

1553. *See* 64 Fed. Reg. 46,010, 46,012 (1999) (to be codified at 40 C.F.R. pt. 130).

would have allowed states to address specific discharges from forestry operations that contribute pollution to impaired waters and required them to have permits.<sup>1554</sup> The timber industry responded with significant information and comment which caused EPA to extend the comment period on the proposed rule. Arkansas forestry opposition focused on the fact that the state has a high percentage of operators already using voluntary best management practices.<sup>1555</sup> EPA issued a final TMDL rule on July 13, 2000.<sup>1556</sup> The federal agency withdrew the part of the proposal that would have potentially encompassed some timber operations.<sup>1557</sup>

### 5. *Aquaculture*

Some states require permits for certain aquaculture activities.<sup>1558</sup> Arkansas has no specific permitting program applicable to these operations.<sup>1559</sup> However, EPA has indicated that it may establish CWA effluent limitations guidelines for aquaculture operations.<sup>1560</sup> Research is focusing on the extent to which catfish aquaculture ponds are sources of nitrogen, phosphorus, organic matter, and settleable solids.<sup>1561</sup> The argument has been made that “no studies [have been] conducted to directly determine the impact of catfish pond effluents on the quality of receiving

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1554. *See id.* *See also* Brendan O’Reilly, *EPA, Lawmakers and Timber Fight to the End*, ARK. BUS., Dec. 11, 2000, at 24 (relying on David Gillespie, Assistant General Counsel, EPA Region 6).

1555. *See id.* at 24. Examples of forestry BMPs include measures such as establishing protected streamside management zones, locating roads on ridge lines rather than slopes, inspecting and maintaining roads, directionally cutting trees, and avoiding use of dry stream beds. *See* Nita Chilton McCann, *DEQ Hears Evidence of Water Pollution Caused by Tree Farming*, 16 MISS. BUS. J., Aug. 15, 1994, at 14. The purpose of such measures is to reduce sediment, organic materials, impact of water temperature, and nutrients and pesticides. *See id.*

1556. *See* 65 Fed. Reg. 43,586 (July 14, 2000).

1557. *See* 65 Fed. Reg. 43,591 (2000) (to be codified at 40 C.F.R. pts. 9, 122-24, 130).

1558. *See* 64 Fed. Reg. 46,911 (1999). *See also* Brenninkmeyer, *supra* note 82, at 101 (referencing various requirements imposed by Minnesota upon some aquaculture operations).

1559. *See* Telephone Interview with Keith Brown, Manager, State Permits Branch, ADEQ Water Division (Dec. 12, 2000). *See also* Brenninkmeyer, *supra* note 82, at 101 (noting Arkansas and Mississippi’s mineral regulation of catfish farms).

1560. *See* 65 Fed. Reg. 55,522 (Sept. 14, 2000).

1561. *See* Craig S. Tucker & John A. Hargreaves, *Effluents from Channel Catfish Agriculture Ponds* (visited Feb. 9, 2001) <<http://www.msstate.edu/dept/tcnwac/effdoc.html>>. The document was prepared in response to the EPA notice of proposed effluent guidelines plan found at 63 Fed. Reg. 29,203 (1998).

streams.”<sup>1562</sup> No effluent limitations guidelines for these operations are expected in the near future.

2. *Funding Water Discharge Permitting/Pollution Control Activities*

a. *Funding ADEQ Water Permitting Activities*

ADEQ permitting, enforcement, and other activities are funded by various sources such as permit fees, state appropriations, penalties collected, and federal grants. While counterintuitive, many regulated facilities are supportive of adequate agency funding and/or reasonable fees for maintenance of environmental agency staff and facilities.<sup>1563</sup> The motivation for such support may include an interest in ensuring that an agency has the personnel necessary to handle the projected volume of permit applications and related tasks.<sup>1564</sup> For example, a facility may need to obtain a new permit or modify an existing one. The acquisition or modification of these permits may be a prerequisite to engaging in a new, changed, or expanded activity. Inadequate funding will impact the number of agency personnel available to review permit applications and issue permits. A shortage of such personnel could impede the progress of some projects or activities.<sup>1565</sup>

b. *Funding Pollution Control Activities*

The acquisition of funds to meet CWA and other federal/state environmental statutory requirements is an important issue. Large capital, operation, and maintenance costs may be needed to construct and operate the facilities and install the controls mandated by various CWA requirements.<sup>1566</sup> A 1997 survey projected that over \$875 million would be needed to fund Arkansas public wastewater needs over the 1997-2002

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<sup>1562</sup>. *Id.*

<sup>1563</sup>. See Telephone Interview with Randy Thurman, Executive Director, Arkansas Environmental Federation (Dec. 18, 2000).

<sup>1564</sup>. See *id.*

<sup>1565</sup>. In the mid-1990s a shortage of personnel was blamed for the delays in various construction projects requiring permits in the state of Hawaii. See Richard T. Sale, *Are the Feds Coming?*, HAW. INV., May 1995, at 29.

<sup>1566</sup>. For example, see Robert J. Smith, *Fayetteville Council Votes to Issue Bonds to Take Care of Sewer Costs*, ARK. DEMOCRAT-GAZETTE, Sept. 20, 2000, at 7B (referencing \$60 to \$90 million needed by Fayetteville, Arkansas to build and improve POTWs to meet the city's needs). A 1992 EPA report summarizes the agency's assessment of various future projected POTW expenditures. See 1992 Report, *supra* note 93.

period.<sup>1567</sup> Few Arkansas municipalities have the ability to fund such projects without substantial federal or state assistance. Private facilities are also often challenged in obtaining needed funds because these expenditures do not typically generate a return on investment.<sup>1568</sup>

Some municipalities and other governmental entities around the United States have responded to the large financial outlays required by this program by privatizing certain aspects of their sewage treatment operations.<sup>1569</sup> Larger cities have explored privatization of such facilities in the past decade.<sup>1570</sup> The structure of the agreement with a contractor will vary. The agreement must address key provisions such as contract length<sup>1571</sup> and responsibility for capital repairs.<sup>1572</sup>

1. *Federal/State POTW Grants/Loans*<sup>1573</sup>

- a. Federal Grants

A key component of the 1972 amendments to the CWA was the inclusion of federal funds for public wastewater treatment facilities.<sup>1574</sup> Subchapter 5 of the CWA authorized federal grants for construction of POTWs.<sup>1575</sup> Grants could be awarded to a “state, municipality, or

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1567. See ARKANSAS SOIL AND WATER CONSERVATION COMM’N, ARKANSAS WATER, WASTE DISPOSAL AND POLLUTION ABATEMENT FACILITIES (ACT 607 OF 1997) AMENDMENT, PLAN OF WORK FOR 1999-2001 BIENNIUM 3 (2000) [hereinafter POLLUTION ABATEMENT].

1568. See, e.g., Wensloff, *supra* note 84 (“Few issues receive less respect and attention around the winery than wastewater produced by wineries. This unglamorous, inglorious byproduct of wine production does not produce revenue, smells bad and would make everyone involved much happier if it would just go away.”); Roothaan, *supra* note 146, at 23 (“... banks typically view environmental equipment as more of a liability than an asset”).

1569. See, e.g., *New Orleans Proposed to Bid out Its Sewer and Water Operations*, NEW ORLEANS CITY BUS., June 26, 2000, at 4.

1570. See *id.* However, some smaller communities began privatization efforts over the past three decades. See *id.*

1571. The length of the contracts vary. New Orleans considered terms of ten to twenty years. See *id.*

1572. For example, Atlanta addresses sewage treatment capital repair issues by requiring the contractor to pay the first \$10,000 in capital repair while the city picks up the remaining costs with bond money. See *id.* Some cities shift all capital repairs to the contractor. See *id.*

1573. This discussion is not intended to be an exhaustive list of the sources of funds for public or private water pollution control activities. For example, it does not address the various federal agricultural programs that may address pollution control practices. See Hoagland & Watts, *supra* note 81, at 646 (discussing federal agricultural cost-share funds for farmers that implement soil conservation measures).

1574. See 33 U.S.C. § 1281(g) (Supp. II 1972).

1575. The CWA provides that “it is the national policy that federal financial



intermunicipal or interstate agency for the construction of publically owned treatment works."<sup>1576</sup> The program's goal was to upgrade and construct POTWs to meet the secondary treatment standards.<sup>1577</sup>

Arkansas and other states have been somewhat dependent upon federal funds to finance public pollution control projects such as the construction or upgrading of POTWs.<sup>1578</sup> Federal sources of funds for Arkansas projects have included EPA, USDA Rural Development, Farmer's Home Administration, Economic Development Administration, and Department of Housing and Urban Development.<sup>1579</sup> A municipality may only be able to access funds from a particular agency if the proposed project meets its eligibility criteria.<sup>1580</sup>

The amount of federal CWA funds available for POTW construction has declined.<sup>1581</sup> This has been a problem for Arkansas and many other states. The procurement of funds to construct, upgrade, and operate POTWs has been a particular concern for smaller communities.<sup>1582</sup> A

assistance be provided to construct public owned waste treatment works." See 33 U.S.C. § 1251(a)(4) (1994).

1576. See 33 U.S.C. § 1281(g) (Supp. II 1972). The development of POTWs was often viewed as a three step process. A court described the process thus:

Projects for waste treatment works are divided into three steps. Step 1 is the planning phase in which the overall facility plan for the project is developed. This involves consideration of alternatives, the determination of the size and scope of the project, and development of other required information to enable the actual design work to begin. This design work, in which construction drawings and specifications are prepared, is Step 2. Step 3 is the actual construction.

*Michigan v. City of Allen Park*, 954 F.2d 1201 (6th Cir. 1992). Federal funding for steps one and two was more difficult to obtain after enactment of the previously cited 1981 amendments to the CWA. See *id.* at 1204 (citing H.R. REP. NO. 270, at 4, reprinted in 1981 U.S.C.C.A.N. 2629, 2632; 40 C.F.R. § 35.920-3 (2000)).

1577. Private companies or facilities were not eligible for such grants. See *Knopman & Smith*, *supra* note 29.

1578. See POLLUTION ABATEMENT, *supra* note 1567, at 3 noting, "[h]istorically, the majority of financing for Arkansas water, waste disposal and pollution abatement facilities has come from the federal government."

1579. See *id.*

1580. See *id.* Examples include: (1) USDA-RD—the municipality must have a population less than 10,000; (2) EPA—the "funds must directly relate to creation or preservation of jobs;" and (3) HUD—the "funds must be directed to low to moderate income families." *Id.* Not all projects meet the necessary requirements. See *id.*

1581. See *New Jersey Builders Ass'n v. Fenske*, 591 A.2d 1362 (N.J. Super. Ct. 1991) (referencing declining amount of federal funds available to construct and improve POTWs).

1582. See Emmett George, *Ola Officials Work to Meet Deadline on Sewage System*, ARK. DEMOCRAT-GAZETTE, Jan. 14, 1990, at B1 (referencing difficulty of communities with limited financial base to fund POTW improvements).

1992 EPA report concluded that smaller communities have less access to private credit markets.<sup>1583</sup>

The 1987 CWA amendments converted the grant program to a state revolving loan fund<sup>1584</sup> financed by federal appropriations.<sup>1585</sup> These amendments<sup>1586</sup> provided a perpetual fund<sup>1587</sup> for financing the construction of wastewater treatment facilities for municipalities and other public entities<sup>1588</sup> through the ADEQ Construction Assistance Revolving Loan Fund Program.<sup>1589</sup> The program is capitalized with federal grants and state matching funds on a ratio of five federal dollars to one state dollar.<sup>1590</sup> The

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1583. See 1992 REPORT, *supra* note 93, at 15. These communities cannot rely on economics of scale to the same extent as larger communities. See *id.*

1584. Various issues associated with the implementation of the State Revolving Loan Fund are addressed in U.S. ENVTL. PROTECTION AGENCY, THE CLEAN WATER STATE REVOLVING FUND FUNDING FRAMEWORK—POLICY AND GUIDANCE DOCUMENT (EPA 832-B-96-005) [hereinafter REVOLVING FUND].

1585. See Telephone Interview with Doug Ford, P.E., Pollution Management, Inc. (Dec. 22, 2000).

1586. See Water Quality Act of 1987, Pub. L. No. 100-4, 101 Stat. 7 (1987).

1587. These capitalization grants are known as "state revolving funds." 33 U.S.C. § 1381 (1994).

1588. The amount of federal CWA SRF funds that should be allocated to the respective states has been a subject of tension. For example, former United States Representative Blanche Lambert Lincoln of Arkansas expressed concern in 1995 about whether an alteration to the SRF which was included in proposed amendments to the CWA was fair to less industrialized states such as Arkansas. Representative Lincoln noted:

During consideration of H.R. 961, the House approved an amendment that altered the allocation formula under the State Revolving Fund (SRF). Under this new formula, the less industrialized states, like Arkansas, received significantly less money than they currently receive. The base bill contained a more equitable approach in its treatment of the allocation formula, but the amendment adopted by the House gutted the original agreement reached by the Committee.

Last year Arkansas received nearly \$15 million under the SRF allocation. Under the amended bill, Arkansas would receive \$8 million—a 42 percent reduction.

Arkansas has a well run SRF program, leveraging two times the amount of its SRF funding. Last year, Arkansas leveraged nearly \$30 million from its \$15 million allocation. The severe reduction in the amended bill not only reflects a \$7 million reduction of federal obligated dollars, but it also adversely affects Arkansas' ability to leverage more funds. The bill's cut in fact represents a \$14 million total loss in funds that could be used to finance much needed wastewater treatment plants and infrastructure needs throughout the state. With the many federal requirements imposed on our communities, they need the capital to comply with these national mandates.

141 CONG. REC. E. 1046 (May 16, 1995).

1589. See ARK. CODE ANN. §§ 15-5-901 to -906 (2000) (LEXIS Repl. 2000).

1590. See ADEQ, CONSTRUCTION ASSISTANCE DIVISION, 1999 ANNUAL REPORT ARKANSAS REVOLVING LOAN FUND (2000).

ADEQ has served as the lead agency for the Construction Assistance Revolving Loan Fund program and is responsible for performing technical reviews, monitoring construction, and coordinating the total management of the program.<sup>1591</sup> However, the Arkansas General Assembly, in Act 459 of 2001, transferred this program from the ADEQ to the Arkansas Soil and Water Conservation Commission.

The Construction Assistance Division of the ADEQ has used a somewhat novel approach to increase the amount of money in the loan program. Loan repayments to the fund are used as collateral to enable the Arkansas Development Finance Authority ("ADFA") to sell bonds.<sup>1592</sup> The proceeds from the bond sales constitute about fifty percent of the funds available for the Construction Assistance Revolving Loan Fund.<sup>1593</sup> Federal grant money and state funds constitute the remainder.<sup>1594</sup> The Construction Assistance Revolving Loan Fund<sup>1595</sup> made its first loan to the City of Truman in 1990.<sup>1596</sup> The program has received almost \$103 million from EPA grants and \$25 million from matched state funds.<sup>1597</sup> Bond proceeds, loan repayments, and investment earnings bring the Revolving Loan Fund revenues since inception to over \$314 million.<sup>1598</sup> The cumulative total through June 1999 of construction expenditures binding commitments by the ADEQ is over \$160 million.<sup>1599</sup>

The loans originated with the ADEQ for the construction of wastewater treatment facilities including new collection systems and rehabilitation or expansion of existing facilities. The loans bear interest rates ranging from 2.5% to 4.0%.<sup>1600</sup> All of the loans are collateralized by sales and use tax bonds issued by the municipality, special assessments, or user charges.<sup>1601</sup>

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1591. *See id.* These federal funds could not be disbursed until EPA and the state executed an agreement establishing a procedure for the distribution of funds. *See* 33 U.S.C. § 1383(a) (1994).

1592. *See* Telephone Interview with Dave Fenter, ADEQ Construction Assistance Division (Sept. 13, 2000).

1593. *See id.*

1594. *See id.*

1595. *See* ARK. CODE ANN. § 15-5-901 (LEXIS Repl. 2000).

1596. *See* ADEQ, CONSTRUCTION ASSISTANCE DIVISION, 1999 ANNUAL REPORT ARKANSAS REVOLVING LOAN FUND 21 (2000).

1597. *See id.* at 19. The amounts referenced are as of June 1999. The federal grant dollars are \$103,959,067 with a state match of \$25,019,006.

1598. *See id.* The total through June, 1999 is \$314,831,371. *See id.*

1599. *See id.* at 15. The cumulative totals for loan projects through June, 1999 is \$160,241,675. *See id.*

1600. *See id.* at 7.

1601. *See id.* In 2001, the Arkansas General Assembly appropriated \$3.8 million for the period ending June 30, 2003, for state matching grants for constructing wastewater

b. Non-Point Source Loans

ADEQ has initiated a pilot program to provide low-interest loans to address water pollution from agricultural non-point sources. The Agriculture Water Quality Loan Program encourages conservation practices such as stream channel stabilization, spring development, construction of ponds or watering facilities, and development of waste management systems.<sup>1602</sup> ADEQ efforts to date have been in Arkansas watersheds that are impaired primarily by non-point sources.<sup>1603</sup> ADEQ has focused the Pilot Program on Benton, Carroll, Madison, and Washington counties.<sup>1604</sup>

Loan applicants are required to work with ADEQ, Natural Resources Conservation Service ("NRCS") of the USDA, and the local Conservation Districts to develop a conservation plan.<sup>1605</sup> After submission of an application to the local Conservation District, the NRCS technical staff will approve or deny the request.<sup>1606</sup> If approved by the NRCS, the applicant receives a certificate of qualification from the Conservation District.<sup>1607</sup> The applicant then contacts a participating bank to secure a loan.<sup>1608</sup>

The Agricultural Water Quality Loan Program limits loan amounts to \$100,000 per applicant.<sup>1609</sup> The loans bear an interest rate of three percent.<sup>1610</sup> The Construction Assistance Revolving Loan Fund pays the difference in the participating bank's loan rate and the three percent rate of the loans in this program.<sup>1611</sup>

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treatment facilities. *See* 2001 Ark. Acts 346.

1602. *See* ADEQ, CONSTRUCTION ASSISTANCE DIVISION, 1999 ANNUAL REPORT ARKANSAS REVOLVING LOAN FUND (2000).

1603. *See* Telephone Interview with Dave Fenter, ADEQ Construction Assistance Division (Sept. 13, 2000). ADEQ examined the CWA 303(d) list to determine which watersheds are impaired by such sources. *Id.*

1604. *See id.*

1605. *See* ADEQ, CONSTRUCTION ASSISTANCE DIVISION, ARKANSAS AGRICULTURAL WATER QUALITY LOAN PROGRAM (2000).

1606. *See id.*

1607. *See id.*

1608. *See id.* The ADEQ sought participation from two banks in each of the four counties identified above. Telephone Interview with Dave Fenter, ADEQ Construction Assistance Division (Sept. 13, 2000).

1609. *See* ADEQ, CONSTRUCTION ASSISTANCE DIVISION, ARKANSAS AGRICULTURAL WATER QUALITY LOAN PROGRAM 3-5 (2000).

1610. *See* Telephone Interview with Dave Fenter, ADEQ Construction Assistance Division (Sept. 13, 2000).

1611. *See id.*

The construction of a POTW may in some circumstances trigger requirements in addition to obtaining an NPDES permit. For example, Arkansas proscribes the construction of POTWs outside a municipality's corporate limits unless certain conditions are fulfilled.<sup>1612</sup>

c. Arkansas Small Business Loan Program

Compliance with the federal and state environmental regulatory requirements can in some instances require a relatively significant capital outlay to purchase necessary equipment or controls. Small businesses often have a limited ability to fund these required expenditures. Assistance is sometimes available through the Small Business Revolving Loan Fund<sup>1613</sup> managed by ADEQ. The purpose of the loan fund is to provide low interest loans to Arkansas small businesses to institute pollution control measures required by state or federal law, or to institute pollution prevention measures that reduce the quantity of pollution produced by businesses.<sup>1614</sup>

To be eligible, the Arkansas business must employ one hundred or fewer individuals and have been profitable for at least two of the previous three tax years. Activities eligible for the loan fund disbursements include pollution control projects which are designed to correct or avoid violations of state or federal environmental regulations, or pollution prevention projects designed to reduce or eliminate the generation of pollution or waste at the source.<sup>1615</sup>

Pollution control loans had been available in amounts of up to \$10,000, with loan terms of up to five years.<sup>1616</sup> Pollution prevention loans had been available in amounts up to \$15,000, with loan terms up to ten

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1612. The City of Russellville challenged the City of Dover's construction of a facility outside the Dover municipal limits. See *City of Dover v. A.G. Barton*, 337 Ark. 186, 187-88, 987 S.W.2d 705, 706 (1999). The court found that the cited provisions did not apply to the Dover project because it would constitute a retroactive application of the statute. See *id.* at 191, 987 S.W.2d at 708.

1613. See ARK. CODE ANN. § 8-5-801 (LEXIS Repl. 2000). See D. Keith Fortner, *Survey of Legislation 1995, Environmental Law*, 18 U. ARK. LITTLE ROCK L. REV. 327 (1996).

1614. See ARK. CODE ANN. § 8-5-804(a)(1) (LEXIS Repl. 2000). In 2001, the Arkansas General Assembly amended the statute to make waste reduction projects eligible for loans. See 2001 Ark. Acts 213.

1615. See ARK. CODE ANN. § 8-5-803(5) (LEXIS Repl. 2000).

1616. See ARK. CODE ANN. §§ 8-5-806(a)(1)(A), (a)(2)(B) (LEXIS Repl. 2000).

years.<sup>1617</sup> Single businesses had been limited to a lifetime maximum of \$25,000.<sup>1618</sup>

d. Arkansas Tax Credits

1. *Pollution Control Equipment Sales Tax Exemption*

Arkansas provides a limited sales tax exemption for the purchase of pollution control machinery and chemicals. The scope of this exemption has been addressed in several decisions. For example, in *Heath v. Research-Cottrell, Inc.*,<sup>1619</sup> the Arkansas Supreme Court considered whether a natural draft cooling tower at a power plant fit within the Arkansas Compensating Use Tax exemption for machinery or equipment used to prevent water pollution.<sup>1620</sup> The court found the equipment was encompassed by the exemption.<sup>1621</sup>

A different result was reached in *Southern Steel & Wire Co. v. Wooten*<sup>1622</sup> where the court found the exemption inapplicable to a pH recorder utilized at a manufacturing facility. The facility argued that the device was necessary to monitor the discharge of waste materials.<sup>1623</sup> The court disagreed, stating that the device merely informed the facility of the level of pollution.<sup>1624</sup> The device was not deemed to “prevent or reduce air and/or water pollution or contamination which might otherwise result from the operation of such plant or facility as required by the statute.”<sup>1625</sup>

A more recent decision addressing this tax credit is *Aluminum Co. of America v. Weiss*.<sup>1626</sup> The court considered whether the exemption applied to leased heavy equipment used to mitigate environmental damages from prior mining operations. The Arkansas Department of Finance and Administration had determined that the leased equipment was ineligible for the exemption because the equipment was used in a post-mining

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1617. *See id.*

1618. *See* ARK. CODE ANN. § 8-5-806(a)(2) (LEXIS Repl. 2000). In 2001, the Arkansas General Assembly, in Act 213, revised the \$10,000, \$15,000, and \$25,000 amounts to \$20,000, \$25,000, and \$45,000 respectively. 2001 Ark. Acts 213.

1619. 258 Ark. 813, 529 S.W.2d 336 (1975).

1620. *See id.* at 816, 529 S.W.2d at 337.

1621. *See id.* at 822, 529 S.W.2d at 340-41.

1622. 276 Ark. 37, 631 S.W.2d 835 (1982).

1623. *See id.* at 41-42, 631 S.W.2d 838.

1624. *See id.* at 42, 631 S.W.2d 838.

1625. *Id.* at 41, 631 S.W.2d 838.

1626. 329 Ark. 225, 946 S.W.2d 695 (1997).

reclamation project as opposed to reduction of pollution from ongoing mining operations. The court agreed with the agency's position.<sup>1627</sup>

## 2. *Wetland Creation/Restoration Tax Credit*

Because the majority of land suitable for wetlands and riparian zones is privately owned, Arkansas has enacted tax incentives to encourage these owners to create new wetland and riparian zones.<sup>1628</sup> Pollution control processes that include the construction of wetlands may be eligible for a tax credit.<sup>1629</sup> Taxpayers who engage in developing or restoring wetlands and riparian zones are entitled to a tax credit equal to the project costs they incur.<sup>1630</sup> The amount may not exceed the lesser of the amount of individual or corporate income tax due, or \$5,000.<sup>1631</sup> Taxpayers are allowed to carry over any unused tax credit for a maximum of nine consecutive years following the year in which the credit originated.<sup>1632</sup> The ASWCC administers the program.<sup>1633</sup>

## 3. *Surface Water Utilization Tax Credit*

Adequate water supplies are a critical component of residential, commercial, and industrial development.<sup>1634</sup> The availability of significant amounts of water can be an important issue for many projects. It may be

1627. *See id.* at 226-29, 946 S.W.2d at 695-97.

1628. *See* ARK. CODE ANN. § 26-51-1502(c) (Michie Repl. 1997).

1629. The Arkansas statute defines the term "wetland" as:

(A) An area that:

- (i) Has water at or near the surface of the ground at some time during the growing season, wetland hydrology;
- (ii) Contains plants that are adapted to wet habitats, hydrophytic vegetation; and
- (iii) Is made up of soils that have developed under wet conditions, hydric soils.

ARK. CODE ANN. § 26-51-1503(8) (Michie Repl. 1997).

1630. *See* ARK. CODE ANN. § 26-51-1505 (Michie Repl. 1997).

1631. *See id.*

1632. *See id.*

1633. *See* ARK. CODE ANN. § 26-51-1506 (LEXIS Repl. 2000). A bill was introduced into the 83rd General Assembly that would provide a tax credit for the donation of land such as riparian zones, floodways, wetlands, etc. *See* H.B. 2277, 83rd Gen. Ass., Reg. Sess. (Ark. 2001).

1634. *See generally* Walter G. Wright, Jr. & Albert J. Thomas III, *Water: A Checklist of Arkansas Common Law and State Government Controls Applicable to Its Use*, ARK. LAW., July 1996, at 34.

a particular concern for areas of the state dependent on groundwater if this resource is not being adequately recharged.<sup>1635</sup>

Certain activities involving utilization of surface water may be eligible for a limited tax credit. These provisions are found in the Arkansas Water Resource Conservation and Development Incentives Act.<sup>1636</sup> The Act provides tax incentives to encourage water users to invest in constructing impoundments, convert from groundwater use to surface water use when available, and practice land leveling.<sup>1637</sup> The ASWCC administers this program.

## VI. CONCLUSION

The federal and Arkansas water pollution control programs remain some of our most expensive and complicated environmental regulatory requirements. Regardless, implementation of these programs has resulted in the elimination of a significant percentage of the pollutants that were formerly discharged into our waterways. These efforts have clearly cleansed a significant number of rivers, streams, and lakes to the extent that they are once again available for various uses and activities. These reductions have, however, been driven to a great extent by the categorical effluent limits applied to point sources. The advantage of this approach has been that, for the most part, facilities covered by this program have been easily identified and the effluent limits applicable to them fairly clear. Further, the fact that these categorical standards apply nationally has ensured that all similar point sources discharging nationally were

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1635. The Arkansas Soil and Conservation Commission has designated Union, Ouchita, Columbia, Calhoun, and Bradley counties in Southern Arkansas as a critical ground water area, and has expressed concern that Arkansas, Jefferson, Prairie, Pulaski, White, and Lonoke could conceivably be designated as critical ground water areas. See ARKANSAS SOIL AND WATER CONSERVATION COMMISSION, THE DESIGNATION OF THE SPARTA AQUIFER WITHIN BRADLEY, CALHOUN, COLUMBIA, OUCHITA, AND UNION COUNTIES AS A CRITICAL GROUND WATER AREA, NO. CGWA 1995-1 (1995); ARKANSAS SOIL AND WATER CONSERVATION COMMISSION, ARKANSAS WATER PLAN SUPPLEMENT: GROUND WATER PROTECTION AND MANAGEMENT REPORT FOR 1995 (1995). Projects eligible for the tax credit include the construction, installation, or restoration of water storage or water control structures of twenty acre-feet or more designed for agriculture, irrigation, or industrial processes. See ARK. CODE ANN. §§ 26-51-1003(7)(A) to 1005(a) (Michie Repl. 1997). Water use, access, and conservation will likely be volatile issues in the future in some parts of Arkansas. See Doug Thompson, *Water Tax Surfaces in House Committee, Lawmakers Discuss Levy to Save Waning Supplies*, ARK. DEMOCRAT-GAZETTE, Feb. 20, 1999, at 12A; Chuck Plunkett, *Deadline Set for Signing on a Plan to Tap White River*, ARK. DEMOCRAT-GAZETTE, Jan. 7, 2000, at 1B.

1636. See ARK. CODE ANN. § 26-51-1001 (Michie Repl. 1997).

1637. See ARK. CODE ANN. § 26-51-1002(c) (Michie Repl. 1997).



required to meet the same baseline effluent limits. The requirement that point source discharges be authorized pursuant to NPDES permits has ensured that both the enforcement agencies and the interested public have understood what the facilities were discharging and whether the applicable effluent limits were being attained. States such as Arkansas that have been delegated this program for many years have generally become proficient in issuing such permits and taking the necessary measures to enforce compliance with their terms.

Despite the overall improvement in national surface water quality, problems remain. A number of United States and Arkansas waterbodies are not meeting the applicable WQS. Consequently, the challenge for both the United States and Arkansas water pollution control programs will involve an effort to move additional lakes, rivers, and streams into compliance with WQS. The difficulty will be the fact that large aggregate reduction of loadings (mandated by the categorical standards) for sources has already taken place. The cost to achieve additional incremental reductions by a number of point sources will be expensive. Further, the significant loadings generated in some waterbodies by CSOs, CSSs, or other wet weather flows may be key sources of pollutants in some waterbodies. However, the public funds required to undertake installation of the infrastructure necessary to achieve reductions is an impediment. In addition, the costs, complexity, and/or political undesirability of imposing mandatory controls on non-point sources renders further reductions from these activities unclear.

Pressure will, however, continue to build under the CWA (as currently structured) to achieve WQS. In the past several years, various groups have rediscovered the CWA mechanisms put in place almost thirty years ago to, in theory, require that every waterbody meet applicable WQS. Specifically, both EPA and the states are, and will be, required to set TMDLs for many waterbodies. This will be a time consuming and expensive task. Equally important, however, is the fact that at the end of this process hard choices may have to be made on how to achieve compliance with WQS by a particular waterbody. None of the potential items on the previously described menu are easy choices.

Arkansas faces the same dilemma as other states. The state is now committed to a schedule for producing TMDLs. The information generated by this process is likely to engender a spirited discussion about the appropriate means to achieve WQS. In reality, the question will be how assimilative capacity in a particular waterbody should be allocated among the sources. There will be no easy answers. The conflict between similar and dissimilar sources is a possibility. These potential conflicts

may generate interest in concepts such as effluent trading programs or watershed planning. Perhaps Arkansas is in as good or better position as many states to address these issues. It has years of experience operating the NPDES permit program and addressing the various issues that flow from that process. Further, Arkansas has made significant investments to better define the criteria necessary to support particular uses in a region. This combination of expertise and a willingness to work together by the disparate sources of loadings could lead to further gains in the protection of one of the United States' and Arkansas' most precious resources—water.

