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20th Annual Environmental Law Institute

Office of Continuing Legal Education at the University of Kentucky College of Law

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The University of Kentucky Office of Continuing Legal Education would like to acknowledge the co-sponsorship of this year's Institute by the Kentucky Bar Association Environmental Law Section which donated funds to help defray the cost of out-of-state speaker expenses.
20th Annual Environmental Law Institute

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ANNUAL ENVIRONMENTAL CASE LAW UPDATE ...................... SECTION A
Lesly A.R. Davis

ANNUAL ENVIRONMENTAL STATUTORY & REGULATORY UPDATE ......................................................... SECTION B
Tim Thomas

NEW FEDERAL STANDARDS FOR DUE DILIGENCE ON REAL ESTATE TRANSACTIONS: ALL APPROPRIATE INQUIRY REGULATIONS .......................................................... SECTION C
Dennis J. Conniff

COMBINED SEWER OVERFLOW ISSUES .......................... SECTION D
Laurence J. Zielke

"REAL ESTATE RECYCLING" VERP REGULATIONS .............. SECTION E
Lloyd R. Cress, Jr.

CITIZEN SUITS & ENFORCEMENT TOOLS ....................... SECTION F
David Bookbinder

SARBANES / OXLEY AND THE ENVIRONMENTAL LAWYER ....... SECTION G
Amy D. Cubbage

"THE AIR YOU BREATHE": AIR TOXICS ......................... SECTION H
Jack C. Bender
Thomas J. FitzGerald
John S. Lyons
Arthur L. Williams

RISK ASSESSMENT AND COMMUNICATION ..................... SECTION I
Mark J. Klan
ANNUAL ENVIRONMENTAL CASE LAW UPDATE

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ANNUAL ENVIRONMENTAL CASE LAW UPDATE

A. CERCLA .......................................................... A-1
   1. Cooper Industries, Inc. v. Aviall Services, Inc. .................. A-1
   5. E.I. DuPont De Nemours v. United States ....................... A-3

B. TOXIC TORTS ......................................................... A-4
   1. Olden, et al. v. Lafarge Corp. ................................. A-4

C. ENERGY .............................................................. A-6
   2. Nuclear Energy Institute, Inc. v. Environmental Protection Agency A-6

D. AIR QUALITY ......................................................... A-7

SECTION A
2. Alaska Department Of Environmental Conservation v. EPA .................. A-7
3. Blue Water Network v. EPA .................................................. A-8

E. WATER QUALITY ................................................................. A-9
3. United States v. Allegheny Ludlum Corp. ................................. A-10

F. OTHER CASES ................................................................. A-10
1. Ethics ............................................................................. A-10
2. NAFTA ........................................................................ A-11
3. Constitutional .................................................................. A-11
4. False Claims Act ................................................................ A-12
   United States, ex rel. Bain v. Georgia Gulf Corp. ....................... A-12
5. Resources ........................................................................ A-13
6. Takings ........................................................................... A-13
   b. John R. Sand & Gravel Co. v. United States ............................. A-14

SECTION A
7. **RCRA** ................................................................. A-14

*Hoosier Environmental Council, Inc., et al. v. Northern Indiana Public Service Company* ................................................. A-14

8. **Financial Guaranty** ............................................. A-15

ANNUAL ENVIRONMENTAL CASE LAW UPDATE
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A. CERCLA


On December 13, 2004, the United States Supreme Court issued a decision which alters the conventional understanding of how CERCLA applies to private cost recovery actions. Cooper Industries, Inc. owned four Texas properties until 1981 when it sold them to Aviall Services, Inc. After operating the sites for several years, Aviall discovered that both it and Cooper had contaminated the sites and that hazardous substances had leaked into the soil and groundwater. Aviall notified the state of the contamination, but neither the state nor the U.S. government took judicial or administrative measures to compel cleanup. Aviall cleaned up the properties under the state’s supervision and sold them to a third party. Aviall remained contractually responsible for $5 million or more in cleanup costs. Aviall filed an action against Cooper to recover costs. The original complaint asserted, among others, a claim for cost recovery under CERCLA §107(a) and a separate claim for contribution under §113(f)(1). Aviall later amended the complaint to combine its two CERCLA claims into a single joint claim that, pursuant to §113(f)(1), sought contribution from Cooper as a potentially responsible party (“PRP”) under §107(a). The district court entered summary judgment in favor of Cooper holding that Aviall had abandoned its §107 claim and that contribution under §113(f)(1) was unavailable because Aviall had not been sued under §106 or §107. The Fifth Circuit reversed. The Supreme Court held that a private party is not permitted to bring a cost recovery action under §113(f)(1) of CERCLA unless U.S. EPA or a state has taken action against it under §§106 or 107 of CERCLA or has entered into an administrative settlement with the United States. The Supreme Court left two very significant questions unanswered: (1) whether a private party who voluntarily complies with a §106 order can seek contribution under §113(f)(1); and (2) whether a private party who voluntarily incurs costs can recover under §107(a)(1). This decision will have a profound impact on how future environmental cost recovery actions are handled.

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1 The author expresses her appreciation to Jeff Baird of Wyatt, Tarrant, & Combs for his assistance in the preparation of this outline.

The Sixth Circuit affirmed a district court's imposition of a $1.9 million penalty upon an individual for failure to respond adequately to an U.S. EPA CERCLA §104(e) information request. The information request was issued in connection with an investigation of a former landfill. Gurley was the president and majority stockholder of the company that had disposed of oil waste at the landfill. In affirming the district court's decision, the Sixth Circuit noted the authority of U.S. EPA to issue information requests pursuant to §104(e) of CERCLA and to impose liability for unreasonably failing to satisfy a properly issued request for information. The Court rejected Gurley's claim that imposition of civil penalties violated the excessive fines and due process clauses of the United States Constitution and that §104(e) violates the Fifth Amendment. In doing so, the Court distinguished Tennessee Valley Authority v. Whitman, 336 F.3d 1236 (11th Cir. 2003), an Eleventh Circuit decision, on the grounds that Defendant had a full and fair hearing before a federal judge. The Court also rejected Defendant's argument that the information sought had already been provided in a deposition and that the information request was no longer useful.


During the 1960s, GenCorp manufactured urethane foam at a plant in Ashtabula, Ohio. A component of the production process is toluene di-isocyanate ("TDI"). Olin Corp. developed a process for producing TDI involving highly toxic chemicals. In 1962, Olin and GenCorp reached an agreement under which Olin would build and operate a plant for manufacturing the chemical. The plant was built on land owned by GenCorp. Under the agreement, GenCorp would purchase 50% of the TDI's plant output. Olin initially held title to the plant but at a later date it was contemplated that Olin would "sell, convey and transfer" title to GenCorp. Engineering specifications for the plant were subject to approval of both GenCorp and Olin. Olin agreed not to make any capital expenditures without GenCorp's approval. Ultimately, GenCorp did not buy the plant. Olin instead bought out GenCorp's interests in the early 1970's. Once the plant became operational, Olin's plant manager hired a waste hauler to dispose of waste at the Big D Disposal site. During the plant's operation, a joint committee addressed the issue of waste disposal, including approving waste hauling costs, and a GenCorp committee member visited the Big D site more than once. In 1983, U.S. EPA listed the Big D site on the Superfund NPL and in 1990 an unilateral administrative order was issued requiring Olin to clean up the site. GenCorp filed a declaratory judgment action seeking a ruling that it was not liable for Superfund cleanup costs. Olin's counterclaim sought a declaration that GenCorp was jointly and severally liable for response costs or for contribution under CERCLA §113. The trial court found GenCorp liable as an "arranger". GenCorp appealed arguing it did not actively participate in arranging for the waste disposal at Big D, nor did it "own or possess" the hazardous waste. The Sixth Circuit found that a party need not actively participate in the disposal of hazardous
waste to be held liable as an “arranger” for disposal. According to the Court, constructive ownership or possession of a hazardous waste is sufficient to hold a party liable as an “arranger” for disposal. GenCorp was liable as an “arranger” even though it never held title to the facility. GenCorp put up half of the construction costs and maintained an option to buy the plant. The Court stressed that the two companies had equal representation on the committee that oversaw construction, operation, and management of the plant, including waste disposal.

4. **Ford Motor Company v. United States, 378 F.3d 1314 (Fed. Cir. 2004).**

The Court found that the United States must indemnify a World War II contractor for contamination at a bomber plant under a contractual agreement requiring the government to pay for damages to property from all claims, including those “which are not now known.” In this case, Plaintiff manufacturer Ford Motor Company brought suit against the United States for breach of contract and sought compensation for the costs of environmental cleanup. During World War II, Plaintiff and the United States Army Air Force entered into a contract to manufacture bomber planes. Decades later, the Michigan regulatory authority and U.S. EPA notified Plaintiff and others of certain environmental damage obligations under CERCLA, including cleanup of chemical waste from the war contract operations. All of the charged entities entered into a consent judgment of liability. Plaintiff was assigned approximately 9% of the total cleanup costs. The government denied Plaintiff’s request for reimbursement. The Court held in favor of Plaintiff finding that the claim for reimbursement of CERCLA costs is defeated neither by the Anti-Deficiency Act nor the fact that CERCLA was not foreseen at the time of the indemnification agreement.

5. **E.I. DuPont De Nemours v. United States, 365 F.3d 1367 (Fed. Cir. 2004).**

E.I. DuPont De Nemours Co., Inc. (“DuPont”) brought a Contracts Disputes Act action to recover costs incurred pursuant to CERCLA for an ordinance plant it built and operated for the government during World War II. On the parties’ cross-motions for summary judgment, the United States Court of Federal Claims entered judgment for the government. The reviewing Court held that the trial court correctly found that the government had agreed to indemnify DuPont for the costs at issue. The trial court erred, however, in concluding that a predecessor to the Anti-Deficiency Act (“ADA”), current version at 31 U.S.C. §1341 (2000), bars DuPont’s recovery. DuPont’s contract with the military, which contained an indemnification provision, was authorized by the Contract Settlement Act, 41 U.S.C. §101, and thus comes under an exception to the ADA. As a result, the Court reversed the judgment in favor of the government and remanded for a determination of damages and entry of judgment in favor of DuPont.

Defendants filed a counterclaim against Plaintiff United States asserting that while involved in a removal action on their property, U.S. EPA caused more than $20 million in damages. Defendants asserted that they suffered money damages for property losses that resulted from the alleged negligent actions of U.S. EPA while it was purportedly in possession of the JO site during the removal action. These included losses to real estate property, marketable goods and equipment losses. In finding that U.S. EPA may not be sued for damages to property during a CERCLA response action to clean up property containing drums of chemicals, the Court found that CERCLA does not provide a cause of action for liability against U.S. EPA for alleged tortious behavior while undertaking a removal action, that Fed. R. Civ. P. 13(d) does not extend the right of a party to sue the U.S. beyond the limits established by statute, and that U.S. EPA’s clean up actions fall within the discretionary function exemption to the Federal Torts Claim Act.


Plaintiff United States filed an action pursuant to §107(a) of CERCLA to recover costs from Defendants DuPont and its successor. The United States alleged to have incurred the costs when responding to the release or threatened release of hazardous substances at a factory site run by the companies. The parties filed cross-motions for summary judgment. The Court citing Third Circuit precedent, denied the government’s claim for remedial design oversight costs (See United States v. Rohm & Haas Co., 2 F.3d 1265 (3d. Cir. 1993). Relying upon Rohm & Haas, the Court also concluded that the government may not recover costs incurred in the oversight of a private parties’ remedial activities, and that the government’s litigation costs in pursuing non-recoverable costs are not recoverable costs. There is a fundamental unfairness if a prevailing party is forced to pay for the government’s efforts to reverse existing precedent. Finally, the Court held that the government may recover interest only for those expenditures that a demand letter asserts with specificity.

B. TOXIC TORTS


A class of 3,600 persons who owned single-family residences in Alpena, Michigan alleged, among others, personal and property damages caused by toxic pollutants originating from a cement manufacturing plant owned by Defendant LaFarge Corporation. The district court granted in part and denied in part Defendant’s motion to dismiss and granted Plaintiffs’ motion to certify the class action. On appeal, the Sixth Circuit was called upon to decide whether Plaintiffs’ class action against the nation’s largest cement plant was valid and decide for the
first time in the Sixth Circuit whether Zahn v. International Paper Company, 414 U.S. 291 (1973), was overruled by 28 U.S.C. §1367. The Sixth Circuit held that Plaintiffs may aggregate their claims for purposes of meeting the jurisdictional amount. The Court found that the district court did not abuse its discretion in certifying the class and that the Supreme Court’s 1973 decision in Zahn was overruled by Congress in the 1990 Judicial Improvements Act. Thus, each Plaintiff need not show that the amount in controversy exceeds $75,000.00.


Viacom, Inc., the corporate successor to Westinghouse Electric Corporation, appealed a judgment entered against it for damages and injunctive relief and awards of attorneys' fees and prejudgment interest in this suit arising out of Westinghouse's environmental contamination of a site it once owned in Minneapolis. Kennedy Building Associates (“Kennedy”), the present owner of the contaminated property, obtained a jury verdict for compensatory damages and $5 million dollars in punitive damages on its common law claim for strict liability. The district court awarded Kennedy, among other relief, response costs which it had incurred under CERCLA and the Minnesota counterpart thereto. The district court also declared Viacom liable for any response costs Kennedy should incur in the future. The court also issued an injunction under the Minnesota Environmental Rights Act (“MERA”) requiring Viacom to clean up the contamination at the site. Viacom appealed everything except the CERCLA and MERA relief, arguing that the strict liability award was not permissible under Minnesota common law; and that the strict liability claim could not support an award of punitive damages. Upon review, the Court, among other action, reversed as to the common law strict liability claim and the punitive damages award. In overturning the jury verdict for $5 million dollars in punitive damages against the prior owner for causing PCB contamination, the Court found that the strict liability principles of Rylands v. Fletcher, L R 3 H.L. 330 (1868) (an English case) apply to activities that escape the property but do not apply to harm on Defendant’s own property caused by a predecessor in title. The owner may be entitled to compensatory damages under other state laws.


Landowners filed a complaint alleging that certain oil companies, which leased the landowners’ land for production of oil, caused property damages and contamination. The landowners obtained a temporary restraining order from the circuit court preventing AJ&K Operating Co., Inc., (the “Oil Companies”) from entering upon and remediating the land. The Oil Companies appealed asserting, among other things, that there was no irreparable harm to support the injunctive relief. The Court stated that in order for there to be irreparable harm sufficient to support a temporary restraining order, the harm must be to a degree that it cannot adequately be remedied by monetary damages or in a court of law. The primary objective of the Landowners in seeking the restraining order was to prevent the
Oil Companies from "covering up" evidence of property contamination while remediation activities were being conducted. The Court could find no case law prohibiting remediation by contaminators where an injunction was issued. In fact, the Court believed that if the restraining order stood, it could possibly lead to continuing contamination and worsening conditions. The contention that remediation would destroy evidence did not constitute irreparable harm. The circuit court was ordered to modify the temporary restraining order to permit the Oil Companies to clean up and remediate the land.

C. ENERGY


Defendants, Utah’s Governor, Attorney General and environmental and transportation officials, appealed a U.S. District Court for the District of Utah ruling in favor of Plaintiffs, a consortium of utility companies and an Indian tribe. The district court found that Utah’s statutes regulating the storage and transportation of spent nuclear fuel were preempted by federal law. The consortium entered into a lease with the Indian tribe for the purpose of building a spent nuclear fuel facility. Plaintiffs submitted a license application to the federal Nuclear Regulatory Commission (“NRC”), and the Utah officials intervened arguing that the NRC lacked authority to license the facility. The NRC rejected that argument stating that “Congress, in enacting the Atomic Energy Act, gave the NRC authority to license privately owned, away-from-reactor facilities...”. The Tenth Circuit found that Utah statutes regulating the storage and transportation of spent nuclear fuel are pre-empted by the Atomic Energy Act.


Petitioners, the State of Nevada, local committees, the nuclear energy industry and other groups, filed a challenge to the statutory and regulatory scheme devised by U.S. EPA, the Department of Energy and the Nuclear Regulatory Commission to establish and govern a Yucca Mountain nuclear waste repository. The U.S. Court of Appeals for the District of Columbia vacated the regulations insofar as they included a ten thousand year compliance period. According to the Court, the 10,000 year radiation protection standard violated the Energy Policy Act because it was not consistent with the findings and recommendations of the National Academy of Sciences. The Court, however, held that the congressional resolution selecting Yucca Mountain was an appropriate exercise of Congress’ authority over federal property and that Department of Energy’s and the President’s actions leading to the selection of the site were unreviewable.
D. AIR QUALITY


   In this United States Supreme Court case, Petitioner associations sued Respondents California South Coast Air Quality Management District and its officials, claiming that §209 (42 U.S.C.S. §7543) of the Clean Air Act ("CAA") (42 U.S.C.S. §7401 et seq.), pre-empted six local vehicle fleet rules. The district court granted summary judgment upholding the rules in their entirety. The United States Court of Appeals for the Ninth Circuit affirmed. The United States Supreme Court granted certiorari, and vacated and remanded the case. The rules at issue required the use of either alternative-fuel vehicles or those that met stringent emissions standards promulgated by the state. Section 209(a) of the CAA preempts state and local standards "relating to the control of emissions" of covered vehicles as well as any state and local requirements "relating to the control of emissions" as a prerequisite to "the initial sale, titling (if any), or registration" of such vehicles. The lower courts agreed that this provision covered only requirements applicable to vehicle manufacturers but not those directed to purchasers or lessees. The Supreme Court concluded that this reading of §209(a) ignored the distinction between the definition of a standard and the method for enforcing a standard. Standards apply to vehicles, but enforcement could target either manufacturers or buyers. The Court concluded that the lower courts misconstrued §209(a), and remanded the case to determine whether all or only some of the local rules were preempted.


   This case concerns the authority of U.S. EPA to enforce the provisions of the Clean Air Act's ("CAA") Prevention of Significant Deterioration ("PSD") program (42 U.S.C.S. §§7401 et seq., 42 U.S.C.S. §7475(a)(4)). Under that program, no major air pollutant emitting facility may be constructed unless the facility is equipped with "the best available control technology" ("BACT"). A controversy arose when Cominco, with funding from the state, sought to expand zinc production by 40%. The expansion required a permit under Alaska's state implementation plan because the larger operation would increase nitrogen oxide emissions. Alaska's environmental agency initially identified selective catalytic reduction as the BACT under the CAA. The company amended its proposal and suggested an alternative BACT known as low NOx which the state ultimately endorsed because of selective catalytic reduction's disproportionate costs. U.S. EPA invoked its authority under the CAA and ordered Alaska not to issue a PSD permit because the company had not adequately justified its claim of economic infeasibility. The state and company challenged U.S. EPA's action and argued that the federal government could not overturn the state's decision through administrative proceedings but must seek judicial review in Alaska's courts. U.S.
EPA argued that the CAA’s definition of BACT gave it authority to review state decisions under the PSD program. The Supreme Court held that U.S. EPA had supervisory authority over the reasonableness of the agency’s BACT determination and that U.S. EPA properly determined that the agency’s BACT determination lacked evidentiary support. The Court also found that it would be anomalous to require a federal agency that administers a federal statute to go to state court to challenge a state issued permit under that statute in the absence of explicit congressional direction. The judgment up holding U.S. EPA’s stop orders was affirmed.


U.S. EPA issued a final rule in 2002 establishing emissions standards for snowmobiles and certain other “non-road” vehicles. (67 Fed. Reg. 68242 (Nov. 8, 2002)). The emissions standards at issue were promulgated under §213 of the Clean Air Act (“CAA”) (42 U.S.C. §7547 (2000)). The D.C. Circuit set aside important elements of the snowmobile emissions standards. The Court held that the agency had authority under the CAA to promulgate standards relating to carbon monoxide and hydrocarbons but not for nitrogen oxides. The carbon monoxide and hydrocarbons standards, however, were remanded for U.S. EPA to clarify the analysis and evidence upon which the standards were based.


Appellant citizens sought review of a judgment which dismissed their complaint for failure to state a claim under § 304(a)(3) of the Clean Air Act (“CAA”) (42 U.S.C.S. §§7401-7671q). Appellee proposed to build a strand board manufacturing facility and the New York Department of Environmental Conservation (“NYDEC”) approved the application under the synthetic minor source permit scheme after determining that effective and enforceable pollution control mechanisms were in place. The citizens alleged in their complaint that the facility was in fact a major emitting facility and that a synthetic minor source permit was not sufficient. The Court held that a state determination that a prospective source is not a major emitting facility does not preclude citizens from bringing suit seeking to enjoin construction of the facility under the CAA. In further support of its position, the Court noted that citizens play a vital role in the enforcement of the CAA in that the citizens suit provisions of the CAA were designed to not only “motivate government agencies”, but also to make citizens partners in the enforcement of the CAA. The Court vacated the judgment dismissing the complaint and remanded the case.
E. WATER QUALITY


Respondents, an Indian tribe and an environmental group, sued Petitioner South Florida Water Management District (“District”) under the Clean Water Act (“CWA”) (33 U.S.C.S. §§1251, et seq.) contending that a pumping facility was required to obtain a discharge permit. The district court granted summary judgment in favor of Respondents and the Eleventh Circuit affirmed. The Supreme Court granted certiorari. The facts demonstrated that the pump station emptied water from a canal into a water conservation area (“WCA”). Respondents argued that the District could not operate the pump station without a point source discharge permit under the NPDES because the pump station moved phosphorus laden water from the canal into the WCA. The district court agreed and granted summary judgment to Respondents and the Eleventh Circuit affirmed. Resolving the issue as to whether the operation of the pump station which did not add pollutants to the water, could constitute the “discharge of a pollutant” within the meaning of the CWA, the Supreme Court determined that the definition of “discharge of a pollutant” contained in 33 U.S.C.S. §1362(12) included within its reach point sources that did not themselves generate pollutants. The Court, however, determined that summary judgment was inappropriate because further development of the record was necessary to resolve the dispute over whether the canal and the WCA were distinct water bodies.


Environmental groups sued the U.S. Army Corps of Engineers (“Corps”), challenging the issuance of a general permit under the Clean Water Act (“CWA”) (33 U.S.C.S. §1344(e)), which would allow coal mines to discharge excess spoil material generated by mountaintop removal operations into the waters of the United States. Under this general permit, the Corps would determine the need for environmental mitigation on a case-by-case basis, however, no public notice or comment period was involved after the general permit was issued. The Court held that the general permit failed to comply with the CWA in that it defined a procedure rather than permitting a category of activities which were determined in advance to have minimal environmental impact as contemplated by §1344(e). A case-by-case analysis under the general permit lacked objective requirements and allowed only individual projects without public notice or comment. As authority for this decision, the Court cited §1344(a), which authorizes the Corps to issue permits only after notice and opportunity for public hearings. Petitioner’s motion for summary judgment was granted and the Corps was enjoined from approving projects under the general permit. In subsequent proceedings, the Corps of Engineers motion for reconsideration was denied.

The United States filed an action against Allegheny Ludlum Corp. ("ALC"), a steel manufacturer, alleging violations of the Clean Water Act ("CWA") including allegations of discharges in excess of ALC’s permits and failure to report violations. ALC filed a motion for summary judgment contending, among others, that “laboratory error” was the cause of its reporting violations which overstated certain pollutant levels. The district court rejected this defense as it had not been recognized in the Third Circuit. On appeal, the Third Circuit held that the “laboratory error” defense, where the error results in over-reporting, is a valid defense. According to the Third Circuit, deprivation of the defense would not advance the purpose of the CWA in that it would be grossly unfair, especially in view of the presence of companion provisions of the CWA imposing liability for monitoring and reporting violations. The Court also concluded that the district court’s determination of economic benefit, holding that 12.73% weighted average cost of capital, so vastly overstated the economic benefit to ALC of its improper discharges, that it does not “level the playing field” and that constitutes abuse of discretion.

**F. OTHER CASES**

1. **Ethics**


This matter arose out of a motion of Plaintiff BHP Copper, Inc. ("BHP") to disqualify James Norris and the firm Hydro Geo Chem as litigation consultations in a CERCLA dispute. To resolve a motion to disqualify an expert in cases other than where an expert has clearly switched sides the Court undertook a two step inquiry, whether: (1) it was objectively reasonable for the moving party to believe that it had a confidential relationship with the expert; and (2) whether the moving party disclosed confidential information to the expert that is relevant to the current litigation. The Court also balances competing policy objectives and considers concerns of fundamental fairness. The Court found that both prongs of the test were satisfied and that the expert had received confidential information from other parties in his capacity as a consultant to a defendant’s group. The Court further concluded that there was no waiver of confidentiality as a result of the disclosure of the information to the defendant’s group and disqualification was required even though he was a testifying expert.
2. NAFTA


One of the most important Supreme Court decisions in the environmental field in 2004 involved the North American Free Trade Agreement ("NAFTA"). The Supreme Court unanimously held that the Federal Motor Carrier Safety Administration ("FMCSA") had no obligation to evaluate the environmental effects of the operation of Mexican trucks in the United States under NAFTA. It was held that under the circumstances presented with respect to FMCSA’s promulgation of regulations which would allow the cross-border operations by Mexican domiciled motor carriers to occur, neither NEPA or the Clean Air Act required FMCSA to evaluate the environmental effects of such cross-border operations.

3. Constitutional


Appellants, an environmental group and its chairman, sought review of a judgment from the United States District Court for the District of Colorado. The judgment denied the Appellants’ Motion for an order requiring continued enforcement of a settlement agreement with Appellee U.S. Forest Service which prohibited the harvesting of trees in certain areas of the Black Hills National Forest in South Dakota. In an effort to address the dangers of insect infestation and fire, Congress passed legislation permitting logging and other clearance measures in the Black Hills National Forest. A rider was attached to a major unrelated appropriations bill that required the Forest Service to take a variety of action, including allowing logging in the Black Hills National Forest, that was inconsistent with the settlement. The Appellants contended that the rider unconstitutionally infringed on both the executive and judicial branches. The Tenth Circuit found that the rider did not unconstitutionally intrude on either executive or judicial power. The Court found that the U.S. Constitution gave Congress the authority to regulate property belonging to the United States and that the rider comported with the current view of executive branch officials regarding management of the national forest.


Plaintiffs, a solid waste management association and member company, filed a motion for declaratory judgment alleging that a Wayne County solid waste ordinance was unconstitutional. The ordinance prohibited county landfill operators from accepting solid waste from jurisdictions that were not regulated by
a beverage container deposit law similar to Michigan’s beverage container law. Plaintiffs alleged that the ordinance violated the Commerce Clause, U.S. Const. art. I, §8, cl. 3, because the ordinance discriminated against interstate and foreign commerce by impeding the flow of non-Michigan waste into the county. The Court agreed, holding that while the ordinance was not facially discriminatory, it was effectively discriminatory because it specifically targeted out-of-state waste. Citing Fort Gratiot Sanitary Landfill, Inc. v. Mich Dept. of Natural Res., 504 U.S. 353, the Court reiterated that “[W]hen a state unconstitutionally regulates the movement of interstate commerce, it is said to violate the dormant ‘domestic’ or ‘interstate’ Commerce Clause. This aspect of the Commerce Clause prohibits states from advancing their own commercial interests by curtailing the movement of articles of commerce, either into or out of the state.” In addition, the Court cited Norfolk S. Corp. v. Oberly, 822 F.2d 388, stating that “[w]hen a state unconstitutionally regulates the movement of foreign commerce, it is said to violate the dormant ‘foreign’ Commerce Clause. State or local laws that burden foreign commerce are subjected to a more rigorous and searching scrutiny. This rule serves the need of ensuring uniformity among the states in the area of foreign trade.”

4. **False Claims Act**

_United States, ex rel. Bain v. Georgia Gulf Corp._, 386 F.3d 648 (5th Cir. 2004).

In this _qui tam_ action brought under the False Claims Act (“FCA”) (31 U.S.C.S. §7729, et seq.), Appellee Bain filed a “reverse false claims” action against Georgia Gulf Corp., a manufacturer of polyvinyl chloride. Appellee alleged that Georgia Gulf Corp. did not measure toxic emissions and submitted false records to the government pertaining to those emissions thereby depriving the government of fines and penalties. Georgia Gulf Corp. filed a motion to dismiss for failure to state a claim which was denied. Georgia Gulf Corp. appealed the denial. Bain argued that Georgia Gulf Corp.’s conduct supported a reverse false claim under 31 U.S.C. § 3729(a)(7) since the emissions, if properly measured and reported, warranted monetary assessments, and since the reports to the government were allegedly false, the government was being deprived of such assessments. The Court held that while there may be potential for fines and penalties, without an actual assessment or initiating penalty proceeding there is no obligation to pay money to the government which is required to support a claim under 31 U.S.C. § 3729(a)(7). The Court went on to say that the emissions permit created a regulatory relationship between Georgia Gulf Corp. and the government. It did not create a contractual or other economic relationship where payment of money to the government was contemplated. The order denying Georgia Gulf Corp.’s motion to dismiss was reversed and the case was remanded for further proceedings. An opposite result might have sparked a dramatic increase in FCA cases.
5. **Resources**


Wyoming Sawmills, Inc., a logging company, claimed that a Historic Preservation Plan (“HPP”) issued by the U.S. Forest Service (“USFS”) for the management of a historic Native American landmark violated the Establishment Clause and the National Forest Management Act (“NFMA”) (16 U.S.C.S. §1600, et seq.). The U.S. District Court for the District of Wyoming dismissed the claims and Wyoming Sawmills, Inc. appealed. The USFS agreed to close a portion of a forest development road which provided access to a Native American landmark. The USFS did make an exception for access to the landmark for religious purposes. The HPP issued by the USFS was crafted to ensure that the area was protected as an important cultural site. Wyoming Sawmills, Inc. had been the key purchaser of timber resources from the forest for over 30 years. In addition to challenging the HPP, Wyoming Sawmills, Inc.’s complaint also addressed the USFS’s decision not to hold a proposed timber sale alleging economic injury. The Court affirmed the decision of the district court and rejected the company’s claim of constitutional injury under the Establishment Clause. The Court held that the loss of an opportunity to bid on timber contracts is not a sufficient basis to confer standing and the company failed to allege a non-economic injury.

6. **Takings**


The Stearns Co., LTD. (“Stearns”) filed suit against the United States seeking compensation for an unconstitutional taking pursuant to the Fifth Amendment of the U.S. Constitution. Stearns had retained the mineral rights to 55 square miles of what is now the Daniel Boone National Forest pursuant to a 1937 deed granting surface rights to the United States Forest Service. The Office of Surface Mining Reclamation and Enforcement (“OSM”) was charged with enforcing the Surface Mining Control and Reclamation Act of 1977 (“SMCRA”) (30 U.S.C.S. §1201 et seq.). In 1980, a lessee of Stearns sought a permit to conduct mining operations. OSM rejected the permit application claiming that Stearns did not have valid existing rights (“VER”) to conduct mining operations on the property. Under SMCRA, however, Stearns could seek a determination as to whether or not the proposed surface operations would be compatible with “significant recreational, timber, economic or other values.” Stearns declined to seek the compatibility determination and filed suit in the Court of Federal Claims. The Court of Federal Claims held that the government’s denial of VER effected a taking of the Stearns property and that just compensation was warranted under the Fifth Amendment. The government appealed the decision to the United States...
Court of Appeals for the Federal Circuit which reversed the Court of Federal Claims judgment citing that: (1) at no time was Stearns required to suffer the physical occupation of either the government or third party on either the mineral estate or the implied appurtenant easement; and (2) the issue was not ripe for review because Stearns never sought the compatibility determination from OSM which could have allowed it to use the easement for mineral extraction. Without such a determination by OSM, the Court of Appeals did not know whether or to what extent OSM would have restricted the use of the property in question.


Plaintiff John R. Sand & Gravel Co. leased property which included a landfill for the purpose of stone and sand mining. Subsequently, the landfill was listed by U.S. EPA as a superfund site and U.S. EPA began remediation. Pursuant to a consent decree entered into between U.S. EPA and the PRPs, the U.S. EPA issued an order prohibiting Plaintiff from using the landfill cap area. Plaintiff was not identified by U.S. EPA as a PRP. Plaintiff filed suit alleging a takings and that U.S. EPA physically took part of its leased property. On cross motions for summary judgment, the Court found that the government may rely on the nuisance exemption as a defense to the company's takings claim. The government may show that the owner's activity violates nuisance law and therefore is not a valid property interest.

7. RCRA


Northern Indiana Public Service Company ("NIPSCO") filed a motion to dismiss Plaintiffs' complaint filed pursuant to the citizens suit provisions of the Resource Conservation and Recovery Act ("RCRA"), (§7002(a)(1)(B), 42 U.S.C. §6972(a)(1)(B). The complaint alleged that NIPSCO was not protecting citizens from pollutants being introduced to well water. The motion to dismiss alleged lack of subject matter jurisdiction (under RCRA) and failure to state a claim upon which relief can be granted (under CERCLA). The Court held that the group of residents may proceed with their citizens suit under RCRA §7002 seeking safe well water despite a prior CERCLA §106 order requiring that other residents be connected to a municipal water supply. CERCLA §113(h) is no bar to the suit because the complaint does not challenge the CERCLA order and would not necessarily delay a continuing removal action. For similar reasons, the "diligent prosecution" provision of RCRA is not applicable.
8. **Financial Guaranty**


Appellees, including a debtor, filed an adversary proceeding to enjoin Appellant Kentucky Natural Resources and Environmental Protection Cabinet (the “Cabinet”) from enforcing state statutory bonding requirements. The United States Bankruptcy Court for the Eastern District of Kentucky determined that the Cabinet’s threatened actions would violate the automatic stay and granted Appellees’ motion for a preliminary injunction. The Appellant’s filed an appeal. The district court reversed the bankruptcy court’s decision and remanded the matter. In doing so, the Court recognized that while the Cabinet’s bonding requirements would provide the funds to reclaim the disturbed land if a permittee cannot or will not do work, the sole purpose of bonding is not to cover such costs. According to the Court, bonding serves the purpose of protecting the citizens of the Commonwealth against dangers posed by land that is not reclaimed and proceedings to enforce the bonding requirements are not subject to the automatic stay.
ANNUAL ENVIRONMENTAL STATUTORY & REGULATORY UPDATE

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SECTION B
ENVIRONMENTAL AND PUBLIC PROTECTION CABINET
STATUTORY & REGULATORY UPDATE

PART ONE: 2004 STATUTORY UPDATE

2004 STATUTORY CHANGES ......................................................... B-1
DIVISION OF WASTE MANAGEMENT REGULATORY CHANGES ................. B-1
DIVISION OF WATER REGULATORY CHANGES .................................. B-2
DIVISION FOR AIR QUALITY REGULATORY CHANGES .......................... B-5

PART TWO: 2005 LEGISLATIVE UPDATE

2005 GENERAL ASSEMBLY ACTIVITY ........................................ B-7
HOUSE BILL 272 ........................................................................ B-7
HOUSE BILL 472 - UNIFORM ENVIRONMENTAL COVENANT .............. B-39
SENATE BILL 175 - AUTHORIZATION TO ISSUE PERMITS PURSUANT TO CLEAN WATER ACT SECTION 404 ................. B-50

SECTION B
2004 Statutory Changes:

1. Senate Bill 222 (effective July 13, 2004) amended KRS 244.46-580 to extend the Hazardous Waste Assessment Fee collection to June 30, 2006. The assessment on generators remains the same at one and two-tenths cents ($0.012) per pound for liquid waste, and two-tenths of a cent ($0.002) per pound for solid waste.


Division of Waste Management Regulatory Changes:

1. **401 KAR 47:030. Environmental Performance Standards.**
   Effective: March 18, 2004
   This regulation was amended to reflect Maximum Contaminant Levels consistent with 401 KAR Chapter 8 and 401 KAR 30:031.

2. **401 KAR 100:030. Remediation requirements.**
   Effective: March 18, 2004
   This regulation was promulgated to create a framework that implements the requirements followed in conducting environmental remediation. The standards for remediation were promulgated along with protocols for cleanups conducted under KRS 224.01-400 and KRS 224.01-405 and the Kentucky Voluntary Environmental Remediation Act. The administrative regulations also established Region 9 PRGs as screening values for the program, detailed determination and use of ambient background for voluntary cleanups, and established methods for risk based screening.

3. **401 KAR 49:011. General provisions relating to area solid waste management plans.**
   Effective: January 21, 2005
   This regulation was amended to update two forms incorporated by reference which are the “Solid Waste Management Area Annual Report Form” and the “Guidance For Preparing an Area Solid Waste Management Plan Five-Year Update.”
4. **401 KAR 49:080. Solid waste grant funds and solid waste collector and recycler registration.**
   Effective January 21, 2005.
   This new regulation creates a framework for counties to follow in order to receive funding related to HB 174 cleanups.

**Division of Water Regulatory Changes:**

1. **401 KAR 5:005. Permits to construct, modify, or operate a facility.**
   Effective: April 12, 2004
   This regulation was amended to exempt the following sewer systems from the requirements of this administrative regulation: gravity sewers that have a diameter of less than eight inches and discharge directly to the sewer main; serve a single family residence building with four dwelling units or less; serve a single office building or a single mercantile building with an occupant load of less than thirty persons; force main sewers, regardless of the location of the pump station which have a length of less than 500 feet and discharge directly to the gravity sewer main; serve a single family residence building with four dwelling units or less, or serve a single office building or a single mercantile building with an occupant load of less than thirty persons. This amendment also updates some cross-references that are no longer valid.

2. **401 KAR 5:002. Definitions for 401 KAR Chapter 5.**
   Effective: September 8, 2004
   An amendment revises the chapter definition section to include two new definitions and deletes one definition that is no longer necessary. The two new definitions are for the term, "E. coli" or "Escherichia coli" and the category, "high quality water." The previously included category, "use protected water," has been deleted in this amendment because the category name, "impaired water," is now being used. The term "impairment" already exists in the definitions regulation; therefore, there was no need to include a definition for "impaired" in this amendment.

3. **401 KAR 5:026. Designation of uses of surface waters.**
   Effective: September 8, 2004
   An amendment revises designated use information for three previously listed surface waters, replaces two previously listed surface waters, and adds fourteen previously unlisted surface waters. Two of the revisions were to correct errors in the previous triennial review in which cold water aquatic habitat use was mistakenly changed to warm water aquatic habitat use in the Nolin and Rough rivers below their respective reservoirs. This amendment is necessary to update surface water information and assign use designations for previously unlisted surface waters. This administrative regulation was amended as part of the triennial review.

4. **401 KAR 5:029. General provisions.**
   Effective: September 8, 2004
   An amendment restricts location of a mixing zone which would jeopardize endangered or threatened aquatic species listed in the Federal Endangered Species Act. This amendment
also prohibits mixing zones for new discharges of Bioaccumulative Chemicals of Concern (BCCs) and phases out mixing zones for existing discharges of these substances. This amendment is necessary to establish revised measures to protect human health and aquatic life.

5. **401 KAR 5:030. Antidegradation policy implementation methodology.**
   Effective: contingent on US EPA approval.
   An amendment revises surface water categories to include the new category of high quality water as a default category and the newly named impaired water. It also sets forth antidegradation review requirements for several types of discharges. The amendment reorganizes much of the Section 1 text and includes 146 surface waters newly classified as exceptional water that are reorganized into a new table. Outstanding state resource water that is not otherwise categorized as outstanding national resource water or exceptional water is defaulted into the high quality water category. Two new documents are incorporated by reference and two documents previously incorporated by reference have been removed from this administrative regulation. This amendment is necessary to address outstanding U.S. EPA disapproval. The U.S. EPA has disapproved this regulation after promulgation twice on August 7, 1997 and August 20, 2000. At Volume 67 Federal Register No. 220 p. 68971 on November 14, 2002, U.S. EPA proposed a substitute rule that is substantially the same as 401 KAR 5:029(1).

6. **401 KAR 5:031. Surface water standards.**
   Effective: September 8, 2004
   An amendment updates water quality criteria to reflect scientific developments. Three tables previously divided in this administrative regulation have been consolidated into one table and placed in Section 6 of this administrative regulation. Dilution flows for non-carcinogenic substances in fish tissue and radionuclides were modified from $7Q_{10}$ to harmonic mean flow in order to more accurately reflect the duration of exposure under which these human health criteria were developed. This amendment is necessary to revise criteria to protect human health and to meet federal recommendations.

7. **401 KAR 8:010. Definitions for 401 KAR Chapter 8.**
   Effective: January 4, 2005
   An amendment updates definitions included in this administrative regulation and complies with federal mandates required to maintain primacy.

8. **401 KAR 8:020. Public and semipublic water supplies - general provisions.**
   Effective: January 4, 2005
   DOW changed provisions regarding boil water notices, boil water advisories, and consumer advisories.

9. **401 KAR 8:070. Public Notification.**
   Effective: January 4, 2005
   Extensive federal revisions to this rule necessitated the adoption of corresponding state revisions. The federal deadline for state adoption was May 2004.
10. **401 KAR 8:075. Consumer confidence reports.**
Effective: January 4, 2005
This regulation required amendment to conform to federal requirements regarding consumer confidence reporting. The federal regulation became effective in 1998. The corresponding state regulation was adopted in 2001. A consumer confidence report is an annual report prepared by a community water system that informs consumers of the quality of the water distributed by the system and characterizes the risks of exposure to contaminants found in drinking water. Other changes clarify the Cabinet's intent regarding the content of a consumer confidence report, the certification, and distribution of the report.

11. **401 KAR 8:150. Disinfection, filtration, and recycling.**
Effective: January 4, 2005
The filter backwash rule became effective June 2003. The federal language covers requirements for recycling backwash water from the treatment processes. These changes were necessary for primacy.

12. **401 KAR 8:300. Lead and copper.**
Effective: January 4, 2005
The lead and copper minor revisions were effective January 2002 and the federal deadline for state adoption was January 2004. These minor revisions were incorporated into state regulations to maintain primacy and to allow systems to reduce monitoring where allowed. The regulation bans lead in drinking water facilities and provides standards for lead and copper in drinking water. While there are extensive revisions throughout this administrative regulation, many reduce the monitoring required for systems that qualify for reduced monitoring and waivers.

13. **401 KAR 8:441. (Repeals 401 KAR 8:440)**
Effective: January 4, 2005
This regulation repeals 401 KAR 8:440, Special testing for unregulated inorganic and synthetic organic contaminants. U.S. EPA administers the unregulated contaminants monitoring rule; therefore, the state regulation was repealed. The inclusion of the regulation in 401 KAR Chapter 8 had caused confusion with water operators.

14. **401 KAR 8:700. Bottled water.**
Effective: January 4, 2005
Other administrative regulations promulgated in 2001 affected this regulation. State administrative regulations assure the purity of water bottled in Kentucky to be resold as a food for human consumption or other consumer use. These regulations for disinfection by-products and surface water treatment forced changes to the bottled water regulation to clarify what bottled water systems are and are not required to do. Many of the requirements apply to individual filters and the distribution system. These provisions do not apply to a bottled water system; therefore, this administrative regulation was amended to clarify the Cabinet's intent.
Division for Air Quality Regulatory Changes:

1. 401 KAR 51:001, Definitions for 401 KAR Chapter 51.
   401 KAR 51:017, Prevention of significant deterioration of air quality (PSD).
   401 KAR 51:052, Review of new sources in or impacting upon non-attainment areas (NSR).
   The amendments to 401 KAR 51:001, 401 KAR 51:017, and 401 KAR 51:052 include the revisions that were published in the December 31, 2002, Federal Register. The amendments address five specific areas of the New Source Review program. The reforms include a change to the calculation of baseline actual emissions, actual-to-projected actual applicability test, clean unit test, plantwide applicability limitations (PALs), and pollution control projects (PCPs).

2. 401 KAR 59:185, New solvent metal cleaning equipment.
   Effective Date: January 4, 2005
   The Cabinet was mandated by the 2004 General Assembly to terminate the vehicle emissions testing (VET) program in Northern Kentucky, if possible. For EPA approval to terminate the VET program, the Cabinet must demonstrate that compensating emission reductions of volatile organic compounds (VOC) and NOx equal or exceed the emissions reductions obtained from the VET program. To help compensate for the removal of the VET program, the Division amended 401 KAR 59:185, New solvent metal cleaning equipment. This amendment will reduce the VOC emissions from cold cleaning degreasing operations in Boone, Campbell, and Kenton counties. The sale and use of cleaning solvents is restricted to a solvent with a lowered vapor pressure (1.0 mm Hg).

3. 401 KAR 59:760 and 401 KAR 59:760E, Commercial motor vehicle and mobile equipment refinishing operations.
   Effective Dates: November 14, 2004 (Emergency Regulation); Ordinary Regulation March 8, 2005.
   The 2004 General Assembly mandated the Cabinet to terminate the vehicle emissions testing (VET) program in Northern Kentucky, if possible. The Cabinet must propose substitute emissions reductions of volatile organic compounds (VOC) and NOx to equal or exceed the reductions obtained from the VET program. This new administrative regulation will reduce the VOC emissions from auto body repair shops in Boone, Campbell, and Kenton counties by requiring the use of high transfer efficiency application techniques at these operations. The Cabinet has calculated that this proposed regulation, in combination with the amendment to 401 KAR 59:185, will provide the necessary VOC reductions necessary to compensate for the emission reductions obtained by the VET program.

4. 401 KAR 57:002, Part 61 national emission standards for hazardous air pollutants.
   401 KAR 60:005, Part 60 standards of performance for new stationary sources.
   401 KAR 63:002, Part 63 national emission standards for hazardous air pollutants.
   401 KAR 58:025, Asbestos standards.
   401 KAR 60:670, Standards of performance of nonmetallic mineral processing plants.
   401 KAR 63:106, Repeal of 401 KAR 63:105.
Effective Date: January 4, 2005.

The amendments to 401 KAR 57:002, 401 KAR 60:005, and 401 KAR 60:670 revise the existing incorporations by reference to the July 1, 2003, CFR publication.

The amendment to 401 KAR 58:025 includes incorporating the July 1, 2003, CFR by reference and the September 18, 2003, *Federal Register* which corrects OSHA requirements citations cross referenced in the federal Asbestos NESHAP.

The amendment to 401 KAR 63:002 also includes incorporating the July 1, 2003, CFR by reference, and, in addition, adds final MACT standards and amendments through the June 15, 2004, Federal Register publications.

401 KAR 63:106 proposes to repeal 401 KAR 63:105 in order to incorporate the provisions of 40 CFR 63, Subpart B into 401 KAR 63:002
House Bill 272

AN ACT relating to revenue and taxation and making an appropriation therefor and declaring an emergency.

* * * * * [Amendments to Defenses and Limitations on Liability]

Section 141. KRS 224.01-400 is amended to read as follows:

(1) As used in this section:

(a) "Hazardous substance" means any substance or combination of substances including wastes of a solid, liquid, gaseous, or semi-solid form which, because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness, or pose a substantial present or potential hazard to human health or the environment. The substances may include but are not limited to those which are, according to criteria established by the cabinet, toxic, corrosive, ignitable, irritants, strong sensitizers, or explosive, except that the term "hazardous substance" shall not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under this section, and shall not include natural gas, natural gas liquids, liquified natural gas, or synthetic gas usable for fuel, or mixtures of natural gas and synthetic gas;

(b) "Release" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing hazardous substances, pollutants, or contaminants into the environment, including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance, pollutant, or contaminant, but excludes emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel,
or pipeline pumping station engine; the release of source, by-product, or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954, if the release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission under Section 170 of the Act, or any release of source by-product, or special nuclear material from any processing site designated under Sections 102(a)(1) or 302(a) of the Uranium Mill Tailing Radiation Control Act of 1978; and the normal application of fertilizer;

(c) "Site" means any building, structure, installation, equipment, pipe, or pipeline, including any pipe into a sewer or publicly-owned treatment works, well, pit, pond, lagoon, impoundment, ditch, landfill, storage containers, motor vehicles, rolling stock, or aircraft, or any other place or area where a release or threatened release has occurred. The term shall not include any consumer product in consumer use;

(d) "Environmental emergency" means any release or threatened release of materials into the environment in such quantities or concentrations as cause or threaten to cause an imminent and substantial danger to human health or the environment; the term includes, but is not limited to, discharges of oil and hazardous substances prohibited by Section 311(b)(3) of the Federal Clean Water Act - (Public Law 92-500), as amended;

(e) "Threatened release" means a circumstance which presents a substantial threat of a release;

(f) "Pollutant or contaminant" shall include, but not be limited to, any element, substance, compound, or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms
or their offspring; except that the term "pollutant or contaminant" shall not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under this section and shall not include natural gas, liquified natural gas, or synthetic gas of pipeline quality (or mixtures of natural gas and such synthetic gas);

(g) "Environment" means the waters of the Commonwealth, land surface, surface, and subsurface soils and strata, or ambient air within the Commonwealth or under the jurisdiction of the Commonwealth;

(h) "Financial institution" means, for purposes of subsections (26) and (27) of this section, the following:
   1. A bank or trust company defined by KRS Chapter 287;
   2. A savings and loan association defined by KRS Chapter 289;
   3. A credit union defined by KRS Chapter 290;
   4. A mortgage loan company or loan broker defined by KRS Chapter 294;
   5. An insurer defined by KRS Chapter 304; and
   6. Any other financial institution engaged in the business of lending money, the lending operations of which are subject to state or federal regulation; and

(i) "Fiduciary" means, for purposes of subsections (26) and (27) of this section, a fiduciary as defined by KRS Chapter 386.

(2) The cabinet may promulgate administrative regulations in accordance with the provisions of KRS Chapter 13A designating individual hazardous substances, pollutants, or contaminants; establishing their respective reportable quantities; and establishing their respective release notification requirements, which differ from those designated or established in subsections (3) to (9) of this section, if necessary to:

(a) Protect human health and the environment;
(b) Maintain consistency with valid scientific development; or
(c) Maintain consistency with newly adopted federal regulations.

(3) The hazardous substances for which release notification is required shall be those hazardous substances designated in 40 C.F.R. Part 302 under the Federal Comprehensive...
Environmental Response Compensation and Liability Act of 1980, as amended; those extremely hazardous substances designated in 40 C.F.R. Part 355 under Title III of the Superfund Amendments and Reauthorization Act of 1986; nerve and blister agents designated under KRS 224.50-130(2); and any hazardous substances designated by the cabinet in administrative regulations promulgated pursuant to subsection (2) of this section.

(4) The reportable quantity for a release of a hazardous substance designated in 40 C.F.R. Part 302 under the Federal Comprehensive Environmental Response Compensation and Liability Act of 1980, as amended, shall be the quantity designated in 40 C.F.R. Part 302. The reportable quantity for a release of an extremely hazardous substance designated in 40 C.F.R. Part 355 under Title III of the Superfund Amendments and Reauthorization Act of 1986 shall be the quantity designated in 40 C.F.R. Part 355. The reportable quantity for a release of a nerve or blister agent designated under KRS 224.50-130(2) shall be any quantity. The cabinet may establish reportable quantities for hazardous substances in administrative regulations promulgated pursuant to subsection (2) of this section which differ from those established in this subsection. The reportable quantity for any hazardous substance designated by the cabinet in administrative regulations promulgated pursuant to subsection (2) of this section shall be the reportable quantity established by the cabinet.

(5) The release notification requirements for a release of a hazardous substance designated in 40 C.F.R. Part 302 under the Federal Comprehensive Environmental Response Compensation and Liability Act of 1980, as amended, shall be the notification requirements established in 40 C.F.R. Part 302. The release notification requirements for a release of an extremely hazardous substance designated in 40 C.F.R. Part 355 under Title III of the Superfund Amendments and Reauthorization Act of 1986 shall be the notification requirements established in 40 C.F.R. Part 355. Whenever notification of a release or threatened release of a hazardous substance is required pursuant to this section, any person possessing or controlling the hazardous substance shall immediately notify the cabinet's twenty-four (24) hour environmental response line. The cabinet may establish release
notification requirements by administrative regulation promulgated pursuant to subsection (2) of this section which differ from those established in this subsection. The release notification requirements for any hazardous substance designated by the cabinet in administrative regulations promulgated pursuant to subsection (2) of this section shall be the release notification requirements established in the cabinet's administrative regulations.

(6) Any person possessing or controlling a pollutant or contaminant for which a reportable quantity has been established by administrative regulation promulgated pursuant to subsection (2) of this section shall immediately notify the cabinet's twenty-four (24) hour environmental response line, as soon as that person has knowledge of any release or threatened release, other than a permitted release or application of a pesticide in accordance with the manufacturer's instructions, of a pollutant or contaminant to the environment in a quantity equal to or exceeding the reportable quantity. In the notice to be made to the cabinet, the person shall state, at a minimum, the location of the release or threatened release, the material released or threatened to be released, and the approximate quantity and concentration of the release or threatened release.

(7) Any person possessing or controlling a pollutant or contaminant shall, as soon as that person has knowledge of any release or threatened release of a pollutant or contaminant from a site to the environment in a quantity which may present an imminent or substantial danger to the public health or welfare, immediately notify the cabinet's twenty-four (24) hour environmental response line. In the notice to be made to the cabinet, the person shall state, at a minimum, the location of the release or threatened release, the material released or threatened to be released, and the approximate quantity and concentration of the release or threatened release. If a person possessing or controlling a pollutant or contaminant for which a reportable quantity has not been established in administrative regulations promulgated pursuant to subsection (2) of the section fails to report a release or threatened release because of a good-faith belief that the release did not present an imminent or substantial danger to the public health or welfare, that person shall not be liable for a
violation of the release notification requirements of this section. In determining whether a person has acted in good faith, the cabinet shall consider the circumstances surrounding the release, including whether the release was a permitted release or the application of a pesticide in accordance with the manufacturer's instructions.

(8) The cabinet may require the person subject to the release notification requirements of subsections (5) to (9) of this section to provide a written report on the release or threatened release. This report shall be submitted to the environmental response section of the cabinet within seven (7) days of the cabinet’s demand for the report. The report shall identify the following:

(a) The precise location of the release or threatened release;
(b) The name, address, and phone number of the person possessing or controlling the material at the time of the release or threatened release;
(c) The name, address, and phone number of persons having actual knowledge of the facts surrounding the release or threatened release;
(d) The specific pollutant or contaminant or hazardous substance released or threatened to be released;
(e) The concentration and quantity of the pollutant or contaminant or hazardous substance in the release or threatened release;
(f) The circumstances and cause of the release or threatened release;
(g) Efforts taken by the person to control or mitigate the release or threatened release;
(h) To the extent known, the harmful effects of the release or threatened release;
(i) The transportation characteristics of the medium or matrix into which the material was released or threatened to be released;
(j) Any present or proposed remedial action by the person at the site of the release or threatened release;
(k) The name, address, and phone number of the person who can be contacted for additional information concerning the release or threatened release; and
(l) Any other information that may facilitate remediation of the site.

(9) A person possessing or controlling a hazardous substance, pollutant, or contaminant shall immediately notify the cabinet pursuant to subsection (5) of this section when release notification, including notification of a continuous release reported under the Federal Comprehensive Environmental Response Compensation and Liability Act of 1980, as amended, is provided to the United States Environmental Protection Agency. Within seven (7) days of providing any written notification to the United States Environmental Protection Agency, the person shall submit to the cabinet a copy of the release notification submitted to the United States Environmental Protection Agency. The cabinet shall not require additional information pursuant to subsection (5) of this section if the release notification is in compliance with this subsection, unless a written report is required under subsection (8) of this section or the release or threatened release constitutes an environmental emergency.

(10) Any person in charge of a vessel or site from which oil is discharged in a harmful quantity as defined by 40 C.F.R. Part 110 in contravention of Section 311 of the Federal Clean Water Act shall immediately notify the cabinet's twenty-four (24) hour environmental response line. In the notice to be made to the cabinet, the person shall state, at a minimum, the location of the discharge, the material discharged, and the approximate quantity and concentration of the discharge.

(11) Any person possessing or controlling petroleum or a petroleum product as defined by KRS 224.60-115(15) shall, as soon as that person has knowledge of any release or threatened release, other than a permitted release or application of a pesticide in accordance with the manufacturer's instructions, in an amount of twenty-five (25) gallons or more in a twenty-four (24) hour period, except for diesel fuel for which the reportable quantity is seventy-five (75) gallons or more in a twenty-four (24) hour period, or in contravention of Section 311 of the Federal Clean Water Act, immediately notify the cabinet's twenty-four (24) hour environmental response line. In the notice to be made to the cabinet, the person shall state,
at a minimum, the location of the release or threatened release, the material released or threatened to be released, and the approximate quantity and concentration of the release or threatened release.

(12) The cabinet may require the person subject to subsections (10) and (11) of this section to provide a written report on the discharge or release. This report shall be submitted to the environmental response section of the cabinet within seven (7) days of the cabinet's demand for the report. The report shall identify the following:

(a) The precise location of the discharge or release;
(b) The name, address, and phone number of the person possessing or controlling the material at the time of the discharge or release;
(c) The name, address, and phone number of persons having actual knowledge of the facts surrounding the discharge or release;
(d) The concentration and quantity of the discharge or release;
(e) The circumstances and cause of the discharge or release;
(f) Efforts taken by the person to control or mitigate the discharge or release;
(g) To the extent known, the harmful effects of the discharge or release;
(h) The transportation characteristics of the medium or matrix into which the material was discharged or released;
(i) Any present or proposed remedial action by the person at the site of the discharge or release;
(j) The name, address, and phone number of the person who can be contacted for additional information concerning the discharge or release; and
(k) Any other information that may facilitate an emergency spill response, or remediation of the site.

(13) Timely notification received under the release notification requirements of this section or information obtained in a notification received under the release notification requirements of this section may not be used against the person making the notification in any criminal
proceeding, except in a prosecution for submitting a false or untimely notification to the cabinet. Notification received by the cabinet of a threatened release or discharge shall not be deemed a separate incident.

(14) The cabinet shall be the lead agency for hazardous substance, pollutant, or contaminant emergency spill response and, after consultation with other affected federal, state, and local agencies and private organizations, shall establish a contingency plan for undertaking emergency actions in response to the release of a hazardous substance, pollutant, or contaminant. The contingency plan shall:

(a) Provide for efficient, coordinated, and effective action to minimize damage to the air, land, and waters of the Commonwealth caused by the release or threatened release of hazardous substances, pollutants, or contaminants;

(b) Include containment, cleanup, and disposal procedures;

(c) Provide for remediation or restoration of the lands or waters affected consistent with this section;

(d) Assign duties and responsibilities among state cabinets and agencies in coordination with federal and local agencies;

(e) Provide for the identification, procurement, maintenance, and storage of necessary equipment and supplies;

(f) Provide for designation of persons trained, prepared, and available to provide the necessary services to carry out the plan; and

(g) Establish procedures and techniques for identifying, containing, removing, and disposing of hazardous substances released or being released.

(15) The cabinet shall have the authority, power, and duty to:

(a) Recover from persons liable therefor for the benefit of the hazardous waste management fund, the cabinet's actual and necessary costs expended in response to a threatened release, an environmental emergency, or a release of a hazardous substance that is reportable under this section. Except as provided in paragraph (b) of
this subsection, this section is intended solely to recognize the existence of a cause of action on behalf of the cabinet and is not intended to expand or contract the bases of liability, the elements of proof, or the amount of liability of any person;

(b) Notwithstanding paragraph (a) of this subsection, recover its costs incurred in the removal of oil or hazardous substances discharged in violation of Section 311(b)(3) of the Federal Clean Water Act from any person liable therefor under Section 311 of the Federal Clean Water Act subject to limitations of liability and defenses provided in the section. The limitations of liability shall apply to the total of state and federal expenses; and

(c) In every case where action required under this section is not being adequately taken or the identity of the person responsible for the release or threatened release is unknown, the cabinet or its agent may contain, remove, or dispose of the hazardous substance, pollutant, or contaminant or take any other action consistent with this section, including, but not limited to, issuance of an emergency order as provided in KRS 224.10-410 to the person possessing, controlling, or responsible for the release or threatened release as necessary for the protection of the environment and public health, safety, or welfare.

(16) Any duly authorized officer, employee, or agent of the cabinet may upon notice to the owner or occupant enter any property, premises, or place at any time for the purposes of this section, if the entry is necessary to prevent damage to the air, land, or waters of the Commonwealth. Notice to the owner or occupant shall not be required if the delay attendant upon providing it will result in imminent risk to public health or safety.

(17) The cabinet shall prepare and annually update an inventory of all sites in the Commonwealth at which there is or has been an environmental emergency or a release of a hazardous substance, pollutant, or contaminant. In preparing the inventory, the cabinet shall determine, based on information available to the cabinet, the impact of each site on public health and the environment and identify the relative priority for restoration or
remedial action. Upon determining that no further restoration or remedial action is necessary, the cabinet shall so designate the site on the inventory. A separate designation of sites where a remedial action involving on-site containment or treatment has been performed and other sites where restoration of the environment has not been achieved shall be maintained. A review of environmental conditions at sites remediated by on-site containment or treatment and other sites where restoration or remediation of the environment is not achieved shall be conducted by the cabinet every five (5) years to determine whether additional action is necessary to protect human health or the environment.

(18) Any person possessing or controlling a hazardous substance, pollutant, or contaminant which is released to the environment, or any person who caused a release to the environment of a hazardous substance, pollutant, or contaminant, shall characterize the extent of the release as necessary to determine the effect of the release on the environment, and shall take actions necessary to correct the effect of the release on the environment. Any person required to take action under this subsection shall have the following options:

(a) Demonstrating that no action is necessary to protect human health, safety, and the environment;

(b) Managing the release in a manner that controls and minimizes the harmful effects of the release and protects human health, safety, and the environment, provided that the management may include any existing or proposed engineering or institutional controls and the maintenance of those controls;

(c) Restoring the environment through the removal of the hazardous substance, pollutant, or contaminant; or

(d) Any combination of paragraphs (a) to (c) of this subsection.

(19) Unless otherwise required by the cabinet, a person required to characterize the extent of a release and correct the effect of the release on the environment under subsection (18) of this section may take those actions without making the demonstrations to the cabinet
required by subsections (18) to (21) of this section, if:

(a) The release is less than the reportable quantity of a hazardous substance, pollutant, or contaminant;

(b) The release is of a pollutant or contaminant for which a reportable quantity has not been established by administrative regulation promulgated pursuant to subsection (2) of this section, if the release does not present an imminent or substantial danger to the public health or welfare; or

(c) The release is authorized by a state or federal permit.

(20) If a person required to take action under subsection (18) of this section demonstrates to the cabinet that, pursuant to subsection (18)(a) of this section, no action is necessary to protect human health, safety, and the environment or, pursuant to subsection (18)(b) of this section, the release will be managed in a manner that controls and minimizes the harmful effects of the release and protects human health, safety, and the environment, the cabinet shall not require restoration of the environment through the removal of the hazardous substance, pollutant, or contaminant pursuant to subsection (18)(c) of this section.

(21) A person required to take action under subsection (18) of this section who does not restore the environment through removal of the hazardous substance, pollutant, or contaminant in accordance with subsection (18)(c) of this section shall demonstrate to the cabinet that the remedy is protective of human health, safety, and the environment, by considering the following factors:

(a) The characteristics of the substance, pollutant, or contaminant, including its toxicity, persistence, environmental fate and transport dynamics, bioaccumulation, biomagnification, and potential for synergistic interaction and with specific reference to the environment into which the substance, pollutant, or contaminant has been released;

(b) The hydrogeologic characteristics of the facility and the surrounding area;

(c) The proximity, quality, and current and future uses of surface water and groundwater;
(d) The potential effects of residual contamination of potentially impacted surface water and groundwater;

(e) The chronic and acute health effects and environmental consequences to terrestrial and aquatic life of exposure to the hazardous substance, pollutant, or contaminant through direct and indirect pathways;

(f) An exposure assessment; and

(g) All other available information.

(22) A person who submits a proposal to the cabinet pursuant to subsection (18) of this section may request in writing a final determination on the proposal no sooner than thirty (30) days after its submission. When a final determination on the proposal is requested, the cabinet shall make its final determination within sixty (60) working days from the date the request is received by the cabinet. After a final determination has been made, the person requesting the final determination may request a hearing pursuant to the provisions of KRS 224.10-420. Nothing in this subsection shall relieve any person of any obligations imposed by law during an environmental emergency, nor shall it require the cabinet to approve a proposal which would violate this chapter or the administrative regulations promulgated pursuant thereto.

(23) (a) The cabinet shall have a lien against the real and personal property of a person liable for the actual and necessary costs expended in response to a release or threatened release or an environmental emergency. The lien shall be filed with the county clerk of the county in which the property of the person is located.

(b) If a financial institution exempted from liability by subsection (26) of this section conveys the site it has acquired, then the cabinet shall have a lien against the site for the actual and necessary costs expended in response to a release or threatened release or an environmental emergency. The lien shall be filed with the county clerk of the county in which the site is located.

(24) Nothing in this section shall replace the financial and technical assistance available to the
Commonwealth pursuant to Section 311 of the Federal Clean Water Act (Public Law 92-500) as amended, but shall be used to provide the Commonwealth with a mechanism for additional response to releases and threatened releases of hazardous substances, pollutants, or contaminants.

(25) Defenses to liability, limitations to liability, and rights to contribution shall be determined in accordance with Sections 101(35), 101(40), 107(a) to (d), 107(q) and 107(r), and 113(t) of the Comprehensive Environmental Response Compensation and Liability Act, as amended, and the Federal Clean Water Act, as amended.

(26) In addition to the defenses and limitations provided in subsection (25) of this section, a financial institution that acquired a site by foreclosure, by receiving an assignment, by deed in lieu of foreclosure, or by otherwise becoming the owner as a result of the enforcement of a mortgage, lien, or other security interest held by the financial institution, shall not be liable under this section with respect to the site, if:

(a) The financial institution served only in an administrative, custodial, financial, or similar capacity with respect to the site before its acquisition;

(b) The financial institution did not control or direct the handling of the material causing the environmental emergency, or control or direct the handling of the hazardous substance, pollutant, or contaminants, at the site before its acquisition;

(c) The financial institution did not participate in the day-to-day management of the site before its acquisition;

(d) The financial institution, at the time it acquired the site, did not know and had no reason to know that a hazardous substance, pollutant, or contaminant was disposed at the site. For purposes of this paragraph, the financial institution shall have undertaken, at the time of acquisition, all appropriate inquiries into the previous ownership and uses of the property consistent with good commercial or customary practice in an effort to minimize liability. What actions constitute all appropriate inquiries shall be determined by taking into account any specialized knowledge or
experience on the part of the financial institution, the relationship of the market value of the site to the value of the site if uncontaminated, commonly known or reasonably ascertainable information about the site, the obviousness of the presence or likely presence of contamination at the site, the ability to detect the contamination by appropriate inspection, and any other relevant factor;

(e) The financial institution, when it undertakes actions to protect or preserve the value of the site, undertakes those actions in accordance with this chapter and the administrative regulations adopted pursuant thereto;

(f) The financial institution, its employees, agents, and contractors did not cause or contribute to an environmental emergency, or to a release or threatened release of a hazardous substance, pollutant, or contaminant; and

(g) The financial institution complies with the release notification requirements of subsection (9) of this section.

(27) In addition to the defenses and limitations provided in subsection (25) of this section, a financial institution serving as a fiduciary with respect to an estate or trust, the assets of which contain a site, shall not be liable under this section with respect to the site if:

(a) The financial institution served only in an administrative, custodial, financial, or similar capacity with respect to the site before it became a fiduciary;

(b) The financial institution did not control or direct the handling of the material causing the environmental emergency, or control or direct the handling of the hazardous substance, pollutant, or contaminants, at the site before it became a fiduciary;

(c) The financial institution did not participate in the day-to-day management of the site before it became a fiduciary;

(d) The financial institution, at the time it became a fiduciary, did not know and had no reason to know that a hazardous substance, pollutant, or contaminant was disposed at the site. For purposes of this paragraph, the financial institution shall have undertaken, at the time it became a fiduciary, all appropriate inquiries into the
previous ownership and uses of the property consistent with good commercial or customary practice in an effort to minimize liability. What actions constitute all appropriate inquiries shall be determined by taking into account any specialized knowledge or experience on the part of the financial institution, the relationship of the market value of the site to the value of the site if uncontaminated, commonly known or reasonably ascertainable information about the site, the obviousness of the presence or likely presence of contamination at the site, the ability to detect the contamination by appropriate inspection, and any other relevant factor;

(e) The financial institution, when it undertakes actions to protect or preserve the value of the site, undertakes those actions in accordance with this chapter and the administrative regulations adopted pursuant thereto;

(f) The financial institution, its employees, agents, and contractors did not cause or contribute to an environmental emergency, or to a release or threatened release of a hazardous substance, pollutant, or contaminant; and

(g) The financial institution complies with the release notification requirements of subsection (9) of this section.

* * * * * * * [Voluntary Environmental Remediation Income Tax Credit]

SECTION 140. A NEW SECTION OF KRS CHAPTER 141 IS CREATED TO READ AS FOLLOWS:

(1) As used in this section:

(a) "Qualifying voluntary environmental remediation property" means real property subject to the provisions of KRS 224.01-400 and KRS 224.01-405 for which the Natural Resources and Environmental Protection Cabinet has made a determination that:
1. The responsible parties are financially unable to carry out the obligations in KRS 224.01-400 and KRS 224.01-405; and
2. The property was acquired after the effective date of this Act by a bona fide prospective purchaser as defined in 42 U.S.C. sec. 9601(40);

(b) "Expenditures" means payment for work to characterize the extent of contamination and to remediate the contamination at a qualifying voluntary environmental remediation property; and

(c) "Taxpayer" means an individual subject to tax under KRS 141.020 or a corporation subject to tax under KRS 141.040.

2) There shall be allowed a nonrefundable credit against the tax imposed under KRS 141.020 or 141.040 for taxable years beginning after December 31, 2004, for taxpayer expenditures made at a qualifying voluntary environmental remediation property in order to meet the requirements of an agreed order entered into by the taxpayer under the provisions of KRS 224.01-518, provided that the taxpayer has obtained a covenant not to sue from the Natural Resources and Environmental Protection Cabinet under KRS 224.01-526.

3) The maximum total credit for each taxpayer shall not exceed one hundred fifty thousand dollars ($150,000). For purposes of this section, an affiliated group of taxpayers required to file a consolidated return under KRS 141.200 shall be treated as one taxpayer.

4) A taxpayer claiming a credit under this section shall submit receipts to the Finance and Administration Cabinet in proof of the expenditures claimed. The Finance and Administration Cabinet shall forward the receipts to the Natural Resources and Environmental Protection Cabinet for verification. After the receipts are verified, the Finance and Administration Cabinet shall notify the taxpayer of eligibility for the credit.

5) The credit may be first claimed on the income tax return of the taxpayer filed in the taxable year during which the credit was certified. The amount of the allowable credit for any taxable year shall be twenty-five percent (25%) of the maximum credit approved. The credit may be carried forward for ten (10) successive taxable years.
(6) If the taxpayer is a general partnership, the credit shall pass through in the same proportion as the distributive share of income or loss is passed through.

[Voluntary Environmental Remediation Real Property Tax Incentive]

Section 54. KRS 132.010 is amended to read as follows:

As used in this chapter, unless the context otherwise requires:

(1) "Cabinet" means the Revenue Cabinet.

(2) "Taxpayer" means any person made liable by law to file a return or pay a tax.

(3) "Real property" includes all lands within this state and improvements thereon.

(4) "Personal property" includes every species and character of property, tangible and intangible, other than real property.

(5) "Resident" means any person who has taken up a place of abode within this state with the intention of continuing to abide in this state; any person who has had his actual or habitual place of abode in this state for the larger portion of the twelve (12) months next preceding the date as of which an assessment is due to be made shall be deemed to have intended to become a resident of this state.

(6) "Compensating tax rate" means that rate which, rounded to the next higher one-tenth of one cent ($0.001) per one hundred dollars ($100) of assessed value and applied to the current year's assessment of the property subject to taxation by a taxing district, excluding new property and personal property, produces an amount of revenue approximately equal to that produced in the preceding year from real property. However, in no event shall the compensating tax rate be a rate which, when applied to the total current year assessment of all classes of taxable property, produces an amount of revenue less than was produced in the preceding year from all classes of taxable property. For purposes of this subsection, "property subject to taxation" means the total fair cash value of all property subject to full local rates, less the total valuation exempted from taxation by the homestead exemption provision of the Constitution and the difference between the fair cash value and agricultural
or horticultural value of agricultural or horticultural land.

(7) "Net assessment growth" means the difference between:

(a) The total valuation of property subject to taxation by the county, city, school district, or special district in the preceding year, less the total valuation exempted from taxation by the homestead exemption provision of the Constitution in the current year over that exempted in the preceding year, and

(b) The total valuation of property subject to taxation by the county, city, school district, or special district for the current year.

(8) "New property" means the net difference in taxable value between real property additions and deletions to the property tax roll for the current year. "Real property additions" shall mean:

(a) Property annexed or incorporated by a municipal corporation, or any other taxing jurisdiction; however, this definition shall not apply to property acquired through the merger or consolidation of school districts, or the transfer of property from one (1) school district to another;

(b) Property, the ownership of which has been transferred from a tax-exempt entity to a nontax-exempt entity;

(c) The value of improvements to existing nonresidential property;

(d) The value of new residential improvements to property;

(e) The value of improvements to existing residential property when the improvement increases the assessed value of the property by fifty percent (50%) or more;

(f) Property created by the subdivision of unimproved property, provided, that when such property is reclassified from farm to subdivision by the property valuation administrator, the value of such property as a farm shall be a deletion from that category;

(g) Property exempt from taxation, as an inducement for industrial or business use, at the expiration of its tax exempt status;
(h) Property, the tax rate of which will change, according to the provisions of KRS 82.085, to reflect additional urban services to be provided by the taxing jurisdiction, provided, however, that such property shall be considered "real property additions" only in proportion to the additional urban services to be provided to the property over the urban services previously provided; and

(i) The value of improvements to real property previously under assessment moratorium. "Real property deletions" shall be limited to the value of real property removed from, or reduced over the preceding year on, the property tax roll for the current year.

(9) "Agricultural land" means:

(a) Any tract of land, including all income-producing improvements, of at least ten (10) contiguous acres in area used for the production of livestock, livestock products, poultry, poultry products and/or the growing of tobacco and/or other crops including timber;

(b) Any tract of land, including all income-producing improvements, of at least five (5) contiguous acres in area commercially used for aquaculture; or

(c) Any tract of land devoted to and meeting the requirements and qualifications for payments pursuant to agriculture programs under an agreement with the state or federal government.

(10) "Horticultural land" means any tract of land, including all income-producing improvements, of at least five (5) contiguous acres in area commercially used for the cultivation of a garden, orchard, or the raising of fruits or nuts, vegetables, flowers, or ornamental plants.

(11) "Agricultural or horticultural value" means the use value of "agricultural or horticultural land" based upon income-producing capability and comparable sales of farmland purchased for farm purposes where the price is indicative of farm use value, excluding sales representing purchases for farm expansion, better accessibility, and other factors which inflate the purchase price beyond farm use value, if any, considering the following
factors as they affect a taxable unit:

(a) Relative percentages of tillable land, pasture land, and woodland;
(b) Degree of productivity of the soil;
(c) Risk of flooding;
(d) Improvements to and on the land that relate to the production of income;
(e) Row crop capability including allotted crops other than tobacco;
(f) Accessibility to all-weather roads and markets; and
(g) Factors which affect the general agricultural or horticultural economy, such as:
    interest, price of farm products, cost of farm materials and supplies, labor, or any
    economic factor which would affect net farm income.

(12) "Deferred tax" means the difference in the tax based on agricultural or horticultural value
    and the tax based on fair cash value.

(13) "Homestead" means real property maintained as the permanent residence of the owner with
    all land and improvements adjoining and contiguous thereto including, but not limited to,
    lawns, drives, flower or vegetable gardens, outbuildings, and all other land connected
    thereto.

(14) "Residential unit" means all or that part of real property occupied as the permanent
    residence of the owner.

(15) "Special benefits" are those which are provided by public works not financed through the
    general tax levy but through special assessments against the benefited property.

(16) "Mobile home" means a structure, transportable in one (1) or more sections, which when
    erected on site measures eight (8) body feet or more in width and thirty-two (32) body feet
    or more in length, and which is built on a permanent chassis and designed to be used as a
    dwelling, with or without a permanent foundation, when connected to the required utilities,
    and includes the plumbing, heating, air-conditioning, and electrical systems contained
    therein. It may be used as a place of residence, business, profession, or trade by the owner,
    lessee, or their assigns and may consist of one (1) or more units that can be attached or
joined together to comprise an integral unit or condominium structure.

(17) "Recreational vehicle" means a vehicular type unit primarily designed as temporary living quarters for recreational, camping, or travel use, which either has its own motive power or is mounted on or drawn by another vehicle. The basic entities are: travel trailer, camping trailer, truck camper, and motor home.

(a) Travel trailer: A vehicular unit, mounted on wheels, designed to provide temporary living quarters for recreational, camping, or travel use, and of such size or weight as not to require special highway movement permits when drawn by a motorized vehicle, and with a living area of less than two hundred twenty (220) square feet, excluding built-in equipment (such as wardrobes, closets, cabinets, kitchen units or fixtures) and bath and toilet rooms.

(b) Camping trailer: A vehicular portable unit mounted on wheels and constructed with collapsible partial side walls which fold for towing by another vehicle and unfold at the camp site to provide temporary living quarters for recreational, camping, or travel use.

(c) Truck camper: A portable unit constructed to provide temporary living quarters for recreational, travel, or camping use, consisting of a roof, floor, and sides, designed to be loaded onto and unloaded from the bed of a pick-up truck.

(d) Motor home: A vehicular unit designed to provide temporary living quarters for recreational, camping, or travel use built on or permanently attached to a self-propelled motor vehicle chassis or on a chassis cab or van which is an integral part of the completed vehicle.

(18) "Intangible personal property" means stocks, mutual funds, money market funds, bonds, loans, notes, mortgages, accounts receivable, land contracts, cash, credits, patents, trademarks, copyrights, tobacco base, allotments, annuities, deferred compensation, retirement plans, and any other type of personal property that is not tangible personal property.
"Qualifying voluntary environmental remediation property" means real property subject to the provisions of KRS 224.01-400 and KRS 224.01-405 for which the Natural Resources and Environmental Protection Cabinet has made a determination that:

(a) The responsible parties are financially unable to carry out the obligations in KRS 224.01-400 and KRS 224.01-405; and

(b) The property was acquired after the effective date of this Act by a bona fide prospective purchaser as defined in 42 U.S.C. sec. 9601(40).

Section 55. KRS 132.020 is amended to read as follows:

(1) The owner or person assessed shall pay an annual ad valorem tax for state purposes at the rate of:

(a) Thirty-one and one-half cents ($0.315) upon each one hundred dollars ($100) of value of all real property directed to be assessed for taxation, and

(b) One and one-half cents ($0.015) upon each one hundred dollars ($100) of value of all privately-owned leasehold interests in industrial buildings, as defined under KRS 103.200, owned and financed by a tax-exempt governmental unit, or tax-exempt statutory authority under the provisions of KRS Chapter 103, upon the prior approval of the Kentucky Economic Development Finance Authority, except that the rate shall not apply to the proportion of value of the leasehold interest created through any private financing,

(c) One and one-half cents ($0.015) upon each one hundred dollars ($100) of value of all qualifying voluntary environmental remediation property, provided the bona fide prospective purchaser has obtained a covenant not to sue from the Natural Resources and Environmental Protection Cabinet under KRS 224.01-526 for all known releases located on the property. This rate shall apply for a period of three (3) years following the issuance of the covenant not to sue, after which the regular tax rate shall apply;

(d) One and one-half cents ($0.015) upon each one hundred dollars ($100) of value of all
tobacco directed to be assessed for taxation, and twenty-five cents ($0.25) upon each one hundred dollars ($100) of value of all money in hand, notes, bonds, accounts, and other credits, whether secured by mortgage, pledge, or otherwise, or unsecured, except as otherwise provided in subsection (2) of this section, and

(e) One and one-half cents ($0.015) upon each one hundred dollars ($100) of value of unmanufactured agricultural products,

(f) One-tenth of one cent ($0.001) upon each one hundred dollars ($100) of value of all farm implements and farm machinery owned by or leased to a person actually engaged in farming and used in his farm operations,

(g) One-tenth of one cent ($0.001) upon each one hundred dollars ($100) of value of all livestock and domestic fowl,

(h) One-tenth of one cent ($0.001) upon each one hundred dollars ($100) of value of all tangible personal property located in a foreign trade zone established pursuant to 19 U.S.C. sec. 81, provided that the zone is activated in accordance with the regulations of the United States Customs Service and the Foreign Trade Zones Board,

(i) Fifteen cents ($0.15) upon each one hundred dollars ($100) of value of all machinery actually engaged in manufacturing,

(j) Fifteen cents ($0.15) upon each one hundred dollars ($100) of value of all commercial radio, television, and telephonic equipment directly used or associated with electronic equipment which broadcasts electronic signals to an antenna,

(k) Fifteen cents ($0.15) upon each one hundred dollars ($100) of value of all property which has been certified as a pollution control facility as defined in KRS 224.01-300,

(l) One-tenth of one cent ($0.001) upon each one hundred dollars ($100) of value of all property which has been certified as an alcohol production facility as defined in KRS 247.910, or as a fluidized bed energy production facility as defined in KRS 211.390.
(m) Twenty-five cents ($0.25) upon each one hundred dollars ($100) of value of motor vehicles qualifying for permanent registration as historic motor vehicles under the provisions of KRS 186.0434.

(n) Five cents ($0.05) upon each one hundred dollars ($100) of value of goods held for sale in the regular course of business, which includes machinery and equipment held in a retailer's inventory for sale or lease originating under a floor plan financing arrangement; and raw materials, which includes distilled spirits and distilled spirits inventory, and in-process materials, which includes distilled spirits and distilled spirits inventory, held for incorporation in finished goods held for sale in the regular course of business;

(o) Ten cents ($0.10) per one hundred dollars ($100) of assessed value on the operating property of railroads or railway companies that operate solely within the Commonwealth;

(p) One and one-half cents ($0.015) per one hundred dollars ($100) of assessed value on aircraft not used in the business of transporting persons or property for compensation or hire;

(q) One and one-half cents ($0.015) per one hundred dollars ($100) of assessed value on federally documented vessels not used in the business of transporting persons or property for compensation or hire, or for other commercial purposes; and

(r) Forty-five cents ($0.45) upon each one hundred dollars ($100) of value of all other property directed to be assessed for taxation shall be paid by the owner or person assessed, except as provided in subsection (2) of this section and KRS 132.030, 132.050, 132.200, 136.300, and 136.320, providing a different tax rate for particular property.

(2) An annual ad valorem tax for state purposes of one and one-half cents ($0.015) upon each one hundred dollars ($100) of value shall be paid upon the following classes of intangible personal properties, when the intangible personal properties have not
acquired a taxable situs without this state:
1. Accounts receivable, notes, bonds, credits, and any other intangible property rights arising out of or created in the course of regular and continuing business transactions substantially performed outside this state;
2. Patents, trademarks, copyrights, and licensing or royalty agreements relating to these;
3. Notes, bonds, accounts receivable, and all other intercompany intangible personal property due from any affiliated company; and
4. Tobacco base allotments.

(b) An annual ad valorem tax for state purposes of one thousandth of one percent (0.001%) shall be paid upon money in hand, notes, bonds, accounts, credits, and other intangible assets, whether by mortgage, pledge, or otherwise, or unsecured, of financial institutions, as defined in KRS 136.500.

(3) "Affiliated company" shall mean a parent corporation or subsidiary corporation, and any corporation principally engaged in business outside the United States in which the owner or the person assessed directly or indirectly owns or controls not less than ten percent (10%) of the outstanding voting stock.

(4) With respect to the intangible properties taxed pursuant to subsection (2) of this section, no other ad valorem tax shall be levied by the state or any county, city, school, or other taxing district on the intangible properties, or directly or indirectly against the owner.

(5) Thirty cents ($0.30) of the thirty-one and one-half cents ($0.315) state tax rate on real property and thirty cents ($0.30) of the forty-five cents ($0.45) state tax rate on tangible personalty subject to local taxation shall be considered as local school district tax levies for purposes of computing any direct payments of state or federal funds to said districts as replacement for ad valorem taxes lost on property acquired by a governmental agency. Should the equivalency ever be less than thirty cents ($0.30), as certified by the Department of Education, the direct payments shall be reduced proportionately.

(6) The provisions of subsection (1) of this section notwithstanding subsection (1)(a) of this section, the state tax rate on real property shall be reduced to compensate for any increase in the aggregate assessed value of real property to the extent that the increase exceeds the
preceeding year's assessment by more than four percent (4%), excluding:

(a) The assessment of new property as defined in KRS 132.010(8);  
(b) The assessment from property which is subject to tax increment financing pursuant to KRS Chapter 65; and

(c) The assessment from leasehold property which is owned and financed by a tax-exempt governmental unit, or tax-exempt statutory authority under the provisions of KRS Chapter 103 and entitled to the reduced rate of one and one-half cents ($0.015) pursuant to subsection (1)(b) of this section. In any year in which the aggregate assessed value of real property is less than the preceding year, the state rate shall be increased to the extent necessary to produce the approximate amount of revenue that was produced in the preceding year from real property.

(3) By July 1 each year, the cabinet shall compute the state tax rate applicable to real property for the current year in accordance with the provisions of subsection (2) of this section and certify the rate to the county clerks for their use in preparing the tax bills. If the assessments for all counties have not been certified by July 1, the cabinet shall, when either real property assessments of at least seventy-five percent (75%) of the total number of counties of the Commonwealth have been determined to be acceptable by the cabinet, or when the number of counties having at least seventy-five percent (75%) of the total real property assessment for the previous year have been determined to be acceptable by the cabinet, make an estimate of the real property assessments of the uncertified counties and compute the state tax rate.

(4) If the tax rate set by the cabinet as provided in subsection (2) of this section produces more than a four percent (4%) increase in real property tax revenues, excluding:

(a) The revenue resulting from new property as defined in KRS 132.010(8);  
(b) The revenue from property which is subject to tax increment financing pursuant to KRS Chapter 65; and

(c) The revenue from leasehold property which is owned and financed by a tax-exempt
governmental unit, or tax-exempt statutory authority under the provisions of KRS Chapter 103 and entitled to the reduced rate of one and one-half cents ($0.015) pursuant to subsection (1) of this section, the rate shall be adjusted in the succeeding year so that the cumulative total of each year's property tax revenue increase shall not exceed four percent (4%) per year.

(9) The provisions of subsection (2) of this section notwithstanding, the assessed value of unmined coal certified by the cabinet after July 1, 1994, shall not be included with the assessed value of other real property in determining the state real property tax rate. All omitted unmined coal assessments made after July 1, 1994, shall also be excluded from the provisions of subsection (2) of this section. The calculated rate shall, however, be applied to unmined coal property, and the state revenue shall be devoted to the program described in KRS 146.550 to 146.570, except that four hundred thousand dollars ($400,000) of the state revenue shall be paid annually to the State Treasury and credited to the Kentucky Coal Council for the purpose of public education of coal-related issues.

(10) Effective on or after January 1, 1990, an ad valorem tax for state purposes of five cents ($0.05) upon each one hundred dollars ($100) of value shall be paid upon goods held for sale in the regular course of business, which, on or after January 1, 1999, includes machinery and equipment held in a retailer's inventory for sale or lease originating under a floor-plan financing arrangement, and raw materials, which includes distilled spirits and distilled spirits inventory, and in-process materials, which includes distilled spirits and distilled spirits inventory, held for incorporation in finished goods held for sale in the regular course of business.

(11) An ad valorem tax for state purposes of ten cents ($0.10) per one hundred dollars ($100) of assessed value shall be paid on the operating property of railroads or railway companies that operate solely within the Commonwealth.

(12) An ad valorem tax for state purposes of one and one-half cents ($0.015) per one hundred dollars ($100) of assessed value shall be paid on aircraft not used in the business of
(13) An ad valorem tax for state purposes of one and one-half cents ($0.015) per one hundred dollars ($100) of assessed value shall be paid on federally documented vessels not used in the business of transporting persons or property for compensation or hire, or for other commercial purposes.

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[Voluntary Environmental Remediation Real Property Tax Incentive]

Section 57. KRS 132.200 is amended to read as follows:

All property subject to taxation for state purposes shall also be subject to taxation in the county, city, school, or other taxing district in which it has a taxable situs, except the classes of property described in KRS 132.030 and 132.050, and the following classes of property, which shall be subject to taxation for state purposes only:

(1) Farm implements and farm machinery owned by or leased to a person actually engaged in farming and used in his farm operation;

(2) Livestock, ratite birds, and domestic fowl;

(3) Capital stock of savings and loan associations;

(4) Machinery actually engaged in manufacturing, products in the course of manufacture, and raw material actually on hand at the plant for the purpose of manufacture. The printing, publication, and distribution of a newspaper or operating a job printing plant shall be deemed to be manufacturing;

(5) Commercial radio, television, and telephonic equipment directly used or associated with electronic equipment which broadcasts electronic signals to an antenna; however, radio or television towers not essential to the production of the wave or signal broadcast shall not be included;

(6) Unmanufactured agricultural products. They shall be exempt from taxation for state purposes to the extent of the value, or amount, of any unpaid nonrecourse loans thereon granted by the United States government or any agency thereof, and except that cities and counties may each impose an ad valorem tax of not exceeding one and one-half cents
House Bill 272

($0.015) on each one hundred dollars ($100) of the fair cash value of all unmanufactured tobacco and not exceeding four and one-half cents ($0.045) on each one hundred dollars ($100) of the fair cash value of all other unmanufactured agricultural products, subject to taxation within their limits that are not actually on hand at the plants of manufacturing concerns for the purpose of manufacture, nor in the hands of the producer or any agent of the producer to whom the products have been conveyed or assigned for the purpose of sale;

(7) Money in hand, notes, bonds, accounts, and other credits, whether secured by mortgage, pledge, or otherwise, or unsecured. Nothing in this section shall forbid local taxation of franchises of corporations or of financial institutions, as provided for in KRS 136.575, or domestic life insurance companies;

(8) All privately-owned leasehold interest in industrial buildings, as defined under KRS 103.200, owned and financed by a tax-exempt governmental unit, or tax-exempt statutory authority under the provisions of KRS Chapter 103, except that the rate shall not apply to the proportion of value of the leasehold interest created through any private financing;

(8)(9) Property which has been certified as a pollution control facility as defined in KRS 224.01-300;

(9)(10) Property which has been certified as an alcohol production facility as defined in KRS 247.910;

(10)(11) On and after January 1, 1977, the assessed value of unmined coal shall be included in the formula contained in KRS 132.590(9) in determining the amount of county appropriation to the office of the property valuation administrator;

(11)(12) Tangible personal property located in a foreign trade zone established pursuant to 19 U.S.C. sec. 81, provided that the zone is activated in accordance with the regulations of the United States Customs Service and the Foreign Trade Zones Board;

(12)(13) Motor vehicles qualifying for permanent registration as historic motor vehicles under the provisions of KRS 186.043. However, nothing herein shall be construed to exempt historical motor vehicles from the usage tax imposed by KRS 138.460;
(13) Property which has been certified as a fluidized bed energy production facility as
defined in KRS 211.390;

(14) All motor vehicles held for sale in the inventory of a licensed motor vehicle
dealer, which are not currently titled and registered in Kentucky and are held on an
assignment pursuant to the provisions of KRS 186A.230, and all motor vehicles with a
salvage title held by an insurance company;

(15) Machinery or equipment owned by a business, industry, or organization in order
to collect, source separate, compress, bale, shred, or otherwise handle waste materials if the
machinery or equipment is primarily used for recycling purposes as defined in KRS
139.095;

(16) New farm machinery and other equipment held in the retailer's inventory for sale
under a floor plan financing arrangement by a retailer, as defined under KRS 365.800;

(17) New boats and new marine equipment held for retail sale under a floor plan
financing arrangement by a dealer registered under KRS 235.220;

(18) Aircraft not used in the business of transporting persons or property for
compensation or hire if an exemption is approved by the county, city, school, or other
taxing district in which the aircraft has its taxable situs;

(19) Federally documented vessels not used in the business of transporting persons or
property for compensation or hire or for other commercial purposes, if an exemption is
approved by the county, city, school, or other taxing district in which the federally
documented vessel has its taxable situs;

(20) Any nonferrous metal that conforms to the quality, shape, and weight
specifications set by the New York Mercantile Exchange's special contract rules for metals,
and which is located or stored in a commodity warehouse and held on warrant, or for which
a written request has been made to a commodity warehouse to place it on warrant,
according to the rules and regulations of a trading facility. In this subsection:
(a) "Commodity warehouse" means a warehouse, shipping plant, depository, or other
facility that has been designated or approved by a trading facility as a regular delivery point for a commodity on contracts of sale for future delivery; and

(b) "Trading facility" means a facility that is designated by or registered with the federal Commodity Futures Trading Commission under 7 U.S.C. secs. 1 et seq. "Trading facility" includes the Board of Trade of the City of Chicago, the Chicago Mercantile Exchange, and the New York Mercantile Exchange; and

(21) Qualifying voluntary environmental remediation property for a period of three (3) years following the issuance of a covenant not to sue by the Natural Resources and Environmental Protection Cabinet for all known releases located on the property.
House Bill 472 Uniform Environmental Covenant

AN ACT relating to uniform environmental covenants.

Be it enacted by the General Assembly of the Commonwealth of Kentucky:

SECTION 2. SUBCHAPTER 80 OF KRS CHAPTER 224 IS ESTABLISHED AND A NEW SECTION THEREOF IS CREATED TO READ AS FOLLOWS:

As used in this subchapter:

(1) "Activity and use limitations" means restrictions or obligations created under Sections 1 to 12 of this Act.

(2) "Applicant" means a person applying to the cabinet for approval of an environmental covenant.

(3) "Cabinet" means the Natural Resources and Environmental Protection Cabinet.

(4) "Common interest community" means a condominium, cooperative, or other real property owed by a person as part of a parcel of real property for which there is an obligation to pay property taxes, insurance premiums, or maintenance, or to make improvements to the real property as described and established in a recorded environmental covenant.

(5) "Environmental covenant" means a servitude arising under an environmental response project that imposes activity and use limitations.

(6) "Environmental response project" means a plan or work performed for the environmental remediation of real property conducted:

(a) Under a federal or state program governing environmental remediation of real property including programs established pursuant to KRS 224.01-400, 224.01-405, 224.46-530, and 224.01-450 to 224.01-465;

(b) Incident to closure of a solid or hazardous waste management unit, if the closure is conducted with approval of the cabinet; or

(c) Under a Commonwealth voluntary cleanup program authorized under KRS 224.01-510 to 224.01-532.
"Holder" means the grantee of an environmental covenant.

"Indexing" means the practice or method kept by a county clerk’s office to record legal property transactions.

"Interest" means all or part of a legal equitable claim to a right in real property which shall include both possessory and nonpossessory interests.

"Owner" means a person that owns a fee simple interest or any other interest in real property that is subject to an environmental covenant.

"Person" shall have the meaning specified in KRS 224.01-010(7).

"Public Notice" means the publication of required information in a daily or weekly newspaper of major circulation located in the county or counties where the property subject to the proposed environmental covenant is located. If there is no daily or weekly newspaper of major circulation in the county or counties where the property is located, public notice shall mean publication of required information in a daily or weekly newspaper of major circulation in a county adjacent to the county or counties where the property is located.

"Subordination agreement" means an agreement affecting priority of interests in a real property that is subject to an environmental covenant.

"Servitude" means a right, burden, or restriction on the use of real property that passes from the current owner or tenant to any owners or tenants in succession.

SECTION 3. A NEW SECTION OF SUBCHAPTER 80 OF KRS CHAPTER 224 IS CREATED TO READ AS FOLLOWS:

(1) Any person that owns an interest in a real property subject to an environmental response project as defined in subsection (6) of Section 1 of this Act as of July 1, 2005, may utilize an environmental covenant as part of a corrective action plan submitted to the cabinet for review and approval.

(2) The cabinet shall review and shall approve or deny the environmental covenant, or request additional information as part of its review of a corrective action plan submitted
pursuant to KRS 224.01-400, 224.01-405, 224.46-530 and 224.01-450 to 224.01-465. The
cabinet shall review the environmental covenant and determine whether:
(a) The real property is eligible for an environmental covenant under Sections 1 to 12
of this Act;
(b) The environmental covenant is complete;
(c) The environmental covenant is protective of human health, safety, and the
environment under KRS 224.01-400, 224.01-405, 224.01-510 to 224.01-532,
224.46-530, and 224.01-450 to 224.01-465.
(d) The person proposing the environmental covenant has published, through public
notice, a notification identifying by legal description and address the property that
is being considered for an environmental covenant, the intent to place an
environmental covenant on the property, and a list of interest holders of record.

(3) In addition to other conditions for the approval of an environmental covenant, the
cabinet may require those persons specified by the cabinet who have an interest in the
real property to sign the covenant.

(4) The cabinet may deny an environmental covenant for reasonable grounds, including a
determination that the covenant does not protect human health or the environment. The
cabinet shall specify in writing, the grounds for denying the environmental covenant.

(5) Any person, including the cabinet, that signs an environmental covenant or an
amendment thereto shall be required to fulfill the obligations and responsibilities
prescribed to him or her in the environmental covenant or amendment. The cabinet's act
of signing the environmental covenant shall be deemed an approval of an environmental
covenant. Nothing contained in this subsection shall modify or deny any existing duties,
rights, or protections granted under law, except as explicitly and legally provided for in
the environmental covenant.

(6) If the environmental covenant is approved and signed in accordance with this
subchapter, those parties meeting the requirements in subsection (7) of this section shall
be deemed holders. The environmental covenant shall be deemed created.

(7) A holder may be:

(a) Any person, including a person that owns an interest in the real property; or

(b) A governmental body empowered to hold an interest in real property under the laws
    of this state or of the United States.

SECTION 4. A NEW SECTION OF SUBCHAPTER 80 OF KRS CHAPTER 224 IS
CREATED TO READ AS FOLLOWS:

(1) An environmental covenant may identify more than one (1) holder, and the interest of a
    holder is an interest in real property.

(2) A right of the cabinet pursuant to Sections 1 to 12 of this Act or under an environmental
    covenant shall not be deemed an interest in real property. The obligations imposed on a
    property and holders of a property subject to an environmental covenant shall be
    considered as ongoing obligations in furtherance of protection of public health and the
    environment and are not intended to be obligations that are reducible to a money claim
    or dischargeable under bankruptcy law.

(3) The following rules apply to persons with interests in real property in existence at the
time an environmental covenant is created or modified:

(a) A person with an interest that has priority under other law shall not be affected by
    an environmental covenant, except when the owner of the interest is a party to the
    covenant or subordinates his or her interest to the environmental covenant in a
    subordination agreement.

(b) Nothing contained in Sections 1 to 12 of this Act shall require a person that owns a
    prior interest to subordinate that interest to an environmental covenant or to agree
to be bound by an environmental covenant.

(c) The cabinet shall have the authority to disapprove an environmental covenant if all
    prior interests to the real property are not subordinated to the environmental
    covenant.
(d) A subordination agreement may be contained in the environmental covenant covering real property or in a separate record. If the environmental covenant covers commonly owned property in a common interest community, the record may be signed by any person authorized by the governing board of the owners' association.

(e) A person's act of subordinating his or her prior interest in a real property to an environmental covenant shall affect the priority of that person's interest. The act of subordinating a prior interest in a real property subject to an environmental covenant shall not be presumed to impose any affirmative obligation on the person with respect to the environmental covenant.

SECTION 5. A NEW SECTION OF SUBCHAPTER 80 OF KRS CHAPTER 224 IS CREATED TO READ AS follows:

(1) An environmental covenant shall:

(a) State that the instrument is an environmental covenant executed pursuant to Sections 1 to 12 of this Act;

(b) Contain a legal description of the real property and a metes and bounds description of the portion of the real property;

(c) Describe the activity and use limitations imposed on the real property;

(d) Identify every holder;

(e) Be signed by the cabinet, by every holder, and, unless waived by the cabinet, by every owner of an interest in the real property subject to the environmental covenant; and

(f) Identify the name and location of any administrative record for the environmental response project.

(2) In addition to the information required under subsection (1) of this section, an environmental covenant may contain other information, restrictions, and requirements agreed to by the persons who signed it, including:
(a) Requirements for notice following transfer of a specified interest in, or concerning proposed changes in use of, application for building permits for, or proposals for any site work affecting the contamination on, the property subject to the covenant;

(b) Requirements for periodic reporting describing compliance with the covenant;

(c) Rights of access to the property granted in connection with implementation or enforcement of the covenant;

(d) A brief narrative description of the contamination and remedy, including the contaminants of concern, the pathways of exposure, limits on exposure, and the location and extent of the contamination;

(e) Limitation on amendment or termination of the covenant in addition to those contained in Sections 9 and 10 of this Act; and

(f) Rights of the holder in addition to the holder's right to enforce the covenant pursuant to Section 11 of this Act.

SECTION 6. A NEW SECTION OF SUBCHAPTER 80 OF KRS CHAPTER 224 IS CREATED TO READ AS FOLLOWS:

(1) An environmental covenant in compliance with the provisions of Sections 1 to 12 of this Act shall run with the land.

(2) An environmental covenant that is otherwise effective shall be deemed valid and shall be enforceable even if:

(a) The environmental covenant is not appurtenant to an interest in real property;

(b) The environmental covenant can be or has been assigned to a person other than the original holder;

(c) The environmental covenant is not of a character that has been recognized traditionally in common law;

(d) The environmental covenant imposes a negative burden;

(e) The environmental covenant imposes an affirmative obligation on a person having an interest in the real property or on the holder;
(f) The benefit or burden does not touch or concern real property;

(g) There is no privity of estate or contract;

(h) The holder dies, ceases to exist, resigns, or is replaced; or

(i) The owner of an interest subject to the environmental covenant and the holder are
the same person.

(3) An instrument that creates restrictions or obligations with respect to real property that
would qualify as activity and use limitations except for the fact that the instrument was
recorded before the effective date of this Act shall not be invalidated or deemed
unenforceable due to:

(a) Any of the limitations on enforcement of interests described in paragraphs (a) to (i)
of subsection (2) of this section; or

(b) The identification of the instrument as an easement, servitude, deed restriction, or
other interest.

(4) Sections 1 to 12 of this Act shall not invalidate or render unenforceable any interest,
whether designated as an environmental covenant or other interest, that is otherwise
enforceable under the law.

SECTION 7. A NEW SECTION OF SUBCHAPTER 80 OF KRS CHAPTER 224 IS
CREATED TO READ AS FOLLOWS:

Sections 1 to 12 of this Act shall not be construed to authorize a use of real property that is
otherwise prohibited by zoning, by law other than is prescribed for the regulating of real
property in Sections 1 to 12 of this Act, or by a recorded instrument that has priority over the
environmental covenant. An environmental covenant may prohibit or restrict uses of real
property authorized by zoning or by law that are not prescribed in Sections 1 to 12 of this Act.

SECTION 8. A NEW SECTION OF SUBCHAPTER 80 OF KRS CHAPTER 224 IS
CREATED TO READ AS FOLLOWS:

(1) A copy of the environmental covenant shall be provided to the following persons in a
manner prescribed by the cabinet:
(a) Each person signing the environmental covenant;

(b) Each person holding a recorded interest in the real property subject to the environmental covenant;

(c) Each person in possession of the real property subject to the environmental covenant;

(d) Each municipality or other unit of local government in which real property subject to the environmental covenant is located; and

(e) Any other person that the cabinet requires.

(2) An environmental covenant shall not be deemed invalid due to a failure to provide a copy of the environmental covenant to a person as required in subsection (1) of this section.

SECTION 9. A NEW SECTION OF SUBCHAPTER 80 OF KRS CHAPTER 224 IS CREATED TO READ AS FOLLOWS:

(1) An environmental covenant and any amendment to or termination of that environmental covenant shall be recorded in the county clerk's office in each county that contains any portion of the real property subject to the environmental covenant. For the purposes of indexing, a holder shall be treated as a grantee.

(2) Except as otherwise provided in subsection (3) of Section 9 of this Act, an environmental covenant shall be subject to the laws of the Commonwealth governing the recording and priority of interests in real property.

SECTION 10. A NEW SECTION OF SUBCHAPTER 80 OF KRS CHAPTER 224 IS CREATED TO READ AS FOLLOWS:

(1) An environmental covenant shall be perpetual except under the following circumstances:

(a) By its terms, the environmental covenant is limited to a specific duration or is terminated by the occurrence of a specific event;

(b) The environmental covenant is terminated pursuant to Section 10 of this Act;

(c) The environmental covenant is terminated by foreclosure of an interest that has
priority over the environmental covenant; or

(d) The environmental covenant is terminated or modified in an eminent domain proceeding and the following conditions exist:
1. The cabinet is a party to the eminent domain proceeding;
2. All persons identified in subsections (1) and (2) of Section 10 of this Act are given notice of the pendency of the eminent domain proceeding; and
3. A court of competent jurisdiction determines, after hearing, that the termination or modification of the environmental covenant will not adversely affect human health or the environment.

(2) If the cabinet or if any holder determines that the intended benefits of an environmental covenant can no longer be realized, Franklin Circuit Court, under the doctrine of changed circumstances, in an action in which all persons identified in subsections (1) and (2) of Section 10 of this Act have been given notice, may terminate the environmental covenant or reduce its burden on the real property subject to the environmental covenant.

(3) Except as otherwise provided in subsections (1) and (2) of this section, an environmental covenant may not be extinguished, limited, or impaired through the issuance of a tax deed, foreclosure of a tax lien, or application of the doctrine of adverse possession, prescription, abandonment, waiver, lack of enforcement, acquiescence, or a similar doctrine.

SECTION 11. A NEW SECTION OF SUBCHAPTER 80 OF KRS CHAPTER 224 IS CREATED TO READ AS FOLLOWS:

(1) An environmental covenant may be amended or terminated by consent only if the amendment or termination is requested as a modification to the corrective action plan approved by the cabinet, and only if the amendment or termination is signed by:
(a) The cabinet;
(b) The current owner of the fee simple of the real property subject to the covenant;
(c) Each person that originally signed the environmental covenant or the person's
heirs, assigns, or transferees unless:
1. The person or the person's heirs, assigns, or transferees waived in a signed document the right to consent; or
2. A court finds that the person no longer exists or cannot be located or identified with the exercise of reasonable diligence; and

(d) The holder, except as otherwise provided in subsection (4)(b) of this section.

(2) If an interest in real property is subject to an environmental covenant, the interest shall not be affected by an amendment of the environmental covenant unless:
(a) The current owner of the interest consents to the amendment; or
(b) The current owner of the interest has waived in a signed record the right to consent to the amendments.

(3) Except for an assignment undertaken pursuant to a governmental reorganization, assignment of an environmental covenant to a new holder shall be deemed an amendment of the environmental covenant.

(4) Except as otherwise provided in an environmental covenant:
(a) A holder may not assign its interest without consent of the other parties to the environmental covenant specified in subsection (1) of this section; and
(b) A holder may be removed and replaced by agreement of the other parties specified in subsection (1) of this section.

(5) A court of competent jurisdiction may fill a vacancy in the position of the holder.

SECTION 12. A NEW SECTION OF SUBCHAPTER 80 OF KRS CHAPTER 224 IS CREATED TO READ AS FOLLOWS:

(1) A civil action for injunctive or other equitable relief for violation of an environmental covenant may be brought by:
(a) A party to the environmental covenant;
(b) The cabinet;
(c) Any person to whom the environmental covenant expressly grants power to enforce;
(d) A person whose interest in the real property or whose collateral or liability may be affected by the alleged violation of the environmental covenant; or

(e) A municipality or other unit of local government in which the real property subject to the environmental covenant is located.

(2) Sections 1 to 12 of this Act shall not limit the cabinet's exercise of regulatory authority under law with respect to an environmental response project unless the environmental covenant expressly prohibits the cabinet from undertaking specified actions.

(3) A person shall not be responsible for or subject to liability for environmental remediation solely because the person has the right to enforce an environmental covenant.

SECTION 13. A NEW SECTION OF SUBCHAPTER 80 OF KRS CHAPTER 224 IS CREATED TO READ AS FOLLOWS:

The cabinet shall establish and maintain a registry that contains all environmental covenants and any amendments to or terminations of those environmental covenants. The registry also may contain any other information concerning environmental covenants and the real property subject to those environmental covenants that the cabinet deems appropriate. The registry shall be deemed a public record under KRS 61.872 to 61.884.
Senate Bill 175 Authorization to Issue Permits Pursuant to Clean Water Act Section 404

AN ACT relating to the issuance of federal permits by the Natural Resources and Environmental Protection Cabinet.

Be it enacted by the General Assembly of the Commonwealth of Kentucky:

Section 14. KRS 224.16-050 is amended to read as follows:

(1) The cabinet may issue federal permits pursuant to 33 U.S.C. sec. 1342(b) of the Federal Water Pollution Control Act (33 U.S.C. secs. 1251 et seq.) subject to the conditions imposed in 33 U.S.C. secs. 1342(b) and 1342(d). The cabinet may issue federal permits pursuant to 33 U.S.C. sec. 1344(e) and (g) of the Federal Water Pollution Control Act, 33 U.S.C. secs. 1251 et seq., subject to the conditions imposed in 33 U.S.C. sec. 1344(h), (i), and (j). Any exemptions granted in the issuance of NPDES permits shall be pursuant to 33 U.S.C. secs. 1311, 1312, and 1326(a). The cabinet shall report to the standing committees of jurisdiction over environmental protection, and appropriations and revenue, no later than January 1, 2006, on the costs, personnel requirements, and any statutory or regulatory changes needed to support state assumption of the permitting program under 33 U.S.C. 1344(c) and (g), and the anticipated benefits in permit streamlining and environmental quality from state administration of the program.

(2) The cabinet may certify pursuant to 33 U.S.C. sec. 1341 that applicants for a federal permit for the construction or operation of facilities which may result in a discharge into the waters of the Commonwealth will comply with the applicable provisions of the Federal Water Pollution Control Act (33 U.S.C. secs. 1251 et seq.).

(3) The cabinet shall not undertake either of the actions authorized in subsections (1) or (2) of this section unless the Governor of the Commonwealth has determined that such activity will be in the best interests of the environment and the people of the Commonwealth.

(4) The cabinet shall not impose under any permit issued pursuant to this section any effluent limitation, monitoring requirement, or other condition which is more stringent than the
effluent limitation, monitoring requirement, or other condition which would have been applicable under federal regulation if the permit were issued by the federal government.

(5) Nonprofit organizations which have been qualified under Section 501(c)(3) of the Internal Revenue Code and which operate their own treatment facilities and which are designated for capacities less than ten thousand (10,000) gallons per day shall be charged a fee no greater than fifty dollars ($50) by the cabinet to process a construction permit, nor a fee greater than twenty dollars ($20) per year for an operating permit for one (1) facility. These fees shall in no case be higher than the fees charged by the cabinet to process permit applications for comparable privately owned facilities. This subsection shall not apply to any school or waterworks owned by a water district, water association, or municipality and established pursuant to KRS Chapters 74 or 106.

(6) The following activities do not require a permit issued under 33 U.S.C. sec. 1344. The discharge of dredged or fill material:

(a) From normal farming, silviculture, and ranching activities such as plowing, seeding, cultivating, minor draining, harvesting for the production of food, fiber, and forest products, or upland soil and water conservation practices;

(b) For the purpose of maintenance, including emergency reconstruction of recently damaged parts of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, bridge abutments or approaches, and transportation structures;

(c) For the purpose of construction or maintenance of farm or stock ponds, irrigation ditches, or the maintenance of drainage ditches;

(d) For the purpose of construction of temporary sedimentation basins on a construction site which does not include placement of fill material into the navigable waters; or

(e) For the purpose of construction or maintenance of farm roads, forest roads, or temporary roads for moving mining equipment, where the roads are constructed
and maintained, in accordance with best management practices, to ensure that flow and circulation patterns and chemical and biological characteristics of the navigable waters are not impaired, that the reach of the navigable waters is not reduced, and that any adverse effect on the aquatic environment will be minimized.

(7) Prior to assuming delegated authority from the United States Environmental Protection Agency to administer 33 U.S.C. sec. 1344(e) and (g), the cabinet shall enter into a memorandum of agreement with the United States Department of Agriculture (USDA) regarding wetlands delineation on agricultural lands or lands owned or operated by a USDA program participant. The cabinet shall give the same deference to wetlands delineations made by USDA as would have been given by a federal agency administering 33 U.S.C. sec. 1344(e) and (g).

(8) The cabinet may establish by regulation a fee for processing permit applications under 33 U.S.C. sec. 1344.
PROPOSED NEW FEDERAL STANDARDS
FOR DUE DILIGENCE ON
REAL ESTATE TRANSACTIONS:
ALL APPROPRIATE INQUIRY

Dennis J. Conniff
Frost Brown Todd LLC
Louisville, Kentucky

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SECTION C
PROPOSED NEW FEDERAL STANDARDS FOR DUE DILIGENCE ON REAL ESTATE TRANSACTIONS: ALL APPROPRIATE INQUIRY

Dennis J. Conniff
Frost Brown Todd LLC

Presentation for:
Environmental Law Institute
University of Kentucky
College of Law
March 18, 2005

Proposed Rule
40 CFR Part 312
69 FR 52, 542 (August 26, 2004)

Comment Period was extended from October 25, 2004
until November 30, 2004
69 FR 56, 016 (September 17, 2004)

Current Status
No further action on the proposed rule as of this date

What is "All Appropriate Inquiry?"

CERCLA Section 101(35)(A)(1142 USC 9601)
provides a defense to liability if:

"At the time the defendant acquired the facility the
defendant did not know and had no reason to know
that any hazardous substance was disposed of, on,
in, or at the facility."

Commonly referred to as the "Innocent Landowner
Defense"
What is “All Appropriate Inquiry?” (continued)
Also applies to
“Bonafide Prospective Purchasers Defense,”
CERCLA Section 101 (40)(42 USC 9601(40)),
and the
“Contiguous Property Owners Defense,” CERCLA Section 107
(42 USC 9607 (q))

CERCLA § 101(B)(iii)(42 USC 9601) requires the
standards and practices of all appropriate inquiry to include:
- The results of an inquiry by an environmental professional
- Interviews with the past and present owner, operator and occupant of the facility to gather information about potential contamination of the facility
- Review of historical sources to determine previous users of the real property since it was first developed

Small Business Liability and Brownfields Revitalization Act of 2002
CERCLA § 101 (B)(iii)(42 USC 9601) (continued)

- Review of government records
- Visual inspection of the facility and adjoining properties
- The degree of obviousness of the presence or likely presence of contamination at the property and the ability to detect the contamination by appropriate investigation
- Specialized knowledge on the part of the prospective purchaser
  - The relationship of the purchase price to the value of the property if the property was not contaminated
  - Commonly known or reasonably ascertainable information about the property
  - A search for recorded environmental lens

Interim Standards which apply to purchases of property after May 31, 1997 until adoption of the new rule

Use of ASTM Standard E1527-97 "Standard Practice for Environmental Site Assessment: Phase I Environmental Site Assessment Process" satisfies the all appropriate inquiry requirement for purchases of property after May 31, 1997 until the proposed regulation becomes final.

NOTE: The ASTM Standard was modified in 2000, but CERCLA incorporates the 1997 Standard

How Does The Proposed Regulation Differ From ASTM Standard E1527-97?

- More interviews – must include past owners and operators of the facility
- More thorough visual inspection of adjoining properties
- Broader review of government records for facility and adjoining properties
- Report must acknowledge areas of uncertainty
Interviews

Most include one or more of

- Current and past managers with knowledge of the uses of the property
- Past owners, operators and occupants
- Employees of current and past occupants

REVIEW OF GOVERNMENT RECORDS

ASTM Standard provides specific categories of records

Proposed regulation sets forth broad categories:

- Records of reported releases
- Records of activities that may have caused a release, i.e. waste units or storage tanks
- Permit records and records of inspections
- CERCLIS records
- Public health records
- Emergency response notification records
- Lists of engineering and institutional controls (including those applicable to adjoining properties)

VISUAL INSPECTIONS

Must conduct visual inspections of adjoining properties

Must make good faith effort to gain access

If access denied, must attempt inspection from best available public access point to view the adjoining properties
CONTENT OF REPORT
Identify data gaps
  Vague and subject to interpretation of Environmental Professional
  Will probably result in recommendation for sampling to fill the gap

Discussion of the significance of the data gaps
  Sampling and analysis not required to address data gaps but, failure to address data gaps calls "appropriateness" of the inquiry into question

CONTENT OF REPORT
(continued)

Report should comment on fair market value
  Environmental Professional may not be qualified to evaluate fair market value

CONTENT OF REPORT
(continued)

Report good for one year from date of site inspection but lien search and database review must be within 180 days of closing
  Beware the delayed closing
Some Environmental Professionals currently performing ASTM Environmental Site Assessments will not meet the new qualifications.

ASTM has no specific standard for an Environmental Professional.

ROLE OF THE ENVIRONMENTAL PROFESSIONAL (continued)

An Environmental Professional shall:
- Be a P.E. or P.G. with at least 3 years of relevant full-time experience.
- Have a license or certification to perform environmental inquiries and 3 years relevant full-time experience.
- Have a Baccalaureate or higher degree in engineering, environmental science or earth science, and 5 years of relevant full-time experience.
- Have a Baccalaureate or higher degree and 10 years of relevant full-time experience as of the effective date of the regulation.
ROLE OF THE ENVIRONMENTAL PROFESSIONAL (continued)

Prospective purchasers have duty to review the Environmental Professional’s qualifications.

Preference for a professional engineer or professional geologist is consistent with typical practices under Kentucky regulatory requirements that key documents be certified by P.E. or P.G.

ROLE OF THE ENVIRONMENTAL PROFESSIONAL cont.

All inquiries are to be undertaken by or under the supervision of the Environmental Professional.

Proposed regulation does not require Environmental Professional to conduct the site investigation, but preamble indicates this is required.

CONCLUSION

More Cost

Less Certainty
COMBINED SEWER OVERFLOWS

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COMBINED SEWER OVERFLOWS

What Is A Combined Sewer Overflow? ................................................. D-1

How Are CSOs Regulated? ............................................................... D-2

What Is The EPA’s National Policy on CSOs? ................................. D-3

The Intersection Between Water Quality Standards and CSOs ............. D-5

The EPA Is On Its Way ................................................................. D-6

The EPA’s Draft Policy On Blending ................................................ D-7

Extent And Status Of CSOs In The United States In 2004 .................... D-8

Appendix ....................................................................................... D-9

SECTION D
What is a Combined Sewer Overflow?

The United States Environmental Protection Agency defines a combined sewer overflow ("CSO") as a discharge from a combined sewer system at some point prior to a wastewater treatment plant. A combined sewer system is a wastewater collection system which conveys sanitary wastewaters and stormwater through a single pipe system to a treatment plant.

Many of the cities in the eastern part of the United States were built with a combined sewer system. That is, the cities built pipes to convey wastewater and also built inlets into those pipes for stormwater. In a combined sewer system, when you see stormwater enter a culvert off a street, that stormwater goes into the same pipe as the wastewater from a house. That pipe conveys the combined waters to a wastewater treatment plant.

Rain can overwhelm the handling capacity of a combined sewer system and cause a discharge of the water before it gets to the treatment plant. For the most part, the discharged water is stormwater. However, because the stormwater and the wastewaters are combined in the single pipe, the discharged water also includes the wastewater in the pipe. Also, a diversion of stormwater may be necessary to prevent flooding of the treatment plant.

In theory, the best way to stop CSOs from occurring is to build two completely separate
sewer systems. One system would carry wastewater, and the other would carry stormwater. The wastewater system would go to the treatment plant, regardless of whether there was heavy rain in the stormwater system. Building two separate systems, however, would be an enormous undertaking in an existing city and would cost billions of dollars. Instead of a complete sewer separation, communities have developed different methods for ending CSOs. For example, Atlanta is building a deep, underground tunnel which would hold water in the pipes during a storm for treatment later as allowed by the capacity of the treatment plant.

Because CSOs consist of mixtures of sewage and stormwater, they often contain high levels of suspended solids, pathogenic microorganisms, toxic pollutants, floatables, nutrients, oxygen-demanding organic compounds, oil and grease, and other pollutants. CSOs can cause exceedences of water quality standards which may pose risks to human health, threaten aquatic life and its habitat, and impair the usage limit of water waste.

How Are CSOs Regulated?

CSOs are generally regulated through the National Pollutant Discharge Elimination System (NPDES) permit program. EPA has delegated the NPDES permit programs to the states. Therefore, the state permitting authority is the regulator of CSOs. EPA, however, has set forth a national policy regarding CSOs which are implemented through the states and their permits.

EPA retains the authority to inspect systems, evaluate CSO programs, and step in with enforcement proceedings whenever it determines that the state regulators are not aggressive enough. In practice, the authority retained by EPA means that EPA has brought suit against numerous CSO communities in the past few years generally resulting in judicially enforceable consent decrees.

EPA enforcement actions regarding CSOs are typically filed with the EPA and the state as plaintiffs jointly. According to the EPA in its Guidelines for Joint State and Federal Civil Environmental Enforcement Litigation, “the federal government and the states share common goals of, an overlapping authorities for, protecting the environment. This fact is reflected in many of the federal environmental statutes, which are premised on cooperative federalism. It is therefore important that federal and state agencies collaborate to promote, within the regulated community and among the public, the notion of fair and even-handed enforcement. Further, cooperation in environmental enforcement helps ensure that an action taken by one sovereign does not impair the overall goals of the other sovereign.”

For example, the US EPA partnered with the State of Ohio to bring a lawsuit against the Board of County Commissioners of Hamilton County, Ohio and the City of Cincinnati regarding its CSOs and its sanitary sewer overflows (“SSOs”). The lawsuit ended with a Consent Decree that requires the Metropolitan Sewer District of Greater Cincinnati to spend more than $1 billion to bring its sewer system into compliance with the Clean Water Act. The Consent Decree is based on the premise that CSOs were caused by inadequate capacity within the combined sewer system, causing an estimated discharge of six billion gallons of untreated wastewater each year. In addition to money
spent on decreasing CSOs, the Consent Decree requires that the Defendants pay $1.2 million in civil penalties and undertake supplemental environmental programs valued at $5.3 million.

**What is the EPA’s National Policy on CSOs?**

EPA has issued a Guidance for Nine Minimum Controls which describes the EPA’s expectations for management of CSOs. They are:

1. Proper operation and regular maintenance programs for the sewer system and the CSOs.
2. Maximum use of the collection system for storage.
3. Review and modification of pre-treatment requirements to assure CSO impacts are minimized.
5. Prohibition of CSOs during dry weather.
6. Control of solid and floatable material in CSOs.
7. Pollution prevention.
8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts.
9. Monitoring to effectively characterize CSO impacts in the efficacy of CSO controls.

These nine minimum controls are considered by the EPA to be the minimum amount of compliance required of each CSO community and should have been implemented years ago according to the EPA CSO Policy. The EPA’s policy behind adoption of the Nine Minimum Controls was to force communities to do all of the inexpensive and quick-fixes that they could to prevent or treat CSOs. For example, if the sewer system is properly operated and regularly maintained, more wastewater would reach the treatment plant for treatment than in a poorly operating or poorly maintained system. If capacity is down because collection pipes have silted up, under the Nine Minimum Controls, a community would have to clean out the silt as part of a regular maintenance program in order to maximize use of the collection system for storage.

Control of solids and floatables can take several forms. A solid or floatable includes trash or leaves that gets washed into a stream with stormwater flow. Controls can include street cleaning regularly to remove trash and leaves from the streets so that they aren’t washed into the collection system. Controls may also include screens to prevent solids and floatables from entering streams.
when stormwater causes a CSO to discharge.

The EPA's policy stresses its prohibition of CSOs during dry weather because a dry weather CSO is almost always sewage, not stormwater. The dry weather CSO may occur, for example, if a combined sewer is blocked and the discharge backs up behind that blockage until it exits through a CSO pipe. Unlike discharge brought about through stormwater, dry weather discharge is not diluted by the rain and runoff. Dry weather discharges occur only when something is wrong with the system. Wet weather CSOs, on the other hand, actually occur because the system was designed to accept stormwater up to a maximum amount and to discharge the remainder.

The EPA stresses public notification to ensure the public receives notice of CSO occurrences and CSO impacts because many CSOs are discharged into bodies of water where the public may come in contact with the water. For example, in Jefferson County, Kentucky, Beargrass Creek which runs through Cherokee Park contains CSOs which discharge during certain storm events. During storms heavy enough to cause a discharge and immediately thereafter, the level of pollutants in the creek rises. Public notification along this creek tells people to stay out of the creek during such times.

While Nine Minimum Controls was designed to take care of the easy fix, EPA has adopted a national policy regarding CSOs which requires CSO communities to create a Long-Term Control Plan ("LTCP"). This Long-Term Control Plan will be the communities' plan for ridding itself of CSOs. Essential elements of a Long-Term Control Plan are as follows:

1. Characterization, monitoring, and modeling of the combined sewer system.
2. Public participation.
3. Consideration of sensitive areas.
4. Evaluation of alternatives to meet Clean Water Act requirements using either the "presumptive approach" or the "demonstrative approach".
6. Operational plan.
7. Maximizing treatment at the existing treatment plant.
8. Implementation schedule.
9. Post-construction compliance monitoring the program.

By this time, every CSO community should have drafted a Long-Term Control Plan and sent
it to their state permitting authority for approval. Long-Term Control Plan begins with studying the system to determine methods of treating CSOs. This is where communities must be creative. For example, building two separate sewer systems is one incredibly expensive method of treating CSOs. Another less expensive method may be rehabilitating certain pump stations or force mains to maximize flow to the treatment plants. Further, communities may decide to create stormwater storage basins which will hold stormwater while the system is full and release it at a controlled rate after the storm is over to allow for treatment. Some communities have created underground tunnels for storage of stormwater, while others have created detention and retention basins above ground. In Louisville, the Louisville and Jefferson County Metropolitan Sewer District has created a Real Time Control System which utilizes large combined sewers that already exist under the city to hold stormwater behind inflatable dams for later treatment. Whatever the method used, once a Long Term Control Plan is complete, communities are required to implement the plans as soon as practicable. Plan completion is generally made a part of discharge permit requirements.

The Intersection Between Water Quality Standards and CSOs

State water quality standard authority should be involved in the Long Term Control Planning efforts to ensure that development of the plans are coordinated with the review, and possibly revision, of water quality standards on CSO impacted waters. In short, CSO controls should be designed to meet water quality standards. A Long Term Control Plan should give the highest priority to controlling overflows to sensitive areas. Those sensitive areas would include waters with threatened or endangered species and their habitat, waters with primary contact recreation, public drinking water intakes or their designated protection areas, and shellfish beds.

Any Long Term Control Plan begins with characterization, monitoring and modeling of the system so that a community can determine the effect of its planned projects on the system. In order to characterize the sewer system, a community needs to have complete rainfall records for the geographic area of the system in order to evaluate flow variations in the receiving water body correlate between CSOs and receiving water conditions. A community needs the comprehensive representative monitoring program to measure their frequency, duration, flow rate, volume and pollutant concentration of CSO discharge and to assess the impact of the CSOs on the receiving waters. With this data, a community then creates a model of its sewer system to use as a tool in predicting sewer system responses to various wet weather events and assessing water quality impacts when evaluating different control strategies and alternatives. For example, with proper data a modeling, a community could determine what effect increasing the size of a pump station would have on a particular CSO.

The CSO program is presumed to provide an adequate level of control under the presumptive approach if it meets the following criteria:

1. No more than an average of four overflow events per year;
2. The elimination or capture for treatment of no less than 85% by volume of the
combined sewage collected in the system during precipitation events on a system-wide annual average basis; or

3. The elimination or removal of no less than the mass of the pollutants identified as causing water quality impairment through the sewer system characterization monitoring and modeling efforts for the volumes that would be eliminated or captured for treatment under 2.

Under the demonstrative approach, a community may demonstrate that a selective control program is adequate to meet the water quality base requirements of the Clean Water Act. Such a demonstration requires the following:

1. The demonstration that the Plan Control Program is adequate to meet water quality standards and protect designated uses, unless water quality standards or uses cannot be met as a result of natural background conditions or pollution sources other than CSOs;

2. The CSO discharges remaining after implementation of the control program will not preclude the attainment of water quality standards or the receiving waters designated uses or contribute to their impairment;

3. The program will provide the maximum pollution reduction benefits reasonably attainable; and

4. The program is designed to allow cost-effective expansion or cost-effective changes if additional controls are subsequently determined to be necessary to meet water quality standards or designated uses.

Water quality standards are adopted by each state and serve as the goals for the water body and the legal basis for the water quality-based permit requirements under the Clean Water Act. Water quality standards consist of uses which the states designate for their water bodies, criteria to protect the uses, and anti-degradation policy to protect the water quality improvements gained and other policies affecting the implementation of the standards.

A primary objective of the EPA’s long-term control plan is to meet water quality standards including the designated uses through reducing risk to human health and the environment by eliminating, relocating or controlling CSOs to the affected waters. The Clean Water Act requires states to periodically, but at least once every three years, to hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards. The states must provide the public an opportunity to comment on any proposed revisions to water quality standards and all revisions must be submitted to EPA for review and approval.

*The EPA Is On Its Way*
EPA's CSO policies have been well-defined for a decade, but recently their enforcement of these policies has increased. Although EPA has delegated permitting authority to the states and the CSO policies should be implemented under permits, EPA has kept a tight reign on these programs. In theory, EPA should allow the states to enforce this EPA policy under the permits that they issue. EPA should only step in and enforce their policy if the state has failed to do so. In practice, however, EPA doesn't wait for a state to enforce or not enforce the CSO policy. EPA’s general practice is to come in to a community and begin an enforcement project, bringing the state in as co-plaintiff.

Communities must be pro-active with their CSO policy and must go on the offense in explaining their CSO programs and CSO successes. Further, communities would be wise to work closely with their state permitting authorities so that the state is on their side in supporting their CSO programs if and when the EPA comes in to assert a deficiency.

The EPA’s CSO policy is intentionally open-ended to allow communities to tailor a CSO program that fits. This can work against a community, however, if EPA levels criticism that their CSO policy is not doing enough fast enough. To counter or head off any such criticism, communities must communicate early and often with their permitting authorities and must continue steady progress toward meeting their CSO plans and be able to justify those plans as adequate for their community. If communities don't do this, the EPA will dictate a CSO policy that very well may not fit the community at all.

While EPA’s policy side can be quite creative in developing and recognizing successful CSO policies, the enforcement side is not nearly as flexible. EPA enforcement favors sewer separations and deep tunnels which are both expensive, capital-intensive programs that may or may not answer an individual community’s CSO problems.

**The EPA's Draft Policy On Blending**

Currently, the EPA has a draft policy proposed on the practice of blending which will give communities another tool when constructing their EPA policy. Blending occurs when large volumes of stormwater exceed the capacity of the secondary treatment units at a sewage treatment facility. In dry weather, incoming wastewater is treated by primary units and then secondary units. With blending, a wastewater treatment facility would still treat as much incoming wastewater as it can through both the primary and secondary treatment units, but amounts in excess of the capacity of the secondary units are diverted after they leave the primary unit. These excess amounts are not given secondary treatment, but are later recombined or blended with the wastewater that has gone through the secondary units. These blended flows are disinfected and discharged. Blending would help manage high-flow events at wastewater treatment plants while maintaining compliance with permit limits. A proposed policy would clarify the requirements of the Clean Water Act and applicable regulations on the practice of blending and would require that municipal sewage treatment facilities implement safeguards, including enhanced monitoring.

Blending has been practiced by quite a few communities, yet the EPA’s policy regarding
blending has been ambiguous. With the new policy, the EPA would clarify its blending regulations. Blending should be addressed in the permitting process which would specify conditions under which blended discharges are allowed and set forth monitoring requirements of the discharge. The ultimate discharge would still have to meet the terms of the permit, regardless of any blending. Blending would reduce the frequency and volume of CSOs by allowing more water to flow through the treatment plant. It would also ensure that the increased flow to the plant would meet discharge limits and would be given primary treatment and disinfectant. The use of blending as an option for managing wet weather flows coming into a sewage treatment facility can help reduce overflows of sewage from elsewhere in the system through CSOs. Blending allows a much higher volume of incoming wastewater to receive treatment and disinfection, thereby reducing or possibly eliminating much more harmful overflows of untreated sewage. Blending is currently being used in many communities. In fact, many existing plants were designed to blend and many permits for these plants recognize blending. The EPA originally released the draft policy for public comment in late 2003, setting a deadline for comment on January 9, 2004. As of today, the policy has not been acted on.

**Extent And Status Of CSOs In The United States In 2004**

In 2004, the EPA issued a report to Congress on both CSOs and sanitary sewer overflows. At that time, there were 828 NPDS permits with authorized discharges from CSO outfalls in 32 states. The total number of authorized outfalls listed in those permits was 9,348. Most combined sewer systems are located in the Northeast and Great Lakes region. The estimated volume of CSO discharge nationwide is 850 billion gallons per year. Only 59% of communities have submitted a long-term control plan to their permitting authorities. This is up from 34% in 2001.

Thirty-six federal judicial enforcement actions have been concluded against municipalities in Regions 1 through 5 as a result of CSO violations. In most cases, the relevant state served as Co-Plaintiff with the EPA. Sixty federal administrative orders have been issued for CSO violations in Regions 1, 3, and 5 since 1987. Two CSO administrative penalty orders were issued to municipalities in Massachusetts. During the same time, state-initiated CSO enforcement cases numbered 16, and 53 state-initiated administrative actions for CSO violations were initiated. Additionally, states issued 18 CSO administrative penalty orders.

In 2004, the EPA estimated that current combined capital investment in wastewater infrastructure from federal, state and local governments is just over $13 billion annually. According to industry organizations, individual utilities can pay as much as 90% of capital expenses. While capital expenditures by state and local governments have remained relatively constant since 1988, annual operating and maintenance expenditures have more than doubled. Many municipalities have made significant investments in CSO controls within their jurisdictions. In the 2004 report, EPA was able to document expenditures on CSO controls in 48 communities, totaling more than $6 billion. In reviewing data from 71 CSO communities, EPA projected that these communities needed more than $22 billion for projected CSO capital needs.
The U.S. Environmental Protection Agency (EPA or "the Agency") is transmitting this Report to Congress on the extent of human health and environmental impacts caused by municipal combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs), including the location of discharges causing such impacts, the volume of pollutants discharged, the constituents discharged, the resources spent by municipalities to address these impacts, and the technologies used by municipalities to address these impacts.

Overview and Background

Why is EPA Preparing this Report?

In the Consolidated Appropriations Act for Fiscal Year 2001, P.L. 106-554 (or "2000 amendments to the Clean Water Act"), Congress requested two reports and the development of a technology clearinghouse. The first report was transmitted to Congress in December 2001 as Report to Congress—Implementation and Enforcement of the Combined Sewer Overflow Control Policy (EPA 2001a). This second Report to Congress fulfills the requirement that:

Not later than 3 years after the date of enactment of this Act, the Administrator of the Environmental Protection Agency shall transmit to Congress a report summarizing—

(A) the extent of human health and environmental impacts caused by municipal combined sewer overflows and sanitary sewer overflows, including the location of discharges causing such impacts, the volume of pollutants discharged, and the constituents discharged;

(B) the resources spent by municipalities to address these impacts; and

(C) an evaluation of the technologies used by municipalities to address these impacts.

Further, the technology information compiled for this Report to Congress will serve as a key element in developing the technology...
clearinghouse requested by P.L. 106-554.

What are CSOs and Why are They a Problem?
Two types of public sewer systems predominate in the United States: combined sewer systems (CSSs) and sanitary sewer systems (SSSs). CSSs were among the earliest sewer systems constructed in the United States and were built until the first part of the 20th century. As defined in the 1994 CSO Control Policy (EPA 1994a), a CSS is:

A wastewater collection system owned by a state or municipality (as defined by Section 502(4) of the Clean Water Act) that conveys domestic, commercial, and industrial wastewaters and storm water runoff through a single pipe system to a publicly-owned treatment works (POTW).

During wet weather events (e.g., rainfall or snowmelt), the combined volume of wastewater and storm water runoff entering CSSs often exceeds conveyance capacity. Most CSSs are designed to discharge flows that exceed conveyance capacity directly to surface waters, such as rivers, streams, estuaries, and coastal waters. Such events are called CSOs.

A CSO is defined as:

The discharge from a CSS at a point prior to the POTW treatment plant.

Some CSO outfalls discharge infrequently, while others discharge every time it rains. Overflow frequency and duration varies from system to system and from outfall to outfall within a single CSS. Because CSOs contain untreated wastewater and storm water, they contribute microbial pathogens and other pollutants to surface waters. CSOs can impact the environment and human health. Specifically, CSOs can cause or contribute to water quality impairments, beach closures, shellfish bed closures, contamination of drinking water supplies, and other environmental and human health problems.

What are SSOs and Why are They a Problem?
Since the first part of the 20th century, municipalities in the United States have generally constructed SSSs. For the purposes of this Report to Congress, an SSS is:

A municipal wastewater collection system that conveys domestic, commercial, and industrial wastewater, and limited amounts of infiltrated groundwater and storm water, to a POTW.

SSSs are not designed to collect large amounts of storm water runoff from precipitation events. Areas served by SSSs often have a municipal separate storm sewer system (MS4) to collect and convey runoff from rainfall and snowmelt.

Untreated or partially treated discharges from SSSs are commonly referred to as SSOs. SSOs have a variety of causes including blockages, line breaks, sewer defects that allow excess storm water and groundwater to overload the system, lapses in sewer system operation and maintenance, inadequate sewer design and
construction, power failures, and vandalism. An SSO is defined as:

*An untreated or partially treated sewage release from a SSS.*

The discussion of SSOs in this report, including national estimates of SSO volume and frequency, does not account for discharges from points after the headworks of the treatment plant, regardless of the level of treatment, or backups into buildings caused by problems in the publicly-owned portion of the SSS. EPA found that backups into buildings are not widely tracked by permitting authorities.

Generally speaking, SSOs can occur at any point in an SSS, during dry weather or wet weather. SSOs include overflows that reach waters of the United States. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations. A limited number of municipalities have SSOs that discharge from fixed points within their sewer system. SSSs can back up into buildings, including private residences. When sewage backups are caused by problems in the publicly-owned portion of an SSS, they are considered SSOs.

SSOs can range in volume from one gallon to millions of gallons. The microbial pathogens and other pollutants present in SSOs can cause or contribute to water quality impairments, beach closures, shellfish bed closures, contamination of drinking water supplies, and other environmental and human health problems.

### What Statutory and Regulatory Framework Applies to CSOs and SSOs?

With extensive and documented stakeholder support, EPA issued its final CSO Control Policy on April 19, 1994 (59 FR 18688). The CSO Control Policy “represents a comprehensive national strategy to ensure that municipalities, permitting authorities, water quality standards authorities, and the public engage in a comprehensive and coordinated effort to achieve cost-effective CSO controls that ultimately meet appropriate health and environmental objectives.”

When the CSO Control Policy was released, many stakeholders, key members of Congress, and EPA advocated for it to be endorsed in the Clean Water Act to ensure its full implementation. In the Consolidated Appropriations Act for Fiscal Year 2001, P.L. 106-554, Congress stated that:

> ...each permit, order, or decree issued pursuant to this Act after the date of enactment of this subsection for a discharge from a municipal combined storm and sanitary sewer shall conform to the CSO Control Policy signed by the Administrator on April 11, 1994.

SSOs that reach waters of the United States are point source discharges, and, like other point source discharges from municipal SSSs, are prohibited unless authorized by an National Pollutant Discharge Elimination System (NPDES) permit. Moreover, SSOs, including those that do not reach waters of the United States, may be indicative of improper operation and maintenance of the sewer system,
and thus may violate NPDES permit conditions.

**What Methodology Did EPA Use for this Report to Congress?**

The basic study approach for this report was to divide the congressional request into a series of discrete study questions, then to identify and collect existing data appropriate to each study question. This effort entailed:

- Reviewing existing data collected by EPA and other federal agencies, state and local governments, and non-governmental organizations;

- Searching the existing literature for environmental and human health impacts attributable to CSOs and SSOs, as well as the cost and technologies used to control CSOs and SSOs;

- Organizing forums to work with EPA and external experts and stakeholders on the specific questions addressed in this report;

- Updating, verifying, and establishing latitude and longitude coordinates for the inventory of CSO outfalls developed as part of EPA's 2001 *Report to Congress—Implementation and Enforcement of the Combined Sewer Overflow Control Policy*;

- Collecting SSO event information from those states that compile data on the volume, frequency, and cause of SSO events in electronic data management systems;

- Developing national estimates of the volume and frequency of CSOs and SSOs; and

- Developing simple models to estimate environmental and human health impacts where there was an absence of direct cause-and-effect data.

EPA emphasized the collection, compilation, and analysis of existing data for this report. This effort allowed the Agency to expand its knowledge about CSOs and SSOs, and to identify gaps in the existing data and in current systems that provide such data. This Report to Congress recognizes that EPA should and will continue to investigate the environmental and human health challenges posed by wet weather.

**Response to Congress**

EPA's response to the congressional request set forth in P.L. 106-554 is presented below, organized into five themes addressing both CSOs and SSOs:

- Characterization
- Environmental impacts
- Human health impacts
- Control technologies
- Resources spent

**What are the Location, Volume of Pollutants, and Constituents of CSOs and SSOs?**

Currently, 828 NPDES permits authorize discharges from 9,348 CSO outfalls in 32 states (including the District of Columbia). As shown in Figure ES.1, most CSSs are located in the Northeast and Great Lakes regions.
The estimated volume of CSO discharged nationwide is 850 billion gallons per year. The number of CSSs and CSO permits has decreased slightly since publication of EPA's 2001 Report to Congress—Implementation and Enforcement of the Combined Sewer Overflow Control Policy. Further, the percentage of CSO long-term control plans (LTCPs) that have been submitted to permitting authorities has increased from 34 to 59 percent. This represents progress in controlling CSOs in the United States.

As shown in Figure ES.2, SSSs are located across the country. EPA's 2000 Clean Watersheds Needs Survey (CWNS) Report to Congress reported 15,582 municipal SSSs with wastewater treatment facilities; an additional 4,846 satellite SSSs collect and transport wastewater flows to regional wastewater treatment facilities. SSOs have the potential to occur in any of these SSSs.

EPA estimates that between 23,000 and 75,000 SSO events occur per year in the United States, discharging a total volume of three to 10 billion gallons per year. This estimate does not account for discharges occurring after the headworks of the treatment plant or backups into buildings caused by problems in the publicly-owned portion of an SSS. The majority of SSO events are caused by sewer blockages that can occur at any time. The majority of SSO volume appears to be related to events caused by wet weather and excessive inflow and infiltration.
A comparison of the estimated annual CSO and SSO discharge volume with treated wastewater is presented in Table ES.1.

CSOs and SSOs contain untreated wastewater, and therefore the pollutant concentration depends on the service population, the characteristics of the sewer system, weather conditions, any treatment provided, and other factors. The principal pollutants present in CSOs and SSOs are:

- Microbial pathogens
- Oxygen depleting substances
- Total suspended solids (TSS)
- Toxics
- Nutrients
- Floatables and trash

Pollutant concentrations in CSOs and SSOs vary substantially, not only from community to community and event to event, but also within a given event. CSOs and SSOs contribute pollutant loadings to waterbodies where discharges occur. It is important to note that waterbodies also receive pollutants of the types found in CSOs and SSOs from other sources such as storm water runoff.
What is the Extent of Environmental Impacts Caused by CSOs and SSOs?

Pollutant concentrations in CSOs and SSOs may be sufficient to cause a violation of water quality standards, precluding the attainment of one or more of the designated uses (e.g., swimming, boating, fishing) for the waterbody.

CSOs and wet weather SSOs discharge simultaneously with storm water runoff and other nonpoint sources of pollution. EPA recognizes that this can make it difficult to identify and assign specific cause-and-effect relationships between CSOs, SSOs, and observed water quality problems. In addition, EPA found that the identification and quantification of environmental impacts caused by CSOs and SSOs at the national level is difficult because there is no comprehensive national data system for tracking the occurrence and impacts of CSOs and SSOs.

Nevertheless, CSOs and SSOs can by themselves affect the attainment of designated uses and cause water quality standards violations. Average bacteria concentrations in CSOs and SSOs may be several thousand times greater than water quality standard criteria, and waterbodies that receive CSO and SSO discharges may lack sufficient dilution or assimilative capacity. Based on modeling analysis conducted by EPA and summarized in Table 5.6 of this report, water quality standards are projected to be violated frequently, even in the absence of other sources of fecal coliform pollution, where discharges from SSO events include more concentrated wastewater (e.g., SSOs with limited I/I) or when SSOs discharge to smaller receiving waters such as a stream or small tributary.

As shown in Figure ES.3, CSOs were responsible for 1 percent of reported advisories and closings, and 2 percent of advisories and closings that had a known cause during the 2002 swimming season. SSOs were reported to be responsible for 6 percent of reported advisories and closings, and 12 percent of advisories and closings having a known cause. Studies also identify CSOs and SSOs as a cause of shellfish harvesting prohibitions and restrictions in classified shellfish growing areas.

The environmental impacts of CSOs and SSOs are most apparent at the local level, and as the result of large or recurrent discharges. Examples of localized impacts due to CSOs and SSOs include:

<table>
<thead>
<tr>
<th>Source</th>
<th>Annual Discharge Volume (billion gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treated wastewater(^a)</td>
<td>11,425</td>
</tr>
<tr>
<td>CSO(^b)</td>
<td>800</td>
</tr>
<tr>
<td>SSO(^c)</td>
<td>3 - 10</td>
</tr>
</tbody>
</table>

\(^a\) EPA 2000a  
\(^b\) GPRACCSO model, Section 4.5.1 of this report  
\(^c\) Section 4.7.4 of this report
The City of Indianapolis assessed receiving waters in the city and ranked CSOs high in importance relative to other sources of pollution.

The State of North Carolina has documented fish kills attributed to SSOs since 1997.

The State of New Jersey closed over 30,000 acres of classified shellfish growing areas in the Raritan Bay area due to a large SSO in 2003.

What is the Extent of Human Health Impacts Caused by CSOs and SSOs?

Microbial pathogens and toxics can be present in CSOs and SSOs at levels that pose risks to human health. Human health impacts occur when people become ill due to contact with water or ingestion of water or shellfish that have been contaminated by CSO or SSO discharges. In addition, CSSs and SSSs can back up into buildings, including private residences. These discharges provide a direct pathway for human contact with untreated wastewater. Exposure to land-based SSOs typically occurs through the skin via direct contact. The resulting diseases are often similar to those associated with exposure through drinking water and swimming (e.g., gastroenteritis), but may also include illness caused by inhaling microbial pathogens.

Although it is clear that CSOs and SSOs contain disease-causing pathogens and other pollutants, EPA has limited information on actual human health impacts occurring as a result of CSO and SSO events. Further, CSOs and wet weather SSOs also tend to occur at times (e.g., storm events) when exposure potential may be lower.

Identification and quantification of human health impacts caused by CSOs and SSOs at the national...
level is difficult due to a number of factors, including under-reporting and incomplete tracking of waterborne illness, contributions of pollutants from other sources, and the lack of a comprehensive national data system for tracking the occurrence and impacts of CSOs and SSOs. As an alternative to direct data on human health impacts, EPA modeled the annual number of gastroenteritis cases potentially occurring as a result of exposure to water contaminated by CSOs and SSOs at BEACH survey beaches. As shown in Table 6.6, EPA found that CSOs and SSOs are estimated to cause between 3,448 and 5,576 illnesses annually at the subset of recreational areas included in the analysis.

What Technologies Have Municipalities Used to Reduce the Impacts of CSOs and SSOs?

Municipalities have many options in selecting technologies to reduce the impacts of CSOs and SSOs. These technologies range from large-scale structural projects (e.g., wet weather storage facilities) to operation and maintenance practices (e.g., sewer cleaning). Technology selection is determined by characteristics of the sewer system, problems identified in the sewer system, performance goals established for the sewer system, resources available, and other site-specific considerations.

Municipalities employ a wide variety of technologies and operating practices to maintain existing infrastructure, minimize the introduction of unnecessary waste and flow into the sewer system, increase capture and treatment of wet weather flow reaching the sewer system, and minimize the impact of any subsequent discharges on the environment and human health. For this Report to Congress, technologies used to address CSOs and SSOs have been grouped into five broad categories:

- Operation and maintenance practices
- Collection system controls
- Storage facilities
- Treatment technologies
- Low-impact development techniques

EPA, states, and municipalities have made progress in developing tools and strategies for reducing the frequency and volume of CSOs and SSOs. Much remains to be done, however, to fully realize the objectives of the Clean Water Act and the CSO Control Policy. Municipalities have suggested that limited resources prevent them from acquiring and implementing technologies as quickly as they and regulatory agencies would prefer.

What Resources Have Municipalities Spent to Address the Impacts of CSOs and SSOs?

Municipal resources used to address CSOs and SSOs are documented in different ways. EPA’s estimates of municipal CSO expenditures rely on requests for Clean Water State Revolving Loan Fund (CWSRF) loans and on documents submitted
to EPA's CWNS, which include CSO LTCPs and other facility planning documents. In addition, EPA uses a cost curve methodology to estimate costs for communities with CSSs that do not submit documentation. In communities served by SSSs, SSO control expenditures are generally a combination of general operation and maintenance (O&M) and capital expenditures. In total, EPA documented expenditures of more than $6 billion on CSO control (through 2002) and at least $4 billion on SSO control (1998-2002). EPA's 2000 CWNS estimated that at least an additional $50.6 billion is required to capture no less than 85 percent of the CSO by volume, and an additional $88.8 billion is required to control SSOs over the next 20 years (EPA 2003b).

What Actions Should be Taken to Reduce the Impacts of CSOs and SSOs?

In its preparation of this report, EPA found that:

Maintaining and improving the integrity of the nation's wastewater infrastructure will protect the high level of environmental quality and public health enjoyed in the United States. Proper O&M of the nation's sewers is integral to ensuring that wastewater is collected, transported, and treated at POTWs; and to reducing the volume and frequency of CSO and SSO discharges. Many existing structural and non-structural technologies are well suited for CSO and SSO control. Emerging technologies and innovative practices hold promise for even greater reductions in pollution. Municipal owners and operators of sewer systems and wastewater treatment facilities need to manage their assets effectively and implement new controls, where necessary, as this infrastructure continues to age.

The impacts of CSOs and SSOs are a concern at the local watershed level. CSOs and SSOs are two among many sources of pollutants that contribute to urban water quality problems. The watershed approach is central to water quality assessments and the identification of control strategies. The presence of sewer systems in most developed watersheds nationwide underscores the importance of considering potential SSOs impacts on water quality. Similarly, the presence of CSOs in 32 states places them in many watersheds across the country. EPA, states, and municipalities should strive toward better integration of wet weather programs with other NPDES, compliance assistance, and enforcement activities. Better integration of programs and activities at the watershed level will provide economies of scale with respect to monitoring and reporting, protecting water quality, and reducing the impacts of CSOs and SSOs.

Improved monitoring and reporting programs would provide better data for decision-makers on CSO and SSO control. Better tracking of environmental impacts and the incidence of waterborne disease would increase national understanding of the environmental and human health impacts associated with CSOs, SSOs,
and other sources of pollution. Use of standardized reporting formats for information on the occurrence and control of CSOs and SSOs would enable EPA, states, and others to track pollutant loads and the performance of controls. Recent EPA efforts such as WATERS (Watershed Assessment, Tracking, and Environmental Results) work to unite national water quality information that was previously available only from several independent and unconnected databases. EPA will continue to work to improve the information available.

The success that the nation has achieved in improving water quality since passage of the Clean Water Act is due to the collective efforts of federal and state agencies, municipalities, industry, non-governmental organizations, and citizens. Continued cooperation among these groups is essential to meet the challenges to clean water that lie ahead. As described in this Report to Congress, numerous pollutant sources threaten the environment and human health, but establishing direct cause-and-effect relationships is often difficult. The information necessary to manage water quality problems comes from many sources. EPA recognizes the value of working with stakeholders and has pursued a strategy of extensive stakeholder participation in its policy-making on CSO and SSO issues. Likewise, as communities continue to implement CSO and SSO controls, further cooperation with municipal, industry, and environmental organizations is essential to ensure successful development and implementation of environmental programs.
Combined Sewer Overflow Management Fact Sheet
Pollution Prevention

DESCRIPTION

This fact sheet describes the use of pollution prevention best management practices (BMPs). These practices are intended to both reduce the volume of pollutants entering a combined sewer system (CSS), and to help reduce the number of combined sewer overflows (CSOs) that occur during storm water runoff producing events.

Combined sewer systems (CSSs) are wastewater collection systems designed to carry both sanitary sewage and storm water runoff in a single pipe to a wastewater treatment plant. Combined sewer overflows occur during wet weather periods when the hydraulic capacity of the CSS becomes overloaded. This causes overflows at discharge points within the CSS. Substantial water quality and habitat benefits can be achieved by keeping pollutants out of the CSS, and thus out of CSO discharges. This can often be accomplished through the implementation of a pollution prevention program. Pollution prevention involves the use of materials, processes, and practices that reduce or eliminate the creation of pollutants and waste at the source.

Pollution prevention is broadly applicable, and is one of the Nine Minimum Controls (NMCs) every CSS community is expected to implement. Pollution prevention generally relies on low technology practices that are applied by many individuals and commercial and industrial establishments. Successful programs should include public education, municipal participation, and proper regulation. Examples include:

- Waste reduction and recycling
- Commercial/Industrial pollution prevention
- Street cleaning
- Catch basin maintenance
- Water conservation
- Fertilizer and pesticide control
- Erosion and sediment control at construction sites

Many of these practices overlap those addressed in other components of the NMCs, including: operating and maintaining the CSS; maximizing collection system storage and flow to wastewater treatment plants; reviewing and modifying pretreatment programs; and controlling solids and floatables in CSO discharges. A comparison the efforts and relative cost of implementing pollution prevention technologies is presented in Table 1. These practices are further described in the sections below:

Solid Waste Management

Solid waste management (SWM) can play an important role in reducing the amount of litter and pollutants that enter the CSS. Successful SWM programs must address issues of bulk waste disposal (e.g. household appliances, batteries, and tires), illegal dumping by both businesses and residential property owners, hazardous waste collection and disposal, street debris and animal waste removal. Programs may also include banning or substituting
products and packaging materials that do not readily degrade in the environment.

**Waste Reduction and Recycling**

Waste reduction is the design, purchase, manufacture, or use of products and materials which limit the amount of solid waste generated. Recycling is the recovery and reuse of waste materials. Waste reduction and recycling reduce the total amount of solid waste generated by a community. This helps limit the amount of trash that finds its way into the CSS.

In the home, reusing and recycling common materials such as plastic and paper reduces pollution and eliminates the need for disposal. A well-organized recycling program for homeowners with clearly marked containers, established transfer locations, and regular collection schedules can be very effective in reducing the total amount of solid waste produced. For industry, waste reduction and recycling can improve environmental compliance, lower accident rates, and reduce regulatory liabilities, reporting requirements and insurance rate. Waste reduction and recycling can also increase profits by reducing the costs of waste disposal, handling, treatment, and the purchase of raw materials.

**Commercial and Industrial Pollution Prevention**

Commercial and industrial establishments contribute large amounts of pollutants to CSSs. These pollutants originate as either industrial waste or storm water runoff discharged directly to the CSS. Adherence to pretreatment requirements, the development of spill control plans, and the prevention or minimization of industrial discharges during wet weather periods can reduce the amount of industrial waste in CSOs. Employing best management practices (BMPs) such as providing temporary covers for outside storage areas, using rain-proof dumpsters, performing vehicle maintenance in covered bays, and maintaining good housekeeping for all areas exposed to storm water runoff, is important. Other examples of BMPs to prevent commercial and industrial pollution include the installation of oil and grease traps in catch basins (inlet chambers which provide access for runoff to enter the CSS) that service commercial and industrial areas, and the use of covered areas and/or reverse berms to redirect runoff away from truck and railcar load/offload areas. When coordinated in an overall pollution prevention plan, these practices
can reduce both storm water volume and pollutants discharged to a CSS during wet weather periods.

**Street Cleaning**

Street cleaning can be an effective means of reducing the accumulation of street debris. Street debris is typically composed of food and beverage wrappers and containers, paper and plastic bags, leaves, and sand/soil. Frequent cleaning limits the quantities of dirt, debris, and pollutants including floatables, entering the CSS during wet weather events. Sweeping also contributes to improved water quality by reducing nutrient, BOD, bacterial and metal loads delivered to the CSS.

**Catch Basin Maintenance**

Regularly scheduled catch basin cleaning can prevent debris, sediment, and floatables from accumulating in the CSS. Cleaning prevents potential clogging of the basins, which helps both to avoid localized flooding and to maintain basin sediment trapping ability. The available options for catch basin cleaning are manual cleaning, vacuum cleaning, and cleaning with eductor equipment. Catch basin cleaning is also beneficial to collection system performance because it reduces the likelihood of fouling or damaging downstream pumping equipment, and it prevents sediment buildup that can reduce capacity and accelerate CSO events.

**Water Conservation**

Water conservation can be defined as practices, techniques, and technologies that improve the efficiency of water use. An effective water conservation program helps to reduce CSOs by reducing sanitary flow. This reduction provides a net increase in CSS collection and treatment capacity for storm water during storm events.

**Fertilizer and Pesticide Control**

Fertilizers and pesticides washed from the ground surface and transported with runoff into CSSs during wet weather events can be contained in CSO discharges. Fertilizers, which contain high levels of nitrogen and phosphorous, contribute to eutrophication of receiving waters. In addition, pesticides are potentially toxic to aquatic life. While the individual contribution of pollutants from a homeowner’s lawn, the grounds of a business establishment, or a municipal park may be small, the cumulative impact on water quality may be significant. The control of urban fertilizer and pesticide levels involves convincing residents, institutions, and municipal departments to adhere to handling and application techniques that limit pollutant runoff. Integrated pest management (IPM) programs that provide information on alternatives to traditional fertilizer, pesticide, and herbicide practices are currently being developed within local and state governments.

**Sediment and Erosion Control**

Sediment and erosion control practices can play an important role in reducing the volume of storm water and the amount of sediment delivered to the CSS during wet weather periods. Well-managed soil retains rainwater, and tends to keep sediment on site. In contrast, poorly-managed soil, particularly at construction sites, produces unnecessary runoff and increased sediment loads. Activities that accelerate erosion include: removing vegetative cover; compacting or disturbing the soil; changing natural drainage patterns; and increasing the amount of impermeable surfaces.

The impact of increased sediment and erosion on the CSS can be substantial. System capacity is reduced by the excess storm water, leading to larger and more frequent overflows. In addition, sediment often clogs catch basins and contributes to inefficient operation of the CSS. Receiving waters are also impacted as sediment increases turbidity, upsets natural habitat and aquatic life, and adds undesirable nutrients, metals, and other toxic substances.

**APPLICABILITY**

Pollution prevention prevention programs should be applicable in all CSO communities. By relying on a combination of public awareness programs and community initiatives, these programs can play a significant role in reducing CSOs. and other toxic substances.
ADVANTAGES AND DISADVANTAGES

Solid Waste Management

The illegal disposal of household trash and chemicals is a major problem in most CSO communities. Public education is essential to solving this problem. In addition to raising awareness of waste disposal issues, programs must provide direction to the general public. People need accurate information on recyclable waste materials. Clear and concise instructions for preparing all types of household wastes, including bulk wastes, for curbside pickup or drop-off must be disseminated. Maintaining convenient hours of operation for waste drop-off facilities will make it easier for residents to properly dispose of waste items. Frequently emptying municipal trash receptacles, so that they remain empty and clean, will prevent spillover and encourage their use. The stenciling of storm drain catch basins serves to educate the public about the connection between storm runoff and receiving waters, and the dangers of dumping waste, such as paintbrush residues and concrete truck washout, into CSS inlets. To prevent animal waste from entering the CSS, municipalities can institute a so-called pooper-scooper regulation and place signs near popular walking trails or common areas reminding people to clean up after their pets.

Waste Reduction and Recycling

Like solid waste management, recycling relies on voluntary cooperation. Public education will be an essential part of any successful recycling effort. Recycling involves encouraging the reuse of materials in both household and industrial settings. Many reusable substances, such as motor oil and cleaning products, require special storage containers and recycling techniques.

Setting a recycling goal for the community is important. However, it takes time for recycling programs to become established and to have a measurable impact. To encourage participation recycling must be made convenient. Providing reliable curbside collection may be the best way to encourage household participation. Pick-ups should occur on a regular schedule, as often as once a week. Drop-off centers where residents may leave recyclable materials at scheduled times can also be established. Offices can contract with paper recyclers for onsite pickup of waste paper and other recyclables.

Commercial and Industrial Pollution Prevention

Pretreatment requirements can be reviewed and modified to control the amount and characteristics of industrial waste entering the CSS. Sewer use ordinances, rules, and regulations can be implemented to control pollutant concentrations, and, in some instances, the timing of discharges to the CSS. CSO communities can provide technical assistance and incentives for pollution prevention to commercial and industrial establishments. Additionally, CSO communities can implement broad programs that encourage commercial and industrial establishments to participate in pollution prevention programs, and they can recognize successes. These programs include strategies for reducing the volumes of industrial wastes generated through: material substitution; process modification; chemical and water use reductions; sensible chemical storage; spill prevention, and good housekeeping.

Street Cleaning

Street sweeping services are provided by either municipal or contracted personnel. The overall effectiveness of a street cleaning program is primarily a function of the frequency and regularity of the cleanings. The frequency of street sweeping is determined by need, the number of miles to be served, and local budget constraints. Other factors for consideration include climatic conditions (e.g., rainfall frequency and season), the size of particles captured by the cleaning, and street-parking regulations. Because parked cars prohibit the street cleaner from removing curbside litter, enforcement of parking regulations is essential.

Sweeping programs tend to be implemented city-wide, not just in areas serviced by CSOs. Budget constraints may require that sweeping efforts be timed to be most effective. Early spring cleanings are essential in areas subject to winter salt, sand, and cinder applications. Late fall sweepings are essential in areas with sustained winter rains. In
general, street sweeping provides appreciable aesthetic benefits that go well beyond CSO control.

Catch Basin Maintenance

Implementing a successful catch basin cleaning program requires a commitment to regularly-scheduled cleaning and maintenance. Catch basins should be cleaned whenever material deposited in the bottom of the basin reaches a height greater than one-third of the depth from the basin bottom to the lowest opening into or out of the basin. Catch basin cleaning is thought to mitigate the "first flush" effect, which occurs when the initial major storm water flow into a catch basin re-suspends deposited material and flushes it out through the outflow pipe. A study comparing the effect of different cleaning schedules found that quarterly cleanings appear to be the most effective in reducing pollutant loads.

Water Conservation

Water conservation programs should be combined with a strong public education component that emphasizes the financial and environmental benefits associated with water conservation and water use efficiency. Water conservation tips can be sent to customers in newsletters that accompany water bills. Local ordinances can be developed to ensure that water conservation practices are standardized. Utilities can also offer technical advice and incentives to customers to encourage water conservation.

Fertilizer and Pesticide Control

Users must receive instruction on how to safely handle and properly apply fertilizer and pesticide products. Public education programs should emphasize that "more is not better," and that the lowest effective dose listed on the label for any one application should always be used. Care should also be taken to identify pests correctly so that the proper pesticide is selected, and inappropriate materials are not wastefully applied. Education about alternative pest control measures can also be valuable. Information about beneficial insects, proper planting dates, and companion cropping systems should be disseminated for consideration. The caretakers of large parcels of urban land, including local parks departments and other institutions, should be encouraged to lead the way and demonstrate the responsible use of fertilizers and pesticides. Finally, the use of Class A biosolids to replace or supplement synthetic fertilizer in turfgrass establishment can greatly reduce the quantity of runoff and its pollutant content.

Erosion and Sediment Control

Soil erosion within the CSS is most prevalent in open space areas, at construction sites, and within streambanks. Open space is largely comprised of lawns in residential areas, open areas at educational, corporate and medical institutions, and government-owned land, including parks. The practices most suitable for lawns and parks are maintaining a vegetative cover and, where applicable, using grassed drainageways and terraces that hold the soil in place and allow water to infiltrate on-site.

For construction sites, planning prior to disturbance is essential. The planning should address controlling erosion by preserving existing vegetation, controlling sediment on site, and post construction activities. The strategy is to spread and slow storm water runoff when possible, and to ensure that concentrated flows do not erode drainageways. Silt fences, filter fabrics, and straw wattles can effectively retain sediment on disturbed slopes. Fabrics must be selected with an appropriate pore size to ensure maximum sediment control for the type of soil encountered. Rock check dams, woodchip-filled bags, and hay bales can be effective sediment traps in drainageways. Small onsite stilling ponds, designed to slow runoff and allow settling, can also be effective. Construction entrance protection is needed to prevent tracking of sediments onto public streets via truck tires. Protection includes laying a woven geotextile fabric across the entranceway and at least 50 feet into the site. Three-inch minus rock is then placed over the fabric. On very large construction sites, wheel washes are often used as an additional sediment control strategy. Additionally, environmentally-oriented landscaping, mulching, and seeding will contribute to erosion and sediment control. CSO communities should consider the development of standards and recommended practices for sediment control.
and erosion control to guide new development and redevelopment projects.

IMPLEMENTATION

Solid Waste Management

Jefferson County, KY, has opened a permanent center for the disposal of household chemicals, such as paint thinners and solvents, cleaning solutions, lawn chemicals, and waste oils. The center is called A-Haz Bin and operates two days per week on a year round basis. A-Haz Bin has an annual operating budget of $250,000. During 1996, A-Haz Bin collected approximately 68,040 kilograms (150,000 pounds) of household chemicals from 2,080 households. More than 85 percent of the waste was either recycled or used in fuel blending.

Waste Reduction and Recycling

Louisville, KY, provides garbage collection once a week and conducts a simultaneous recycling program that collects newsprint, glass, plastics, and tin and aluminum cans. The program collects approximately 15.2 million kilograms (15,000 tons) of material each year, of which 75-80 percent is fiber. The City has found a private contractor who will purchase fibers for 2 cents per kilogram ($25 per ton). This money is used to offset costs associated with all aspects of solid waste management.

The Industrial Materials Exchange (IMEX) is an element of the King County, WA, hazardous waste management program, and has been active since 1989. IMEX's goals are to conserve energy and resources, and to protect the environment by helping businesses and organizations find alternatives to the disposal of valuable materials or wastes. IMEX has an annual operating budget of $250,000, which is used to help businesses find markets for industrial by-products, surplus materials, and wastes. Potential wastes are reused to the mutual benefit of the supplier of the surplus material, the user, and the environment.

Commercial and Industrial Pollution Prevention

As part of its outreach effort, The Rouge River National Wet Weather Demonstration Project in Michigan initiated the Rouge Friendly Business Program. The Program works with small business owners to help them complete a facility management self-assessment form. The program then suggests the implementation of source controls, such as: storage and disposal of non-hazardous materials, grease handling, and managing outdoor work areas. The Program recognizes and promotes businesses which make the suggested changes and demonstrate river-friendly pollution prevention practices. As of June 1997, 17 businesses have been officially recognized.

Street Cleaning

New York City's street sweeping program cleans just over 50 percent of the city's 18,800 curb kilometers (11,700 curb miles). Streets are cleaned on a regular schedule that ranges between one and three sweepings per week. Alternate-side-of-the-street parking regulations support the sweeping program. There are also ordinances in place which prohibit littering and require property owners to clean sidewalks and gutters daily. Enforcement agents patrol commercial areas and fine owners who fail to maintain sidewalks and gutters.

South Portland, ME, utilizes contracted sweeping services to sweep the entire 160 kilometers (100 miles) of city roadways each spring. This process yields more than 1,500 cubic meters (2,000 cubic yards) of material annually. City streets are then continually maintained by city personnel and equipment throughout the summer and fall months. On average, an additional 750 cubic meters (1,000 cubic yards) of debris is picked up during this period.

Catch Basin Maintenance

An in-depth study of floatable discharges to New York Harbor was recently completed. The final report recommended that the City adopt a two year cycle for cleaning catch basins, which numbered well over 100,000 city-wide. In trying to meet this goal,
the City cleaned 63,500 catch basins in 1996. Approximately 32,000 were scheduled cleanings, and the remaining were the result of complaints phoned into the City's Department of Environmental Protection.

**Water Conservation**

As part of its Water Smart Technology Program, Seattle Water in Washington offered technical assistance and financial incentives to commercial customers to encourage installation of water conservation technologies. The financial incentives included refunds of as much as 50 percent of the installed cost for an approved conservation project. Through June 1997, the incentive program spent $1.2 million, and has seen a savings of approximately 0.9 MGD. Seattle Water also created a toilet rebate program. The program offers rebates of $100-$150 for each fixture replaced. Through June 1997, the toilet program has spent $1.4 million, and installed more than 8,000 fixtures with an estimated water savings of 0.8 MGD. In total, the programs have conserved approximately 1.7 MGD for the $2.6 million spent.

**Fertilizer and Pesticide Control**

The local hazardous waste program in King County, WA, sponsors an annual Green Gardening Program. The program focuses on integrated pest management (IPM). Major program components include working with schools, hosting tours of gardens grown with little or no pesticides, and holding workshops for nursery store staff, master gardeners, and professional grounds managers. Nearly 2,000 people participated in the various activities in 1996, and 41 percent of participants said they were very likely to adopt green gardening methods. Additionally, the Washington State University Cooperative Extension promotes the Green Gardening Program in its weekly newspaper column for ten weeks each spring.

**Sediment and Erosion Control**

The Louisville and Jefferson County Metropolitan Sewer District (MSD) in Kentucky developed erosion control standards for the county. The standards require erosion controls (silt fence placement) to be in place before the soil is disturbed, and will stipulate that any site left 14 days without activity be stabilized. Additionally, no more than 500 linear meters (1,500 linear feet) of earth can be disturbed at one time.

In addition, the local governments of Louisville and Jefferson County are working together to reduce the generation of household and industrial wastes. The MSD modified wastewater rates to encourage industrial water conservation and pretreatment. Additionally, an erosion control plan is now a required component for construction activities. MSD developed a set of minimum requirements which can be easily inserted into most construction plans. Recently, MSD offered instruction in sediment and erosion control to private design engineering firms and contractors who frequently work on municipal projects and to government employees involved in planning, design, construction, and inspection. Complementing that work, the Department of Solid Waste Management and Services (SWMS) has reduced the amount of household waste entering local landfills by providing separate weekly collections for recyclable and compostable waste. To further encourage waste reduction, SWMS has reduced residential garbage collection from twice to once per week. Also, the Jefferson County Department of Environmental Protection and Management has opened a permanent center for the disposal of household hazardous waste. The combined efforts have yielded the collection of 170 million kilograms (168,000 tons) of recyclable materials in 1996, the recycling or reuse of more than 85 percent of the household hazardous waste brought to the center, and decreased water demands from a growing population.

**COSTS**

Cost comparisons for the wide range of strategies used for pollution prevention are difficult to make without consideration of site-specific factors. The following section summarizes the range of costs representative of each pollution prevention technique:
Solid Waste Management

Costs vary greatly depending on the type of program implemented and the size of the community.

Waste Reduction and Recycling

The costs associated with municipal recycling programs are typically between one and two dollars per household per month. This estimate includes expenses of 7.4 to 7.8 cents per kilogram ($75-80 per ton) to collect the recyclables. However, recyclables often generate $0.02-0.025 per kilogram ($20-25 per ton) in revenue.

Street Cleaning

Cost will depend on the frequency of cleaning, the number of cars on the street, the degree of enforcement of parking regulations, the volume of litter, and the types of labor and machinery employed. Cost will also depend on the landfill tipping fees associated with the removed debris. The reported costs of sweeping vary widely, but average $62 per curb kilometer ($100 per curb mile).

Catch Basin Maintenance

The cost to clean catch basins can range from $65 to $110 per basin, depending on the type of equipment used. This figure includes machine rental, fuel, and labor costs. The purchase cost for vacuum trucks ranges from $150,000 to $200,000 for trucks having a capacity of 7.6 to 12.2 cubic meters (10 to 16 cubic yards) of material. Recent technological advances have produced high performance vacuum sweeping trucks that can also clean out catch basins. Maintenance costs are estimated by a manufacturer to range from $12,500 to $15,000 per truck per year. The cost estimate does not include fuel, but reflects costs for routine maintenance materials and mechanic-time.

Water Conservation

Costs are closely tied to program specifics. Incentive programs average a one-time cost of $0.25-0.50 cents per liter ($1 to $2 per gallon) of water saved per day.

Sediment and Erosion Control

Blankets/Fencing

Netted erosion control blankets average $0.75 per square meter ($0.65 per square yard) for straw and $1.35 per square meter ($1.15 per square yard) for coconut-based material (50 square meter/60 square yard blankets). Tight-knit coconut fiber rolls, for long steep slopes, average $2.40-4.20 per square meter ($2.00-3.50 per square yard). Synthetic blankets average $4.80 per square meter ($4.00 per square yard). Silt fences (with pocketed post slots) are sold by the 30.5 meter (100 foot roll), with prices starting at $0.11 to $0.15 per linear meter ($0.35 to $0.50 per linear foot), uninstall.

Vegetative Controls

Vegetative controls include broadcast seeding and hydroseeding. Typical costs for simple broadcast seeding with an economical erosion control seed mix are $245-$620 per hectare ($100-$250 per acre). Commercial hydroseeding averages $1980-$2470 per hectare (800-$1000) per acre. The cost of supplying any needed water to the site can result in significant additional costs. Devices aimed at keeping seed in place during germination include straw mulch ($2.00-$4.00 per bale) and straw wattles ($4.25 per linear meter, or $1.30 per linear foot).

Inlet Protection

Catch basin inlet protection can include inlet bags, grate wraps, woodchip-filled mesh bags, and rock/block/screens. Inlet bags and grate wraps average $60-$75 per unit. Woodchip filter bags, where available, average $2.75 per 25 centimeter by 75 centimeter (10 inch by 30 inch) bag. Rock/block/screen average $12-$15 per inlet, although most of this material can later be used for construction purposes.
Construction Entrance Protection

Woven geotextile fabric costs average $1.10-$2.30 per square meter ($0.90-$1.90 per square yard). Three-inch minus rock costs average $6.50-$8.75 per meter ($6.00-$8.00 per yard) plus delivery charges.

REFERENCES


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Combined Sewer Overflow Management Fact Sheet
Sewer Separation

DESCRIPTION

Sewer systems that convey both sanitary sewage and storm water through a single pipe are referred to as combined sewer systems (CSSs). In dry weather and during light to moderate rainfall, the CSS is able to convey all flows to the wastewater treatment facility. During periods of heavy rainfall, however, the capacity of the CSS may be exceeded, often causing untreated combined sewage and storm water to back up into basements and to overflow from manholes onto surface streets. Traditionally, CSS outfalls were designed to discharge directly into receiving waters during combined sewer overflows (CSOs). This was done to prevent the excessive combined flows from directly impacting public health via basement and street flooding.

In addition to flooding problems, CSOs can cause problems in receiving water bodies. CSOs can contain untreated domestic, industrial, and commercial wastes, as well as storm water runoff. Contaminants contributed by these sources include potentially high concentrations of suspended solids, biochemical oxygen demand (BOD), oils and grease, toxics, nutrients, floatables, pathogenic microorganisms, and other pollutants. CSO pollution has caused many receiving waters to exceed water quality standards, resulting in threats to public health, aquatic species, or aquatic habitat. CSO pollutants have impaired receiving water body uses and have contributed to restrictions on shellfish harvesting, occasional fish kills, and numerous beach closures. Potential odors and solids deposits in the receiving water body can also compromise aesthetics and limit recreational uses of the water body.

Many communities have studied and evaluated CSO control strategies that would effectively reduce, if not necessarily eliminate, CSOs and their associated health and ecological risks. One of the strategies often considered is sewer separation.

Sewer separation is the practice of separating the combined, single pipe system into separate sewers for sanitary and storm water flows. In a separate system, storm water is conveyed to a storm water outfall for discharge directly into the receiving water. Based on a comprehensive review of a community's sewer system, separating part or all of its combined systems into distinct storm and sanitary sewer systems may be feasible. Communities that elect for partial separation typically use other CSO controls in the areas that are not separated.

APPLICABILITY

Sewer separation can be considered wherever there is a CSS. However, an evaluation of the most appropriate CSO control should be performed prior to selecting sewer separation or any other measure. Sewer separation has often been the appropriate technology in areas where one or more of the following conditions exist:

- Most sewers are already separated;
- Siting constraints and costs prohibit the use of other structural measures;
- The uses and the assimilative capacities of receiving waters prohibit the use of other CSO controls;
ADVANTAGES AND DISADVANTAGES

Positive impacts resulting from sewer separation include: reduction or elimination of basement and street flooding; reduction or elimination of sanitary discharges to receiving waters; decreased impacts to aquatic species and habitat; decreased contact risk with pathogens and bacteria from domestic sewage in the receiving water; and relief from CSO regulations. In addition, incidental infrastructure work (e.g., road repaving and the repair or replacement of miscellaneous utilities, such as water and cable lines) could be conducted more cost effectively if it were to coincide with sewer separation. For example, as a result of the CSO program in the City of St. Paul, MN, streets were paved and handicap ramps were added to sidewalks, gas and water mains were installed, gas services were renewed or replaced, lead water service connections were replaced, and street lights were installed.

Separating CSSs may contribute to improvements to water quality due to the reduction or elimination of sanitary discharges to receiving water bodies. However, the increased storm water discharges resulting from sewer separation could decrease the positive impacts of the separation unless storm water discharges are mitigated. Without mitigation, increased loads of storm water pollutants, including heavy metals, sediments, and nutrients, may run off into local water bodies. For example, in Atlanta, GA, sewer separation was predicted to increase pollution to local creeks (AMSA, 1994) as polluted storm water previously reaching the treatment plants now is discharged directly into receiving waters. However, in many cases, separating sewers reduces pollution to receiving waters, as described above for St. Paul, MN. A second example of successfully reducing pollution to receiving water bodies has occurred in Juneau, AK. It has been reported that in Juneau, where there is in excess of 70 inches of precipitation a year, the storm water concentrations conveyed through the recently separated storm water sewers are rather dilute. This has also been attributed to large quantities of clean groundwater that infiltrate into the storm sewer, relatively clean activities within the watershed, and several non-point source pollution control programs within the City (City of Juneau, 1997). Existing and future storm water impacts to the receiving water body should be evaluated prior to implementing sewer separation.

Negative impacts associated with sewer separation include extensive construction and construction related impacts (e.g., noise, dust, erosion), disruption to residents and businesses, possible disruptions in sewer service, and the need for storm water controls or best management practices.

One of the largest sewer separation projects occurred in Minneapolis, St. Paul, and South St. Paul, MN. The project involved pipe separation in more than 21,000 acres of drainage area. By December 1996, 189 miles of storm sewers and 11.9 miles of sanitary sewers had been installed. This program was needed to reduce the number of overflows that were estimated to occur an average of once every three days (American City and County, 1996). Overflows have been significantly reduced by this separation project.

Sewer separation has been used effectively in many communities. Most of the approximately 1,000 communities that are served by CSSs are located in the Northeast and the Great Lakes region. Complete or partial separation of CSSs has occurred in many of these areas, as well as in several locations in the West. Cities that have completely or partially separated CSSs include: Minneapolis, St. Paul, and South St. Paul, MN; the metro Detroit, MI, area; the metro Boston, MA, area; Salem and Portland, OR; the metro Seattle, WA, area; Lynchburg, VA; Bangor, ME; Hartford and Norwich, CT; and Remington, IN. Columbus, OH, has recently elected to separate its CSS as well.

Other CSO strategies are not publicly acceptable;
Additional infrastructure improvements, such as road repaving, are also required;
The combined system is undersized;
Elimination of CSOs is desired; and/or
Other CSO measures are not able to achieve the community's goals.

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In addition, complete separation of sanitary and storm water flows can be hard to accomplish whether the combined sewer is converted to a storm sewer or to a sanitary sewer. Complete separation of a CSS would involve disconnection of all storm water drainage structures, sump pumps, and roof and footer drains. Disconnection of footer drains is often not cost effective. Some communities have offered financial incentives to homeowners and businesses for voluntarily disconnecting some of these storm water sources from sanitary sewers. Many communities have also passed ordinances requiring the disconnection. Despite these provisions, there is still potential for some storm water flows to remain connected to sanitary sewers. Likewise, complete disconnection of sanitary flows from a converted storm water sewer may be difficult to accomplish, but is usually more successful than eliminating all storm flow connections from connected sanitary sewers.

KEY PROGRAM COMPONENTS

Decisions for a CSO control strategy should be made on a site-by-site basis utilizing drainage area data, receiving water use and water quality data, and sewer system data. Sewer system information can be obtained from review of sewer plans, television inspection, and flooding records. Communities may consider performing house to house inventories of house connections to the combined system (i.e., sanitary and roof drains). This was successfully done in parts of the metropolitan Boston area. Modeling and Geographical Information Systems (GIS) may be useful data analysis and prediction tools.

Using these data, communities should determine what CSO controls, or combination of controls, will meet performance goals established by the community. Other factors, such as cost effectiveness, natural and urban topography and soil types, siting constraints, location of current and future utilities, land use and cover, existing sewer capacity, layout, and condition, pump and treatment plant capacities, and requirement for other infrastructure work in the same area, should be considered before finalizing project plans. For example, sewer separation was selected in Minneapolis, South St. Paul, and St. Paul, MN, due to local needs for eliminating sewage backups into basements, reducing street flooding, and reconstructing aging portions of the sewer system (MWCC, 1984).

Sewer separation can be accomplished through installing new storm or sanitary sewers to be used in conjunction with the existing sewer. Economics, capacity, condition, and layout of the combined sewer are the typical factors used in deciding the existing line’s post-separation use.

An advantage of converting the combined sewer to a sanitary sewer (referred to as a converted sanitary sewer in this document) is that all sanitary flows are already connected to the converted sanitary sewer. Using the existing combined sewer as the sanitary sewer and installing a new storm sewer would likely require that any overflow weirs, gates, or other regulating devices remaining in the converted sanitary system be bulkheaded or otherwise disabled to eliminate the potential for sewage to overflow. In addition, storm water drainage structures, sump pumps, and roof drains must be disconnected from the converted sanitary system and connected to the new storm water sewer. This will provide more capacity in the converted sanitary sewer and will reduce the possibility of overflows. Building footer drains, however, are often left connected to the existing combined system and do consume some of the converted sanitary sewer capacity. Rehabilitation or relining of the converted sanitary system, storage tanks, and/or equalization basins may be required if infiltration is a significant problem due to cracks or inadequate construction materials (e.g., brick sewers). In some cases, such as in Juneau, AK, the existing combined sewer may be in such poor condition that new sanitary sewers, as well as new storm sewers, are constructed.

There are some circumstances that may make the conversion of the combined sewer to a storm sewer (referred to as a converted storm sewer in this document) more appropriate. For instance, combined sewers that have a large diameter and have little slope (less than 3 percent) would not have the flushing velocity required of a sanitary sewer. In cases such as this, the existing CSS may be more appropriately converted to a storm sewer, provided that the sewer has sufficient capacity for safe conveyance of the local design storm. A
smaller sewer should be appropriately designed, sized, and constructed to convey the sanitary flows. Storm, roof, and footer drains, as well as catchbasins could remain connected to the converted storm sewer. Sanitary connections, however, would need to be disconnected and conveyed to the new sanitary line. Any remaining sanitary lines connected to the converted storm sewer will cause direct discharges of sanitary flows to the receiving water body. Post-separation sampling and monitoring of the converted storm sewer is typically required to confirm that all sanitary flows have been removed from the converted storm sewer and redirected into the sanitary sewer. Conversion of the combined sewer to a storm sewer would also require that the interceptor connection at the regulating device (e.g., weir or gate) be plugged, and may potentially require modifications to prevent water from stagnating upstream of the regulator.

Consideration should be given to coordinating sewer separation with improvements to other utilities, as this enhances the cost-effectiveness of both/all projects and minimizes disruption to the public.

IMPLEMENTATION

Sewer separation reduces and often eliminates untreated sanitary discharges from discharging into receiving water bodies, and therefore positively impacts receiving water quality. Sewer separation, however, greatly increases untreated storm water discharges to the receiving water body. In a CSS, at least some of the storm water flows are treated at the treatment plant. The performance achieved with sewer separation will vary depending on the existing storm water pollutant loading and the existing sanitary pollutant loading. For example, a study performed for North Dorchester Bay, MA, estimated that the overall fecal coliform removal potentially achieved by sewer separation was only 45 percent (Metcalf & Eddy, 1994). This was attributed to the increase in storm water discharges to the receiving water body, and the corresponding increase in non-point runoff pollutants.

Actual fecal coliform removal rates have been determined for several sites where sewer separation has been implemented. Water quality monitoring data collected in St. Paul and Minneapolis from 1976 to 1996 indicated a fecal coliform concentration reduction of 70 percent. One of the four sites where data was collected reduced fecal coliform concentrations from an average of 500 organisms per 100 mL to 150 organisms per 100 mL. At another site, fecal coliforms were reduced from 489 organisms per 100 mL to 143 organisms per 100 mL (Richman, 1996). This reduction has been attributed to sewer separation and to the reduction in the number of overflows occurring every year.

Sewer separation may also result in other related improvements to water quality. In stretches of the Mississippi, water quality improvements attributed to sewer separation projects have resulted in the return of the pollution-sensitive Hexagenia mayfly after a 30 year absence; the return of Bald Eagles to the area; and the recovery of fish populations and diversity from 3 species to over 25 species (Cities of Minneapolis, et. al., 1996).

Monitoring the performance of CSO control strategies at the Rouge River Demonstration Program has been underway since the summer of 1997. Part of the monitoring program will identify the effectiveness of sewer separation in terms of improvements to water quality. Instream monitoring is also occurring in Portland, OR. The supplemental data will add to the performance data collected in Minnesota (70 percent fecal coliform reduction) and estimated for Massachusetts (45 percent fecal coliform reduction).

OPERATIONS AND MAINTENANCE

The Operations and Maintenance (O&M) requirements of separated sewers are generally the same as those of other sewer systems. Maintenance must be conducted on pump stations (including routinely cleaning wet wells, testing for adequate pumping capacity, and exercising pumps and stand-by generators), sewer lines, and catchbasins and grit chambers. Catchbasins and grit chambers located in the sanitary or storm sewer system will require routine cleaning to prevent accumulation of sediment. Jet spray cleaning, pumping, and
vacuuming are common methods for cleaning catchbasins and grit chambers.

In addition, all sewer lines, and in particular sewers that were previously combined, need to be monitored to verify hydraulic capacity and to identify infiltration and inflow. Basement or street flooding is a likely indication of hydraulic capacity or gradient problems in the sewer and may require major repairs. Excessive infiltration into a converted sanitary sewer may require rehabilitation of the sewer system. Methods for assessing the condition of the sewers include modeling, smoke testing, and television inspection. Monitoring will identify cracked and collapsed sewers that will need to be repaired. In addition, monitoring can identify the location and cause of sewer blockages. To prevent blockages, lodged debris, sediment, and grit must be removed on a regular basis.

Post-separation monitoring and sampling may be required to ensure that no sanitary flows are still connected to the storm sewer and being directly discharged to the receiving water body. Alternatively, simple dye studies can be employed to verify separation.

COSTS

Separation costs vary considerably due to the location and layout of existing sewers; the location of other utilities that will have to be avoided during construction; other infrastructure work that may be required; land uses and costs; and the construction method used (e.g., open cut verses microtunneling). Communities that have other infrastructure requirements (such as road repairs) in addition to sewer separation may find that upgrading the facilities simultaneously can result in a much lower cost relative to upgrading them independently. Construction occurring in existing right-of-ways would probably not require land acquisition, and thus would not add to the project cost. Project costs could increase depending on the land use. For example, project construction occurring in an industrial area that contained hazardous materials or wastes would likely increase the project cost. Methods of construction, such as the need to tunnel or bore versus open cutting, can also add to the cost. Project costs could also increase if sanitary equalization basins are required as part of the separation project or if storm water best management practices are required to control the increased storm water discharges to the receiving water body.

Actual construction costs are available from the St. Paul sewer separation project. For that project, sewer separation costs ranged from $8,350/acre to $40,060/acre, with an average cost of $15,400/acre (all costs are in 1984 dollars). Estimates from the City of Portland and Detroit are $18,000/acre and $67,800/acre, respectively.

The Rouge River project has also generated good cost data for sewer separation. Costs were approximately $377,000 for separating approximately 600 meters of pipe on a small residential street (CSO Area 42, Windsor Avenue), which included costs for removing existing pavement, laying a new sewer line, and re-paving and re-sodding. A second project (CSO Area uing cost $1.3 million to separate approximately 2,600 meters of pipe. All costs are presented in 1995 dollars.

The cost of operation and maintenance (O&M) of the separated sewer system is difficult to predict. Factors contributing to the O&M costs include the age and the condition of the previously combined sewer, the length and diameter of the sewers, the frequency and the amount of sand and grit removed, and the size of drainage areas.

Sewer separation can reduce treatment and O&M costs at the receiving treatment plant by potentially eliminating storm water flows to the plant. Energy costs for transporting flows to the treatment plant could also be reduced due to the reduced flow volume.

REFERENCES


**ADDITIONAL INFORMATION**

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Combined Sewer Overflow
O&M Fact Sheet
Proper Operation and Maintenance

DESCRIPTION

Combined sewer systems (CSSs), as shown in Figure 1, are single-pipe sewer systems that convey sanitary wastewaters (domestic, commercial and industrial) and storm water runoff to a publicly owned treatment works. During periods of heavy rainfall, however, the sanitary wastewaters and storm waters can overflow the conveyance system and discharge directly to surface water bodies. This is called a combined sewer overflow (CSO).

CSOs may contain high levels of suspended solids, biochemical oxygen demand (BOD), oil and grease, floatables, toxic pollutants, pathogenic microorganisms and other pollutants. These pollutants can exceed water quality standards and pose risks to human health, threaten aquatic species, and damage the waterways.

Because of the pollution potential from CSOs, EPA issued the CSO Control Policy on April 19, 1994. This policy states that permittees with CSSs that have CSOs should be able to provide, at a minimum, primary treatment and disinfection, when necessary, to 85 percent of the volume captured in a CSS on an annual average basis. The policy also includes nine minimum control requirements for inclusion in the CSO discharge permit. One of these minimum controls is proper operation and regular maintenance (O&M) programs for the sewer systems with CSOs.

KEY PROGRAM COMPONENTS

Proper O&M of combined sanitary sewers and overflows is not significantly different from that of sanitary sewer systems, with the objective being to maintain maximum flow to the wastewater treatment plant and to maximize either in-line storage capacity or detention upstream of the system inlets. There are several key components of an O&M program that a municipality/authority must provide to ensure proper O&M and to meet the minimum control requirement. These program components include:

- Scheduling routine inspections, maintenance and cleaning of the CSS, regulators and outfalls.
- Developing O&M reporting and record keeping systems with maintenance procedures and inspection reports.
- Providing training for O&M personnel.
• Reviewing the O&M program periodically to update and revise procedures as necessary.

These components are further described below.

Operational Review

Prior to developing an O&M program, the municipality should undertake an operational review of its system to inventory and assess existing facilities, operating conditions and maintenance practices. The municipality should have a complete plan of the collection system, showing all sewers and points where CSOs and outfalls are located. This plan should reference streets and other utilities to enable the maintenance crews to locate the structures and CSOs quickly. This plan may also aid in scheduling and planning the inspection and maintenance of the CSS system and overflows; for example, the regions or areas that are prone to flooding or premature overflows should be inspected first after a major storm.

The nine minimum CSO control requirements include conducting a characterization of the CSS. This characterization should include documentation of overflow occurrences and correlation of these events with rainfall patterns (e.g., volume, intensity, duration). The results of the CSS characterization are critical to designing an O&M program that is effective in optimizing system operations. As part of these studies, it is important to measure actual system flows and the response to various operating and wet weather conditions. This information will be critical during the development of specific operation and maintenance procedures that will be part of the O&M program.

Municipalities may eventually be able to use data from their Long-term CSO Control Plans to supplement their O&M programs. As part of these plans, a system may conduct modeling of the integrated system (sewers, regulators, and treatment plant) to analyze operational improvements. These modeling efforts typically identify operational modifications that maximize storage and transport, provide improved treatment in the existing system, and decrease untreated CSO discharges. Because many municipalities will implement their O&M programs before their Long-term CSO Control Plans are completed, the results of the CSS modeling may not be available during the early phase of the O&M program. However, the O&M program should be updated periodically to address this type of additional information.

Record Keeping System

The O&M program should include a record keeping component. The record keeping system should document maintenance procedures through inspection reports. These reports should include information about when the system was inspected, and, if applicable, what maintenance action was taken, including the equipment used and the personnel involved. Geographical information systems (GIS) and desktop mapping may be useful in storing O&M data on the CSO system, as well as in developing a database of problem areas.

System Operating Procedures

Each municipality should have written policies, procedures, or protocols for training O&M personnel and should conduct periodic reviews and revisions of the O&M program. Some municipalities have reported that alternating crews between O&M and other functions has proven beneficial because it reduces the tedium of the work by making it less routine, and it promotes the cross-training of employees. Other municipalities prefer devoting personnel strictly to O&M because it keeps the work assignments simple.

Training

The O&M Program should have established training goals, procedures, and schedules. Training should provide the maintenance personnel with an understanding of the CSS operations and system characteristics. Hands-on training illustrates the specific O&M procedure to those directly responsible for performing these activities. In addition, the nature of the O&M work may require employees to work in confined spaces or to be exposed to dangerous gases. Providing proper safety training, in accordance with Occupational Safety and Health Administration (OSHA) standards, is imperative. Safety programs should be
reviewed, and, if necessary, updated periodically. Tide gates that require underwater inspection should only be inspected by a certified diver.

ROUTINE MAINTENANCE ACTIVITIES

Proper operation of the CSO system begins with proper operation and maintenance of the individual components - the regulators, tide gates, pump stations, sewer lines, and catch basins; and implementation of an organized plan that provides regular, consistent, and response-oriented O&M. In addition, operators must develop plans for determining where CSOs occur, and for conducting system-specific repairs to prevent future CSOs.

Regulator/Tide Gate Maintenance

Because of the debris normally present in combined sewage, regulators are particularly susceptible to the accumulation of materials that cause clogging and blockages. Trash blockages at the entrance to the orifice of the interceptor increase the headloss through the orifice and causes the majority of unnecessary overflows in passive regulators. Other causes of unnecessary diversions at regulators include weir plates or dams that are improperly set, damaged, or broken off. Similarly, tide gate failure can often be attributed to trash or debris becoming lodged in the gate, or corrosion of the gate or deterioration of the gate gaskets. Tide gate failure allows the receiving water to enter the CSS, reducing the storage and flow capacity. For more information on solids and floatables control, refer to the EPA’s CSO Technology Fact Sheets on Screens (EPA 832-F-99-027) and Floatables Control (EPA 832-F-99-008).

Frequent inspection of CSO regulators and tide gates for the problems outlined above, and subsequent program to implement corrective measures (such as cleaning or repair of the regulator or tide gate) will ensure maximum storage or flow capacity. Inspection of tide gates is most easily performed during dry weather and at low tide, when most installations are above the water level of the receiving water. Tide valves that are below the level of the receiving water at all times may require a diver to perform the inspection. Regulators which have proven to be problematic should be inspected after every rainfall event.

There are many different ways of determining if an overflow has occurred at a regulator or tide gate, how long it lasted, and what volume was discharged. For instance, some municipalities have installed switches on their tide gates that sense when the gate is open; others have installed instrumentation in the discharge line upstream of the tide gate that senses when there is water in the line. In both cases, the signal from the instrumentation is sent to the operating municipality via telemetry to alert the operator of a possible overflow. This type of system may be especially useful if the tide gate is inaccessible or difficult to inspect. These types of systems should be regularly tested to ensure proper operation.

An inexpensive way of passively determining if an overflow occurred at the CSO is to place a small wooden block on the static weir; if the block is not present after a rainfall event, then it was carried off with the overflow. If the wooden block disappears after a period of dry weather flows, then the overflow structure needs to be recalibrated. Base sanitary flows can increase over time as a result of changes in the drainage basin, (e.g., more paved areas), higher sanitary flows, and increased I&I. An increase in base sanitary flow could cause dry weather overflows that need to be identified and eliminated. Another inexpensive method to determine overflows is to install a portable water level or depth gauge (e.g., sonic meter or bubbler) in the combined sewer line and to check dry weather head relative to overflow control structure elevation. This method can quickly determine if the overflow weir or other device needs to be adjusted.

Pump Station Maintenance

Pump stations should be maintained to operate at the design conditions. Wet wells should be routinely cleaned because grit and solids deposition in the wet well can damage or restrict the flow of wastewater into the pump.

Inadequate or improper pump station operation can lead to reduced storage and hydraulic capacity during wet weather, and, if the pumping capacity is
severely restricted, dry weather overflows can result. In general, inadequate pumping capacity is caused by:

- Mechanical, electrical, or instrumentation problems.
- Changes in the upstream drainage area that cause storm runoff to exceed the original design basis.
- Changes in the discharge piping (e.g., tying-in or manifolding with another pressure system) that creates more headloss in the discharge system.

If conditions upstream of the pump station (such as development) increase the flow above the design values, steps should be taken to upgrade the station to meet the increased flowrate. Pump station upgrading may include such items as:

- Installing new pumps and motors.
- Changing out impellers.
- Upgrading/changing pump controls to maximize use of all pumps during wet weather.
- Modifying system piping to improve the system head curve.
- Installing additional force main piping for wet weather pumping.

Depending on the complexity of the system, changes to the downstream discharge conditions that may affect the system head curve may require extensive study and should be evaluated on a case-by-case basis.

Sewer Line Maintenance

Sewer line maintenance can be broken down into two main components, which include the use of diagnostic methods to identify potential trouble spots in the line; and actual physical inspections of the lines for cracks, breaks, or blockages.

The use of diagnostic methods allows system operators to predict where problems may occur in the lines, thus allowing a more efficient use of O&M resources. Proper maintenance of a sewer system requires a knowledge of the system, including information about the age of the system, the drainage areas served, the elevations of the drainage structures, and slopes of the sewer lines. Adequate knowledge of the age of the sewer system is crucial because many older systems are constructed of weaker materials (such as clay pipe) that are prone to cracking and collapsing. Cracked and collapsed sewers can pose significant problems, such as infiltration of the sewer flow into the groundwater and the introduction of sediment into the system. This may lead to hydraulic restrictions. Knowing which sections of the sewer system are the oldest or identifying sections that are made of less sturdy materials will allow the system operators to track the most likely trouble spots in the system.

Information regarding the elevations of the sewer system is important for determining the likelihood of sediment accumulation in the line. The slope of a sewer line is directly proportional to the line capacity and velocity. When the wastewater velocity in the line is below the self-cleaning velocity of 2 feet per second, solids tend to settle out, creating a flow restriction. Oversized sewers placed on very flat gradients are especially prone to conveying the wastewater at low velocities, and, as a result, filling with sediment. Small- and mid-sized storms are of significant concern because the flow velocity from these storms may be below the self-cleaning velocity. Therefore, areas that are prone to deposition should be inspected frequently. Sewer lines with a history of sediment deposition and blockages should be identified and scheduled for routine cleaning.

Modeling a sewer to evaluate the need for improvements can be especially beneficial in avoiding future problems. For instance, increasing the flow in an upstream sewer can create problems.
downstream if the downstream sewer does not have the capacity to handle the increased flow. Other problems, such as flow backing up into basements, may appear as a result. In cases where there is concern about back-ups into basements, a backflow preventor may be warranted. Modeling will help to determine how raising a weir will decrease CSOs. Methods of increasing the flow through sewers include increasing the pumping rate from the upstream pumping station and injecting polymer to reduce the sewer roughness coefficient (Field et al., 1994).

Determining whether an overflow occurred in a discharge sewer is important in understanding how the system works and for requirements on reporting. An inexpensive method for determining the maximum depth of flow in the discharge line is to draw a chalk line around the inner circumference of the discharge sewer. The overflow water will dissolve this substance to the maximum depth of flow. More advanced techniques include employing instrumentation that measures the flow in a discharge and relays this information via telemetry to the municipality.

The second part of a sewer line maintenance program is physical inspection of the lines. If possible, CSSs and CSOs should be inspected regularly to ensure peak performance. Sewers are commonly inspected by television cameras, but if the sewers are large enough and flow conditions are low enough, manual inspection may be possible. If manual inspection is the chosen method, the inspector must follow the OSHA confined space entry guidelines.

Inspections should be used to identify blockages, cracks, or other problems in the lines. Blockages are typically the result of sediment and grit accumulating in the sewer system, although dislodged vegetation and debris restrict flow as well. Another common cause of sewer blockages is tree roots, which can grow through cracked sewers. System blockages in sewer systems can decrease both the hydraulic capacity of the sewer and its effective storage capacity. This can cause flow to back up and overflow the sewer system.

Once these problems have been identified, maintenance crews must be dispatched to correct them. Crews should ensure that all lines are cleared of all lodged debris. They should check and empty any in-line grit chambers or flushing stations where sediment routinely causes blockages in the system. Cracked sewers should be repaired and collapsed sewers should be replaced to restore the system capacity and prevent infiltration.

**Catch Basin and Grit Chamber Maintenance**

Catch basins and grit chambers are inlet chambers that provide sumps for the retention of sediment, grit, and debris. These basins should be cleaned on a routine basis to prevent grit and sediment from filling the structure and passing untreated flow into the CSS. Cleaning methods include utilizing vacuum trucks, jet sprays, submersible pumps that can handle grit and slurry mixtures, and clamshell buckets.

**Sediment Control**

As sediment is a significant source of the problems in combined sewer systems, control of sediment from the source can prove beneficial. An example of source control includes implementing and maintaining effective erosion control practices for construction in the drainage area. These practices will prevent sediment from being transported to the sewer inlet during a rainfall event. Frequent street sweeping has also proven effective in decreasing the sediment load to the sewer system.

**Infiltration & Inflow**

Sewer system evaluation studies (SSES), such as smoke testing and television inspection, are effective methods of determining infiltration and inflow of groundwater into the sewer system. This is the result of structural failure of the piping system that allows groundwater into the piping system and is a common problem in older sewer systems. Often, tree roots will grow into the broken piping system, causing more blockage problems in the sewer. This problem is a serious one not only because it introduces additional flow into the sewer system which can lead to surcharges and overflows, but also because it can introduce sediment into the
system, which can cause the problems outlined above.

COST

The cost of operating and maintaining CSOs and CSSs is especially difficult to determine because it is a function of many different factors, including the age of the system, the type(s) of overflow structure(s), the size of the system (both in linear footage and in the diameter of combined sewer), and the drainage areas. Cost data for key components of proper O&M of CSO systems is summarized in other EPA Fact Sheets, including “Sewer Cleaning and Inspection” (EPA 832-F-99-018) and “Catch Basin Cleaning” (EPA 832-F-99-011). For example, average costs for catch basin cleaning can range from $8-$16 per catch basin depending on whether the cleaning is done manually or with a vacuum sweeper. Table 1 summarizes average national cost data for cleaning and inspecting sewers, another key component of proper CSO system O&M.

REFERENCES

### TABLE 1 NATIONAL SUMMARY OF MAINTENANCE COSTS

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Range of Costs</th>
<th>Average Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total O&amp;M cost/mile*year</td>
<td>$951-$46,973</td>
<td>$2,823²</td>
</tr>
<tr>
<td>Labor (cost/mile/year)</td>
<td>$695 -$19,831</td>
<td>$3,626¹</td>
</tr>
<tr>
<td>Fringe Benefits (cost/mile/year)</td>
<td>$192 -$9,033</td>
<td>$1,186¹</td>
</tr>
<tr>
<td>Chemicals (cost/mile/year)</td>
<td>$0.3 -$7,616</td>
<td>$512¹</td>
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<td>Hydroflush Cleaning (cost/mile)</td>
<td>$475 -$5,230²</td>
<td>$1,700¹</td>
</tr>
<tr>
<td>Television Inspection (cost/mile)</td>
<td>$1,000 -$11,450²</td>
<td>$4,600¹</td>
</tr>
<tr>
<td>Preventive Maintenance</td>
<td></td>
<td>63% of Total Maintenance Costs (excludes depreciation)</td>
</tr>
</tbody>
</table>


### ADDITIONAL INFORMATION

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The mention of trade names or commercial products does not constitute endorsement or recommendation for the use by the U.S. Environmental Protection Agency.

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FACT SHEET
Guidance: Coordinating CSO Long-Term Planning with Water Quality Standards Reviews

The U.S. Environmental Protection Agency (EPA) is issuing Guidance: Coordinating Combined Sewer Overflow (CSO) Long-Term Planning with Water Quality Standards Reviews. The guidance is designed to address questions raised since the publication of the CSO Control Policy in 1994 on integrating the long-term control plan (LTCP) development process with the water quality standards review. As outlined in the guidance, EPA will continue to implement the CSO Control Policy through its existing statutory and regulatory authorities.

Background

EPA issued the Combined Sewer Overflow (CSO) Control Policy in April 1994. Since then, the agency has released seven related guidance documents and worked with stakeholders to foster implementation of the policy. The CSO Control Policy calls for the development of a long-term control plan (LTCP), which includes measures that provide for compliance with the Clean Water Act, including attainment of water quality standards. The CSO Control Policy provides that the LTCP should be coordinated with the review and revision (as appropriate) of water quality standards and implementation procedures on waters impacted by CSOs. This process is intended to ensure that long-term controls will be sufficient to meet water quality standards. In the six years since EPA issued the CSO Control Policy, implementation of this principle has not progressed as quickly as expected.

CSO communities need clear guidance on how they should implement CSO and other wet weather water pollution control programs to attain water quality standards. As part of EPA's FY 1999 appropriation, Congress directed EPA to develop guidance on reviews of water quality standards and designated uses in CSO-receiving waters, and urged EPA to provide technical and financial assistance to states and EPA Regions to conduct these reviews. Further, in December 2000, amendments to the Clean Water Act required EPA to publish final guidance on this subject by July 31, 2001.

This guidance was published as a draft in January 2001 and titled: Draft Guidance on Implementing the Water Quality-Based Provisions in the Combined Sewer Overflow Control Policy. EPA received comments from 27 interested parties. EPA reviewed the comments and made appropriate changes to the draft guidance in response to the submitted comments.

The guidance addresses impediments to implementing the water quality-based provisions in the CSO Policy, and actions that State and Interstate Water Pollution Control Directors and CSO communities should take to overcome these impediments.
Guidance: Coordinating CSO Long-Term Planning with Water Quality Standards Reviews

Integrating CSO long-term control planning with water quality standards reviews requires extensive coordination among CSO communities, states and the public. Although this coordination is an intensive process, it provides greater assurance that CSO communities will implement affordable CSO control programs that support the attainment of appropriate water quality standards. The guidance describes a process for integrating LTCP development and implementation with the water quality standards review. This process is the essence of EPA’s commitment to facilitating the review and revision, as appropriate, of water quality standards for waters affected by CSOs.

Additional Information

Interested persons may obtain a copy of the guidance from EPA’s NPDES website at www.epa.gov/npdes or by contacting the Office of Water Resources Center at 202-260-7786 (e-mail: center.water-resource@epa.gov); mailing address: Office of Water Resources Center, U.S. Environmental Protection Agency, RC-4100, 1200 Pennsylvania Avenue, NW, Washington, DC 20460. Please request Guidance: Coordinating CSO Long-Term Planning with Water Quality Standards Reviews (EPA Number EPA-833-R-01-002; July 2001). For additional information, contact Tim Dwyer, Office of Wastewater Management, Water Permits Division, MC 4203M, 1200 Pennsylvania Avenue, NW, Washington DC, 20460, phone number 202-564-0717.
UNITED STATES AND OHIO REACH SETTLEMENT WITH CINCINNATI AND HAMILTON COUNTY TO END YEARS OF SEWER OVERFLOWS

WASHINGTON, D.C. -- The Justice Department, the Environmental Protection Agency and the State of Ohio today announced a partial settlement with the Board of Commissioners of Hamilton County and the City of Cincinnati that will eliminate long-standing and significant sewage discharges from its sanitary sewer system. Under the settlement, the Metropolitan Sewer District of Greater Cincinnati (MSD) could spend upwards of $450 million toward eliminating these discharges. This decree will result in approximately 100 million gallons of raw sewage discharges eliminated annually.

EPA estimates that there are at least 40,000 sanitary sewer overflows
(SSOs) nationally each year. The untreated sewage from these overflows can contaminate waters with bacteria, pathogens and other harmful pollutants, causing serious water quality problems. It can also back-up into basements, damage property and threaten public health.

"The Justice Department is committed to enforcing our nation's clean water laws to protect human health and the environment with the highest water quality standards," said Attorney General John Ashcroft. "We are pleased the State of Ohio joined us as plaintiffs in this settlement, as it will go a long way toward improving the health of the Ohio River and its tributaries in the Cincinnati area."

"Sanitary sewer overflows are a chronic and growing problem in the country, and pose a severe risk to public health and the environment. Communities must find problems in their sewer systems, and fix or upgrade them to reduce or eliminate SSOs. I'm confident that this settlement will do just that for the citizens of Hamilton County and City of Cincinnati," said EPA Administrator Christie Todd Whitman.

For years, the city and county have discharged untreated sewage when it rains through overflow pipes, or sanitary sewer outfalls, including some that were constructed long ago in MSD's aging sanitary sewer system. Discharges from these outfalls are illegal under the Clean Water Act (CWA).

Today's partial settlement will make important progress toward eliminating the city and county's SSO violations. However, the settlement does not address the city and county's other extensive problems with overflows from sewers that carry both sewage and stormwater, known as combined sewer overflows (CSOs). Neither does it resolve the United States' and the State of Ohio's claims for civil penalties due to all the City and County's CWA violations. The parties have agreed to continue negotiations to resolve these issues as soon as the partial settlement is approved by the court.

Specifically, the settlement puts the city and county on an enforceable schedule to construct major capital improvement projects, estimated to cost $43 million, to eliminate the worst of their SSOs. Most of these projects will be completed in the next three to five years. However, Cincinnati's worst and most prolific SSO, SSO 700, will require significantly more time and money to fix.

Currently, MSD is evaluating building a large, deep tunnel with the U.S. Army Corps of Engineers for flood control. The tunnel under consideration would be more than 16 miles long, 30 feet in diameter, and 300 feet deep and would end the area's chronic flooding problems. It would also help eliminate significant overflow problems that
MSD is experiencing from its combined sewers. In turn, the combined sewers could then be used to store and carry excess sewage that is frequently discharged from SSO 700 when it rains, thus eliminating these SSO 700 overflows. MSD’s share of the costs of building the tunnel and related sewer pipes to eliminate this one SSO could amount to an estimated $210 - 410 million.

Because the tunnel and other fixes being contemplated for SSO 700 could take until 2016 or longer to build, the settlement requires the defendants to build a $10 - 15 million interim treatment facility at this outfall to reduce the environmental impact from SSO 700 while the final measures are being planned and built.

Finally, the agreement requires the defendants to thoroughly assess their sewer system, using sophisticated models to determine the current and future capacity. Once the sewer assessment is completed, which itself will cost over $14 million, the city and county must develop a comprehensive plan for projects to eliminate all the rest of their SSOs and provide adequate capacity for the future. There is currently no estimate as to how much more the city and county will have to spend on these additional projects.

The Metropolitan Sewer District of Greater Cincinnati (MSD) is a department of the City of Cincinnati. The District serves more than 800,000 customers throughout Cincinnati and Hamilton County and operates seven major wastewater treatment plants. Over 200,000 separate sewer connections tie into MSD's 3,000-plus miles of sanitary and combined sewers.

"We are pleased to be able to resolve this matter for the good of the environment and the health of residents in Cincinnati and Hamilton County," Ohio Attorney General Betty D. Montgomery said. "It's important that we now focus our energies on reaching a resolution on the remaining issues relating to the operation of MSD."

"For years, Cincinnati has struggled to address environmentally damaging sewer overflows," said Ohio EPA Director Christopher Jones. "This settlement will change that course, as a result of a cooperative effort between state, local and federal agencies to clean Cincinnati's waterways."

The Justice Department and the federal EPA, often joined by the States, are taking an active lead in municipal CWA enforcement across the country. The United States has already entered into CWA settlements with numerous municipalities, including Atlanta, Baton Rouge, Boston, Honolulu, Jefferson County, Ala., Miami, Mobile, Ala., New Orleans and San Diego.
The settlement was lodged in U.S. District Court in the Southern District of Ohio and is subject to a 30-day public comment period and final court approval.

R-027 ###

Release date: 02/15/2002 Receive our News Releases Automatically by Email
IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF OHIO
WESTERN DIVISION

UNITED STATES OF AMERICA and THE STATE OF OHIO,
Plaintiffs,

v.

THE BOARD OF COUNTY COMMISSIONERS OF HAMILTON COUNTY, OHIO and THE CITY OF CINCINNATI,
Defendants.

INTERIM PARTIAL CONSENT DECREE ON SANITARY SEWER OVERFLOWS
# TABLE OF CONTENTS

I. JURISDICTION AND VENUE .................................................. - 5 -

II. PARTIES ........................................................................ - 6 -

III. BINDING EFFECT .............................................................. - 7 -

IV. OBJECTIVES ..................................................................... - 9 -

V. DEFINITIONS ..................................................................... - 10 -

VI. CAPITAL IMPROVEMENT PROJECTS AND SSO 700 ............... - 14 -

VII. COMPREHENSIVE SSO REMEDIATION PROGRAM .......... - 25 -

VIII. SHORT-TERM ADEQUATE CAPACITY .............................. - 35 -

IX. REPORTING REQUIREMENTS .............................................. - 37 -

X. DOCUMENT RETENTION/CERTIFICATION OF SUBMISSIONS - 39 -

XI. STIPULATED PENALTIES ...................................................... - 40 -

XII. FORCE MAJEURE BETWEEN DEFENDANTS AND THE UNITED STATES ........................................ - 48 -

XIII. POTENTIAL FORCE MAJEURE BETWEEN DEFENDANTS AND THE STATE ........................................ - 51 -

XIV. DISPUTE RESOLUTION ..................................................... - 52 -

XV. RIGHT OF ENTRY ............................................................. - 56 -

XVI. NOT A PERMIT/COMPLIANCE WITH ................................ -
XVII. FAILURE OF COMPLIANCE

XVIII. EFFECT OF CONSENT DEGREE AND NON-WAIVER PROVISIONS

XIX. COSTS OF SUIT

XX. NOTICES

XXI. MODIFICATION

XXII. REVIEW OF SUBMITTALS

XXIII. CONTINUING JURISDICTION

XXIV. CONTINGENT LIABILITY OF STATE OF OHIO

XXV. TERMINATION

XXVI. PUBLIC COMMENT

XXVII. SIGNATORIES/SERVICE

EXHIBIT 1: Non-MSD Sewer System

EXHIBIT 2: ADDITIONAL WASTEWATER TREATMENT PLANTS

EXHIBIT 3: CAPITAL IMPROVEMENT PROJECTS

EXHIBIT 4: METROPOLITAN SEWER DISTRICT OF GREATER CINCINNATI MODEL AND DATA COLLECTION WORK PLAN AND ADDENDUM

EXHIBIT 5: SSO MONITORING AND REPORTING PLAN

EXHIBIT 6: SEWER OVERFLOW RESPONSE PLAN

EXHIBIT 7: OPERATION AND MAINTENANCE PROGRAM

EXHIBIT 8: INDUSTRIAL WASTE SSO/CSO DISCHARGE MANAGEMENT AND MINIMIZATION PLAN

EXHIBIT 9: PUMP/LIFT STATION OPERATION AND MAINTENANCE PROCEDURES
WHEREAS, plaintiff United States of America ("United States"), on behalf of the United States Environmental Protection Agency ("U.S. EPA"), is filing a Complaint herein concurrently with lodging of this Partial Consent Decree ("Consent Decree" or "Decree"), alleging that Defendants Board of County Commissioners of Hamilton County, Ohio (the "County") and the City of Cincinnati (the "City") (collectively, "Defendants"), acting through the Metropolitan Sewer District of Greater Cincinnati ("MSD"), have Sanitary Sewer Overflows ("SSOs") in the MSD Sanitary Sewer System which have violated and continue to violate Section 301 of the Federal Water Pollution Control Act (the "Clean Water Act" or the "Act"), 33 U.S.C. § 1311;

WHEREAS, Plaintiff State of Ohio, on behalf of the Ohio EPA, is filing a separate Complaint against Defendants concurrently with the lodging of this Consent Decree concerning the SSOs, alleging violations of the Act, 33 U.S.C. § 1251 et seq., and Chapter 6111 of the Ohio Revised Code ("O.R.C"), and all Parties agree that the Complaints filed by the United States and the State of Ohio should be consolidated;

WHEREAS, the Complaints allege that Defendants have discharged pollutants from their Sanitary Sewer System, which discharges were
not authorized under Section 301(a) of the Act, 33 U.S.C. § 1311(a), and the Complaints seek injunctive relief for these SSOs, but not civil penalties at this time;

WHEREAS, Plaintiffs maintain that various other wet weather issues, including Combined Sewer Overflows (CSOs) from Defendants' Combined Sewer System and capacity-related issues at certain of Defendants' Wastewater Treatments Plants ("WWTPs"), have led to additional violations of the Act beyond those alleged in the Complaints, but Plaintiffs' claims for these violations are not addressed by this Consent Decree, because they will be resolved through later negotiations designed to find a global solution to these issues, and/or by other future enforcement efforts;

WHEREAS, in response to orders issued by Ohio EPA, Defendants have already taken some measures to address SSOs through a program established in 1992 designed to identify SSOs and remedy them through an infiltration/inflow reduction program, and rehabilitation and construction of new sewers, which have resulted in the elimination of a number of SSOs;

WHEREAS, MSD asserts that it is in compliance with the 1992 State of Ohio Director's Final Findings and Orders ("DFFO") regarding SSOs;

WHEREAS, MSD has engaged in environmental research both through studies and pilot-scale operations conducted by its own staff and
funding of cooperative research performed by the University of
Cincinnati, the Water Environment Research Foundation, the Ohio River
Valley Water Sanitation Commission ("ORSANCO"), U.S. EPA and other
organizations;

WHEREAS, MSD has been an active participant in the national
discussion of SSO policy through the Association of Metropolitan
Sewerage Agencies and the Water Environment Federation;

WHEREAS, the Parties are entering into this Partial Consent
Decree because they recognize the need for the Defendants: 1) to
continue work they have already begun to address certain SSOs by
implementing certain capital improvement projects, which Defendants
had already planned; 2) to implement interim and permanent remedial
measures at SSO 700; and 3) to evaluate their Sewer System in order
to allow them to develop and propose a comprehensive SSO elimination
program;

WHEREAS, the Parties nevertheless recognize that wet weather
issues in and remedial measures for the Sanitary Sewer System are
directly related to wet weather issues in and remedial measures for
other parts of MSD's collection system. This is especially true with
respect to CSOs from Defendants' Combined Sewer System and capacity-
related issues at certain of Defendants' WWTPs;

WHEREAS, MSD asserts that it has undertaken a program to
address CSOs by implementation of the Nine Minimum Controls and
preparation and submission to U.S. EPA and Ohio EPA of a Long Term Control Plan, which efforts will be the subject of future discussions with the Plaintiffs;

WHEREAS, the confluence of these and other factors requires an integrated and costly response that addresses SSOs, CSOs and WWTP issues;

WHEREAS, Defendants are in the process of analyzing and considering global solutions for these wet weather issues and other Sewer System challenges, including possible construction of a deep storage tunnel beneath Mill Creek that will be approximately 16 miles in length and in excess of thirty feet in diameter ("the Mill Creek Deep Tunnel");

WHEREAS, the Parties recognize the need expeditiously to commence discussions concerning global solutions to address the remaining Sewer System issues; and further recognize that because the schedule for implementing the SSO remedial measures that are to be proposed under the Capacity Assurance Program Plan required by this Decree is related to certain other Sewer System solutions, this Decree neither requires implementation of, nor provides a final construction completion date for, the SSO remedial measures that will be proposed under the Capacity Assurance Program Plan pursuant to this Decree;
WHEREAS, the Parties intend expeditiously to commence negotiations concerning: provisions for implementation of the Capacity Assurance Program Plan's SSO remedial measures, including a completion date for such measures; solutions for other alleged violations of the Act (including, among other things, CSOs and certain WWTPs); and for a civil penalty to address both the unauthorized discharges from the Sanitary Sewer System (some of the injunctive relief for which is incorporated in this Partial Consent Decree) and the other alleged violations;

WHEREAS, the Parties recognize that if they are unable to timely negotiate a resolution of these issues, future litigation may be necessary;

WHEREAS, the Parties explicitly recognize that this Partial Consent Decree does not resolve any claims the Plaintiffs may have for penalties for the SSO violations alleged in the Complaints; that this Partial Consent Decree does not fully resolve Plaintiffs' claims for injunctive relief arising from the SSO violations alleged in the Complaints because it does not require implementation of the remedial measures to be proposed under the Capacity Assurance Program Plan; that this Partial Consent Decree does not resolve any claims Plaintiffs may have for penalties or injunctive relief for violations that have not yet been alleged in any complaint; and that the Parties
reserve all claims and defenses that they may have concerning all these matters; and

WHEREAS, the Parties agree and the Court, by entering this Decree, finds that settlement of this matter without further litigation is in the public interest and that entry of this Consent Decree is the most appropriate means of resolving the matter;

NOW, THEREFORE, upon consent of the Parties hereto, before the taking of testimony, without any adjudication of issues of fact or law, and without admission by the Defendants of the non-jurisdictional allegations in the Complaint, it is hereby ORDERED, ADJUDGED AND DECREED as follows:

I. JURISDICTION AND VENUE

A. This Court has jurisdiction over the subject matter of this action and over the Parties, pursuant to Section 309(b) of the Act, 33 U.S.C. § 1331, and 28 U.S.C. §§ 1331, 1345, and 1355. This Court has supplemental jurisdiction over the claims asserted by the State of Ohio pursuant to 28 U.S.C. § 1367. The United States' Complaint states a claim upon which relief can be granted pursuant to Section 309 of the Act, 33 U.S.C. § 1319. The State's Complaint states claims upon which relief can be granted pursuant to O.R.C. §§ 6111.07 and 6111.09. The Defendants agree not to contest the jurisdiction of the Court to enter and enforce this Decree.
B. Venue is properly in this District pursuant to Section 309(b) of the Act, 33 U.S.C. § 1319(b), and under 28 U.S.C. §§ 1391 and 1395.

II. PARTIES

A. Plaintiff, United States of America, is acting at the request and on behalf of the Administrator of the United States Environmental Protection Agency.

B. Plaintiff, State of Ohio, is acting at the written request of the Director of Environmental Protection of the State of Ohio.

C. Defendant Board of Commissioners of Hamilton County ("the County") is the duly authorized governing body of Hamilton County, Ohio, pursuant to the laws of the State of Ohio. The County is the holder of various NPDES permits that govern discharges from the County's Wastewater Treatment Plants and Sewer System. As such, it is responsible for operating the County's Wastewater Treatment Plants and Sewer System. The County has established the MSD, a county sewer district established pursuant to Chapter 6117 of the Ohio Revised Code, and acts as the principal of MSD, including maintenance of funding authority for MSD. Prior court decisions in Ohio hold that MSD cannot be sued in its own name, and thus, MSD is not made a Party to this action.

D. Defendant City of Cincinnati ("the City") is a chartered municipal corporation, organized and existing under the laws of the
State of Ohio. Pursuant to an agreement with the County, and subject to the pertinent provisions of the Ohio Revised Code, the City also serves as the agent for the County in the management and operation of MSD. It is in this capacity that the City is named as Defendant.

III. BINDING EFFECT

A. The provisions of this Consent Decree shall apply to, and be binding upon the Defendants and their officers, directors, employees, agents, servants, successors and assigns, and upon all persons, firms and corporations in active concert or participation with the Defendants or the Defendants' officers, directors, employees, agents, servants, successors or assigns, and upon the United States and the State of Ohio.

B. Effective from the Date of Lodging of this Consent Decree until its termination, any sale or transfer of either Defendant's interests in or operating role with respect to the Sewer System or WWTPs shall not in any manner relieve either Defendant of its responsibilities for meeting the terms and conditions of this Consent Decree, except as provided in Paragraph C.

C. If either Defendant seeks to name a successor in interest to assume any or all of its interests in, or operating role with respect to, the Sewer System or WWTPs, such Defendant may request modification of this Consent Decree from U.S. EPA/Ohio EPA to amend
this Consent Decree in accordance with the role to be assumed by the proposed successor in interest. Upon such Defendant’s request, the Parties shall discuss the matter. If the Parties agree on a proposed modification to the Consent Decree, they shall prepare a joint motion to the Court requesting such modification and seeking leave to join the proposed successor in interest. If the Parties do not agree, and the Defendant still believes modification of this Decree and joinder of a successor in interest is appropriate, it may file a motion seeking such modification in accordance with Federal Rule of Civil Procedure 60(b); provided, however, that nothing in this Paragraph is intended to waive the Plaintiffs’ right to oppose such motion and to argue that such modification is unwarranted.

D. If this Consent Decree is modified to allow a successor in interest to assume any or all of the obligations hereunder, Defendants shall give written notice of and provide a copy of this Consent Decree to any such successor in interest prior to transfer of ownership or operation of any portion of their WWTPs or Sewer System.

E. Defendants shall notify U.S. EPA and Ohio EPA in writing, as specified in Section XX, of any successor in interest at least twenty-one (21) days prior to any such transfer.

F. Defendants shall advise each engineering, consulting and contracting firm to be retained to perform any activities described
in this Decree of the existence of this Decree and shall make copies of this decree available to such firms upon execution of any contract relating to such work. Defendants shall also advise each engineering, consulting and contracting firm, already retained for such purpose, of the existence of this Decree and shall make copies of this Decree available to such firms no later than thirty (30) days after the Date of Lodging of this Consent Decree.

IV. OBJECTIVES

It is the express purpose of the Parties entering into this Partial Consent Decree to further the objectives set forth in Section 101 of the Act, 33 U.S.C. § 1251, and to partially resolve the claims of the Plaintiffs for injunctive relief for unpermitted discharges from the Defendants' Sanitary Sewer System, as alleged in Plaintiffs' Complaints. In light of these objectives, Defendants agree, inter alia: to use sound engineering practices, consistent with industry standards, to perform investigations, evaluations and analyses and to design and construct any remedial measures required by this Decree; to use sound management, operational, and maintenance practices, consistent with industry standards, to implement all the requirements of this Consent Decree; and to achieve expeditious implementation of the provisions of this Decree with the goal of eliminating all Sanitary Sewer Overflows.
V. DEFINITIONS

A. Unless otherwise defined herein, terms used in this Consent Decree shall have the meaning given to those terms in the Clean Water Act, 33 U.S.C. §§ 1251 et seq., and the regulations promulgated thereunder.

B. The following terms used in this Consent Decree shall be defined as follows:

"Calendar Quarter" shall mean the three-month periods ending on March 31st, June 30th, September 30th, and December 31st.

"City" shall mean the City of Cincinnati, Ohio.

"Combined Sewer System" means the portion of the Defendants' Sewer System designed to convey municipal sewage (domestic, commercial and industrial wastewaters) and stormwater runoff through a single-pipe system to the Defendants' Wastewater Treatment Plants or Combined Sewer Overflows.

"Consent Decree" shall mean this Consent Decree.

"County" shall mean Hamilton County, Ohio and the Board of County Commissioners of Hamilton County.

"Date of Entry" shall mean the date the Consent Decree is approved and signed by a United States District Court Judge.

"Date of Lodging" shall mean the date the Consent Decree is filed for lodging with the Clerk of the Court for the United States District Court for the Southern District of Ohio, Western Division.
"Day" or "Days" as used herein shall mean a calendar day or calendar days, unless otherwise indicated. When the day a report or other deliverable is due under this Consent Decree falls on a Saturday, Sunday, federal holiday or legal holiday for Defendants, Defendants shall have until the next calendar day that is not one of the aforementioned days for submittal of such report or other deliverable.

"Infiltration" shall mean the water entering a sewer system and service connections from the ground, through such means as, but not limited to, pipes, pipe joints, connections, or manhole walls.

"Inflow" shall mean the water discharged into a sewer system, including service connections, from such sources as, but not limited to: roof leaders; cellars, yard and area drains; foundation drains; cooling water discharges; drains from springs and swampy areas; manhole covers; cross connections from storm sewers; surface run-off; street wash waters; or drainage.

"I/I" shall mean the total quantity of water from both infiltration and inflow without distinguishing the source.

"Mill Creek Deep Tunnel" shall mean a tunnel designed to provide flood control and CSO control in the Mill Creek drainage basin.

"Non-MSD Sewer System" shall mean any wastewater collection and transmission system or piping that is designed to collect and convey
domestic, commercial or industrial sewage and/or stormwater, but that is not owned or controlled by MSD at the time of lodging of this Consent Decree. The wastewater collection and transmission system and the piping comprising the Non-MSD Sewer System are generally depicted in Exhibit 1 to this Decree.

"Paragraph" shall mean a portion of this Consent Decree identified by an uppercase letter.

"Sanitary Sewer Discharge" and "SSD" shall mean any discharge to waters of the State or United States from Defendants' Sanitary Sewer System through a point source not specified in any NPDES permit.

"Sanitary Sewer Overflow," "SSO," and "Overflow" shall mean any discharge to waters of the State or United States from Defendants' Sanitary Sewer System through point sources not specified in any NPDES permit, as well as any release of wastewater from Defendants' Sanitary Sewer System to public or private property that does not reach waters of the United States or the State, such as a release to a land surface or structure that does not reach waters of the United States or the State; provided, however, that wastewater backups into buildings that are caused by blockages, flow conditions, or malfunctions in a building lateral, other piping or conveyance system that is not owned or operationally controlled by Defendants are not SSOs for the purposes of this Consent Decree.
"Sanitary Sewer Overflow 700," or "SSO 700," shall mean the SSO located at State plane coordinates E 1,418,903; N 455,867.

"Sanitary Sewer System" or "SSS" shall mean all portions of the Defendants' Sewer System that are not a part of the Defendants' Combined Sewer System. SSS does not include any non-MSD Sewer System.

"Section" shall mean a portion of this Consent Decree identified by an uppercase Roman Number.

"Sewage" means municipal sewage, including domestic, commercial and industrial sewage.

"Sewer System" means the wastewater collection and transmission system owned or operated by Defendants designed to collect and convey municipal sewage (domestic, commercial and industrial) to the Defendants' Wastewater Treatment Plants or overflow structures.

"Sub-Basin" means the following portions of the Defendants' Sewer System: West Branch Mill Creek, East Branch Mill Creek, South Branch Mill Creek, Polk Run, Sycamore, California, Dry Run-Newtown-Clough, Duck Creek, Delta, Muddy Creek, Taylor Creek, Rapid Run, Muddy Creek-Ohio River and Cleves.

"Surcharge" means the condition that exists when the surface of the wastewater in manholes rises above the top of the sewer pipe, or the sewer is under pressure or head, rather than at atmospheric pressure.
"Ten-Year Storm" shall mean a SCS Type II storm with a ten-year return and 24-hour duration.

"U.S. EPA/Ohio EPA" shall mean "U.S. EPA and Ohio EPA" unless Plaintiffs jointly elect (in their unreviewable discretion) to assign a particular task or responsibility to one of them. To make that election, Plaintiffs shall notify Defendants in writing of the task or responsibility that U.S. EPA or Ohio EPA is assigned. Collectively, U.S. EPA/Ohio EPA are referred to as "Plaintiffs," and each individually is a "Plaintiff" under this Decree.

"Wastewater Treatment Plant(s)" ("WWTP(s)") shall refer to: 1) the following wastewater treatment plants: Mill Creek, Little Miami, Muddy Creek, Sycamore, Polk Run, Indian Creek, and Taylor Creek; and 2) the permitted treatment facilities owned or operated by Defendants identified in Exhibit 2 to this Decree.

VI. CAPITAL IMPROVEMENT PROJECTS AND SSO 700

A. Capital Improvement Projects

1. Defendants shall construct Capital Improvement Projects (CIP) consistent with the descriptions set forth in Exhibit 3 and in accordance with the Construction Complete Dates for each project set forth in Exhibit 3; provided however, that Defendants may seek to modify the project descriptions and schedule set forth in Exhibit 3 to address deficiencies in these projects identified by the
Sanitary Sewer System Hydraulic Model completed pursuant to Paragraph VII.B of this Consent Decree. Any such new schedule proposed by Defendants shall be as expeditious as practicable. Defendants shall submit any proposed modifications to the project descriptions and/or schedule set forth in Exhibit 3 to U.S. EPA/Ohio EPA for review and approval.

2. U.S. EPA/Ohio EPA may approve the submittal or decline to approve it and provide written comments. Within 60 days of receiving U.S. EPA/Ohio EPA's written comments, Defendants shall either: (i) alter the submittal consistent with U.S. EPA/Ohio EPA's written comments, and submit the submittal to U.S. EPA/Ohio EPA for final approval; or (ii) submit the matter for dispute resolution under Section XIV of this Decree.

3. Upon receipt of U.S. EPA/Ohio EPA's final approval of the submittal, or upon completion of the submittal pursuant to dispute resolution, Defendants shall implement the revised Capital Improvement Project(s) in accordance with the schedule in the approved submittal.

B. SSO 700 Interim Measures

1. No more than eleven months from the lodging of this Consent Decree, Defendants shall submit an SSO 700 Interim Remedial Measures (IRM) Plan to build a Chemically Enhanced High Rate Settling (CEHRS) and Storage Facility, to reduce the amount of contaminant
loading and improve the quality of discharges from SSO 700 while alternatives for final remedial measures for SSO 700 are being developed, evaluated and implemented. The CEHRS and Storage Facility will consist of a storage basin, a Chemically Enhanced High Rate Settling (CEHRS) treatment system, and the piping, pumps, controls and equipment necessary to allow the system to operate as both a storage and treatment facility. The CEHRS treatment system shall utilize the ballasted flocculation process (in which chemicals and a fine sand are added to the wastewater prior to settling, to improve solids removal rates and treatment system capacity) or another CEHRS treatment process that will provide an equivalent or better reduction in discharge volume and pollutant load to the Mill Creek. Defendants shall spend a minimum of $10 million and up to $15 million in total project costs on the CEHRS and Storage Facility. Defendants shall utilize their available hydraulic modeling capabilities to assess whether marginal increases in system capacity and total project cost above $10 million (up to $15 million) are justified based on a "knee of the curve" analysis. The IRM Plan shall contain the results of such an evaluation of system cost/performance, and a discussion of proposed system capacities and capital costs, based on those cost/performance analyses. The IRM Plan shall also provide a detailed technical description of the proposed CEHRS and Storage Facility, including its proposed design performance characteristics (including
expected treatment capacity and associated "design" storm magnitude, hydraulic loading rates, ballast and chemical feed rates, expected modes of operation, etc.); its expected impact on SSO 700 activation frequency, duration and volume of discharge in a "typical" year; and associated pollutant loads in a "typical" year (under both current uncontrolled conditions and following implementation of the CEHRS and Storage Facility). The IRM Plan shall also include a schedule that is as expeditious as practicable, and that achieves completion of construction by no later than December 31, 2007. At a minimum, the schedule shall include critical construction milestones, including, at a minimum, deadlines for submission of a Permit to Install; commencement of construction, and completion of construction.

2. U.S. EPA/Ohio EPA may approve the IRM Plan or decline to approve it and provide written comments. Within 60 days of receiving U.S. EPA/Ohio EPA's written comments, Defendants shall either: (i) alter the IRM Plan consistent with U.S. EPA/Ohio EPA's written comments, and submit the IRM Plan to U.S. EPA/Ohio EPA for final approval; or (ii) submit the matter for dispute resolution under Section XIV of this Decree.

3. Upon receipt of U.S. EPA/Ohio EPA's final approval of the IRM Plan, or upon completion of the IRM Plan pursuant to dispute resolution, Defendants shall implement the IRM Plan in accordance with the schedule in the approved Plan.
4. Once construction is completed and the CEHRS and Storage Facility is placed in service, Defendants shall operate and maintain the CEHRS and Storage Facility in a manner consistent with the goals of (1) reducing SSO 700 pollutant discharges and, (2) successfully completing the CEHRS and Storage Facility Effectiveness Study, required by subparagraph VI.B.6, in accordance with the approved CEHRS and Storage Facility Effectiveness Study Plan.

5. Within 60 days of completion of construction of the CEHRS and Storage Facility, Defendants shall provide U.S. EPA and Ohio EPA with documentation regarding the total project cost, and the components of that total cost (e.g., land acquisition, design, equipment acquisition and construction, etc.), of the CEHRS and Storage Facility.

6. CEHRS and Storage Facility Effectiveness Study.

   (a) Within 30 months of the entry of this Consent Decree, Defendants shall submit to U.S. EPA and Ohio EPA, for approval, a work plan for conducting a two year study ("CEHRS and Storage Facility Effectiveness Study") of the effectiveness of the CEHRS and Storage Facility. The study shall commence immediately after completion of construction of the CEHRS and Storage Facility and shall include, but not be limited to, an analysis of: (a) the effectiveness of those facilities at removing suspended solids, carbonaceous biochemical oxygen demand (or biochemical oxygen
demand), total Kjeldahl nitrogen (TKN), ammonia and total phosphorus; (b) any difficulties encountered in or limitations involved with using those facilities over a range of flow conditions, chemical feed rates and other operational control parameters; and (c) measures that MSD has taken to optimize use of those facilities. The work plan shall also include a schedule for the study and for production of a report that presents the results of the study.

(b) U.S. EPA/Ohio EPA may approve the CEHRS and Storage Facility Effectiveness Study Plan or decline to approve it and provide written comments. Within 60 days of receiving U.S. EPA/Ohio EPA's written comments, Defendants shall either: (i) alter the CEHRS and Storage Facility Effectiveness Study Plan consistent with U.S. EPA/Ohio EPA's written comments, and submit the CEHRS and Storage Facility Effectiveness Study Plan to U.S. EPA/Ohio EPA for final approval; or (ii) submit the matter for dispute resolution under Section XIV of this Decree.

(c) Upon receipt of U.S. EPA/Ohio EPA’s final approval of the CEHRS and Storage Facility Effectiveness Study Plan, or upon completion of the CEHRS and Storage Facility Effectiveness Study Plan pursuant to dispute resolution, Defendants shall implement the CEHRS and Storage Facility Effectiveness Study Plan in accordance with the schedule in the approved Plan.

C. Permanent Remedial Measures for SSO 700

21
1. As soon as sufficient information becomes available on which to base their decision, but no later than December 31, 2005, Defendants shall submit to U.S. EPA/Ohio EPA a notice concerning the Mill Creek Deep Tunnel ("Tunnel Notice"). The Tunnel Notice shall contain a statement either: (a) that Defendants will pursue construction of the Mill Creek Deep Tunnel; or (b) that Defendants will not pursue construction of the Mill Creek Deep Tunnel.

2. It is the current understanding of the Parties that Defendants intend to pursue construction of the Mill Creek Deep Tunnel with assistance and/or funding from a third party project sponsor, which is not a signatory to this Consent Decree. However, whether or not Defendants actually receive such assistance and/or funding shall have no effect on Defendants' obligations under this Consent Decree, including, but not limited to, the requirement that Defendants complete construction of permanent remedial measures for SSO 700 in the manner and in accordance with the applicable schedule set forth in subparagraph VI.C.3.

3. Defendants shall submit to U.S. EPA/Ohio EPA an SSO 700 Remedial Plan by December 31, 2009. The SSO 700 Remedial Plan shall set out a plan for installation of remedial measures that have the goal of eliminating SSOs from SSO 700. The SSO 700 Remedial Plan shall provide a schedule for design and construction of the proposed remedial measures, which shall include critical construction
milestones, including, at a minimum, deadlines for submission of a Permit to Install; commencement of construction, and completion of construction. If Defendants intend to address SSOs from SSO 700 in whole or in part by the operation of the Mill Creek Tunnel, the schedule shall be as expeditious as practicable and shall achieve construction of the Tunnel and any other proposed remedial measures by December 31, 2016. If Defendants intend to address SSOs from SSO 700 by means other than the operation of the Mill Creek Tunnel, the schedule shall be as expeditious as practicable and shall achieve construction of the proposed remedial measures by December 31, 2022. The SSO 700 Remedial Plan shall also include a detailed technical description of the proposed remedial measures, estimated costs (capital, annual operation and maintenance (O&M) and either present value or annualized costs), and information regarding the expected performance of the proposed remedial measures (including the expected performance of the measures during storms of various sizes and the maximum storm that the measures can be expected to capture or otherwise address). In addition, the Plan shall indicate whether the CEHRS and Storage Facility will remain in operation after construction of the proposed remedial measures, and if so, in what capacity and with what expected performance results.

4. U.S. EPA/Ohio EPA may approve the SSO 700 Remedial Plan or decline to approve it and provide written comments. Within
90 days of receiving U.S. EPA/Ohio EPA's written comments, Defendants shall either: (i) alter the SSO 700 Remedial Plan consistent with U.S. EPA/Ohio EPA's written comments, and submit the SSO 700 Remedial Plan to U.S. EPA/Ohio EPA for final approval; or (ii) submit the matter for dispute resolution under Section XV of this Decree.

5. Upon receipt of U.S. EPA/Ohio EPA's final approval of the SSO 700 Remedial Plan, or upon completion of the SSO 700 Remedial Plan pursuant to dispute resolution, Defendants shall implement the SSO 700 Remedial Plan in accordance with the schedule in the approved Plan.

D. Evaluation and Correction Period.

1. After the completion of the permanent remedial measures for SSO 700, Defendants may evaluate the effectiveness of the rehabilitative work completed. Defendants may have two years after the completion of construction date for the remedial measures set forth in the SSO 700 Remedial Plan to evaluate system performance.

2. If Defendants need additional time to eliminate SSOs from SSO 700 or to correct other problems identified during the evaluation period, they may petition U.S. EPA/Ohio EPA for an extension of the previously applicable deadline for completion of construction of the SSO 700 remedial measures to allow for the implementation of additional remedial measures. Such petition shall
include the reason(s) that the deadline extension is deemed necessary and shall be submitted within thirty (30) days of the end of the two-year evaluation period. Defendants shall submit a petition as soon as practicable after they identify a problem(s) that they believe warrants correction, and may submit more than one petition if they identify multiple problems.

3. U.S. EPA/Ohio EPA may approve the petition or decline to approve it and provide written comments, provided however, that U.S. EPA/Ohio EPA's approval shall not be arbitrarily and capriciously denied if the permanent remedial measures have been designed and constructed in accordance with the SSO 700 Remedial Plan approved by U.S. EPA/Ohio EPA pursuant to Paragraph VI.C of this Decree. Within 45 days of receiving U.S. EPA/Ohio EPA's written comments, Defendants shall either: (i) alter the petition consistent with U.S. EPA/Ohio EPA's written comments, and submit the petition to U.S. EPA/Ohio EPA for final approval; or (ii) submit the matter for dispute resolution under Section XIV of this Decree.

4. Upon receipt of U.S. EPA/Ohio EPA's final approval of the petition, or upon completion of the petition pursuant to dispute resolution, Defendants shall have 90 days to submit a Revised SSO 700 Remedial Plan (including a schedule that is as expeditious as practicable for completion of the additional remedial measures) to U.S. EPA/Ohio EPA for review and approval.
5. U.S. EPA/Ohio EPA may approve the Revised SSO 700 Remedial Plan or decline to approve it and provide written comments. Within 90 days of receiving U.S. EPA/Ohio EPA’s written comments, Defendants shall either: (i) alter the Revised SSO 700 Remedial Plan consistent with U.S. EPA/Ohio EPA’s written comments, and submit the Revised SSO 700 Remedial Plan to U.S. EPA/Ohio EPA for final approval; or (ii) submit the matter for dispute resolution under Section XV of this Decree.

6. Upon receipt of U.S. EPA/Ohio EPA’s final approval of the Revised SSO 700 Remedial Plan, or upon completion of the Revised SSO 700 Remedial Plan pursuant to dispute resolution, Defendants shall implement the revised SSO 700 Remedial Plan in accordance with the schedule included in the approved revised Plan.

E. Modification of the Tunnel Notice or Remedial Plan

1. At any time after submission of the Tunnel Notice, or the SSO 700 Remedial Plan, if Defendants reasonably believe in good faith that the decision reflected in the Tunnel Notice or the SSO 700 Remedial Plan should be significantly modified or that alternative remedial measures that have the goal of eliminating SSOs from SSO 700 should be implemented, Defendants may submit to U.S. EPA and Ohio EPA a Revised Tunnel Notice and/or a Revised SSO 700 Remedial Plan. The Revised Tunnel Notice and/or the Revised SSO 700 Remedial Plan will
set out the nature of the modification to the Tunnel Notice and/or the SSO 700 Remedial Plan and the reasons for such modifications. U.S. EPA/Ohio EPA shall review the submittal and in their sole and unreviewable discretion may approve or disapprove the proposed submittal. Upon receipt of U.S. EPA/Ohio EPA's approval of the submittal, Defendants shall implement the approved submittal in accordance with its terms.

2. If U.S. EPA/Ohio EPA do not approve the submittal, and Defendants believe modification of this Decree is appropriate, they may file a motion seeking such modification in accordance with Federal Rule of Civil Procedure 60(b); provided, however, that nothing in this subparagraph is intended to waive the Plaintiffs' right to oppose such motion and to argue that such modification is unwarranted.

VII. COMPREHENSIVE SSO REMEDIATION PROGRAM

A. Introduction

1. As further set forth in this Section, Defendants shall undertake a comprehensive program to evaluate and propose rehabilitation measures for their Sanitary Sewer System in order to meet the objectives of this Consent Decree as described in Section IV and as further described in this Section VII. This program builds upon the Capital Improvement Projects required by Section VI and
Exhibit 3 of this Consent Decree, will take place in phases, and includes the following elements:

**Data Collection and Modeling**
- Sanitary Sewer System Hydraulic Model (and associated monitoring and data collection) (§VII.B)

**Analysis and Assessment**
- Capacity Assessment Plan (§VII.C)
- Capacity Assessment Report (§VII.D)

**Program Development and Implementation**
- Capacity Assurance Program Plan Development (§VII.E)
- SSO Monitoring and Reporting Program (§VII.F)
- Sewer Overflow Response Program (§VII.G)
- Operation and Maintenance Program (§VII.H)
- Industrial Waste SSO/CSO Management and Minimization Program (§VII.I)
- Pump/Lift Station Operating and Management Procedures (§VII.J)
- Short Term Adequate Capacity Program Plan (§VIII)

2. Defendants' plans, programs, and other submittals shall be based on good engineering practices and industry standards
and shall be consistent with the following standard references, or revisions thereto, as applicable:


B. Sanitary Sewer System Hydraulic Model

1. Defendants shall develop and employ, as required by Paragraph VII.C, a hydraulic model of Defendants' Sanitary Sewer System ("the Sanitary Sewer System Model" or "the Model") in accordance with the "Metropolitan Sewer District of Greater Cincinnati Model and Data Collection Work Plan and Addendum (August 2001) (Model Plan) which is attached as Exhibit 4 to this Consent Decree.

2. The Model Plan describes how Defendants will develop and implement a hydraulic model of their Sewer System. The Model Plan also describes the extensive Sewer System precipitation, groundwater, flow, and other monitoring and data collection that Defendants have performed or will be performing, and how Defendants will use those data in calibrating and validating the Model.
3. Defendants shall complete calibration and validation of the Model through actual flow measurements by October 31, 2003, unless there have been adequate precipitation events to allow for the technically sound calibration and validation of the Model. If there have not been adequate precipitation events, Defendants shall so notify U.S. EPA/Ohio EPA in writing and then shall complete calibration and validation of the Model through actual precipitation and flow measurements as expeditiously as practicable. Defendants shall immediately notify U.S. EPA/Ohio EPA in writing when validation has been completed.

C. Capacity Assessment Plan

1. Defendants shall carry out an assessment of the capacities of the following portions of their Sanitary Sewer System: all pump stations, all gravity sewer lines of 12 inches diameter or greater, force mains and syphons (as specified in the Model Plan), all known overflow points, specified sewers that hydraulically affect all known overflow points, and any other portions of the Sewer System (including portions of the Combined Sewer System 18 inches or greater, such as interceptors) that must be assessed so as to allow the technically sound evaluation of the causes of all known capacity-related SSOs, and the identification of appropriate measures that have the goal of eliminating those capacity-related SSOs. This assessment shall specifically identify the hydraulic capacities of
the aforementioned portions of the Sewer System, and compare those capacities to existing and future projected (through year 2025, or another future date chosen consistent with industry standards) average and peak, dry and wet weather flows. This capacity assessment shall take into account impacts on future collection system capacities that may result from the completion of the Capital Improvement Projects required pursuant to Section VI and Exhibit 3. This assessment shall identify, within the aforementioned portions of Defendants' Sewer System, those portions of the Sewer System that experience and/or are expected to experience and/or cause SSOs and/or Surcharge conditions under existing and future projected (through year 2025, or another future date chosen consistent with industry standards), average and peak, dry and wet weather flows, and the degree to which those portions experience or cause, under current or projected future conditions, SSOs and/or Surcharge conditions. It is specifically noted that the programs in this Consent Decree do not seek, per se, to eliminate all Surcharge conditions in Defendants' Separate Sewer System; rather, identification of Surcharge conditions is required as Surcharge conditions are typically indicative of limited additional capacity in a sewer line.

2. This assessment shall consider local rainfall data and the impact of appropriate rainfall events on peak wet weather flows within those portions of Defendants' Sewer System identified in
subparagraph C.1, above. Defendants shall use the Model, as
described in the Model Plan attached as Exhibit 4, to accomplish this
assessment.

3. Defendants shall submit to U.S. EPA/Ohio EPA for
review and approval a comprehensive Capacity Assessment Plan within
120 days of completion of validation through actual flow measurements
of the model developed pursuant to the Model Plan attached to this
Decree as Exhibit 4. This Capacity Assessment Plan shall describe
how Defendants will undertake an engineering study to comprehensively
evaluate the hydraulic capacities of specified portions of the Sewer
System, as described above in subparagraph VII.C.1. The Plan shall
also include a schedule that is as expeditious as practicable for the
completion of that Assessment for the completion and submission to
U.S. EPA/Ohio EPA of a Report summarizing the Assessment, and for the
completion and submission of a Capacity Assurance Program Plan,
pursuant to the requirements of Paragraph VII.E.

4. U.S. EPA/Ohio EPA may approve the Capacity Assessment
Plan or decline to approve it and provide written comments. Within
60 days of receiving U.S. EPA/Ohio EPA's written comments, Defendants
shall either: (i) alter the Capacity Assessment Plan consistent with
U.S. EPA/Ohio EPA's written comments, and submit the Capacity
Assessment Plan to U.S. EPA/Ohio EPA for final approval; or (ii)
submit the matter for dispute resolution under Section XIV of this Decree.

5. Upon receipt of U.S. EPA's/Ohio EPA's final approval of the Plan, or upon completion of the Capacity Assessment Plan pursuant to dispute resolution, Defendants shall implement the Capacity Assessment Plan in accordance with the schedule included in the approved Plan.

D. Capacity Assessment Report

1. Defendants shall submit a Report, consistent with the schedule in the approved Capacity Assessment Plan required pursuant to Paragraph VII.C, that presents and summarizes the results of implementation of the Capacity Assessment Plan to U.S. EPA/Ohio EPA for review, comment and approval. This Capacity Assessment Report shall describe the analyses carried out, and shall specifically identify, both in narrative and using schematics and maps, within the aforementioned portions of Defendants' Sewer System, portions of the Sewer System experiencing or causing SSOs and/or Surcharge, and/or having inadequate capacity under current and future conditions, and both dry and wet weather conditions, and shall characterize those capacity limitations. The Report shall provide detailed information demonstrating that the assessment has been carried out in accordance with the approved Plan.
2. U.S. EPA/Ohio EPA may approve the Capacity Assessment Report or decline to approve it and provide written comments. Within 60 days of receiving U.S. EPA/Ohio EPA’s written comments, Defendants shall either: (i) alter the Capacity Assessment Report consistent with U.S. EPA/Ohio EPA’s written comments, and submit the Capacity Assessment Report to U.S. EPA/Ohio EPA for final approval; or (ii) submit the matter for dispute resolution under Section XIV of this Decree. Upon receipt of U.S. EPA’s/Ohio EPA’s final approval of the Capacity Assessment Report, or upon completion of the Report pursuant to dispute resolution, Defendants shall utilize the assessment to develop the Capacity Assurance Program, pursuant to the requirements of Paragraph VII.E.

E. Capacity Assurance Program Plan

1. Defendants shall develop a Capacity Assurance Program Plan, based upon the system capacities revealed by the Capacity Assessment pursuant to Paragraphs VII.C-VII.D, Defendants’ knowledge of the condition of their Sewer System, and projected impacts of the Capital Improvement Projects required pursuant to Section VI and Exhibit 3, and any other planned improvements, changes, or additions to Defendants’ Sewer System. The Capacity Assurance Program Plan shall identify additional feasible remedial measures that have the goal of eliminating all capacity-related SSOs and/or that are necessary to insure that there is adequate capacity in the SSS under
current and projected future conditions so that there will be no capacity-related SSOs under projected future conditions (as defined in subparagraph VII.C.1). If insufficient capacity, compared to current or projected future conditions (as defined in subparagraph VII.C.1), exists in any portion of the Defendants' Sanitary Sewer System or those other portions of Defendants' Sewer System that convey sanitary Sewage to the WWTPs, Defendants shall identify additional feasible measures needed to provide adequate capacity under current and projected future conditions and/or that have the goal of eliminating capacity-related SSOs and shall provide detailed information on the methodologies used to select the proposed remedial measures. It is the intent of the Parties that the Capacity Assurance Program Plan shall identify only those measures the construction or implementation of which is necessary in light of information and analyses developed pursuant to Sections VI and VII, which construction and/or implementation shall not be required under this decree and shall only be required pursuant to future negotiations and/or other enforcement action.

2. Measures proposed by Defendants to address capacity limitations may include removal of I/I sources, increases in pump station and sewer capacities in both the Sanitary Sewer System and the Combined Sewer System, storage/equalization facilities, or increases in wastewater treatment plant capacity.
3. The Capacity Assurance Program Plan shall provide information regarding the effectiveness of the Capital Improvement Projects required pursuant to Section VI and Exhibit 3, and their compatibility with the other remedial projects chosen and the ultimate goal of eliminating SSOs.

4. The Plan shall provide estimated costs (capital, annual O&M and either present value or annualized costs) and information regarding the expected performance of all considered and proposed measures. U.S. EPA/Ohio EPA shall consider the information concerning costs and performance of measures in their review of Defendants' Plan.

5. The Plan shall provide a schedule that is as expeditious as practicable for design and construction of all proposed measures. The schedule shall be broken out by Sub-Basin, and shall specify critical construction milestones for the projects in each Sub-Basin, including, at a minimum, deadlines for submission of Permit(s) to Install, commence construction, and complete construction, for each project, and a deadline for the completion date of all work in each Sub-Basin.

6. It is the intent of the Parties that this Partial Consent Decree does not include a specific date by which all design and construction in all Sub-Basins must be accomplished, but that this date will be proposed by Defendants in the schedule required by
subparagraph VII.E.5, and will be subject to future negotiations and/or dispute resolution in connection with the review and approval process for the Capacity Assurance Program Plan under subparagraph VII.E.8.

7. The Plan shall be submitted to U.S. EPA/Ohio EPA for review and approval, in accordance with the schedule in the approved Capacity Assessment Plan required pursuant to Paragraph VII.C.

8. U.S. EPA/Ohio EPA may approve the Capacity Assurance Program Plan or decline to approve it and provide written comments. Within 90 days of receiving U.S. EPA/Ohio EPA's written comments, Defendants shall either: (i) alter the Capacity Assurance Program Plan consistent with U.S. EPA/Ohio EPA's written comments, and submit the Capacity Assurance Program Plan to U.S. EPA/Ohio EPA for final approval; or (ii) submit the matter for dispute resolution under Section XIV of this Decree.

9. It is the intent of the Parties that implementation of the Capacity Assurance Program Plan shall not be required under this Decree, but shall only be required pursuant to future negotiations and/or other enforcement action.

F. SSO Monitoring And Reporting Plan

Defendants shall implement the SSO Monitoring and Reporting Plan attached to this Consent Decree as Exhibit 5.

G. Sewer Overflow Response Plan
Defendants shall implement the Sewer Overflow Response Plan attached to this Consent Decree as Exhibit 6.

H. **Operation and Maintenance Program**

Defendants shall implement the Operation and Maintenance Program attached to this Consent Decree as Exhibit 7.

I. **Industrial Waste SSO/CSO Discharge Management and Minimization Plan**

Defendants shall implement the Industrial Waste SSO/CSO Discharge Management and Minimization Plan attached to this Consent Decree as Exhibit 8.

J. **Pump/Lift Station Operation and Maintenance Procedures**

Defendants shall implement the Pump/Lift Station Operation and Maintenance Procedures attached to this Consent Decree as Exhibit 9.

**VIII. SHORT-TERM ADEQUATE CAPACITY**

A. Defendants shall implement the Short-Term Adequate Capacity Program Plan (STACP Plan) attached to this Consent Decree as Exhibit 10. Defendants shall authorize only those new sewers or sewer extensions or an increase in flow associated with new development that are in conformance with this Plan. The conditions of this Plan shall apply to each Sub-Basin or part of a Sub-Basin only until such time as the Sub-Basin remedial measures set forth in Defendants' Capacity Assurance Program Plan, required pursuant to
Paragraph VII.E above, have been satisfactorily completed. Nothing contained in the STACP Plan shall be construed as setting standards for, or changing any of the requirements for or objectives of, the remedial measures for the Defendants' Sewer System as required above by Paragraph VII.E of this Consent Decree.

B. The STACP Plan describes the process(es) that shall be used for authorizing those new sewers and/or sewer extensions including forms, procedures, methods, equations, staffing plans, flow meter locations, and the information or methods for obtaining information necessary to support such authorizations.

C. The objective of the STACP Plan is to prevent any wastewater flows from new development from aggravating or in any way adding to the quantity discharged from any downstream SSO. Specifically, the objective of the STACP Plan is to ensure that more flow is removed from the system than is added from a proposed new sewer, sewer extension, or increased flow associated with new development upstream of the SSO, as determined by the criteria and formulae set out in the STACP Plan. The current STACP Plan utilizes a removal credit trade ratio, as determined by the criteria and formulae set out in the Plan, that a minimum of 5 gallons of flow from a downstream SSO is to be removed for every gallon of flow added from the proposed new sewer, sewer extension, or increased flow associated with new development upstream of the SSO. In evaluating

39

D · 94
the proposed removal/addition for consistency with the STACP Plan, Defendants shall use design I&I conditions and estimated peak flow from the new development.

D. The STACP Plan may be modified to incorporate new or revised flow figures or methodologies for improvements undertaken by the Defendants to remove extraneous water (I/I) from the SSS, or to change the removal credit trade ratio. Any such modification shall be subject to the modification process set out in Section 6.0 of the STACP Plan.

E. Defendants agree to notify the public and permit applicants no later than 90 days after lodging of this Decree, of the program requirements in this Section.

IX. REPORTING REQUIREMENTS

A. Beginning within the thirty (30) days of the close of the first full Calendar Quarter following the Date of Lodging of this Consent Decree, and within thirty (30) days of the close of each subsequent Calendar Quarter, Defendants shall submit to U.S. EPA and Ohio EPA, a summary report containing the following information pertaining to the Calendar Quarter just concluded: a brief synopsis of the current status of the major remedial measures (i.e., each CIP project, the development of the Model and associated data collection activities, the Capacity Assessment, the Capacity Assurance Program,
and the deliverables associated with, and implementation of, these remedial measures) specified in Sections VI and VII of this Consent Decree and progress made with respect to such remedial measures since the last report; a brief synopsis of the implementation of the SSO Monitoring and Reporting Plan, Sewer Overflow Response Plan, Operation and Maintenance Program, Industrial Waste SSO/CSO Management and Minimization Plan, Pump/Lift Station Operating and Management Procedures, and Short Term Adequate Capacity Program Plan (e.g., compliance with performance measures); the number of Permit(s) to Install that have been applied for and/or issued; and a description of compliance or non-compliance with the requirements of this Consent Decree and its attachments and, if applicable, reasons for non-compliance. This report shall also identify any anticipated delays in the completion of any of the remedial measures specified in Sections VI and VII of this Consent Decree. It is anticipated that these reports will provide summary information, preferably in the form of narrative tables. Notification to U.S. EPA or Ohio EPA pursuant to this Paragraph of any anticipated delay, shall not, by itself, excuse the delay.

B. Along with the quarterly reports required by Paragraph IX.A, Defendants shall also submit at the same time to U.S. EPA copies of monthly summaries of SSO information and certifications that Defendants have submitted to Ohio EPA pursuant to the SSO
Monitoring and Reporting Plan and the Short Term Adequate Capacity Program Plan in the previous Calendar Quarter.

C. Beginning within the 30 days of the first year anniversary of the Date of Lodging of the Consent Decree, and within 30 days of each subsequent anniversary, Defendants shall submit to U.S. EPA/Ohio EPA notice of: any staffing changes that occurred in the prior year as required by Exhibit 6 (Sewer Overflow Response Plan); any revisions to the procedures or schedules set forth in Appendices C or D to Exhibit 9 (Pump/Lift Station O&M Procedures); any revisions to the equipment owned by MSD as set forth in Appendix A to Exhibit 7 (O&M Program); any changes to permanent monitoring locations that Defendants made in the prior year as required by Exhibit 4 (Model Plan); and any other revisions made in accordance with the terms of Exhibits 5-10.

X. DOCUMENT RETENTION/CERTIFICATION OF SUBMISSIONS

A. Defendants shall maintain copies of any underlying research and data in their possession, custody or control for any and all documents, reports, or permits submitted to U.S. EPA/Ohio EPA pursuant to this Consent Decree for a period of five (5) years after submission. Defendants shall require any independent contractor(s) implementing this Consent Decree to also retain such materials for a
period of five (5) years. Defendants shall submit such supporting documents to U.S. EPA/Ohio EPA upon request.

B. At the conclusion of this document retention period, Defendants shall notify U.S. EPA, Ohio EPA, U.S. Department of Justice, and the Ohio Attorney General at least 90 days prior to the destruction of any such materials, and upon request by any of these agencies, Defendants shall deliver any such materials to that agency or other specified agency.

C. In all notices, documents or reports submitted to the United States and State pursuant to this Consent Decree, Defendants shall, by a senior management official, sign and certify such notices, documents and reports as follows:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering such information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false
information, including the possibility of fine and imprisonment for knowing violations.

XI. STIPULATED PENALTIES

A. Defendants shall pay stipulated penalties, as set forth below, for each day they fail to timely submit submittals or meet any of the milestones or requirements set forth in Paragraphs XI.C through XI.G below. Fifty (50%) percent of the total stipulated penalty amount due shall be paid to the United States and fifty (50%) percent shall be paid to the State. All stipulated penalties arising under this Section shall, in the first instance, be levied against funds collected under Section 6117 of the Ohio Revised Code for the operation of MSD to the extent such funds are available, without limitation on recourse by the United States or the State in the event that such funds are not available within the sixty (60) day period for payment specified by Paragraph XI.I or are insufficient to pay such stipulated penalties.

B. “Timely submit”, as used in this Section, shall mean that the submittal is made by the date specified in this Consent Decree or in a document approved pursuant to this Consent Decree. “Timely submit” shall further mean that the submittal must include all of the elements pertaining to the submittal as set forth in this Consent Decree or in a document approved pursuant to this Consent Decree.
C. Stipulated Penalties for Critical Path Submittals and Critical Remedial Milestones

1. Defendants shall be subject to the following stipulated penalties for a failure to timely submit the submittals listed in subparagraph XI.C.2, below, or for a failure to meet the critical remedial milestones set forth in subparagraph XI.C.2, below, in accordance with all requirements, and objectives provided under this Consent Decree or in submittals subsequently approved by U.S. EPA/Ohio EPA pursuant to the provisions of this Consent Decree:

   1-30 days $1500/day
   31-60 days $3000/day
   over 60 days $5000/day

2. The following submittals are "critical path submittals," subject to the stipulated penalties of subparagraph XI.C.1, above:

   • SSO 700 Interim Remedial Measures Plan
   • CEHRS & Storage Facility Effectiveness Study Plan
   • Tunnel Notice
   • SSO 700 Remedial Plan
   • Capacity Assessment Plan
   • Capacity Assessment Report
   • Capacity Assurance Program Plan
The following deadlines are "critical milestones," subject to the stipulated penalties of subparagraph XI.C.1, above:

- the Construction Completion Date for each Capital Improvement Project set forth in Exhibit 3
- the critical milestones, as required by subparagraph VI.B.1, set forth in the construction schedules contained in the approved SSO 700 Interim Remedial Measures Plan; provided, however, that Defendants shall not be subject to stipulated penalties in connection with achievement of the "proposed design performance characteristics, expected impact on SSO 700 activation frequency, duration and volume of discharge," or expected impact on "pollutant loads" set forth in the SSO 700 Interim Remedial Measures Plan, as required by subparagraph VI.B.1.
- the critical milestones, as required by subparagraph VI.C.3, set forth in the construction schedules contained in the approved SSO 700 Remedial Plan
- the date for calibration of the Sanitary Sewer System Model, as set forth in subparagraph VII.B.3
- the final date for implementation of the Sanitary Sewer System Model, as set forth in Exhibit 4

D. Stipulated Penalties for Reporting Requirements
Defendants shall be subject to the following stipulated penalties for a failure to timely submit any of the reports required by Section IX of this Consent Decree:

1-7 days $500/day
8-60 days $1000/day
over 60 days $1500/day

E. Stipulated Penalties for SSDs

1. Pre-Remedial Measures SSDs

For the time periods set forth below, Defendants shall be subject to stipulated civil penalties of $3000 per day for each day of each SSD 1) that was caused by Defendants' failure to comply with their Operation and Maintenance Program or for which Defendants' failure to comply with their O&M Program contributed to the volume or the duration of such SSD; or 2) for which Defendants failed to follow their SSO Response Plan in responding to and mitigating the impact of the discharge:

- For an SSD from any location (other than from SSO 700) within any Sub-Basin, prior to the completion of the remedial measures for that Sub-Basin in accordance with the approved Capacity Assurance Program Plan;
- For an SSD from SSO 700, prior to the later of the completion of construction date set forth in the SSO
700 Remedial Measures Plan required pursuant to subparagraph VI.C.3 or any schedule completion date extensions or revisions that are be made pursuant to Paragraph VI.D of this Consent Decree.

These stipulated civil penalties shall be in lieu of any stipulated penalties under Section XI.H below for Defendants' failure to comply with their Operation and Maintenance Program or their SSO Response Plan.

2. SSDs Following Completion of Permanent Remedial Measures for SSO 700

(a) Except as provided in subparagraphs XI.E.2(b)-(c), Defendants shall be subject to a stipulated penalty of $3000 per day for each day of each SSD from SSO 700 that occurs after the later of: (1) the date for completion of all SSO 700 remedial measures pursuant to the SSO 700 Remedial Plan of this Consent Decree; or (2) any schedule completion date extensions or revisions that are be made pursuant to Paragraph VI.D of this Consent Decree. However, U.S. EPA/Ohio EPA will not demand payment for stipulated penalties under this subparagraph until after the two-year evaluation period set forth in Paragraph VI.D of this Consent Decree and shall not be entitled to stipulated penalties under this subparagraph for SSDs that occur prior to the later of the date for completion of all SSO 700 remedial measures pursuant to the SSO 700 Remedial Plan of
this Consent Decree or any schedule completion date extensions or revisions that are made pursuant to Paragraph VI.D of this Consent Decree.

(b) Defendants shall not be liable for stipulated penalties under subparagraph 2(a) during the six month period (a "shake down" period) following the date for completion of all SSO 700 remedial measures pursuant to the SSO 700 Remedial Plan.

(c) Defendants shall not be liable for stipulated penalties for SSDs that are caused by a ten-year or greater storm event.

F. Stipulated Penalties for Improper Sewer Connections

Defendants shall be subject to a stipulated penalty of $5,000.00 for each connection authorized by Defendants other than in full compliance with the requirements of Section VIII of this Consent Decree.

G. Stipulated Penalties for Violations of Exhibits and Submittals

Failure to comply with any requirements set forth in the following attached Exhibits to this Consent Decree, or in the following submittals (subsequently approved by U.S. EPA/Ohio EPA pursuant to the provisions of this Consent Decree) shall subject Defendants to a stipulated penalty of $2,000 per day for each violation:
- CEHRS & Storage Facility Effectiveness Study Plan
- SSO 700 Remedial Plan or Revised Remedial Plan
- Model Plan (Exhibit 4)
- Capacity Assessment Plan
- SSO Monitoring and Reporting Program (Exhibit 5)
- Sewer Overflow Response Program (Exhibit 6)
- Operation and Maintenance Program (Exhibit 7)
- Industrial Waste SSO/CSO Discharge Management and Minimization Program (Exhibit 8)
- Pump/Lift Station Operation and Maintenance Procedures (Exhibit 9)
- Short-Term Adequate Capacity Program Plan (Exhibit 10).

H. Stipulated civil penalties shall automatically begin to accrue on the first day Defendants fail either to meet any of the schedules of performance required by this Consent Decree or to satisfy any other obligation or requirement of this Consent Decree.

I. Stipulated civil penalties shall be paid to both Plaintiffs within sixty (60) days of a written demand by either Plaintiff for payment of any stipulated penalty owing pursuant to this Consent Decree. The Plaintiff making a demand for payment of a
stipulated penalty shall simultaneously send a copy of the demand to the other Plaintiff. Either Plaintiff may, in the exercise of its unreviewable discretion, waive its right to any or all of its portion of the stipulated penalty amount.

J. Penalties owed to the United States shall be paid by submitting a cashier's or certified check payable to "Treasurer, United States of America", and shall be tendered to U.S. EPA Region V, Post Office Box 70753, Chicago, Illinois 60673. The transmittal letter accompanying the check shall specify the caption and docket number of this action, the facility and the violations for which the stipulated penalties are being paid, and DOJ Ref. No. 90-5-1-6-341A. A copy of the letter and the check shall simultaneously be sent to U.S. EPA Region V, Water Compliance Branch, Compliance Section, WCC-15J, 77 West Jackson Boulevard, Chicago, Illinois 60604, and to Chief, Environmental Enforcement Section, United States Department of Justice, Post Office Box 7611, Washington, D.C. 20044-7611.

K. Penalties owed to the State shall be paid by submitting a cashier's or certified check payable to "Treasurer, State of Ohio", and shall be tendered to Administrative Assistant, Ohio Attorney General's Office, 30 E. Broad Street, 25th floor, Columbus, Ohio 43215-3428. The transmittal letter accompanying the check shall specify the caption and docket number of this action and the facility and the violations for which the stipulated penalties are being paid.
A copy of the letter and the check shall simultaneously be sent to Enforcement Coordinator, Division of Surface Water, P.O. Box 1049, Columbus, Ohio 43216.

L. In the event that a stipulated civil penalty is not paid within sixty (60) days of a written demand as required by Paragraph XI.I, the stipulated civil penalty shall, upon written demand of the United States, be payable with interest from the original due date (sixty days after the written demand) to the date of payment, at the statutory judgment rate set forth at 28 U.S.C. § 1961(a).

M. Payment of stipulated civil penalties as set forth above shall be in addition to any other rights or remedies that may be available to the United States, the State, or their agencies by reason of the Defendants' failure to comply with requirements of this Consent Decree, and all applicable Federal, state or local laws, regulations, NPDES permit(s) and all other applicable permits. The payment of such stipulated penalties shall not be construed to relieve Defendants from specific compliance with this Decree or applicable federal or State law, nor shall it limit the authority of U.S. EPA or Ohio EPA to require compliance with such laws.

XII. FORCE MAJEURE BETWEEN DEFENDANTS AND THE UNITED STATES

A. If any event occurs that causes or may cause Defendants to violate any provision of this Consent Decree, Defendants shall notify
U.S. EPA in writing within fourteen (14) days from the date Defendants first knew, or in the exercise of reasonable diligence should have known, that compliance with the Consent Decree would be prevented or delayed. The notice shall reference this Section of the Consent Decree and shall describe in detail the anticipated length of time the violation may persist, the precise cause or causes of the violation, the measures taken or to be taken by Defendants to prevent or minimize the violation and the timetable by which those measures will be implemented. Defendants shall adopt all reasonable measures to avoid or minimize any such violation. Defendants shall make all reasonable efforts to identify events that cause or may cause a violation of this Consent Decree. Failure by Defendants to comply with the notice requirements of this Paragraph shall constitute a waiver of Defendants' rights to obtain an extension of time or other relief under this Section based on such incident.

B. If U.S. EPA agrees that the violation has been or will be caused by circumstances beyond the control of Defendants or any entity controlled by it, including its consultants and contractors, and that Defendants could not have prevented such violation, the time for performance of the requirement in question may be extended for a period not to exceed the actual delay resulting from such circumstance, and stipulated penalties shall not be due for such delay or non-compliance. In the event U.S. EPA does not agree that
the violation was caused by circumstances beyond the control of the Defendants and notifies Defendants of such determination, Defendants may invoke the dispute resolution provisions in Section XIV of this Consent Decree.

C. If Defendants invoke dispute resolution and U.S. EPA or the Court determines that the violation was caused by circumstances beyond the control of Defendants or any entity controlled by it, and that Defendants could not have prevented such violation, Defendants shall be excused as to that violation, but only for the period of time the violation continues due to such circumstances.

D. Defendants shall bear the burden of proving that any delay or violation has been or will be caused by circumstances beyond its control, and that Defendants could not have prevented such violation, as set forth above. Defendants shall also bear the burden of establishing the duration and extent of any delay or violation attributable to such circumstances, that such duration or extent is or was warranted under the circumstances and that, as a result of the delay, a particular extension period is appropriate. An extension of one compliance date based on a particular circumstance beyond Defendants' control shall not automatically extend any subsequent compliance date or dates.

E. Changed financial circumstances or unanticipated
or increased costs or expenses associated with implementation of this Consent Decree, shall not serve as a basis for excusing violations of or granting extensions of time under this Decree. Failure to apply for a required permit or approval or to provide in a timely manner all information required to obtain a permit or approval that is necessary to meet the requirements of this Consent Decree shall not, in any event, be considered Force Majeure events.

F. Defendants shall make a showing of proof regarding the cause of each delayed incremental step or other requirement for which an extension is sought. Defendants may petition for the extension of more than one compliance date in a single request.

XIII. POTENTIAL FORCE MAJEURE BETWEEN DEFENDANTS AND THE STATE

A. If any event occurs that causes or may cause the Defendants to violate any provision of this Consent Decree, Defendants shall notify the Ohio EPA in writing within fourteen (14) days from when it knew, or in the exercise of reasonable diligence under the circumstances should have known, that compliance with the Decree would be prevented or delayed, describing in detail the precise cause or causes of the delay or violation, the anticipated length of the delay if applicable, the measures taken by Defendants to prevent or minimize the delay and the timetable by which those measures will be implemented. Defendants shall adopt all reasonable
measures to avoid or minimize any such violation. Defendants shall make all reasonable efforts to identify events that cause or may cause a violation of this Consent Decree.

B. In any action by the State of Ohio to enforce any of the provisions of this Consent Decree, Defendants may raise at that time the question of whether they are entitled to a defense that its conduct was caused by circumstances beyond their control such as, by way of example and not limitation, acts of God, strikes, acts of war or civil disturbances. While the State of Ohio does not agree that such a defense exists, it is, however, hereby agreed by Defendants and the State of Ohio that it is premature at this time to raise and adjudicate the existence of such a defense and that the appropriate point at which to adjudicate the existence of such a defense is at the time, if ever, that the proceeding to enforce this Consent Decree is commenced by the State. At that time the burden of proving that any delay was or will be caused by circumstances beyond the control of Defendants shall rest with Defendants. Failure by Defendants to timely comply with the notice requirements of Paragraph XIII.A shall, at the option of Ohio EPA, constitute a waiver by Defendants of any right they may have to raise such a defense. Changed financial circumstances or increased costs associated with the implementation of any action required by this Consent Decree shall not in any event

56

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constitute circumstances entirely beyond the control of Defendants or serve as a basis for an extension of time under this Decree.

**XIV. DISPUTE RESOLUTION**

A. This Court shall retain jurisdiction of this matter for the purposes of implementing and enforcing the terms and conditions of this Consent Decree and for the purpose of adjudicating all disputes among the Parties that may arise under the provisions of this Consent Decree, to the extent that Paragraph C, below, provides for resolution of disputes by the Court.

B. The issuance, renewal, modification, denial or revocation of a permit and the issuance of orders or other actions of the Director of Environmental Protection (Ohio EPA) are not subject to dispute resolution under this Decree but, rather, shall be subject to challenge under Chapter 3745, Ohio Revised Code. The term "actions of the Director of Environmental Protection" shall be consistent with the definitions set forth in Chapter 3745, Ohio Revised Code.

C. Except as provided in Paragraph B, above, any dispute that arises with respect to the meaning, application, implementation, interpretation, amendment or modification of this Consent Decree, or with respect to Defendants' compliance herewith (including the adequacy of the Defendants' performance of the remedial measures and adequacy of the submittals required by this Decree) or any delay...
hereunder, the resolution of which is not expressly provided for in this Consent Decree, shall in the first instance be the subject of informal negotiations. If any Party believes it has a dispute with any other Party, it shall notify all the other Parties in writing, including notice to the U.S. Department of Justice and the Ohio Attorney General, setting forth the matter(s) in dispute, and the Parties will proceed initially to resolve the matter in dispute by informal means. Such period of informal negotiations shall not exceed thirty (30) days from the date the notice was sent, unless the Parties agree otherwise.

D. If the informal negotiations are unsuccessful, the position of the United States and the State shall control unless, within twenty (20) days after the conclusion of the informal negotiation period, the Defendants invoke the formal dispute resolution procedures of this Section by serving on the United States and the State a written statement of position on the matter in dispute.

E. Within thirty (30) days of receiving the Defendants' statement of position, the United States and/or the State will serve on the Defendants its/their written statement of position.

F. The United States' and/or the State's statement of position shall be binding upon the Defendants unless Defendants file a petition with the Court describing the nature of the dispute and a
proposal for its resolution. Defendants' petition must be filed no more than twenty (20) days after receipt of the United States' and/or the State's statement of position. The United States and/or the State shall then have 30 days to file a response setting forth its/their position and proposal for resolution. In any such dispute, the petitioner shall have the burden of proof, and the standard of review shall be that provided by applicable law.

G. Submission of any matter to the Court for resolution shall not extend any of the deadlines set forth in this Consent Decree, unless the Parties agree to such extension in writing or the Court allows the extension upon motion.

H. If the United States and the State provide Defendants with materially different or irreconcilable positions on the issue(s) in dispute, Defendants' obligation to perform an action necessarily affected by the materially different or irreconcilable positions (and Defendants' liability for stipulated penalties concerning such obligation) shall be stayed until the dispute is resolved.

I. Stipulated penalties with respect to any disputed matter (and interest thereon) shall accrue in accordance with Paragraphs XI.H and L; however, payment of stipulated penalties, and any accrued interest, shall be stayed pending resolution of the dispute, as follows:
1. If the dispute is resolved by informal agreement before appeal to this Court, accrued penalties (and interest), if any, determined to be owing shall be paid within 60 days of the agreement or the receipt of the United States' and/or the State's final position in writing.

2. If the dispute is appealed to this Court and the United States and/or the State prevails in whole or in part, Defendants shall pay all accrued penalties (and interest) determined to be owed within 60 days of the Court's decision or order.

3. In the event of an appeal, Defendants shall pay all accrued penalties (and interest) determined to be owed within 60 days of a final decision no longer subject to judicial review has been rendered.

XV. RIGHT OF ENTRY

A. Until termination of this Consent Decree, the United States and the State, and their authorized representatives and contractors, shall have authority at all reasonable times, upon the presentation of credentials, to enter Defendants' premises to:

1. Monitor the progress of activities required by this Consent Decree;

2. Verify any data or information submitted to the United States and/or the State;
3. Obtain samples from the WWTPs and Sewer System;
4. Inspect and evaluate Defendants' WWTPs and Sewer System; and
5. Inspect and review any records required to be kept under the terms and conditions of this Consent Decree or any NPDES Permit and the Clean Water Act.

B. The United States and the State agree to provide Defendants an opportunity to obtain split samples of wastewater samples taken by the United States or the State from the Sewer System. The United States and the State further agree to provide Defendants with the quality assured/quality controlled laboratory analytical results of samples obtained from the Sewer System, and any non-privileged (including non-attorney work product) reports prepared concerning such results. The United States and the State will use best efforts to coordinate field inspections of the Sewer System with Defendants by notifying them, if practicable, of such inspections prior to arrival at the field inspection location.

XVI. NOT A PERMIT/COMPLIANCE WITH OTHER STATUTES/REGULATIONS

A. This Consent Decree is not and shall not be construed as a permit, or a modification of any existing permit, issued pursuant to Section 402 of the Clean Water Act, 33 U.S.C. § 1342, nor shall it in any way relieve Defendants of their obligations to obtain permits for
their wastewater treatment facilities and to comply with the requirements of any NPDES permit or with any other applicable federal or state law or regulation, including the obligation to obtain Permits to Install. Any new permit, or modification of existing permits, must be complied with in accordance with applicable federal and State laws and regulations.

B. The pendency or outcome of any proceeding concerning issuance, reissuance or modification of any NPDES permit shall not affect or postpone Defendants' responsibilities under this Decree. However if a permitting authority receives a timely, approvable application for a permit, renewal or modification, and the permitting authority does not issue the permit, renewal or modification or take a proposed action on the application in a timely manner, the Defendants may seek relief under the force majeure provisions of this Consent Decree.

C. Nothing herein, including the United States' and the States' review or approval of any plans, reports, policies or procedures formulated pursuant to this Consent Decree, shall be construed as relieving Defendants of the duty to comply with the Clean Water Act, the regulations promulgated thereunder, and all applicable permits issued thereunder, or as relieving Defendants of their duty to comply with State law and the regulations promulgated thereunder.
XVII. FAILURE OF COMPLIANCE

The United States and State do not, by their consent to the entry of this Consent Decree, warrant or aver in any manner that Defendants' complete compliance with this Consent Decree will result in compliance with the provisions of the Clean Water Act, 33 U.S.C. §§ 1251 et seq., R.C. 6111, or with Defendants' NPDES permits.

XVIII. EFFECT OF CONSENT DECREE AND NON-WAIVER PROVISIONS

A. Nothing contained in this Consent Decree shall be construed to prevent or limit the United States' or the State's rights to obtain penalties or further or additional injunctive relief under the Clean Water Act or other federal statutes or regulations, including, but not limited to, criminal punishment under Section 309(c) of the Act, 33 U.S.C. § 1319(c), or state laws and regulations respectively except as expressly specified herein.

B. This Consent Decree resolves the civil claims of the United States and the State for injunctive relief for the SSO violations alleged in the Complaints filed herein through the date of Lodging of this Decree, except that this Consent Decree does not resolve, and the United States and the State specifically reserve, claims for injunctive relief concerning implementation of the remedial measures set forth in the approved Capacity Assurance
Program Plan. The United States and State specifically reserve any and all claims for penalties associated with the violations alleged in the Complaints filed herein.

C. The United States and State further reserve all rights against the Defendants with respect to any SSO violations by Defendants that occur after the Date of Lodging of this Consent Decree, and/or for any violations of the Clean Water Act not specifically alleged in the Complaints filed herein, whether they occurred before or after the Date of Lodging of this Decree.

D. The Parties agree that in any future civil action pursuant to 33 U.S.C. § 1319(b) for injunctive relief to address SSO violations at SSO 700 that occur after the date of lodging of this Consent Decree, Defendants' compliance or noncompliance with the remedial measures set forth in this Consent Decree may be taken into account by a District Court in fashioning appropriate injunctive relief. The Parties further agree that in any future civil action pursuant to 33 U.S.C. § 1319(d) for penalties for SSO violations that occur after the date of lodging of this Consent Decree, Defendants' compliance or noncompliance with the remedial measures set forth in this Consent Decree shall be considered to be among the factors specified in 33 U.S.C. § 1319(d) that may be taken into account by a District Court in determining the amount of a civil penalty.
E. In any subsequent administrative or judicial proceeding initiated by the United States or the State for injunctive relief, penalties, or other appropriate relief relating to Defendants’ violation of the Clean Water Act, Defendants shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States or the State in the subsequent proceeding were or should have been brought in the instant case, except with respect to claims that have been specifically resolved pursuant to Paragraph B of this Section.

F. The Consent Decree in no way affects or relieves Defendants of any responsibility to comply with any federal, state, or local law or regulation.

G. The Parties agree that Defendants are responsible for achieving and maintaining complete compliance with all applicable federal and state laws, regulations, and permits, and that compliance with this Consent Decree shall be no defense to any actions commenced pursuant to said laws, regulations, or permits, except as set forth herein.

H. This Consent Decree does not limit or affect the rights of the Parties as against any third parties that are not Parties to this Consent Decree. The Parties recognize that this Consent Decree
resolves only matters between Plaintiffs and Defendants and that its execution does not preclude Defendants from asserting any legal or factual position in any action brought against them by any person or entity not a Party to this Consent Decree.

I. The United States and the State reserve any and all legal and equitable remedies available to enforce the provisions of this Consent Decree.

J. This Consent Decree shall not limit any authority of the United States or the State under any applicable statute, including the authority to seek information from Defendants, to require monitoring, to conduct inspections, or to seek access to the property of Defendants; nor shall anything in this Consent Decree be construed to limit the authority of the United States or the State to undertake any action against any person, including Defendants, in response to conditions that may present an imminent and substantial endangerment to the environment or to the public health or welfare.

K. Application for construction grants, State Revolving Loan Funds, or any other grants or loans, or other delays caused by inadequate facility planning or plans and specifications, on the part of Defendants shall not be cause for extension of any required compliance date in this Consent Decree.

L. Obligations of Defendants under the provisions of this Consent Decree to perform duties scheduled to occur after the
signing, but prior to the Date of Entry, shall be legally enforceable from the date this Consent Decree is signed by Defendants. Liability for stipulated penalties, if applicable, shall accrue for violation of such obligations and payment of such stipulated penalties may be demanded by the United States as provided in this Consent Decree. The contempt authority of this Court shall also extend to violations of such obligations.

XIX. COSTS OF SUIT

Each Party shall bear its own costs and attorneys' fees with respect to matters related to this Consent Decree.

XX. NOTICES

All notices and correspondence under this Decree shall be sent to the following addresses:

For U.S. EPA:
Chief, Enforcement and Compliance Assurance Branch
Water Division (WCC-15J)
U.S. EPA, Region V
77 West Jackson Blvd.
Chicago, Illinois 60604
For U.S. Department of Justice

U.S. Department of Justice
Chief, Environmental Enforcement Section
Environment and Natural Resources Division
Post Office Box 7611
Washington, D.C. 20044-7611
Reference DJ # 90-5-1-6-341A

For Ohio EPA:

Ohio EPA Southwest District Office
ATTN: DSW Enforcement Group Leader
401 East Fifth Street
Dayton, Ohio 45402-2911.

For Ohio Attorney General

Chief, Environmental Enforcement Section
Ohio Attorney General’s Office, 25th floor
30 E. Broad Street
Columbus, Ohio 43215-3428

For the County:

Hamilton County Board of County Commissioners
County Administration Building
138 East Court Street, Suite 603
Cincinnati, Ohio 45202

For the City of Cincinnati:

W. Peter Heili
Deputy City Solicitor for the City of Cincinnati
801 Plum Street, Suite 214
Cincinnati, Ohio 45202

For MSD:

Director
Metropolitan Sewer District of Greater Cincinnati
1600 Gest Street
Cincinnati, Ohio 45204

XXI. MODIFICATION

68
A. Except as further set forth in this Paragraph, there shall be no material modification of this Consent Decree, Exhibits attached to this Consent Decree, or the submittals approved under this Consent Decree without written approval by all of the Parties and the Court; and any non-material modification of this Consent Decree, its Exhibits, or approved submittals shall be in writing and signed by the Parties. Modifications (whether material or not) to the attached Exhibits or subsequently approved submittals that are specifically allowed under the terms of those Exhibits or submittals may be made in accordance with the terms of those Exhibits or approved submittals.

B. It is the intention of the Parties to this Consent Decree that the Defendants shall have the opportunity, consistent with applicable law, to conform compliance with this Consent Decree to any modifications in U.S. EPA's regulations or national policies governing SSOs.

1. Consequently, upon issuance of any new U.S. EPA final regulation (as promulgated in the Federal Register) or national policy governing SSOs, Defendants may request modification of this Consent Decree from U.S. EPA/Ohio EPA to conform this Consent Decree to such regulation or national policy. For the purposes of this Paragraph, "national policy" refers to a formal written policy statement issued by the Assistant Administrator for the Office of
Water and the Assistant Administrator for the Office of Enforcement and Compliance Assurance. Upon Defendants' request, the Parties shall discuss the matter. If the Parties agree on a proposed modification to the Consent Decree, they shall prepare a joint motion to the Court requesting such modification.

2. If the Parties do not agree, and Defendants still believe modification of this Decree is appropriate, they may file a motion seeking such modification in accordance with Federal Rule of Civil Procedure 60(b); provided, however, that nothing in this subparagraph is intended to waive the Plaintiffs' rights to oppose such motion and to argue that such modification is unwarranted.

3. Following the filing of a motion under Rule 60(b), stipulated penalties shall accrue due to Defendants' failure, if any, to continue performance of obligations under the Decree that are necessarily the subject of the Rule 60(b) motion; provided, however, that such penalties need not be paid unless the Court resolves the Rule 60(b) motion in the Plaintiffs' favor. If the Court resolves the motion in Defendants' favor, Defendants shall comply with the Decree as modified.

XXII. REVIEW OF SUBMITTALS

A. U.S. EPA/Ohio EPA agree to use their best efforts to expeditiously review and comment on deliverables that Defendants are
required to submit to U.S. EPA/Ohio EPA for approval pursuant to the terms and provisions of this Consent Decree. Where the Consent Decree both requires Defendants to submit a plan or report or other submittal to U.S. EPA/Ohio EPA for review and approval and establishes a specific timeline for Defendants to resubmit such plan, report or other submittal after comments by U.S. EPA/Ohio EPA, U.S. EPA/Ohio EPA shall, as expeditiously as possible, review and approve or decline to approve and provide written comments to the Defendants on the submittal.

B. If U.S. EPA/Ohio EPA cannot complete their review of the submittal within 60 days of receipt of the submittal, U.S. EPA/Ohio EPA shall so notify Defendants. Such notice shall be given within the 60-day period following receipt of the submittal, and U.S. EPA/Ohio EPA shall identify a schedule for completion of their review.

C. If U.S. EPA/Ohio EPA fail to approve or decline to approve and provide written comments within 60 days of receipt of the submittal, any subsequent milestone date dependent upon such approval or any resubmission dependent upon such comments shall be extended by the number of days beyond 60 days that U.S. EPA/Ohio EPA use for their comment or decision on that submittal.

XXIII. CONTINUING JURISDICTION

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The Court shall retain jurisdiction to enforce the terms and conditions and achieve the objectives of this Consent Decree and to resolve disputes arising hereunder as may be necessary or appropriate for the construction, modification, implementation or execution of this Decree.

XXIV. CONTINGENT LIABILITY OF STATE OF OHIO

Section 309(e) of the Act, 33 U.S.C. § 1319(e), requires that the State be a Party to this action insofar as it may be liable in the event the laws of Ohio prevent Defendants from raising revenues needed to comply with this Decree. The State of Ohio, by signing this Decree, certifies that the current laws of the State do not prevent Defendants from raising revenues needed to comply with this Decree. Except as required by Section 309(e) of the Act, the State of Ohio shall have no liability under this Consent Decree.

XXV. TERMINATION

A. Upon motion filed with the Court by the United States, State or Defendant, the Court may terminate the terms of this Consent Decree after each of the following has occurred:
1. Defendants have achieved compliance with all provisions contained in this Consent Decree, including the completion of any additional remedial measures determined to be necessary pursuant to Paragraph VI.D, and subsequently have maintained compliance with each and every provision of this Consent Decree for twelve consecutive months;

2. Defendants have paid all penalties and other monetary obligations due hereunder and no penalties or other monetary obligations due hereunder are outstanding or owed to the United States or the State;

3. Defendants have certified compliance pursuant to Paragraphs A and B above to the Court and all Parties; and

4. The United States and the State, within forty-five (45) days of receiving such certification from the Defendants has not contested, in writing, that such compliance has been achieved.

B. If the United States and/or the State dispute(s) Defendants' full compliance, this Consent Decree shall remain in effect pending resolution of the dispute by the Parties or the Court.

XXVI. PUBLIC COMMENT

This Consent Decree shall be lodged with the Court for a period of not less than 30 days, for public notice and comment in accordance with the provisions of 28 C.F.R. § 50.7. The United States reserves
the right to withdraw or withhold its consent if the comments received disclose facts or considerations which indicate that the Consent Decree is inappropriate, improper or inadequate. Defendants hereby agree not to withdraw from, oppose entry of, or to challenge any provision of this Consent Decree, unless the United States has notified Defendants in writing that it no longer supports entry of the Consent Decree.

XXVII. SIGNATORIES/SERVICE

A. This Consent Decree may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

B. The Assistant Attorney General for the Environment and Natural Resources Division of the United States Department of Justice, on behalf of the United States, the Ohio Assistant Attorney General signing this Decree, on behalf of the State, and the undersigned representatives of the Defendants each certifies that he or she is authorized to enter into the terms and conditions of this Consent Decree and to execute and bind legally such Party to this document.

C. Each Defendant shall identify, on the attached signature page, the name and address of an agent who is authorized to accept service of process by mail on behalf of that Party with respect to all matters arising under or relating to this Consent Decree.
Defendants hereby agree to accept service in that manner and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court, including but not limited to, service of a summons. The Parties agree that Settling Defendants need not file an answer to the complaints in this action unless or until the Court expressly declines to enter this Consent Decree.

SO ORDERED, this ___ day of ___________ 2002.

__________________________
United States District Judge

THE UNDERSIGNED Parties enter into this Consent Decree, subject to the public notice requirements of 28 C.F.R. § 50.7, and submit it to the Court for entry.

FOR THE UNITED STATES OF AMERICA:

__________________________
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Environment and Natural Resources Division
U.S. Department of Justice
LESLIE ALLEN  
Senior Attorney  
Environmental Enforcement Section  
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Environmental Enforcement Section
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FOR BOARD OF COUNTY COMMISSIONERS
OF HAMILTON COUNTY, OHIO

By: _____________________________

DAVID J. KRINGS
COUNTY ADMINISTRATOR

AGENT FOR SERVICE OF PROCESS:

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1050 Connecticut Avenue, N.W.
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FOR CITY OF CINCINNATI, OHIO

By:
TIMOTHY M. RIORDAN
ACTING CITY MANAGER

AGENT FOR SERVICE OF PROCESS:

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“REAL ESTATE RECYCLING”

VERP REGULATIONS: A NUTS & BOLTS APPROACH

Lloyd R. Cress, Jr.
Greenebaum Doll & McDonald PLLC
Frankfort, Kentucky

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SECTION E
"REAL ESTATE RECYCLING" – VERP REGULATIONS:
A NUTS AND BOLTS APPROACH

Lloyd R. ("Rusty") Cress, Jr.
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(502) 875-0050
I. Purpose of Kentucky Voluntary Environmental Remediation Act ("VERA")

A. It is "intended to establish an efficient and predictable process . . . to promote voluntary cleanup and redevelopment of properties suspected of environmental contamination . . . while stimulating economic development and job creation through the construction of new residential, commercial, and industrial facilities." KRS 224.01-510.

B. Provides property owners with certainty in:

1. Environmental and Public Protection Cabinet remediation review time lines; and,

2. Level of comfort following completion of remediation activities, without stymieing remediation management at site.

II. Remediation Statutes

A. KRS 224.01-400.

1. Any person possessing or controlling a hazardous substance, pollutant, or contaminant which is released to the environment, or any person who caused a release to the environment of a hazardous substance, pollutant, or contaminant, shall characterize the extent of the release as necessary to determine the effect of the release on the environment, and shall take actions necessary to correct the effect of the release on the environment.

2. Four options:

   a. Demonstrating that no action is necessary to protect human health, safety, and the environment;

   b. Managing the release in a manner that controls and minimizes the harmful effects of the release and protects human health, safety, and the environment, provided that the management may include any existing or proposed engineering or institutional controls and the maintenance of those controls;

   c. Restoring the environment through the removal of the hazardous substance pollutant or contaminant; or,

   d. Any combination of paragraphs (a), (b), and (c).
B. KRS 224.01-405.

1. For releases of petroleum or petroleum products from sources other than petroleum storage tanks, any person who owns or operates the source from which the release occurred or any person who caused the release shall characterize the extent of the release as necessary to determine the effect of the release on the environment and shall perform corrective action.

2. Corrective action means those actions necessary to protect human health, safety, and the environment, and includes: remedial actions to clean up contaminated media; actions to address residual effects after initial corrective action is taken; actions to restore or replace potable water supplies; and actions necessary to monitor, assess, and evaluate a release, as well as actions necessary to monitor, assess, and evaluate the effectiveness of remedial action.

C. KRS 224.01-450 to 465

1. In 1996, the legislature created a law providing for the issuance of a No Further Remediation Letter to a public entity for a site when a remediation plan has been successfully completed.

2. Letter intended to signify a release from further responsibilities for a remediation plan approved under KRS 224.01-460 and any further responsibilities under KRS 224.01-400 to undertake any other remedial action on the site.

3. Well-intended, but ineffective – not available for private lands and scarcely utilized by public entities.

D. KRS 224.01-510 to 532

1. Establishes Voluntary Environmental Remediation Program – applies to sites under KRS 224.01-400 and KRS 224.01-405.

2. Ineligible sites.

   a. The property is part of or contains a site which is on the National Priorities List established by the United States Environmental Protection Agency;

   b. The property is part of or contains a hazardous waste treatment, storage, or disposal facility for which a permit has been issued, or the site is otherwise the subject of hazardous waste closure or corrective action pursuant to KRS 224.46-520 or KRS 224.46-530;

   c. The property or site is the subject of state or federal environmental enforcement action relating to the release, for which the application is submitted; or
d. The property or site presents an environmental emergency, as defined in KRS 224.01-400.

3. Program requirements.

a. Application, including standard form

b. Filing fee:

- Site size up to 3 acres = $1,000
- Site size 3 - 10 acres = $2,500
- Site size greater than 10 acres = $3,500
- Possible fee waiver

c. Characterization Plan – Identify any hazardous substance and any petroleum released or believed to be released to the environment at the site and provide a characterization plan for the releases or threatened releases adequate to comply with KRS 224.01-400, 224.01-405, 224.01-510 to 224.01-532, and any administrative regulations promulgated pursuant thereto.

d. Public notice

i. Upon filing of application, the applicant shall notify the chief executive of local governmental units in which the property or site that is the subject of the application is located and shall provide the chief executives with a copy of the application.

ii. Publish notice of the application in the newspaper of largest circulation in the county in which the site is located.

e. EPPC time for approval or disapproval – 45 days.

4. Voluntary Remediation Agreed Order:

a. Agreement to identify and characterize releases at site and submit characterization report.

b. Agreement to submit corrective action plan and final report which certifies that the work has been completed in accordance with the Corrective Action Plan.

c. Listing of costs to be reimbursed to Cabinet for oversight and review and a payment schedule (costs must be reasonable, actual, and necessary).

d. Definite remediation schedule.
e. Agreement that applicant may withdraw from agreed order prior to issuance of covenant not to sue (must pay Cabinet costs).

f. Other provisions necessary to protect human health and the environment.

5. Work plans set forth in Agreed Order must be completed

   a. Submittal of Site Characterization Report and Corrective Action Plan (120 days from entry of Agreed Order) – Site characterization and corrective action must comply with KRS 224.01-400 and KRS 224.01-405.

   b. Must include plan of action to inform public of remediation and provide for public comment.

   c. EPPC review of plan (120 days).

   d. Reasons Cabinet may disapprove Corrective Action Plan:

      i. Failure to comply with KRS 224.01-400 and KRS 224.01-405.

      ii. Failure to respond to request for information.

   e. Implementation of plan on approved schedule.


6. Public notice and participation (includes notice of activities, availability of information, and opportunity for comment).

   a. Publish notice of application in newspaper.

   b. Notification to local government unit officials of filing of application, along with providing copy of application.

   c. Notification to local government unit of corrective action plan.

   d. Publish notice of Corrective Action Plan and request for comment in newspaper.

   e. 30-day comment period and possible public hearing.

   f. Property sign stating that property is undergoing remediation and location of information.

   g. Documents to be maintained in local public library:
i. Agreed Order;

ii. Characterization Plan;

iii. Characterization Report;

iv. Corrective Action Plan;

v. Corrective Action Completion Report;

vi. Notices of Deficiency and responses thereto;

vii. Covenant not to sue.

7. Covenant not to sue.

a. Covers releases identified in Corrective Action Plan for:

i. No further remediation.

ii. Prosecution of civil or administrative enforcement for failure to perform remediation under state and federal law; injunctive relief; lien assertion; reimbursement of costs; and, civil penalties.

b. Does not cover:

i. Releases not identified in Corrective Action Plan;

ii. Failure to comply with Agreed Order or plans required;

iii. Exacerbation of releases;

iv. Criminal liability;

v. Underground storage tanks;

vi. Misrepresentation or intentional omissions;

vii. Conditions not known to the Cabinet which prevent remedy from being protective;

viii. Changes in scientific knowledge indicating that remedy is no longer protective;

ix. Environmental emergencies;
x. Natural Resource Damages under CERCLA.

8. Screening levels and remediation standards (applicable to all sites, whether participating in VERP or not).
   a. Use of U.S. EPA Region 9 Preliminary Remediation Goals as screening levels.
   b. Promulgation of remediation standards.

III. Implementing Regulations – 401 KAR 100:030

A. Governs remediation pursuant to KRS 224.01-400(18)-(21), 224.01-405(1), 224.01-450 to 224.01.465, and 224.01-510 to 224.01-532.

B. Allows for a notice of completion, a no further remediation letter, or a covenant not to sue to be issued by the EPPC only for those sites at which remediation is conducted under Cabinet oversight or is otherwise approved by the Cabinet.
   1. Notice of completion – upon approval of remediation in accordance with KRS 224.01-400 or 224.01-405.
   2. No further remediation letter (public entities) – upon approval of remediation in accordance with KRS 224.01-450 to 465.
   3. Covenant not to sue – must apply under Voluntary Environmental Remediation Program and remediation must be approved in accordance with KRS 224.01-510 to 224.01-532.
   4. None of the above are required to be issued unless the EPPC has reviewed and approved the remediation.

C. A person conducting characterization and remediation, with or without Cabinet oversight as provided by KRS 224.01-400(19), shall have all the options of KRS 224.01-400.

D. Initial Property Screening
   1. Contamination that does not exceed the residential value in the Region 9 PRGs does not “rise to a level of concern under KRS 224.01-530.”
   2. Contamination which exceeds the residential value but does not exceed the industrial value in the Region 9 PRGs does not “rise to a level of concern under KRS 224.01-530” if the property is restricted to industrial use by a deed instrument in the property’s chain of title that industrial exposures have been
assumed at the site and is recorded with the county clerk for the county in which the property exists.

3. The Cabinet may require further characterization and remediation of any release (if appropriate under statute or regulation) regardless of the application of the Region 9 PRGs.

E. VERP Mechanics (not required unless seeking covenant not to sue)

1. "Application to Enter Voluntary Environmental Remediation Program," DEP Form 6059, October 22, 2003;

2. The tear sheet for the public notice required by KRS 224.01-514(3)(d);

3. Site characterization plan; and,

4. Nonrefundable application fee, if required by KRS 224.01-514(3).

F. Site Characterization

1. "Party" or "Applicant" must submit a site characterization plan that identifies or includes:

   a. The location and ownership of the property and site; the history of the use of the property and site, surrounding land use and ownership; information regarding the circumstances surrounding known or suspected releases at the property and site, including the types of hazardous substances or petroleum released, approximate volumes or amounts of releases, and actions taken in response to known or suspected releases to date;

   b. The site conditions and physical setting including soils, groundwater, geology, and other pertinent features; a 7.5 minute USGS topographic quadrangle map or the appropriate part of this map indicating the location of the property, a 7.5 minute USGS geological quadrangle map or the appropriate part of such a map indicating the location of the property; and a base map, at an appropriate scale, accuracy, and detail depicting property lines, surrounding land ownership and uses, significant structures and infrastructure; and significant environmental or geological features;

   c. A soil sampling plan to identify and characterize the horizontal and vertical extent of contamination and the variation in types and concentrations of hazardous substances and petroleum sufficient to support selection of remediation options for the site;
d. A plan to determine whether a groundwater assessment is necessary (see groundwater assessment guidance);

e. A plan to determine whether air quality, surface water and its associated sediments, or terrestrial or aquatic habitat have been affected by a release;

f. A plan to determine whether an ecological risk assessment is necessary;

g. A statement specifying that sample collection and analysis requirements, quality assurance, and quality control will be met in accordance with "Test Methods for Evaluating Solid Wastes: Physical Chemical Methods (EPA Publication No. SW-846) Third Edition"; and

h. A proposed schedule for implementation of the characterization plan and submittal of a site characterization report.

2. "Applicant" is defined as a person who has applied to participate in the Voluntary Environmental Remediation Program.

3. "Party" is defined as a person who is: (a) conducting remediation in accordance with KRS 224.01-400(18) or 224.01-405(1), who is seeking a notice of completion from the Cabinet; or (b) conducting remediation in accordance with KRS 224.01-400(18) or 224.01-405(1), and seeking a no further remediation letter in accordance with KRS 224.01-450 to 224.01-465.

4. If remediation and characterization are conducted with or without EPPC oversight, Region 9 PRGs may be used to screen sites and identify contaminants of concern, but the EPPC shall not approve the adequacy of the Region 9 PRGs without review of site-specific conditions.

5. Once plan implemented, a site characterization report must be submitted including:

a. A list of the contaminants of concern at the site identified using Region 9 PRGs. The party or applicant shall identify contaminants of concern at the site using the Region 9 PRGs considering: (a) the frequency of detection of the contaminants; (b) the effects on human health due to the interaction between contaminants, including additivity; and (c) ambient background conditions.

b. A determination of the extent of the contamination in all media impacted by contaminants of concern:

i. The horizontal and vertical extent of contamination in soils;
ii. The results of the groundwater assessment determination;

iii. The results of the determination of whether air quality, surface water and its associated sediments, or terrestrial or aquatic habitat have been affected by a release, and the extent of the effect of the release on these media; and

iv. A determination by way of screening or risk assessment, as appropriate, of the human health and ecological risks posed by contamination at the site or resulting from the site.

G. Corrective Action Plan

1. “Party” or “Applicant” must submit a corrective action plan that addresses contaminants of concern in impacted media, and unacceptable ecological risks.

2. If conducting corrective action without EPPC oversight, Region 9 PROs may be used to identify final remediation goals, but the EPPC shall not approve the adequacy of the Region 9 PROs as final remediation goals without review of site-specific conditions.

3. Must employ one of following options (consistent with KRS 224.01-400):

   a. No action necessary.

      i. Demonstrate that the risk posed by contaminants of concern does not exceed target risk levels (defined as an excess cancer risk of one in one million for carcinogenic endpoints and a hazard index of 1.0 for noncancer endpoints) for unrestricted land use and does not exceed ecological risk endpoints in U.S. EPA guidance; or

      ii. Demonstrate that organic contaminants of concern do not exceed target risk levels for unrestricted land use, that inorganic contaminants of concern do not exceed ambient background levels for the respective media, and do not exceed ecological risk endpoints.

   iii. Region 9 PRGs may be used as the final remediation goals for human health at sites that do not have multiple contaminants of concern that result in an additive risk above the target risk level and for which the assumptions used in developing the Region 9 PRGs are applicable.

   b. Management in place
i. The goal of management in place is to attain target risk levels at the point of exposure, and be protective of ecological health.

ii. Includes engineering and institutional controls amounting to containment of the release, and either elimination of exposure pathways, or reduction of exposure and must consider current and proposed land use in selecting the remedy.

iii. Methods for maintenance of engineering and institutional controls include:

- Inspections of the engineering and institutional controls;
- Certification that the engineering and institutional controls remain protective of human health, safety and the environment; and
- A deed instrument, filed with the EPPC, containing an enforceable restrictive covenant which is transferable and is binding on current and subsequent property and recorded with the county clerk for the county in which the property exists.

iv. If the target risk levels at the point of exposure will not be achieved, the party or applicant must demonstrate the protectiveness of the remedy using the following criteria (with emphasis on the first four listed):

- The overall protection of human health and the environment;
- The compliance with any other applicable requirements;
- The long-term effectiveness and permanence of the remedial option;
- The reduction of toxicity, mobility, or volume through the use of treatment;
- The short-term effectiveness of the remedy;
- The ability to implement the remedy;
- The cost of the remedy; and
- Community acceptance of the remedy.

v. If the proposed remedy will not achieve target risk levels at the point of exposure, public notice and opportunity for comment shall be given, including a summary of the contamination at the
site, the remedial actions taken, and the residual risks associated with the site.

c. Restoration

- Restoration of the environment through removal of the contaminants of concern to ambient background levels, target risk levels at the point of exposure, or levels derived from a site-specific risk assessment approved by the Cabinet, that do not require engineering or institutional controls.

d. Combination of options described in a through d

4. EPPC review and approval

5. Corrective Action Completion Report

a. Submitted to EPPC

b. Must include:

i. Documentation that the corrective actions implemented comply with the corrective action plan;

ii. Documentation of the completion of all the activities specified in the corrective action plan:

- Documentation of any modification from the approved corrective action plan;
- Documentation of the weight, volume, and classification of any material removed as part of the corrective action;
- Copies of signed manifests and any other pertinent waste disposal forms;
- Sampling procedures used for waste profile determination and restoration conformation;
- Results from any confirmatory sampling; and
- Copies of all laboratory analytical reports, and information regarding backfill material, where it was obtained, and any attendant analytical results.

iii. Documentation of all engineering and institutional controls implemented to contain the release, eliminate pathways of exposure, reduce exposure, or achieve a combination thereof; and

iv. A statement signed by the party or applicant certifying that the document and all attachments were prepared under the party or applicant’s direction or supervision, and the information submitted
is, to the best knowledge of the party or applicant, true, accurate, and complete.

c. EPPC review and approval of report.

IV. Financial Incentives

A. Moneys expended under VERP are qualifying costs under:

1. Economic development laws;

2. Infrastructure projects.

B. Agricultural Warehousing Sites Cleanup Fund

1. Administered by the Cabinet for Economic Development.

2. The purpose of the agricultural warehousing sites cleanup fund is to provide financial assistance to persons who did not cause or contribute to the contamination on property used for agricultural warehousing activity, and who propose to undertake a voluntary cleanup of the property.

3. The financial assistance shall be in an amount of up to seventy-five percent (75%) of the costs incurred for completing an environmental study and implementing a cleanup plan by an eligible applicant.

4. Financial assistance may be in the form of grants or low-interest loans, to be lent at a rate not to exceed two percent (2%).

5. Loans may be made to the following categories of applicants:

a. Local economic development agencies;

b. Political subdivisions or their instrumentalities; and

c. Other persons determined to be eligible by the Cabinet for Economic Development.

6. The Cabinet for Economic Development is required to take all of the following factors into consideration when determining which applicants shall receive financial assistance:

a. The benefit of the remedy to human health, safety, and the environment;

b. The permanence of the remedy;
c. The cost-effectiveness of the remedy in comparison with other alternatives;

d. The financial condition of the applicant;

e. The financial or economic distress of the area in which the cleanup is being conducted; and

f. The potential for economic development.

7. Loans may be made based upon the ability to repay from future revenue to be derived from the cleanup, by a mortgage or other collateral, or on any other fiscal matters which the Cabinet for Economic Development deems appropriate.

C. 2005 House Bill 272

1. Applies to a "qualifying voluntary environmental remediation property" – real property subject to the provisions of KRS 224.01-400 and KRS 224.01-405 for which the EPPC has made a determination that:

   a. The responsible parties are financially unable to carry out the obligations in KRS 224.01-400 and KRS 224.01-405; and

   b. The property was acquired after the effective date of the Act by a bona fide prospective purchaser as defined in 42 U.S.C. sec. 9601(40).

2. Applies to "expenditures" – payment for work to characterize the extent of contamination and to remediate the contamination at a qualifying voluntary environmental remediation property.

3. Creates a nonrefundable credit against income taxes for:

   a. Expenditures;

   b. Made at a qualifying voluntary environmental remediation property;

   c. In order to meet the requirements of an agreed order entered into by the taxpayer under the provisions of KRS 224.01-518;

   d. Provided that the taxpayer has obtained a covenant not to sue from the EPPC.

4. Maximum total credit for each taxpayer not to exceed $150,000.
401 KAR 100:030. Remediation requirements.

RELATES TO: KRS 224.01-400, 224.01-405, 224.01-450-224.01-465, 224.01-510-224.01-532, 224.40-100

STATUTORY AUTHORITY: KRS 224.10-100(30), 224.40-100, 224.01-400(2), 224.01-405(2), 224.01-530(2), 224.01-532

NECESSITY, FUNCTION AND CONFORMITY: KRS 224.01-530(2) requires the cabinet to promulgate administrative regulations establishing standards under KRS 224.01-400 and 224.01-405 with respect to hazardous substances, pollutants, contaminants, petroleum, or petroleum products, that are protective of human health, safety, and the environment. KRS 224.01-532 authorizes the cabinet to promulgate administrative regulations to implement KRS 224.01-510 to 224.01-532. This administrative regulation governs remediation under KRS 224.01-400 and 224.01-405, 224.01-510 through 224.01-532, and 224.01-450 to 224.01-465.

Section 1. Definitions. (1) "Ambient background" means the concentrations of naturally-occurring inorganic substances and ubiquitous anthropogenic inorganic substances in the environment that are representative of the region surrounding the site and not attributable to an identifiable release.

(2) "Applicant" means a person who has applied to participate in the Voluntary Environmental Remediation Program in accordance with KRS 224.01-514.

(3) "Application" means Application to Enter the Voluntary Environmental Remediation Program, DEP Form 6059 (October 22, 2003), including any additions, revisions, or modifications and any narrative and drawings.

(4) "Contaminant of concern" means a hazardous substance or petroleum that is sufficiently present in frequency and concentration in the environment to require further evaluation of human and ecological health effects.

(5) "Industrial" means a type of property not used for residential purposes or for other purposes with a similar potential for human exposure.

(6) "Notice of completion" means a letter from the cabinet to the person indicating that the person has satisfactorily completed the requirements of KRS 224.01-400(18) and 224.01-405(1) and Sections 6 through 9 of this administrative regulation.

(7) "Party" means a person as defined in KRS 224.01-010(17) who is:

(a) Conducting remediation in accordance with KRS 224.01-400(18) or 224.01-405(1), who is seeking a notice of completion from the cabinet; or

(b) Conducting remediation in accordance with KRS 224.01-400(18) or 224.01-405(1), and seeking a no further remediation letter in accordance with KRS 224.01-450 to 224.01-465.

(8) "Region 9 PRGs" means the U.S. EPA Region 9 Preliminary Remediation Goals, (October 1, 2002) used in accordance with the U.S. EPA Region 9 Preliminary Remediation Goals Table User's Guide/Technical Background Document (October 1, 2002).

(9) "Residential" means a type of property used:

(a) As a residence or dwelling, including a house, apartment, or condominium; or
(b) For other purposes with a similar potential for human exposure.

(10) "Target risk" means an excess cancer risk of one in one million for carcinogenic endpoints and a hazard index of 1.0 for noncancer endpoints.

(11) "Voluntary Environmental Remediation Program" (VERP) means the process for site remediation established in this administrative regulation and KRS 224.01-510 to 224.01-532.

Section 2. Applicability. This administrative regulation shall govern remediation pursuant to KRS 224.01-400(18)-(21), 224.01-405(1), 224.01-450 to 224.01.465, and 224.01-510 to 224.01-532.

Section 3. Eligibility

(1) A notice of completion, a no further remediation letter, or a covenant not to sue shall be issued by the cabinet only for those sites at which remediation is conducted under cabinet oversight or is otherwise approved by the cabinet.

(2) Upon approval of a remediation done in accordance with KRS 224.01-400 or 224.01-405 and Sections 6 through 9 of this administrative regulation, the cabinet shall issue a notice of completion to the person.

(3) Upon approval of a remediation done in accordance with KRS 224.01-450 to 465 and Sections 6 through 9 of this administrative regulation, the cabinet shall issue a no further remediation letter to the eligible public entity.

(4) Eligible participants seeking a covenant not to sue from the cabinet shall apply to enter the Voluntary Environmental Remediation Program. Upon approval of a remediation done in accordance with KRS 224.01-510 to 224.01-532 and Sections 5 through 9 of this administrative regulation, the cabinet shall issue a covenant not to sue to the applicant.

(5) A person conducting characterization and remediation, with or without cabinet oversight as provided by KRS 224.01-400(19), shall have all the options of KRS 224.01-400 and of this administrative regulation.

Section 4. Initial Property Screening.

(1) KRS 224.01-530 establishes the Region 9 PRGs as screening values. Contamination on a property that does not exceed the residential value in the Region 9 PRGs and does not otherwise require action under KRS 224.01-400 or 224.01-405, shall not rise to a level of concern under KRS 224.01-530.

(2) Contamination on a property which exceeds the residential value but does not exceed the industrial value in the Region 9 PRGs and does not otherwise require action under KRS 224.01-400 or 224.01-405, shall not rise to a level of concern under KRS 224.01-530 if the property is restricted in use to industrial use by a deed instrument in the property's chain of title that industrial exposures have been assumed at the site and is recorded with the county clerk for the county in which the property exists.

(3) The cabinet shall not issue a covenant not to sue for sites described by subsections (1) and (2) of this section unless the owner of the property applies to the Voluntary Environmental Remediation Program and complies with Sections 5 through 9 of this administrative regulation.

(4) The cabinet may require further characterization and remediation of any release pursuant to and in compliance with all applicable statutes and regulations regardless of the application of subsections (1) and (2) of this section.

Section 5. Application. In order to enter into the Voluntary Environmental Remediation Program an applicant shall submit to the cabinet:
(1) A completed "Application to Enter Voluntary Environmental Remediation Program," DEP Form 6059, October 22, 2003;

(2) The tear sheet for the public notice required by KRS 224.01-514(3)(d);

(3) A site characterization plan prepared in accordance with Section 6 of this administrative regulation; and

(4) A nonrefundable application fee, if required by KRS 224.01-514(3).

Section 6. Site Characterization Plan. The party or applicant shall submit to the cabinet a site characterization plan that complies with KRS 224.01-400(18) to (21) or 224.01-405(1) and Section 7(2) of this administrative regulation, and shall include:

(1) To the extent known or reasonably obtained, the location and ownership of the property and site; the history of the use of the property and site, surrounding land use and ownership; information regarding the circumstances surrounding known or suspected releases at the property and site, including the types of hazardous substances or petroleum released, approximate volumes or amounts of releases, and actions taken in response to known or suspected releases to date;

(2) The site conditions and physical setting including soils, groundwater, geology, and other pertinent features; a 7.5 minute USGS topographic quadrangle map or the appropriate part of this map indicating the location of the property, a 7.5 minute USGS geological quadrangle map or the appropriate part of such a map indicating the location of the property; and a base map, at an appropriate scale, accuracy, and detail depicting property lines, surrounding land ownership and uses, significant structures and infrastructure; and significant environmental or geological features;

(3) A soil sampling plan to identify and characterize the horizontal and vertical extent of contamination and the variation in types and concentrations of hazardous substances and petroleum sufficient to support selection of remediation options for the site;

(4) A plan to determine whether a groundwater assessment is necessary;

(5) A plan to determine whether air quality, surface water and its associated sediments, or terrestrial or aquatic habitat have been affected by a release;

(6) A plan to determine whether an ecological risk assessment is necessary;

(7) A statement specifying that sample collection and analysis requirements, quality assurance, and quality control will be met in accordance with "Test Methods for Evaluating Solid Wastes: Physical Chemical Methods (EPA Publication No. SW-846) Third Edition"; and

(8) A proposed schedule for implementation of the characterization plan and submittal of a site characterization report.

Section 7. Site Characterization and Site Characterization Report. (1) The party or applicant shall conduct a site characterization that complies with the site characterization plan, as required in Section 6 of this administrative regulation.

(2) The party or applicant shall submit a site characterization report that includes:

(a) A list of the contaminants of concern at the site that complies with the following requirements:
1. The party or applicant shall identify contaminants of concern at the site using the Region 9 PRGs;

2. In identifying contaminants of concern the party or applicant shall consider the following:

a. The frequency of detection of the contaminants;

b. The effects on human health due to the interaction between contaminants, including additivity. Additivity of contaminants of concern shall be evaluated using the screening index described in the "U.S. EPA Region 9 Preliminary Remediation Goals Table User's Guide/Technical Background Document (October 1, 2002)";

c. Ambient background conditions, including ambient background based on generic statewide ambient background levels as presented in Table 2 of the Kentucky Guidance for Ambient Background Assessment, or site-specific ambient background conditions determined in accordance with the Kentucky Guidance for Ambient Background Assessment; and

d. Any other applicable requirements; and

3. A person conducting characterization and screening with or without cabinet oversight as provided by KRS 224.01-400(19), may use Region 9 PRGs to screen sites and identify contaminants of concern, as described in KRS 224.01-530(1). However, the cabinet shall not approve the adequacy of the Region 9 PRGs without review of site-specific conditions;

(b) A determination of the extent of the contamination in all media impacted by contaminants of concern including:

1. The horizontal and vertical extent of contamination in soils;

2. The results of the determination of whether a groundwater assessment is necessary, conducted in accordance with the "Kentucky Guidance for Groundwater Assessment Screening", or other method selected by the party or applicant and approved by the cabinet;

3. The results of the determination of whether air quality, surface water and its associated sediments, or terrestrial or aquatic habitat have been affected by a release, and the extent of the effect of the release on these media; and

(c) A determination by way of screening or risk assessment, as appropriate, of the human health and ecological risks posed by contamination at the site or resulting from the site:


Section 8. Corrective Action Plan. (1) The party or applicant shall submit a corrective action plan to the cabinet that addresses contaminants of concern in impacted media, and unacceptable ecological risks. The corrective action plan shall contain a proposed schedule for implementation of the corrective action.

(2) A person conducting corrective action pursuant to KRS 224.01-400(19) may use the Region 9 PRGs in order to identify final remediation goals. However, the cabinet shall not approve the adequacy of the Region 9 PRGs as final remediation goals without review of site-specific conditions.
(3) The corrective action plan shall employ one (1) of the following options:

(a) No action necessary.

1. No action is necessary in accordance with KRS 224.01-400(18)(a) if the party or applicant:

   a. Demonstrates to the cabinet that the risk posed by contaminants of concern does not exceed target risk levels for unrestricted land use and does not exceed ecological risk endpoints in accordance with "Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (1997)" and "Guidelines for Ecological Risk Assessment (1998)"; or


2. The party's or applicant's attempt to demonstrate that no action is necessary to protect human health, safety and the environment may include demonstrations by the party or applicant that the remaining organic constituents in soil are naturally occurring or are not attributable to an identifiable release.

3. The party's or applicant shall consider any applicable requirements when demonstrating no action is necessary.

4. Region 9 PRGs may be used as the final remediation goals for human health at sites:

   a. That do not have multiple contaminants of concern that result in an additive risk above the target risk level. Additivity of contaminants of concern shall be evaluated using the screening index described in the "U.S. EPA Region 9 Preliminary Remediation Goals Table User's Guide/Technical Background Document (October 1, 2002)"; and

   b. For which the assumptions used in developing the Region 9 PRGs are applicable.

(b) Management in place. KRS 224.01-400(18)(b) shall apply to sites where the party or applicant will manage releases in place. The goal of management in place shall be to attain target risk levels at the point of exposure, and be protective of ecological health.

1. Management of the release shall include engineering and institutional controls amounting to containment of the release, and either elimination of exposure pathways, or reduction of exposure.

2. The party or applicant shall consider current and proposed land use in selecting the remedy. Proposed land use shall not be in conflict with local zoning codes and other applicable ordinances.

3. The party or applicant shall describe to the cabinet the method for maintenance of engineering and institutional controls, including:

   a. Annual (or other approved frequency) inspections of the engineering and institutional controls, as approved by the cabinet in the corrective action plan;

   b. Annual (or other approved frequency) certification to the cabinet that the engineering and institutional controls remain protective of human health, safety and the environment; and
c. A deed instrument containing an enforceable restrictive covenant which is transferable and is binding on current and subsequent property and recorded with the county clerk for the county in which the property exists. A copy of the restrictive covenant shall be filed with the cabinet.

4. If the target risk levels at the point of exposure will not be achieved by the proposed remedy, the party or applicant shall demonstrate to the cabinet the protectiveness of the remedy using the criteria listed in clauses a through h of this subparagraph. The cabinet shall place emphasis on criteria listed in clauses a through d of this subparagraph when evaluating the remedy selected.

   a. The overall protection of human health and the environment;
   b. The compliance with any other applicable requirements;
   c. The long-term effectiveness and permanence of the remedial option;
   d. The reduction of toxicity, mobility, or volume through the use of treatment;
   e. The short-term effectiveness of the remedy;
   f. The ability to implement the remedy;
   g. The cost of the remedy; and
   h. Community acceptance of the remedy.

5. If the proposed remedy will not achieve target risk levels at the point of exposure the party or applicant shall provide a public notice of the remedy, including a summary of the contamination at the site, the remedial actions taken, and the residual risks associated with the site. The cabinet shall receive public comments on the proposed remedy for at least thirty (30) days following publication of the notice. For VERP participants, the public notice and comment period required by KRS 224.01-524 shall serve as the required public notice.

   (c) Restoration. KRS 224.01-400(18)(c) shall apply to sites where the party or applicant restores the environment through removal of the contaminants of concern to ambient background levels, target risk levels at the point of exposure, or levels derived from a site-specific risk assessment approved by the cabinet, that do not require engineering or institutional controls.

   (d) Combination of options. The party or applicant shall have the option to employ a combination of the remedial options described in this section.

(4) The cabinet shall review and approve or disapprove the corrective action plan pursuant to KRS 224.01-522 or 224.01-400(22), as applicable.

Section 9. Corrective Action Completion Report. (1) The party or applicant shall submit to the cabinet a corrective action completion report.

(2) The corrective action completion report shall include:

(a) Documentation that the corrective actions implemented comply with the corrective action plan approved by the cabinet;
(b) Documentation of the completion of all the activities specified in the corrective action plan required in Section 7 of this administrative regulation, including documentation of any modification from the approved corrective action plan, documentation of the weight, volume, and classification of any material removed as part of the corrective action, copies of signed manifests and any other pertinent waste disposal forms, sampling procedures used for waste profile determination and restoration conformation, results from any confirmatory sampling and copies of all laboratory analytical reports, and information regarding backfill material, where it was obtained, and any attendant analytical results;

(c) Documentation of all engineering and institutional controls implemented to contain the release, eliminate pathways of exposure, reduce exposure, or achieve a combination thereof; and

(d) A statement signed by the party or applicant certifying that the document and all attachments were prepared under the party or applicant's direction or supervision, and the information submitted is, to the best knowledge of the party or applicant, true, accurate, and complete.

(3) The cabinet shall review and approve or disapprove the corrective action completion report pursuant to KRS 224.01-522 or 224.01-400(22), as applicable.

Section 10. Incorporation by Reference. (1) The following material is incorporated by reference:

(a) "Application to Enter Voluntary Environmental Remediation Program, DEP Form 6059 (October 22, 2003)"

(b) "U.S. EPA Region 9 Preliminary Remediation Goals, and the Region 9 PRGs Table User's Guide/Technical Background Document (October 1, 2002)"

(c) "Kentucky Guidance for Ambient Background Assessment (January 8, 2004)"

(d) "Kentucky Guidance for Groundwater Assessment Screening (January 15, 2004)"


(h) "Risk Assessment Guidance for Superfund: Volume 1, Human Health Evaluation Manual, Part A, Interim Final Version (December 1989);

(i) "Risk Assessment Guidance for Superfund: Volume 1, Human Health Evaluation Manual, Part B, Development of Risk-based Preliminary Remediation Goals, Interim Version (December 1991); and


(2) This material may be inspected, copied, or obtained, subject to applicable copyright law, at the Division of Waste Management, 14 Reilly Rd, Frankfort, Kentucky 40601, (502) 564-8716, Monday through Friday, 8 a.m. to 4:30 p.m., Eastern time, excluding state holidays. (30 Ky.R. 1707; Am. 1961; 2021; eff. 3-18-2004.)
Kentucky Guidance for Ambient Background Assessment

January 8, 2004

Natural Resources and
Environmental Protection Cabinet
Introduction

This guidance document is intended to assist in comparing site data and background data for sites undergoing environmental assessment. These procedures provide a simplified statistical procedure for determining if the site data is part of the background population. It also provides generic statewide background values for inorganic chemicals that may be used in lieu of collecting site-specific background samples. The statistical procedures may be used for site-specific data or the generic statewide values in Tables 1 and 2. This guidance does not preclude other appropriate statistical comparisons from being made, but rather a simplified screening method that does not require a deep knowledge of statistics. If the site data set fails the statistical procedures in this guidance, it may be appropriate to perform a more complete statistical comparison.

Background, as defined in 401 KAR 42:005 (definitions codified to support the Underground Storage Tank regulations), means the concentration of substances consistently present in the environment at, or regionally proximate to, a release but outside the influence of the release. There are two types of background:

a) Natural background is the amount of naturally occurring substances in the environment, exclusive of that from anthropogenic sources.

b) Ambient background means the concentrations of naturally occurring inorganic substances and ubiquitous anthropogenic inorganic substances in the environment that are representative of the region surrounding the site and not attributable to an identifiably release.

Since sites undergoing environmental assessment are often found in industrialized and potentially contaminated areas, the determination of site-specific background concentrations is difficult. Generic ambient background values applicable to all sites in Kentucky would be useful for comparison to site data for the purpose of identifying those constituents requiring remedial action (i.e., removal or exposure control). These generic ambient background values would provide an alternative to attempting to identify site-specific background soils in areas that are likely contaminated.
Methodology

To provide an alternative to site-specific background sampling, the NREPC used background sample values provided by regulated facilities, as well as background sample values collected by cabinet employees. These samples were collected from areas generally considered to be outside of the influence of site activities, but were potentially impacted by regional or urban activity. Therefore, these samples represent “ambient,” as opposed to “natural,” background. From 400 to over 800 samples for each constituent were used in the analysis. For each constituent, a 95% Upper Confidence Limit (UCL) of the arithmetic mean, 60th percentile, and 95th percentile were calculated. The 95% UCL is the value below which the true mean of the data set falls, with 95% confidence. The 60th and 95th percentiles indicate that 60 percent and 95 percent of the data falls below those values.

The following methodology was employed to calculate ambient background:

1. Values reported as “non-detected” were retained in the database at half the reporting limit (USEPA, 1998).

2. As the data sets came from areas having varied uses (e.g., industrial, commercial, residential, agricultural, woodlands, etc.), the probability that some of the samples were taken in contaminated areas is significant. Data sets were tested for outliers by the Grubb’s test, and individual samples that had a calculated Z-score above 3.8 were generally removed from the background data set. The Grubb’s test formula is as follows:

\[ Z = \frac{|\text{population mean} - \text{value of individual sample}|}{\text{standard deviation}} \]

3. The descriptive statistics of mean and standard deviation were calculated by standard parametric methods assuming normality and are listed in Table 1. Parametric methods were used to allow for comparisons between these generic ambient background values and the results of other published studies of background.
a. Standard deviation was calculated by the "nonbiased" method employing the formula:

\[ S.D. = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n-1}} \]

b. Mean was calculated as the sum of all individual scores divided by the total number of observations.

4. The data sets were analyzed with Lillefor's test for normality. Since the data sets are not normally or lognormally distributed, the parameters that are to be used in determining if site samples are consistent with background (i.e. 95% UCL of mean, 60th percentile and 95th percentile) were calculated by nonparametric methods and are listed in Table 2.

5. The 95% UCL of the arithmetic mean for each constituent was calculated on the trimmed data set using ProUCL. ProUCL is a statistical package developed by Lockheed Martin under contract with the U.S. EPA.

6. The 60th percentile value is used as the midpoint for each constituent. It was calculated as follows:
   a. The constituent values were ranked in increasing order of magnitude.
   b. The quantity 60(n)/100 was used to identify the measurement with the resulting rank.

7. The 95th percentile value is used as the upper bound value for each constituent and was calculated as follows:
   a. The constituent values were ranked in increasing order of magnitude.
   b. The quantity 95(n)/100 was used to identify the measurement with the resulting rank.

The thallium data were characterized by a large number of non-detects (633 non-detects verses 54 detects). Due to the large number of non-detects, non-detects were not entered as ½ the non-detect concentration. Each non-detect sample was assumed to have a concentration equal to the recorded non-detect concentration. Considering the number of non-detects and the likelihood that
the recorded values skew thallium concentrations upward, only the 95th percentile of the total data is cited in Table 2.

**Procedure for Comparison to Background**

The site data should be segregated by surface and subsurface data. The surface and subsurface site data may be compared to the statewide numbers in Table 2, or to site-specific background samples. The following three criteria may be used to demonstrate that the site data is background:

1. The mean site concentration for inorganic constituents must be below the 95% UCL of the mean concentrations of background for inorganic constituents.
2. At least half of the data points should be less than the 60th percentile.
3. No data points should be above the upper bound value (95th percentile).

These procedures provide a tool for comparing site data with either generic statewide or site-specific background using the statistical characteristics of the two populations. Other statistical comparisons may be used, if appropriate.

**Determining Site-specific Background**

Site-specific ambient background levels may be determined at the site. The site-specific ambient background data set shall consist of an appropriate number of samples for the statistical method employed. The number of samples necessary to characterize site-specific background will vary based on the variability of the data. Twenty data points may be used as a minimum number of samples per horizon (surface and subsurface) as a default number, unless other statistical methods can be used to develop a different number. A site-specific determination of the number of required samples may be calculated based on the statistical characteristics of the background population.

Upgradient groundwater samples are to be obtained from the same hydrogeological unit as the groundwater contamination at the site. The background monitoring wells shall be located hydrogeologically upgradient from the release(s) of concern, unless it can be demonstrated to the cabinet that the upgradient location is undefinable or infeasible.
Background soil samples should be collected from native soil in areas of similar soil type as found at the site. Background concentrations should be determined separately for surface and subsurface areas that are consistent with the on-site investigation.

The following areas are inappropriate to sample when determining soil background unless otherwise necessary to reach a corrective action decision or identify potential sources of contamination:

1. Fill areas;
2. Areas in which management, treatment, handling, storage or disposal activities of any of the following are known or suspected to have occurred: hazardous substances or petroleum, solid or hazardous wastes, or waste waters;
3. Areas within three feet of a roadway;
4. Parking lots and areas surrounding parking lots or other paved areas;
5. Railroad tracks or railway areas or other areas affected by their runoff;
6. Areas of concentrated air pollutant depositions or areas affected by their runoff;
7. Storm drains or ditches presently or historically receiving industrial or urban runoff; or
8. Areas within three feet of any current structure, or the former location of any structure, which is likely to have been painted with lead-based paint.
Literature Cited


Table 1. Summary Statistics for Ambient Inorganic Chemicals

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<tr>
<th>Element</th>
<th>Number of Samples</th>
<th>Range (mg/kg)</th>
<th>Mean (mg/kg)</th>
<th>Standard Deviation (mg/kg)</th>
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Table 2. Generic Statewide Ambient Background for Kentucky

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<th>Element</th>
<th>Mean (mg/kg)</th>
<th>95% UCL of Mean (mg/kg)</th>
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Kentucky Guidance for Groundwater Assessment Screening

January 15, 2004

Environmental and Public Protection Cabinet
Introduction

This document provides guidance for evaluating contaminated sites to determine whether superficial and shallow contamination in soils indicates an existing or potential groundwater contamination problem, and whether a direct assessment of groundwater conditions is necessary. This method is intended to provide the party or applicant a cost-effective approach using soils data collected as part of the site characterization for determining the need to assess groundwater quality.

Methodology

An assessment of the effect of a release of a hazardous substance or petroleum on groundwater quality may not be necessary at all sites. This process is intended for sites that lack adequate groundwater monitoring data and where the party or applicant anticipates to leave in place contaminants of concern (COCs).

This approach to evaluating impacts and potential impacts of a release on groundwater is based on the attenuation of contaminants moving through the soil profile by means of biodegradation, hydrolysis, volatilization, adsorption, and dilution. Contaminants may not attenuate similarly in all situations, and therefore conservative Dilution Attenuation Factor (DAF) values are applied. However, conditions at some sites may result in contaminant migration through the soil profile in a manner that bypasses physical, chemical, and biological processes in the soils. Caution should be applied to use of this methodology at sites where normal physical, chemical, and biological processes in the soils are bypassed, including sites underlain by soils with large, interconnected pores (macropores) that provide for the rapid transport of water and contaminants through the soil profile, sites underlain by well-developed karst terrane,
sites underlain by highly fractured media, or where contamination extends to the soil-
bedrock interface. These types of sites may not provide for the soil processes assumed to
be in effect in this method. In addition, this process is primarily intended for COCs that
are relatively insoluble and are expected, under normal conditions, to remain in the soil
profile and not to migrate to groundwater. Therefore, caution should be used in applying
this methodology at sites where soluble or mobile COCs such as volatile organic
compounds, nitrates, or dense non-aqueous phase liquids (DNAPL) are present; the
presence of such COCs in the soils may indicate that a groundwater assessment may be
necessary. The cabinet reserves the authority to require a direct assessment of
groundwater at sites where it deems such investigation is prudent to understanding the
extent of contamination and the risks associated with the release.

To determine whether a direct assessment of groundwater conditions is necessary,
analytical data from the soil profile may be evaluated by the methods outlined in this
document in combination with an evaluation of other soil conditions, and the geology and
hydrology of the site. These data can be used to determine whether groundwater was
likely to have been impacted, and whether these soils will serve as a future source of
groundwater contamination.

In order to use this method, the horizontal and vertical extent of soil
contamination must be known. An adequate number of soil borings with multiple,
discreet sampling intervals of sufficient length and spacing to characterize vertical
distribution of contamination are also necessary.
If it can be demonstrated using one of the following options that a release has not
had and will not have an adverse effect on groundwater quality, a direct assessment of
groundwater impacts may not be necessary.

1. An assessment of groundwater for a release may not be necessary if the
applicable Soil Screening Levels, or SSL (DAF 1), in the U.S. EPA Region 9 Preliminary
Remediation Goals (October 1, 2002) are not exceeded in the bottom two (2) sampling
intervals of each soil boring.

2. Rather than using the default SSLs (DAF 1), a modified SSL may be used. This
modified SSL takes into account the surface area of the site, the vertical separation
between the contamination in the soil profile and groundwater, and the underlying
bedrock conditions. The appropriate modified SSL is equivalent to the SSL (DAF 1)
referredenced in the U.S. EPA Region 9 Preliminary Remediation Goals, (October 1, 2002)
multiplied by the applicable value in Table 1, below. An assessment of groundwater for
a release may not be necessary if the applicable modified SSLs are not exceeded in
samples from the bottom two (2) sampling intervals.

Table 1.

<table>
<thead>
<tr>
<th>Vertical Separation Between Contamination in the Soil Profile and the</th>
<th>Surface Area of Site and other considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 0.5 acres</td>
</tr>
<tr>
<td>0-5 ft</td>
<td>1</td>
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<tr>
<td>5-10 ft</td>
<td>5</td>
</tr>
<tr>
<td>10-15 ft</td>
<td>10</td>
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<tr>
<td>15-20 ft</td>
<td>15</td>
</tr>
<tr>
<td>Greater than 20 ft</td>
<td>20</td>
</tr>
</tbody>
</table>
3. A site-specific SSL may be developed and applied based on site-specific conditions, including soil types, characteristics of COCs, total organic carbon in the soil, soil porosity, infiltration rate, and the vertical separation between the contamination in the soil profile and groundwater. If the analytical results in the bottom two (2) sampling intervals do not exceed the site-specific SSLs, a groundwater assessment may not be necessary for that site.

4. A fate and transport evaluation may be developed to demonstrate that levels of COCs in the soils will not result in groundwater contamination beyond the property boundary. If a fate and transport evaluation adequately demonstrates that levels of COCs in the soils will not result in groundwater contamination beyond the property boundary, a groundwater assessment may not be necessary. However, a direct groundwater assessment will be required to make such a determination in most situations.

5. An analysis of the results of current and historical groundwater monitoring may be used to determine whether groundwater has been adequately characterized. Such an analysis shall contain sufficient information to determine whether groundwater has been affected by any releases at the site. The report of this analysis shall include:

   a. The location of monitoring wells relative to the location of the soil contamination at the site, and to groundwater flow direction at the property;

   b. Monitoring well construction details, including diameter of the annulus, diameter of the well casing, the depth and length of the screened interval, construction of the sand pack, and the type and manner of sealing materials used;

   c. The proximity of wells to one another and to the property boundary; and
d. The results of all groundwater analyses conducted to date on samples collected at the property, including sample dates, the parameters analyzed, and the methods of collection and analysis.

A groundwater assessment is necessary and prudent in some circumstances. Any direct evidence of groundwater contamination, including seeps, contaminated wells and springs, or other similar information is compelling evidence to conduct a thorough groundwater investigation. The cabinet may direct a person or applicant to conduct a groundwater assessment in regards to a known or suspected release, regardless of the results of the methods employed above.
References


SECTION 140. A NEW SECTION OF KRS CHAPTER 141 IS CREATED TO READ AS FOLLOWS:

(1) As used in this section:

(a) "Qualifying voluntary environmental remediation property" means real property subject to the provisions of KRS 224.01-400 and KRS 224.01-405 for which the Natural Resources and Environmental Protection Cabinet has made a determination that:

1. The responsible parties are financially unable to carry out the obligations in KRS 224.01-400 and KRS 224.01-405; and

2. The property was acquired after the effective date of this Act by a bona fide prospective purchaser as defined in 42 U.S.C. sec. 9601(40);

(b) "Expenditures" means payment for work to characterize the extent of contamination and to remediate the contamination at a qualifying voluntary environmental remediation property; and
"Taxpayer" means an individual subject to tax under KRS 141.020 or a corporation subject to tax under KRS 141.040.

(2) There shall be allowed a nonrefundable credit against the tax imposed under KRS 141.020 or 141.040 for taxable years beginning after December 31, 2004, for taxpayer expenditures made at a qualifying voluntary environmental remediation property in order to meet the requirements of an agreed order entered into by the taxpayer under the provisions of KRS 224.01-518, provided that the taxpayer has obtained a covenant not to sue from the Natural Resources and Environmental Protection Cabinet under KRS 224.01-526.

(3) The maximum total credit for each taxpayer shall not exceed one hundred fifty thousand dollars ($150,000). For purposes of this section, an affiliated group of taxpayers required to file a consolidated return under KRS 141.200 shall be treated as one taxpayer.

(4) A taxpayer claiming a credit under this section shall submit receipts to the Finance and Administration Cabinet in proof of the expenditures claimed. The Finance and Administration Cabinet shall forward the receipts to the Natural Resources and Environmental Protection Cabinet for verification. After the receipts are verified, the Finance and Administration Cabinet shall notify the taxpayer of eligibility for the credit.

(5) The credit may be first claimed on the income tax return of the taxpayer filed in the taxable year during which the credit was certified. The amount of the allowable credit for any taxable year shall be twenty-five percent (25%) of the maximum credit approved. The credit may be carried forward for ten (10) successive taxable years.

(6) If the taxpayer is a general partnership, the credit shall pass through in the same proportion as the distributive share of income or loss is passed through.

Section 141. KRS 224.01-400 is amended to read as follows:
As used in this section:

(a) "Hazardous substance" means any substance or combination of substances including wastes of a solid, liquid, gaseous, or semi-solid form which, because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness, or pose a substantial present or potential hazard to human health or the environment. The substances may include but are not limited to those which are, according to criteria established by the cabinet, toxic, corrosive, ignitable, irritants, strong sensitizers, or explosive, except that the term "hazardous substance" shall not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under this section, and shall not include natural gas, natural gas liquids, liquified natural gas, or synthetic gas usable for fuel, or mixtures of natural gas and synthetic gas;

(b) "Release" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing hazardous substances, pollutants, or contaminants into the environment, including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance, pollutant, or contaminant, but excludes emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine; the release of source, by-product, or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954, if the release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission under Section 170 of the Act, or any release of source by-product, or special nuclear material from any processing site designated under
Sections 102(a)(1) or 302(a) of the Uranium Mill Tailings Radiation Control Act of 1978; and the normal application of fertilizer;

(c) "Site" means any building, structure, installation, equipment, pipe, or pipeline, including any pipe into a sewer or publicly-owned treatment works, well, pit, pond, lagoon, impoundment, ditch, landfill, storage containers, motor vehicles, rolling stock, or aircraft, or any other place or area where a release or threatened release has occurred. The term shall not include any consumer product in consumer use;

(d) "Environmental emergency" means any release or threatened release of materials into the environment in such quantities or concentrations as cause or threaten to cause an imminent and substantial danger to human health or the environment; the term includes, but is not limited to, discharges of oil and hazardous substances prohibited by Section 311(b)(3) of the Federal Clean Water Act - (Public Law 92-500), as amended;

(e) "Threatened release" means a circumstance which presents a substantial threat of a release;

(f) "Pollutant or contaminant" shall include, but not be limited to, any element, substance, compound, or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring; except that the term "pollutant or contaminant" shall not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under this section and shall not include...
natural gas, liquified natural gas, or synthetic gas of pipeline quality (or mixtures of natural gas and such synthetic gas);

(g) "Environment" means the waters of the Commonwealth, land surface, surface, and subsurface soils and strata, or ambient air within the Commonwealth or under the jurisdiction of the Commonwealth;

(h) "Financial institution" means, for purposes of subsections (26) and (27) of this section, the following:
1. A bank or trust company defined by KRS Chapter 287;
2. A savings and loan association defined by KRS Chapter 289;
3. A credit union defined by KRS Chapter 290;
4. A mortgage loan company or loan broker defined by KRS Chapter 294;
5. An insurer defined by KRS Chapter 304; and
6. Any other financial institution engaged in the business of lending money, the lending operations of which are subject to state or federal regulation; and

(i) "Fiduciary" means, for purposes of subsections (26) and (27) of this section, a fiduciary as defined by KRS Chapter 386.

(2) The cabinet may promulgate administrative regulations in accordance with the provisions of KRS Chapter 13A designating individual hazardous substances, pollutants, or contaminants; establishing their respective reportable quantities; and establishing their respective release notification requirements, which differ from those designated or established in subsections (3) to (9) of this section, if necessary to:

(a) Protect human health and the environment;
(b) Maintain consistency with valid scientific development; or
(c) Maintain consistency with newly adopted federal regulations.

(3) The hazardous substances for which release notification is required shall be those
hazardous substances designated in 40 C.F.R. Part 302 under the Federal Comprehensive Environmental Response Compensation and Liability Act of 1980, as amended; those extremely hazardous substances designated in 40 C.F.R. Part 355 under Title III of the Superfund Amendments and Reauthorization Act of 1986; nerve and blister agents designated under KRS 224.50-130(2); and any hazardous substances designated by the cabinet in administrative regulations promulgated pursuant to subsection (2) of this section.

(4) The reportable quantity for a release of a hazardous substance designated in 40 C.F.R. Part 302 under the Federal Comprehensive Environmental Response Compensation and Liability Act of 1980, as amended, shall be the quantity designated in 40 C.F.R. Part 302. The reportable quantity for a release of an extremely hazardous substance designated in 40 C.F.R. Part 355 under Title III of the Superfund Amendments and Reauthorization Act of 1986 shall be the quantity designated in 40 C.F.R. Part 355. The reportable quantity for a release of a nerve or blister agent designated under KRS 224.50-130(2) shall be any quantity. The cabinet may establish reportable quantities for hazardous substances in administrative regulations promulgated pursuant to subsection (2) of this section which differ from those established in this subsection. The reportable quantity for any hazardous substance designated by the cabinet in administrative regulations promulgated pursuant to subsection (2) of this section shall be the reportable quantity established by the cabinet.

Act of 1986 shall be the notification requirements established in 40 C.F.R. Part 355.
Whenever notification of a release or threatened release of a hazardous substance is required pursuant to this section, any person possessing or controlling the hazardous substance shall immediately notify the cabinet's twenty-four (24) hour environmental response line. The cabinet may establish release notification requirements by administrative regulation promulgated pursuant to subsection (2) of this section which differ from those established in this subsection. The release notification requirements for any hazardous substance designated by the cabinet in administrative regulations promulgated pursuant to subsection (2) of this section shall be the release notification requirements established in the cabinet's administrative regulations.

(6) Any person possessing or controlling a pollutant or contaminant for which a reportable quantity has been established by administrative regulation promulgated pursuant to subsection (2) of this section shall immediately notify the cabinet's twenty-four (24) hour environmental response line, as soon as that person has knowledge of any release or threatened release, other than a permitted release or application of a pesticide in accordance with the manufacturer's instructions, of a pollutant or contaminant to the environment in a quantity equal to or exceeding the reportable quantity. In the notice to be made to the cabinet, the person shall state, at a minimum, the location of the release or threatened release, the material released or threatened to be released, and the approximate quantity and concentration of the release or threatened release.

(7) Any person possessing or controlling a pollutant or contaminant shall, as soon as that person has knowledge of any release or threatened release of a pollutant or contaminant from a site to the environment in a quantity which may present an imminent or substantial danger to the public health or welfare, immediately notify the cabinet's twenty-four (24) hour environmental response line. In the notice to be
made to the cabinet, the person shall state, at a minimum, the location of the release or threatened release, the material released or threatened to be released, and the approximate quantity and concentration of the release or threatened release. If a person possessing or controlling a pollutant or contaminant for which a reportable quantity has not been established in administrative regulations promulgated pursuant to subsection (2) of the section fails to report a release or threatened release because of a good-faith belief that the release did not present an imminent or substantial danger to the public health or welfare, that person shall not be liable for a violation of the release notification requirements of this section. In determining whether a person has acted in good faith, the cabinet shall consider the circumstances surrounding the release, including whether the release was a permitted release or the application of a pesticide in accordance with the manufacturer's instructions.

(8) The cabinet may require the person subject to the release notification requirements of subsections (5) to (9) of this section to provide a written report on the release or threatened release. This report shall be submitted to the environmental response section of the cabinet within seven (7) days of the cabinet's demand for the report. The report shall identify the following:

(a) The precise location of the release or threatened release;
(b) The name, address, and phone number of the person possessing or controlling the material at the time of the release or threatened release;
(c) The name, address, and phone number of persons having actual knowledge of the facts surrounding the release or threatened release;
(d) The specific pollutant or contaminant or hazardous substance released or threatened to be released;
(e) The concentration and quantity of the pollutant or contaminant or hazardous substance in the release or threatened release;
(f) The circumstances and cause of the release or threatened release;

(g) Efforts taken by the person to control or mitigate the release or threatened release;

(h) To the extent known, the harmful effects of the release or threatened release;

(i) The transportation characteristics of the medium or matrix into which the material was released or threatened to be released;

(j) Any present or proposed remedial action by the person at the site of the release or threatened release;

(k) The name, address, and phone number of the person who can be contacted for additional information concerning the release or threatened release; and

(l) Any other information that may facilitate remediation of the site.

(9) A person possessing or controlling a hazardous substance, pollutant, or contaminant shall immediately notify the cabinet pursuant to subsection (5) of this section when release notification, including notification of a continuous release reported under the Federal Comprehensive Environmental Response Compensation and Liability Act of 1980, as amended, is provided to the United States Environmental Protection Agency. Within seven (7) days of providing any written notification to the United States Environmental Protection Agency, the person shall submit to the cabinet a copy of the release notification submitted to the United States Environmental Protection Agency. The cabinet shall not require additional information pursuant to subsection (5) of this section if the release notification is in compliance with this subsection, unless a written report is required under subsection (8) of this section or the release or threatened release constitutes an environmental emergency.

(10) Any person in charge of a vessel or site from which oil is discharged in a harmful quantity as defined by 40 C.F.R. Part 110 in contravention of Section 311 of the Federal Clean Water Act shall immediately notify the cabinet's twenty-four (24) hour environmental response line. In the notice to be made to the cabinet, the person
shall state, at a minimum, the location of the discharge, the material discharged, and
the approximate quantity and concentration of the discharge.

(11) Any person possessing or controlling petroleum or a petroleum product as defined
by KRS 224.60-115(15) shall, as soon as that person has knowledge of any release
or threatened release, other than a permitted release or application of a pesticide in
accordance with the manufacturer's instructions, in an amount of twenty-five (25)
gallons or more in a twenty-four (24) hour period, except for diesel fuel for which
the reportable quantity is seventy-five (75) gallons or more in a twenty-four (24)
hour period, or in contravention of Section 311 of the Federal Clean Water Act,
immediately notify the cabinet's twenty-four (24) hour environmental response line.
In the notice to be made to the cabinet, the person shall state, at a minimum, the
location of the release or threatened release, the material released or threatened to be
released, and the approximate quantity and concentration of the release or
threatened release.

(12) The cabinet may require the person subject to subsections (10) and (11) of this
section to provide a written report on the discharge or release. This report shall be
submitted to the environmental response section of the cabinet within seven (7)
days of the cabinet's demand for the report. The report shall identify the following:

(a) The precise location of the discharge or release;
(b) The name, address, and phone number of the person possessing or controlling
   the material at the time of the discharge or release;
(c) The name, address, and phone number of persons having actual knowledge of
   the facts surrounding the discharge or release;
(d) The concentration and quantity of the discharge or release;
(e) The circumstances and cause of the discharge or release;
(f) Efforts taken by the person to control or mitigate the discharge or release;
(g) To the extent known, the harmful effects of the discharge or release;
(h) The transportation characteristics of the medium or matrix into which the material was discharged or released;

(i) Any present or proposed remedial action by the person at the site of the discharge or release;

(j) The name, address, and phone number of the person who can be contacted for additional information concerning the discharge or release; and

(k) Any other information that may facilitate an emergency spill response, or remediation of the site.

(13) Timely notification received under the release notification requirements of this section or information obtained in a notification received under the release notification requirements of this section may not be used against the person making the notification in any criminal proceeding, except in a prosecution for submitting a false or untimely notification to the cabinet. Notification received by the cabinet of a threatened release or discharge shall not be deemed a separate incident.

(14) The cabinet shall be the lead agency for hazardous substance, pollutant, or contaminant emergency spill response and, after consultation with other affected federal, state, and local agencies and private organizations, shall establish a contingency plan for undertaking emergency actions in response to the release of a hazardous substance, pollutant, or contaminant. The contingency plan shall:

(a) Provide for efficient, coordinated, and effective action to minimize damage to the air, land, and waters of the Commonwealth caused by the release or threatened release of hazardous substances, pollutants, or contaminants;

(b) Include containment, cleanup, and disposal procedures;

(c) Provide for remediation or restoration of the lands or waters affected consistent with this section;

(d) Assign duties and responsibilities among state cabinets and agencies in coordination with federal and local agencies;
(e) Provide for the identification, procurement, maintenance, and storage of necessary equipment and supplies;

(f) Provide for designation of persons trained, prepared, and available to provide the necessary services to carry out the plan; and

(g) Establish procedures and techniques for identifying, containing, removing, and disposing of hazardous substances released or being released.

(15) The cabinet shall have the authority, power, and duty to:

(a) Recover from persons liable therefor for the benefit of the hazardous waste management fund, the cabinet's actual and necessary costs expended in response to a threatened release, an environmental emergency, or a release of a hazardous substance that is reportable under this section. Except as provided in paragraph (b) of this subsection, this section is intended solely to recognize the existence of a cause of action on behalf of the cabinet and is not intended to expand or contract the bases of liability, the elements of proof, or the amount of liability of any person;

(b) Notwithstanding paragraph (a) of this subsection, recover its costs incurred in the removal of oil or hazardous substances discharged in violation of Section 311(b)(3) of the Federal Clean Water Act from any person liable therefor under Section 311 of the Federal Clean Water Act subject to limitations of liability and defenses provided in the section. The limitations of liability shall apply to the total of state and federal expenses; and

(c) In every case where action required under this section is not being adequately taken or the identity of the person responsible for the release or threatened release is unknown, the cabinet or its agent may contain, remove, or dispose of the hazardous substance, pollutant, or contaminant or take any other action consistent with this section, including, but not limited to, issuance of an emergency order as provided in KRS 224.10-410 to the person possessing,
controlling, or responsible for the release or threatened release as necessary for the protection of the environment and public health, safety, or welfare.

(16) Any duly authorized officer, employee, or agent of the cabinet may upon notice to the owner or occupant enter any property, premises, or place at any time for the purposes of this section, if the entry is necessary to prevent damage to the air, land, or waters of the Commonwealth. Notice to the owner or occupant shall not be required if the delay attendant upon providing it will result in imminent risk to public health or safety.

(17) The cabinet shall prepare and annually update an inventory of all sites in the Commonwealth at which there is or has been an environmental emergency or a release of a hazardous substance, pollutant, or contaminant. In preparing the inventory, the cabinet shall determine, based on information available to the cabinet, the impact of each site on public health and the environment and identify the relative priority for restoration or remedial action. Upon determining that no further restoration or remedial action is necessary, the cabinet shall so designate the site on the inventory. A separate designation of sites where a remedial action involving on-site containment or treatment has been performed and other sites where restoration of the environment has not been achieved shall be maintained. A review of environmental conditions at sites remediated by on-site containment or treatment and other sites where restoration or remediation of the environment is not achieved shall be conducted by the cabinet every five (5) years to determine whether additional action is necessary to protect human health or the environment.

(18) Any person possessing or controlling a hazardous substance, pollutant, or contaminant which is released to the environment, or any person who caused a release to the environment of a hazardous substance, pollutant, or contaminant, shall characterize the extent of the release as necessary to determine the effect of the release on the environment, and shall take actions necessary to correct the effect of
the release on the environment. Any person required to take action under this
subsection shall have the following options:

(a) Demonstrating that no action is necessary to protect human health, safety, and
the environment;

(b) Managing the release in a manner that controls and minimizes the harmful
effects of the release and protects human health, safety, and the environment,
provided that the management may include any existing or proposed
engineering or institutional controls and the maintenance of those controls;

(c) Restoring the environment through the removal of the hazardous substance,
pollutant, or contaminant; or

(d) Any combination of paragraphs (a) to (c) of this subsection.

(19) Unless otherwise required by the cabinet, a person required to characterize the
extent of a release and correct the effect of the release on the environment under
subsection (18) of this section may take those actions without making the
demonstrations to the cabinet required by subsections (18) to (21) of this section, if:

(a) The release is less than the reportable quantity of a hazardous substance,
pollutant, or contaminant;

(b) The release is of a pollutant or contaminant for which a reportable quantity
has not been established by administrative regulation promulgated pursuant to
subsection (2) of this section, if the release does not present an imminent or
substantial danger to the public health or welfare; or

(c) The release is authorized by a state or federal permit.

(20) If a person required to take action under subsection (18) of this section demonstrates
to the cabinet that, pursuant to subsection (18)(a) of this section, no action is
necessary to protect human health, safety, and the environment or, pursuant to
subsection (18)(b) of this section, the release will be managed in a manner that
controls and minimizes the harmful effects of the release and protects human health,
safety, and the environment, the cabinet shall not require restoration of the
environment through the removal of the hazardous substance, pollutant, or
contaminant pursuant to subsection (18)(c) of this section.

(21) A person required to take action under subsection (18) of this section who does not
restore the environment through removal of the hazardous substance, pollutant, or
contaminant in accordance with subsection (18)(c) of this section shall demonstrate
to the cabinet that the remedy is protective of human health, safety, and the
environment, by considering the following factors:

(a) The characteristics of the substance, pollutant, or contaminant, including its
toxicity, persistence, environmental fate and transport dynamics,
biaccumulation, biomagnification, and potential for synergistic interaction
and with specific reference to the environment into which the substance,
 pollutant, or contaminant has been released;

(b) The hydrogeologic characteristics of the facility and the surrounding area;

(c) The proximity, quality, and current and future uses of surface water and
groundwater;

(d) The potential effects of residual contamination of potentially impacted surface
water and groundwater;

(e) The chronic and acute health effects and environmental consequences to
terrestrial and aquatic life of exposure to the hazardous substance, pollutant,
or contaminant through direct and indirect pathways;

(f) An exposure assessment; and

(g) All other available information.

(22) A person who submits a proposal to the cabinet pursuant to subsection (18) of this
section may request in writing a final determination on the proposal no sooner than
thirty (30) days after its submission. When a final determination on the proposal is
requested, the cabinet shall make its final determination within sixty (60) working
days from the date the request is received by the cabinet. After a final determination has been made, the person requesting the final determination may request a hearing pursuant to the provisions of KRS 224.10-420. Nothing in this subsection shall relieve any person of any obligations imposed by law during an environmental emergency, nor shall it require the cabinet to approve a proposal which would violate this chapter or the administrative regulations promulgated pursuant thereto.

(23) (a) The cabinet shall have a lien against the real and personal property of a person liable for the actual and necessary costs expended in response to a release or threatened release or an environmental emergency. The lien shall be filed with the county clerk of the county in which the property of the person is located.

(b) If a financial institution exempted from liability by subsection (26) of this section conveys the site it has acquired, then the cabinet shall have a lien against the site for the actual and necessary costs expended in response to a release or threatened release or an environmental emergency. The lien shall be filed with the county clerk of the county in which the site is located.

(24) Nothing in this section shall replace the financial and technical assistance available to the Commonwealth pursuant to Section 311 of the Federal Clean Water Act (Public Law 92-500) as amended, but shall be used to provide the Commonwealth with a mechanism for additional response to releases and threatened releases of hazardous substances, pollutants, or contaminants.

(25) Defenses to liability, limitations to liability, and rights to contribution shall be determined in accordance with Sections 107(35), 107(40), 107(a) to (d), 107(q) and 107(r), and 113(f) of the Comprehensive Environmental Response Compensation and Liability Act, as amended, and the Federal Clean Water Act, as amended.

(26) In addition to the defenses and limitations provided in subsection (25) of this section, a financial institution that acquired a site by foreclosure, by receiving an assignment, by deed in lieu of foreclosure, or by otherwise becoming the owner as a
result of the enforcement of a mortgage, lien, or other security interest held by the
financial institution, shall not be liable under this section with respect to the site, if:

(a) The financial institution served only in an administrative, custodial, financial,
or similar capacity with respect to the site before its acquisition;

(b) The financial institution did not control or direct the handling of the material
causing the environmental emergency, or control or direct the handling of the
hazardous substance, pollutant, or contaminants, at the site before its
acquisition;

(c) The financial institution did not participate in the day-to-day management of
the site before its acquisition;

(d) The financial institution, at the time it acquired the site, did not know and had
no reason to know that a hazardous substance, pollutant, or contaminant was
disposed at the site. For purposes of this paragraph, the financial institution
shall have undertaken, at the time of acquisition, all appropriate inquiries into
the previous ownership and uses of the property consistent with good
commercial or customary practice in an effort to minimize liability. What
actions constitute all appropriate inquiries shall be determined by taking into
account any specialized knowledge or experience on the part of the financial
institution, the relationship of the market value of the site to the value of the
site if uncontaminated, commonly known or reasonably ascertainable
information about the site, the obviousness of the presence or likely presence
of contamination at the site, the ability to detect the contamination by
appropriate inspection, and any other relevant factor;

(e) The financial institution, when it undertakes actions to protect or preserve the
value of the site, undertakes those actions in accordance with this chapter and
the administrative regulations adopted pursuant thereto;

(f) The financial institution, its employees, agents, and contractors did not cause
or contribute to an environmental emergency, or to a release or threatened
release of a hazardous substance, pollutant, or contaminant; and
(g) The financial institution complies with the release notification requirements of
subsection (9) of this section.
(27) In addition to the defenses and limitations provided in subsection (25) of this
section, a financial institution serving as a fiduciary with respect to an estate or
trust, the assets of which contain a site, shall not be liable under this section with
respect to the site if:
(a) The financial institution served only in an administrative, custodial, financial,
or similar capacity with respect to the site before it became a fiduciary;
(b) The financial institution did not control or direct the handling of the material
causing the environmental emergency, or control or direct the handling of the
hazardous substance, pollutant, or contaminants, at the site before it became a
fiduciary;
(c) The financial institution did not participate in the day-to-day management of
the site before it became a fiduciary;
(d) The financial institution, at the time it became a fiduciary, did not know and
had no reason to know that a hazardous substance, pollutant, or contaminant
was disposed at the site. For purposes of this paragraph, the financial
institution shall have undertaken, at the time it became a fiduciary, all
appropriate inquiries into the previous ownership and uses of the property
consistent with good commercial or customary practice in an effort to
minimize liability. What actions constitute all appropriate inquiries shall be
determined by taking into account any specialized knowledge or experience
on the part of the financial institution, the relationship of the market value of
the site to the value of the site if uncontaminated, commonly known or
reasonably ascertainable information about the site, the obviousness of the
presence or likely presence of contamination at the site, the ability to detect
the contamination by appropriate inspection, and any other relevant factor;
(e) The financial institution, when it undertakes actions to protect or preserve the
value of the site, undertakes those actions in accordance with this chapter and
the administrative regulations adopted pursuant thereto;
(f) The financial institution, its employees, agents, and contractors did not cause
or contribute to an environmental emergency, or to a release or threatened
release of a hazardous substance, pollutant, or contaminant; and
(g) The financial institution complies with the release notification requirements of
subsection (9) of this section.
CITIZEN SUITS

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CITIZEN SUITS

ASSOCIATION TO PROTECT HAMMERSLEY v. TAYLOR RESOURCES, INC.,
299 F.3d 1007 (9TH Cir. 2002) ................................................................. F-1

ASSOCIATED CONTRACT LOGGERS v. U.S. FOREST SERV.,
84 F.Supp.2d 1029 (D.Minn.2000) ............................................................... F-15

RAZORE v. TULALIP TRIBES OF WASHINGTON,
66 F.3D 236 (9th Cir. 1995) ................................................................. F-25

FRIENDS OF THE EARTH INCORPORATED v. LAIDLAW ENVIRON. SERVS.,
120 S.Ct. 693 (2000) ................................................................. F-31
provide false information because he was married two times after his marriage to Geraldine and would not wish to be viewed as a bigamist. Third, Smith's statement does not agree with agency records, which indicate that the courthouse in Yuma, Arizona was unable to locate a record of a divorce between Geraldine and Smith. Finally, Geraldine's own testimony is inconsistent with Smith's statement as she alleged that Smith told her that he divorced her in Mexico.

Geraldine also argues that the fact that Smith remarried two additional times after his marriage to her demonstrates that Smith dissolved their marriage leaving her free to enter into a common-law marriage with Leach. This evidence, however, is also unconvincing. In addition to the factors discussed above, Smith's first marriage following his marriage to Geraldine occurred on January 1, 1959. Thus, it is possible that Smith could have divorced Geraldine after January 1, 1957, thereby precluding the commencement of a common-law marriage in the state of Michigan.

Nevertheless, even assuming arguendo that Geraldine's evidence demonstrating that her marriage to Smith was dissolved, her marriage to Archie in 1963 is even more problematic. While we would concede that Geraldine's marriage to Archie indicated her belief that her marriage to Smith was dissolved, it also tends to demonstrate that Geraldine did not believe that she was married to Leach. Moreover, Geraldine returned to Michigan and allegedly resumed her common-law marriage to Leach in 1964. By this time, however, Michigan no longer recognized common-law marriages. Geraldine claims, however, that Archie annulled their marriage at some point in 1968 in Mexico. If Geraldine were correct in that her marriage to Archie was annulled, then it would be possible for her to argue that there was no interruption in her alleged common-law marriage to Leach. Geraldine's only evidence of such an annulment, however, is her statement that a friend of Archie's told her that Archie annulled their marriage. Geraldine's continued use of Archie's name, i.e., Gainey, since 1963, however, speaks louder than her after-the-fact explanation.

III.

Because the Commissioner's decision is supported by substantial evidence, in this case a lack of convincing evidence that Geraldine was free to enter into a common-law marriage with the deceased wage earner Leach, we affirm.
ing facilities. The United States District Court for the Western District of Washington, Franklin D. Burgess, J., granted summary judgment in favor of producer. Organization appealed. The Court of Appeals, Gould, Circuit Judge, held that: (1) organization had ability to bring citizen's suit, and (2) state agency was not necessary party to action; but (3) materials released by mussels were not "pollutants," and (4) harvesting facilities were not "point sources" of discharge.

Affirmed.

1. Environmental Law =>226, 659

Advocacy organization was entitled to bring citizen's suit under Clean Water Act (CWA) for unpermitted discharges by shellfish producer, even though state agency charged with administering National Pollutant Discharge Elimination System (NPDES) permit program had determined that producer did not require permit, since organization satisfied explicit citizen's suit notice requirements of CWA, and agency did not possess exclusive authority under CWA to decide whether producer's discharges violated statute. Federal Water Pollution Control Act Amendments of 1972, § 101 et seq., as amended, 33 U.S.C.A. § 1251 et seq.

2. Federal Civil Procedure =>219

State agency that administered National Pollutant Discharge Elimination System (NPDES) permit program was not necessary party to citizen's suit brought by advocacy organization under Clean Water Act (CWA) against shellfish producer, even though agency had determined that producer's discharge activities did not require permit, since presence of agency in suit would not preclude relief to either party, and agency did not claim interest that would be impaired by litigation. Fed. Rules Civ.Proc.Rule 19(a), 28 U.S.C.A.; Federal Water Pollution Control Act Amendments of 1972, § 101 et seq., as amended, 33 U.S.C.A. § 1251 et seq.

3. Statutes =>194

Under "ejusdem generis" doctrine, when statute contains list of specific items and general item, court usually deems general item to be of same category or class as more specifically enumerated items.

See publication Words and Phrases for other judicial constructions and definitions.

4. Environmental Law =>175

Natural materials released by mussels during commercial harvest were not "pollutants", under Clean Water Act (CWA), notwithstanding inclusion of "biological materials" in list of pollutants covered by statute, and thus discharge of such materials did not contravene CWA; shells and natural byproducts of living mussels were result of natural biological processes, not waste product of transforming human process, and CWA specified that living shellfish were to be protected under statute. Federal Water Pollution Control Act Amendments of 1972, § 502(6), as amended, 33 U.S.C.A. § 1362(6).

5. Environmental Law =>201

Commercial mussel harvesting facility was excluded from classification as concentrated aquatic animal production facility (CAAPF) under Clean Water Act (CWA), and thus was exempt from National Pollutant Discharge Elimination System (NPDES) permitting requirements as "point source" of discharges, since facility did not add any feed to its harvesting rafts or to surrounding water. Federal Water Pollution Control Act Amendments of 1972, § 502(14), as amended, 33 U.S.C.A. § 1362(14); 40 C.F.R. § 122.24(a); 40 C.F.R. Part 122, App. C(a).
ASSOC. TO PROTECT HAMMERSLEY v. TAYLOR RESOURCES
Cite as 299 F.3d 1007 (9th Cir. 2002)

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Appeal from the United States District Court for the Western District of Washington; Franklin D. Burgess, District Judge, Presiding. D.C. No. CV-99-05433-FDB(EM).

Before: THOMAS, GRABER and GOULD, Circuit Judges.

OPINION

GOULD, Circuit Judge.

This case poses the interesting question whether the mussel shells, mussel feces and other biological materials emitted from mussels grown on harvesting rafts, and thereby entering the beautiful waters of Puget Sound, constitute the discharge of pollutants from a point source without a permit in violation of the Clean Water Act (“the Act”), 33 U.S.C. §§ 1251–1376. Preliminarily, we must also assess procedural issues that affect whether we now can decide this question.

The Association to Protect Hammersley, Eld, and Totten Inlets (“APHETI”), a non-profit organization composed of about 3,000 persons who reside along the southern shores of Puget Sound, sued Taylor Resources, Inc. (“Taylor”), a mussel-harvesting company, under the citizen suit provisions of the Act. APHETI sought: (1) a judgment declaring that Taylor discharged pollutants from its mussel-harvesting facilities without a National Pollutant Discharge Elimination System (“NPDES”) permit; (2) an order enjoining Taylor from discharging pollutants from its facilities until it obtained such a permit; and (3) an order imposing civil penalties for Taylor’s alleged violations of the Act. The district court granted summary judgment in favor of Taylor, holding that Taylor’s mussel-harvesting rafts did not violate the Clean Water Act. APHETI appeals. We reach the Clean Water Act claim and review de novo the district court’s grant of summary judgment. See Waste Action Project v. Dawn Mining Corp., 137 F.3d 1426, 1428 (9th Cir. 1998).

We affirm.

I

The Clean Water Act, 33 U.S.C. §§ 1251–1376, aims to restore and maintain the “chemical, physical and biological integrity of [the] Nation’s waters.” 33 U.S.C. § 1251(a). To achieve these desirable goals, the Act “establishes a comprehensive statutory system for controlling water pollution. To that end, it establishes the ... NPDES permit system for regulating discharges of pollutants into waters of the United States.” Nat’l Wildlife Fed’n v. Consumers Power Co., 862 F.2d 580, 582 (6th Cir. 1988).

A cornerstone of the Clean Water Act is that the “discharge of any pollutant” from a “point source” into navigable waters of the United States is unlawful unless the discharge is made according to the terms of an NPDES permit obtained from either the United States Environmental Protection Agency (“EPA”) or from an authorized state agency. 33 U.S.C. §§ 1311(a), 1342; see also Comm. to Save Mokelumne River v. E. Bay Mun. Util. Dist., 13 F.3d 305, 308 (9th Cir. 1993). In Washington State, the Depart-
ment of Ecology ("Ecology") is authorized by the EPA to administer the Clean Water Act's NPDES program. See 33 U.S.C. § 1342(c)(1) (suspending the availability of federal NPDES permits once a state-permitting program has been submitted and approved by the EPA). With these salient legal principles in mind, we consider the dispute between APHETI and Taylor.

II

Since the early 1990s, Taylor has run two mussel-harvesting facilities in Puget Sound's Totten Inlet, producing more than 20,000 pounds of mussels each year. With these facilities, Taylor harvests gallo mussels, a species of mussels present in Puget Sound for about twenty-five years.1

Taylor attaches what are termed "mussel brood stock" or mussel "seeds"—that is, what we might consider to be "infant" mussels if personified—to suspension ropes that hang from floating rafts. Leading from Taylor's rafts, the suspension ropes are immersed and then anchored to the sea floor, surrounded by mesh netting designed to protect the mussels from predators. Taylor does not add fish food or chemicals to the water; the mussels are nurtured exclusively by the nutrients found naturally in the waters of Puget Sound, with nothing added. It is nature and the vibrant waters of Puget Sound that transform the mussel "seeds" into edible mussels worthy of admiration and human appetite.

But here's the rub, the environmental issue, as APHETI sees it: The tiny mussels have their commensurate physical and chemical processes. And as a byproduct of their metabolism, the mussels harvested at Taylor's facilities produce and release, as particulate matter, feces and pseudofeces, and they generate dissolved materials in the form of ammonium and inorganic phosphate (collectively, "mussel byproduct"). Also, gallo mussel shells have appeared on the beaches of Totten Inlet since the mid-1990s. There is no doubt that mussel byproduct and mussel shells are released from Taylor's facilities and, in this sense, they are adding something, however small, to the Sound's abundant waters. But it must also be recognized that the mussels act as filters and are considered by many to enhance water quality by filtering excess nutrients or other matter in the water that can be destructive to marine environments.2

1. Gallo mussels were first brought to Puget Sound in the 1970s and 1980s by mussel harvesters. However, *amicus curiae* Pacific Coast Shellfish Growers Association suggests that gallo mussels may have also independently found their way to Puget Sound by (1) hybridizing with sibling species of mussels or (2) migrating northward along the Pacific coast. Whatever their ticket to Puget Sound, gallo mussels now reproduce naturally in Puget Sound, albeit in limited numbers, and have been observed in locations isolated from any mussel-harvesting facilities.

2. Several Puget Sound area Native American Tribes submitted letters as *amicus curiae* in strong and unequivocal support of Taylor and argued, among other things, that their own historical shellfish-harvesting methods, which are similar in design to Taylor's methods, serve to enhance water quality. For example, the Squaxin Island Tribe wrote that it relies on a high standard of water quality for its aquacultural activities and that "shellfish populations are a regulating species, helping to consume and control excess nutrients added to the water from other sources." Similarly, the Port Gamble S'Klallam Tribe wrote that "because of their formidable water filtration capabilities, mussel rafts have actually been proposed as a means to improve water quality in embayments where poor circulation and point source discharges threaten water quality." Although we cannot make factual findings in our appellate review, we need not close our eyes to the positions of these independent Tribes, which have a deep historic familiarity with Puget Sound waters, with harvesting shellfish, and with concern for the environment.
Taylor's mussel-harvesting rafts, although not welcomed by all who reside along Puget Sound's southern shores, are not a rogue operation. Since Taylor began its operations, it has applied for and received all required permits for compliance with both the Washington State Environmental Policy Act and the National Environmental Policy Act. To comply with the Clean Water Act, Taylor sought to acquire an NPDES permit. Ecology, however, told Taylor that it would neither accept nor process Taylor's application for an NPDES permit. In Ecology's view, an NPDES permit was not required for Taylor's mussel-harvesting facilities.  

On August 18, 1997, the Director of Ecology responded in a letter to an APHETI member who had inquired whether an NPDES permit was required for mussel harvesting rafts. The Director of Ecology wrote that mussel-harvesting facilities do not violate the Clean Water Act because "shellfish farmers do not need to add fish food (nutrients) to the water to promote shellfish growth." Not persuaded, APHETI, on August 18, 1999, filed a complaint under the citizen suit provision of the Clean Water Act, 33 U.S.C. § 1365, alleging that Taylor had violated the Act by "discharging pollutants," such as mussel feces, mussel shells, and ammonia from its rafts into the Puget Sound without an NPDES permit. See 33 U.S.C. §§ 1311, 1342. APHETI claimed that particles and chemicals emitted from the mussels were "pollutants," that Taylor's harvesting rafts were "point sources," and that Taylor therefore needed an NPDES permit to operate. APHETI sought civil penalties and an order enjoining Taylor from discharging pollutants from its facilities until Taylor obtained an NPDES permit.

The district court granted summary judgment to Taylor, holding that Taylor's facilities did not "discharge a pollutant" and that the mussels and mussel rafts were not "point sources." In this appeal, we must assess whether the district court's conclusions on these novel interpretive issues under the Clean Water Act were correct.

III

At the threshold, we are faced with Taylor's contention that a private party cannot bring a Clean Water Act citizen's suit for unpermitted discharges when the state agency charged with administering the NPDES permit program has determined that such a permit is not required. Taylor's argument must be rejected because it runs squarely against the plain words of

3. Some amicus curiae oppose a requirement that Ecology issue NPDES permits for shellfish-harvesting facilities. They argue that such a requirement could divert the agency's administrative and financial resources away from regulating activities that significantly impair water quality. For example, the Jamestown S'Klallam Tribe writes that:

[the application of the NPDES permit to mussel culture is a misuse of the Clean Water Act. Our Tribe is very familiar with the NPDES permit and other regulatory tools emanating from this Act. We work closely with both the U.S. Environmental Protection Agency and the Washington State Department of Ecology to insure that the water quality upon which we rely is protected ... The Jamestown S'Klallam Tribe will be directly and adversely affected if these limited agency resources are diverted from pollution prevention and directed toward attempting to apply the NPDES permit to shellfish farming. This view was echoed by the People for Puget Sound, a non-profit conservation group with about 12,000 members in Washington State. That organization wrote that "Ecology acted appropriately in determining that the Taylor mussel rafts were not subject to the requirement for an NPDES permit. Unlike salmon net pens and other confined animal farming operations, we do not view this type of activity as meeting the EPA definition of 'point source.'"
the statute and would frustrate the purposes of the Clean Water Act’s empowerment of citizen suit.

A

The Clean Water Act explicitly allows private citizens to bring enforcement actions against any person alleged to be in violation of federal pollution control requirements. 33 U.S.C. § 1365(a)(1); see, e.g., Friends of the Earth, Inc. v. Laidlaw Envtl. Servs., 528 U.S. 167, 174-75, 120 S.Ct. 693, 145 L.Ed.2d 610 (2000). This right of private suit is subject to express procedural prerequisites: At least sixty days before filing a suit, the prospective citizen plaintiff must provide notice of the alleged violation to the EPA, the State where the alleged violation occurs, and the alleged violator. 33 U.S.C. § 1365(a)(1). If either the United States or the State decides to bring an enforcement action within sixty days, the private plaintiff cannot bring an independent action, but may only intervene in the government’s suit. 33 U.S.C. § 1365(b). Here, APHETI gave sixty days’ notice to the EPA and Ecology but neither agency brought an enforcement action. APHETI decided to proceed alone, and we must consider whether it has the right to do so despite inaction by the government and Taylor’s arguments to the contrary.

[1] APHETI has satisfied the Act’s explicit citizen suit notice requirements. Yet, Taylor contends that these protections are inadequate and that APHETI is nonetheless barred from bringing this citizen suit because Ecology has told the parties that NPDES permits are not required for mussel-harvesting facilities. In Taylor’s view, APHETI should not be allowed to sue Taylor for the unpermitted discharge of pollutants when Ecology would neither accept nor process an NPDES permit application. We disagree.

Although the EPA or an authorized state agency may be charged with enforcement of the Clean Water Act, neither the text of the Act nor its legislative history expressly grants to the EPA or such a state agency the exclusive authority to decide whether the release of a substance into the waters of the United States violates the Clean Water Act. See Sierra Club v. Cedar Point Oil Co., 73 F.3d 546, 566-67 (5th Cir.1996) (holding courts may determine in citizen suits whether discharged substance is pollutant even if EPA has not issued NPDES permit). Here, if EPA and Ecology decline enforcement, then they have no statutory or common law right to veto environmental review sought by a citizen who otherwise has complied with the Act. To the contrary, we must honor the Act’s express provisions authorizing citizen suits in appropriate cases where procedural requirements are met. Congress thus empowered citizens to pursue enforcement of the Clean Water Act when all procedural requirements were satisfied. Because those requirements are met here, a citizen suit is authorized and the statutory issues whether Taylor “discharged pollutants” from a “point source” are within our jurisdiction. See, e.g., id. That Ecology has decided that an NPDES permit is not needed warrants consideration but does not divest the federal courts of jurisdiction. The State may choose to sit on the sidelines, but state inaction is not a barrier to a citizen’s otherwise proper federal suit to enforce the Clean Water Act.4 has obtained an NPDES permit and violated its terms. Suit may also be brought where a party proceeds to discharge pollutants from a point source without a required permit. See id.

4. We recognize that Clean Water Act citizen suits are often brought against persons who are violating the strictures of a NPDES permit, see Cedar Point Oil Co., 73 F.3d at 566, but nothing in the Act limits citizen suits to only those claims where the alleged polli
We have subject matter jurisdiction to hear APHETI's citizen suit.

B

To support its argument that a citizen suit alleging unpermitted discharges cannot be asserted where an NPDES permit is not obtainable, Taylor relies on *Hughey v. JMS Development Corp.*, 78 F.3d 1523 (11th Cir.1996). In *Hughey*, a property owner filed a Clean Water Act citizen suit seeking to enjoin a real estate developer from discharging runoff from storm water without an NPDES permit, even though the delegated state agency would not issue NPDES permits for such discharges. The citizen plaintiff contended that the developer violated the "zero discharge" standard of the Act, 33 U.S.C. § 1311(a), which makes it unlawful to discharge any pollutant without an NPDES permit. The Eleventh Circuit rejected the citizen plaintiff's argument and held that a citizen suit cannot be maintained when: "(1) compliance with [the zero discharge] 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." *Hughey*, 78 F.3d at 1530.

We have never adopted nor rejected the rule of *Hughey*, and would apply it here only if persuasive. However, because we conclude that *Hughey* by its terms would not preclude suit here, we need not reach the issue of its application in a case meeting its requirements. To explain why *Hughey*, even if adopted, would not preclude this suit, we must ponder only the first *Hughey* factor: whether compliance with a pollution control requirement is impossible. In *Hughey*, the Eleventh Circuit reasoned that relief could not be accorded to the citizen plaintiff because it was impossible for the developer to comply with the Act's zero discharge standard. The court reasoned that "rain water will run downhill, and not even a law passed by the Congress of the United States can stop that." *Id.* But that is not the case here. In this case, there is no reason why Taylor cannot comply with the Act's zero discharge standard, if the mussel byproduct and shells are the discharge of pollutants from a point source and prohibited without a permit. Taylor, unlike the developer in *Hughey*, could simply cease operations to comply with the Act. Because Taylor can abate the discharge of alleged pollutants by halting its operations, *Hughey* is distinguishable and does not detract from APHETI's statutory right of citizen suit.

C

Taylor further contends that Ecology is a necessary party under the Clean Water Act and Federal Rule of Civil Procedure 19(a). We have already reviewed the substantive provisions that govern permitting and the citizen suit provisions of the Clean Water Act. Rule 19(a) provides in relevant part:

A person who is subject to service of process and whose joinder will not deprive the court of jurisdiction over the subject matter of the action shall be joined as a party in the action if (1) in the person's absence complete relief cannot be accorded among those already parties, or (2) the person claims an in-
terest relating to the subject of the action and is so situated that the disposition of the action in the person's absence may (i) as a practical matter impair or impede the person's ability to protect that interest or (ii) leave any of the persons already parties subject to a substantial risk of incurring double, multiple, or otherwise inconsistent obligations by reason of the claimed interest.

Taylor stresses that APHETI is attempting to overturn Ecology's decision that Taylor's mussel-harvesting facilities do not require an NPDES permit to operate. And Taylor thus argues that Ecology will need to be joined as a party in order to accord relief or, alternatively, that any relief accorded in Ecology's absence will impair Ecology's interests in overseeing the State's NPDES program.

[2] This case squarely presents an issue not previously decided by us: whether a state agency that administers the Clean Water Act's NPDES program is a necessary party to a citizen suit when that agency has decided that an NPDES permit is not required. We fully agree with other federal circuits that, without exception, have held, as Taylor acknowledges as a "general rule" in its supplemental briefing, that federal and state agencies administering federal environmental laws are not necessary parties in citizen suits to enforce the federal environmental laws. See Friends of Earth v. Carey, 535 F.2d 165, 173 (2d Cir.1976) (EPA not a necessary party in Clean Air Act citizen suit); Metro. Wash. Coalition for Clean Air v. Dist. of Columbia, 511 F.2d 809, 814-15 (D.C.Cir.1975) (per curiam) (same); see also Sierra Club v. Young Life Campaign, Inc., 176 F.Supp.2d 1070, 1078-80 (D.Colo.2001) (state not necessary party in Clean Water Act citizen suit); Student Pub. Interest Research Group of N.J., Inc. v. Monsanto Co., 600 F.Supp. 1479, 1484 (D.N.J.1985) (state and EPA not necessary parties in Clean Water Act citizen suit).

Although these cases addressed circumstances in which the citizen plaintiff was seeking to enforce the terms of an existing pollution abatement plan or NPDES permit that had been approved by the relevant agency, there is no sound reason to distinguish between the cases cited above and this case. The plain language of the Clean Water Act has created opportunity for citizen suit when government agencies do not act. We adopt the views of the Second Circuit and the District of Columbia Circuit in Clean Air Act cases where they accepted citizen suits without requiring joinder of a responsible government agency. In those Clean Air Act cases, it was the EPA that was not joined; in our Clean Water Act case, it is the delegated state agency that is not joined and that previously had determined that an NPDES permit is not required. The principle is the same: Whether a citizen is seeking to enforce the terms of an NPDES permit or a pollution abatement plan or, as here, the statutory requirements of the Clean Water Act, it is the government agency's alleged failure to act that "brings the citizen suit into play." Carey, 535 F.2d at 173.

Our conclusion that Ecology is not a necessary party is supported by direct analysis of the text of Rule 19(a). We first ask, under Rule 19(a)(1), whether Ecology is a necessary party under the theory that in its absence complete relief cannot be accorded to the parties: APHETI and Taylor. Here, the presence of Ecology will not preclude relief to either party. If APHETI were to win, Taylor could be ordered to terminate operations unless it obtains a permit, a form of relief that is available irrespective of Ecology's participation. Ecology might grant a permit allowing further operations but, if not,

6. In supplemental briefing, Ecology has ad-
Taylor would have to pull in the ropes and dock the rafts, and in either event, our relief would be complete. Conversely, if Taylor were to win, there would be no need for Ecology to congratulate it or give condolences to APHETI, and again our relief would be complete. Ecology is not needed at all for federal court relief that is wholly adequate to resolve the dispute between APHETI and Taylor.

We next ask, under Rule 19(a)(2), whether Ecology "claims an interest relating to the subject of the action" and is so situated that our decision in Ecology's absence "may . . . impair or impede [that] person's ability to protect that interest" or "leave [those] already parties subject to a substantial risk of incurring double, multiple, or otherwise inconsistent obligations by reason of the claimed interest." This portion of the Rule is wholly inapplicable because Ecology does not claim an interest that will be impaired by this litigation,7 and we see none. See United States v. Bowen, 172 F.3d 682, 688-89 (9th Cir.1999) (a claim of interest is an essential prerequisite to joinder under Rule 19(a)(2)). And Ecology's absence does not subject APHETI or Taylor to any multiple or inconsistent obligations.

Having determined that APHETI's citizen suit is within our jurisdiction despite Ecology's position that no permit is needed and having held that Ecology is not a necessary party under Rule 19(a),8 we turn to the interpretive issues under the Clean Water Act.

IV

We recur to the fundamental law described at the outset of our opinion: The "discharge of any pollutant" from a "point source" into navigable waters is unlawful under the Clean Water Act unless made per the terms of an NPDES permit obtained from Ecology as the authorized state agency. Because no permit was obtained before commencing the raft operations in the navigable waters of Puget Sound, we now address whether the materials naturally released by gallo mussels are "pollutant[s]" under the Clean Water Act.

The Act states:

The term "pollutant" means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

33 U.S.C. § 1362(6) (emphasis added). APHETI argues that the chemicals, fluids, shells and other materials released by Taylor's mussels meet the statutory definition of "pollutant" because these materials are "biological materials" and thus "pollutants" under the Act. A novel question is presented, but we conclude that APHETI's contention must be rejected to preserve the integrity of the Clean Water Act.

"It is well settled that the starting point for interpreting a statute is the language of the statute itself." Gwaltney of Smith-

7. Ecology states in its supplemental briefing: "This Court's resolution of this matter will not impair or impede Ecology's ability to protect its interest because Ecology recognizes that its decisions are subject to judicial review and will issue an NPDES permit to Taylor if this Court concludes a permit is necessary."

8. Because we hold that Ecology is not a necessary party under Rule 19(a), we need not decide whether it is feasible to join Ecology, id., or whether Ecology is an indispensable party under Rule 19(b).

The doctrine of ejusdem generis suggests that the definition of "biological materials" is not as broad as APHETI argues. Under that doctrine, "[w]hen a statute contains a list of specific items and a general item, we usually deem the general item to be of the same category or class as the more specifically enumerated items." Sutton v. Providence St. Joseph Med. Ctr., 192 F.3d 826, 834 (9th Cir.1999). Here, the more specific items in the illustrative list of pollutants, such as "radioactive materials," "wrecked or discarded equipment," "garbage," "sewage sludge," "solid waste," and "incinerator residue" support an understanding of the more general statutory term, "biological materials," as waste material of a human or industrial process.

Viewed in this context, mussel shells, mussel feces and other natural byproduct of live mussels do not appear to be the type of materials the drafters of the Act would classify as "pollutants." But it must also be acknowledged that the phrase "biological materials" could literally embrace the emissions at issue. For this reason, the statute is ambiguous on whether "biological materials" means all biological matter regardless of quantum and nature and regardless of whether generated by living creatures, or whether the term is limited to biological materials that are a waste product of some human process. In light of this ambiguity, we consider the congressional intent in passing the Clean Water Act. See N.W. Forest Res. Council v. Glickman, 82 F.3d 825, 834 (9th Cir.1996) ("Where a statute is ambiguous, we may look to legislative history to ascertain [the statute's] purpose.").

In 1972, Congress passed the Clean Water Act amendments, 33 U.S.C. §§ 1251-1387, to respond to environmental degradation of the nation's waters. In the text of the Act, Congress plainly and explicitly listed the "protection and propagation of ... shellfish" as one of the goals of reduced pollution and cleaner water. 33 U.S.C. § 1251(a)(2) (emphasis added); see also 33 U.S.C. §§ 1312(a), 1314(a)(2). It would be anomalous to conclude that the living shellfish sought to be protected under the Act are, at the same time, "pollutants," the discharge of which may be proscribed by the Act. Such a holding would contravene clear congressional intent, give unintended effect to the ambiguous language of the Act and undermine the integrity of its prohibitions.

This conclusion is strengthened by further analysis. When faced with an ambiguous statutory term, we may apply other tools of reason in assessing what Congress proscribed. Interpreting the ambiguous term, "biological materials," in its context, we consider that the addition of this material to the waters, so far as the record shows, does not add any identifiable harm, let alone appreciable or significant damage, to the Puget Sound environment. Moreover, there may be countervailing environmental benefits for encouraging shellfish farming in Puget Sound. We are persuaded that Congress did not intend that living shellfish and the natural chemicals and particulate biological matter emitted from them, or the occasional shells that separate from them, be considered pollutants.

By holding that mussel shells and mussel byproduct are not pollutants, we do not suggest that materials found naturally in
the water can never be "biological materials" considered pollutants under the Act. A facility that processes fish on land or sea and that discards skin, scales, bones and entrails into the waters might be discharging pollutants under the Act. Similarly, if shellfish are processed and shells discarded in the water, this might be the discharge of pollutants, even though the biological materials had been in the water before processing. Such materials, although naturally occurring, are altered by a human or industrial process and, as waste material in significant amounts, might affect the biological composition of the water. See, e.g., Ass'n of Pac. Fisheries v. EPA, 615 F.2d 794, 802 (9th Cir. 1980) (pollutants are added where a seafood processor removes fish from a body of water, processes them, and then places the "heads, tails and internal residuals of the processed fish" back in the water). In our case, however, the shells and natural byproduct of living mussels released from Taylor's facilities are the result of the natural biological processes of the mussels, not the waste product of a transforming human process. Accordingly, we do not view Taylor's mussel shells and mussel byproduct as pollutants under the Clean Water Act.

That "biological materials" means the waste product of a human or industrial process is in accord with the views of other courts that have examined what constitutes "biological materials" under the Act. See Concerned Area Residents for Envt v. Southview Farm, 34 F.3d 114, 117 (2d Cir.1994) (liquid manure spread on farm fields met definition of pollutant as it was "solid waste, ... sewage, ... biological materials, ... and agricultural waste discharged into water") (internal quotation marks and citation omitted); United States v. Plaza Health Labs., Inc., 3 F.3d 643, 645 (2d Cir.1993) (glass vials of human blood placed into river were "biological materials"); National Wildlife Fed'n v. Consumers Power Co., 862 F.2d 580, 583 (6th Cir.1988) ("live fish, dead fish and fish remains" discharged into Lake Michigan after live fish were pulled through dam's turbines "are pollutants within the meaning of the CWA, since they are biological materials"); United States v. Frezzo Bros., 461 F.Supp. 266, 269-70 (E.D.Pa. 1978), aff'd, 602 F.2d 1123 (3d Cir.1979) (runoff from pile of "mushroom compost" was discharge of "sewage" and "biological materials"). These cases support that the "biological materials" that are "pollutants" under the Act are materials that are transformed by human activity. We reject a broader interpretation in this case. Moreover, our conclusion that the statutory term "biological materials" means the waste product of a human process is further reinforced by the Act's use of the term "pollution," which is defined as the "man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water." 33 U.S.C. § 1362(19) (emphasis added).

We conclude that Taylor's mussel shells and the byproduct from these living mussels are not "biological materials" under the Act because these materials come from

9. As a caveat, the record does not indicate that the biological materials released by Taylor's facilities were released in concentrations significantly greater than would otherwise be found in the waters of the Puget Sound. Accordingly, we need not decide whether the addition of biological materials to the water in concentrations significantly higher than natural concentrations could support a conclusion that such biological materials are "pollutant[s]" under the Act by virtue of their high concentrations. In this case, feces and chemicals exuded from live mussels have not been shown in the record significantly to alter the character of Puget Sound waters, and the record suggests instead that the mussel-harvesting operations generally purify the waters.
the natural growth and development of the mussels and not from a transformative human process. We hold that the mussel shells, mussel feces and other mussel by-product released from Taylor's live mussels thus do not fall within the statutory definition and meaning of "pollutant." 10

As an alternative and related basis for decision, we next address whether Taylor's mussel facility is a "point source," an issue keenly disputed in this litigation and the amicus briefing before us. The Clean Water Act's definition of a "point source" provides that a "point source" is any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.

33 U.S.C. § 1362(14) (emphasis added). The EPA has determined that a fish farm that harvests aquatic animals can be a point source under the Clean Water Act. 40 C.F.R. § 122.24(a). Under EPA regulations, a "concentrated aquatic animal production facility," or "CAAPF," is a point source and subject to the NPDES permit requirements if it contains, grows or holds, among other things, "[c]old water fish species or other cold water aquatic animals in ponds, raceways, or other similar structures which discharge at least 30 days per year." 40 C.F.R. Pt. 122, App. C(a). Taylor's facilities meet these criteria. However, the EPA excludes from classification as a CAAPF: "(1) Facilities which produce less than [approximately 20,000] pounds of aquatic animals per year; and (2) Facilities which feed less than [approximately 5,000 pounds] of food during the calendar month of maximum feeding." Id. (emphasis added). 11 Because Taylor does not add any feed to its rafts or to the surrounding water, its facilities fall under the second exception to CAAPF classification.

APHETI argues that, even if Taylor's mussel harvesting facilities do not meet the EPA's definition of a CAAPF, they still fall under the general definition, "discernible, confined, and discrete conveyance," or under the more specific definition, "vessel or other floating craft." By this reasoning, APHETI argues that Taylor's mussel rafts are "point source[s]" and that their operation, if discharging pollutants, requires an NPDES permit. But, whatever merit this argument might have in the absence of a regulatory definition of when an aquatic animal feeding operation is a point source, the argument has little persuasive effect when faced with aquatic animal farming that does not involve feeding and that is not within the express and described limits that invoke the Act under the regulation.

We have previously held that "in the construction of administrative regulations ... it is presumed that every phrase serves a legitimate purpose and, therefore, constructions which render regulatory provisions superfluous are to be avoided." 12 This is not the case here. The agency has the discretion, on a case-by-case basis, to "designate any ... cold water aquatic animal production facility as a concentrated aquatic animal production facility upon determining that it is a significant contributor of pollution to waters of the United States." If so designated, such a facility would require an NPDES permit to operate. 40 C.F.R. § 122.24(c).
Rainsong Co. v. Fed. Energy Regulatory Comm'n, 151 F.3d 1231, 1234 (9th Cir. 1998) (quoting Hart v. McLucass, 635 F.2d 516, 519 (9th Cir.1976)). In the context of aquatic animal harvesting, the EPA's regulations expressly exclude from the definition of "point source" facilities, like Taylor's, that do not meet certain feeding thresholds. To hold that these facilities are nonetheless "point sources" under the statutory definition would render the EPA's CAAPF criteria superfluous and undermine the agency's interpretation of the Clean Water Act. See Natural Res. Def. Council, Inc. v. Costle, 568 F.2d 1369, 1382 (D.C.Cir.1977) (EPA was given the power under the Act to define point sources). Placing greatest weight on the regulations that are most directly related to the conduct under challenge, we hold that Taylor's facilities are not "point sources" under the Act.

VI

APHETI, on behalf of its members, has a right of citizen suit to challenge Taylor's operation under the Clean Water Act, regardless of how Ecology views the rafts' production of mussels. But when we consider these mussel growing rafts and their operations in Puget Sound in light of the text and history of the Clean Water Act, we conclude that mussel byproduct and mussel shells that enter Puget Sound from the living creatures suspended on ropes attached to Taylor's rafts are not "pollutants," Taylor's rafts are not "point sources," and Taylor's mussel harvesting on these rafts without a permit does not offend the Clean Water Act.

AFFIRMED.

F - 13
the remaining Defendants' Motions to Dismiss are denied. Additionally, Plaintiffs' fraudulent concealment claim is not pled with sufficient particularity. Plaintiffs fail to allege Defendants' active concealment of the cause of action, fail to explain why they did not discover the cause of action earlier, and fail to assert their due diligence in attempting to discover the claim. On that basis, the Court dismisses Plaintiffs' fraudulent concealment claim.

Additionally, Plaintiffs' claim against LOL as successor in interest and majority owner of Country Lake Foods and Dairy Fresh must fail. No specific acts of either Country Lake or Dairy Fresh were alleged. Further, any potential acts by either company occurred more than four years prior to the filing of Plaintiffs' claim and are thus barred by the statute of limitations. Therefore, all of Plaintiffs' claims against LOL as successor in interest or majority owner must be dismissed.

As Plaintiffs' Complaint is not being dismissed, it is appropriate for discovery to go forward. Defendants must turn over all relevant documents to Plaintiffs, with the exception of those documents submitted to the grand jury, as they are protected by Rule 6(e) of the Federal Rules of Criminal Procedure. Plaintiffs have failed to show a particularized need for the grand jury documents, and thus their Motion to Compel discovery is denied with respect to the grand jury documents, but granted with respect to all other requests.

Lastly, the Court determines that it is too early in the proceedings to determine the issues of personal jurisdiction and product and market definitions. First, the Motion to Dismiss for lack of personal jurisdiction is dismissed with leave to renew the motion at a later date. Second, a decision on the relevant product and geographic market definitions would be premature at this point. Therefore, the Court declines to address these issues at this point in time.

Accordingly, IT IS HEREBY ORDERED THAT:

1. Defendant K & P Company, Inc.'s Motion to Dismiss (Clerk Doc. No. 92) is GRANTED;
2. Defendant Marigold Foods, Inc.'s Motion to Dismiss (Clerk Doc. No. 91) is DENIED;
3. Defendant Meyer Bros. Dairy, Inc.'s Motion to Dismiss (Clerk Doc. No. 88) is DENIED;
4. Defendant Schroeder Milk Co., Inc.'s Motion to Dismiss (Clerk Doc. No. 97) is DENIED;
5. Defendant Land O'Lakes, Inc.'s Motion to Dismiss the Fraudulent Concealment Allegation (Clerk Doc. No. 89) is GRANTED;
6. Plaintiffs' claims against Defendants alleging fraudulent concealment of the combination or conspiracy, contained in Count IX of the Second Amended Complaint (Clerk Doc. No. 86), are DISMISSED WITH PREJUDICE;
7. Defendants BolsWessanen Holdings, Inc. and BolsWessanen U.S.A., Inc.'s Motion to Dismiss (Clerk Doc. No. 95) is DENIED WITH LEAVE TO RENEW the motion after further discovery; and
8. Plaintiffs' Renewed Motion to Compel (Clerk Doc. No. 140) is DENIED IN PART AND GRANTED IN PART.


Logging companies brought action against United States Forest Service
(USFS) and environmental groups to enjoin them from imposing set of religious beliefs called "Deep Ecology." On defendants' motion to dismiss, the District Court, Rosenbaum, J., held that: (1) groups were not so entangled in USFS affairs that they could be considered to be state actors; (2) groups were exempted from any damages to lumber companies as result of advocacy of their beliefs in administrative proceedings before USFS; and (3) fact that USFS sometimes refused to permit logging did not necessarily imply that USFS's decisions violated Establishment Clause due to input of environmental groups.

Motion granted.

1. Constitutional Law (USFS) and environmental groups were not so entangled in United States Forest Service (USFS) affairs that they could be considered to be state actors for purposes of action alleging that groups violated Establishment Clause by attempting to suborn or coerce USFS into imposing set of beliefs based on purported religion of "Deep Ecology," even if groups were active administrative process participants and litigants. U.S.C.A. Const.Amend. I.

2. Constitutional Law In determining whether private party's acts may be deemed state action for purposes of Establishment Clause, a court must consider: (1) whether claimed constitutional violation resulted from exercise of right having its source in state authority, and (2) whether private parties charged with deprivation could be described in all fairness as state actors. U.S.C.A. Const.Amend. 1.


4. Civil Rights

Constitutional Law

Even if nonprofit environmental groups were motivated in their dealings with United States Forest Service (USFS) by religious beliefs based on "Deep Ecology," they were exempted under Noerr-Pennington doctrine from any damages to lumber companies as result of their advocacy of their beliefs in administrative proceedings before USFS, absent evidence that groups' actions were meritless. U.S.C.A. Const.Amend. 1.


6. Constitutional Law In considering Establishment Clause claim, court must consider: (1) whether government action has secular legislative purpose; (2) whether action's primary effect either to advance or inhibit religion; and (3) whether action fosters excessive government entanglement with religion. U.S.C.A. Const.Amend. 1.

7. Constitutional Law

Woods and Forests

Fact that United States Forest Service (USFS) sometimes refused to permit logging did not necessarily imply that USFS's decisions violated Establishment Clause due to input of environmental groups that allegedly advocated religion of "Deep Ecology," which purportedly disfavored logging, absent evidence that USFS's purpose in regulating forest use was not secular, or that USFS's forest-use actions primarily advanced or inhibited religion. U.S.C.A. Const.Amend. 1.

8. Federal Civil Procedure Court possesses inherent power to sanction conduct that is inappropriate and frivolous.

Stephen B. Young, Winthrop Consulting, Minneapolis, MN, for Associated Contract
ASSOCIATED CONTRACT LOGGERS v. U.S. FOREST SERV.

ORDER

ROSENBAUM, District Judge.

Defendants move to dismiss this case, pursuant to Rule 12(b)(6) of the Federal Rules of Civil Procedure ("Fed. R. Civ. P."). Oral argument was heard on January 14, 2000.1 The defendants' motions are granted, and the cause is dismissed with prejudice. Further, because this Court is concerned as to plaintiffs' and their counsel's bona fides in initiating and prosecuting this lawsuit, the Court issues an Order to Show Cause why sanctions ought not be imposed.

I. Background

Plaintiffs are Associated Contract Loggers, Inc., and Olson Logging, Inc. Each claims to be involved in Northern Minnesota logging. Plaintiffs bring this action against the United States Forest Service ("Forest Service" or "USFS") and two private, nonprofit organizations: the Superior Wilderness Action Network ("SWAN") and Forest Guardians (collectively, "nonprofit defendants").

While plaintiffs' complaint is far from crystal clear, it appears to claim defendants, acting in concert, violated the Establishment Clause of the United States Constitution. Specifically, plaintiffs claim the nonprofit defendants have attempted to suborn or coerce the USFS into imposing a set of religious beliefs called "Deep Ecology."

Plaintiffs claim the nonprofit defendants have influenced the Forest Service's decision-making in matters of forest management. In plaintiffs' view, the nonprofit defendants' efforts to influence the USFS have converted them from private parties into state actors for constitutional analytic purposes. Plaintiffs further claim the USFS has acquiesced in the nonprofit defendants' actions. The complaint states, and for purposes of this Rule 12 motion the Court must assume, that the nonprofit defendants' actions are actually motivated by a form of nature worship.

II. A Rule 12 Motion

In considering these motions, the Court is ever mindful of its obligation to assume the facts set forth by plaintiffs as true, and that a complaint "should not be dismissed unless it appears beyond doubt that the plaintiff can prove no set of facts in support of his claim which would entitle him to relief." Conley v. Gibson, 355 U.S. 41, 45, 78 S.Ct. 99, 2 L.Ed.2d 80 (1957). Nonetheless, granting a motion to dismiss is appropriate when a complaint, even taken as true, and considered in light of applicable law, shows an insuperable bar to relief. See, e.g., Leggett v. Montgomery Ward & Co., 178 F.2d 436 (10th Cir.1949). Throughout this Order, the Court does not determine the accuracy of plaintiffs' factual allegations, but instead focuses solely on the legal import, or lack thereof, of those facts. With that approach in mind, the Court concludes plaintiffs' claims cannot proceed.

III. The Nonprofit Defendants

Taking the plaintiffs' well-pleaded facts as true, the Court easily finds all claims against the nonprofit defendants must be dismissed for two fundamental reasons.
First, notwithstanding plaintiffs' assertions, the nonprofit defendants are not, and cannot be under plaintiffs' pleadings, state actors. Second, the nonprofit defendants are immune from this kind of suit under the Noerr-Pennington doctrine.2

A. State Action

The establishment clause of the United States Constitution prohibits governmental actions which support or establish religious beliefs. See United States Constitution Amend. I ("Congress shall make no law respecting an establishment of religion . . . ."); Montano v. Hedgepeth, 120 F.3d 844, 848 (8th Cir.1997); see also United Bhd. Of Carpenters & Joiners of America v. Scott, 463 U.S. 825, 831, 103 S.Ct. 3352, 77 L.Ed.2d 1049 (1983).

[1] Plaintiffs' complaint recognizes that SWAN and Forest Guardians are nonprofit entities, and neither is part of the state or federal government. Nonetheless, plaintiffs claim the nonprofit defendants have so entangled themselves in the Forest Service's affairs that they must be considered state actors for purposes of this lawsuit. Plaintiffs assert, "Defendant USFS has allowed itself to be used as a tool, agent, or instrument of Defendants SWAN and Forest Guardians for religious purposes." Complaint at 7. This somewhat bizarre assertion is neither supported in law nor in the complaint's own factual allegations.

Plaintiffs' brief opposing dismissal misapprehends the concept of state action. Plaintiffs cite cases irrelevant to the issue. For example, plaintiffs cite the well-known case of Shelley v. Kraemer, 334 U.S. 1, 68 S.Ct. 836, 92 L.Ed. 1161 (1948), where the United States Supreme Court found a state court's order enforcing the private parties' racially-discriminatory covenant which restricted real estate sales to be a state action. Plaintiffs do not seem to understand that, however misguided, the private parties' contract was not the state action barred in Shelley. The state action was the court's order enforcing the private parties' racially-discriminatory covenants. While Shelley is undoubtedly an important case, it says nothing about whether a nonprofit private party, which advocates and petitions a federal agency, becomes a state actor. Neither Shelley, nor any case cited by plaintiffs, supports a claim of state action on the part of the nonprofit defendants.

To the contrary, both the Congress and the courts permit private parties, irrespective of their religious views, to participate in the public's discourse over forest and natural resource use. The Congress has explicitly allowed public participation in the administrative process before any major use of federal lands and resources is allowed. See, e.g., National Environmental Policy Act, 42 U.S.C. §§ 4331, 4332. This participation is encouraged in order to give meaning and flesh to the additional First Amendment constitutional protection: the right to petition for redress of grievances. Similarly, the courts have remained open to private parties seeking to protect—however that term is defined—natural resources. See, e.g., Ohio Forestry Ass'n v. Sierra Club, 523 U.S. 726, 118 S.Ct. 1665, 140 L.Ed.2d 921 (1998); Sierra Club v. United States Forest Service, 93 F.3d 610 (9th Cir.1996).

[2] In order for a party's acts to be deemed state action, a court must consider: (1) whether the claimed constitutional violation resulted from the exercise of a right having its source in state authority, and (2) whether the private parties (here, SWAN and Forest Guardians) charged with the deprivation could be described in all fairness as state actors. See Edmonson v. Leesville Concrete Co., 500 U.S. 614, 620, 111 S.Ct. 2077, 114 L.Ed.2d 660 (1991). Plaintiffs have entirely failed to plead facts which support either element.2

2. The Court, in a later portion of this Opinion, focusing directly on the United States Forest Service, finds this matter is not currently justiciable. This same determination is fully applicable to the nonprofit defendants.

3. Plaintiffs' memorandum in opposition to
[3] A private party does not become a state actor by the "mere invocation" of legal procedures. Such an act does not satisfy the first element of the test. See Lugar v. Edmondson Oil Co., 457 U.S. 922, 939 n. 21, 102 S.Ct. 2744, 73 L.Ed.2d 482 (1982); see also Cobb v. Georgia Power Co., 757 F.2d 1248, 1251 (11th Cir.1985). The mere use of legal procedures cannot suffice; there must be an affirmative governmental action encouraging the private action. Simple governmental permission to participate in a consultative process is not sufficient. Here, the laws and administrative practices which deal with forest use allow private-party input; this is no more than the "mere invocation" of procedures which is fully permitted and protected. Plaintiffs' complaint sets forth no factual allegations which could conceivably support any claim that the nonprofit defendants did anything other than invoke statutory rights.

Plaintiffs correctly acknowledge the nonprofit defendants' frequent participation in adversarial proceedings against the USFS. See complaint at 10 ("The tactics used be Defendants SWAN and Forest Guardians have placed great administrative burdens on Defendant USFS in Minnesota so that sales of timber are postponed, delayed or abandoned."); id. at 9–10 (listing appeals and lawsuits brought by the nonprofit defendants challenging USFS actions). The Court considers that these allegations actually undermine any claim of governmental encouragement. The cited instances are events when, rather than working in concert with the USFS, the nonprofit defendants opposed and burdened the Forest Service. The complaint simply fails to allege any encouragement or endorsement by the government of the nonprofit defendants' activities.4

Plaintiffs have similarly failed to allege facts to support their claim that the nonprofit defendants could be described in fairness as state actors. Plaintiffs certainly claim the nonprofit defendants are active administrative process participants and litigants, but they fail to assert any facts to support the conclusion that they are, in fairness, appropriately described as state actors. The nonprofit defendants actively advocated for positions they espouse. They have prevailed and they have lost. See, e.g., complaint at 9–10. This simply makes them participants, not state actors.

Again, the nonprofit defendants' status as litigation opponents of the USFS militates against attributing their actions as state action. See Polk County v. Dodson, 454 U.S. 312, 324, 102 S.Ct. 445, 70 L.Ed.2d 509 (1981) (public defenders, even though paid by the state, are not state actors due to adversarial function). Plaintiffs do not claim the nonprofit defendants' lawsuits are collusive, or that the USFS and the nonprofit defendants are not genuine adversaries in those other matters. Plaintiffs' complaint, in fact, makes clear that the nonprofit defendants have placed a burden on the USFS, and plaintiffs allege this burden has caused the USFS to scale back logging activities—thus depriving plaintiffs of as much logging as they believe is appropriate. See complaint at 9–10. These allegations are inimical to plaintiffs' assertion that the nonprofit defendants' actions are those of the state.

Thus, neither the "state authority" nor the "in all fairness" state actor factors set forth in Edmonson v. Leesville Concrete

4. As in Section II, above, the Court clearly recognizes that a Rule 12(b)(6) motion is not the time to resolve factual disputes. But it is a time to determine whether the challenged party has pleaded any facts setting forth a claim on which relief may be granted. Here, the Court is not resolving a factual dispute; indeed, it is taking the plaintiffs' assertions as true. Plaintiffs' problem is that, even taking their complaint as true, they have failed to state a claim on which relief may be granted.
Co. have been alleged by plaintiffs in a manner which states a claim upon which relief can be granted, within the contemplation of Rule 12(b)(6). As a result, no colorable claim premised on the Establishment Clause has been pled against the nonprofit defendants. Accordingly, the state action claims against the nonprofit defendants must be dismissed.

B. Noerr-Pennington

Plaintiffs seem to completely misapprehend the Constitution's protection of a citizen's right to petition the government for redress of grievances. This protection inheres whether the petitioner is a single person or a collective group commonly advocating for their views.5 In analyzing this portion of plaintiffs' complaint, the Court does assume as true plaintiffs' rather problematic assertion that the nonprofit defendants are actually adherents of the Deep Ecology religion. After making this assumption, however, plaintiffs urge the Court to accept, as an actionable claim, the stunning proposition that the Constitution protects only a religious group's rights to ineffective petition. According to plaintiffs, once the religious group's petition actually seeks to accomplish something—and to press its beliefs into actions—the religious group moves beyond the ambit of the First Amendment's protection of the right to petition.

[4] Plaintiffs astound the Court when they assert that the First Amendment does not protect effective petitioning activities, stating—without citation to any authority whatsoever—that "[o]nce defendants act on their beliefs—more importantly—once defendants seek to involve the government in enforcing their beliefs, they cross the line separating valued and protected freedoms from unconstitutional manipulation of the government's police powers." Plaintiffs' memorandum in opposition to motions to dismiss at 3 (emphasis in original).

This assertion is so clearly wrong as to beggar conventional legal analysis. The right to petition is absolutely fundamental to the First Amendment. "To hold ... that people cannot freely inform the government of their wishes would ... be particularly unjustified." Eastern R.R. Presidents Conference v. Noerr Motor Freight, Inc., 365 U.S. 127, 137, 81 S.Ct. 523, 5 L.Ed.2d 464 (1961); accord NAACP, 357 U.S. at 459, 78 S.Ct. 1163. The Constitution itself even makes it more clear: Citizens have the right "to petition the Government for a redress of grievances." It is beyond conception that this cherished right is so cabined that it is lost at the very moment the petition might possibly achieve success.

Even assuming the nonprofit defendants are advocates of a religion's precepts, the Court finds no support for the proposition that the right to petition is restricted to citizens whose motivation is only secular. No such restriction is found in the words of the Constitution. Plaintiffs have cited no authority to support their argument to the contrary, because none exists. Freedom of belief is not a passive right: citizens are not limited to merely sitting idly thinking about their political, moral, and religious beliefs; democracy is founded upon them acting upon those beliefs in efforts to effect change. See generally Corporation of Presiding Bishop of Church of Jesus Christ of Latter-day Saints v. Amoas, 483 U.S. 327, 107 S.Ct. 2862, 97 L.Ed.2d 273 (1987); Walz v. Tax Commission, 397 U.S. 664, 90 S.Ct. 1409, 25 L.Ed.2d 697 (1970).6

5. It is irrelevant whether the nonprofit defendants approach the USFS in administrative proceedings or the courts singly or in a group. The Constitution's First Amendment protects the right of individuals to freely associate with others of their choosing. See, e.g., NAACP v. Alabama, 357 U.S. 449, 459, 78 S.Ct. 1163, 2 L.Ed.2d 1488 (1958) ("Effective advocacy of both public and private points of view, particularly controversial ones, is undeniablelly enhanced by group association ... ").

6. The motion hearing transcript will reveal at least one stunning moment. This occurred when plaintiffs' counsel suggested that, whenever an arguably religious-based claim is asserted, the Court ought to make a threshold determination and decide whether the claim
Not surprisingly, with these flawed assumptions at their core, plaintiffs' arguments with respect to the Noerr-Pennington doctrine fail. The Noerr-Pennington doctrine implements the First Amendment's protections by barring claims against litigants "for injuries allegedly caused by activities and participation in public processes with the intent of influencing public policy decisions." Fischer Sand and Aggregate v. City of Lakeville, 874 F.Supp. 957, 959 (D.Minn.1994); see also Eastern Railroad Presidents Conference v. Noerr Motor Freight, Inc., 365 U.S. 29, 81 S.Ct. 523, 5 L.Ed.2d 464 (1961). On its face, this doctrine immunizes the nonprofit defendants from plaintiffs' claims, as the activities complained of are prima facie protected petitioning activity.

There is an exception to the Noerr-Pennington doctrine. The doctrine excepts those whose claims were not filed with the true intent of influencing public policy, but whose true intent was a sham. In such a case, claims can be allowed against a party whose legal actions were objectively and subjectively meritless. See Fischer Sand, 874 F.Supp. at 959. But plaintiffs' complaint makes no such assertion. Their only reference to this Noerr-Pennington exception is found in their responsive brief opposing dismissal.

Plaintiffs' belated assertion of sham by the nonprofit defendants falls far short of the mark. In order to place the nonprofit defendants beyond the Noerr-Pennington doctrine, plaintiffs must overcome a high hurdle. They must show that the nonprofit defendants' actions were "objectively meritless in the sense that no reasonable person could realistically expect success on the merits"; they must also show that the actions were undertaken in bad faith (the subjective element of the test). Fischer Sand, 874 F.Supp. at 960. The plaintiffs have failed to meet this test.

Plaintiffs' complaint shows the futility of their position. Rather than having made "objectively meritless" claims, they acknowledge that on several occasions, the is religiously based. If so, he urged the Court nonpublic defendants' efforts to influence public policy have succeeded. See, e.g., complaint at 9 ("SWAN filed a successful appeal which halted the Greenwood Timber Sale in Superior National Forest in Minnesota."). Plaintiffs do not allege that any of the nonprofit defendants have ever been sanctioned under Fed.R.Civ.P. 11 or otherwise for bringing frivolous actions, or that any of the nonprofit defendants' actions have ever been described by the USFS or the courts as shams. This record of success simply vaporizes plaintiffs' claims that the nonprofit defendants' actions were "objectively meritless," and that "no reasonable [person] could realistically expect success" on them. The nonprofit defendants not only realistically expected success; they at times, achieved it. A successful claim is, as a matter of logic and of law, not meritless. See Professional Real Estate Investors Inc. v. Columbia Pictures Industries, Inc., 508 U.S. 49, 58, 113 S.Ct. 1920, 123 L.Ed.2d 611 (1993).

The plaintiffs, therefore, have not satisfied the objective test which could invoke the sham exception to the Noerr-Pennington doctrine. They have, similarly, failed to deny that the nonprofit defendants were attempting to influence governmental actions which could implicate the sham exception's subjective element. Instead, plaintiffs again focus on their allegation that the nonprofit defendants' motivation was religious. This allegation fails to help the plaintiffs, because a religious motivation is not now, and has never been, any bar to Noerr-Pennington protection. The Court finds that plaintiffs' claim of a sham exception to the Noerr-Pennington doctrine is entirely inapplicable. Plaintiffs' desperate efforts to smear the nonprofit defendants with the sham brush is both unseemly and unavailing.

In short, the Court finds that the Constitution's Establishment Clause does not trump its right to petition and the right to free exercise of religion, including the right to express those beliefs to govern-
mental officials. As the Court noted at oral argument, many of the parties involved in social and political advocacy in this country have been motivated and inspired, at least in part, by religious views. The concept of a court's prescreening a party's religious views, and requiring them to prove that its claims are not religiously based, is disturbing, and runs counter to the protections set forth by the Constitution. It is a concept which this Court will not endorse.

Accordingly, because plaintiffs have failed to establish state action or any inapplicability of the Noerr-Pennington doctrine respecting the nonprofit defendants, their motions to dismiss are granted. Because these flaws in plaintiffs' lawsuit are of constitutional dimension and cannot be corrected by amending the complaint, this dismissal is with prejudice.

IV. United States Forest Service

After review of the plaintiffs' claims, the Court finds, in light of Rule 12(b), that plaintiffs have failed to recognize and acknowledge applicable law respecting the Forest Service. Their claims against the USFS fail because (a) this matter is not justiciable under Article III of the Constitution; (b) plaintiffs have abandoned any claim for breach of statutory duty; and (c) plaintiffs have failed to state a claim under the Establishment Clause.

A. Justiciability

The Constitution, itself, makes clear that a federal court may only exercise its powers when there exists a "case or controversy" within the meaning of Article III. "A justiciable controversy is ... distinguished from a difference or dispute of a hypothetical character; from one that is academic or moot. The controversy must be definite or concrete, touching the legal relations of parties having adverse legal interests. It must be a real and substantial controversy, admitting of specific relief through a decree of a conclusive character, as distinguished from an opinion advising what the law would be upon a hypothetical state of facts." Aetna Life Ins. Co. v. Haworth, 300 U.S. 227, 240-41, 57 S.Ct. 461, 81 L.Ed. 617 (1937). No such dispute exists here.

[5] Plaintiffs recite a series of past logging disputes between the USFS and the nonprofit defendants. After invoking this history, they ask the Court to bring its injunctive power to bear on future logging disputes. But plaintiffs do not claim any present logging dispute. The prior actions are complete; all appeals and other legal challenges have either been concluded or waived. Under these circumstances, the Court cannot—and indeed, is constitutionally prohibited from attempting to—speculate or opine concerning future disputes.

Plaintiffs' only response to this objection is a statutory citation to 28 U.S.C. § 1331, and cases based upon it. This "reply" is entirely unavailing. There is no doubt that § 1331 touches subject matter jurisdiction. At the same time, it is axiomatic that a statute cannot trump the Constitution, which is the supreme law of the land. No statute obviates Article III's requirement of a case or controversy. Whether or not the Court can, in fact, discern the beliefs of Deep Ecology, and even if the Court could anticipate future actions (Heavens (or Deep Ecology) knows it couldn't have anticipated this one), this case is simply not ripe. Plaintiffs attempt to reply by making the facile observation that defendants "are all over the [I]nternet and in the public press." Plaintiffs' memorandum in opposition to motions to dismiss at 20. Even assuming this to be true, it in no way creates a case or controversy where none exists.

Plaintiffs' arguments, if they relate at all to justiciability, misapprehend this Court's power: a federal court cannot, and will not, act absent a live and current dispute. None is present here. The Court recognizes that it might be able to hear a case where there is a dispute which is "capable of repetition, yet evading review." City of Los Angeles v. Lyons, 461 U.S. 95, 108, 103 S.Ct. 1660, 75 L.Ed.2d 675 (1983). But plaintiffs have nowhere alleged that this is
such a dispute. Even absent such an allegation, the Court considers, as dicta, that since each of the Forest Service’s actions are particular forest and site specific, this slender exception would likely be unavailable here.

Absent any case or controversy, as is mandated by the Constitution, each claim against these defendants must be dismissed.

B. Statutory Claims

Plaintiffs have disavowed any claims based on the statutes which control the USFS’s actions, including the Organic Act of 1897 or the Multiple-Use Sustained Yield Act of 1960. See plaintiffs’ memorandum in opposition to motions to dismiss at 17. Plaintiffs have apparently taken this position to withdraw their claims entitled “Breach of Duty by Defendant USFS.” Complaint at 4-6. In that portion of their complaint, plaintiffs appeared to assert the USFS had acted in breach of numerous duties purportedly imposed by statute. But now, in light of the plaintiffs’ late abandonment of any possible statutory claims (and to whatever extent a private cause of action might accrue therefrom—a highly questionable proposition), any possible claim is dismissed.

C. Establishment Clause

[6] Finally, the Court determines that plaintiffs have entirely failed to state a claim under the Establishment Clause. The United States Supreme Court has delineated the test to be applied to Establishment Clause claims. Under Lemon v. Kurtzman, 403 U.S. 602, 91 S.Ct. 2105, 29 L.Ed.2d 745 (1971), a court must ask three questions when considering such a claim: (a) Does the government action have a secular legislative purpose? (b) Is the action’s primary effect either to advance or inhibit religion?, and (c) Does the action foster excessive government entanglement with religion? See id. at 612-13, 91 S.Ct. 2105. As plaintiffs have challenged the Forest Service on Establishment Clause grounds, the Lemon test must be applied here.

[7] Plaintiffs’ complaint sets forth no facts which demonstrate that the USFS’s purpose in regulating forest use was anything other than secular. Their conclusory assertions that the Forest Service’s actions were taken to implement or impose the teachings of Deep Ecology—without any factual allegations in support—do not, and could not, permit any finding upon which relief could be granted. Even under the liberal pleading standards of Conley v. Gibson, 355 U.S. 41, 78 S.Ct. 99, 2 L.Ed.2d 80 (1957), plaintiffs’ bare assertions lack the substance to satisfy this element.

Further, there is no fact alleged which shows the USFS’s forest-use actions primarily advanced or inhibited religion. It is a sophistry to say the nonprofit defendants’ religion disfavors logging; the Forest Service sometimes does not allow logging; and therefore, the Forest Service had taken a position advancing religion. This is as illogical as saying that if a tall man advocates a position, and the government takes a position in accord with the tall man’s wishes, it therefore follows that the government has necessarily established the views of tall men.

Beyond this wholly insubstantial argument, the Court takes judicial notice of instances where the USFS enthusiastically litigated against the nonprofit defendants—and others alleged by plaintiffs to also advocate Deep Ecology—in forest management decisions, sometimes winning and sometimes losing. The public record, which can be considered in motions to dismiss, see Porous Media Corp. v. Pulp Corp., 186 F.3d 1077, 1079 (8th Cir.1999), is clear that the USFS sometimes takes positions which are congruent with, and sometimes incongruent with, those taken by the nonprofit defendants. Plaintiffs’ own complaint recognizes this. See complaint at 9–10. A governmental decision coinciding with the desires of a religious group does not automatically constitute the primary advancement of that religion.

Finally, the Court finds no allegation in the complaint to support a claim that the
USFS's actions foster excessive entanglement with religion. The Forest Service acts, as it is required by law to do, as an arbiter of forest management decisions. Even if the nonprofit defendants were religiously motivated, they are simply players-participants in the forest management process. If the Court were to rule that the nonprofit defendants' religion barred them from participating in the USFS's activities, the Court would necessarily become excessively entangled in deciding which religious believers could—and could not—advocate to influence governmental policy.

Because plaintiffs have failed to satisfy any of Lemon's requirements, the USFS motion to dismiss must also be granted. Again, because the flaws in plaintiffs' claims are fundamental and irreparable through amendment, this dismissal is also with prejudice.

V. Sanctions

[8] A Court possesses inherent power to sanction conduct that is inappropriate and frivolous. See Chambers v. NASCO, Inc., 501 U.S. 32, 111 S.Ct. 2123, 115 L.Ed.2d 27 (1991). Despite plaintiffs' protestations to the contrary, this lawsuit seems to be designed to harass and delay the defendants, in particular, the nonprofit defendants, in the exercise of their constitutionally-protected rights. It appears probable that Plaintiffs have knowingly drawn this Court into an unseemly and baseless lawsuit, and has wasted the Court's time and the defendants' valuable time and money. It presently appears that this case falls far below the minimal standards of pleading and law which ought to be expected in a federal court practitioner.

With these preliminary observations in mind, but not yet established as findings, the Court invokes its inherent powers and those granted by Fed.R.Civ.P. 11, and issues an Order to Show Cause, directed to plaintiffs' attorney, to show cause to this Court why it ought not to impose sanctions against him for his frivolous and, perhaps, contumacious pleading. This response is returnable within 15 days of the issuance of this Order.

V. Conclusion

Accordingly, IT IS ORDERED that:

1. Defendants' motions to dismiss [Docket Nos. 4, 8, & 10] are granted, and the matter is dismissed with prejudice.

2. The attorney for plaintiffs is ordered to show cause, within fifteen (15) days of this Order, why sanctions should not be imposed, pursuant to this Court's inherent powers, and under Fed.R.Civ.P. 11 for his actions in bringing this lawsuit.

7. The Court notes, parenthetically, that the plaintiffs do not allege that they participated in the administrative process in the forest management matters of which they now complain.

8. The USFS has also argued that plaintiffs' failure to plead facts to overcome sovereign immunity dooms their request for damages. Because the Court's rulings herein are dispos-
[4] Because Mt. Bachelor made an unenforceable bargain in trying to escape liability for gross negligence and willful misconduct, the entire release provision in the season pass application, including the limitation of liability for ordinary negligence, is unenforceable. In contrast to other release clauses, the language of the release provision in this case does not manifest an intention by Mt. Bachelor or by Farina that the provision be severable. See George v. School District No. 8R of Umatilla County, 7 Or.App. 183, 188, 490 P.2d 1009, 1012 (1971) (“Whether a contract is divisible depends on the intention of the parties. Such intent is determined primarily through construction or interpretation of the contract.”) (citations omitted). In one simple, broad sentence, Mt. Bachelor sought to exculpate itself for any and all claims that an injured skier might bring against it. This attempt rendered Mt. Bachelor’s entire release clause invalid. It is not our role to enforce only part of the release clause where it is not obvious from the language of the clause that the parties intended the clause to be severable.

CONCLUSION

The judgment of the district court is REVERSED and the case is REMANDED for trial.

Josie RAZORE; John Banchero, Plaintiffs-Appellants,

v.

The TULALIP TRIBES OF WASHINGTON; The Tulalip Section 17 Corporation; The Bureau of Indian Affairs; Carol Browner, Administrator of the United States Environmental Protection Agency, Defendants-Appellees.

Josie RAZORE; John Banchero, Plaintiffs-Appellees,

v.

The TULALIP TRIBES OF WASHINGTON; The Tulalip Section 17 Corporation, Defendants-Appellants.

Nos. 94-35985, 94-36244.

United States Court of Appeals, Ninth Circuit.


Operator of subsequently closed landfill brought action alleging that Indian tribes’ management of site was violating Clean Water Act (CWA) and Resource Conservation and Recovery Act (RCRA). The United States District Court, Western District of Washington, Carolyn R. Dimmick, Chief Judge, dismissed, but denied tribes’ request for attorney fees. On cross-appeals, the Court of Appeals, David R. Thompson, Circuit Judge, held that: (1) remedial investigation/feasibility study (RI/FS) is “removal or remedial action” within meaning of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) section banning all challenges to ongoing remedial or removal actions; (2) RCRA and CWA claims were “challenge” to removal action within meaning of that CERCLA section; (3) that CERCLA section was not inconsistent with CERCLA’s savings provision; (4) district court did not abuse discretion in refusing to permit additional discovery; and (5) district court did not abuse discretion in denying tribes’ request for attorney fees.

Affirmed.
RAZORE v. TULALIP TRIBES OF WASHINGTON

1. Health and Environment ☞ 25.15(3.2)

Remedial investigation/feasibility study (RI/FS) is "removal or remedial action" within meaning of CERCLA section banning all challenges to ongoing remedial or removal actions. Comprehensive Environmental Response, Compensation, and Liability Act of 1980, § 113(h), 42 U.S.C.A. §§ 9613(h), 9652(d); Federal Water Pollution Control Act Amendments of 1972, § 101 et seq.; 33 U.S.C.A. § 1251 et seq.; Solid Waste Disposal Act, § 1002 et seq., as amended, 42 U.S.C.A. § 6901 et seq.

See publication Words and Phrases for other judicial constructions and definitions.

2. Health and Environment ☞ 25.15(3.2)

Plaintiffs asserting Resource Conservation and Recovery Act (RCRA) and Clean Water Act (CWA) claims were "challenging" remedial investigation/feasibility study (RI/FS) in violation of CERCLA section banning all challenges to ongoing remedial or removal actions; government established that RCRA and CWA claims would affect ongoing RI/FS. Comprehensive Environmental Response, Compensation, and Liability Act of 1980, § 113(h), 42 U.S.C.A. § 9613(h).

See publication Words and Phrases for other judicial constructions and definitions.

3. Health and Environment ☞ 25.15(3.2)


See publication Words and Phrases for other judicial constructions and definitions.

4. Health and Environment ☞ 25.15(3.2)

CERCLA section banning all challenges to ongoing remedial or removal actions, including, in instant case, remedial investigation/feasibility study (RI/FS), did not conflict with CERCLA's savings provision, expressly preserving Indiana tribes' obligations under Clean Water Act (CWA) and Resource Conservation and Recovery Act (RCRA) temporary bar to citizen enforcement did not change tribes' "obligations or liabilities" under CWA or RCRA, so as to violate savings provision. Comprehensive Environmental Response, Compensation, and Liability Act of 1980, §§ 113(h), 302(d), 42 U.S.C.A. §§ 9613(h), 9652(d); Federal Water Pollution Control Act Amendments of 1972, § 101 et seq., 33 U.S.C.A. § 1251 et seq.; Solid Waste Disposal Act, § 1002 et seq., as amended, 42 U.S.C.A. § 6901 et seq.

5. Federal Civil Procedure ☞ 1828

District court did not abuse its discretion in refusing to permit additional discovery which could allegedly have demonstrated that Indian tribes' compliance with Clean Water Act (CWA) and Resource Conservation and Recovery Act (RCRA) would not have "challenged" CERCLA removal action in violation of CERCLA section banning challenges to ongoing remedial or removal actions; additional discovery would not have affected jurisdictional analysis, particularly as complaint on its face attempted to impose requirements on handling of site, and plaintiffs admitted that they were attempting either to require tribes to obtain permits or to stop pollution discharges. Comprehensive Environmental Response, Compensation, and Liability Act of 1980, § 113(h), 42 U.S.C.A. § 9613(h); Federal Water Pollution Control Act Amendments of 1972, § 101 et seq., 33 U.S.C.A. § 1251 et seq.; Solid Waste Disposal Act, § 1002 et seq., as amended, 42 U.S.C.A. § 6901 et seq.

6. Federal Civil Procedure ☞ 2737.10

District court may award attorney fees to prevailing defendant in Resource Conservation and Recovery Act (RCRA) and Clean Water Act (CWA) suits upon finding that plaintiff's action was frivolous, unreasonable, or without foundation, even though not brought in subjective bad faith. Federal Water Pollution Control Act Amendments of 1972, § 101 et seq., 33 U.S.C.A. § 1251 et seq.; Solid Waste Disposal Act, § 1002 et seq., as amended, 42 U.S.C.A. § 6901 et seq.

7. Federal Civil Procedure ☞ 2737.3, 2737.10

District court did not abuse its discretion in denying defendant Indian tribes' re-
quest for attorney fees following their successful defense of Resource Conservation and Recovery Act (RCRA) and Clean Water Act (CWA) claims based on CERCLA section banning all challenges to ongoing remedial or removal actions, as plaintiffs' jurisdictional arguments were not frivolous or unreasonable; whether remedial investigation/feasibility study (RI/FS) was "remedial or removal action" was novel question, and court had not previously considered whether CERCLA's savings provision preserved right of citizen suit enforcement under RCRA and CWA. Comprehensive Environmental Response, Compensation and Liability Act of 1980, § 113(h), 106 Stat. 818, 42 U.S.C.A § 9613(h), 9652(d); Federal Water Pollution Control Act Amendments of 1972, § 101 et seq., 33 U.S.C.A § 1261 et seq.; Solid Waste Disposal Act, § 1002 et seq., as amended, 42 U.S.C.A § 6901 et seq.

Roger Truitt, Piper & Marbury, Baltimore, MD, for plaintiffs-appellants Razore and Banchero.

Keith E. Moxon, Buck & Gordon, Seattle, WA, and Joan M. Pepin, United States Department of Justice, Washington, DC, for defendants-appellees Tulalip Tribes, et al.

Appeals from the United States District Court for the Western District of Washington.

Before JOHN T. NOONAN, Jr., THOMPSON * and HAWKINS, Circuit Judges.

DAVID R. THOMPSON, Circuit Judge:

Section 113(h) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9613(h), bans all challenges to ongoing remedial or removal actions. The principal question in this appeal is whether a remedial investigation/feasibility study constitutes a removal or remedial action.

* Judge David R. Thompson was drawn to replace Judge Farris. He has read the briefs, reviewed

I. FACTS

The plaintiffs operated a landfill on the Tulalip Indian Reservation from 1965 to 1979. In 1979, the Environmental Protection Agency (EPA) directed the plaintiffs to halt landfill disposal because pollution was contaminating the Snohomish River and Puget Sound. The landfill was closed pursuant to a consent decree entered into by the United States, the plaintiffs, and the Tulalip Tribes. The consent decree required the plaintiffs to place a soil cover on the landfill.

The soil cover proved inadequate to stop rainwater from percolating down through the wastes and creating leachate. In 1985, the Tulalip Tribes sought to place a thicker soil cover over the landfill. The plaintiffs allege that the Tribes capped the landfill with debris such as concrete chunks, bricks and creosoted wood. In 1988, the EPA began studying the landfill. Its study revealed that groundwater and wetlands adjacent to the landfill exceeded maximum contaminant levels for several types of pollution. In 1989, the EPA informed the Tribes that the landfill might be listed as a superfund site. It recommended that additional capping efforts be postponed. The Tribes compiled with the EPA's request. In 1991, the EPA proposed that the site be included on the federal National Priorities List. The site was eventually listed on May 25, 1995.

In 1993, the plaintiffs and other major principally responsible parties signed an administrative order for a remedial investigation/feasibility study (RI/FS). The parties agreed to conduct a RI/FS as directed by an EPA work plan. The objective of the RI/FS is to make an informed choice among possible cleanup alternatives. 40 C.F.R. § 300.430(a)(2). The RI/FS will be completed and cleanup will begin later in 1995.

In March 1994, the plaintiffs filed this complaint alleging that the Tribes' management of the site is violating the Clean Water Act and the Resource Conservation and Recovery Act. The Tribes and the EPA moved to dismiss the suit for lack of subject matter jurisdiction. They assert that the suit challenged the record and listened to the tape of oral argument held on July 18, 1995.
lenges an ongoing removal action under CERCLA, and consequently section 113(h), 42 U.S.C. § 9613(h), bars judicial review. The district court granted the motion to dismiss, but denied the Tribes' request for attorney fees. The plaintiffs appeal, and the Tribes cross-appeal the denial of fees.

II. DISCUSSION

A. Jurisdiction Barred by CERCLA § 113(h)

CERCLA is the federal government's statutory framework for cleaning up hazardous wastes. To ensure that the cleanup of contaminated sites will not be slowed or halted by litigation, Congress enacted section 113(h) in its 1986 amendments to CERCLA. Section 113(h) provides in part:

No Federal court shall have jurisdiction under Federal law ... to review any challenges to removal or remedial action selected under section 9604 of this title, or to review any order issued under section 9606(a) of this title.

42 U.S.C. § 9613(h).

The statute lists five exceptions, but none is applicable here. Thus, the district court had jurisdiction to hear the plaintiffs' claims if (1) the EPA has not initiated a removal or remedial action under section 9604, or (2) the plaintiffs are not "challenging" such action.

1 The plaintiffs' principal argument on appeal is that a RI/FS is not a remedial or removal action. We reject this argument. CERCLA defines a removal action to include "such actions as may be necessary to monitor, assess, and evaluate the release or threat of release of hazardous substances ... " 42 U.S.C. § 9601(23). A RI/FS satisfies this definition. See Boarhead Corp. v. Erickson, 928 F.2d 1011 (3rd Cir.1991) (holding that section 113(h) bars claims under the Historical Preservation Act during the RI/FS phase of CERCLA cleanup); South Macomb Disposal Auth. v. EPA, 681 F.Supp. 1244, 1246 (E.D. Mich.1988) (stating that "[i]t is clear ... that a RI/FS taken by the EPA is a 'removal action' within the meaning of the statute").

The plaintiffs argue that the EPA has not selected a removal action under section 9604. This argument finds no support in the record. The Administrative Order of Consent (RI/FS consent order) was "issued under the authority vested in the President of the United States in sections 104 (section 9604), 122(a) and 122(d)(3) of [CERCLA]."

The plaintiffs argue that the EPA, after completing the RI/FS, may adopt a no-further-action alternative at the landfill. Their argument implies that even though the EPA is conducting studies, there may never be a cleanup. Although the plaintiffs' scenario may be theoretically possible, we cannot ignore the clear mandate of section 113(h). See McClellan Ecological Seepage Situation v. Perry (MESS), 47 F.3d 325, 328 (9th Cir. 1995), (stating the "section 113(h) is clear and unequivocal" and "amounts to a blunt withdrawal of federal jurisdiction" (quotation omitted)), petition for cert. filed, May 1, 1995. Further, the EPA is obligated to consider the no-action alternative. 40 C.F.R. § 300.430(e)(6). If the EPA elects not to initiate a cleanup under CERCLA, the plaintiffs can then bring an appropriate citizen suit.

[2, 3] The plaintiffs next argue they are not "challenging" a removal action. Specifically, they contend the district court could have fashioned RCRA and CWA remedies that will not interfere with the RI/FS, and ultimately the selected cleanup plan. We reject this argument. An action constitutes a challenge if it is related to the goals of the cleanup. MESS at 330. The government has persuasively demonstrated that the plaintiffs' RCRA and CWA claims would affect the ongoing RI/FS. According to the Tulalip landfill site's remedial project manager, "a judicial order requiring implementation of a leachate collection system at this stage in the RI/FS would effectively terminate the present RI/FS." The district court found that "[t]he plaintiffs attempt to dictate specific remedial actions and to alter the method and order for cleanup during an RI/FS and

prior to a determination of the ultimate remedial plan." The plaintiffs' own expert admits that the work could be halted for "days or weeks." The RCRA and CWA claims are sufficiently related to the goals of CERCLA cleanup to trigger section 113(h). See MESS at 330.

[4] The plaintiffs raise a third argument about section 113(h). They argue that CERCLA's "savings provision," section 302(d), expressly preserves the Tribes' and the EPA's obligations under the CWA and RCRA. Section 302(d) provides in part:

Nothing in this chapter shall affect or modify in any way the obligations or liabilities of any person under Federal or State law, including common law with respect to releases of hazardous substances or other pollutants or contaminants.... (emphasis added).

42 U.S.C. § 9622(d). The plaintiffs argue that without citizen suit enforcement, the Tribes' obligations are not only modified but actually extinguished.

Sections 113(h) and 302(d) are not in conflict. The temporary bar to citizen enforcement does not change the Tribes' "obligations or liabilities" under the CWA or RCRA. On the other hand, if section 302(d) were to govern the interpretation of the statute, it "would effectively write [section 113(h)] out of the Act." Westlands Water Dist. v. Natural Resources Defense Council, 43 F.3d 457, 462 (9th Cir.1994) (citation omitted). "It is our duty to give effect, if possible, to every clause and word of a statute, rather than to emasculate an entire section." Id., quoting Estate of Reynolds v. Martin, 965 F.2d 470, 473 (9th Cir.1993).

B. Refusing Additional Discovery not Abuse of Discretion

[5] The plaintiffs assert that the district court abused its discretion by not permitting additional discovery. They contend that additional discovery could have demonstrated that RCRA and CWA compliance would not have "challenged" the CERCLA removal action. We review a district court's decision to grant or deny discovery on jurisdictional facts for abuse of discretion. Cheng v. Boeing Co., 708 F.2d 1406, 1408 (9th Cir.), cert. denied, 464 U.S. 1017, 104 S.Ct. 549, 78 L.Ed.2d 723 (1983).

The district court did not abuse its discretion. A denial of discovery is proper "when it is clear that further discovery would not demonstrate facts sufficient to constitute a basis for jurisdiction." America West Airlines, Inc. v. GPA Group, Ltd., 877 F.2d 763, 801 (9th Cir.1989). The district court rejected the plaintiffs' motion for discovery because their complaint "on its face" attempts to impose requirements on the handling of the site. The plaintiffs admit that they were attempting either to require the Tribes to obtain permits or to stop the pollution discharges. Additional discovery would not affect the jurisdictional analysis.

C. Tribes' Cross-appeal for Attorney Fees

[6] The Tulalip Tribes contend that the district court abused its discretion by failing to award attorney fees. We have not considered when attorney fees will be awarded to a prevailing defendant under RCRA or CWA. The Supreme Court has held that a district court may "award attorney's fees to a prevailing defendant in a Title VII case upon a finding that the plaintiff's action was frivolous, unreasonable, or without foundation, even though not brought in subjective bad faith." Christiansburg Garment Co. v. EEOC, 434 U.S. 412, 421, 98 S.Ct. 694, 700, 54 L.Ed.2d 648 (1978). The Court has adopted the same standard under 42 U.S.C. § 1988. Hughes v. Roe, 449 U.S. 5, 14, 101 S.Ct. 173, 178, 66 L.Ed.2d 163 (1980) (per curiam); see also Elks Nat'l Found. v. Weber, 942 F.2d 1480, 1485 (9th Cir.1991), cert. denied, 505 U.S. 1206, 112 S.Ct. 2995, 120 L.Ed.2d 872 (1992). We agree with the district court that Christiansburg Garment Co. is the proper standard for RCRA and CWA suits.

[7] The plaintiffs' section 113(h) jurisdictional arguments are not frivolous or unreasonable. Whether a RIFS constitutes a remedial or removal action was, before we ruled, a novel question. Further, we have not previously considered whether section 302(d) preserves the right of citizen suit enforcement under RCRA and CWA. The dis-
The term "employer", for purposes of WARN Act, embraces any defendant who engages in a business enterprise, meaning at time of plant closing or mass layoff, defendant is responsible for operating business as a going concern. Worker Adjustment and Retraining Notification Act, §§ 2(a), 3(a), 29 U.S.C.A. §§ 2101(a), 2102(a).

Where secured creditor does no more than exercise that degree of control over debtor's collateral necessary to protect security interest, and acts only to preserve business asset for liquidation or sale, notice requirements of WARN Act will not apply because debtor has not continued the business in operation. Worker Adjustment and Retraining Notification Act, § 3(a), 29 U.S.C.A. § 2102(a).

Determination that a defendant is an employer under WARN Act creates no other employment rights. Worker Adjustment and Retraining Notification Act, §§ 2 et seq., 2(a), 3(a), 29 U.S.C.A. §§ 2101 et seq., 2101(a), 2102(a); 29 C.F.R. § 639.8.

Secured creditor whose interaction with delinquent debtor primarily was limited to financial controls was not an employer for WARN Act purposes.

Affirmed.
reconsider the constitutional assumptions that underlie that case.

Justice SCALIA, concurring in the judgment.

I do not share the apparent skepticism of today's opinion concerning the judgment of the Court (often curiously described as merely the judgment of "the majority") in Faretta v. California, 422 U.S. 806, 95 S.Ct. 2525, 45 L.Ed.2d 562 (1975). I have no doubt that the Framers of our Constitution, who were suspicious enough of governmental power—including judicial power—that they insisted upon a citizen's right to be judged by an independent jury of private citizens, would not have found acceptable the compulsory assignment of counsel by the government to plead a criminal defendant's case. While I might have rested the decision upon the Due Process Clause rather than the Sixth Amendment, I believe it was correct.

That asserting the right of self-representation may often, or even usually, work to the defendant's disadvantage is no more remarkable—and no more a basis for withdrawing the right—than is the fact that proceeding without counsel in custodial interrogation, or confessing to the crime, usually works to the defendant's disadvantage. Our system of laws generally presumes that the criminal defendant, after being fully informed, knows his own best interests and does not need them dictated by the State. Any other approach is unworthy of a free people. As Justice Frankfurter eloquently put it for the Court in Adams v. United States ex rel. McCann, 317 U.S. 269, 63 S.Ct. 236, 87 L.Ed. 288 (1942), to require the acceptance of counsel "is to imprison a man in his privileges and call it the Constitution." Id., at 280, 63 S.Ct. 236.

In any event, Faretta is relevant to the question before us only to the limited extent that we must decide whether its holding applies to self-representation on appeal. It seems to me that question is readily answered by the fact that there is no constitutional right to appeal. See McKane v. Durston, 153 U.S. 684, 687-688, 14 S.Ct. 913, 38 L.Ed. 867 (1894). Since a State could, as far as the Federal Constitution is concerned, subject its trial-court determinations to no review whatever, it could a fortiori subject them to review which consists of a nonadversarial reexamination of convictions by a panel of government experts. Adversarial review with counsel appointed by the State is even less questionable than that.

For these reasons, I concur in the judgment of the Court.
Fourth Circuit, 149 F.3d 303, vacated and remanded with instructions to dismiss. Certiorari was granted. The Supreme Court, Justice Ginsburg, held that: (1) groups had standing to bring citizen suit seeking both injunctive relief and civil penalties; (2) action was not rendered moot by permit holder's compliance with permit limits or its shut down of facility, absent showing that violations could not reasonably be expected to recur; and (3) Supreme Court would not address groups' request for attorneys' fees.

Judgment of Court of Appeals reversed and remanded.

Justice Stevens filed concurring opinion.

Justice Kennedy filed concurring opinion.

Justice Scalia filed dissenting opinion in which Justice Thomas joined.

1. Health and Environment ⇆25.15(4.1)
Purpose of notice to the alleged violator, under Clean Water Act's citizen suit provision, is to give violator an opportunity to bring itself into complete compliance with the Act and thus render unnecessary a citizen suit. Federal Water Pollution Control Act, § 505(a), (b)(1)(A), (g), as amended, 33 U.S.C.A. §§ 1365(a), (b)(1)(A), (g).

2. Health and Environment ⇆25.15(4.1)
Citizens lack statutory standing under Clean Water Act's citizen suit provision to sue for violations that have ceased by the time the complaint is filed. Federal Water Pollution Control Act, § 505(a), as amended, 33 U.S.C.A. § 1365(a).

3. Federal Civil Procedure ⇆103.2, 103.3
To satisfy Article III's standing requirements, a plaintiff must show: (1) it has suffered an injury in fact that is concrete and particularized and is 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 will be redressed by a favorable decision. U.S.C.A. Const. Art. 3, § 2, cl. 1.

4. Associations ⇆20(1)
An association has standing to bring suit on behalf of its members when its members would otherwise have standing to sue in their own right, the interests at stake are germane to the organization's purpose, and neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit. U.S.C.A. Const. Art. 3, § 2, cl. 1.

5. Health and Environment ⇆25.15(4.1)
Environmental groups alleged sufficient injury in fact to establish standing to seek injunctive relief in action against holder of National Pollutant Discharge Elimination System (NPDES) permit for alleged violation of mercury discharge limits, pursuant to citizen suit provision of Clean Water Act (CWA), even if there was no resulting injury to the environment, as group members alleged that, although they would like to use affected river for recreational purposes, they would not do so due to permit holder's alleged discharges. U.S.C.A. Const. Art. 3, § 2, cl. 1.; Federal Water Pollution Control Act, § 505(a, g), as amended, 33 U.S.C.A. § 1365(a, g).

6. Health and Environment ⇆25.15(3.3)
Environmental plaintiffs adequately allege injury in fact, for standing purposes, when they aver that they use the affected area and are persons for whom the aesthetic and recreational values of the area will be lessened by the challenged activity. U.S.C.A. Const. Art. 3, § 2, cl. 1.

7. Health and Environment ⇆25.15(4.5)
Environmental groups had standing to seek civil penalties in action against holder of National Pollutant Discharge Elimination System (NPDES) permit for allegedly ongoing violation of mercury discharge limits, pursuant to citizen suit provision of Clean Water Act (CWA), even
though such penalties are paid to government, not private plaintiffs, since penalties would encourage permit holder to discontinue current violations and deter it from committing future ones. U.S.C.A. Const. Art. 3, § 2, cl. 1.; Federal Water Pollution Control Act, § 505(a, g), as amended, 33 U.S.C.A. § 1365(a, g).

8. Federal Civil Procedure ⇜103.2
   A plaintiff must demonstrate standing separately for each form of relief sought.

   Neither National Pollutant Discharge Elimination System (NPDES) permit holder's substantial compliance with its permit nor its subsequent shutdown of hazardous waste incinerator facility from which it discharged pollutants rendered moot environmental groups' citizen suit, under Clean Water Act, seeking civil penalty for violation of permit's mercury discharge limits, absent clear showing that violations could not reasonably be expected to recur, notwithstanding groups' failure to appeal district court's denial of injunctive relief. Federal Water Pollution Control Act, § 505(a, g), as amended, 33 U.S.C.A. § 1365(a, g).

10. Federal Courts ⇜12.1
    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 under the mootness doctrine; if it did, the courts would be compelled to leave the defendant free to return to his old ways.

11. Federal Courts ⇜12.1
    A case might become moot based on a defendant's voluntary conduct if subsequent events made it absolutely clear that the allegedly wrongful behavior could not reasonably be expected to recur, but the heavy burden of persuading the court that the challenged conduct cannot reasonably be expected to start up again lies with the party asserting mootness.

12. Federal Civil Procedure ⇜103.2
    In a lawsuit brought to force compliance, it is the plaintiff's burden to establish standing by demonstrating that, if unchecked by the litigation, the defendant's allegedly wrongful behavior will likely occur or continue, and that the threatened injury is certainly impending.

13. Federal Civil Procedure ⇜103.2
    Federal Courts ⇜12.1
    There are circumstances in which the prospect that a defendant will engage in or resume harmful conduct may be too speculative to support standing, but not too speculative to overcome mootness.

14. Federal Courts ⇜13
    When a mentally disabled patient files a lawsuit challenging her confinement in a segregated institution, her postcomplaint transfer to a community-based program will not moot the action, despite the fact that she would have lacked initial standing had she filed the complaint after the transfer.

15. Federal Civil Procedure ⇜103.2
    Federal Courts ⇜12.1
    If a plaintiff lacks standing at the time the action commences, the fact that the dispute is capable of repetition yet evading review will not entitle the complainant to a federal judicial forum.

16. Federal Courts ⇜12.1
    District courts cannot retain jurisdiction over cases in which one or both of the parties plainly lacks a continuing interest, as when the parties have settled or a plaintiff pursuing a nonsurviving claim has died, notwithstanding the sunk costs to the judicial system.

17. Health and Environment ⇜25.15(12)
    Under Clean Water Act's citizen suit provision, the district court has discretion to determine which form of relief is best suited, in the particular case, to abate current violations and deter future ones. Federal Water Pollution Control Act, § 505(a), as amended, 33 U.S.C.A. § 1365(a).
18. Injunction ⇔ 1

A federal judge sitting as chancellor is not mechanically obligated to grant an injunction for every violation of law.

19. Health and Environment ⇔ 25.7(24)

Denial of injunctive relief in action brought under Clean Water Act's citizen suit provision does not necessarily mean that the district court has concluded there is no prospect of future violations for civil penalties to deter. Federal Water Pollution Control Act, § 505(a, g), as amended, 33 U.S.C.A. § 1365(a, g).

20. Federal Civil Procedure ⇔ 2582

Federal courts should aim to ensure the framing of relief no broader than required by the precise facts.

21. Health and Environment ⇔ 25.15(2.1)

A district court in a Clean Water Act citizen suit properly may conclude that an injunction would be an excessively intrusive remedy, because it could entail continuing superintendence of the permit holder's activities by a federal court, which is a process burdensome to court and permit holder alike. Federal Water Pollution Control Act, § 505(a), as amended, 33 U.S.C.A. § 1365(a).

22. Federal Courts ⇔ 460.1

Supreme Court would not address plaintiff's entitlement to attorneys' fees under catalyst theory, on appeal from dismissal for mootness of citizen suit under Clean Water Act, but would have district court address request for fees in the first instance, where district court had stayed time for petition for attorneys' fees until time for appeal had expired or, if either party appealed, until appeal was resolved. Federal Water Pollution Control Act, § 505(d), as amended, 33 U.S.C.A. § 1365(d).

* The syllabus constitutes no part of the opinion of the Court but has been prepared by the Reporter of Decisions for the convenience of the reader. See United States v. Detroit Timber & Lumber Co., 200 U.S. 321, 333, 26 S.Ct. 282, 50 L.Ed. 499.

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Defendant-respondent Laidlaw Environmental Services (TOC), Inc., bought a facility in Roebuck, South Carolina, that included a wastewater treatment plant. Shortly thereafter, the South Carolina Department of Health and Environmental Control (DHEC), acting under the Clean Water Act (Act), 33 U.S.C. § 1342(a)(1), granted Laidlaw a National Pollutant Discharge Elimination System (NPDES) permit. The permit authorized Laidlaw to discharge treated water into the North Tyger River, but limited, among other things, the discharge of pollutants into the waterway. Laidlaw began to discharge various pollutants into the waterway; these discharges, particularly of mercury, an extremely toxic pollutant, repeatedly exceeded the limits set by the permit.

On April 10, 1992, plaintiff-petitioners Friends of the Earth and Citizens Local Environmental Action Network, Inc. (referred to collectively here, along with later joined plaintiff-petitioner Sierra Club, as “FOE”), notified Laidlaw of their intention to file a citizen suit against it under the Act, 33 U.S.C. § 1365(a), after the expiration of the requisite 60-day notice period. DHEC acceded to Laidlaw's request to file a lawsuit against the company. On the last day before FOE's 60-day notice period expired, DHEC and Laidlaw reached a settlement requiring Laidlaw to pay $100,000 in civil penalties and to make “every effort” to comply with its permit obligations.

On June 12, 1992, FOE filed this citizen suit against Laidlaw, alleging noncompliance with the NPDES permit and seeking declaratory and injunctive relief and an award of civil penalties. Laidlaw moved for summary judgment on the ground that FOE lacked Article III standing to bring the lawsuit. After examining affidavits and deposition testimony from members of the plaintiff organizations; the District Court in the reader. See United States v. Detroit Timber & Lumber Co., 200 U.S. 321, 337, 26 S.Ct. 282, 50 L.Ed. 499.
Court denied the motion, finding that the plaintiffs had standing. The District Court also denied Laidlaw’s motion to dismiss on the ground that the citizen suit was barred under § 1365(b)(1)(B) by DHEC’s prior action against the company. After FOE initiated this suit, but before the District Court rendered judgment on January 22, 1997, Laidlaw violated the mercury discharge limitation in its permit 18 times and committed 13 monitoring and 10 reporting violations. In issuing its judgment, the District Court found that Laidlaw had gained a total economic benefit of $1,092,581 as a result of its extended period of noncompliance with the permit’s mercury discharge limit; nevertheless, the court concluded that a civil penalty of $405,800 was appropriate. In particular, the District Court found that the judgment’s “total deterrent effect” would be adequate to forestall future violations, given that Laidlaw would have to reimburse the plaintiffs for a significant amount of legal fees and had itself incurred significant legal expenses. The court declined to order injunctive relief because Laidlaw, after the lawsuit began, had achieved substantial compliance with the terms of its permit.

FOE appealed as to the amount of the District Court’s civil penalty judgment, but did not appeal the denial of declaratory or injunctive relief. The Fourth Circuit vacated the District Court’s order and remanded with instructions to dismiss the action. Assuming, arguendo, that FOE initially had standing, the appellate court held that the case had become moot once Laidlaw, after the lawsuit began, had achieved substantial compliance with the terms of its permit.

Held: The Fourth Circuit erred in concluding that a citizen suitor’s claim for civil penalties must be dismissed as moot when the defendant, after commencement of the litigation, has come into compliance with its NPDES permit. pp. 703-712.

(a) The Constitution’s case-or-controversy limitation on federal judicial authority, Art. III, § 2, underpins both standing and mootness doctrine, but the two inquiries differ in crucial respects. Because the Fourth Circuit was persuaded that the case had become moot, it simply assumed that FOE had initial standing. See Arizona v. Arizonans for Official English, 520 U.S. 43, 66-67, 117 S.Ct. 1055, 137 L.Ed.2d 170. But because this Court concludes that the Court of Appeals erred as to mootness, this Court has an obligation to assure itself that FOE had Article III standing at the outset of the litigation. Pp. 703-704.

(b) FOE had Article III standing to bring this action. This Court has held that to satisfy Article III’s standing requirements, a plaintiff must show “injury in fact,” causation, and redressability. Lujan v. Defenders of Wildlife, 504 U.S. 555, 560-561, 112 S.Ct. 2130, 119 L.Ed.2d 383. An association has standing to bring suit on behalf of its members when its members would have standing to sue in their own right, the interests at stake are germane to the organization’s purpose, and neither the claim asserted nor the relief requested requires individual members’ participation in the lawsuit. Hunt v. Washington State Apple Advertising Comm’n, 432 U.S. 233, 343, 97 S.Ct. 2434, 53 L.Ed.2d 383. The relevant showing for Article III standing is not injury to the environment but injury to the plaintiff. To
insist on the former rather than the latter is to raise the standing hurdle higher than the necessary showing for success on the merits in a citizen's NPDES permit enforcement suit. Here, injury in fact was adequately documented by the affidavits and testimony of FOE members asserting that Laidlaw's pollutant discharges, and the affiants' reasonable concerns about the effects of those discharges, directly affected those affiants' recreational, aesthetic, and economic interests. See, e.g., Sierra Club v. Morton, 405 U.S. 727, 735, 92 S.Ct. 1361, 31 L.Ed.2d 696. These submissions present dispositively more than the mere "general averments" and "conclusory allegations" found inadequate in Lujan v. National Wildlife Federation, 497 U.S. 871, 888, 110 S.Ct. 1177, 111 L.Ed.2d 656, or the "'some day' intentions to visit endangered species halfway around the world held insufficient in Defenders of Wildlife, 504 U.S., at 564, 112 S.Ct. 2130. Pp. 704-706.

(c) Laidlaw argues that FOE lacked standing to seek civil penalties payable to the Government, because such penalties offer no redress to citizen plaintiffs. For a plaintiff who is injured or threatened with injury due to illegal conduct ongoing at the time of suit, a sanction that effectively abates that conduct and prevents its recurrence provides a form of redress. Civil penalties can fit that description. Insofar as they encourage defendants to discontinue current violations and deter future ones, they afford redress to citizen plaintiffs injured or threatened with injury as a result of ongoing unlawful conduct. The Court need not explore the outer limits of the principle that civil penalties provide sufficient deterrence to support redressability, because the civil penalties sought here carried a deterrent effect that made it likely, as opposed to merely speculative, that the penalties would redress FOE's injuries—as the District Court reasonably found when it assessed a penalty of $405,800. Steel Co. is not to the contrary. That case held that private plaintiffs may not sue to assess penalties for wholly past violations, 523 U.S., at 106-107, 118 S.Ct. 1003, but did not address standing to seek penalties for violations ongoing at the time of the complaint that could continue into the future if undeterred, see id., at 108, 118 S.Ct. 1003. Pp. 706-708.

(d) FOE's civil penalties claim did not automatically become moot once the company came into substantial compliance with its permit. A defendant's voluntary cessation of a challenged practice ordinarily does not deprive a federal court of its power to determine the legality of the practice. City of Mesquite v. Aladdin's Castle, Inc., 455 U.S. 283, 289, 102 S.Ct. 1070, 71 L.Ed.2d 152. If it did, courts would be compelled to leave the defendant free to return to its old ways. Thus, the standard for determining whether a case has been mooted by the defendant's voluntary conduct is stringent: A case might become moot if subsequent events make it absolutely clear that the allegedly wrongful behavior could not reasonably be expected to recur. United States v. Concentrated Phosphate Export Assn., 393 U.S. 199, 203, 89 S.Ct. 361, 21 L.Ed.2d 344. The heavy burden of persuading the court that the challenged conduct cannot reasonably be expected to recur lies with the party asserting mootness. Ibid. The Court of Appeals incorrectly conflated this Court's case law on initial standing, see, e.g., Steel Co., with its case law on mootness, see, e.g., City of Mesquite. Such confusion is understandable, given this Court's repeated description of mootness as "the doctrine of standing set in a time frame: The requisite personal interest that must exist at the commencement of the litigation (standing) must continue throughout its existence (mootness)." E.g., Arizonans, 520 U.S., at 68, n. 22, 117 S.Ct. 1055. Careful reflection, however, reveals that this description of mootness is not comprehensive. For example, a defendant claiming that its voluntary compliance moots a case bears a formidable burden. By contrast, it is the plaintiff's burden, in a
lawsuit brought to force compliance, to establish standing by demonstrating that, if unchecked by the litigation, the defendant's allegedly wrongful behavior will likely occur or continue and that the threatened injury is certainly impending. Whitmore v. Arkansas, 495 U.S. 149, 110 S.Ct. 1717, 109 L.Ed.2d 135. The plain lesson is that there are circumstances in which the prospect that a defendant will engage in (or resume) harmful conduct may be too speculative to support standing, but not too speculative to overcome mootness. Further, if mootness were simply "standing set in a time frame," the exception to mootness for acts that are "capable of repetition, yet evading review" could not exist. See, e.g., Olmstead v. L.C., 527 U.S. 581, 594, n. 6, 119 S.Ct. 2176, 14 L.Ed.2d 540. Standing admits of no similar exception; if a plaintiff lacks standing at the time the action commences, the fact that the dispute is capable of repetition yet evading review will not entitle the complainant to a federal judicial forum. See, e.g., Steel Co., 523 U.S., at 109, 118 S.Ct. 1003. Standing doctrine ensures, among other things, that the resources of the federal courts are devoted to disputes in which the parties have a concrete stake. Yet by the time mootness is an issue, abandonment of the case may prove more wasteful than frugal. Courts have no license to retain jurisdiction over cases in which one or both of the parties plainly lacks a continuing interest, see, e.g., Arizonans, 520 U.S., at 67, 117 S.Ct. 1055, but the foregoing examples highlight an important difference between the two doctrines, see generally Honig v. Doe, 484 U.S. 305, 329-332, 108 S.Ct. 592, 98 L.Ed.2d 686 (REHNQUIST, C. J., concurring).

Laidlaw's argument that FOE doomed its own civil penalty claim to mootness by failing to appeal the denial of injunctive relief misconceives the statutory scheme. Under § 1365(a), the district court has discretion to determine which form of relief is best suited to abate current violations and deter future ones. See Weinberger v. 

Romero—Barcelo, 456 U.S. 305, 313, 102 S.Ct. 1798, 72 L.Ed.2d 91. Denial of injunctive relief does not necessarily mean that the district court has concluded there is no prospect of future violations to deter. Indeed, it meant no such thing in this case; the District Court denied injunctive relief, but expressly based its award of civil penalties on the need for deterrence. A district court properly may conclude that an injunction would be too intrusive, because it could entail continuing and burdensome supervision of the permit holder's activities by a federal court. See City of Mesquite, 455 U.S., at 289, 102 S.Ct. 1070. Both Laidlaw's permit compliance and the facility closure might moot this case, but only if one or the other event made it absolutely clear that violations could not reasonably be expected to recur. Concentrated Phosphate Export Assn., 393 U.S., at 203, 89 S.Ct. 361. These are disputed factual matters that have not been aired in the lower courts; they remain open for consideration on remand. Pp. 708-711.

(e) This Court does not resolve FOE's argument that it is entitled to attorneys' fees on the theory that a plaintiff can be a "prevailing party" under § 1365(d) if it was the "catalyst" that triggered a favorable outcome. Although the Circuits have divided as to the continuing validity of the catalyst theory following Farrar v. Hobby, 506 U.S. 103, 113 S.Ct. 566, 121 L.Ed.2d 494, it would be premature for this Court to address the question here. The District Court stayed the time for a petition for attorneys' fees until the time for appeal had expired or until any appeal was resolved. Thus, when the Fourth Circuit addressed the availability of counsel fees, no order was before it either denying or awarding fees. It is for the District Court, not this Court, to address in the first instance any request for reimbursement of costs, including fees. Pp. 711-712.

149 F.3d 303, reversed and remanded.

GINSBURG, J., delivered the opinion of the Court, in which REHNQUIST, C. J., and STEVENS, O'CONNOR,
KENNEDY, SOUTER, and BREYER, JJ., joined. STEVENS, J., post, p. 712, and KENNEDY, J., post, p. 713, filed concurring opinions. SCALIA, J., filed a dissenting opinion, in which THOMAS, J., joined, post, p. 713.

Bruce J. Terris, Washington, DC, for petitioners.

Jeffrey P. Minear, Washington, DC, for United States as amicus curiae, by special leave of the Court.

Donald A. Cockrill, Greenville, SC, for respondent.

For U.S. Supreme Court briefs, see:
1999 WL 311764 (Pet.Brief)
1999 WL 513805 (Resp.Brief)
1999 WL 623917 (Reply.Brief)

Justice GINSBURG delivered the opinion of the Court.

This case presents an important question concerning the operation of the citizen-suit provisions of the Clean Water Act. Congress authorized the federal district courts to entertain Clean Water Act suits initiated by “a person or persons having an interest which is or may be adversely affected.” 33 U.S.C. §§ 1365(a), (g). To impel future compliance with the Act, a district court may prescribe injunctive relief in such a suit; additionally or alternatively, the court may impose civil penalties payable to the United States Treasury. § 1365(a). In the Clean Water Act citizen suit now before us, the District Court determined that injunctive relief was inappropriate because the defendant, after the institution of the litigation, achieved substantial compliance with the terms of its discharge permit. 956 F.Supp. 588, 611 (D.S.C.1997). The court did, however, assess a civil penalty of $405,800. Id., at 610. The “total deterrent effect” of the penalty would be adequate to forestall future violations, the court reasoned, taking into account that the defendant “will be required to reimburse plaintiffs for a significant amount of legal fees and has, itself, incurred significant legal expenses.” Id., at 610–611.

The Court of Appeals vacated the District Court’s order. 149 F.3d 303 (C.A.4 1998). The case became moot, the appellate court declared, once the defendant fully complied with the terms of its permit and the plaintiff failed to appeal the denial of equitable relief. “Civil penalties payable to the government,” the Court of Appeals stated, “would not redress any injury Plaintiffs have suffered.” Id., at 307. Nor were attorneys’ fees in order, the Court of Appeals noted, because absent relief on the merits, plaintiffs could not qualify as prevailing parties. Id., at 307 n. 5.

We reverse the judgment of the Court of Appeals. The appellate court erred in concluding that a citizen suitor’s claim for civil penalties must be dismissed as moot when the defendant, albeit after commencement of the litigation, has come into compliance. In directing dismissal of the suit on grounds of mootness, the Court of Appeals incorrectly conflated our case law on initial standing to bring suit, see, e.g., Steel Co. v. Citizens for a Better Environment, 523 U.S. 83, 118 S.Ct. 1003, 140 L.Ed.2d 210 (1998), with our case law on postcommencement mootness, see, e.g., City of Mesquite v. Aladdin’s Castle, Inc., 455 U.S. 283, 102 S.Ct. 1070, 71 L.Ed.2d 152 (1982). A defendant’s voluntary cessation of allegedly unlawful conduct ordinarily does not suffice to moot a case. The Court of Appeals also misperceived the remedial potential of civil penalties. Such penalties may serve, as an alternative to an injunction, to deter future violations and thereby redress the injuries that prompted a citizen suitor to commence litigation.

I

A

In 1972, Congress enacted the Clean Water Act (Act), also known as the Federal Water Pollution Control Act, 86 Stat.
816, as amended, 33 U.S.C. § 1251 et seq. Section 402 of the Act, 33 U.S.C. § 1342, provides for the issuance, by the Administrator of the Environmental Protection Agency (EPA) or by authorized States, of National Pollutant Discharge Elimination System (NPDES) permits. NPDES permits impose limitations on the discharge of pollutants, and establish related monitoring and reporting requirements, in order to improve the cleanliness and safety of the Nation's waters. Noncompliance with a permit constitutes a violation of the Act. § 1342(h).

Under § 505(a) of the Act, a suit to enforce any limitation in an NPDES permit may be brought by any "citizen," defined as "a person or persons having an interest which is or may be adversely affected." 33 U.S.C. §§ 1365(a), (g). Sixty days before initiating a citizen suit, however, the would-be plaintiff must give notice of the alleged violation to the EPA, the State in which the alleged violation occurred, and the alleged violator. § 1365(b)(1)(A). "[T]he purpose of notice to the alleged violator is to give it an opportunity to bring itself into complete compliance with the Act and thus ... render unnecessary a citizen suit." Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Foundation, Inc., 484 U.S. 49, 60, 108 S.Ct. 376, 98 L.Ed.2d 306 (1987). Accordingly, we have held that citizens lack statutory standing under § 505(a) to sue for violations that have ceased by the time the complaint is filed. Id., at 56–63, 108 S.Ct. 376. The Act also bars a citizen from suing if the EPA or the State has already commenced, and is "diligently prosecuting," an enforcement action. 33 U.S.C. § 1365(b)(1)(B).

The Act authorizes district courts in citizen-suit proceedings to enter injunctions and to assess civil penalties, which are payable to the United States Treasury. § 1365(a). In determining the amount of any civil penalty, the district court must take into account "the seriousness of the violation or violations, the economic benefit (if any) resulting from the violation, any history of such violations, any good-faith efforts to comply with the applicable requirements, the economic impact of the penalty on the violator, and such other matters as justice may require." § 1319(d). In addition, the court "may award costs of litigation (including reasonable attorney and expert witness fees) to any prevailing or substantially prevailing party, whenever the court determines such award is appropriate." § 1365(d).

In 1986, defendant-respondent Laidlaw Environmental Services (TOC), Inc., bought a hazardous waste incinerator facility in Roebuck, South Carolina, that included a wastewater treatment plant. (The company has since changed its name to Safety-Kleen (Roebuck), Inc., but for simplicity we will refer to it as "Laidlaw" throughout.) Shortly after Laidlaw acquired the facility, the South Carolina Department of Health and Environmental Control (DHEC), acting under 33 U.S.C. § 1342(a)(1), granted Laidlaw an NPDES permit authorizing the company to discharge treated water into the North Tyger River. The permit, which became effective on January 1, 1987, placed limits on Laidlaw's discharge of several pollutants into the river, including—of particular relevance to this case—mercury, an extremely toxic pollutant. The permit also regulated the flow, temperature, toxicity, and pH of the effluent from the facility, and imposed monitoring and reporting obligations.

Once it received its permit, Laidlaw began to discharge various pollutants into the waterway; repeatedly, Laidlaw's discharges exceeded the limits set by the permit. In particular, despite experimenting with several technological fixes, Laidlaw consistently failed to meet the permit's stringent 1.3 ppb (parts per billion) daily average limit on mercury discharges. The District Court later found that Laidlaw...
had violated the mercury limits on 489 occasions between 1987 and 1995. 956 F.Supp., at 613-621.

On April 10, 1992, plaintiff-petitioners Friends of the Earth (FOE) and Citizens Local Environmental Action Network, Inc. (CLEAN) (referred to collectively in this opinion, together with later joined plaintiff-petitioner Sierra Club, as "FOE") took the preliminary step necessary to the institution of litigation. They sent a letter to Laidlaw notifying the company of their intention to file a citizen suit against it under § 505(a) of the Act after the expiration of the requisite 60-day notice period, i.e., on or after June 10, 1992. Laidlaw's lawyer then contacted DREC to ask whether DREC would consider filing a lawsuit against Laidlaw. The District Court later found that Laidlaw's reason for requesting that DHEC file a lawsuit against it was to bar FOE's proposed citizen suit through the operation of 33 U.S.C. § 1365(b)(1)(B). 890 F.Supp. 470, 478 (D.S.C.1995). DREC agreed to file a lawsuit against Laidlaw; the company's lawyer then drafted the complaint for DREC and paid the filing fee. On June 9, 1992, the last day before FOE's 60-day notice period expired, DREC and Laidlaw reached a settlement requiring Laidlaw to pay $100,000 in civil penalties and to make "'every effort' " to comply with its permit obligations. 890 F.Supp., at 479-481.

On June 12, 1992, FOE filed this citizen suit against Laidlaw under § 505(a) of the Act, alleging noncompliance with the NPDES permit and seeking declaratory and injunctive relief and an award of civil penalties. Laidlaw moved for summary judgment on the ground that FOE had failed to present evidence demonstrating injury in fact, and therefore lacked Article III standing to bring the lawsuit. Record, Doc. No. 43. In opposition to this motion, FOE submitted affidavits and deposition testimony from members of the plaintiff organizations. Record, Doc. No. 71 (Exhs. 41-51). The record before the District Court also included affidavits from the organizations' members submitted by FOE in support of an earlier motion for preliminary injunctive relief. Record, Doc. No. 21 (Exhs. 5-10). After examining this evidence, the District Court denied Laidlaw's summary judgment motion, finding—albeit "by the very slimmest of margins"—that FOE had standing to bring the suit. App. in No. 97-1246(C.A.4), pp. 207-208 (Tr. of Hearing 39-40 (June 30, 1993)).

Laidlaw also moved to dismiss the action on the ground that the citizen suit was barred under 33 U.S.C. § 1365(b)(1)(B) by DHEC's prior action against the company. The United States, appearing as amicus curiae, joined FOE in opposing the motion. After an extensive analysis of the Laidlaw-DREC settlement and the circumstances under which it was reached, the District Court held that DHEC's action against Laidlaw had not been "diligently prosecuted"; consequently, the court allowed FOE's citizen suit to proceed. 890 F.Supp., at 499. The record indicates that after FOE initiated the suit, but before the District Court rendered judgment, Laidlaw violated the mercury discharge limitation in its permit 13 times. 956 F.Supp., at 621. The District Court also found that Laidlaw had committed 13 monitoring and 10 reporting violations during this period. Id., at 601. The last recorded mercury discharge violation occurred in January 1995, long after the complaint was filed but about two years before judgment was rendered. Id., at 621.

1. The District Court noted that "Laidlaw drafted the state-court complaint and settlement agreement, filed the lawsuit against itself, and paid the filing fee." 890 F.Supp., at 489. Further, "the settlement agreement between DHEC and Laidlaw was entered into with unusual haste, without giving the Plaintiffs the opportunity to intervene." Ibid. The court found "most persuasive" the fact that "in imposing the civil penalty of $100,000 against Laidlaw, DHEC failed to recover, or even to calculate, the economic benefit that Laidlaw received by not complying with its permit." Id., at 491.
On January 22, 1997, the District Court issued its judgment. 956 F.Supp. 588 (D.S.C.). It found that Laidlaw had gained a total economic benefit of $1,092,581 as a result of its extended period of noncompliance with the mercury discharge limit in its permit. Id., at 603. The court concluded, however, that a civil penalty of $405,800 was adequate in light of the guiding factors listed in 33 U.S.C. § 1319(d). 956 F.Supp., at 610. In particular, the District Court stated that the lesser penalty was appropriate taking into account the judgment’s “total deterrent effect.” In reaching this determination, the court “considered that Laidlaw will be required to reimburse plaintiffs for a significant amount of legal fees.” Id., at 610–611. The court declined to grant FOE’s request for injunctive relief, stating that an injunction was inappropriate because “Laidlaw has been in substantial compliance with all parameters in its NPDES permit since at least August 1992.” Id., at 611.

FOE appealed the District Court’s civil penalty judgment, arguing that the penalty was inadequate, but did not appeal the denial of declaratory or injunctive relief. Laidlaw cross-appealed, arguing, among other things, that FOE lacked standing to bring the suit and that DHEC’s action qualified as a diligent prosecution precluding FOE’s litigation. The United States continued to participate as amicus curiae in support of FOE.

On July 16, 1998, the Court of Appeals for the Fourth Circuit issued its judgment. 149 F.3d 303. The Court of Appeals assumed without deciding that FOE initially had standing to bring the action, id., at 306, n. 8, but went on to hold that the case had become moot. The appellate court stated, first, that the elements of Article III standing—injury, causation, and redressability—must persist at every stage of review, or else the action becomes moot. Id., at 306. Citing our decision in Steel Co., the Court of Appeals reasoned that the case had become moot because “the only remedy currently available to [FOE]—civil penalties payable to the government—would not redress any injury [FOE has] suffered.” 149 F.3d, at 306–307. The court therefore vacated the District Court’s order and remanded with instructions to dismiss the action. In a footnote, the Court of Appeals added that FOE’s “failure to obtain relief on the merits of [its] claims precludes any recovery of attorneys’ fees or other litigation costs because such an award is available only to a ‘prevailing or substantially prevailing party.’” Id., at 307, n. 5 (quoting 33 U.S.C. § 1365(d)).

According to Laidlaw, after the Court of Appeals issued its decision but before this Court granted certiorari, the entire incinerator facility in Roebuck was permanently closed, dismantled, and put up for sale, and all discharges from the facility permanently ceased. Respondent’s Suggestion of Mootness 3.


II

A

The Constitution’s case-or-controversy limitation on federal judicial authority, Art.
III, § 2, underpins both our standing and our mootness jurisprudence, but the two inquiries differ in respects critical to the proper resolution of this case, so we address them separately. Because the Court of Appeals was persuaded that the case had become moot and so held, it simply assumed without deciding that FOE had initial standing. See Arizonans for Official English v. Arizona, 520 U.S. 43, 66-67, 117 S.Ct. 1055, 137 L.Ed.2d 170 (1997) (court may assume without deciding that standing exists in order to analyze mootness). But because we hold that the Court of Appeals erred in declaring the case moot, we have an obligation to assure ourselves that FOE had Article III standing at the outset of the litigation. We therefore address the question of standing before turning to mootness.

[3, 4] In Lujan v. Defenders of Wildlife, 504 U.S. 555, 560-561, 112 S.Ct. 2130, 119 L.Ed.2d 381 (1992), we held that, to satisfy Article III's standing requirements, 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 will be redressed by a favorable decision. An association has standing to bring suit on behalf of its members when its members would otherwise have standing to sue in their own right, the interests at stake are germane to the organization's purpose, and neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit. Hunt v. Washington State Apple Advertising Comm'n, 432 U.S. 333, 343, 97 S.Ct. 2434, 53 L.Ed.2d 383 (1977).

[5] Laidlaw contends first that FOE lacked standing from the outset even to seek injunctive relief, because the plaintiff organizations failed to show that any of their members had sustained or faced the threat of any "injury in fact" from Laidlaw's activities. In support of this contention Laidlaw points to the District Court's finding, made in the course of setting the penalty amount, that there had been "no demonstrated proof of harm to the environment" from Laidlaw's mercury discharge violations. 956 F.Supp., at 602; see also id. ("[T]he NPDES permit violations at issue in this citizen suit did not result in any health risk or environmental harm.").

The relevant showing for purposes of Article III standing, however, is not injury to the environment but injury to the plaintiff. To insist upon the former rather than the latter as part of the standing inquiry (as the dissent in essence does, post, at 713-714) is to raise the standing hurdle higher than the necessary showing for success on the merits in an action alleging noncompliance with an NPDES permit. Focusing properly on injury to the plaintiff, the District Court found that FOE had demonstrated sufficient injury to establish standing. App. in No. 97-1246(CA4), at 207-208 (Tr. of Hearing 39-40). For example, FOE member Kenneth Lee Curtis averred in affidavits that he lived a half-mile from Laidlaw's facility; that he occasionally drove over the North Tyger River, and that it looked and smelled polluted; and that he would like to fish, camp, swim, and picnic in and near the river between 3 and 15 miles downstream from the facility, as he did when he was a teenager, but would not do so because he was concerned that the water was polluted by Laidlaw's discharges. Record, Doc. No. 71 (Exhs. 41, 42). Curtis reaffirmed these statements in extensive deposition testimony. For example, he testified that he would like to fish in the river at a specific spot he used as a boy, but that he would not do so because he was concerned that the water was polluted by Laidlaw's discharges. Record, Doc. No. 71 (Exhs. 41, 42). Curtis reaffirmed these statements in extensive deposition testimony. For example, he testified that he would like to fish in the river at a specific spot he used as a boy, but that he would not do so now because of his concerns about Laidlaw's discharges. Ibid. (Exh. 49, at 52-53; Exh. 44, at 33).

Other members presented evidence to similar effect. CLEAN member Angela Patterson attested that she lived two miles from the facility; that before Laidlaw op-
erated the facility, she picnicked, walked, birdwatched, and waded in and along the North Tyger River because of the natural beauty of the area; that she no longer engaged in these activities in or near the river because she was concerned about harmful effects from discharged pollutants; and that she and her husband would like to purchase a home near the river but did not intend to do so, in part because of Laidlaw's discharges. Record, Doc. No. 21 (Exh. 10). CLEAN member Judy Pruitt averred that she lived one-quarter mile from Laidlaw's facility and would like to fish, hike, and picnic along the North Tyger River, but has refrained from those activities because of the discharges. Ibid. (Exh. 7). FOE member Linda Moore attested that she lived 20 miles from Roebuck, and would use the North Tyger River south of Roebuck and the land surrounding it for recreational purposes were she not concerned that the water contained harmful pollutants. Record, Doc. No. 71 (Exhs. 45, 46). In her deposition, Moore testified at length that she would hike, picnic, camp, swim, boat, and drive near or in the river were it not for her concerns about illegal discharges. Ibid. (Exh. 48, at 29, 36–37, 62–63, 72).

CLEAN member Gail Lee attested that her home, which is near Laidlaw's facility, had a lower value than similar homes located farther from the facility, and that she believed the pollutant discharges accounted for some of the discrepancy. Record, Doc. No. 21 (Exh. 9). Sierra Club member Norman Sharp averred that he had canoed approximately 40 miles downstream of the Laidlaw facility and would like to canoe in the North Tyger River closer to Laidlaw's discharge point, but did not do so because he was concerned that the water contained harmful pollutants. Ibid. (Exh. 8).

[6] These sworn statements, as the District Court determined, adequately documented injury in fact. We have held that environmental plaintiffs adequately allege injury in fact when they aver that they use the affected area and are persons "for whom the aesthetic and recreational values of the area will be lessened" by the challenged activity. Sierra Club v. Morton, 405 U.S. 727, 735, 92 S.Ct. 1361, 31 L.Ed.2d 636 (1972). See also Defenders of Wildlife, 504 U.S., at 562–563, 112 S.Ct. 2130 ("Of course, the desire to use or observe an animal species, even for purely esthetic purposes, is undeniably a cognizable interest for purposes of standing.").

Our decision in Lujan v. National Wildlife Federation, 497 U.S. 871, 110 S.Ct. 3177, 111 L.Ed.2d 695 (1990), is not to the contrary. In that case an environmental organization assailed the Bureau of Land Management's "land withdrawal review program," a program covering millions of acres, alleging that the program illegally opened up public lands to mining activities. The defendants moved for summary judgment, challenging the plaintiff organization's standing to initiate the action under the Administrative Procedure Act, 5 U.S.C. § 702. We held that the plaintiff could not survive the summary judgment motion merely by offering "averments which state only that one of [the organization's] members uses unspecified portions of an immense tract of territory, on some portions of which mining activity has occurred or probably will occur by virtue of the governmental action." 497 U.S., at 889, 110 S.Ct. 3177.

In contrast, the affidavits and testimony presented by FOE in this case assert that Laidlaw's discharges, and the affiant members' reasonable concerns about the effects of those discharges, directly affected those affiants' recreational, aesthetic, and economic interests. These submissions present dispositively more than the mere "general averments" and "conclusory allegations" found inadequate in National Wildlife Federation. Id., at 889, 110 S.Ct. 3177. Nor can the affiants' conditional statements—that they would use the nearby North Tyger River for recreation if Laidlaw were not discharging pollutants into it—be equated with the speculative
‘some day’ intentions” to visit endangered species halfway around the world that we held insufficient to show injury in fact in *Defenders of Wildlife*. 504 U.S., at 554, 112 S.Ct. 2130.

*Los Angeles v. Lyons*, 461 U.S. 95, 103 S.Ct. 1660, 75 L.Ed.2d 675 (1983), relied on by the dissent, post, at 714, does not weigh against standing in this case. In *Lyons*, we held that a plaintiff lacked standing to seek an injunction against the enforcement of a police chokehold policy because he could not credibly allege that he faced a realistic threat from the policy. 461 U.S., at 107, n. 7, 103 S.Ct. 1660. In the footnote from *Lyons* cited by the dissent, we noted that “[t]he reasonableness of Lyons' fear is dependent upon the likelihood of a recurrence of the allegedly unlawful conduct,” and that his “subjective apprehensions” that such a recurrence would even take place were not enough to support standing. 461 U.S., at 108, n. 8, 103 S.Ct. 1660. Here, in contrast, it is undisputed that Laidlaw’s unlawful conduct—discharging pollutants in excess of permit limits—was occurring at the time the complaint was filed. Under *Lyons*, then, the only “subjective” issue here is “[t]he reasonableness of [the] fear” that led the affiants to respond to that concededly ongoing conduct by refraining from use of the North Tyger River and surrounding areas. Unlike the dissent, post, at 714, we see nothing “improbable” about the proposition that a company’s continuous and pervasive illegal discharges of pollutants into a river would cause nearby residents to curtail their recreational use of that waterway and would subject them to other economic and aesthetic harms. The proposition is entirely reasonable, the District Court found it was true in this case, and that is enough for injury in fact.

[7] Laidlaw argues next that even if FOE had standing to seek injunctive relief, it lacked standing to seek civil penalties. Here the asserted defect is not injury but redressability. Civil penalties offer no redress to private plaintiffs, Laidlaw argues, because they are paid to the Government, and therefore a citizen plaintiff can never have standing to seek them.

[8] Laidlaw is right to insist that a plaintiff must demonstrate standing separately for each form of relief sought. See, e.g., *Lyons*, 461 U.S., at 109, 103 S.Ct. 1660 (notwithstanding the fact that plaintiff had standing to pursue damages, he lacked standing to pursue injunctive relief); see also *Lewis v. Casey*, 518 U.S. 343, 358, n. 6, 116 S.Ct. 2174, 135 L.Ed.2d 606 (1996) (“[S]tanding is not dispensed in gross.”). But it is wrong to maintain that citizen plaintiffs facing ongoing violations never have standing to seek civil penalties.

We have recognized on numerous occasions that “all civil penalties have some deterrent effect.” *Hudson v. United States*, 522 U.S. 93, 102, 118 S.Ct. 488, 139 L.Ed.2d 450 (1997); see also, e.g., *Department of Revenue of Mont. v. Kurth Ranch*, 511 U.S. 767, 778, 114 S.Ct. 1937, 128 L.Ed.2d 767 (1994). More specifically, Congress has found that civil penalties in Clean Water Act cases do more than promote immediate compliance by limiting the defendant’s economic incentive to delay its attainment of permit limits; they also deter future violations. This congressional determination warrants judicial attention and respect. “The legislative history of the Act reveals that Congress wanted the district court to consider the need for retribution and deterrence, in addition to restitution, when it imposed civil penalties. . . . The district court may seek to deter future violations by basing the penalty on its economic impact.” *Tull v. United States*, 481 U.S. 412, 422–423, 107 S.Ct. 1831, 95 L.Ed.2d 365 (1987). It can scarcely be doubted that, for a plaintiff who is injured or faces the threat of future injury due to illegal conduct ongoing at the time of suit, a sanction that effectively abates that conduct and prevents its recurrence provides a form of redress. Civil penalties can fit that description. To the extent that they encour-
age defendants to discontinue current violations and deter them from committing future ones, they afford redress to citizen plaintiffs who are injured or threatened with injury as a consequence of ongoing unlawful conduct.

The dissent argues that it is the availability rather than the imposition of civil penalties that deters any particular polluter from continuing to pollute. Post, at 718-719. This argument misses the mark in two ways. First, it overlooks the interdependence of the availability and the imposition; a threat has no deterrent value unless it is credible that it will be carried out. Second, it is reasonable for Congress to conclude that an actual award of civil penalties does in fact bring with it a significant quantum of deterrence over and above what is achieved by the mere prospect of such penalties. A would-be polluter may or may not be dissuaded by the existence of a remedy on the books, but a defendant once hit in its pocketbook will surely think twice before polluting again.

We recognize that there may be a point at which the deterrent effect of a claim for civil penalties becomes so insubstantial or so remote that it cannot support citizen standing. The fact that this vanishing point is not easy to ascertain does not detract from the deterrent power of such penalties in the ordinary case. Justice Frankfurter's observations for the Court, made in a different context nearly 60 years ago, hold true here as well:

"How to effectuate policy—the adaptation of means to legitimately sought ends—is one of the most intractable of legislative problems. Whether pro-

2. The dissent suggests that there was little deterrent work for civil penalties to do in this case because the lawsuit brought against Laidlaw by DHEC had already pushed the level of deterrence to "near the top of the graph." Post, at 718. This suggestion ignores the District Court's specific finding that the penalty agreed to by Laidlaw and DHEC was far too low to remove Laidlaw's economic benefit from noncompliance, and thus was inadequate to deter future violations. 890 scribed conduct is to be deterred by qui tam action or triple damages or injunction, or by criminal prosecution, or merely by defense to actions in contract, or by some, or all, of these remedies in combination, is a matter within the legislature's range of choice. Judgment on the deterrent effect of the various weapons in the armory of the law can lay little claim to scientific basis." Tigner v. Texas, 310 U.S. 141, 148, 60 S.Ct. 879, 84 L.Ed. 1124 (1940).

In this case we need not explore the outer limits of the principle that civil penalties provide sufficient deterrence to support redressability. Here, the civil penalties sought by FOE carried with them a deterrent effect that made it likely, as opposed to merely speculative, that the penalties would redress FOE's injuries by abating current violations and preventing future ones—as the District Court reasonably found when it assessed a penalty of $405,800. 956 F.Supp., at 610-611.

Laidlaw contends that the reasoning of our decision in Steel Co. directs the conclusion that citizen plaintiffs have no standing to seek civil penalties under the Act. We disagree. Steel Co. established that citizen suitors lack standing to seek civil penalties for violations that have abated by the time of suit. 523 U.S., at 106-107, 118 S.Ct. 1003. We specifically noted in that case that there was no allegation in the complaint of any continuing or imminent violation, and that no basis for such an allegation appeared to exist. Id., at 108, 118 S.Ct. 1003; see also Gwaltney, 484 U.S., at 59, 108 S.Ct. 376 ("the harm sought to be addressed by the citizen suit lies in the


3. In Tigner the Court rejected an equal protection challenge to a statutory provision exempting agricultural producers from the reach of the Texas antitrust laws.
present or the future, not in the past”). In short, Steel Co. held that private plaintiffs, unlike the Federal Government, may not sue to assess penalties for wholly past violations, but our decision in that case did not reach the issue of standing to seek penalties for violations that are ongoing at the time of the complaint and that could continue into the future if undeterred.4

Satisfied that FOE had standing under Article III to bring this action, we turn to the question of mootness.

[9-11] The only conceivable basis for a finding of mootness in this case is Laidlaw’s voluntary conduct—either its achievement by August 1992 of substantial compliance with its NPDES permit or its more recent shutdown of the Roebuck facility. It is well settled 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.” City of Mesquite, 455 U.S., at 289, 102 S.Ct. 1070. “[I]f it did, the courts would be compelled to leave ‘[t]he defendant ... free to return to his old ways.’” Id., at 289, n. 10, 102 S.Ct. 1070 (citing United States v. W.T. Grant Co., 449 U.S. 629, 632, 98 S.Ct. 894, 77 L.Ed. 1303 (1988)). In accordance with this principle, the standard we have announced for determining whether a case has been mooted by the defendant’s voluntary conduct is stringent: “A case might become moot if subsequent events made it absolutely clear that the allegedly wrongful behavior could not reasonably be expected to recure.” United States v. Concentrated Phosphate Export Assn., 398 U.S. 199, 203, 89 S.Ct. 361, 21 L.Ed.2d 344 (1968). The “heavy burden of persuading” the court that the challenged conduct cannot reasonably be expected to start up again lies with the party asserting mootness. Ibid.

The Court of Appeals justified its mootness disposition by reference to Steel Co., which held that citizen plaintiffs lack standing to seek civil penalties for wholly past violations. In relying on Steel Co., the Court of Appeals confused mootness with standing. The confusion is understandable, given this Court’s repeated statements that the doctrine of mootness

4. In insisting that the redressability requirement is not met, the dissent relies heavily on Linda R.S. v. Richard D., 410 U.S. 614, 93 S.Ct. 1146, 35 L.Ed.2d 536 (1973). That reliance is sorely misplaced. In Linda R. S., the mother of an out-of-wedlock child filed suit to force a district attorney to bring a criminal prosecution against the absentee father for failure to pay child support. Id., at 616, 93 S.Ct. 1146. In finding that the mother lacked standing to seek this extraordinary remedy, the Court drew attention to “the special status of criminal prosecutions in our system,” id., at 619, 93 S.Ct. 1146, and carefully limited its holding to the “unique context of a challenge to [the nonenforcement of] a criminal statute,” id., at 617, 93 S.Ct. 1146. Furthermore, as to redressability, the relief sought in Linda R. S.—a prosecution which, if successful, would automatically land the delinquent father in jail for a fixed term, id., at 618, 93 S.Ct. 1146, with predictably negative effects on his earning power—would scarcely remedy the plaintiff’s lack of child support payments. In this regard, the Court contrasted “the civil contempt model whereby the defendant ‘keeps the keys to the jail in his own pocket’ and may be released whenever he complies with his legal obligations.” Ibid. The dissent’s contention, post, at 716, that “precisely the same situation exists here” as in Linda R. S. is, to say the least, extravagant.

Putting aside its mistaken reliance on Linda R. S., the dissent’s broader charge that citizen suits for civil penalties under the Act carry “grave implications for democratic governance,” post, at 715, seems to us overdrawn. Certainly the Federal Executive Branch does not share the dissent’s view that such suits dissipate its authority to enforce the law. In fact, the Department of Justice has endorsed this citizen suit from the outset, submitting amicus briefs in support of FOE in the District Court, the Court of Appeals, and this Court. See supra, at 702, 703. As we have already noted, supra, at 701, the Federal Government retains the power to foreclose a citizen suit by undertaking its own action. 33 U.S.C. § 1365(b)(1)(B). And if the Executive Branch opposes a particular citizen suit, the statute allows the Administrator of the EPA to “intervene as a matter of right” and bring the Government’s views to the attention of the court. § 1365(c)(2).
can be described as "the doctrine of standing set in a time frame: The requisite personal interest that must exist at the commencement of the litigation (standing) must continue throughout its existence (mootness)." *Arizonans for Official English*, 520 U.S., at 68, n. 22, 117 S.Ct. 1055 (quoting *United States Parole Comm'n v. Geraghty*, 445 U.S. 388, 397, 100 S.Ct. 1202, 63 L.Ed.2d 479 (1980), in turn quoting Monaghan, Constitutional Adjudication: The Who and When, 82 Yale L.J. 1363, 1384 (1973) (internal quotation marks omitted).

[12, 13] Careful reflection on the long-recognized exceptions to mootness, however, reveals that the description of mootness as "standing set in a time frame" is not comprehensive. As just noted, a defendant claiming that its voluntary compliance moots a case bears the formidable burden of showing that it is absolutely clear the allegedly wrongful behavior could not reasonably be expected to recur. *Concentrated Phosphate Export Assn.*, 393 U.S., at 203, 89 S.Ct. 361. By contrast, in a lawsuit brought to force compliance, it is the plaintiffs burden to establish standing by demonstrating that, if unchecked by the litigation, the defendant's allegedly wrongful behavior will likely occur or continue, and that the "threatened injury [is] certainly impending." *Whitmore v. Arkansas*, 495 U.S. 149, 158, 110 S.Ct. 1717, 109 L.Ed.2d 135 (1990) (citations and internal quotation marks omitted). Thus, in *Lyons*, as already noted, we held that a plaintiff lacked initial standing to seek an injunction against the enforcement of a police chokehold policy because he could not credibly allege that he faced a realistic threat arising from the policy. 461 U.S., at 105-110, 103 S.Ct. 1660. Elsewhere in the opinion, however, we noted that a citywide moratorium on police chokeholds—an action that surely diminished the already slim likelihood that any particular individual would be choked by police—would not have mooted an otherwise valid claim for injunctive relief, because the moratorium by its terms was not permanent. Id., at 101, 103 S.Ct. 1660. The plain lesson of these cases is that there are circumstances in which the prospect that a defendant will engage in (or resume) harmful conduct may be too speculative to support standing, but not too speculative to overcome mootness.

[14, 15] Furthermore, if mootness were simply "standing set in a time frame," the exception to mootness that arises when the defendant's allegedly unlawful activity is "capable of repetition, yet evading review," could not exist. When, for example, a mentally disabled patient files a lawsuit challenging her confinement in a segregated institution, her postcomplaint transfer to a community-based program will not moot the action, *Olmstead v. L.C.*, 527 U.S. 581, 594, n. 6, 119 S.Ct. 2176, 144 L.Ed.2d 540 (1999), despite the fact that she would have lacked initial standing had she filed the complaint after the transfer. Standing admits of no similar exception; if a plaintiff lacks standing at the time the action commences, the fact that the dispute is capable of repetition yet evading review will not entitle the complainant to a federal judicial forum. See *Steel Co.*, 523 U.S., at 109, 118 S.Ct. 1003 ("the mootness exception for disputes capable of repetition yet evading review ... will not revive a dispute which became moot before the action commenced") (quoting *Renne v. Geary*, 501 U.S. 312, 320, 111 S.Ct. 2331, 115 L.Ed.2d 288 (1991)).

We acknowledged the distinction between mootness and standing most recently in *Steel Co.*:

"The United States ... argues that the injunctive relief does constitute remediation because 'there is a presumption of [future] injury when the defendant has voluntarily ceased its illegal activity in response to litigation,' even if that occurs before a complaint is filed.... This makes a sword out of a shield. The 'presumption' the Government refers to has been applied to re-
fute the assertion of mootness by a defendant who, when sued in a complaint that alleges present or threatened injury, ceases the complained-of activity.... It is an immense and unacceptable stretch to call the presumption into service as a substitute for the allegation of present or threatened injury upon which initial standing must be based." 523 U.S., at 109, 118 S.Ct. 1003.

[16] Standing doctrine functions to ensure, among other things, that the scarce resources of the federal courts are devoted to those disputes in which the parties have a concrete stake. In contrast, by the time mootness is an issue, the case has been brought and litigated, often (as here) for years. To abandon the case at an advanced stage may prove more wasteful than frugal. This argument from sunk costs does not license courts to retain jurisdiction over cases in which one or both of the parties plainly lack a continuing interest, as when the parties have settled or a plaintiff pursuing a nonsurviving claim has died. See, e.g., DeFunis v. Odegaard, 416 U.S. 312, 94 S.Ct. 1704, 40 L.Ed.2d 164 (1974) (per curiam) (non-class-action challenge to constitutionality of law school admissions process mooted when plaintiff, admitted pursuant to preliminary injunction, reached graduation and defendant law school conceded that as a matter of ordinary school policy, plaintiff would be allowed to finish his final term); Arizona v. California, 520 U.S., at 67, 117 S.Ct. 1055 (non-class-action challenge to state constitutional amendment declaring English the official language of the State became moot when plaintiff, a state employee who sought to use her bilingual skills, left state employment). But the argument surely highlights an important difference between the two doctrines. See generally Honig v. Doe, 484 U.S. 305, 329-332, 108 S.Ct. 592, 98 L.Ed.2d 686 (1988) (REHNQUIST, C. J., concurring).

[17-21] In its brief, Laidlaw appears to argue that, regardless of the effect of Laidlaw's compliance, FOE doomed its own civil penalty claim to mootness by failing to appeal the District Court's denial of injunctive relief. Brief for Respondent 14-17. This argument misconceives the statutory scheme. Under § 1365(a), the district court has discretion to determine which form of relief is best suited, in the particular case, to abate current violations and deter future ones. “[A] federal judge sitting as chancellor is not mechanically obligated to grant an injunction for every violation of law.” Weinberger v. Romero-Barcelo, 456 U.S. 315, 320, 102 S.Ct. 1798, 72 L.Ed.2d 91 (1982). Denial of injunctive relief does not necessarily mean that the district court has concluded there is no prospect of future violations for civil penalties to deter. Indeed, it meant no such thing in this case. The District Court denied injunctive relief, but expressly based its award of civil penalties on the need for deterrence. See 956 F.Supp., at 610-611. As the dissent notes, post, at 717, federal courts should aim to ensure “the framing of relief no broader than required by the precise facts.” Schlesinger v. Reservists Comm. to Stop the War, 418 U.S. 208, 222, 94 S.Ct. 2925, 41 L.Ed.2d 706 (1974). In accordance with this aim, a district court in a Clean Water Act citizen suit properly may conclude that an injunction would be an excessively intrusive remedy, because it could entail continuing superintendence of the permit holder's activities by a federal court—a process burdensome to court and permit holder alike. See City of Mesquite, 455 U.S., at 289, 292 S.Ct. 1070 (although the defendant's voluntary cessation of the challenged practice does not moot the case, noting that courts should use caution to avoid carrying forward a moot case solely to vindicate a plaintiff's interest in recovering attorneys' fees.)
"Such abandonment is an important factor bearing on the question whether a court should exercise its power to enjoin the defendant from renewing the practice").

Laidlaw also asserts, in a supplemental suggestion of mootness, that the closure of its Roebuck facility, which took place after the Court of Appeals issued its decision, mooted the case. The facility closure, like Laidlaw's earlier achievement of substantial compliance with its permit requirements, might moot the case, but—we once more reiterate—only if one or the other of these events made it absolutely clear that Laidlaw's permit violations could not reasonably be expected to recur. Concentrated Phosphate Export Assn., 393 U.S., at 203, 89 S.Ct. 361. The effect of both Laidlaw's compliance and the facility closure on the prospect of future violations is a disputed factual matter. FOE points out, for example—and Laidlaw does not appear to contest—that Laidlaw retains its NPDES permit. These issues have not been aired in the lower courts; they remain open for consideration on remand. 6

C

[22] FOE argues that it is entitled to attorneys' fees on the theory that a plaintiff can be a "prevailing party" for purposes of 33 U.S.C. § 1365(d) if it was the "catalyst" that triggered a favorable outcome. In the decision under review, the Court of Appeals noted that its Circuit precedent construed our decision in Farrar v. Hobby, 506 U.S. 103, 113 S.Ct. 566, 121 L.Ed.2d 494 (1992), to require rejection of that theory. 149 F.3d, at 305 (describing order staying time for attorneys' fees petition). In the opinion accompanying its order on penalties, the District Court stated, in dicta, that

6. We note that it is far from clear that vacatur of the District Court's judgment would be the appropriate response to a finding of mootness on appeal brought about by the voluntary conduct of the party that lost in the District Court. See U.S. Bancorp Mortgage Co. v. Bonner Mall Partnership, 513 U.S. 18, 115 S.Ct. 386, 130 L.Ed.2d 233 (1994) (mootness attributable to a voluntary act of a nonprevailing party ordinarily does not justify vacatur of a judgment under review); see also Walling v. James V. Reuter, Inc., 321 U.S. 671, 64 S.Ct. 826, 88 L.Ed. 1001 (1944).


It would be premature, however, for us to address the continuing validity of the catalyst theory in the context of this case. The District Court, in an order separate from the one in which it imposed civil penalties against Laidlaw, stayed the time for a petition for attorneys' fees until the time for appeal had expired or, if either party appealed, until the appeal was resolved. See 149 F.3d, at 305 (describing order staying time for attorneys' fees petition). In the opinion accompanying its order on penalties, the District Court stat-
ed only that “this court has considered that Laidlaw will be required to reimburse plaintiffs for a significant amount of legal fees,” and referred to “potential fee awards.” 956 F.Supp., at 610–611. Thus, when the Court of Appeals addressed the availability of counsel fees in this case, no order was before it either denying or awarding fees. It is for the District Court, not this Court, to address in the first instance any request for reimbursement of costs, including fees.

* * *

For the reasons stated, the judgment of the United States Court of Appeals for the Fourth Circuit is reversed, and the case is remanded for further proceedings consistent with this opinion.

It is so ordered.

Justice STEVENS, concurring.

Although the Court has identified a sufficient reason for rejecting the Court of Appeals' mootness determination, it is important also to note that the case would not be moot even if it were absolutely clear that respondent had gone out of business and posed no threat of future permit violations. The District Court entered a valid judgment requiring respondent to pay a civil penalty of $405,800 to the United States. No postjudgment conduct of respondent could retroactively invalidate that judgment. A record of voluntary postjudgment compliance that would justify a decision that injunctive relief is unnecessary, or even a decision that any claim for injunctive relief is now moot, would not warrant vacation of the valid money judgment.


Furthermore, petitioners' claim for civil penalties would not be moot even if it were absolutely clear that respondent's violations could not reasonably be expected to recur because respondent achieved substantial compliance with its permit requirements after petitioners filed their complaint but before the District Court entered judgment. As the Courts of Appeals (other than the court below) have uniformly concluded, a polluter's voluntary postcomplaint cessation of an alleged violation will not moot a citizen-suit claim for civil penalties even if it is sufficient to moot a related claim for injunctive or declaratory relief.* This conclusion is consistent with the structure of the Clean Water Act, which attaches liability for civil penalties at the time a permit violation occurs. 33 U.S.C. § 1319(d) (“Any person who violates [certain provisions of the Act or certain permit conditions and limitations] shall be subject to a civil penalty . . . ”). It is also consistent with the character of civil penalties, which, for purposes of mootness analysis, should be equated with punitive damages rather than with injunctive or declaratory relief. See Tull v. United States, 481 U.S. 412, 422–423, 107 S.Ct. 1831, 95 L.Ed.2d 365 (1987). No one contends that a defendant's postcomplaint conduct could moot a claim for punitive damages; civil penalties should be treated the same way.

The cases cited by the Court in its discussion of the mootness issue all involved requests for injunctive or declaratory relief. In only one, Los Angeles v. Lyons, 461 U.S. 95, 108 S.Ct. 1660, 75 L.Ed.2d 675 (1983), did the plaintiff seek damages, and
in that case the opinion makes it clear that the inability to obtain injunctive relief would have no impact on the damages claim. Id., at 105, n. 6, 109, 103 S.Ct. 1660. There is no precedent, either in our jurisprudence, or in any other of which I am aware, that provides any support for the suggestion that postcomplaint factual developments that might moot a claim for injunctive or declaratory relief could either moot a claim for monetary relief or retroactively invalidate a valid money judgment.

Justice KENNEDY, concurring.

Difficult and fundamental questions are raised when we ask whether exactions of public fines by private litigants, and the delegation of Executive power which might be inferable from the authorization, are permissible in view of the responsibilities committed to the Executive by Article II of the Constitution of the United States. The questions presented in the petition for certiorari did not identify these issues with particularity; and neither the Court of Appeals in deciding the case nor the parties in their briefing before this Court devoted specific attention to the subject. In my view these matters are best reserved for a later case. With this observation, I join the opinion of the Court.

Justice SCALIA, with whom Justice THOMAS joins, dissenting.

The Court begins its analysis by finding injury in fact on the basis of vague affidavits that are undermined by the District Court's express finding that Laidlaw's discharges caused no demonstrable harm to the environment. It then proceeds to marry private wrong with public remedy in a union that violates traditional principles of federal standing—thereby permitting law enforcement to be placed in the hands of private individuals. Finally, the Court suggests that to avoid mootness one needs even less of a stake in the outcome than the Court's watered-down requirements for initial standing. I dissent from all of this.

Plaintiffs, as the parties invoking federal jurisdiction, have the burden of proof and persuasion as to the existence of standing. Lujan v. Defenders of Wildlife, 504 U.S. 555, 561, 112 S.Ct. 2130, 119 L.Ed.2d 551 (1992) (hereinafter Lujan); FW/PBS, Inc. v. Dallas, 493 U.S. 215, 231, 110 S.Ct. 596, 107 L.Ed.2d 603 (1990). The plaintiffs in this case fell far short of carrying their burden of demonstrating injury in fact. The Court cites affiants' testimony asserting that their enjoyment of the North Tyger River has been diminished due to "concern" that the water was polluted, and that they "believed" that Laidlaw's mercury exceedances had reduced the value of their homes. Ante, at 704–705. These averments alone cannot carry the plaintiffs' burden of demonstrating that they have suffered a "concrete and particularized" injury, Lujan, 504 U.S., at 560, 112 S.Ct. 2130. General allegations of injury may suffice at the pleading stage, but at summary judgment plaintiffs must set forth "specific facts" to support their claims. Id., at 561, 112 S.Ct. 2130. And where, as here, the case has proceeded to judgment, those specific facts must be "supported adequately by the evidence adduced at trial," ibid. (quoting Gladstone, Realtors v. Village of Bellwood, 441 U.S. 91, 115, n. 31, 99 S.Ct. 1601, 60 L.Ed.2d 66 (1979)). In this case, the affidavits themselves are woefully short on "specific facts," and the vague allegations of injury they do make are undermined by the evidence adduced at trial.

Typically, an environmental plaintiff claiming injury due to discharges in violation of the Clean Water Act argues that the discharges harm the environment, and that the harm to the environment injures him. This route to injury is barred in the present case, however, since the District Court concluded after considering all the evidence that there had been "no demonstrated proof of harm to the environment,"
956 F.Supp. 588, 602 (D.S.C.1997), that the “permit violations at issue in this citizen suit did not result in any health risk or environmental harm,” ibid., that “[a]ll available data ... fail to show that Laidlaw's actual discharges have resulted in harm to the North Tyger River,” id., at 602-603, and that “the overall quality of the river exceeds levels necessary to support ... recreation in and on the water,” id., at 600.

The Court finds these conclusions unproblematic for standing, because “[t]he relevant showing for purposes of Article III standing ... is not injury to the environment but injury to the plaintiff.” Ante, at 704. This statement is correct, as far as it goes. We have certainly held that a demonstration of harm to the environment is not enough to satisfy the injury-in-fact requirement unless the plaintiff can demonstrate how he personally was harmed. E.g., Lujan, supra, at 563, 112 S.Ct. 2130. In the normal course, however, a lack of demonstrable harm to the environment will translate, as it plainly does here, into a lack of demonstrable harm to citizen plaintiffs. While it is perhaps possible that a plaintiff could be harmed even though the environment was not, such a plaintiff would have the burden of articulating and demonstrating the nature of that injury. Ongoing “concerns” about the environment are not enough, for “[i]t is the reality of the threat of repeated injury that is relevant to the standing inquiry, not the plaintiff's subjective apprehensions,” Los Angeles v. Lyons, 461 U.S. 95, 107, n. 8, 103 S.Ct. 1660, 75 L.Ed.2d 675 (1983). At the very least, in the present case, one would expect to see evidence supporting the affidavits' bald assertions regarding decreasing recreational usage and declining home values, as well as evidence for the improbable proposition that Laidlaw's violations, even though harmless to the environment, are somehow responsible for these effects. Cf. Gladstone, supra, at 115, 99 S.Ct. 1601 (noting that standing could be established by “convincing evidence” that a decline in real estate values was attributable to the defendant’s conduct). Plaintiffs here have made no attempt at such a showing, but rely entirely upon unsupported and unexplained affidavit allegations of “concern.” Indeed, every one of the affiants deposed by Laidlaw cast into doubt the (in any event inadequate) proposition that subjective “concerns” actually affected their conduct. Linda Moore, for example, said in her affidavit that she would use the affected waterways for recreation if it were not for her concern about pollution. Record, Doc. No. 71 (Exhs. 45, 46). Yet she testified in her deposition that she had been to the river only twice, once in 1980 (when she visited someone who lived by the river) and once after this suit was filed. Record, Doc. No. 62 (Moore Deposition 23-24). Similarly, Kenneth Lee Curtis, who claimed he was injured by being deprived of recreational activity at the river, admitted that he had not been to the river since he was “a kid,” ibid. (Curtis Deposition, pt. 2, p. 38), and when asked whether the reason he stopped visiting the river was because of pollution, answered “no,” id., at 39. As to Curtis's claim that the river “looked and smelled polluted,” this condition, if present, was surely not caused by Laidlaw's discharges, which according to the District Court “did not result in any health risk or environmental harm.” 956 F.Supp., at 602. The other affiants cited by the Court were not deposed, but their affidavits state either that they would use the river if it were not polluted or harmful (as the court subsequently found it is not), Record, Doc. No. 21 (Exhs. 7, 18, and 9), or said that the river looks polluted (which is also incompatible with the court's findings), ibid. (Exh. 10). These affiants have established nothing but “subjective apprehensions.”

The Court is correct that the District Court explicitly found standing—albeit “by the very slimmest of margins,” and as “an awfully close call.” App. in No. 97-1246 (C.A.A), pp. 207-208 (Tr. of Hearing 39-40 (June 30, 1998)). That cautious finding,
however, was made in 1993, long before the court's 1997 conclusion that Laidlaw's discharges did not harm the environment. As we have previously recognized, an initial conclusion that plaintiffs have standing is subject to reexamination, particularly if later evidence proves inconsistent with that conclusion. *Gladstone*, 441 U.S., at 115, and n. 31, 99 S.Ct. 1601; *Wyoming v. Oklahoma*, 502 U.S. 437, 446, 112 S.Ct. 789, 117 L.Ed.2d 1 (1992). Laidlaw challenged the existence of injury in fact on appeal to the Fourth Circuit, but that court did not reach the question. Thus no lower court has reviewed the injury-in-fact issue in light of the extensive studies that led the District Court to conclude that the environment was not harmed by Laidlaw's discharges.

Inexplicably, the Court is untroubled by this, but proceeds to find injury in fact in the most casual fashion, as though it is merely confirming a careful analysis made below. Although we have previously refused to find standing based on the "conclusory allegations of an affidavit," *Lujan v. National Wildlife Federation*, 497 U.S. 871, 888, 110 S.Ct. 3177, 111 L.Ed.2d 695 (1990), the Court is content to do just that today. By accepting plaintiffs' vague, contradictory, and unsubstantiated allegations of "concern" about the environment as adequate to prove injury in fact, and accepting them even in the face of a finding that the environment was not demonstrably harmed, the Court makes the injury-in-fact requirement a sham.

If there are permit violations, and a member of a plaintiff environmental organization lives near the offending plant, it would be difficult not to satisfy today's lenient standard.

The Court's treatment of the redressability requirement—which would have been unnecessary if it resolved the injury-in-fact question correctly—is equally cavalier. As discussed above, petitioners allege ongoing injury consisting of diminisbed enjoyment of the affected waterways and decreased property values. They allege that these injuries are caused by Laidlaw's continuing permit violations. But the remedy petitioners seek is neither recompense for their injuries nor an injunction against future violations. Instead, the remedy is a statutorily specified "penalty" for past violations, payable entirely to the United States Treasury. Only last Term, we held that such penalties do not redress any injury a citizen plaintiff has suffered from past violations. *Steel Co. v. Citizens for a Better Environment*, 523 U.S. 83, 106-107, 118 S.Ct. 1003, 140 L.Ed.2d 210 (1998). The Court nonetheless finds the redressability requirement satisfied here, distinguishing *Steel Co.* on the ground that in this case petitioners allege ongoing violations; payment of the penalties, it says, will remedy petitioners' injury by deterring future violations by Laidlaw. *Ante*, at 706-707. It holds that a penalty payable to the public "remedies" a threatened private harm, and suffices to sustain a private suit.

That holding has no precedent in our jurisprudence, and takes this Court beyond the "cases and controversies" that Article III of the Constitution has entrusted to its resolution. Even if it were appropriate, moreover, to allow Article III's remediation requirement to be satisfied by the indirect private consequences of a public penalty, those consequences are entirely too speculative in the present case. The new standing law that the Court makes—like all expansions of standing beyond the traditional constitutional limits—has grave implications for democratic governance. I shall discuss these three points in turn.

Although that provision made it a misdemeanor for "any parent" to refuse to support his or her minor children under 18 years of age, it was enforced only against married parents. That refusal, the plaintiff contended, deprived her and her child of the equal protection of the law by denying them the deterrent effect of the statute upon the father's failure to fulfill his support obligation. The Court held that there was no Article III standing. There was no "direct relationship," it said, "between the alleged injury and the claim sought to be adjudicated," since "[t]he prospect that prosecution will, at least in the future, result in payment of support can, at best, be termed only speculative." Id., at 618, 93 S.Ct. 1146. "[O]ur cases] demonstrate that, in American jurisprudence at least, a private citizen lacks a judicially cognizable interest in the prosecution or nonprosecution of another." Id., at 619, 93 S.Ct. 1146.

Although the Court in *Linda R.S.* recited the "logical nexus" analysis of *Flast v. Cohen*, 392 U.S. 83, 88 S.Ct. 1942, 20 L.Ed.2d 947 (1968), which has since fallen into desuetude, "it is clear that standing was denied ... because of the unlikelihood that the relief requested would redress appellant's claimed injury." *Duke Power Co. v. Carolina Environmental Study Group, Inc.*, 438 U.S. 59, 79, n. 24, 98 S.Ct. 2620, 57 L.Ed.2d 595 (1978). There was no "logical nexus" between nonenforcement of the statute and *Linda R.*'s failure to receive support payments because "[t]he prospect that prosecution will ... result in payment of support" was "speculative," *Linda R. S., supra*, at 618, 93 S.Ct. 1146—that is to say, it was uncertain whether the relief would prevent the injury.1 Of course precisely the same situation exists here. The principle that "in American jurisprudence ... a private citizen lacks a judicially cognizable interest in the prosecution or nonprosecution of another" applies no less to prosecution for civil penalties payable to the State than to prosecution for criminal penalties owing to the State.

The Court's opinion reads as though the only purpose and effect of the redressability requirement is to assure that the plaintiff receive some of the benefit of the relief that a court orders. That is not so. If it were, a federal tort plaintiff fearing repetition of the injury could ask for tort damages to be paid not only to himself but to other victims as well, on the theory that those damages would have at least some deterrent effect beneficial to him. Such a suit is preposterous because the "remediation" that is the traditional business of Anglo-American courts is relief specifically tailored to the plaintiff's injury, and not any sort of relief that has some incidental benefit to the plaintiff. Just as a "generalized grievance" that affects the entire citizenry cannot satisfy the injury-in-fact requirement even though it aggrieves the plaintiff along with everyone else, see *Lujan*, 504 U.S., at 573-574, 112 S.Ct. 2130, so also a generalized remedy that deters all future unlawful activity against all persons cannot satisfy the remediation requirement, even though it deters (among other things) repetition of this particular unlawful activity against these particular plaintiffs.

Thus, relief against prospective harm is traditionally afforded by way of an injunction, the scope of which is limited by the scope of the threatened injury. *Lewis v. Casey*, 518 U.S. 343, 357-360, 116 S.Ct. 2174, 135 L.Ed.2d 606 (1996); *Lyons*, 461 U.S., at 105-107, and n. 7, 103 S.Ct. 1660. In seeking to overturn that tradition by

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1. The decision in *Linda R.S.* did not turn, as today's opinion imaginatively suggests, on the father's short-term inability to pay support if imprisoned. *Ante*, at 708, n. 4. The Court's only comment upon the imprisonment was that, unlike imprisonment for civil contempt, it would not condition the father's release upon payment. The Court then continued: 'The prospect that prosecution will, at least in the future'—i.e., upon completion of the imprisonment—"result in payment of support can, at best, be termed only speculative." *Linda R. S.*, 410 U.S., at 618, 93 S.Ct. 1146.
giving an individual plaintiff the power to invoke a public remedy, Congress has done precisely what we have said it cannot do: convert an "undifferentiated public interest" into an "individual right" vindicable in the courts. *Lujan*, supra, at 577, 112 S.Ct. 2130; *Steel Co.*, 523 U.S., at 106, 118 S.Ct. 1003. The sort of scattershot redress approved today makes nonsense of our statement in *Schlesinger v. Reservists Comm. to Stop the War*, 418 U.S. 208, 222, 94 S.Ct. 2925 (1974), that the requirement of injury in fact "insures the framing of relief no broader than required by the precise facts." A claim of particularized future injury has today been made the vehicle for pursuing generalized penalties for past violations, and a threshold showing of injury in fact has become a lever that will move the world.

B

As I have just discussed, it is my view that a plaintiff's desire to benefit from the deterrent effect of a public penalty for past conduct can never suffice to establish a case or controversy of the sort known to our law. Such deterrent effect is, so to speak, "speculative as a matter of law." Even if that were not so, however, the deterrent effect in the present case would surely be speculative as a matter of fact.

The Court recognizes, of course, that to satisfy Article III, it must be "likely," as opposed to "merely speculative," that a favorable decision will redress plaintiffs' injury, *Lujan*, supra, at 561, 112 S.Ct. 2130. See *ante*, at 704. Further, the Court recognizes that not all deterrent effects of all civil penalties will meet this standard—though it declines to "explore the outer limits" of adequate deterrence, *ante*, at 707. It concludes, however, that in the present case "the civil penalties sought by FOE carried with them a deterrent effect" that satisfied the "likely [rather than] speculative" standard. *Ibid.* There is little in the Court's opinion to explain why it believes this is so.

The Court cites the District Court's conclusion that the penalties imposed, along with anticipated fee awards, provided "adequate deterrence." *Ante*, at 703, 707; 956 F.Supp., at 611. There is absolutely no reason to believe, however, that this meant "deterrence adequate to prevent an injury to these plaintiffs that would otherwise occur." The statute does not even mention deterrence in general (much less deterrence of future harm to the particular plaintiff) as one of the elements that the court should consider in fixing the amount of the penalty. (That element can come in, if at all, under the last, residual category of "such other matters as justice may require." 33 U.S.C. § 1319(d).) The statute does require the court to consider "the seriousness of the violation or violations, the economic benefit (if any) resulting from the violation, any history of such violations, any good-faith efforts to comply with the applicable requirements, [and] the economic impact of the penalty on the violator...." *Ibid.*, see 956 F.Supp., at 601. The District Court meticulously discussed, in subsections (a) through (e) of the portion of its opinion entitled "Civil Penalty," each one of those specified factors, and then—under subsection (f) entitled "Other Matters As Justice May Require," it discussed "1. Laidlaw's Failure to Avail Itself of the Reopener Clause," "2. Recent Compliance History," and "3. The Ever-Changing Mercury Limit." There is no mention whatever—in this portion of the opinion or anywhere else—of the degree of deterrence necessary to prevent future harm to these particular plaintiffs. Indeed, neither the District Court's final opinion (which contains the "adequate deterrence" statement) nor its earlier opinion dealing with the preliminary question whether South Carolina's previous lawsuit against Laidlaw constituted "diligent prosecution" that would bar citizen suit, see 33 U.S.C. § 1365(b)(1)(B), displayed any awareness that deterrence of future injury to the plaintiffs was necessary to support standing.
The District Court's earlier opinion did, however, quote with approval the passage from a District Court case which began: " Civil penalties seek to deter pollution by discouraging future violations. To serve this function, the amount of the civil penalty must be high enough to insure that polluters cannot simply absorb the penalty as a cost of doing business."

App. 122, quoting PIRG v. Powell Duffryn Terminals, Inc., 720 F.Supp. 1158, 1166 (D.N.J. 1989). When the District Court concluded the "Civil Penalty" section of its opinion with the statement that "[t]aken together, this court believes the above penalty, potential fee awards, and Laidlaw's own direct and indirect litigation expenses provide adequate deterrence under the circumstances of this case," 956 F.Supp., at 611, it was obviously harking back to this general statement of what the statutorily prescribed factors (and the "as justice may require" factors, which in this case did not include particularized or even generalized deterrence) were designed to achieve. It meant no more than that the court believed the civil penalty it had prescribed met the statutory standards.

The Court points out that we have previously said "all civil penalties have some deterrent effect," ante, at 706 (quoting Hudson v. United States, 522 U.S. 93, 102, 118 S.Ct. 488, 139 L.Ed.2d 450 (1997)). That is unquestionably true: As a general matter, polluters as a class are deterred from violating discharge limits by the availability of civil penalties. However, none of the cases the Court cites focused on the deterrent effect of a single imposition of penalties on a particular lawbreaker. Even less did they focus on the question whether that particularized deterrent effect (if any) was enough to redress the injury of a citizen plaintiff in the sense required by Article III. They all involved penalties pursued by the government, not by citizens. See id., at 96, 118 S.Ct. 488; Department of Revenue of Mont. v. Kurth Ranch, 511 U.S. 767, 778, 114 S.Ct. 1937, 128 L.Ed.2d 767 (1994); Tull v. United States, 481 U.S. 412, 414, 107 S.Ct. 1831, 95 L.Ed.2d 365 (1987).

If the Court had undertaken the necessary inquiry into whether significant deterrence of the plaintiffs' feared injury was "likely," it would have had to reason something like this: Strictly speaking, no polluter is deterred by a penalty for past pollution; he is deterred by the fear of a penalty for future pollution. That fear will be virtually nonexistent if the prospective polluter knows that all emissions violators are given a free pass; it will be substantial under an emissions program such as the federal scheme here, which is regularly and notoriously enforced; it will be even higher when a prospective polluter subject to such a regularly enforced program has, as here, been the object of public charges of pollution and a suit for injunction; and it will surely be near the top of the graph when, as here, the prospective polluter has already been subjected to state penalties for the past pollution. The deterrence on which the plaintiffs must rely for standing in the present case is the marginal increase in Laidlaw's fear of future penalties that will be achieved by adding federal penalties for Laidlaw's past conduct.

I cannot say for certain that this marginal increase is zero; but I can say for certain that it is entirely speculative whether it will make the difference between these plaintiffs' suffering injury in the future and these plaintiffs' going unhurted. In fact, the assertion that it will "likely" do so is entirely farfetched. The speculativeness of that result is much greater than the speculativeness we found excessive in Simon v. Eastern Ky. Welfare Rights Organization, 426 U.S. 26, 43, 96 S.Ct. 1917, 48 L.Ed.2d 450 (1976), where we held that denying § 501(c)(3) charitable-deduction tax status to hospitals that refused to treat indigents was not sufficiently likely to assure future treatment of the indigent plaintiffs to support standing. And it is much greater than the specula-
tiveness we found excessive in *Linda R.S. v. Richard D.*, discussed *supra*, at 715-716, where we said that "the prospect that prosecution [for nonsupport] will . . . result in payment of support can, at best, be termed only speculative," 410 U.S., at 618, 93 S.Ct. 1146.

In sum, if this case is, as the Court suggests, within the central core of "deterrence" standing, it is impossible to imagine what the "outer limits" could possibly be. The Court's expressed reluctance to define those "outer limits" serves only to disguise the fact that it has promulgated a revolutionary new doctrine of standing that will permit the entire body of public civil penalties to be handed over to enforcement by private interests.

C

Article II of the Constitution commits it to the President to "take Care that the Laws be faithfully executed," Art. II, § 3, and provides specific methods by which all persons exercising significant executive power are to be appointed, Art. II, § 2. As Justice KENNEDY'S concurrence correctly observes, the question of the conformity of this legislation with Article II has not been argued—and I, like the Court, do not address it. But Article III, no less than Article II, has consequences for the structure of our government, see *Schlesinger*, 418 U.S., at 222, 94 S.Ct. 2925, and it is worth noting the changes in that structure which today's decision allows.

By permitting citizens to pursue civil penalties payable to the Federal Treasury, the Act does not provide a mechanism for individual relief in any traditional sense, but turns over to private citizens the function of enforcing the law. A Clean Water Act plaintiff pursuing civil penalties acts as a self-appointed mini-EPA. Where, as is often the case, the plaintiff is a national association, it has significant discretion in choosing enforcement targets. Once the association is aware of a reported violation, it need not look long for an injured member, at least under the theory of injury the Court applies today. See *supra*, at 700-702. And once the target is chosen, the suit goes forward without meaningful public control. The availability of civil penalties vastly disproportionate to the individual injury gives citizen plaintiffs massive bargaining power—which is often used to achieve settlements requiring the defendant to support environmental projects of the plaintiffs' choosing. See Greve, The Private Enforcement of Environmental Law, 65 Tulane L.Rev. 339, 355-359 (1990). Thus is a public fine diverted to a private interest.

To be sure, the EPA may foreclose the citizen suit by itself bringing suit. 33 U.S.C. § 1365(b)(1)(B). This allows public authorities to avoid private enforcement only by accepting private direction as to when enforcement should be undertaken—which is no less constitutionally bizarre. Elected officials are entirely deprived of their discretion to decide that a given violation should not be the object of suit at all, or that the enforcement decision should be postponed. See § 1365(b)(1)(A) (providing that citizen plaintiff need only wait

2. The Court points out that the Government is allowed to intervene in a citizen suit, see *ante*, at 708, n. 4; 33 U.S.C. § 1365(c)(2), but this power to "bring the Government's views to the attention of the court," *ante*, at 708, n. 4, is meager substitute for the power to decide whether prosecution will occur. Indeed, according the Chief Executive of the United States the ability to intervene does no more than place him on a par with John Q. Public, who can intervene—whether the Government likes it or not—when the United States files suit. § 1365(b)(1)(B).

3. The Court observes that "the Federal Executive Branch does not share the dissent's view that such suits dissipate its authority to enforce the law," since it has "endorsed this citizen suit from the outset." *Ante*, at 708, n. 4. Of course, in doubtful cases a long and uninterrupted history of Presidential acquiescence and approval can shed light upon the constitutional understanding. What we have here—acquiescence and approval by a single administration—does not deserve passing mention.
60 days after giving notice of the violation to the government before proceeding with action). This is the predictable and inevitable consequence of the Court's allowing the use of public remedies for private wrongs.

III

Finally, I offer a few comments regarding the Court's discussion of whether FOE's claims became moot by reason of Laidlaw's substantial compliance with the permit limits. I do not disagree with the conclusion that the Court reaches. Assuming that the plaintiffs had standing to pursue civil penalties in the first instance (which they did not), their claim might well not have been mooted by Laidlaw's voluntary compliance with the permit, and leaving this fact-intensive question open for consideration on remand, as the Court does, ante, at 711, seems sensible. In reaching this disposition, however, the Court engages in a troubling discussion of the purported distinctions between the doctrines of standing and mootness. I am frankly puzzled as to why this discussion appears at all. Laidlaw's claimed compliance is squarely within the bounds of our "voluntary cessation" doctrine, which is the basis for the remand. Ante, at 710.

There is no reason to engage in an interesting academic excursus upon the differences between mootness and standing in order to invoke this obviously applicable rule.

4. In addition to the compliance and plant-closure issues, there also remains open on remand the question whether the current suit was foreclosed because the earlier suit by the State was "diligently prosecuted." See 33 U.S.C. § 1365(b)(1)(B). Nothing in the Court's opinion disposes of the issue. The opinion notes the District Court's finding that Laidlaw itself played a significant role in facilitating the State's action. Ante, at 702, n. 1, 707, n. 2. But there is no incompatibility whatever between a defendant's facilitation of suit and the State's diligent prosecution—as prosecutions of felons who confess their crimes and turn themselves in regularly demonstrate. Laidlaw was entirely within its rights to prefer state suit to this private enforcement action; and if it had such a preference it would have been prudent—given that a State must act within 60 days of receiving the notice of a citizen suit, see § 1365(b)(1)(A), and given the number of cases state agencies handle—for Laidlaw to make sure its case did not fall through the cracks. South Carolina's interest in the action was not a feigned last minute contrivance. It had worked with Laidlaw in resolving the problem for many years, and had previously undertaken an administrative enforcement action resulting in a consent order. 890 F.3d 303, 306 (1998). While this might be characterized as a conclusion that FOE had no standing to pursue civil penalties from the outset, it can also be characterized, as it was by the Fourth Circuit, as a conclusion that, when FOE declined to appeal denial of the declaratory judgment and injunction, and appealed only the inadequacy of the civil penalties (which it had no standing to pursue) the case as a whole became moot. Given the Court's erroneous conclusion that civil penal-

5. Unlike Justice STEVENS' concurrence, the opinion for the Court appears to recognize that a claim for civil penalties is moot when it is clear that no future injury to the plaintiff at the hands of the defendant can occur. The concurrence suggests that civil penalties, like traditional damages remedies, cannot be mooted by absence of threatened injury. The analogy is inapt. Traditional money damages are payable to compensate for the harm of past conduct, which subsists whether future harm is threatened or not; civil penalties are privately assessable (according to the Court) to deter threatened future harm to the plaintiff. Where there is no threat to the plaintiff, he has no claim to deterrence. The proposition that impossibility of future violation does not moot the case holds true, of course, for civil-penalty suits by the government, which do not rest upon the theory that some particular future harm is being prevented.

6. The Court attempts to frame its exposition as a corrective to the Fourth Circuit, which it claims "confused mootness with standing." Ante, at 708. The Fourth Circuit's conclusion of nonjusticiability rested upon the belief (entirely correct, in my view) that the only remedy being pursued on appeal, civil penalties, would not redress FOE's claimed injury. 149 F.3d 303, 306 (1998). While this might be characterized as a conclusion that FOE had no standing to pursue civil penalties from the outset, in any event, it can also be characterized, as it was by the Fourth Circuit, as a conclusion that, when FOE declined to appeal denial of the declaratory judgment and injunction, and appealed only the inadequacy of the civil penalties (which it had no standing to pursue) the case as a whole became moot. Given the Court's erroneous conclusion that civil penal-
Because the discussion is not essential—indeed, not even relevant—to the Court's decision, it is of limited significance. Nonetheless, I am troubled by the Court's too-hasty retreat from our characterization of mootness as "the doctrine of standing set in a time frame." *Arizonaans for Official English v. Arizona*, 520 U.S. 43, 68, n. 22, 117 S.Ct. 1055, 137 L.Ed.2d 170 (1997).

We have repeatedly recognized that what is required for litigation to continue is essentially identical to what is required for litigation to begin: There must be a justiciable case or controversy as required by Article III. "Simply stated, a case is moot when the issues presented are no longer 'live' or the parties lack a legally cognizable interest in the outcome." *Powell v. McCormack*, 395 U.S. 486, 496, 89 S.Ct. 1944, 23 L.Ed.2d 491 (1969). A court may not proceed to hear an action if, subsequent to its initiation, the dispute loses "its character as a present, live controversy of the kind that must exist if [the court is] to avoid advisory opinions on abstract propositions of law." *Hall v. Beals*, 396 U.S. 45, 48, 90 S.Ct. 200, 24 L.Ed.2d 214 (1969) (per curiam). See also *Preiser v. Newkirk*, 422 U.S. 395, 401, 95 S.Ct. 2330, 45 L.Ed.2d 272 (1975); *Steffel v. Thompson*, 415 U.S. 452, 459, n. 10, 94 S.Ct. 1209, 39 L.Ed.2d 505 (1974). Because the requirement of a continuing case or controversy derives from the Constitution, *Liner v. Jafco, Inc.*, 375 U.S. 301, 306, n. 3, 84 S.Ct. 391, 11 L.Ed.2d 347 (1964), it may not be ignored when inconvenient, *United States v. Alaska S.S. Co.*, 253 U.S. 118, 116, 40 S.Ct. 448, 64 L.Ed. 808 (1920) (most question cannot be decided, "[h]owever convenient it might be"), or, as the Court suggests, to save "sunk costs," compare *ante*, at 710, with *Lewis v. Continental Bank Corp.*, 494 U.S. 472, 480, 110 S.Ct. 1249, 108 L.Ed.2d 400 (1990) ("[R]easonable caution is needed to be sure that mooted litigation is not pressed forward . . . solely in order to obtain reimbursement of sunk costs").

It is true that mootness has some added wrinkles that standing lacks. One is the "voluntary cessation" doctrine to which the Court refers. *Ante*, at 708. But it is inaccurate to regard this as a reduction of the basic requirement for standing that obtained at the beginning of the suit. A genuine controversy must exist at both stages. And just as the initial suit could be brought (by way of suit for declaratory judgment) before the defendant actually violated the plaintiff's alleged rights, so also the initial suit can be continued even though the defendant has stopped violating the plaintiff's alleged rights. The "voluntary cessation" doctrine is nothing more than an evidentiary presumption that the controversy reflected by the violation of alleged rights continues to exist. *Steel Co.*, 523 U.S., at 109, 118 S.Ct. 1003. Similarly, the fact that we do not find cases moot when the challenged conduct is "capable of repetition, yet evading review" does not demonstrate that the requirements for mootness and for standing differ. "Where the conduct has ceased for the time being but there is a demonstrated probability that it will recur, a real-life controversy between parties with a personal stake in the outcome continues to exist." *Honig v. Doe*, 484 U.S. 305, 314, 108 S.Ct. 592, 596, 98 L.Ed.2d 686 (1988) (SCALIA, J., dissenting) (emphasis deleted).

Part of the confusion in the Court's discussion is engendered by the fact that it compares standing, on the one hand, with mootness based on voluntary cessation, on the other hand. *Ante*, at 709. The required showing that it is "absolutely clear" that the conduct "could not reasonably be expected to recur" is not the threshold showing required for mootness, but the heightened showing required in a particular category of cases where we have sensibly concluded that there is reason to be skeptical that cessation of violation means course comparing the mootness and standing doctrines.
cessation of live controversy. For claims of mootness based on changes in circumstances other than voluntary cessation, the showing we have required is less taxing, and the inquiry is indeed properly characterized as one of "standing set in a time frame." See Arizonans, supra, at 67, 68, n. 22, 117 S.Ct. 1055 (case mooted where plaintiff's change in jobs deprived case of "still vital claim for prospective relief"); Spencer v. Kemna, 523 U.S. 1, 7, 118 S.Ct. 978, 140 L.Ed.2d 43 (1998) (case mooted by petitioner's completion of his sentence, since "throughout the litigation, the plaintiff must have suffered, or be threatened with, an actual injury traceable to the defendant and likely to be redressed by a favorable judicial decision" (internal quotation marks omitted)); Lewis, supra, at 478-480, 116 S.Ct. 2174 (case against State mooted by change in federal law that eliminated parties' "personal stake" in the outcome).

In sum, while the Court may be correct that the parallel between standing and mootness is imperfect due to realistic evidentiary presumptions that are by their nature applicable only in the mootness context, this does not change the underlying principle that "[t]he requisite personal interest that must exist at the commencement of the litigation ... must continue throughout its existence...." Arizonans, supra, at 68, n. 22, 117 S.Ct. 1055 (quoting United States Parole Comm'n v. Geraghty, 445 U.S. 388, 397, 100 S.Ct. 1202, 63 L.Ed.2d 479 (1980)).

By uncritically accepting vague claims of injury, the Court has turned the Article III requirement of injury in fact into a "mere pleading requirement," Lujan, 504 U.S., at 561, 112 S.Ct. 2130; and by approving the novel theory that public penalties can redress anticipated private wrongs, it has come close to "mak[ing] the redressability requirement vanish," Steel Co., supra, at 107, 118 S.Ct. 1008. The undesirable and unconstitutional consequence of today's decision is to place the immense power of suing to enforce the public laws in private hands. I respectfully dissent.

Reversed and remanded.
ETHICAL CONCERNS FOR THE ENVIRONMENTAL LAWYER:

THE SARBANES-OXLEY ACT AND ENVIRONMENTAL REPORTING

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SECTION G
ETHICAL CONCERNS FOR THE ENVIRONMENTAL LAWYER:

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INTRODUCTION ................................................................. G-1

I. OVERVIEW OF THE SARBANES-OXLEY ACT ............... G-2
   A. Applicability ....................................................... G-2
   B. Basic Requirements Of The Act .......................... G-2
      1. Auditors ......................................................... G-2
      2. Corporate Governance ................................ G-3
         a. Certification Requirements ......................... G-3
         b. Requirements Applicable to Audit Committees .... G-3
         c. Requirements Applicable to Executive Compensation G-4
         d. Penalties .................................................. G-4
      3. Attorneys ...................................................... G-5

II. THE SARBANES-OXLEY ACT AND ENVIRONMENTAL REPORTING ... G-6
   A. Standard for Materiality .................................. G-6
   B. Alternative Proposals for Determining Materiality .... G-6
      1. ASTM ............................................................... G-6
      2. ISO 14000 ......................................................... G-7
      3. Other Standards .............................................. G-7

III. THE SARBANES-OXLEY ACT AND THE ATTORNEY-CLIENT PRIVILEGE ........................................................................ G-7
   A. Threshold Issues ............................................... G-7
      1. “Practicing Before The Commission” ................... G-7
      2. Who Is The Client? ............................................. G-8
      3. Who Has The Authority To Enforce The Rules? ....... G-8

SECTION G
B. Up The Ladder Reporting Rules .............................. G-8
   1. What Must Be Reported Up? ................................ G-9

C. Proposed Noisy Withdrawal Rules .............................. G-10

D. Investigation Of Whistleblower Complaints ...................... G-10

IV. THE SARBANES-OXLEY ACT AND PUBLIC INFORMATION ............... G-11
A. Publicly-Available Information .............................. G-11
B. Interaction Of Publicly-Available Information And The Materiality Requirement .............................. G-12

SECTION G
Ethical Concerns for the Environmental Lawyer: The Sarbanes-Oxley Act and Environmental Reporting

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Congress adopted the Sarbanes-Oxley Act of 2002, Pub. L. No. 107-204, 116 Stat. 745 (2002) (the "Act") in an effort to restore investor confidence in light of public scandals such as Enron, Tyco, and Worldcom. Though only applicable to publicly-traded companies, the Act sets forth a new standard of conduct concerning disclosure of liabilities that may ripple down to privately-held for-profit and non-profit companies.

Lawyers have been highly suspicious of the Act since its enactment in 2002. A survey by LexisNexis and the International Bar Association in 2003 found that 90% of lawyers surveyed worry their clients will be "less open" with them, and 71% worry that the Act will be "detrimental to justice." Lawyers are also concerned about the effect of the Act on the attorney-client privilege, particularly because 80% of lawyers surveyed believe that the general public does not understand the reasons behind the attorney-client privilege and ethics rules protecting client confidentiality. The issue of how the Act affects the attorney-privilege is even the subject matter being discussed by a new task force of the American Bar Association.

The Act has various implications for the environmental lawyer in particular. First, the Act sets forth new standards for reporting liabilities, including environmental liabilities. Second, the Act sets imposes obligations on attorneys to report potential violations of law by representatives of the client "up the ladder," a significant intrusion on the attorney-client privilege. Last, potential liabilities implicit in the Act create a need to ensure that all publicly-available information is completely accurate in order to stave off any claims that a company is concealing potential liabilities. Though treated in the popular press as a new securities law, the Act has far-reaching effects that all environmental lawyers need to consider.
I. Overview of the Sarbanes-Oxley Act

A. Applicability

The Act is applicable to companies currently registered under the Securities Exchange Act of 1934 or who apply to register securities under the Securities Exchange Act of 1934.

B. Basic Requirements of the Act

The Act includes provisions on three broad topics—(1) auditors; (2) internal corporate governance; and (3) corporate attorneys. Though this outline will focus on the third topic, it includes the basic provisions of the Act concerning auditors and corporate governance.

1. Auditors

The Act created the Public Company Accounting Oversight Board ("PCAOB"). The PCAOB was created to regulate accounting industry standards applicable to outside audits of public companies' books. See Section 101 of the Act.

All accounting firms preparing or issuing audit reports for public companies must be registered with the PCAOB. See Section 102 of the Act.

Registered firms performing audits for a client may not provide some non-auditing services to those clients, including bookkeeping, appraisal and valuation services, and actuarial services. See Section 201 of the Act. These provisions are intended to preserve auditor independence in reviewing the books of a public company.

Registered firms must comply with rules enacted by the PCAOB in order to maintain their certification, including rules concerning document retention and destruction. See Section 103 of the Act.

The PCAOB has the power to periodically audit registered firms to ensure compliance. Firms auditing more than 100 public companies are subject to an annual compliance audit; firms auditing less than 100 public companies are subject to a compliance audit every three years. See Sections 104-105 of the Act.

The PCAOB has the power to levy civil penalties of up to $750,000 against an individual and $15,000,000 against corporate-type entities, in conjunction with the SEC.
2. **Corporate Governance**

The Act sets forth several requirements to ensure that public companies, in making disclosures in publicly-available securities filings, do not mislead investors about the financial condition of the company. These requirements include (1) enhanced certification requirements; (2) requirements applicable to public companies' audit committees; and (3) restrictions on executive compensation. The Act also includes civil and criminal penalties for violation of the corporate governance provisions.

**a. Certification Requirements**

The Act required the SEC to adopt rules (now codified as Exchange Act Rules 13a-14 and 15d-14) requiring the CEO and CFO of all public companies to certify the accuracy of all annual and quarterly reports filed with the SEC. The certification must include the following: (1) They have read the report; (2) The report, to their knowledge, does not contain any material misstatements; and (3) The report fairly presents the financial situation of the company. *See Section 302 of the Act; Exchange Act Rules 13a-14 and 15d-14.*

Every periodic report containing financial statements must be accompanied by a written statement from the CEO and CFO certifying that statements comply with securities laws and fairly present the financial condition of the company. This requirement overlaps with the requirements in Section 302, but it imposes criminal penalties of up to $5,000,000 in fines and 20 years in prison. *See Section 906 of the Act.*

Public companies must maintain controls on procedures for making disclosures, and do an evaluation of their internal disclosure controls within 90 days before filing quarterly reports. *See Exchange Act Rules 13a-15 and 15d-15.*

**b. Requirements Applicable to Audit Committees**

The Act includes a requirement that all members of the audit committee be "independent," i.e., that the committees members must not be internal to the public company such as a member of management or receive compensation from the public company other than director or committee fees. *See Section 301 of the Act.*

The Act allows the SEC to adopt rules requiring the stock exchanges and the NASDAQ to deny the listing of securities of any issuer not in compliance with the audit committee provisions. *See Section 301 of the Act; Securities Act Release 33-8220.*
The Act requires the audit committee to contract for outside auditing services on behalf of the public company instead of management. See Section 301 of the Act.

The audit committee must establish a system to allow employees of the public company to make confidential reports concerning questionable practices. See Section 301 of the Act. Failure to properly respond to these confidential reports can give rise to damages. One company in Virginia has already been required to rehire a "whistleblower" it fired after the employee made allegations of financial irregularities. The company may also be required to pay damages to the employee. This case is still at the administrative level, and commentators expect to eventually see an appeal at least to the Federal Court of Appeals for the Fourth Circuit. See Welch v. Cardinal Bankshares Corp., 2003-SOX-15

The Act requires audit committees to disclose whether any of its members is a "financial expert," and if so, whether that expert is "independent" of management. See Section 407 of the Act; Securities Act Release 33-8177.

c. Requirements Applicable to Executive Compensation

If a public company is required to restate its public financial reports as a result of "misconduct," the Act requires the CEO and CFO to disgorge any bonuses or profits from sale of company stock gained in the 12 months after filing the inaccurate financial report. See Section 304 of the Act.

Corporate executives cannot trade company stock during blackout periods imposed on the company's employee stock plan. Any profits obtained on such trades must be returned to the company. See Section 306 of the Act.

Directors and officers must disclose any transactions they make in their company's stock ("insider" transactions) within two business days after completion of the transaction. See Section 403 of the Act.

Public companies may no longer make personal loans to directors and officers. See Section 402 of the Act.

d. Penalties

The Act lengthens the statute of limitations for civil securities fraud actions from one year to two years from discovery of the violations, with an overall bar against civil actions after five years from the occurrence of the violation. See Section 804 of the Act.
The Act amends the Bankruptcy Code to prevent discharge of indebtedness due to judgments or settlements of securities violations. See Section 803 of the Act.

The Act lowers the standard required for the SEC to bar an officer or director of a public company from serving in either of those positions in another public company from "substantial unfitness" to "unfitness." The SEC may also now bar an officer or director in an administrative cease and desist proceeding. See Sections 305 and 1105 of the Act.

The Act also creates a number of new crimes, including a new securities fraud crime substantially the same as existing criminal liability under Rule 10b-5. Maximum jail time is increased from five to 20 years, and maximum fines are increased from $1,000,000 to $5,000,000 for individuals, and from $2,500,000 to $25,000,000 for corporate-type entities. See Sections 802, 807, 903, 1102, 1106, and 1107 of the Act.

3. Attorneys

The Act requires the SEC to enact rules to govern the conduct of attorneys "practicing before the Commission," including rules requiring attorneys to report potential violations of securities or other laws "up the ladder" to senior management in order to ensure that those managers are fully aware of all potential liabilities to report in securities filings. See Section 307 of the Act. The SEC enacted those rules in January 2003. See Securities Act Release 33-8185.

An attorney's requirement to report potential violations of securities laws "up the ladder" can be discharged by reporting to a Qualified Legal Compliance Committee ("QLCC"). The Act gives covered companies the option to establish a QLCC, which must be comprised of at least one member of the audit committee and two or more independent board members. The QLCC then has the responsibility to investigate alleged violations of securities laws and must request the company to take remedial actions in response to the QLCC's conclusions. If the company does not undertake the remedial actions requested by the QLCC, the members of the QLCC, the chief legal officer, and the CEO must report that to the SEC and disavow any filings tainted by the violation.

The SEC, as part of the rules it plans to enact to carry out Section 307 of the Act, has proposed a rule to require attorneys who have knowledge that, notwithstanding any up the ladder reporting, the company filed any materially false or misleading information with the SEC, to effect a "noisy withdrawal" from that representation. The "noisy withdrawal" requirement was not imposed on attorneys reporting to a QLCC. The SEC has put implementation of the proposed "noisy withdrawal" rule to individual attorneys on hold pending further comment, but maintained the requirement for QLCCs in the final rule.
II. The Sarbanes-Oxley Act and Environmental Reporting

The provisions of the Act (and accompanying regulations) affecting certification of a company's financial condition do not specify any mechanism for determining whether an environmental liability is "material." Material effects of compliance with environmental laws and material pending or threatened litigation proceedings are required to be reported pursuant to Items 101, 103 and 303 of Regulation S-K, 17 C.F.R. § 229, and are subject to generally-accepted standards developed in light of that regulation. Those rules have not changed in the wake of the Act. However, some groups are concerned that the increased emphasis on corporate disclosures will increase the scrutiny on environmental liabilities and whether they are indeed material.

A. Standard for Materiality

There is no hard and fast rule for determining whether a potential liability is material. The Securities Exchange Act of 1934 defines "material" as anything that would influence a reasonable investor's decision to invest in a company.

Item 101 of Regulation S-K requires public companies to disclosure the material effects of compliance with environmental laws.

Item 103 of Regulation S-K requires a description of all pending material legal proceedings. Item 103 normally requires any non-routine liability to be disclosed, as well as any damage claims that exceed 10 percent of the net worth of a company OR probable liability that is equal to or greater than $100,000, though the SEC claims that $100,000 is not a bright-line test. Item 103 is the most violated requirement.

Item 303 of Regulation S-K requires a public company to disclose any known trends or uncertainties that are reasonably likely to have a material impact on operations.

B. Alternative Proposals for Determining Materiality

1. ASTM

Some groups have petitioned the SEC to formally enact as regulations under the Act the American Society of Testing and Materials ("ASTM") Standard Guide for Disclosure of Environmental Liabilities (ASTM E2137-01) established in March 2002 for estimating and disclosing environmental liabilities. According to the rulemaking petition, adoption of the ASTM standards would provide a uniform and comprehensive approach to estimating environmental liabilities and expanding the scope of conditions requiring disclosure. Should the SEC decide to enact regulations enshrining the ASTM standards, companies may be faced with expanded disclosure obligations if they do not currently adhere to the ASTM standards.

ASTM E2137-01 gives a public company mechanism by which to estimate the amount of potential liabilities, particularly when there are uncertainties inherent in
the potential liabilities. ASTM E2137-01 sets forth four methods for calculating liabilities—(1) expected costs; (2) most likely value; (3) range of value; and (4) known minimum value. The method to be used depends on the amount of information available and the degree of uncertainty.

2. ISO 14000

ISO 14000 standards are a set of internationally-recognized standards for environmental process management developed by the International Organization for Standardization. The Act provides that public companies must maintain controls on procedures for making disclosures, and do an evaluation of their internal disclosure controls within 90 days before filing quarterly reports. See Exchange Act Rules 13a-15 and 15d-15. ISO 14000 processes and ISO certification under ISO 14001 give public companies a mechanism to monitor their environmental management systems to ensure that they can give proper assurances under Exchange Act Rules 13a-15 and 15d-15. Unlike ASTM E2137-01, there has not been a push to codify ISO 14000 standards into regulations as a method to achieve prima facie compliance.

3. Other Standards

Other standards which attempt to give meaning to the materiality requirement include: American Institute of Certified Public Accountants Statement of Position 96-1, Environmental Remediation Liabilities; Financial Accounting Standards Board Statement of Financial Accounting Standards No. 5, Accounting for Contingencies; and Financial Accounting Standards Board Interpretation No. 14, Reasonable Estimation of the Amount of a Loss.

III. The Sarbanes-Oxley Act and the Attorney-Client Privilege

Section 307 of the Act authorizes the SEC to enact rules "setting forth minimum standards of professional conduct for attorneys practicing before the Commission." The SEC has taken steps to exercise its authority under Section 307 of the Act by enacting a rule requiring attorneys for public corporations to report potential violations of law "up the ladder" to senior management and by proposing a rule requiring a "noisy withdrawal" by an attorney for a public company if senior management does not appropriately react to the up the ladder reporting of potential violations. Both the current up the ladder reporting rule and the proposed noisy withdrawal rule have implications for the attorney-client privilege.

A. Threshold Issues

1. "Practicing Before the Commission"

Section 307 of the Act limits the SEC's authority to those attorneys "practicing before the Commission." The SEC has claimed jurisdiction over all lawyers preparing and issuing securities, representing a public company in any way before
the SEC, making or preparing disclosures to the SEC, or otherwise providing advice on documents to be filed with the SEC. See 17 CFR § 205.2(a); SEC Rule of Practice 102(f). The last two provisions pull in attorneys preparing disclosures of any type to the SEC, including disclosures of environmental liabilities. Thus, even though most environmental attorneys do not consider themselves to be securities lawyers, if those lawyers aid in preparing environmental disclosures they are "practicing before the Commission" for the purposes of Section 307 of the Act and all rules enacted under that Section. There are no cases at this time challenging the SEC's interpretation of the extent of its power under Section 307 of the Act.

The SEC has the authority to "censure a person or deny, temporarily or permanently, the privilege of appearing or practicing before it in any way . . . " upon finding of a violation of the rules applicable to attorneys under the Act, in much the same manner that state bar associations have authority to sanction attorney conduct. See SEC Rule of Practice 102(e). Disbarment by the SEC would extend both to administrative hearings practice before the SEC as well as the privilege to file documents with the SEC. The SEC has indicated that it will not hesitate to impose sanctions on offending attorneys if state bar associations fail to do so.

2. **Who is the client?**

The issuer, i.e., the company, is the client—not individual members of the board, officers, or employees.

3. **Who has the authority to enforce the rules?**

Only the SEC has the authority to enforce the Act or the attorney conduct rules. They do not create a private cause of action on behalf of shareholders of the company.

B. **Up the Ladder Reporting Rules**

The Up the Ladder Reporting Rule requires attorneys aware of evidence of a material violation of law to report that evidence to the CEO or chief legal officer of the public company. This rule is of particular importance to environmental attorneys, who normally deal with environmental managers and not persons at the senior management level. This rule does not directly affect the attorney-client privilege (though it does interfere in the attorney-client relationship) because it does not directly require a breach of the privilege. However, other parts of the Rule are of concern.
1. **What must be reported up?**

The final Up the Ladder Reporting Rule requires an attorney to report to the CEO or chief legal officer upon receipt of evidence of a material violation. Evidence of a material violation is defined as:

Credible evidence, based upon which it would be unreasonable, under the circumstances, for a prudent and competent attorney not to conclude that it is reasonably likely that a material violation has occurred, is ongoing, or is about to occur.

This definition takes in both violations in the past, the present, and those about to occur.

This definition also puts the attorney in the position of being required to judge the conduct of the company as opposed to simply responding to client requests for legal services. Clients – and client representatives – expect absolute loyalty from their attorneys. However, if your client contact is a midlevel environmental manager, you may be placed in the position of reporting your client contact to the chief legal officer, CEO or QLCC if you believe any actions taken by your client contact are a material violation of law.

There are also issues concerning what constitutes an appropriate response by the company to a report by an attorney under the Rule. An “appropriate response” by the company is either to enact remedial measures based on the report, or obtain an opinion from another attorney that there is a colorable defense to the alleged material violation.

2. **How does the Rule affect ethical rules concerning disclosure of client confidences?**

The Rule permits, but does not require, attorneys to reveal client confidences to the SEC without the client’s consent if the attorney believes that a material violation of law will occur. See 17 CFR § 203.5(d)(2). Any attorney who chooses to breach the confidence and reveal client confidences in such a manner would in most states be guilty of a violation of ethics rules on confidentiality of client information (as distinct from the evidentiary privilege). The SEC takes the position that its rules preempt all other conflicting law, and that this preemption gives any attorney cover from an ethics complaint. See 17 CFR § 205.1; 17 CFR § 205.6(c). However, it is not clear that state ethics rules would recognize any federal preemption since this rule is not mandatory. See, e.g., SCR 3.130(1.6), Commentary 20-22 (setting forth the principle that disclosure of client confidences based on other law is only appropriate in Kentucky when compelled and that there is a presumption against interpreting other law to compel disclosure). In other words, in most states an attorney risks an ethics violation if he or she attempts to rely on the SEC for authority to breach client confidences.
As noted above, the SEC has given itself the power to sanction attorneys who do not comply with the Up the Ladder Reporting Rule. *See* SEC Rule of Practice 102(e). While this provision could only be invoked if the SEC determines that a public company committed a material violation of law, the SEC could use this provision to force attorneys to defend their own actions, and, in turn, reveal client confidences to the SEC in their own defense.

C. Proposed Noisy Withdrawal Rules

The proposed Noisy Withdrawal Rule would require attorneys who reasonably believe that a material violation of law is ongoing or about to occur and that the material violation of law is likely to result in substantial injury to the public company or its investors must (1) withdraw from the representation; (2) provide written notice to the SEC that the attorney had withdrawn from the representation for "professional considerations"; and (3) disaffirm to the SEC any filing which contains any material misrepresentations. The last provision applies to in-house attorneys, but in-house attorneys are not required to quit their jobs.

This proposed Rule is designed to give notice to the SEC of potential violations of law, which implicitly reveals a client confidence. The SEC has contended that the proposed Rule is consistent with ABA Model Rules 1.16(a)(1) and 4.1, Comment 3, which allow an attorney to withdraw from a representation if the attorney's services are or will be used in commission of a fraud or crime. *See also* SCR 3.130(1.16) and 3.130(4.1) (equivalent Kentucky ethics rules). However, some commentators have opined that the circumstances permitting withdrawal in Model Rules 1.16(a)(1) and 4.21 are sufficiently broad to protect client confidences, whereas a withdrawal under the SEC proposed Rule will give the SEC much more information concerning the conduct of the client.

Given the outcry over the proposed Noisy Withdrawal rule, the SEC has tabled the Rule for now and is offering for comment an alternate proposal which would allow the attorney to withdraw upon notice to the public company. The public company would then have the burden to notify the SEC of the withdrawal. This proposal has also been criticized on the same grounds as the original proposal, i.e., that the SEC notice provisions reveal client confidences no matter who is compelled to make the disclosure.

Note that the "Noisy Withdrawal" rule still applies to a QLCC. If the majority of the members of a QLCC believe that a company has not taken proper remedial measures after a report of a material breach of law, the QLCC, chief legal officer, and CEO must report that to the SEC and disavow any tainted filings.

D. Investigation of Whistleblower Complaints

Attorneys – both outside counsel and in-house counsel – are increasingly being called upon to assist audit committees in investigating whistleblower complaints. This raises several issues, including whether attorneys should be involved in the initial complaint
“hotline” process, and how attorneys should proceed to investigate whistleblower complaints.

1. Should attorneys answer the whistleblower hotline?

Many third-party vendors are advertising “hotline” services to public companies to discharge audit committee responsibilities to create mechanisms for employees to report alleged wrongdoing. Using a third-party vendor can be a bad idea. It is preferable to use in-house legal staff for such “hotline” services. The use of in-house legal staff gives the public company an argument that the reports are cloaked with the attorney-client privilege, and in-house legal staff are in a better position to determine if the “whistleblower” is legitimate or is simply a disgruntled employee.

2. How should an internal investigation of whistleblower complaints be conducted?

Attorneys should be involved in every step of the investigation of a whistleblower complaint, for obvious reasons of privilege. However, it may be prudent to use primarily outside counsel for such investigations because there are normally fewer challenges that can be made to the application of the privilege to outside counsel than for in-house counsel.

The choice of outside counsel is also important. If the public company and its officers and directors have a longstanding relationship with one firm, it may not be prudent to use that firm for the investigation. A private law firm with substantial ties to existing management may be viewed as beholden to that current management and may not be viewed as impartial. It often makes sense to use a law firm with few or no existing ties to the public company, and that law firm should answer only to the audit committee.

A whistleblower investigation may also turn into a dual investigation—one of the initial company, and another of any alleged retaliation against the whistleblower. Attorneys directing a whistleblower investigation must be careful to fully investigate both sides of the equation while keeping the issues separate.

IV. The Sarbanes-Oxley Act and Public Information

In addition to the direct implications of the Act, U.S. EPA's roll-out of the ECHO Database, along with other publicly-available data from U.S. EPA and equivalent state agencies, may have implications for the reporting of environmental liabilities in securities filings.

A. Publicly-Available Information

The ECHO Database (Enforcement and Compliance History Online) provides the public easy access to facility enforcement and compliance information for approximately
800,000 facilities for the past two years. Facilities regulated under the Clean Air Act Stationary Source Program, Clean Water Act, National Pollutant Elimination Discharge System, and Resource Conservation and Recovery Act are included in the ECHO Database. Information on the ECHO Database is available on the U.S. EPA website at http://www.epa.gov/echo/.

The ECHO Database is updated once a month, but some commentators have noticed a longer lag time between posting of a proposed penalty assessment and correction to a final, negotiated penalty assessment, which could be much lower. An EPA spokesperson has admitted that "there may be a small percentage of cases where EPA shows the proposed penalty where the company has settled for a lesser amount." See "Sarbanes-Oxley Act Forces Corporations to Focus on Environmental Disclosure Rules," 34 ENVIRONMENT REPORTER 36 at 2048-2049 (September 12, 2003).

Other regulatory agencies commonly post enforcement records on their websites, and any member of the public can easily obtain enforcement information about public companies from regulatory agencies through the Freedom of Information Act and its state equivalents.

B. Interaction of Publicly-Available Information and the Materiality Requirement

Item 103 of Regulation S-K of the Securities Exchange Act of 1934 requires a public company to disclose any non-routine liability, as well as any damage claims that exceed 10 percent of the net worth of a company OR probable liability that is equal to or greater than $100,000. See Section II.A, supra. The ECHO Database will include information on proposed penalty assessments, and that information will be available to the public and the SEC. If a proposed penalty is listed in excess of $100,000, the SEC and stockholders will be able to find that information to use as a double-check against disclosures. If that proposed penalty is not disclosed pursuant to Item 103, the SEC or stockholders may be under the impression that the public company failed to properly disclose liabilities, even if the ultimate liability ended up being less than $100,000. This danger heightens the need for public companies to periodically review the accuracy of information in the ECHO Database and similar databases to make sure accurate penalty information is posted.

The SEC has made a recent push to upgrade its publicly-available databases so that investors have more current information about public companies, and has attempted to work toward better coordination with EPA on information-sharing. Neither the SEC nor EPA have made any specific commitments, with EPA being particularly non-committal, but such information linkage will likely come in the future.
Ethical Concerns for the Environmental Lawyer: The Sarbanes-Oxley Act and Environmental Reporting

University of Kentucky CLE
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ETHICS PROBLEMS

1. You are outside counsel representing a large mining company, Mineco, Inc. Mineco has issued securities registered under the Securities Exchange Act of 1934. During a visit to a mine you inquire as to the status of the mining permits for the current mining. The mining engineer, a mid-level employee, tells you that Mineco applied for the permits but has not yet received them. Mining without a permit is a violation of state and federal law.

   a. What are your duties under the Up the Ladder Reporting provisions of the Act? Is the violation material?

   b. If you report the potential violation of law to upper management, are your duties discharged?

   c. You meet with the CEO of Mineco, and he informs you that he was already aware of the problem and authorized mining activity prior to receipt of a permit. What are your duties at this point?

   d. Mineco has a QLCC. What do you need to do?

   e. No regulatory authorities have found out about the violation at this time. You get a request from Mineco's audit committee for a list of all environmental liabilities that should be disclosed under the Act and Regulation S-K. Do you disclose the unpermitted mining? What if the client objects?

   f. Assume that you disclose the unpermitted mining to the SEC against the wishes of the client. The client files a bar complaint against you. What do you do?

   g. Do any of your answers change if you are an in-house attorney at Mineco?
The mining engineer reported the violation to the audit committee. After reporting the violation to the audit committee, the mining engineer is demoted and files a whistleblower complaint. The audit committee comes to you for advice on investigating his allegations. The initial investigation into the mining engineer’s complaint is not complete. How should the investigation be structured?

2. You are an associate in a mid-sized law firm. You are the primary client contact for a landfill owned by a company which has issued securities registered under the Securities Exchange Act of 1934, We-Dump-It, Inc., but a senior partner has ultimate responsibility for the We-Dump-It. An employee of the landfill calls you one day and tells you that the on-site manager has authorized disposal of wastes in the landfill not allowed under the landfill’s permit.

   a. You call the on-site manager of the landfill and ask him if what the employee claims is true. The manager denies the allegations and claims the employee is "just trying to make trouble because he didn't get a promotion." What do you do?

   b. You decide you believe the employee. Do you immediately call the General Counsel of We-Dump-It or consult the partner in charge of the case?

   c. You consulted the partner in charge, and she did not believe you and sides with the on-site manager. Is that the end of the matter?

   d. The partner believed you, and she informed the General Counsel. The General Counsel takes no action to even investigate the matter. Do you have any further responsibilities?

   e. You decided to call the General Counsel of We-Dump-It without consulting the partner in charge. The General Counsel sides with the on-site manager. What are your responsibilities at that point?

   f. You call the General Counsel, and he does not dispute the allegations. The General Counsel informs you that the on-site manager was working pursuant to a general directive at the corporate level and asks you to call the on-site manager to let him know that you have been informed of the new corporate policy. What do you do?

   g. Assume that when you called the General Counsel without the partner in charge's permission, the General Counsel believed you and fired the on-site manager. Later, the on-site manager sues for wrongful termination, and in the lawsuit it comes out that the employee was lying. The General Counsel files a malpractice action against your law firm. How do you defend?
"THE AIR YOU BREATHE"

AIR-TOXICS

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SECTION H
"THE AIR YOU BREATHE"

AIR-TOXICS

PART ONE: HISTORY OF KENTUCKY AIR TOXICS REGULATIONS . . . H-1

PART TWO: KEY ISSUES IN THE DEVELOPMENT OF STATE/LOCAL TOXIC AIR POLLUTANT REGULATIONS ............... H-7

PART THREE: LOUISVILLE METRO AIR POLLUTION CONTROL DISTRICT – STAR PROGRAM ......................... H-21

SECTION H
History of Kentucky Air Toxics Regulations

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Submitted to

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Overview – State Air Toxies Regulations

401 KAR 63:020, Potentially hazardous matter or toxic substances (existing)
Effective: June 6, 1979
Approved to Kentucky SIP: December 24, 1980 (45 FR 84999)

- On a case-by-case basis the cabinet has used this regulation to require risk assessments.

- The regulation:
  ⇒ Was promulgated under the mandate of KRS 224 to protect the public health and environment.
  ⇒ Calls for case-by-case determination for any material that could be "harmful to the health and welfare of humans, animals, and plants."
  ⇒ Applies to any "affected facility which emits or may emit potentially hazardous matter or toxic substances."

401 KAR 63:021, Existing sources emitting toxic air pollutants (amended)
401 KAR 63:024, Repeal of 401 KAR 63:022, New or modified sources emitting toxic air pollutants
Effective: November 11, 1986
Amended/Repealed: January 19, 1999

- The 1999 revision to the state air toxics program repealed 401 KAR 63:022 regarding new or modified sources emitting toxic air pollutants. The revision also amended 401 KAR 63:021 to provide that any condition of a permit issued under these regulations must remain in place unless the source can demonstrate that compliance with the condition is no longer necessary to protect human health or the environment (no back-sliding provision).

- All sources of toxic air pollutants that were subject to 401 KAR 63:021 or 401 KAR 63:022 became subject to 401 KAR 63:020.

- The amendment to 401 KAR 63:021 and the repeal of 401 KAR 63:022 allowed sources to be excused from the obligation under the Title V program to re-demonstrate compliance with Kentucky air toxics regulations (i.e., all state origin requirements). Such sources are not required to re-demonstrate compliance with Kentucky’s air toxic regulations when they receive their Title V permit, but they are not allowed to alter or remove controls or procedures that were used to achieve compliance with these administrative regulations.

- Reasons for the revisions to the air toxics regulations included:
  ⇒ The air toxics program was ineffective and inefficient. In the twelve years that the regulations existed, fewer than ten sources were impacted.
  ⇒ Excessive amounts of agency and industry time and resources were expended in preparing and reviewing applications and modeling results only to determine that nothing was required to be done to meet the provisions of the regulations.
⇒ The preparation and review of air toxics permits under these regulations was very costly and time consuming, and human health and the environment would be better served if the Division and industry resources were redirected to other air quality issues.
⇒ The citizens of the Commonwealth would be better served if the resources being expended on the air toxics program were redirected to more positively impact human health and the environment.

• The Division applies 401 KAR 63:020 on a case-by-case basis as necessary.
⇒ Catalog emissions and identify Hazardous Air Pollutants (HAPs)
⇒ Identify HAPs that may pose risk to public health and the environment
⇒ Conduct screening modeling to predict maximum concentrations in ambient air
⇒ Compare maximum concentrations to acceptable limits (IRIS, Region 9 PRGs, OEHHA, et al)
⇒ If necessary, conduct more precise screening
⇒ If exceedence still exists, work with source to resolve

• Sources that subject to 401 KAR 63:021 or 401 KAR 63:022 prior to the 1999 revisions are not allowed to alter or remove controls or procedures that were used to achieve compliance with these regulations.
⇒ The “no back-sliding” provision of 401 KAR 63:021 applies to all permit conditions. This includes technological controls as well as throughput limits and operating hour limitations.
⇒ The permit conditions must remain in force absent a demonstration by a source that a condition will no longer be necessary to protect the human health or the environment.

• The 1999 state air toxics revision was somewhat controversial:
⇒ In general, industry supported the Division’s position, while the environmental community feared that the action would ultimately have a negative impact on human health and the environment.
⇒ EQC’s approval of the revision was contingent upon the Cabinet establishing an air toxics task force to review the air toxics regulations and make recommendations on how to address the concerns of the environmental and regulated communities.

• Section 112 of the Clean Air Act (CAA) establishes a two-stage regulatory process to address emissions of HAPs from stationary sources.
⇒ In the first stage, after EPA has identified categories of sources emitting one or more of the HAP listed in the CAA, Section 112(d) requires EPA to promulgate national technology-based emission standards for sources within those categories that emit or have the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons per year (known as “major sources”), as well as for certain “area sources” emitting less than those amounts. These technology-based standards are commonly referred to as maximum achievable control technology (MACT) standards.
⇒ The second stage in standard-setting is described in section 112(f) of the CAA. The provision requires, first, that EPA prepare a Report to Congress discussing risk posed by
sources after implementation of the MACT standards. This report ("Residual Risk Report to Congress") was prepared and submitted in March 1999. Since Congress did not act on this report EPA was then required to begin the standard-setting process, the residual risk phase. This requires EPA to look at each source category and determine whether the MACT standards protect public health with an ample margin of safety. If the MACT standards for HAP "classified as a known, probable or possible human carcinogen do not reduce lifetime excess cancer risks to the individual most exposed to emissions from a source in the category or subcategory to less than one in one million," EPA must promulgate residual risk standards. The terms "individual most exposed and "ample margin of safety" are not defined in the CAA but are found in EPA's 1989 rulemaking on benzene emissions, better known as the Benzene NESHAP.

• Given that EPA is behind in the process described above for determination that MACT standards have or have not provided an "ample margin safety", the Environmental and Public Protection Cabinet has embarked on an effort to establish an air toxics program that goes beyond the generic application of 401 KAR 63:020 and formalizes in Kentucky regulations, a process for making this determination. This effort is not yet complete; however, a workgroup of individuals who have special knowledge and experience in the fields of toxicology, environmental protection and risk assessment have been assembled to assist in the formulation of the regulatory program.
KEY ISSUES IN THE DEVELOPMENT OF STATE/LOCAL TOXIC AIR POLLUTANT REGULATIONS

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I. STATUTORY AUTHORITY TO REGULATE TOXIC AIR POLLUTANTS

Congress and state legislatures establish the extent to which the United States Environmental Protection Agency ("U.S. EPA"), state agencies, and/or local regulatory authorities must or may regulate toxic air pollutants. It is axiomatic that an agency's promulgation of administrative regulations must be consistent with its statutory authorizations. NLRB v. United Food & Commercial Workers Union, Local 23, 484 U.S. 112, 123 ("[T]he regulations at issue must be fully consistent with [the statute]."); Flying J Travel Plaza v. Commonwealth, Transp. Cabinet, Dep't of Highways, 928 S.W.2d 344, 347 (Ky. 1996) (stating that regulations are valid only "as subordinate rules when found to be within the framework of the policy defined by the legislation" because an agency's authority is "limited to a direct implementation of the functions assigned to the agency by statute."). As to air pollutants that may present a risk to human health, Congress has often authorized U.S. EPA to protect human health with "an ample margin of safety."

Under the Clean Air Act ("CAA"), for example, U.S. EPA is to establish and periodically review primary and secondary National Ambient Air Quality Standards ("NAAQS") for any pollutant the "emissions of which ... cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare." 42 U.S.C. §7408(a)(1)(A). U.S. EPA is to set primary NAAQS at levels "the attainment and maintenance of which in the judgment of the Administrator, ... allow[s] an adequate margin of safety, [and] are requisite to protect the public health." Id. §7409(b)(1) (emphasis added). Moreover, U.S. EPA may, on the basis of all the information it has accessible, promulgate regulations to "control or prohibit the manufacture, introduction into commerce, offering for sale, or sale of any fuel or fuel additive for use in a motor vehicle [or] motor vehicle engine ... if ... any emission product of such fuel or fuel additive causes, or contributes, to air pollution which may reasonably be anticipated to endanger the public health or welfare." 42 U.S.C.A. § 7545(c)(1).

Pursuant to Section 112(b) of the CAA, U.S. EPA is also authorized to regulate hazardous air pollutants ("HAPs"), which are specific listed in the statute. 42 U.S.C. §7412(b)(1). However, U.S. EPA must periodically review and revise this list by "adding pollutants which present, or may present, through inhalation or other routes of exposure, a threat of adverse human health effects...." Id. § 7412(b)(2). Following promulgation of technology-based emission standards for source categories of HAPs, U.S. EPA is to determine whether, for each source category, the technology-based standards protect public health "with an ample margin of safety." Id. § 7412(f)(2)(A).

State statutes do not necessarily contain as specific an authorization as the CAA for regulating potentially harmful air pollutants. For example, KRS Chapter 224 provides the Kentucky Division for Air Quality with the following authorities to promulgate regulations to control the emission of air pollutants from point sources:

224.20-100 Finding as to necessity for act

The Kentucky General Assembly hereby finds that it is necessary to the health and welfare of the citizens of Kentucky that there be maintained at all times both now and in the future a reasonable
degree of purity of the air resources of this Commonwealth consistent with maximum employment and full industrial development necessary for the protection of the public health, the general welfare, and the property and people in this Commonwealth; and foster the comfort and convenience of its inhabitants and facilitate the enjoyment of the natural attractions of the state.

224.20-120 Considerations in fixing standards

In exercising the power conferred upon it by this chapter the Natural Resources and Environmental Protection Cabinet shall give due recognition to the policy as heretofore expressed in KRS 224.20-100. The cabinet, in fixing standards, shall require the use of all available, practical, and reasonable methods to prevent and control air pollution in the Commonwealth of Kentucky. It shall give due recognition to the quantity of characteristics of air contaminants or the duration of their presence in the atmosphere. It shall take into consideration in this connection such factors, among others, found by it to be proper and just, existing physical conditions, public benefit, that the degree of conformance therewith that may be proper as to an essentially residential area of the state may not be proper as to a highly industrial area of the state, and, further, the relationship between the intensity and composition of air pollution and the health of the public and damage to or interference with enjoyment of property. It shall give reasonable consideration to the interests of all parties concerned.

KRS 224.20-100 (emphasis added); KRS 224.20-120 (emphasis added).

The Louisville Metro Air Pollution Control District (“District”) derives its rulemaking authority from KRS Chapter 77. These statutory provisions provide as follows:

77.060 General powers of district

(1) The district shall have power to . . . make rules and regulations and do all other things necessary to carry out the provisions of this chapter . . .

77.155 Prohibited emission of air contaminants

(2) . . . The board shall have power, by regulation, to fix reasonable limits, by weight or otherwise, for particular air contaminants or other material which in the opinion of said board may cause or have tendency to cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public . . .

H · 10
77.190 Authority to enact orders, rules and regulations for reduction of air pollution

Whenever the air pollution control board finds that the air in the air pollution control district is so polluted as to cause any discomfort or property damage at intervals to a substantial number of inhabitants of the district, the air pollution control board may make and enforce such orders, rules, and regulations as will reduce the amount of air contaminants released within the district.

The Kentucky Supreme Court has interpreted KRS Chapter 77 as authorizing the District to "make regulations which are necessary in order to carry out the statute's provisions and purposes, to establish reasonable limits for particular air contaminants, and to regulate the amounts of air contaminants released within the districts." Frederick v. Air Pollution Control Dist. of Jefferson County, 783 S.W.2d 391, 395 (Ky. 1990).

Unless the relevant legislative body has specified that a certain pollutant or group of pollutants poses an unacceptable risk and shall be the subject of regulation, as an initial threshold, the regulatory agency must first determine whether an unacceptable risk of injury or impact on human health exists under the authorizing statute before it may promulgate health-based regulations for the pollutant. The courts have generally afforded considerable deference to regulatory agencies in making this determination. In essence, the courts have generally found this to be a "policy" type decision, especially where the statutes are written to prevent emissions of pollutants that "may" cause injury or that will "endanger" public health. As explained by the United States Court of Appeals for the D.C. Circuit regarding the "will endanger public health" threshold for regulating fuel additives:

[W]e conclude that the "will endanger" standard is precautionary in nature and does not require proof of actual harm before regulation is appropriate. . . . Danger, the Administrator recognized, is not set by a fixed probability of harm, but rather is composed of reciprocal elements of risk and harm, or probability and severity. That is to say, the public health may properly be found endangered both by a lesser risk of a greater harm and by a greater risk of a lesser harm. Danger depends upon the relation between the risk and harm presented by each case, and cannot legitimately be pegged to 'probable' harm, regardless of whether that harm may be great or small.

Where a statute is precautionary in nature, the evidence difficult to come by, uncertain, or conflicting because it is on the frontiers of scientific knowledge, the regulations designed to protect the public health, and the decision that of an expert Administrator, we will not demand rigorous step-by-step proof of cause and effect. Such proof may be impossible to obtain if the precautionary purpose of the statute is to be served. Of course, we are not suggesting that
the Administrator has the power to act on hunches or wild guesses.

... his conclusions must be rationally justified.


With respect to regulation of HAPs under Section 112 of the CAA, "[U.S.] EPA, not the court[s], has the technical expertise to decide what inferences must be drawn from the characteristics of . . . substances and to formulate policy with respect to what risks are acceptable." _Natural Resources Defense Council v. U.S. EPA_, 824 F.2d 1146, 1163 (D.C. Cir. 1987). Congress "recognized in Section 112 that the determination of what is ‘safe’ will always be marked by scientific uncertainty and thus exhorted the Administrator to set emission standards that will provide an ‘ample margin’ of safety. This language permits the Administrator to take into account scientific uncertainty and to use expert discretion to determine what action should be taken in light of that uncertainty." _Id._ at 1165.

II. POLICY AND SCIENCE ISSUES IN PROMULGATING RULES FOR TOXIC AIR POLLUTANTS

A. Policy Issues

As set forth above, where a statute authorizes a regulatory agency to promulgate regulations to control air pollutants that may endanger human health, the agency will generally have discretion in determining the level of "risk" to human health that is acceptable due to exposure. Under U.S. EPA's residual risk program for HAPs, U.S. EPA has indicated its overall objective:

In protecting public health with an ample margin of safety, we strive to provide maximum feasible protection against risk to health from hazardous air pollutants by (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than approximately 1 in 1 million; and (2) limiting to no higher than 1 in 10,000 [i.e., 100 in a million] the estimated risk that a person living near a facility would have if he or she were exposed to the maximum pollutant concentrations for 70 years.


It seems important to put health risks from exposure to toxic air pollutants in perspective when promulgating regulations so the public can appreciate the true nature of the potential risks and the potential costs of reduction to achieve the selected or proposed risk standards. For example, the risk of being killed by accidents associated with many routine aspects of life are frequently far lower than one in a million. _See_ Attachment 1. The lifetime risks of dying from an accident in the home or from a motor vehicle accident are both greater than one in one thousand. The risk of being struck and killed by lightening in a lifetime is also calculated as being far less than 1 in 100,000. This demonstrates that standards or controls to reduce lifetime risks from exposure to below 1 in 100,000 are very protective when compared to other risks associated with modern life.
When promulgating regulations, several other “policy” factors also help to determine the necessary control stringency that will reduce the health exposure risk from toxic air pollutants. For example, if a lifetime cancer risk goal of one in a million is established, the following factors will impact the stringency of controls necessary to achieve that standard:

- Where is the risk to be determined or measured?
  - The fence line of the industrial facility;
  - The nearest residential area; or
  - Any location to which the public may have access (e.g., on waterways or highways)?

- What is the standard for lifetime exposure?
  - 70 years;
  - The average residence time in any one location; or
  - 24 hours per day versus average hours per day in a single location?

- Which sources of the toxic air pollutant at issue will be regulated in order to achieve the risk standard?
  - Only industrial point sources;
  - Area sources;
  - Mobile sources; or
  - All sources?

One or more of these “policy” issues may be addressed in the statute authorizing the agency to promulgate regulations to control toxic air pollutants. If a statute does not specifically address such issues, and provides for “reasonable” regulation of point source emissions or otherwise qualifies or restricts the authority of the agency to promulgate such regulations, a question may arise as to whether policy choices with respect to regulating risks are reasonable. For example, one may argue that a program designed to regulate risks based upon a 100 year lifespan would be unreasonable. Similarly, a program designed to regulate emissions based upon a resident’s lifetime exposure to ambient air inside the fence line of an industrial facility or in the middle of a river would appear to be overly stringent. Indeed, based upon the risks associated with many aspects of modern life (see Attachment 1), one could argue that setting a strict 1 in a million lifetime standard for control of emissions from point sources is not “reasonable” within the meaning of KRS 224.20-100 or KRS 77.155.

B. Science Used to Establish Risk Associated with Levels of Emissions

Once the regulatory agency makes its policy decisions that define the acceptable risk, it then must determine the amount of emissions of a given toxic air pollutant that will not exceed
the established risk level in ambient air. This is very difficult determination because it involves highly technical and scientific issues. Such issues generally involve complicated emission computer modeling, as well as reliance on toxicological studies to determine the ambient concentrations at which a toxic air pollutant is expected to cause acute or chronic health concerns to one person in the populations to be protected (e.g., 1 in 1,000,000) over the period at issue. At the federal level, U.S. EPA has the technical resources to conduct such analyses. Even then, however, U.S. EPA’s risk evaluations are commonly subject to legal challenge. Moreover, the science is constantly evolving.

When a state or local air pollution control agency undertakes the regulation of toxic air pollutants through development of its own program, it may not have the in-house technical resources or expertise to independently develop such standards. In such cases, a state or local agency may look to established databases prepared by U.S. EPA or others for use as key components of the local program. This may also create concerns if the database or program to be relied upon:

- Is outdated or was not designed or intended to be used in the manner that the agency is proposing; or
- Was designed based upon a different statutory authority with standards that vary from the standards established in the state or local agency’s authorizing statute (e.g., “reasonable controls” versus “protect with ample margin of safety”).

An example of such concerns arise from the use of U.S. EPA’s Integrated Risk Information System (“IRIS”) database. U.S. EPA’s IRIS database contains “chemical specific summaries of qualitative and quantitative health information in support of the first two steps of the risk assessment process, i.e., hazard identification and dose-response evaluation. Combined with specific situational exposure assessment information, the information in IRIS may be used as a source in evaluating potential public health risks from environmental contaminants.” 69 Fed. Reg. 5971 (February 9, 2004). Mandatory reliance on an IRIS database to determine acceptable levels of emissions of toxic air pollutants may grossly over-estimate or under-estimate the risk associated with emissions of a particular toxic air pollutant where the IRIS value is out of date or was not subjected to peer review. In fact, U.S. EPA has emphasized that the IRIS database should not be used as the exclusive means of determining the potential health risks from exposure to a toxic air pollutant:

EPA recognizes that IRIS is not a comprehensive toxicological database. There may be more recent relevant information available than is contained in IRIS. IRIS values are not rules adopted after notice and comment rulemaking, although recent IRIS assessments are posted on the Internet and public comments are solicited. IRIS values are not legally binding and are not entitled to conclusive weight in any rulemaking. In addition, EPA or any State agency that uses IRIS should not rely exclusively on IRIS values but should consider all credible and relevant information that is submitted in any particular rulemaking. If an outside party questions IRIS values during the course of an EPA rulemaking,...
EPA considers all credible and relevant information before it in that proceeding.

66 Fed. Reg. 46929 (Sept. 7, 2001). Accordingly, when state or local agencies attempt to develop toxic air pollutant regulations based upon databases, program elements, and findings taken in isolation from other regulatory programs, the resulting regulations may not be scientifically defensible or could be based upon policy considerations that are inconsistent with the promulgating agency’s statutory authority.

Other factors may also influence the over or under estimation of risk associated with an industrial facility’s emissions. For example: Are exposure assessments conducted based upon a facility’s maximum hourly emissions or annual average emissions? Are synergistic effects of toxic air pollutants considered? How are background ambient concentrations taken into account? Moreover, if a regulatory authority assumes several conservative factors in its risk evaluation, this inevitably will have a compounding effect. In such an instance, even though the standard or goal may be stated as a 1 in a million lifetime cancer risk, the program may actually be regulating sources to a much more stringent standard. Conversely, use of overly liberal assumptions could under-estimate risks from emissions.

C. Legal Challenges to an Agency’s Scientific Determinations of Risk

At the federal level, the courts generally apply the familiar arbitrary and capricious standard when reviewing challenges to U.S. EPA’s findings of fact—especially with respect to the highly technical risk issues associated with exposure to air pollutants. Of course, the courts also examine whether the agency considered the appropriate factors delineated in the authorizing statute. With respect to scientific based challenges, the courts generally afford a high degree of deference to the regulatory authority where such determinations are within the agency’s area of expertise. Nevertheless, the courts will closely scrutinize scientific determinations to ensure that they have a rational basis. One of the most extensive discussions of this review is set forth in Ethyl Corp. v. EPA, 541 F.2d. 1 (D.C. Cir., 1976).

There is no inconsistency between the deferential standard of review and the requirement that the reviewing court involve itself in even the most complex evidentiary matters; rather, the two indicia of arbitrary and capricious review stand in careful balance. The close scrutiny of the evidence is intended to educate the court. It must understand enough about the problem confronting the agency to comprehend the meaning of the evidence relied upon and the evidence discarded; the questions addressed by the agency and those bypassed; the choices open to the agency and those made. The more technical the case, the more intensive must be the court’s effort to understand the evidence, for without an appropriate understanding of the case before it the court cannot properly perform its appellate function. But that function must be performed with conscientious awareness of its limited nature. The enforced education into the intricacies of the problem before the agency is not designed to enable the court to become a
superagency that can supplant the agency’s expert decision-maker. To the contrary, the court must give due deference to the agency’s ability to rely on its own developed expertise. The immersion in the evidence is designed solely to enable the court to determine whether the agency decision was rational and based on consideration of the relevant factors. It is settled that we must affirm decisions with which we disagree so long as this test is met. Thus, after our careful study of the record, we must take a step back from the agency decision. We must look at the decision not as the chemist, biologist or statistician that we are qualified neither by training nor experience to be, but as a reviewing court exercising our narrowly defined duty of holding agencies to certain minimal standards of rationality. Although (our) inquiry into the facts is to be searching and careful, the ultimate standard of review is a narrow one. We must affirm unless the agency decision is arbitrary or capricious.


[T]he agency must examine the relevant data and articulate a satisfactory explanation for its action including a “rational connection between the facts found and the choice made.” In reviewing that explanation, we must “consider whether the decision was based upon a consideration of the relevant factors and whether there has been a clear error of judgment.” Normally, an agency rule will be arbitrary and capricious if the agency has relied upon factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

Where U.S. EPA’s technical rulemaking judgments are being challenged, the arbitrary and capricious standard of review also requires the court to determine whether “the agency has provided notice and an opportunity to comment, and has fairly considered all significant data and comments...” Kennecott v. United States Environmental Protection Agency, 780 F.2d. 445, 449 (4th Cir., 1985).

Under Kentucky law, agency action in promulgating a regulation will be deemed arbitrary where: (1) the agency exceeded its statutory powers; (2) the agency’s procedures deprived any person of due process; or (3) the agency’s decision is not supported by substantial evidence. Transp. Cabinet v. Cornell, 796 S.W.2d 591, 594 (Ky. Ct. App. 1990). As stated in Motor Vehicle Comm’n v. Hertz Corp., 767 S.W.2d 1, 2 (Ky. Ct. App. 1989):

[A] legislature, or a body acting under legislative authority, may not, “under the guise of protecting the public, arbitrarily interfere
with private business or prohibit lawful occupation or impose unreasonable or unnecessary restrictions on them. The regulation of a lawful business is dependent upon some reasonable necessity for the protection of health, safety, morality or other phase of the general welfare.

See also Kentucky Milk Marketing v. Kroger Co., 691 S.W.2d 893, 899 (Ky. 1985) ("The question of reasonableness is one of degree and must be based on the facts of a particular case."); McGuffey v. Hall, 557 S.W.2d 401, 413 (Ky. 1975) (finding that a state’s police power is not without limitation: “it may not operate unreasonably beyond the occasion or necessity of the case”).

III. CONCLUSION

The extent to which a state or local agency may regulate toxic air pollutant emissions from industry to protect public health is largely dependent on the agency’s statutory rulemaking authority. Depending upon the nature of statutory restrictions on agency power, the agency may not be free to regulate industry to an unreasonably low risk level, especially if other non-regulated sources contribute significantly to the perceived problem.

Methodologies used to predict the risk posed by certain levels of emissions are highly technical, complicated, and often rely on science that is evolving. If a regulation is based upon flawed science or is not rational, especially given the agency’s statutory charge, the rules may also be susceptible to challenge.

In sum, although state/local agency determinations receive deference, a state or local agency does not have unfettered discretion when regulating toxic air emissions. The agency must comply with its statutory authority, ensure that it relies on substantial evidence, and promulgate regulations that are reasonable.
### RISKS ASSOCIATED WITH MODERN LIFE

**ANNUAL RISK OF Dying FROM, 1 IN...**

<table>
<thead>
<tr>
<th>Cause</th>
<th>Risk (per 100,000)</th>
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<tbody>
<tr>
<td>Accident (all kinds)</td>
<td>3,014</td>
</tr>
<tr>
<td>Motor vehicle accidents</td>
<td>6,745</td>
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<tr>
<td>Alcohol (direct plus liver disease)</td>
<td>6,210</td>
</tr>
<tr>
<td>Homicide</td>
<td>15,440</td>
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<tr>
<td>Food poisoning</td>
<td>56,424</td>
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<tr>
<td>Drowning</td>
<td>64,031</td>
</tr>
<tr>
<td>Fire</td>
<td>82,977</td>
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<tr>
<td>Bicycle accident</td>
<td>376,165</td>
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<tr>
<td>Lightning</td>
<td>4,478,159</td>
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<tr>
<td>Bioterrorism (anthrax)</td>
<td>56,424,800</td>
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*U.S. pop. Divided by number of annual deaths for 2000 except for bioterrorism. Source: CDC as reported on website for Harvard Center for Risk Analysis, [www.hcra.harvard.edu](http://www.hcra.harvard.edu)*
Louisville Metro Air Pollution Control District

Draft Regulations
January 10, 2005

This is Draft 2 of the set of STAR program regulations. For each regulation, the PDF document linked in the right column identifies with a double underline the changes between Draft 1 (September 16, 2004) and Draft 2 (January 10, 2005). If there is not a link to the regulation, the District did not make a change to that regulation between Draft 1 and Draft 2.

On 1/13/2005, the Committee of the Whole of the Air Pollution Control Board approved beginning the formal public review process for the proposed regulations.

All of the regulations are provided as Adobe PDF files.

<table>
<thead>
<tr>
<th>No.</th>
<th>Regulation Title</th>
<th>Changes from Draft 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.02</td>
<td>Definitions</td>
<td>1.02</td>
</tr>
<tr>
<td>1.06</td>
<td>Stationary Source Self Monitoring, Emissions Inventory Development, and Reporting</td>
<td>1.06</td>
</tr>
<tr>
<td>1.07</td>
<td>Excess Emissions During Startups, Shutdowns, and Malfunctions</td>
<td>1.07</td>
</tr>
<tr>
<td>1.20</td>
<td>Malfunction Prevention Programs</td>
<td>1.20</td>
</tr>
<tr>
<td>1.21</td>
<td>Enhanced Leak Detection and Repair Programs</td>
<td>1.21</td>
</tr>
<tr>
<td>2.08</td>
<td>Emissions Fees, Permit Fees, Permit Renewal Procedures, and Additional Program Fees</td>
<td>2.08</td>
</tr>
<tr>
<td>3.01</td>
<td>Ambient Air Quality Standards</td>
<td>3.01</td>
</tr>
<tr>
<td>3.02</td>
<td>Applicability of Ambient Air Quality Standards</td>
<td>—</td>
</tr>
<tr>
<td>3.03</td>
<td>Definitions</td>
<td>—</td>
</tr>
<tr>
<td>3.04</td>
<td>Ambient Air Quality Standards</td>
<td>—</td>
</tr>
<tr>
<td>3.05</td>
<td>Methods of Measurement</td>
<td>—</td>
</tr>
<tr>
<td>5.01</td>
<td>General Provisions</td>
<td>5.01</td>
</tr>
<tr>
<td>5.03</td>
<td>Potential Hazardous Emissions</td>
<td>—</td>
</tr>
<tr>
<td>5.11</td>
<td>Standards of Performance for Existing Processes and Process Equipment Emitting Toxic Air Pollutants</td>
<td>5.11</td>
</tr>
<tr>
<td>5.12</td>
<td>Standards of Performance for New or Modified Processes or Process Equipment Emitting Toxic Air Pollutants</td>
<td>5.12</td>
</tr>
<tr>
<td>Section</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>5.20</td>
<td>Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant</td>
<td>5.20</td>
</tr>
<tr>
<td>5.21</td>
<td>Environmental Acceptability for Toxic Air Contaminants</td>
<td>5.21</td>
</tr>
<tr>
<td>5.22</td>
<td>Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant</td>
<td>5.22</td>
</tr>
<tr>
<td>5.23</td>
<td>Categories of Toxic Air Contaminants</td>
<td>5.23</td>
</tr>
<tr>
<td>5.30</td>
<td>Report and Plan of Action for Identified Source Sectors (Added in second draft)</td>
<td>5.30</td>
</tr>
</tbody>
</table>
“When You Wish Upon A STAR”

Politics, Policy And Air Toxics
In Metro Louisville, Kentucky

Tom FitzGerald, Director
Kentucky Resources Council, Inc.
P.O. Box 1070
Frankfort, Kentucky 40602
www.kyrc.org
1. Political Realignment and Changing Expectations

    * Shift from heavy industrial to service economy

    * Evolution Of Air Pollution Control Agency

2. History of State Activities Towards Controlling Air Toxics

A. 1986 state air toxics regulations.

Developed pursuant to Reagan Administration initiative to encourage state lead in development of air toxics regulations. Identified lists of chemicals and compounds, and required demonstration that emissions fell below threshold or imposition of controls to achieve that emission limit.

Underprotective of public health due to certain assumptions in the standards and calculation of allowable emissions.

i. Allowance for stack height.

ii. Use of $1/42^{nd}$ fraction of TLVs. Developed by ACGIH for occupational exposure, and never intended to be used to establish ambient concentrations for general public.

iii. Scope of coverage included 92 chemicals contrasted with the 736 chemicals listed in the new source regulation as being toxics of concern.

B. 1994 Air Toxics Program Issues Paper

Recognized failure of 1986 regulations. Invited public comment on state methodology for addressing the requirements of the Clean Air Act Amendments of 1990 regulating 189 "hazardous air pollutants" from 174 categories of sources, and how this new requirement would be meshed with the existing state air pollution regulations governing the air toxics emissions.

C. Kentucky Air Toxic Pollutants Workgroup

"EPPC is of the opinion that the public interest would be served by the development of a state regulatory program that identifies ambient levels of toxic air pollutants that are consistent with protection of health-related values and establishes clear-cut implementation procedures."

D. Evolution of Local Toxics Control Efforts

1. West County Community Task Force – West Louisville Air Toxics Study
2. Legal Authority

a. Clean Air Act and “floor preemption”

42 U.S.C. 7416, CAAA Sec. 116, explicitly preserves state and local government authority, noting that

... nothing in this chapter shall preclude or deny the right of any
State or political subdivision thereof to adopt or enforce (1) any
standard or limitation respecting emissions of air pollutants or (2)
any requirement respecting control or abatement of air pollution;

except that the standards cannot be less stringent than those required under the Act and included in a state implementation plan. Likewise, KRS 224.20-130 requires that a local district’s regulations and standards be no less stringent than those adopted by the cabinet.

b. KRS Chapter 77 provides explicit authorization for a county to establish a local air pollution control program. It designates each county as an air pollution control district, and provides the mechanism by which the district’s program becomes activated.

General rulemaking authority in KRS 77.060(1) to make rules and regulations “necessary to carry out the provisions of this chapter.”

Specific authorization in KRS 77.155(2) to “fix reasonable limits” by weight or otherwise,

for particular air contaminants or other material which in the opinion of
said board may cause or have tendency to cause injury, detriment,
nuisance, or annoyance to any considerable number of persons or to the public.

c. Preemption and “concurrent authority”

“Gap filling” on residual risk. Status of EPA Actions on MACT and residual risk.

Eight years after EPA publishes a final technology-based NESHAP for a source category, they are required to determine if the residual risk from air toxics emissions for that source category are protective of human health and the environment with an ample margin of safety. They are also required to review the technology-based standards every eight years after publication.

EPA acknowledged in January 2005 that it had missed the 8-year statutory deadline and that “we are focusing our resources on the 8 projects where we have missed our deadline and Earth Justice has filed suit and we are under schedule negotiations. 20 residual risk and MATC review standards development projects are underway, first proposal is for coke ovens.
Issues associated with regulation:

a. Point of Compliance for measuring risk and defining “ambient air.”

KRC has questioned the use of “public access” as a qualifier for defining “ambient air.” While air within a structure that is used for commercial or manufacturing is typically subject to OSHA standards, occupational exposure of workers in the workplace outside of the workplace to emissions from the facility vents and stacks appears to fall in a void if the ambient standards are not measured until the “property line.” The use of the “property line” as the point at which compliance is determined with respect to ambient standards, has two unintended consequences that make it underprotective of public health – first, it would appear to allow acquisition of land in order to create a buffer rather than management of the emissions; and second, it would allow exposure to workers outside of the workplace without accountability, even where those workers might be the maximally exposed individuals due to the exposure in the workplace as well as potential exposure as neighborhood residents and individual in transit from home to work.

b. Control of Emissions From Malfunctions And Upsets

Emissions of products of combustion and of incomplete combustion from thermal treatment units can be orders of magnitude higher than during normal operating conditions, and accountability in the area of startups, shutdowns, malfunctions and releases has been lacking.

Question of who should develop malfunction prevention program.

2. Principles

a. The goal of the state program should be that of assuring air quality that protects public health and welfare, with an adequate margin of safety (to account for tremendous uncertainties in toxicology and cumulative risk science). Endpoint should not be identification of “tolerance” level of exposure but cessation of the use of the public air for disposal of wastes to which exposure is nontherapeutic and which are toxic, persistent or bioaccumulative. Imposition of any degree of involuntary risk on an unknowing population, many of whom are legally incapable of consent, in order to accommodate the short-term economic interests of the discharger, is morally and legally repugnant.

In determining the “acceptable” level of risk, KRC believes that the formulation of “acceptability” of risks posited by the National Commission on Product Safety is instructive:

Risks of bodily harm to users are not unreasonable when consumers understand that risk exists, can appraise their probability and severity, know how to cope with them, and voluntarily accept them to get benefits that could not be obtained in less risky ways. When there is a risk of this character,
consumers have reasonable opportunity to protect themselves; and public authorities should hesitate to substitute their value judgments about the desirability of the risk for those of the consumers who choose to incur it.

But preventable risk is not reasonable (a) when consumers do not know that it exists; (b) when, though aware of it, consumers are unable to estimate its frequency and severity, or (c) when consumers do not know how to cope with it, and hence are likely to incur harm unnecessarily; or (d) when risk is unnecessary in . . . that it could be reduced or eliminated at a cost in money or in the performance of the product that consumers would willingly incur if they knew the facts and were given the choice.

Thus framed, the regulatory endpoint must be the protection of public health and environmental quality by eliminating the use of the “commons” for disposal of airborne wastes and by more fully internalizing the cost of avoidance, reduction, management and disposal of waste byproducts of manufacturing.

b. Utilizing the precautionary principle, the burden must be shifted to the sources to demonstrate lack of harm in the use of the public’s air for waste disposal rather than on the agency to justify imposition of controls to limit the use of public resources to dispose of wastes as airborne pollutants. Each facility should bear responsibility for demonstrating that its emissions at the rate, quantities and duration proposed do not result in an increase in morbidity or mortality, or failing that, to commit to a meaningful, measurable program of continuous reductions that will achieve that standard in a reasonable time certain.
AIR TOXICS

- SUPPLEMENTAL HANDOUT -

LOUISVILLE METRO AIR POLLUTION CONTROL DISTRICT

STAR PROGRAM
Strategic Toxic Air Reduction

DRAFT REGULATIONS
January 10, 2005
REGULATION 1.02 Definitions

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control
Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation contains certain definitions used throughout District regulations.

SECTION 1 Definitions

As used in these regulations, the following terms shall have the meaning given to them in this section except as otherwise specified in these regulations. All terms not defined in these regulations shall have the meaning given to them in KRS 77.005, the Act, or by commonly accepted usage.

1.1 "Act" means the Clean Air Act (42 U.S.C. §§7401 et seq.) which consists of the Clean Air Act of 1963 and all of the amendments made by subsequent enactments, the most recent major amendment being the Clean Air Act Amendments of 1990 (P.L. 101-549).

1.2 "Acute noncancer effect" means a biochemical change, functional impairment, or pathological lesion that affects the performance of the whole organism, or reduces an organism’s ability to respond to an additional environmental challenge that is produced within a short period of time following an exposure.

1.32 "Affected facility" means a process or process equipment to which a regulation is applicable.

1.43 "Air contaminant" or "air pollutant" means smoke, charred paper, dust, soot, grime, carbon, noxious acids, fumes, gases, odors, or particulate matter, or any combination of these, that is emitted into or otherwise enters the outside air. These terms also include any precursors to the formation of an air contaminant or air pollutant.

1.54 "Air pollution control equipment" means equipment that may be required by law or regulation for the control of air pollution but is not vital to production of the normal product of the process or process equipment or to its normal operation.

1.65 "Alternative method" means any method of sampling and analyzing for an air pollutant that is not a reference method or an equivalent method but that has been demonstrated to the satisfaction of the EPA and the District to produce, in specific cases, results adequate for determining compliance.

1.76 "Ambient air" means that portion of the atmosphere, external to buildings, to which the general public has access. For the purpose of determining the concentration of an air contaminant that is or may be emitted by a stationary source, ambient air also includes the atmosphere, external to buildings, that is beyond the property line of that stationary source, regardless of whether the general public has access.

1.87 "Ambient air quality standard" means a numerical expression of the level of an air contaminant required to be achieved and maintained through the application of appropriate preventive or control measures. An "ambient air quality standard" consists of two parts:

1.87.1 A specified concentration for a particular air contaminant and

1.87.2 A time-averaging interval over which that concentration is measured.

1.98 "Annual mean" means an average determined on the basis of any consecutive 12-month
"Asbestos" means the asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, amosite, anthophyllite, and actinolite-tremolite.

"Asbestos mill" means any process or process equipment engaged in converting, or in any intermediate step in converting, asbestos ore into commercial asbestos. Outside storage of asbestos materials is not considered a part of the asbestos mill.

"Asbestos material" means asbestos or any material containing asbestos.

"Asbestos tailings" means any solid waste that contains asbestos and is a product of asbestos mining or milling operations.

"Best available control technology" (BACT) means an emission limitation, including a visible emission standard, based on the maximum degree of reduction for each pollutant subject to regulation that would be emitted from any proposed new or modified process or process equipment that the District, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for that new or modified process or process equipment through the application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment, innovative fuel combustion techniques, and pollution prevention approaches, for elimination, reduction, or control of that pollutant. In no event shall the application of best available control technology result in emissions of any pollutant that would exceed the emissions allowed by any applicable standard under Regulation 5, 6, or 7. If the District determines that technological or economic limitations on the application of measurement methodology to a particular process or process equipment would make the imposition of an emissions standard infeasible, a design, equipment, work practice, or operational standard, or combination of those approaches, may be prescribed instead.

"Board" means the Air Pollution Control Board of Jefferson County as provided for in KRS Chapter 77.

"Bypass" means the intentional diversion of air contaminants from air pollution control equipment or process equipment that normally reduces the emission of the air contaminants.

"Cabinet" means the Natural Resources and Environmental and Public Protection Cabinet of the Commonwealth of Kentucky as provided for in KRS Chapter 224.

"Cancer" means a disease of heritable, somatic mutations affecting cell growth and differentiation, characterized by an abnormal, uncontrolled growth of cells.

"Carcinogen" means an agent capable of inducing cancer.

"Chronic noncancer effect" means a biochemical change, functional impairment, or pathological lesion that affects the performance of the whole organism, or reduces an organism’s ability to respond to an additional environmental challenge that occurs as a result of repeated or long term exposures.

"Commence" means that an owner or operator has obtained all necessary preconstruction approvals or permits and has either:

1. Begun, or caused to begin, a continuous program of actual on-site construction or modification, to be completed within a reasonable time, or

2. Entered into a binding agreement or a contractual obligation, that cannot be canceled or modified without substantial loss to the owner or operator, to undertake a continuous program of actual on-site construction or modification, to be completed within a reasonable time.
1.2221 "Commercial asbestos" means any asbestos that is extracted from asbestos ore.
1.2318 "Compliance plan and schedule" means a list of remedial measures including an enforceable
sequence and timing of actions or operations leading to compliance with a limitation or
standard by a specific date.
1.2419 "Construction" means fabrication, erection, modification, or installation of an affected
facility or any portion of an affected facility.
1.250 "Demolition" means the wrecking or taking out of any load-supporting structural member
of a structure together with any related handling operations.
1.261 "District" means the Air Pollution Control District of Jefferson County as provided for in
KRS Chapter 77.
1.272 "Division" means the Division for Air Quality of the Natural Resources and Environmental
and Public Protection Cabinet of the Commonwealth of Kentucky as provided for in KRS
Chapter 224.
1.283 "Emission standard" means a requirement that is contained in a federal, state, or local law
or regulation, District permit, or Board Order, or is otherwise legally enforceable requirement
that limits the quantity, rate, or concentration, or opacity of the emissions of an air
contaminants into the ambient air on a continuous basis, including any requirement related
to the operation or maintenance of a process or process equipment to assure continuous
emission reduction, and any required design, equipment, work practice, or operational
standard.
1.294 "Equivalent method" means any method of sampling and analyzing for an air pollutant that
has been demonstrated to the satisfaction of the EPA to have a consistent and quantitatively-
known relationship to the reference method under specified conditions.
1.30 "Excess emissions" means emissions that exceed an applicable emission standard. An
applicable emissions standard would include a surrogate emission standard, such as volatile
organic compounds that would include a toxic air contaminant, for which environmental
acceptability has been demonstrated pursuant to Regulation 5.21. If there is not an applicable
emission standard for a toxic air contaminant established pursuant to Regulation 5.21
Environmental Acceptability for Toxic Air Contaminants, then, for the purpose of the
notification and reporting requirements of Regulation 1.07 Excess Emissions During
Startups, Shutdowns, and Malfunctions, excess emissions shall also mean emissions that
exceed 125% of the reported actual maximum hourly emission rate of a toxic air contaminant
that results from a startup, shutdown, or malfunction.
1.3125 "Existing affected facility", except as otherwise specified under applicable regulations,
means any affected facility that is in existence or has commenced construction before the
effective date of the applicable emission standard and that has not been subsequently
modified or reconstructed.
1.3226 "Federally Enforceable District Origin Operating Permit" (FEDOOP) means a non-Title V
operating permit issued by the District that contains a federally-enforceable permit condition,
limit, or provision.
1.3327 "Fixed capital cost" means the capital needed to provide all of the depreciable components.
1.3428 "Fuel" means natural gas, petroleum, coal, wood, and any other form of solid, liquid, or
gaseous matter consumed for the purpose of creating useful heat.
1.3529 "Fugitive emissions" means those emissions that could not reasonably pass through a stack,
chimney, vent, or other functionally equivalent opening.

1.02-3
1.36 "Hazardous air pollutant" (HAP) means any air pollutant listed in Regulation 5.14 Hazardous Air Pollutants and Source Categories Section 2 pursuant to the Act §112(b).

1.37 "Incineration" means the process of igniting and burning solid, semi-solid, liquid, or gaseous combustible or partially combustible wastes.

1.38 "Incinerator" means any furnace used in the process of burning waste for the purpose of reducing the volume of waste by removing combustible matter.

1.39 "Lowest achievable emission rate" (LAER) means, for any affected facility, that rate of emissions based on the more stringent of the following:

1.39.1 The most stringent emission limitation that is contained in the implementation plan of any State for that class or category of affected facility, unless the owner or operator of the proposed affected facility demonstrates that this limitation is not achievable, or

1.39.2 The most stringent emission limitation that is achieved in practice by that class or category of affected facility taking into consideration the pollutant that must be controlled. In no event shall the application of lowest achievable emission rate permit a proposed affected facility to emit any pollutant in excess of the amount allowable under applicable new source standards pursuant to Regulations 5, 6, or 7 or 40 CFR parts 60, 61, or 63.

1.40 "Major source", except as specified in another regulation for use in that regulation, means any stationary source that emits, or has the potential to emit, 100 tons per year or more of any air pollutant subject to regulation under the Act, 10 tons or more of an individual hazardous air pollutant (HAP), or 25 tons per year or more of a combination of HAPs.

1.41 "Malfunction" means the sudden, unforeseen, and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner that causes, or is likely to cause, emissions that exceed an applicable emission standard, but not including failures that are caused entirely or in part by poor maintenance, careless operation, or any other preventable upset condition or equipment breakdown.

1.42 "Maximum achievable control technology" (MACT) means the maximum achievable control technology defined in the Act §112 (d)(3).

1.43 "Modification", except as specified in another regulation for use in that regulation, means any physical change in, or change in the method of operation of, an affected facility that increases the amount of any air pollutant (to which an emission standard applies) emitted by that affected facility or that results in the emission of any air pollutant (to which an emission standard applies) not previously emitted, except that:

1.43.1 Routine maintenance, repair, and replacement shall not be considered a physical change, and

1.43.2 A change in the method of operation, unless previously limited by permit conditions, shall not include:

1.43.2.1 An increase in the production rate, if the increase does not exceed the operating design capacity of the affected facility or of the air pollution control equipment installed on the affected facility,

1.43.2.2 An increase in the hours of operation when the increase does not result in a violation of any applicable emission standards,

1.43.2.3 Use of an alternative fuel or raw material if, prior to the date any standard under this regulation becomes applicable to that affected facility, the affected facility is designed to accommodate the alternative use,
1.4337.2.4 Use of an alternative fuel or raw material by reason of an order, rule, or natural gas curtailment plan as approved by the District, or
1.4337.2.5 Change in ownership of the stationary source.
1.4438 "New affected facility" means any affected facility the construction, modification, or reconstruction of which is commenced on or after the effective date of any applicable emission standard regulation.
1.4539 "Nitrogen oxides" means all oxides of nitrogen, except nitrous oxide, as measured by test methods specified by the District.
1.460 "Odor" means the property of an air contaminant that can be detected by the sense of smell.
1.474 "Opacity" means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.
1.482 "Open burning" means the burning of any matter in such a manner that the products of combustion resulting from the burning are emitted directly into the outside air without passing through a stack, chimney, vent, or other functionally equivalent opening.
1.493 "Organic compound" or "organic material" means a chemical compound of carbon that has the same meaning as "volatile organic compound."
1.5044 "Outside air" or "open air" means the air outside of buildings and structures.
1.5145 "Owner or Operator" means any person who owns, leases, operates, controls, or supervises one or more affected facilities.
1.5246 "Particulate asbestos material" means finely divided particles of asbestos material.
1.5347 "Particulate matter" means any material, except uncombined water, that exists in a finely divided form as a liquid or a solid.
1.5448 "PM_{10}\) means particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by a reference method based on 40 CFR Part 50 Appendix J and designated in accordance with 40 CFR Part 53, or by an equivalent method designated in accordance with 40 CFR Part 53.
1.5549 "PM_{2.5}\) means particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers as measured by a reference method based on 40 CFR Part 50 Appendix L and designated in accordance with 40 CFR Part 53, or by an equivalent method designated in accordance with 40 CFR Part 53.
1.560 "Person" means any individual, firm, copartnership, joint venture, association, corporation, social club, fraternal organization, estate, trust, receiver, syndicate, county, city, municipality, district (for air pollution control or other purpose), or other political subdivision, or any group or combination acting as a unit, and the plural as well as the singular unit.
1.577 "Pollution prevention" (P2) means the use of materials, processes, or practices that reduce or eliminate the creation of pollutants or wastes by the process. Pollution prevention includes practices that reduce the use of hazardous and nonhazardous materials, energy, water, or other resources as well as practices that protect natural resources through conservation or more efficient use.
1.582 "Potential hazardous emissions" means an air pollutant, exclusive of pollutants regulated under the Act Section 112(b), to which no ambient air quality standard is applicable and that, in the judgment of the District, may cause, or contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness.
1.593 "Potential to emit" (PTE) means the maximum capacity of a stationary source or an affected facility to emit a pollutant under its physical and operational design. Any physical or
operational limitation on the capacity of the stationary source or affected facility to emit a pollutant, including air pollution control equipment and restrictions on the hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source or affected facility.

1.6054 "Process" means an action or operation, or a series of actions or operations, from which the emission of an air contaminant may originate. Examples of a "process" include any of the following:

1.6054.1 The physical change of a material,
1.6054.2 The chemical change of a material,
1.6054.3 The combustion of a fuel, refuse, or waste material,
1.6054.4 The storage of a material, and
1.6054.5 The handling of a material, and
1.60.6 The use of a material.

1.6155 "Process equipment" means all equipment, devices, and auxiliary components, including control equipment and stacks, used in a process.

1.6256 "Reactor" means a vat or vessel, that may be jacketed to permit temperature control, designed to contain chemical reactions.

1.6357 "Reasonably available control technology" (RACT) means devices, systems, process modifications, or other apparatus or techniques, including pollution prevention approaches, that are reasonably available taking into account the necessity of imposing those controls in order to attain and maintain a national ambient air quality standard and the social, environmental, and economic impact of those controls.

1.6458 "Reconstruction" means the replacement of process equipment for an affected facility to the extent that the fixed capital cost of the new components exceeds 50% of the fixed capital cost of a comparable entirely new affected facility.

1.6559 "Reference Method" means any method of sampling and analyzing for an air pollutant as prescribed in the following EPA regulations: Standards of Performance for New Stationary Sources (40 CFR part 60), National Emission Standards for Hazardous Air Pollutants (40 CFR part 61), National Emission Standards for Hazardous Air Pollutants for Source Categories (40 CFR part 63), National Primary and Secondary Ambient Air Quality Standards (40 CFR part 50), and Requirements for Preparation, Adoption, and Submittal of Implementation Plans (40 CFR part 51).

1.660 "Regulation" means a rule or order adopted by the Board pursuant to KRS Chapter 77 for the control or abatement of air contaminants within its jurisdiction or for the administration of the District.

1.674 "Run" means the net period of time during which an emission sample is collected. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practice.

1.682 "Sludge" means solid or semi-solid material produced by a treatment plant that processes municipal or industrial waste waters.

1.693 "Sludge dryer" means a device used to reduce the moisture content of a sludge by heating to temperatures above 65 °C directly with combustion gases.

1.7064 "Stack or chimney" means a flue, conduit, or duct arranged to conduct a gas stream to the
outside air.

1.7165 "Standard conditions" means:
1.7165.1 For source measurements, 20 °C and a pressure of 760 mm Hg, and
1.7165.2 For the purpose of air quality determinations, 25 °C and a reference pressure of 760 mm Hg.

1.7266 "Stationary source" means all of the air pollutant-emitting activities that are located on 1 or more contiguous or adjacent properties and are under the control of the same person or persons under common control. A property shall be considered contiguous if separated by only a public thoroughfare, stream, or other right of way. If a transmission and fuel delivery rights-of-way or a strip of land that serves no other principal purpose than as a transportation or materials handling link connects 2 or more otherwise separate stationary sources, then the connected stationary sources shall be considered as separate stationary sources.

1.7369 "Startup" means the setting in operation of an affected facility for any purpose.

1.74 "Toxic air contaminant" (also "TAC") means any air contaminant for which there is no national ambient air quality standard and that is, or may become, harmful to public health or the environment when present in sufficient quantities and duration in the ambient air. As used in these regulations, toxic air contaminant does not include the substances listed in Regulation 5.23 Categories of Toxic Air Contaminants Section 5 Exemptions from the Definition of Toxic Air Contaminant.

1.7568 "Toxic air pollutant" (TAP) means a substance listed in either 401 KAR 63:021 (11-11-86) or 401 KAR 63:022 (11-11-86).

1.7669 "Uncombined water" means water that is either in a gaseous, liquid, or solid state and that is not bound to a compound by internal molecular forces.

1.776 "Volatile organic compound" (VOC) means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, that participates in atmospheric photochemical reactions. The following organic compounds have been determined by the EPA to have negligible photochemical reactivity and are also excluded:

1.776.1 Methane,
1.776.2 Ethane,
1.776.3 Methylene chloride (dichloromethane),
1.776.4 1,1,1-trichloroethane (methyl chloroform),
1.776.5 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113),
1.776.6 Trichlorofluoromethane (CFC-11),
1.776.7 Dichlorodifluoromethane (CFC-12),
1.776.8 Chlorodifluoromethane (HCFC-22),
1.776.9 Trifluoromethane (HFC-23),
1.776.10 1,2-dichloro-1,1,2,2-tetrafluoroethane (CFC-114),
1.776.11 Chloropentafluoroethane (CFC-115),
1.776.12 1,1,1-trifluoro-2,2-dichloroethane (HCFC-123),
1.776.13 1,1,1,2-tetrafluoroethane (HFC-134a),
1.776.14 1,1-dichloro-1-fluoroethane (HCFC-141b),
1.776.15 1-chloro-1,1-difluoroethane (HCFC-142b),
1.776.16 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124),
1.776.17 Pentafluoroethane (HFC-125),
1.776.18 1,1,2,2-tetrafluoroethane (HFC-134),
1.776.19 1,1,1-trifluoroethane (HFC-143a),
1.776.20 1,1-difluoroethane (HFC-152a),
1.776.21 Parachlorobenzotrifluoride (PCBTF),
1.776.22 Cyclic, branched, or linear completely methylated siloxanes,
1.776.23 Acetone,
1.776.24 Perchloroethylene (tetrachloroethylene),
1.776.25 3,3-dichloro-l,1,1,2,2-pentafluoropropane (HCFC-225ca),
1.776.26 1,3-dichloro-l,1,2,2,3-pentafluoropropane (HCFC-225cb),
1.776.27 1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC-43-10mee),
1.776.28 Difluoromethane (HFC-32),
1.776.29 Ethylfluoride (HFC-161),
1.776.30 1,1,1,3,3,3-hexafluoropropane (HFC-236fa),
1.776.31 1,1,2,2,3-pentafluoropropane (HFC-245ca),
1.776.32 1,1,2,3,3-pentafluoropropane (HFC-245ea),
1.776.33 1,1,1,2,3,3,3-heptafluoropropane (HFC-236ea),
1.776.34 1,1,1,3,3-pentafluoropropane (HFC-245fa),
1.776.35 1,1,2,3,3-hexafluoropropane (HFC-236fa),
1.776.36 1,1,1,3,3-pentafluorobutane (HFC-365mfc),
1.776.37 Chlorofluoromethane (HCFC-31),
1.776.38 1-chloro-1-fluoroethane (HCFC-151a),
1.776.39 1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a),
1.776.40 1,1,1,2,2,3,3,4,4-nonfluoronitro-methoxy-butane ($C_6F_5OCCH_3$),
1.776.41 2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane {[CF$_3$]$_2$CF CF$_2$OCCH$_3$],
1.776.42 1-ethoxy-1,1,2,2,3,3,3-heptafluoropropane ($C_6F_5OCCH_3$),
1.776.43 2-(ethoxydifluoromethyl)-1,1,1,2,3,3-heptafluoropropane {[CF$_3$]$_2$CF CF$_2$OCCH$_3$],
1.776.44 Perfluorocarbon compounds that fall into the following classes:
1.776.44.1 Cyclic, branched, or linear, completely fluorinated alkanes,
1.776.44.2 Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations,
1.776.44.3 Cyclic, branched, or linear, completely fluorinated tertiary amines with no
unsaturations, and
1.776.44.4 Sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only
to carbon and fluorine, and
1.776.45 Methyl acetate,
1.776.46 1,1,2,2,3,3-heptafluoro-3-methoxy-propane (HFE-7000),
1.776.47 3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl) hexane (HFE-7500),
1.776.48 1,1,2,3,3-heptafluoropropane (HFC 227ea),
1.776.49 Methyl formate, and
1.776.50 t-butyl acetate, for purposes of VOC emissions limitations or VOC content requirements,
but is not excluded for purposes of all recordkeeping, emissions reporting, photochemical
dispersion modeling, and inventory requirements that apply to VOC and shall be
uniquely identified in emission reports.

1.78 "Welfare" means the effects on welfare, including, but not limited to, the effects on soils,
water, crops, vegetation, man-made materials, animals, wildlife, weather, visibility, and
climate, damage to and deterioration of property, hazards to transportation, and effects on
economic values and on personal comfort and well-being, whether caused by transformation,
conversion, or combination with other air pollutants.

1.79+ "Year" means a calendar year.

REGULATION 1.06 Stationary Source Self-Monitoring, Emissions Inventory Development, and Reporting

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control
Necessity And Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes the conditions for stationary source self monitoring, emissions inventory development, and reporting.

SECTION 1 In-Stack Self-Monitoring and Reporting
The District may require the owner or operator of a process or process equipment affected facility to install, operate, and maintain stack gas measuring, and/or emission monitoring, and parametric monitoring equipment in accordance with such requirements as specified in these regulations. For cause, including, but not limited to, in selected instances, primarily involving the incineration of hazardous or infectious waste or repeated or on-going violations, the District such requirement may also require include data storage and transmission equipment and lines. The owner or operator of a process or process equipment that is required to install, operate, and maintain this measuring or monitoring equipment shall maintain records of monitoring data and make periodic reports of these such data in such form, units of measure, and at such time intervals required by which the District may prescribe. Requirements for specific affected facilities are contained in the applicable regulations. The District, for cause, may require additional or more stringent specific requirements for an individual affected facility than those required in the regulations otherwise applicable to that affected such facility.

SECTION 2 Ambient Air Monitoring
The District may require the owner or operator of a process or process equipment any affected facility to install, operate, and maintain ambient air monitoring equipment in accordance with methods prescribed by the District, and in the such-number and frequency as prescribed by the District, and to make periodic ambient air monitoring reports at intervals as prescribed by the District.

SECTION 3 Provisions for Section 4 and Section 5 Emissions Data
The following provisions apply to the emissions data requirements in Section 4 and Section 5:

3.1 When reporting actual emissions, the owner or operator shall include any increased emissions that result from startups, shutdowns, and malfunctions along with the routine emissions of a process or process equipment.

3.2 For purposes of complying with the provisions of Section 4 and Section 5 this section, all emissions shall must be calculated using emission factors from EPA AP-42, other methods defined in the EPA-approved District regulations, stack test or CEMS data, or other procedures proposed defined by the owner or operator and which have been approved in writing by the District. If these other District-approved procedures are used, the District shall
provide all documentation on the emissions calculation procedures to the EPA, upon request.

3.3.2 The emissions data required by Section 4 and Section 5 statements shall include the process- or process equipment-specific facility-by-facility calculations used to determine emissions. The raw data used to calculate the emissions shall be retained by the owner or operator of the stationary source for a period of not less than 5 years and shall be made available to the District upon request. Representative Selected portions of the raw data used to calculate the emissions shall be supplied to the District in support of the emissions statement in a format provided by the District.

3.4 Notwithstanding the provisions of sections 4.2 to 4.4, if a stationary source is subject to Regulation 2.16 Title V Operating Permits, then the owner or operator of the stationary source shall comply with the provisions of section 4.1 and not the otherwise applicable provisions of sections 4.2 to 4.4.

3.5 For the purpose of reporting emissions pursuant to Section 4, the owner or operator may exclude emissions that are defined in Regulation 5.01 General Provisions sections 1.6.1 and 1.6.2 as "de minimis."

3.6 For the purpose of reporting emissions pursuant to Section 5, the owner or operator may exclude emissions that are defined in Regulation 5.01 section 1.6 as "de minimis."

3.7 If the owner or operator of a stationary source is required to submit an emissions statement pursuant to section 4.1 but no hazardous air pollutant is emitted during the applicable year, then the owner or operator shall submit a negative declaration in place of the emissions statement.

3.8 If the owner or operator of a stationary source is required to submit an enhanced emissions statement pursuant to section 5.2 but no toxic air contaminant is emitted during the applicable year, then the owner or operator shall submit a negative declaration in place of the enhanced emissions statement.

section 3.2 Sources subject to section 3.1 are:

3.2.1 Any stationary source that emits 25 tpy or more of any of the following pollutants: sulfur dioxide, particulates, volatile organic compounds, or nitrogen oxides, and

3.2.2 Any stationary source that emits 10 tpy or more, or a lesser quantity as promulgated by EPA in 40 CFR Part 61, of any HAP listed in the Act Section 112(b), or 25 tpy of any combination of the listed HAPs.

3.3 Stationary sources subject to sections 3.2.1 or 3.2.2 shall submit their first emissions statement by April 15, 1993 and shall report actual emissions from all facilities within the source during calendar year 1992. A source shall submit emission statements annually thereafter, unless it is no longer subject to section 3.2.

3.5 Failure to return the requisite data and forms by the date required in section 3.1 shall be prima facie evidence of a violation of this regulation.

SECTION 43 Emissions and Related Data for Criteria Pollutants, HAPs, and Ammonia Reporting

43.1 The owner or operator of a any stationary source described in section 3.2 shall submit an annual emissions statements of actual emissions of particulate matter, sulfur dioxide, carbon monoxide, nitrogen dioxide, ozone precursor emissions of volatile organic compounds and oxides of nitrogen, lead, ammonia, and all hazardous air pollutants (HAPs) listed in Regulation 5.14 Hazardous Air Pollutants and Source Categories to the District as
4.1.1 Each year, on or before April 15th of the year, for the previous calendar year of operation, for a stationary source subject to Regulation 2.16 Title V Operating Permits (Group 1 stationary source),

4.1.2 Each year, on or before April 15th of the year, for the previous calendar year of operation, for either of the following (Group 2 stationary source):

4.1.2.1 A stationary source that has applied for an operating permit pursuant to Regulation 2.17 Federally Enforceable District Origin Operating Permits, or

4.1.2.2 A stationary source that is subject to the permit requirements of Regulation 2.03 section 1.1 or 1.2 but is not included in section 4.1.1, 4.1.2.1, 4.2, 4.3, or 4.4 of this regulation, if the actual emissions from the stationary source are 25 or more tons per year individually of sulfur dioxide, particulate matter, volatile organic compounds, or oxides of nitrogen, and

4.1.3 Beginning August 15, 2006, and every third year thereafter, on or before August 15th of the year, for the previous calendar year of operation, for a stationary source that is subject to the permit requirements of Regulation 2.03 section 1.1 or 1.2 but is not included in section 4.1.1, 4.1.2, 4.2, 4.3, or 4.4 of this regulation, unless the District has notified the owner or operator of the stationary source in writing that an emissions statement is required every year.

4.2 Beginning April 15, 2006, the owner or operator of a gasoline dispensing facility subject to Regulation 6.40 Standards of Performance for Gasoline Transfer to Motor Vehicles (Stage II Vapor Recovery and Control), which does not include the initial transfer of gasoline into the fuel tanks of new motor vehicles at an automobile or truck assembly plant, shall submit to the District, on or before April 15th of each year, the gasoline throughput, by grade, by month, for the previous calendar year of operation. In addition, beginning April 15, 2006, and every third year thereafter, the owner or operator shall submit to the District, on or before April 15th of the year, the amount, by type, in gallons per year, of cold cleaner material used for the previous calendar year.

4.3 Beginning July 15, 2006, and every third year thereafter, the owner or operator of a stationary source that is subject to Regulation 6.44 Standards of Performance For Existing Commercial Motor Vehicle And Mobile Equipment Refinishing Operations or Regulation 7.79 Standards of Performance For New Commercial Motor Vehicle And Mobile Equipment Refinishing Operations and is not a stationary source described in either section 4.1.1 or 4.1.2 shall submit to the District, on or before July 15th of the year, the amount, in gallons, of coating and solvent, by type, used each month for the previous calendar year.

4.4 Beginning April 15, 2006, and every third year thereafter, the owner or operator of a stationary source that is subject to Regulation 5.02 Adoption of National Emission Standards for Hazardous Air Pollutants section 3.12 National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities and is not a stationary source described in either section 4.1.1 or 4.1.2 shall submit to the District, on or before April 15th of the year, the perchloroethylene usage in gallons, by month, for the previous calendar year.

43.54 The District may require the owner or operator of any stationary source not subject to section 3.2 to submit additional information regarding processes, process equipment, and report the actual or potential emissions related to any process or process equipment at the stationary source to the District on forms supplied by the District. The forms shall be certified pursuant
to section 3.1.3 and returned to the District by the deadline date stated in the letter of transmittal with the forms or stated in the forms themselves.

**SECTION 5 Enhanced Emissions Data for Toxic Air Contaminants**

5.1 As used in Section 5:

5.1.1 “Category 1 TAC” means a toxic air contaminant (TAC) listed in Regulation 5.23 Categories of Toxic Air Contaminants Section 1,

5.1.2 “Category 2 TAC” means a toxic air contaminant listed in Regulation 5.23 Section 2, and

5.1.3 “Uncontrolled emissions” means the maximum amount of an air contaminant that could be emitted from a process or process equipment under its physical and operational design, regardless of any enforceable limitation on the potential to emit of the process or process equipment and the effect of any air pollution control equipment or other process equipment that reduces emissions and that is vital to production of the normal product or to the normal operation of the process or process equipment. Physical and operational design factors that would limit the uncontrolled emissions from a process or process equipment include, but are not limited to, raw material specifications, maximum production capability, product configuration, and process constraints.

5.2 The owner or operator of a stationary source shall submit an enhanced emissions statement for listed toxic air contaminants (TACs) to the District as follows:

5.2.1 For a stationary source subject to Regulation 2.16 (Group 1 stationary source), the following:

5.2.1.1 The information listed in section 5.2.3 for the actual and uncontrolled emissions by process or process equipment as follows:

<table>
<thead>
<tr>
<th>Category 1 TACs</th>
<th>Calendar Year 2004 Due 7-15-05, and</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Category 1 and 2 TACs</th>
<th>Calendar Year 2006 Due 6-30-07, and each year thereafter, and</th>
</tr>
</thead>
</table>

5.2.1.2 The related stack and fugitive emission release parameters listed in section 5.3 as follows:

<table>
<thead>
<tr>
<th>Category 1 TACs</th>
<th>Due 7-15-05, and</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Category 2 TACs</th>
<th>Due 12-31-06, and</th>
</tr>
</thead>
</table>

5.2.2 For a stationary source that has applied for an operating permit pursuant to Regulation 2.17 or a stationary source that is described in section 4.1.2.2 (Group 2 stationary source), the following:

5.2.2.1 The information listed in section 5.2.3 for the actual emissions by process or process equipment as follows:

<table>
<thead>
<tr>
<th>Categories 1 and 2 TACs</th>
<th>Calendar Year 2006 Due 9-30-07, and each year thereafter, and</th>
</tr>
</thead>
</table>

5.2.2.2 The related stack and fugitive emission release parameters listed in section 5.3 as follows:

<table>
<thead>
<tr>
<th>Categories 1 and 2 TACs</th>
<th>Due 12-31-06.</th>
</tr>
</thead>
</table>

5.2.3 For each process, all of the following:

5.2.3.1 The operating schedule in hours per day, days per week, and weeks per year,

5.2.3.2 The chemical name for each listed TAC emitted,

5.2.3.3 The actual (and, if required, for the first year’s emissions inventory submittal, the uncontrolled) annual, average hourly and daily, and maximum hourly and daily emissions.
emission rates for each listed TAC, and

For the process emissions:

Whether the emission is a stack, fugitive, or area/pit emission,

The percentage of the overall process emissions that are stack, fugitive, or area
or pit, and

The amount of emissions for each point of emission for each listed TAC,

For cause, the District may extend the compliance date of section 5.2.1.1.1 by up to 6
months. To be eligible for this extension, the owner or operator shall submit all of the
information that is available by the compliance date and a written request to the District
explaining why the extension is necessary and the actions that were taken to minimize
the needed extension.

The related stack and fugitive emission release parameters are as follows:

Plot plan, drawn to scale, showing all of the following:

Property line,

Fences,

Scale,

North arrow,

Buildings and other structures,

Height of buildings and other structures (if buildings have tiers, profile of building
tiers),

Location of processes and process equipment,

Location of points of emission, and

UTM coordinates for corners of property, fences, buildings, and points of emission,

For each stack, all of the following:

Stack height,

Stack diameter (or dimensions if the stack is not round),

Exhaust gas temperature at stack exit point,

Exhaust gas exit velocity,

Exhaust gas flow rate in ACFM, and

A diagram of the stack discharge point if the exhaust gas is not discharged unobstructed vertically upwards,

For fugitive and area or pit emissions, all of the following:

Dimensions of the point of release, and

Height of the point of release, and

For flares, all of the following:

Flare tip height,

Maximum and average flare input gas stream volumetric flow rate, temperature, and
net heat input,

Identification of each component of the flare input gas stream,

Volumetric fraction for each component of the flare input gas stream, and

Flare stack diameter.

The uncontrolled emission rate for each listed toxic air contaminant, if required pursuant to
section 5.2.1, the maximum hourly and daily emission rates, and the related stack and
fugitive emission release parameters required to be submitted pursuant to section 5.2 are
required to be submitted only once unless there is an appreciable increase in the uncontrolled
or maximum hourly or daily emission rates or an appreciable change in the information that
has been submitted that would increase the maximum ambient concentration of a toxic air
contaminant. The current actual annual and average hourly and daily emission rates of each
listed toxic air contaminant are required to be submitted each year according to the schedule
in section 5.2.

5.5 If the District determines that the concentration of a toxic air contaminant in the ambient air,
resulting from the emission by a stationary source that is not required to submit the related
stack and fugitive emission release parameters listed in section 5.3, may be greater than the
level that would be considered environmentally acceptable pursuant to Regulation 5.21
Environmental Acceptability for Toxic Air Contaminants section 2.5.2 or 2.5.3, then the
District may require the owner or operator to submit the applicable stack and fugitive
emission release parameter information. In this case, the District shall provide written notice
to the owner or operator, specifying the information required to be submitted and the
applicable deadline.

5.6 If the District determines that the concentration of a toxic air contaminant in the ambient air
is, or may be, greater than the level that would be considered environmentally acceptable
pursuant to Regulation 5.21 section 2.8.1 or 2.8.2 and a potentially responsible entity for the
emissions of the toxic air contaminant is identified, then the District may require the owner
or operator of an identified stationary source to submit the information identified in
sections 5.2 and 5.3 of this regulation. If the stationary source is already scheduled to submit
the information identified in section 5.2 and 5.3, then the District may require the
information to be submitted on an accelerated schedule. In either case, the District shall
provide written notice to the owner or operator, specifying the required information to be
submitted and the applicable deadline.

SECTION 63.1-3 Certification by a Responsible Official
The information submitted to the District pursuant to this regulation shall contain a formal
certification by a responsible official, as defined in Regulation 2.16 section 1.35 (excluding
section 1.35.1.1), of the truth, accuracy, and completeness of the information. The certification
required is as follows:
"Based on information and belief formed after reasonable inquiry, I certify that the
statements and information in this document are true, accurate, and complete."

SECTION 7 Confidentiality and Open Records Requirements
3.1.4—Nothing in this section of the regulation is intended to preempt the confidentiality and open
records provisions policy of Regulation 1.08 Administrative Procedures.

v6/12-15-93.
REGULATION 1.07 Excess Emissions During Startups, Shutdowns, and Malfunctions

Air Pollution Control District of Jefferson County

Jefferson County, Kentucky

Relates to: KRS Chapter 77 Air Pollution Control
Pursuant to: KRS Chapter 77 Air Pollution Control
Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes the notification, and reporting, and operational requirements for the owner or operator of a stationary source when excess emissions occur as a result of a startup, shutdown, or malfunction, and emergencies.

SECTION 1 Definitions
Terms used in this regulation that are not defined in this regulation herein shall have the meaning given to them in Regulation 1.02 Definitions.

1.1 "Emergency" means a situation arising from a sudden and reasonably unforeseeable event beyond the control of the source, including acts of God, which requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation in the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.

SECTION 2 Excess Emissions

2.1 The owner or operator of a process or process equipment has a general duty to ensure that the emissions from the process or process equipment are in compliance with all emission standards at all times. This includes starting up and shutting down the process or process equipment in a manner that the emissions are in compliance with all applicable emission standards and, consistent with safe operating procedures, stopping input feed to the process or process equipment and shutting down the process or process equipment if excess emissions would likely result from a malfunction.

2.2 Excess emissions from a process or process equipment due to startup, shutdown, or malfunction, or emergency, that temporarily exceed the standards set forth by the District; shall be deemed in violation of the applicable emission standards, unless, based upon a showing by the owner or operator of the source and an affirmative determination by the District, the applicable requirements of this regulation are satisfied.

2.3 2 Notwithstanding the provisions of section 2.1, if a federal regulation requires compliance with emission standards during startup, shutdown, malfunction, or emergency, excess emissions resulting from any of these events shall be deemed in violation of those standards even though, based upon a showing by the owner or operator of the source and an affirmative determination by the District, the applicable requirements identified in section 2.1 are satisfied. However, in the case of technology-based federal emission standards, an emergency shall constitute an affirmative defense to an enforcement action brought for noncompliance with these emission standards if, based upon a showing by the owner or...
5.1 The affirmative defense of an emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

5.1.1 An emergency occurred and that the permittee can identify the cause of the emergency;

5.1.2 The permitted facility was at the time being properly operated;

5.1.3 During the period of the emergency, the permittee expeditiously took all reasonable steps consistent with safe operating practices to minimize levels of emissions that exceeded the emission standards or other requirements in the permit, and

5.1.4 The permittee submitted notice of the emergency to the District pursuant to this regulation of the time when emission limitations were exceeded due to the emergency. This notice must fulfill the requirements of this section, and must contain a description of the emergency, steps taken to mitigate emissions, and corrective actions taken:

5.2 In an enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

5.3 This provision is in addition to any emergency or upset provision contained in an applicable regulation.

2.3 In determining the appropriate enforcement action for excess emissions, the District may consider the following factors:

2.3.1 The duration and frequency of excess emissions during startups, shutdowns, malfunctions,

2.3.2 Whether the excess emissions could have been prevented through careful planning and design,

2.3.3 Whether the excess emissions are part of a recurring pattern indicative of inadequate design, operation, or maintenance,

2.3.4 Whether the process or process equipment was, at all times, operated in a manner consistent with good practices for minimizing emissions,

2.3.5 For a malfunction, whether the owner or operator, consistent with safe operating procedures, stopped input feed to the process or process equipment and shut down the process or process equipment as soon as possible,

2.3.6 For excess emissions during a startup or shutdown, the extent to which the owner or operator complied with section 3.6,

2.3.7 For excess emissions during a malfunction, the extent to which the owner or operator complied with section 4.4,

2.3.8 For a malfunction, whether the excess emissions were the result of an unavoidable malfunction. To be deemed an unavoidable malfunction, the owner or operator of the process or process equipment shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, all of the following:

2.3.8.1 The excess emissions were the result of an identified sudden and reasonably unforeseeable event beyond the control of the owner or operator, including forces of nature,

2.3.8.2 Corrective action to restore normal operation of the process or process equipment
was required,

2.3.8.3 The excess emissions were not caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error, and

2.3.8.4 The process or process equipment was, at the time of the malfunction, being properly operated, and

2.3.9 Whether the excess emissions exceeded a concentration in the ambient air that could reasonably have caused an acute noncancer effect.

2.43 Nothing in this regulation shall be construed to restrict the District's discretion to take, at any time, appropriate enforcement action under KRS Chapter 77 if, upon information supplied to the District pursuant to this regulation or otherwise available to the District, the District determines that such action is necessary to protect public health or welfare.

2.5 The owner or operator of a process or process equipment for which there are excess emissions shall comply with the following requirements, as applicable:

These applicable requirements are as follows:

2.5†.1 For startups and shutdowns, are in Section 3, and

2.5†.2 For malfunctions, are in Section 4, 6, and 7, and

2.1.3 Emergencies are in Section 5, 6, and 7.

2.6 If a notification or report to the District is required pursuant to this regulation to be in writing, then compliance with the deadline shall be established as follows:

2.6.1 If the notification or report is sent via mail, then the date and time postmarked by the U.S. Postal Service,

2.6.2 If the notification or report is sent via facsimile, then the date and time received by the District as indicated on the printed copy received by the District,

2.6.3 If the notification or report is sent via electronic mail, then the date and time identified as sent by the electronic mail received by the District, and

2.6.4 If the notification or report is hand-delivered to the District's office, then the date and time received by the District as stamped by the District.

2.7 The owner or operator of a process or process equipment that is subject to a notification or reporting requirement pursuant to this regulation may request, and the District may, for cause, approve an extension of the deadline for submitting one or more elements of the notification or report. The owner or operator may make this request by telephone, facsimile or electronic mail. If the request is made by telephone, then the owner or operator shall submit, by the end of that day, a confirmation written request by facsimile, electronic mail, or mail.

2.8 Notwithstanding a requirement in these regulations for certification of a submitted report, the notifications required by sections 3.1, 3.2, 3.3, 4.1, 4.3, and 4.6 are not required to be certified by a "responsible official" as defined in Regulation 2.16 Title V Operating Permits section 1.35. The reports required by sections 3.7, 3.8, 4.5, and 4.7 are required to be certified by a "responsible official."

SECTION 3 Startup or Shutdown

3.1 If excess emissions during any planned startup or shutdown are expected to exceed the standards, then the owner or operator of the process or process equipment affected facility shall notify the District in writing no later than three days before the planned startup or shutdown. However,
If an unplanned startup or shutdown during which excess emissions are expected to occur is necessitated by events, other than a malfunction, that which the owner or operator could not reasonably have foreseen 3 three days before the startup or shutdown, then the such notification shall be given to the District by telephone, facsimile, or electronic mail within 1 hour after the decision to start up or shut down the process or process equipment was made, and, if the notification is given by telephone, in writing as promptly as possible, but no later than 24 hours after that following the decision determination to shut down was made or startup and no event later than one day following the determination to startup or shutdown.

If an unplanned startup or shutdown pursuant to section 3.2 begins outside of the District's regular business hours (8:00 a.m. to 5:00 p.m. on Monday to Friday, not including holidays) and the initial written notification pursuant to section 3.2 was not available to the District during regular business hours, then, in addition to that written notification, the owner or operator of the process or process equipment shall leave a message on the District's main telephone line ([502) 574-6000] containing the information required by sections 3.5.1, 3.5.3, 3.5.4, and 3.5.6, and the name and telephone number of a contact person at the stationary source.

An unplanned startup or shutdown during which excess emissions are expected to occur that is necessitated by a malfunction shall be treated as part of the malfunction pursuant to Section 4.

The written planned or unplanned startup or shutdown initial notification pursuant to section 3.1 or 3.2 shall include the following information:

- The name and location of the stationary source,
- The name, address, telephone number, and electronic mail address of the person responsible for providing the information required by section 3.5,
- The process or process equipment involved in the startup or shutdown,
- The scheduled date and time for the beginning of the startup or shutdown process, the expected duration of for the startup or shutdown process, and the expected time period during which excess emissions are expected to occur,
- The physical and chemical composition and estimated quantity and concentration of excess emissions, or equivalent information that relates to compliance with the emissions standard, such as emissions monitoring data or results of an EPA-approved test method, for each air contaminant, action, and
- The reason for and necessity duration of the startup or shutdown,
- The reason the startup or shutdown could not be accomplished without causing excess emissions, and
- An explanation as to how the provisions of section 3.6 will be met.

The nature of the action to be taken during startup or shutdown;

The basis for determination that such startup or shutdown is necessary.

If excess emissions during a startup or shutdown of a process or process equipment are expected to occur, then the owner or operator of the process or process equipment shall comply with all of the following:

Reasonable, available, and practicable emission reduction measures, including process equipment design, operating procedures, and pollution prevention measures, shall be used to prevent or minimize excess emissions,

The frequency of operation of the process or process equipment in the startup or
shutdown mode shall be minimized to the maximum extent practicable,

3.6.3 A bypass of any related control equipment shall not occur unless necessary to prevent loss of life, personal injury, or severe property damage, and the extent and duration of any bypass shall be reduced as much as necessary to minimize excess emissions, and

3.6.4 All emission and parametric monitoring systems for the process or process equipment shall be operated unless technically infeasible.

3.7 If a person has notified the District pursuant to section 3.1, 3.2, or 3.3 but no excess emission occurred as the result of the startup or shutdown, then the owner or operator of the process or process equipment shall send a written report to the District that includes the name and telephone number of a contact person at the stationary source and the information required by sections 3.8.1, 3.8.3, and 3.8.4, except indicating that no excess emission occurred. The written report may be sent by mail, facsimile, or electronic mail, and shall be sent no later than 5 working days following the completion of the startup or shutdown.

3.8.2 If the emissions exceed the standard for a period in excess of four hours, no later than 5 working days following the completion of a startup or shutdown during which excess emissions occurred, whether or not initial notification of the startup or shutdown pursuant to section 3.1, 3.2, or 3.3 was made to the District, the owner or operator of the process or process equipment shall send a written report notice to the District that includes the following information: no later than the end of the next working day following the fourth hour of excess emissions:

3.8.1 The name and location of the stationary source,

3.8.2 The name, address, telephone number, and electronic mail address of the person responsible for providing the information required by section 3.8,

3.8.3 The process or process equipment involved in the startup or shutdown,

3.8.4 The actual date and time of the beginning of the startup or shutdown process, the actual duration of the startup or shutdown process, and the actual time period during which excess emissions occurred,

3.8.5 The physical and chemical composition and calculated quantity and concentration of excess emissions, or equivalent information that relates to compliance with the emissions standard, such as emissions monitoring data or results of an EPA-approved test method, for each air contaminant, including a description of the method used for calculating excess emissions and an identification of the applicable emission standard that was exceeded,

3.8.6 An explanation as to how each provision of section 3.6 was met, and

3.8.7 The frequency of excess emissions during startups or shutdowns during the previous 2 years.

3.9 The District may require the owner or operator of a process or process equipment for which startups or shutdowns have resulted in repeated excess emissions to develop and submit a program to eliminate or minimize excess emissions. If the District determines that a program is appropriate, then the District shall notify the owner or operator in writing, specify the information that is required in the program, and establish a deadline for submittal of the program. Upon District approval, the owner or operator shall implement the approved program and the approved program shall be an enforceable requirement of the applicable District permit for the process and process equipment included in the program.
SECTION 4  Malfunctions

4.1 If excess emissions from a process or process equipment resulting from a malfunction, or from an unplanned unforeseen startup or shutdown necessitated by a facility's malfunction or emergency, occur or are likely to occur, the owner or operator of the process or process equipment shall, as promptly as possible, but no and in no event later than 1 hour following the start of the malfunction or emergency, or, if a call to the 911 system was made, then no later than 2 hours following the start of the malfunction, notify the District by telephone, facsimile, or electronic mail. A call placed to the emergency number 911 constitutes notification to the District.

4.2 The initial notification of the malfunction pursuant to section 4.1 shall include the following information:

4.2.1 The name and location of the stationary source,

4.2.2 The name, address, telephone number, and electronic mail address of the person responsible for providing the information required by section 4.2,

4.2.3 The process or process equipment involved in the malfunction,

4.2.4 The date and time of the beginning of the malfunction, the estimated time before, consistent with safe operating procedures, input feed to the process or process equipment will be stopped and the process or process equipment shut down or the process or process equipment is returned to normal operation, whichever is earlier (the excess emissions end), and the estimated time period during which excess emissions are likely to occur,

4.2.5 To the extent that it can reasonably be determined within the context of the circumstances, the physical and chemical composition and estimated quantity and concentration of excess emissions, or equivalent information that relates to compliance with the emissions standard, such as emissions monitoring data or results of an EPA-approved test method, for each air contaminant,

4.2.6 If known or suspected, the likely cause of the malfunction, and

4.2.7 If applicable and known, the reason the processes or process equipment will not be shut down immediately, consistent with safe operating procedures.

4.3 If the initial notification pursuant to section 4.1 is required to be made at a time outside of the District's regular business hours (8:00 a.m. to 5:00 p.m. on Monday to Friday, not counting holidays), then, in addition to that initial notification, the owner or operator of the process or process equipment shall leave a message on the District's main telephone line [(502) 574-6000] containing the information required by sections 4.2.1, 4.2.3, 4.2.4, 4.2.6, and 4.2.7, and the name and telephone number of a contact person at the stationary source.

4.4 If excess emissions during a malfunction of a process or process equipment occur or are likely to occur, then the owner or operator of the process or process equipment shall comply with all of the following:

4.4.1 Reasonable, available, and practicable emission reduction measures, including process equipment design, operating procedures, pollution prevention measures, use of off-shift labor and overtime, and, consistent with safe operating procedures, immediately stopping input feed to the process or process equipment and shutting down the process or process equipment, shall be used to prevent or minimize excess emissions,

4.4.2 The frequency of operation of the process or process equipment in a malfunction mode shall be minimized to the maximum extent practicable and the duration of operation of
the process or process equipment in a malfunction mode shall be reduced as much as
necessary to minimize excess emissions,

4.4.3 A bypass of any related control equipment shall not occur unless necessary to prevent
loss of life, personal injury, or severe property damage, and the extent and duration of
any bypass shall be reduced as much as necessary to minimize excess emissions, and

4.4.4 All emission and parametric monitoring systems for the process or process equipment
shall be operated unless technically infeasible.

4.1 In order for excess emissions resulting from a malfunction to not be deemed a violation, the
showing and determination identified in section 2.1 shall confirm that all of the following
have occurred:

4.1.1 The occurrence in question did not result from the failure of the owner or operator of the
source to operate and maintain the equipment properly;

4.1.2 All reasonable steps were taken to correct, as expeditiously as practicable, the conditions
causing the emissions to exceed the standards, including the use of off-shift labor and
overtime if necessary;

4.1.3 All reasonable steps were taken to minimize the emissions resulting from the occurrence;
and

4.1.4 The excess emissions are not part of a recurring pattern indicative of inadequate design,
operation, or maintenance.

4.5 If a person has notified the District pursuant to section 4.1 or 4.3 but no excess emission
occurred as the result of the malfunction, then the owner or operator of the process or process
equipment shall send a written report to the District that includes the name and telephone
number of a contact person at the stationary source, the information required by sections
4.6.1, 4.6.3, and 4.6.4, and the statement that no excess emission occurred. The written
report may be sent by mail, facsimile, or electronic mail, and shall be sent no later than 5
working days after the input feed to the process or process equipment is stopped and the
process or process equipment is shut down or the process or process equipment is returned
to normal operation after the occurrence of a malfunction, whichever is earlier.

4.6 As soon as reasonably possible, but no later than 2 hours after the excess emissions ended,
the owner or operator of the process or process equipment shall notify the District by
telephone, facsimile, or electronic mail. If this notification is made by telephone, the owner
or operator shall provide written notification by facsimile or electronic mail no later than 4
hours after the excess emissions ended. The written notification of the end of the
malfunction shall include the following information:

4.6.1 The name and location of the stationary source,

4.6.2 The name, address, telephone number, and electronic mail address of the person
responsible for providing the information required by section 4.6,

4.6.3 The process or process equipment involved in the malfunction,

4.6.4 The date and time that the excess emissions ended, and

4.6.5 If the initial notification to the District pursuant to section 4.6 was made by telephone,
then the time that the telephone notification was made.

4.7 No later than 15 calendar days after the excess emissions ended, the owner or operator of the
process or process equipment shall send a written report to the District that includes the
following information:

6.2 If the time necessary to correct unlawful emissions will exceed four hours, the owner or
operator must notify the District of the malfunction or emergency by telephone at the time of this determination, and in writing no later than two working days after the start of the emergency or malfunction. Notification of completion of the corrective actions must be made by telephone to the District:

6.3 Malfunction and emergency reports and notices must include the following information:

46.73.1 The name and location of the stationary source, air contaminant source, and affected facility,

6.3.2 Its location,

46.73.23 The name, address, and telephone number, and electronic mail address of the person responsible for providing the information required by section 4.7 the affected facility,

4.7.3 The process or process equipment involved in the malfunction,

46.73.4 Confirmation of the actual date and time that the excess emissions ended of the occurrence,

46.73.5 The physical and chemical composition, rate, and calculated quantity and concentration of excess emissions, or equivalent information that relates to compliance with the emissions standard, such as emissions monitoring data or results of an EPA-approved test method, for each air contaminant, including a description of the method used for calculating excess emissions and an identification of the applicable emission standard that was exceeded during the malfunction, or during the emergency, and

46.73.6 An explanation as to how each provision of section 4.4 was met: The measures adopted to minimize the duration and extent of the emissions during shutdown, startup, malfunction, or emergency:

6.4 Malfunction and emergency reports shall also include:

6.4.1 The time the excess emissions began and ended;

6.4.2 The time of the beginning and end of the breakdown, malfunction or emergency that is asserted to be the cause of the excess emissions;

6.4.3 An explanation and, where appropriate, an engineering analysis of the cause of the malfunction, breakdown or emergency,

6.5 The District, for cause, may waive the reports or extend the time period for filing the reports required by this section:

4.2 In cases where malfunctions are of a repetitious nature, or when more than 12 failures of the same or similar pieces of equipment occur in a 12-month period, the District shall require the owner or operator to submit a written program outlining a time schedule and corrective actions which will result in a permanent solution to the problems. The District reserves the right to continually evaluate and require corrections of malfunctions:

46.74.74 An analysis of the cause of the malfunction and the steps that will be taken to prevent or minimize similar occurrences in the future, and

4.7.8 The frequency of excess emissions resulting from malfunctions during the previous 2 years of the same or similar process or process equipment or that occurred because of the same or similar cause, and

46.74.95 Any additional information requested by the District may require.

4.8 Upon written request from the owner or operator of a process or process equipment required to submit a report pursuant to section 4.7 for an extension of the due date to submit the information required by section 4.7.7, the District may extend the due date by up to 45 days
from the original due date.

SECTION 5—Emergencies

SECTION 6—Initial Notification and Reporting Requirements for Malfunctions and Emergencies

SECTION 57 Extended Malfunctions and Emergencies

57.1 In the event of a malfunction or emergency for which the time necessary to correct unlawful emissions will exceed four hours, the Air Pollution Control Officer may authorize continued operation and impose conditions for continued operation.

57.12 If correcting the time necessary to correct the unlawful excess emissions from a process or process equipment resulting from a malfunction is anticipated to exceed 30 days and the owner or operator does not shut down the process or process equipment, then the owner or operator shall, as soon as known, but no later than 7 days after the beginning of the excess emissions, request, in writing, that the District initiate the process for the adoption of a Board Order to allow continued operation with excess emissions. The request by the owner or operator of the process or process equipment shall include a written program outlining a time schedule and corrective actions to abate the excess emissions. The time schedule may include a period for engineering review and analysis of the cause of the excess emissions and design of modifications to effect compliance with the emission standards. The owner or operator shall, in a timely manner, submit all information requested by the District.

5.2 Any resulting Board Order shall include a time schedule and required actions to comply with the emission standards.

REGULATION 1.20 Malfunction Prevention Programs

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control
Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes the requirement for the owner or operator of certain permitted processes or process equipment to develop and implement a malfunction prevention program.

SECTION 1 Definitions
Terms used in this regulation that are not defined in this regulation shall have the meaning given to them in Regulation 1.02 Definitions.

1.1 “Affected facility” means any process or process equipment that meets one of the following:
1.1.1 A malfunction involving the process or process equipment was reported pursuant to Regulation 1.07 Excess Emissions During Startups, Shutdowns, and Malfunctions and the District determines that the development and implementation of a malfunction prevention program is appropriate,
1.1.2 The District determines that a malfunction involving the process or process equipment may have occurred and that the development and implementation of a malfunction prevention program is appropriate, or
1.1.3 The District determines that the development and implementation of a malfunction prevention program is appropriate to minimize the likelihood of the occurrence of a malfunction that may become harmful to public health or welfare.

SECTION 2 Applicability
This regulation applies to any affected facility.

SECTION 3 Malfunction Prevention Program Requirements
3.1 The owner or operator of an affected facility shall develop a malfunction prevention program to prevent, detect, and correct malfunctions, equipment failures, or abnormal process or process equipment operating parameters that may cause an excess emission. The program shall be in writing and reviewed and updated as the owner or operator or the District determines necessary to keep the program current, relevant, and effective. The program shall, at a minimum, include all of the following:
3.1.1 Identification of the processes, process equipment, and air pollution control equipment included in the program, including monitoring equipment and other instrumentation used to determine proper operation of the process and equipment,
3.1.2 Identification of the individual or position responsible for inspecting, maintaining, and repairing the affected process equipment and air pollution control equipment,
3.1.3 The maximum intervals for inspection and routine maintenance of the affected process equipment and air pollution control equipment. The maximum interval for routine
3.1.4 A description of the items or conditions that will be inspected,
3.1.5 A listing of materials and spare parts that will be maintained in inventory,
3.1.6 A description of the corrective procedures that will be taken in the event of a malfunction,
3.1.7 The calibration schedule for any device that monitors emissions or process equipment, or air pollution control equipment operational parameters. The time between calibrations shall not exceed 1 year or as specified in the program, whichever is shorter,
3.1.8 A description of any additional air pollution control equipment, monitoring equipment, or other instrumentation that will be installed, the installation and operation of which is necessary to minimize the likelihood of the occurrence of a malfunction,
3.1.9 A description of any operational changes that will be instituted that are necessary to minimize the likelihood of the occurrence of a malfunction,
3.1.10 If full implementation of a component of the malfunction prevention program will not occur upon approval by the District, then a schedule for implementation of that component,
3.1.11 The recommended length of time for the malfunction prevention program to remain in effect, and
3.1.12 Any other information that the District deems appropriate.

3.2 The owner or operator of an affected facility shall submit a malfunction prevention program to the District within 120 days of receipt of written notification from the District that a program is required. If the District determines that a revision to the program is necessary, the owner or operator shall, within 60 days of receipt of written notification from the District of a deficiency, submit a revision to the program addressing the deficiency.

3.3 After providing an opportunity for public review and comment on an initial malfunction prevention program, the District may approve the program. Upon receipt of written notification from the District that a submitted malfunction prevention program is approved, the owner or operator of the affected facility shall implement the approved program. The approved program shall be an enforceable requirement of the applicable District permit for the process and process equipment included in the program.

3.4 In addition to any required revision of a malfunction prevention program pursuant to section 3.1 or 3.2, the owner or operator of an affected facility may periodically revise the program as necessary to satisfy the requirements of this regulation or to reflect changes in equipment or procedures for the affected facility. Any revised program shall be submitted to the District. After providing an opportunity for public review and comment on a revision to a program determined by the District to be substantive, the District may approve the revised program. Upon receipt of written notification from the District that the revised program is approved, the owner or operator of the affected facility shall implement the approved revised program. The approved revised program shall be the enforceable requirement of the applicable District permit.

3.5 The owner or operator may reference, in whole or in part, in a malfunction prevention program the affected facility’s standard operating procedure manual, an Occupational Safety and Health plan, or other program to meet some or all of the requirements of this regulation.

3.6 The owner or operator of the affected facility shall keep adequate records to document
implementation of the components of the malfunction prevention program. These records
shall be maintained for a minimum of 5 years and made available to the District upon
request.

3.7 The District, after providing an opportunity for public review and comment, may discontinue
the requirement for an owner or operator to implement a malfunction prevention program.
If the District determines that discontinuation of this requirement is appropriate, based upon
a supporting history that the program has been successful in minimizing malfunctions, then
the District shall notify the owner or operator in writing and the program shall no longer be
an enforceable requirement of the applicable District permit.

Adopted v1/___________; effective __________.
REGULATION 1.21 Enhanced Leak Detection and Repair (LDAR) Program

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes the requirement for the owner or operator of certain process units to develop and implement an enhanced leak detection and repair program.

SECTION 1 Definitions

Terms used in this regulation that are not defined in this regulation shall have the meaning given to them in Regulation 1.02 Definitions.

1.1 “Affected facility” means either of the following:
1.1.1 A process unit that is subject to requirements of a program for the detection and repair of equipment leaks in 40 CFR Part 60, 61, or 63 except for 40 CFR Part 63 Subpart M National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities, or
1.1.2 A process unit for which the District determines the implementation of a leak detection and repair (LDAR) program is appropriate to minimize the likelihood of the occurrence of increased emissions that may become harmful to public health or welfare.

1.2 “Connector” means a flanged, screwed, or other joined fitting used to connect two pipe lines or a pipe line and a piece of equipment. A common connector is a flange. A joined fitting welded completely around the circumference of the interface is not considered a connector for the purpose of this regulation.

1.3 “Independent third party” means an entity in which the owner or operator (including any subsidiary, parent company, sister company, or joint venture) of the affected facility has no ownership or other financial interest. If the routine monitoring at an affected facility is done by a contractor rather than by in-house personnel, then the independent third party shall not be the contractor that did the routine monitoring nor have ownership or other financial interest in that contractor.

1.4 “Leak” means:
1.4.1 For a valve or flange, a screening concentration greater than 100 parts per million by volume,
1.4.2 For a pump, a screening concentration greater than 250 parts per million by volume,
1.4.3 For an agitator or compressor, a screening concentration greater than 2,500 parts per million by volume, and
1.4.4 For any other component, a screening concentration greater than 500 parts per million by volume.

1.4.5 All concentrations specified in this definition are as methane, above background.

1.5 “Process unit” means the equipment assembled and connected by pipes or ducts to process raw materials and to manufacture an intended product, including ancillary equipment such as, but not limited to, pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, and control
devices or systems. A process unit may consist of more than 1 unit operation. A process unit
does not include utilities, such as steam, uncontaminated water, or compressed air.

1.6 “Water seal control” means a seal pot, p-leg trap, or other type of trap filled with water (e.g.,
flooded sewers that maintain water levels adequate to prevent air flow through the system)
that creates a water barrier between the water level of the seal and the atmosphere. The water
level of the seal shall be maintained in the vertical leg of a drain in order to be considered a
water seal.

SECTION 2 Applicability
This regulation applies to any affected facility except that an affected facility that is subject to
Section 14 shall comply with the provisions of Section 14.

SECTION 3 General Monitoring and Inspection Requirements
The owner or operator of an affected facility shall monitor the process unit equipment for organic
compound leaks according to the requirements of 40 CFR 63 Subpart H National Emission Standards
for Organic Hazardous Air Pollutants for Equipment Leaks, except that the following additional
requirements shall apply:

3.1 The organic compound emissions from the following components shall be monitored with a
hydrocarbon gas analyzer each calendar quarter: blind flange, cap, or plug at the end of a pipe
or line containing an organic compound; heat exchanger head; sight glass; meter; gauge;
sampling connection; bolted manway; hatch; connector; agitator; sump cover; junction box
vent; cover and seal on an organic compound-water separator; and process drain.

3.2 As an alternative to the requirements of section 3.1 for blind flanges, caps, or plugs at the end
of pipes or lines containing an organic compound; sight glasses; meters; gauges; sampling
connections; bolted manways; connectors; heat exchanger heads; hatches; and sump covers
(the section 3.2 components), the owner or operator may elect to monitor all of these
components of a process unit and then conduct subsequent monitoring at the following
frequencies:

3.2.1 Once per year (i.e., 12-month period), if the percent of leaking section 3.2 components of
the process unit was 0.5% or greater, but less than 2.0%, during the last required annual
or biennial monitoring period,

3.2.2 Once every 2 years, if the percent of leaking section 3.2 components of the process unit
was less than 0.5% during the last required monitoring period. An owner or operator may
comply with section 3.2.2 by monitoring at least 40% of these components in the first year
and the remainder of the components in the second year. The percent of leaking section
3.2 components shall be calculated for the total of all monitoring performed during the
2-year period,

3.2.3 If the owner or operator of the process unit in a biennial leak detection and repair program
calculates less than 0.5% of leaking section 3.2 components from the 2-year monitoring
period, the owner or operator may monitor the components one time every 4 years. An
owner or operator may comply with the requirements of section 3.2.3 by monitoring at
least 20% of the components each year until all section 3.2 components have been
monitored within 4 years,

3.2.4 If the process unit complying with the requirements of section 3.2.3 using a 4-year
monitoring interval program has greater than or equal to 0.5% but less than 1.0% leaking
section 3.2 components, the owner or operator shall increase the monitoring frequency to one time every 2 years. An owner or operator may comply with the requirements of section 3.2.4 by monitoring at least 40% of the components in the first year and the remainder of the components in the second year. The owner or operator may again elect to use the provisions of section 3.2.3 when the percent leaking components decreases to less than 0.5%.

3.2.5 If the process unit complying with requirements of section 3.2.3 using a 4-year monitoring interval program has greater than or equal to 1.0% but less than 2.0% leaking section 3.2 components, the owner or operator shall increase the monitoring frequency to one time per year. The owner or operator may again elect to use the provisions of section 3.2.3 when the percent leaking components decreases to less than 0.5%, and

3.2.6 If a process unit complying with requirements of section 3.2.3 using a 4-year monitoring interval program has 2.0% or greater leaking section 3.2 components, the owner or operator shall increase the monitoring frequency to quarterly. The owner or operator may again elect to use the provisions of section 3.2.3 when the percent leaking components decreases to less than 0.5%.

3.3 A process drain equipped with a water seal control shall be inspected weekly to ensure that the water seal control is effective in preventing ventilation, except that daily inspections are required for a seal that has failed 3 or more inspections in any 12-month period. Upon request by the District, the owner or operator shall demonstrate (e.g., by visual inspection or smoke test) that the water seal control is properly designed and restricts ventilation.

3.4 A process drain not equipped with a water seal control shall be inspected monthly to ensure that each gasket, cap, and plug is in place and that there is no gap, crack, or other hole in the gasket, cap, or plug. In addition, each cap and plug shall be inspected monthly to ensure that it is tightly-fitting.

3.5 A pressure relief valve in gaseous service that is not vented to a closed-vent system shall be monitored with a hydrocarbon gas analyzer each calendar quarter.

3.6 Monitored screening concentrations shall be recorded for each component in gaseous or light liquid service. Notations such as “pegged,” “off scale,” “leaking,” “not leaking,” or “below leak definition” shall not be substituted for numerical hydrocarbon gas analyzer results. For readings that are higher than the upper end of the scale (i.e., pegged) even when using the highest scale setting or a dilution probe, a default pegged value of 100,000 parts per million by volume shall be recorded.

3.7 If there are 25,000 or more components at an affected facility required to be monitored by this regulation, then the monitoring data shall be recorded simultaneously when the component is monitored in an electronic format using a datalogger or other similar device and the information shall be kept electronically in a computer database. However, if the electronic recording device fails, then the monitoring data may temporarily be recorded in a non-electronic format and later entered into the electronic database.

3.8 Notwithstanding the monitoring frequency provisions of sections 3.1 to 3.5, the District may, for cause, require monitoring to be done on a more frequent schedule. If the District determines that more frequent monitoring is appropriate, the District shall notify the owner or operator of the affected facility in writing of the required revised monitoring schedule and the reason for requiring more frequent monitoring.

3.9 The owner or operator may propose to the District for approval a leak monitoring program.
that uses continuous monitoring of leaks with an alarm system that may be used to replace the monitoring requirement of sections 3.1 to 3.7. This program shall include a record keeping plan.

SECTION 4 Leak Repair

4.1 For leaks detected over 10,000 parts per million by volume (ppmv), a first attempt at repairing the leaking component shall be made no later than 1 process unit operating day after the leak is detected, and the component shall be repaired no later than 7 calendar days after the leak is detected.

4.2 For all other components subject to this regulation found to have leaks as defined in section 1.4, the components shall be repaired as specified in 40 CFR 63 Subpart H.

4.3 For a valve that is not a pressure relief valve or automatic control valve, repair may be delayed beyond the period designated in section 4.1 only under one of the following conditions:

4.3.1 Repair or replacement of the valve will occur at the next scheduled process unit shutdown and the owner or operator has undertaken "extraordinary efforts" to repair the leaking valve. For purposes of section 4.3, "extraordinary efforts" is defined as nonroutine repair methods (e.g., sealant injection) or use of a closed-vent system to capture and control the leak by at least 90%. For a leak detected at a level greater than 10,000 ppmv, extraordinary efforts shall be undertaken within 7 days of the valve being placed on the shutdown list; however, the owner or operator may keep the leaking valve on the shutdown list only after 2 unsuccessful attempts to repair a leaking valve through extraordinary efforts, provided that the second extraordinary effort attempt is made within 15 days of the first extraordinary effort attempt. For any other leak, extraordinary efforts shall be undertaken within 15 days of the valve being placed on the shutdown list, and a second extraordinary effort attempt is not required.

4.3.2 The owner or operator maintains, and makes available to the District upon request, documentation that demonstrates that there is a safety, mechanical, or major environmental concern posed by repairing the leak by using "extraordinary efforts", or

4.3.3 The valve is isolated from the process unit and does not remain in organic compound service.

4.4 A supervisory level person shall sign-off prior to putting a component on a "delay of repair" list.

SECTION 5 Equipment Requirements

The following equipment standards shall apply in addition to any equipment standards in 40 CFR 63 Subpart H.

5.1 A pressure relief valve in organic compound service that vents to atmosphere and that is installed in series with a rupture disk, pin, second relief valve, or other similar leak-tight pressure relief component shall be equipped with a pressure-sensing device or an equivalent device or system between the pressure relief valve and the other pressure relief component to monitor for leakage past the first pressure relief component. When leakage is detected past the first pressure relief component, the pressure relief component shall be repaired or replaced as soon as practicable, but no later than 30 calendar days after the failure is detected.

5.2 A pump, compressor, or agitator installed on or after July 1, 2006, shall be equipped with a shaft sealing system that prevents or detects the emission of organic compounds from the
An acceptable shaft sealing system includes:

5.2.1.1 A seal equipped with piping capable of transporting any leakage from the seal back to the process unit,
5.2.1.2 A seal with a closed-vent system capable of transporting to a control device any leakage from the seal,
5.2.1.3 A dual seal system with a heavy liquid or non-organic compound barrier fluid or gas at a higher pressure than the process pressure, and
5.2.1.4 A seal with an automatic seal failure detection and alarm system.

5.2.2 The District may approve a shaft sealing system different from those specified in section 5.2.1, provided that the District considers, on a case-by-case basis, the technological circumstances of the individual pump, compressor, or agitator, and determines that the alternative shaft sealing system will result in the lowest emissions level that the pump, compressor, or agitator is capable of meeting.

5.3 The following equipment standards shall apply to a process drain:

5.3.1 If a water seal control is used the only acceptable alternative to water as the sealing liquid is ethylene glycol, propylene glycol, or a similar low vapor pressure antifreeze, which may be used only during the period of November through February,
5.3.2 As an alternative to the weekly water seal inspections of section 3.3, the owner or operator may choose to equip the process drain with one of the following:
5.3.2.1 An alarm that alerts the operator if the water level in the vertical leg of the drain falls below 50% of the maximum level and a device that continuously records the status of the water level alarm, including the time period for which the alarm is activated,
5.3.2.2 A flow-monitoring device indicating either positive flow from a main to a branch water line supplying a trap or water being continuously dripped into the trap, and a device that continuously records the status of water flow into the trap, and
5.3.3 For a process drain not equipped with a water seal control, the process drain shall be equipped with one of the following:
5.3.3.1 A gasketed seal, or
5.3.3.2 A tightly-fitting cap or plug.

5.4 Construction of a new or reworked piping, valve, pump, or compressor system shall conform to the applicable American National Standards Institute, American Petroleum Institute, American Society of Mechanical Engineers, or equivalent codes.

5.5 A new or reworked underground process unit pipeline shall not contain a buried valve that would render monitoring for fugitive emissions impractical.

5.6 To the extent that good engineering practice will permit, a new or reworked component shall be located so as to be reasonably accessible for leak checking during the operation of the process unit. A component elevated more than 2 meters above a support surface may be considered nonaccessible and may be included on a list of nonaccessible components and made available to the District upon request.

5.7 A new or reworked piping connection shall be either welded or flanged or consist of pressed and permanently formed metal-to-metal seals. A screwed connection is permissible only on new piping smaller than 2 inches in diameter. A new connection shall be checked for leaks using one of the following methods:
Within 10 days of being placed in organic compound service, by monitoring with a hydrocarbon gas analyzer for a component in light liquid and gas service and by using visual, audio, or olfactory means for a component in heavy liquid service, or

Before placing the system in organic compound service, by pressure testing at a pressure that is equal to or greater than the maximum operating pressure for that component.

For a pressure relief valve installed in series with a rupture disk, pin, second relief valve, or other similar leak-tight pressure relief component, a pressure gauge or an equivalent device or system shall be installed between the first pressure relief component and the second pressure relief component to monitor for leakage past the first pressure relief component. When leakage is detected past the first pressure relief component, that component shall be repaired or replaced at the earliest opportunity, but no later than the next process unit shutdown.

SECTION 6 Personnel Requirements

The owner or operator of an affected facility shall act as, or assign a person to be, the leak detection and repair (LDAR) coordinator. The position of LDAR coordinator shall be authorized to implement appropriate changes regarding LDAR activities.

The owner or operator of an affected facility shall provide LDAR program training for:

- Each new LDAR technician employee prior to performing LDAR program duties without supervision,
- Each existing LDAR technician employee, at least once every 2 years, and
- Each operations and maintenance employee who deals with the affected facility’s potentially leaking components, at least once every 2 years.

If the owner or operator of an affected facility uses the services of contractors to do LDAR-related work, then the owner or operator shall determine and assure that the contracted employees have sufficient training to meet the requirements of this section.

SECTION 7 Recordkeeping Requirements

If the owner or operator of an affected facility is securing a bypass line valve in the closed position to comply with 40 CFR 63.172(j)(2), the owner or operator shall:

- Maintain a record of the dates that the monthly visual inspection of the seal or closure mechanism has been performed,
- Record the date and time of all periods when:
  - The seal mechanism is broken,
  - The bypass line valve position has changed, or
  - The key for a lock-and-key type lock has been checked out, and
- Maintain a record of each time the bypass line valve was opened, including:
  - The date and time the valve was opened,
  - The date and time the valve was closed,
  - The reason the valve was opened,
  - The flow through the valve, and
  - The resulting speciated emissions, including the basis for the emissions estimate.

Records of all components subject to Section 4 for which repair was delayed shall be prepared and maintained as specified in 40 CFR 63 Subpart H.

The owner or operator shall maintain all records required by this regulation for at least 5 years.
and make them available to the District for review upon request, including records identifying and justifying each exemption claimed under Section 8.

SECTION 8 Exemptions

8.1 The following are exempt from the shaft sealing system requirements of section 5.2 of this regulation:

8.1.1 Submerged pumps or sealless pumps (e.g., diaphragm, canned, or magnetic-driven pumps), and

8.1.2 Pumps, compressors, and agitators installed before July 1, 2006.

8.2 The following components are exempt from the requirements of this regulation:

8.2.1 Components in continuous vacuum service,

8.2.2 Valves that are not externally regulated (such as in-line check valves),

8.2.3 Components that are insulated or buried underground, making them inaccessible to monitoring with a hydrocarbon gas analyzer,

8.2.4 Sampling connection systems, as defined in 40 CFR §63.161, that are in compliance with 40 CFR §63.166(a) and (b), and

8.2.5 Instrumentation systems, as defined in 40 CFR §63.161, that are in compliance with 40 CFR §63.169.

SECTION 9 Test Methods

9.1 The monitoring and testing requirements of this regulation shall be satisfied by using the methods specified in 40 CFR 63 Subpart H.

9.2 As authorized by 40 CFR §63.180(b)(2)(ii), a calibration gas other than methane may be used, provided that the owner or operator demonstrates, to the District’s satisfaction, equivalency to the leak definition concentration based upon the different calibration gas.

SECTION 10 Alternative Requirements

The owner or operator of an affected facility may submit a request for the use of an alternate method of demonstrating and documenting continuous compliance with the applicable control requirements or exemption criteria in this regulation. The District may approve the request if emission reductions are demonstrated to be substantially equivalent.

SECTION 11 Data Review Plan

The owner or operator of an affected facility shall prepare, submit to the District for approval, and implement a data review plan. The plan shall include, but not be limited, to the following items:

11.1 The number of components monitored per technician,

11.2 Times between monitoring events, and

11.3 The presence of abnormal data patterns.

SECTION 12 Audit Requirements

12.1 At least once every 2 calendar years, the owner or operator of an affected facility shall retain the services of an independent third party to conduct an audit of each process unit subject to this regulation, including:

12.1.1 All components that:

12.1.1.1 Were not identified, and if leaking, tagged, but that should have been identified, and,
12.1.2 The leak/no-leak status and measured organic compound concentration for all components for which monitoring (with a hydrocarbon gas analyzer) or visual inspection is required that monitoring period, as follows:

12.1.2.1 The monitoring/inspection audit shall begin when the owner’s or operator’s contracted or usual monitoring service begins monitoring components for that monitoring period,

12.1.2.2 The number of components required to be monitored in the audit out of the total number of components that have the potential to emit organic compounds in each affected facility shall be determined as follows:

12.1.2.2.1 If 400 or fewer components, then at least 50% shall be monitored,

12.1.2.2.2 If between 401 and 700 components, then at least 40% shall be monitored,

12.1.2.2.3 If between 701 and 1000 components, then at least 30% shall be monitored,

12.1.2.2.4 If between 1001 and 1500 components, then at least 25% shall be monitored, and

12.1.2.2.5 If more than 1500 components, at least 400 components shall be monitored.

12.1.2.3 The audit shall not include components that were included in the most recent audit if there are 1000 or fewer components at the affected facility and shall not include components that were included in either of the 2 most recent audits if there are more than 1000 components at the affected facility, unless monitoring these components is unavoidable due to the shutdown of process units not included in the specified audits, or for other reasons agreed upon in advance by the District, and

12.1.3 All data generated by monitoring technicians in the previous quarter. This shall include:

12.1.3.1 A review of the number of components monitored per technician,

12.1.3.2 A review of the time between monitoring events,

12.1.3.3 Identification of abnormal data patterns, and

12.1.3.4 Identification of any discrepancies between the data in the electronic data system required by Section 3.7 and the data in the datalogger or field notes required by Section 3 or 40 CFR 63 Subpart H, respectively.

12.2 The owner or operator shall submit notification to the District as follows:

12.2.1 Written notification of the date that the independent third party is scheduled to begin the audit at least 30 days prior to this date, and

12.2.2 Written notification within 15 days after the audit is completed.

12.3 The owner or operator shall submit to the District a copy of the results of each audit authored by the independent third party within 30 days of receipt of the audit results, but no later than 60 days after completion of the audit, including:

12.3.1 The number of components that were not tagged, but that should have been tagged,

12.3.2 The number of components that were not included in the list of components to be monitored (with a hydrocarbon gas analyzer) or visually inspected, but that should have been included on that list,

12.3.3 The number of components monitored, the number of leaking components, and the percentage of leaking components identified by the independent third party and by the owner’s or operator’s contracted or usual monitoring service in each of the following categories:

12.3.3.1 Valves (excluding pressure relief valves),
12.3.3.2 Pressure relief valves,
12.3.3.3 Pumps,
12.3.3.4 Compressors, and
12.3.3.5 Connectors, and
12.3.4 A summary of the independent third party’s review of all data generated by monitoring technicians in the previous quarter by the owner’s or operator’s contracted or usual monitoring service for each of the following categories:
12.3.4.1 The number of components monitored per technician,
12.3.4.2 The time between monitoring events, including identification of specific instances in which a monitoring technician recorded data faster than was physically possible due to the hydrocarbon gas analyzer response time or the time required for the technician to move to the next component, and
12.3.4.3 Identification of abnormal data patterns.
12.4 The District may conduct an audit of the owner’s or operator’s leak detection and repair program.
12.5 In lieu of complying with sections 12.1 to 12.3, an owner or operator may request approval from the District of an alternative method that demonstrates equivalency with the independent third party audit, provided that the request:
12.5.1 Includes a detailed explanation of how the equivalency will be demonstrated, including the appropriate recordkeeping and reporting requirements that will be implemented that are sufficient to demonstrate compliance with the alternative method and
12.5.2 Demonstrates that it is a replicable procedure and details how the equivalency will be demonstrated.
12.6 The District may approve the third-party audits required by this Section to be performed every 3 years after 2 consecutive audits show a high level of compliance with the requirements of this regulation.

SECTION 13 Leak Detection and Repair Plan
13.1 The owner or operator of an affected facility shall prepare, submit to the District for approval, and implement the District-approved leak detection and repair plan. The plan shall include, but is not limited to, the following items:
13.1.1 The components of the training program and the frequency of training,
13.1.2 A procedure and schedule for identifying equipment included in the plan, including both equipment that is subject to an existing LDAR program, if applicable, and equipment that is part of the new LDAR program pursuant to this regulation,
13.1.3 If the affected facility is not subject to an existing LDAR program, then the schedule to begin monitoring,
13.1.4 If the affected facility is subject to an existing LDAR program but is required to monitor additional components pursuant to this regulation, then the schedule to begin monitoring the additional components,
13.1.5 Procedures for identifying leaking equipment,
13.1.6 Procedures for identifying added equipment,
13.1.7 A process to identify and promote the installation of equipment technology to minimize leaks,
13.1.8 A data review plan, and
13.1.9 A schedule for implementation of any other component of the LDAR plan for which full implementation will not occur upon approval by the District.

13.2 The owner or operator of an affected facility pursuant to section 1.1.1 shall submit the leak detection and repair plan to the District by [insert the date 120 days after the effective date of this regulation]. The owner or operator of an affected facility pursuant to section 1.1.2 shall submit the leak detection and repair plan to the District within 120 days of written notification from the District that a plan is required. If the District determines that a revision to the plan is necessary, the owner or operator shall, within 60 days of written notification from the District of a deficiency, submit a revision to the plan addressing the deficiency.

13.3 A leak detection and repair plan approved by the District shall be an enforceable requirement of the applicable District permit for the process unit included in the plan.

SECTION 14  Inorganic Compound Leak Detection and Repair

14.1 The owner or operator of an affected facility that has components that have the potential to leak an inorganic toxic air contaminant shall prepare, submit to the District for approval, and implement an inorganic toxic compound leak detection and repair plan. The plan shall include, but is not limited to, the following:

14.1.1 The screening and sampling methods,
14.1.2 The frequency of monitoring,
14.1.3 The repair procedures,
14.1.4 The data recording and maintenance plan and the data review plan,
14.1.5 The components of the training program and the frequency of training,
14.1.6 The procedure and schedule for identifying equipment included in the plan,
14.1.7 The schedule to begin monitoring,
14.1.8 The schedule for implementation of any other component of the LDAR plan for which full implementation will not occur upon approval by the District.

14.2 The leak detection and repair plan shall be submitted within 120 days of written notification from the District that a plan is required. If the District determines that a revision to the plan is necessary, the owner or operator shall, within 60 days of written notification from the District of a deficiency, submit a revision to the plan addressing the deficiency.

14.3 A leak detection and repair plan approved by the District shall be an enforceable requirement of the applicable District permit for the process unit included in the plan.

Adopted v1/___________; effective __________.
SECTION 1 Title V Emissions Fees

1.1 Emissions fees are required from all major sources defined in Regulation 2.16 Title V Operating Permits that are subject to the operating permit requirements of Regulation 2.16 and all stationary sources for which an administratively complete operating permit application pursuant to Regulation 2.16 has been submitted to the District.

1.2 Beginning with Fiscal Year 1997 (July 1, 1996, through June 30, 1997) and for each fiscal year thereafter, and for the purpose of the July 1st interim billing for that fiscal year, emissions fees shall be calculated by multiplying the total of all the single pollutant actual emissions in tpy, as affected by the limitations of section 1.3, by the EPA-published Annual Emissions Fee Amount Consumer Price Index for the year in which the emissions occurred. The Board may, by resolution, adjust the emissions fee rate applicable to a fiscal year based upon the review required by section 4.1 and after the public review process specified in section 4.3. If the Board adjusts the emissions fee rate applicable to a fiscal year, the new emissions fee rate shall be retroactive to July 1st of that year and the supplemental emissions fees specified in the supplemental billing shall be calculated by multiplying the difference in emissions fee rates by the same single pollutant total as used for the interim billing.

1.3 The total of all the single pollutant actual emissions in tpy shall be modified by the following limitations:

1.3.1 The total annual emissions fee shall be the sum of the single pollutant fees except that no pollutant shall be counted in more than one single pollutant category,

1.3.2 No more than 4,000 tpy of the actual emissions of a single pollutant shall be counted toward the total emissions of a stationary source, and

1.3.3 Carbon monoxide emissions shall not be counted toward the total emissions.

1.4 Emissions fees shall be calculated based upon the actual emissions from the stationary source for the calendar year preceding the start of the fiscal year in which the fee is due. Emissions statements are required to be submitted in accordance with Regulation 1.06 Source Self-Monitoring and Reporting. If data for the preceding year are not submitted, then the District shall determine the fees based upon potential to emit.

1.5 Emissions fees are due annually beginning July 1, 1994. Payment of emission fees is due within 30 days of the billing date or July 31, whichever is later. In certain situations, the
Version #20, Draft #2 - Proposed  
[If adopted, this would amend the September 19, 2001, version of Regulation 2.08]  
[Approved by the Committee of the Whole on January 13, 2005, for Public Review]

1.6 District may approve an installment schedule of payments not more frequently than quarterly.

Failure to pay emissions fees when due is a violation of District regulations. This failure is subject to penalties and an increase in the fee of an additional 5% per month up to a maximum of 25% of the original amount due. In addition, failure to pay emissions fees within 60 days of the due date shall automatically suspend the stationary source's permits to operate until the fees are paid or a schedule for payment acceptable to the District has been established.

SECTION 2 Permit Fees

2.1 The permit fees listed in Section 2 shall apply to Fiscal Year 2001 (July 1, 2000, to June 30, 2001) to the extent that the date of the applicable event identified in section 2.3 is on or after July 1, 2000. If the date of the applicable event identified in section 2.3 is before July 1, 2000, then the permit fee listed in the June 16, 1999, version of this regulation shall apply.

2.2 Beginning with Fiscal Year 2002 (July 1, 2001, to June 30, 2002) and for each fiscal year thereafter, all permit fees shall be calculated by multiplying the applicable permit fee for the previous fiscal year by the sum of 1 plus the fractional change in the Consumer Price Index as is used in section 1.2 for calculating the Title V emissions fee rate, rounded to the nearest dollar. The District shall make available, at the beginning of each fiscal year, a document that lists the calculated permit fees applicable to that fiscal year.

2.3 The fiscal year used for determining the applicable permit fee is as follows:

2.3.1 For construction permits, permit transfers, and asbestos demolition/renovation permits, the fiscal year in which the permit is issued,

2.3.2 For construction permit renewals, the fiscal year in which the construction permit expires,

2.3.3 For first-issue operating permits, the fiscal year in which the construction permit expires and is not renewed pursuant to section 2.5.3,

2.3.4 For first-issue FEDOOP permits, the fiscal year in which the FEDOOP permit is issued, and

2.3.5 For renewal operating permits and FEDOOP permits, the fiscal year in which the previous operating permit or FEDOOP permit expires.

2.4 Fees for permits except permit transfers and asbestos demolition/renovation permits reviewed or issued pursuant to this regulation shall be based upon the pollutant that has the largest potential to emit and are on a per permit basis. Construction permits are based on potential to emit for the total project and operating permits are based on the potential to emit for the entire stationary source.

2.5 Construction Permit Fees

2.5.1 Construction permits shall be valid for a period of 1 year. The permit fee shall be determined by the following criteria for each permit:

2.5.1.1 Subject to Federal PSD/NSR (includes "net-outs," "offsets," other exemptions, or subject to NSPS or NESHAPs) $ 5,638

2.5.1.2 100 tpy or more, the basic fee is $ 3,759

2.5.1.2.1 Subject to NSPS, add to the basic fee $ 1,342

2.5.1.2.2 Subject to NESHAPs, add to the basic fee $ 1,342

2.5.1.3 Less than 100 tpy, but greater than or equal to 50 tpy,
the basic fee is $2,282

Subject to NSPS, add to the basic fee $1,007

Subject to NESHAPs, add to the basic fee $1,007

Less than 50 tpy, but greater than or equal to 10 tpy, the basic fee is $872

Subject to NSPS, add to the basic fee $671

Subject to NESHAPs, add to the basic fee $671

New Stage II Gasoline Dispensing Facilities $1,950

Modified Stage II Gasoline Dispensing Facilities for which testing or retesting is necessary $780

Less than 10 tpy, but greater than or equal to 5 tpy, or Stage I Gasoline Dispensing Facilities of greater than 1000 gallon capacity, the basic fee is $671

Subject to NESHAPs or NSPS, add to the basic fee $335

Stage I Gasoline Dispensing Facilities of greater than 250 gallon capacity but less than or equal to 1000 gallon capacity $168

Less than 5 tpy and TAP greater than the adjusted significant level or subject to NSPS or NESHAPs (except asbestos demolition/renovation projects subject to section 2.8), the basic fee is $470

Less than 5 tpy, and not subject to NSPS or NESHAPs, and no TAP greater than the adjusted significant level $250

Permit transfers at non-Title V stationary sources $67

On applications for construction permits where there are 2 or more identical pieces of equipment at the same location, the fee shall be the same as that specified for 1 piece of equipment.

Construction permits may be renewed until the project is completed and the affected facility is in operation unless 1 of the provisions in Regulation 2.03 Permit Requirements - Non-Title V Construction and Operating Permits and Demolition/Renovation Permits section 5.4 is met. The construction permit renewal fee shall be $604 or the applicable construction permit fee, whichever is less.

Non-Title V Operating Permit Fees

Non-Title V operating permits are for stationary sources that are not subject to the emissions fees of Section 1.

Non-Title V operating permits are valid for up to 5 years except as noted in Section 3 if no changes are made to the process operation equipment, the air pollution control equipment, or the raw materials; or if there is no increase in the pollutant emission rate. If changes are proposed, the owner or operator shall apply for the appropriate permits and any resulting permits shall be issued at full fee.

Expiration dates of non-Title V operating permits for a stationary source shall be adjusted to a common date and fees shall not be prorated.

Non-Title V operating permits are issued on an equipment basis and the District may require multiple permits.

The permit fee shall be determined by the following criteria for each permit:

Reissuance of a permit for which the sole change is the name or address of the stationary source (this does not include change of owner or operator or relocation) $40
2.6.5.2 Greater than or equal to 100 tpy but not subject to the Title V program ... $1,040
2.6.5.3 Less than 100 tpy, but greater than or equal to 50 tpy, the basic fee is ... $ 416
2.6.5.4 Less than 50 tpy, but greater than or equal to 10 tpy, the basic fee is ... $ 312
2.6.5.5 Less than 10 tpy, but greater than or equal to 5 tpy, or
2.6.5.6 Stage I Gasoline Dispensing Facilities, the basic fee is ... $ 208
2.6.5.7 Less than 5 tpy, the basic fee is ... $ 156
2.6.5.8 Gasoline Dispensing Facilities - Stage II, add to the Stage I fee per
2.6.5.9 fueling position ... $ 166
2.6.5.10 Subject to NSPS, add to the applicable basic fee ... $ 52
2.6.5.11 Subject to NESHAPs, add to the applicable basic fee ... $ 52

2.6.5.12 TAP greater than the adjusted significant level, add to
the applicable basic fee ... $ 52
2.6.5.13 Greater than 5 tpy of a single HAP or greater than 10 tpy of all HAPs
2.6.5.14 combined, add to the applicable basic fee ... $ 52
2.6.5.15 Banking Permit (issuance or reissuance with modification,
2.6.5.16 no renewal required.) ... $ 403
2.6.5.17 Permit transfers ... $ 67

2.7 Federally Enforceable District Origin Operating Permit (FEDOOP) Fees
2.7.1 Permit fees under section 2.7 are for stationary sources that applied for, and were issued,
a FEDOOP permit pursuant to Regulation 2.17 Federally Enforceable District Origin
Operating Permits.
2.7.2 FEDOOP permits are valid for 5 years unless voided at the request of the applicant or
revoked pursuant to Regulation 2.17 section 6.5.
2.7.3 The FEDOOP permit fee shall be the sum of the following:
2.7.3.1 Special processing fee (including cost of public notification) of $416 and
2.7.3.2 The sum of the permit fees for all of the emissions units at the stationary source that
normally would be assessed pursuant to section 2.6 if the stationary source had not
applied for a FEDOOP permit.
2.7.4 The permit fee for initial issuance of a FEDOOP permit pursuant to section 2.7.3.2 shall
be adjusted on a prorated basis to account for the unexpired term of any previously issued
operating permits pursuant to section 2.6.
2.7.5 The permit fee for revision of a FEDOOP permit shall be the amount that, in the absence
of section 2.7, would have been required by section 2.5 or section 2.6.
2.7.6 The permit fee for the initial FEDOOP permit and subsequent renewal FEDOOP permits
shall be divided by the number of years for which that FEDOOP permit is issued and the
District shall issue a statement of fees annually for the calculated quotient.

2.8 The permit fee or notification fee for asbestos demolition/renovation projects shall be
determined by the following criteria:
2.8.1 NESHAPs asbestos demolition/renovation projects:
2.8.1.1 The basic permit fee including the first 1500 linear or square feet ... $ 537
2.8.1.2 Add to the basic permit fee for each additional full or partial increment of
1500 linear or square feet ... $ 537
2.8.2 NESHAPs asbestos demolition/renovation projects using glovebags:
2.8.2.1 The basic permit fee including the first 1500 linear or square feet ... $ 336
2.8.2.2 Add to the basic permit fee for each additional full or partial increment of
2.8.3 Non-NESHAPs asbestos demolition/renovation projects:
2.8.3.1 The basic permit fee including the first 3,000 linear or square feet $ 201
2.8.3.2 Add to the basic permit fee for each additional full or partial increment of
3,000 linear or square feet $ 201
2.8.4 Notification fee for all asbestos demolition/renovation projects for which
the quantity involved is less than 260 linear feet on pipes and 160 square
feet on other facility components (sections 2.1 to 2.3 apply) $ 25
2.8.5 Each address on a multiple-dwelling project shall be assessed a fee based upon the
criteria in sections 2.8.1 to 2.8.4.
2.8.6 A single permit may be issued with any number of combinations of projects described
in sections 2.8.1 to 2.8.4.
2.9 Permit fees are payable by cash, check, or money order to the District and due 30 days after
the issuance of a statement of fees by the District. Failure to timely pay for permits may
cause the issuance of a notice of violation.
2.10 Failure to timely pay for permits issued pursuant to section 2.8 may also cause the
requirement that permits be paid for only by cash, money order, or cashier’s check and at the
time of issuance.
2.11 Failure to pay permit fees for permits issued pursuant to sections 2.5.1.1 to 2.5.1.10, 2.6, or
2.7 within 60 days of the due date may also cause the suspension of the unpaid permits until
the fees are paid or a schedule for payment acceptable to the District has been established.

SECTION 3 Permit Renewal And Transfer
3.1 All stationary sources shall renew operating permits every 5 years.
3.2 The District, at its discretion, may adjust individual permit time periods up to 1 year to
conform with its inspection schedules of stationary sources.
3.3 Instead of the expiration date and fee provisions of section 2.6.3, section 2.7.2,
section 2.7.3.2, section 3.1, or section 3.2, the District, at its discretion, may, at permit
renewal or at any time during the term of a permit, adjust an individual non-Title V operating
permit time period by an amount greater than 1 year. If, at the time of operating permit
renewal, the District adjusts the time period for the permit by more than 1 year, then the
permit fee, other than the special processing fee pursuant to section 2.7.3.1, shall be adjusted
on a prorated basis to account for the shortened length of time for which the renewed permit
is valid. If, during the term of an operating permit, the District adjusts the time period for
the permit by more than 1 year, then the permit fee, other than the special processing fee
pursuant to section 2.7.3.1, for the subsequent permit renewal shall be adjusted on a prorated
basis to account for the shortened length of time for which the permit is valid.
3.4 Except for construction permits and operating permits at Title V stationary sources, permits
issued under this regulation may be reissued to a new owner or operator (transferred)
provided that all of the following provisions are met:
3.4.1 A written agreement containing a specific date for transfer of permit responsibility,
coverage, and liability between the current and new permittee has been submitted to the
District,
3.4.2 The District determines that no other changes in the permit are necessary, and
3.4.3 The permit contains an additional permit condition that allows the District to revise the

2.08-5
permit to increase monitoring, record keeping, and reporting requirements.

The transfer of construction permits and operating permits at Title V stationary sources is subject to the requirements of Regulation 2.16 sections 1.3.4 and 5.4.

Banking permits are not subject to periodic renewal. However, a modified banking permit, subject to the permit fee provisions of section 2.6.6.12, shall be issued after each banking transaction, either ERCs deposited or removed.

SECTION 4 Review Of Emissions And Permit Fees

4.1 Emissions, construction, and operating fees shall be reviewed each year by the Board.

4.2 The annual emissions fee review shall be presented to EPA to document the adequacy of the fees collected to satisfy the requirements of the Act.

4.3 The Title V emissions fee rate adjustment public review process pursuant to section 1.2 shall consist of the following steps:

4.3.1 Information on the actual expenses incurred during the previous fiscal year, the projected expenses for the current fiscal year, the total for all the affected stationary sources of all the single pollutant actual emissions, as affected by the limitations of section 1.2.1, for the previous year, and the resulting adjusted emissions fee rate shall be presented to the Title V Permit Fee Advisory Panel (Advisory Panel). If a quorum of the Advisory Panel is not present at a meeting scheduled by the District for this purpose, then this step shall be met by the District mailing this information to the Advisory Panel members,

4.3.2 The Advisory Panel shall have an opportunity to review the information identified in section 4.3.1 and make a recommendation to the Board,

4.3.3 The public shall be provided with at least 30 days’ notice prior to the public hearing, and the opportunity for public comment, on a proposed Board action to adjust the Title V emissions fee rate. Legal notice shall be made in accordance with KRS Chapter 424 Legal Notices, and

4.3.4 The Board shall hold a public hearing on the proposed Board action to adjust the Title V emissions fee rate.

SECTION 5 Transition Period

5.1 In addition to the billing of Title V fees as required by Section 1, the District shall continue to issue, as appropriate, non-Title V operating permits to a Title V source whose operating permits expire before issuance of a Title V permit. The permit fee for each non-Title V operating permit renewal at a Title V source whose non-Title V operating permit expires on or after December 15, 1993, and before July 1, 1994, shall be $450. A non-Title V operating permit renewal for a Title V source whose non-Title V operating permit expires on or after July 1, 1994, shall be issued at no charge to the owner or operator if the stationary source is considered by the District to be a Title V source at the time that the non-Title V operating permit expires. Non-Title V operating permits issued in the interim for a Title V source shall expire when the Title V permit is issued.

5.2 A stationary source is considered by the District to be a Title V source if it meets 1 of the following:

5.2.1 The District has issued a Title V operating permit to the stationary source,

5.2.2 The District has determined that the stationary source has submitted an administratively complete Title V permit application, or
5.2.3 The District had, for Fiscal Years 1995, 1996, or 1997, included the emissions from the 
stationary source in the emissions inventory list of Title V companies that was used for 
determining the final Title V emission fee rate for that fiscal year.

5.3 A Title V emissions fee credit for the unexpended portion of the non-Title V operating 
permit fees at a Title V source shall be made as follows:

\[ C = (0.51 \cdot P) \left( \frac{T - M}{T} \right) (N) \]

where:

\( C \) = Title V emissions fees credit, in dollars.
\( 0.51 \) = The fraction of the operating permit fee that does not represent the initial cost 
of inspection and reissuance.
\( P \) = The non-Title V operating permit fee, pursuant to section 2.6, in dollars.
\( T \) = Term of the issued non-Title V operating permit, in months.
\( M \) = Number of months from effective date of non-Title V operating permit 
renewals to July 1st of the fiscal year in which the stationary source was 
considered a Title V source, in months.
\( N \) = Number of current non-Title V operating permits.

SECTION 6 Additional Program Fees

6.1 Starting in Fiscal Year 1999, annual Risk Management Plan (RMP) program fees are 
required from all stationary sources that are subject to the requirements of Regulation 5.15 
Chemical Accident Prevention Provisions except for those stationary sources that are also 
subject to Title V emissions fees pursuant to Section 1.

6.2 The RMP program fee is as follows:

6.2.1 For Fiscal Year 1999, $110,
6.2.2 For Fiscal Year 2000, $480, and
6.2.3 Starting in Fiscal Year 2001, the RMP program fee shall be calculated by multiplying the 
fee for the previous fiscal year by the sum of 1 plus the fractional change in the 
Consumer Price Index as is used in section 1.2 for calculating the Title V emissions fee 
rate, rounded to the nearest dollar. The District shall make available, at the beginning 
of each fiscal year, a document that lists the calculated fee applicable to that fiscal year.

6.3 For Fiscal Year 2005, Toxic Air Contaminant (TAC) program fees are required from each 
stationary source that, as of July 1, 2004, was subject to Regulation 2.16 Title V Operating 
Permits (Title V source); each stationary source that, as of July 1, 2004, had applied for an 
operating permit pursuant to Regulation 2.17 Federally Enforceable District Origin 
Operating Permits (FEDOOP source); and each stationary source that is neither a Title V 
source nor a FEDOOP source but, for calendar year 2002, had actual emissions of 25 or more 
tons per year individually of sulfur dioxide, particulate matter, volatile organic compounds, 
or oxides of nitrogen (25 ton source). The TAC program fees are as follows:

6.3.1 For a Title V source, the sum of the following:
6.3.1.1 $2,529, and
6.3.1.2 The proportional amount of $108,750 based upon the Title V sources’s percentage 
of the total hazardous air pollutant (HAP) and ammonia emissions reported to the 
District for 2002. The District will make available a list of the Title V sources, the
HAP and ammonia emissions reported by each Title V source, and the percentage of
the total for each Title V source, and

For a FEDOOP source and a 25 ton source, $335.

Program fees are payable by cash, check, or money order to the District and due 30 days after
the issuance of a statement of fees by the District. Failure to timely pay program fees may
cause the issuance of a notice of violation. In addition, failure to pay program fees pursuant
to section 6.3 within 60 days of the due date shall automatically cause the stationary source's
construction and operating permits to be suspended until the fees are paid or a schedule for
payment acceptable to the District has been established.

Adopted v1/6-13-79, effective 6-13-79; amended v2/4-21-82, v3/11-16-83, v4/12-17-86, v5/6-20-90,
v13/3-19-97, v14/4-16-97, v15/9-16-98, v16/6-16-99, v17/5-17-00, v18/12-20-00, v19/9-19-01.
PART Regulation 3

Ambient Air Quality Standards

REGULATION 3.01 Purpose of Ambient Air Quality Standards and Expression of Non-Degradation Intention

Air Pollution Control District of Jefferson County

Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity And Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and make all necessary orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes the purpose of the ambient air quality standards, the methods for measuring air contaminants, and the expression of non-degradation intention of the Air Pollution Control Board to prohibit further significant and avoidable deterioration of air quality.

SECTION 1 Definitions
Terms used in this regulation that are not defined in this regulation shall have the meaning given them in Regulation 1.02 Definitions

SECTION 2 Purpose
The purpose of an ambient air quality standards is to establish a concentration, including a time-averaging interval over which that concentration is measured, for a particular air contaminant mean those levels of air quality that which the Board determines is judges necessary, with an adequate margin of safety, to protect the public health and welfare from any known or anticipated adverse effects of that air contaminant pollution. Such standards are subject to revision, and additional standards may be promulgated as the Board deems necessary to protect the public health and welfare.

SECTION 3 Non-degradation Intention
In establishing an ambient air quality the establishment of these standards, it is the intention of the Board to prohibit further significant and avoidable deterioration of air quality in areas where the air quality is presently exists which is numerically equal to or is better than the standards expressed herein.

SECTION 4 General Prohibition
A No person shall not cause or allow the emission of an air contaminant that would violate, or interfere with the attainment or maintenance of, an ambient air quality standards as specified in this regulation.
### SECTION 5  Ambient Air Quality Standards

<table>
<thead>
<tr>
<th>Air Contaminant</th>
<th>Primary Standards</th>
<th>Averaging Times</th>
<th>Secondary Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Carbon Monoxide</td>
<td>9 ppm (10 mg/m³)</td>
<td>8-hour¹</td>
<td>None</td>
</tr>
<tr>
<td>5.1.2</td>
<td>35 ppm (40 mg/m³)</td>
<td>1-hour¹</td>
<td>None</td>
</tr>
<tr>
<td>5.2 Lead</td>
<td>1.5 μg/m³</td>
<td>Quarterly Average</td>
<td>Same as Primary</td>
</tr>
<tr>
<td>5.3 Nitrogen Dioxide</td>
<td>0.053 ppm (100 μg/m³)</td>
<td>Annual (Arithmetic Mean)</td>
<td>Same as Primary</td>
</tr>
<tr>
<td>5.4 Particulate Matter (PM₁₀)</td>
<td>50 μg/m³</td>
<td>Annual² (Arithmetic Mean)</td>
<td>Same as Primary</td>
</tr>
<tr>
<td>5.4.2</td>
<td>150 μg/m³</td>
<td>24-hour¹</td>
<td></td>
</tr>
<tr>
<td>5.5 Particulate Matter (PM₂.₅)</td>
<td>15 μg/m³</td>
<td>Annual³ (Arithmetic Mean)</td>
<td>Same as Primary</td>
</tr>
<tr>
<td>5.5.2</td>
<td>65 μg/m³</td>
<td>24-hour⁴</td>
<td></td>
</tr>
<tr>
<td>5.6 Ozone</td>
<td>0.08 ppm</td>
<td>8-hour⁵</td>
<td>Same as Primary</td>
</tr>
<tr>
<td>5.6.2</td>
<td>0.12 ppm</td>
<td>1-hour⁶</td>
<td>Same as Primary</td>
</tr>
<tr>
<td>5.7 Sulfur Oxides</td>
<td>0.03 ppm</td>
<td>Annual (Arithmetic Mean)</td>
<td></td>
</tr>
<tr>
<td>5.7.2</td>
<td>0.14 ppm</td>
<td>24-hour¹</td>
<td></td>
</tr>
<tr>
<td>5.7.3</td>
<td></td>
<td>3-hour¹</td>
<td>0.5 ppm (1300 μg/m³)</td>
</tr>
</tbody>
</table>

1. Not to be exceeded more than once per year.
2. To attain this standard, the expected annual arithmetic mean PM₁₀ concentration at each monitor within an area must not exceed 50 μg/m³.
3. To attain this standard, the 3-year average of the annual arithmetic mean PM₂.₅ concentrations from single or multiple community-oriented monitors must not exceed 15 μg/m³.
4. To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each
population-oriented monitor within an area must not exceed 65 µg/m³.

To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.

The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1, as determined by 40 CFR Part 50 Appendix H. The 1-hour ozone standard shall be in effect until June 15, 2005.

SECTION 6 Applicability of Ambient Air Quality Standards

The ambient air quality standards shall apply, be achieved, and maintained in Jefferson County, Kentucky.

SECTION 7 Methods of Measurement

The air contaminants listed in sections 5.1 to 5.7 shall be measured by the reference or equivalent methods and at the frequency specified in EPA regulations on Ambient Air Quality Surveillance (40 CFR Parts 50, 53, and 58).

SECTION 8 Savings Clause

Any emission standard established pursuant to Regulation 3.04 Ambient Air Quality Standards section 1.7, 2.7, 2.8, or 2.9 that is reflected in a permit condition as of [insert the effective date of Version 4 of this regulation] shall remain in effect until replaced with an emission standard established pursuant to Regulation 5.21.

REGULATION 3.02 Applicability of Ambient Air Quality Standards

REPEALED - Superceded by Regulation 3.01

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control
Necessity And Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes the applicability of District air quality standards.

The ambient air quality standards in Regulation 3.04 shall apply, be achieved, and maintained at any single point in the District.

REGULATION 3.03 Definitions

REPEALED - Superseded by Regulation 3.01

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity And Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation contains certain definitions used in all ambient air quality standards regulations.

SECTION 1
Terms used in Regulation 3 not defined herein shall have the meaning given them in Regulation 1.02:
1.1 "Calendar quarter average" means an average determined on the basis of a consecutive 3-month interval coinciding with one of the four quarters of a calendar year.
1.2 "Maximum" means an ambient air quality standard which shall not be exceeded more than once per year providing that the averages exceeding the standard do not contain any common hourly data points.
1.3 "Three hour average" means an average determined on the basis of any consecutive 3-hour interval.

REGULATION 3.04 Ambient Air Quality Standards

REPEALED - Superseded by Regulation 3.01

Note: Any emission standard that had been established pursuant to section 1.7, 2.7, 2.8, or 2.9 and is reflected in a permit condition as of [insert the effective date of the repeal of this regulation] shall remain in effect until replaced with an emission standard established pursuant to Regulation 5.21.

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control
Necessity And Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes ambient air quality standards for Jefferson County.

SECTION 1 — Primary Standards
The primary ambient air quality standards for sulfur oxides, particulate matter, carbon monoxide, total nonmethane hydrocarbons, lead, nitrogen dioxide, photochemical oxidants, hydrogen fluoride, and odors measured by reference methods specified by the Board, or by equivalent methods, are:

1.1 Sulfur Oxides (sulfur dioxide):
1.1.1 120 micrograms per cubic meter (.03 ppm) - annual arithmetic mean;
1.1.2 365 micrograms per cubic meter (0.14 ppm) - maximum 24-hour average not to be exceeded more than once per year;

1.2 Particulate Matter PM10:
1.2.1 50 micrograms per cubic meter — annual arithmetic mean as determined in accordance with 40 CFR Part 50 Appendix K;
1.2.2 150 micrograms per cubic meter — maximum 24-hour average not to be exceeded more than once per year as determined in accordance with 40 CFR Part 50 Appendix K;

1.3 Carbon Monoxide:
1.3.1 10 milligrams per cubic meter (9 ppm) - maximum 8-hour average not to be exceeded more than once per year;
1.3.2 40 milligrams per cubic meter (35 ppm) - maximum 1-hour average not to be exceeded more than once per year;

1.4 Photochemical Oxidants (measured as Oz and corrected for interferences due to nitrogen oxides and sulfur dioxide):
1.4.1 35 micrograms per cubic meter (0.12 ppm) — The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm (235 ug/m3) is equal to or less than 1, and determined by 40 CFR Part 50 Appendix H.

3.04-1
1.5 Hydrocarbons (measured as total hydrocarbons and corrected for methane, to be used as a
guide in devising plans to achieve photochemical oxidant standards):

1.5.1 160 micrograms per cubic meter (0.24 ppm) - maximum 3-hour average (6:00 a.m.
to 9:00 a.m.) not to be exceeded more than once per year.

1.6 Nitrogen Dioxide:

1.6.1 100 micrograms per cubic meter (0.05 ppm) - annual arithmetic mean.

1.7 Gaseous Fluorides (expressed as HF):

1.7.1 400 micrograms per cubic meter (0.05 ppm) - annual arithmetic mean.

1.8 Lead:

1.8.1 Not to exceed 1.5 micrograms per cubic meter, calendar quarter average.

1.9 Odors:

Any ambient air sample of at least 50 ml which, undiluted, is established by a
documented investigation or measurement to be offensive, foul, unpleasant, or repulsive.

SECTION 2 - Secondary Standards

The secondary ambient air quality standards for sulfur oxides, particulate matter, carbon
monoxide, total nonmethane hydrocarbons, lead, nitrogen dioxide, hydrogen sulfide;
photochemical oxidants, hydrogen fluoride, total fluorides, and odors measured by reference
methods specified by the Board, or by equivalent methods are:

2.1 Sulfur Oxides (sulfur dioxide):

2.1.1 1300 micrograms per cubic meter (0.50 ppm) maximum 3-hour average not to be
exceeded more than once per year.

2.2 Particulate Matter PM_{10}:

2.2.1 150 micrograms per cubic meter maximum 24-hour average not to be exceeded more
than once per year as determined in accordance with 40 CFR Part 50 Appendix K.

2.2.2 50 micrograms per cubic meter annual arithmetic mean, shall be used as a guide in
assessing implementation plans to achieve the 24-hour primary standard as
determined in accordance with 40 CFR Part 50 Appendix K.

2.3 Carbon Monoxide

Same as primary standards:

2.4 Photochemical Oxidants:

Same as primary standard:

2.5 Hydrocarbons:

Same as primary standard:

2.6 Nitrogen Dioxide:

2.6.1 254 micrograms per cubic meter (0.135 ppm) maximum 24-hour average not to be
exceeded more than once per year.

2.6.2 1,020 micrograms per cubic meter (0.54 ppm) maximum 1-hour average not to be
exceeded more than once per year.

2.6.3 100 micrograms per cubic meter (0.05 ppm) annual arithmetic mean.

2.7 Gaseous Fluorides (expressed as HF):

2.7.1 0.50 micrograms per cubic meter (.60 ppb) - maximum 1-month average not to be
exceeded more than once per year.

2.7.2 0.80 micrograms per cubic meter (0.97 ppb) - maximum 1-week average not to be
exceeded more than once per year.

3.04-2
2.7.3—2.86 micrograms per cubic meter (3.5 ppb) — maximum 24-hour average not to be exceeded more than once per year;

2.7.4—3.68 micrograms per cubic meter (4.5 ppb) — maximum 12-hour average not to be exceeded more than once per year;

2.8—Hydrogen Sulfide:

2.8.1—14 micrograms per cubic meter (0.01 ppm) maximum 1-hour average not to be exceeded more than once per year;

2.9—Total Fluorides:

2.9.1—Not to exceed 40 ppm (w/w) — average concentration of monthly samples over growing season (not to exceed 6 consecutive months);

2.9.2—Not to exceed 60 ppm (w/w) — 2-month average;

2.9.3—Not to exceed 80 ppm (w/w) — 1-month average.

2.10—Lead:

Same as primary standard.

2.11—Odors:

Same as primary standard.

REGULATION 3.05  Methods of Measurement

REPEALED - Superceded by Regulation 3.01

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To:  KRS Chapter 77 Air Pollution Control
Pursuant To:  KRS Chapter 77 Air Pollution Control
Necessity And Function:  KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes the methods to use for measuring air contaminants.

Air contaminants shall be measured by the reference or equivalent methods and at such frequency as specified in EPA regulations on Ambient Air Quality Surveillance (40 CFR Parts 50, 53 and 58) or, in the case of contaminants for which no national standard exists, by methods and at such frequency as specified by the District.

PART REGULATION 5

Standards for Toxic Air Contaminants and Hazardous Air Pollutants

REGULATION 5.01 General Provisions

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control
Necessity And Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes the general provisions for toxic air contaminants, the requirement for environmental acceptability of toxic air contaminant emissions, and the requirement that new or modified processes or process equipment comply with all applicable emission standards upon commencing operation testing and monitoring to comply with the standards for hazardous air pollutants.

SECTION 14 Definitions

Terms used in this regulation that are not defined in this regulation herein shall have the meaning given to them in Regulation 1.02 Definitions. As used in the Part 5 regulations, the following terms shall have the meaning given to them in this section.

4.1 “Stationary source” means any building, structure, facility, or installation that emits or may emit any air pollutant that has been designated as hazardous by the District.

1.1 “Benchmark ambient concentration” means the concentration of a toxic air contaminant that is used in determining environmental acceptability pursuant to Regulation 5.21 Environmental Acceptability for Toxic Air Contaminants.

1.1.1 The benchmark ambient concentration for a carcinogen (BACc) is the concentration, including an averaging time frame, of a toxic air contaminant that is representative of an additional lifetime cancer risk of one in one million (1 × 10⁻⁶). The benchmark ambient concentration for a carcinogen is established pursuant to Regulation 5.20 Methodology for Determining Benchmark Ambient Concentration for a Toxic Air Contaminant Section 3.

1.1.2 The benchmark ambient concentration for the noncarcinogenic effects of a toxic air contaminant (BACNC) is the concentration, including an averaging time frame, of a toxic air contaminant that is likely to be without an appreciable risk of deleterious effects during a lifetime. The benchmark ambient concentration for the noncarcinogenic effects of a toxic air contaminant is established pursuant to Regulation 5.20 Section 4.

1.2 “Category 1 TAC” means a toxic air contaminant listed in Regulation 5.23 Categories of Toxic Air Contaminants Section 1.

1.3 “Category 2 TAC” means a toxic air contaminant listed in Regulation 5.23 Section 2.

1.4 “Category 3 TAC” means a toxic air contaminant listed in Regulation 5.23 Section 3.

1.5 “Category 4 TAC” means a toxic air contaminant listed in Regulation 5.23 Section 4.

1.6 “De minimis emission” means any of the following:

1.6.1 If the estimation of the emission of a TAC that may be contained in a mixture of
1.6.3 The emissions from a process or process equipment or activity that is included on the Insignificant Activity list that is part of the District’s EPA-approved Title V Operating Permit Program, available on the Internet at “http://www.apcd.org/permit/t5/insignificant.pdf”, or

1.6.4 The emission of a TAC from a process or process equipment that is equal to or less than the amounts calculated by using the following method:

1.6.4.1 Determine the benchmark ambient concentrations pursuant to Regulation 5.20 Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant Section 4 and, if the TAC is determined to be a carcinogen, Section 3,

1.6.4.2 Multiply the BAC$_{NC}$ (in $\mu g/m^3$) by:

1.6.4.2.1 0.54 (the 1-Hour Factor in Regulation 5.22 Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant Section 2 Table 1) to derive the pound-per-hour de minimis value for the BAC$_{NC}$, and

1.6.4.2.2 By the applicable (based upon the averaging time period of the BAC$_{NC}$) Annual, 24-Hour, or 8-Hour Factor in Regulation 5.22 Section 2 Table 1 to derive the applicable pound-per-averaging time period de minimis value for the BAC$_{NC}$,

1.6.4.3 If the TAC is a carcinogen, multiply the BAC$_c$ (in $\mu g/m^3$) by:

1.6.4.3.1 0.54 (the 1-Hour Factor in Regulation 5.22 Section 2 Table 1) to derive the pound-per-hour de minimis value for the BAC$_c$, and

1.6.4.3.2 480 (the Annual Factor in Regulation 5.22 Section 2 Table 1) to derive the annual pound-per-year de minimis value for the BAC$_c$,

1.6.4.4 If the TAC is not determined to be a carcinogen, then an emission of that TAC that is less than both the pound-per-hour de minimis value determined in section 1.6.4.2.1 and the applicable pound-per-averaging time period de minimis value determined in section 1.6.4.2.2 is deemed to be a de minimis emission,

1.6.4.5 If the TAC is determined to be a carcinogen, then compare the pound-per-hour de minimis values derived in sections 1.6.4.2.1 and 1.6.4.3.1 to determine which value is smaller. An emission of that TAC that is less than both the smaller pound-per-hour de minimis value and the corresponding applicable averaging time period de minimis value determined in section 1.6.4.2.2 or 1.6.4.3.2 is deemed to be a de minimis emission, or

1.6.5 The emissions from a new or modified surface coating process, including a coating change, or process equipment, for which the construction permit application qualifies under any of the circumstances described in Regulation 5.21 section 1.5, and for which the potential volatile organic compound emissions are less than 5.0 tons per year.

1.7 “Exempt stationary source” means any of the following:

1.7.1 A gasoline dispensing facility subject to the provisions of Regulation 6.40 Standards of
Section 2t Applicability

This regulation applies to the owner or operator of any process or process equipment that emits or may emit a toxic air contaminant or hazardous air pollutant or stationary source for which a toxic air contaminant or hazardous air pollutant emission standard or other requirement is prescribed in a Part 5 under this regulation. A new or modified process or process equipment shall sources must comply with all applicable emission standards upon commencing operation.

Section 3 General Duty

The owner or operator of a process or process equipment from which a toxic air contaminant is or may be emitted shall provide the utmost care and consideration to prevent the potential harmful effects of the emissions resulting from the process or process equipment. A person shall not allow any process or process equipment to emit a toxic air contaminant in a quantity or duration as to be harmful to the health and welfare of humans, animals, and plants.

Section 2—Emission Tests and Monitoring

Emission tests and monitoring shall be conducted and reported as set forth in this regulation and the EPA Regulation on National Emission Standards for Hazardous Air Pollutants (40 CFR 61) and its appendices. Where the test results using an alternative method do not adequately indicate whether a source is in compliance with a standard, the District may require use of the reference method or its equivalent. Equivalent test methods for Federal Regulations incorporated in Regulations 5.02
and 5.04 require EPA approval.

SECTION 3—Emission Testing Facilities

The owner or operator of a new source subject to Regulation 5 and, at the request of the District, the owner or operator of an existing source subject to Regulation 5 shall provide or cause to be provided emission testing facilities as follows:

3.1 Sampling ports adequate for test methods applicable to such source;
3.2 Safe sampling platforms;
3.3 Safe access to sampling platforms, and
3.4 Utilities for sampling and testing equipment.

Adopted v1/7-14-76; effective 9-1-76; amended v2/6-13-79, v3/4-20-88.
REGULATION 5.03 Potential Hazardous Emissions

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control
Necessity And Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes certain responsibilities for affected facilities emitting potentially hazardous emissions.

Persons responsible for a source from which hazardous matter may be emitted including but not limited to, antimony, arsenic, asbestos, beryllium, bismuth, lead, mercury, silica, tin, vinyl chloride, compounds of such materials, and other toxic materials shall give the utmost care and consideration to the potential harmful effects of the emissions resulting from such activities. Evaluation of such facilities as to adequacy and emission potential will be made on an individual basis by the District.

Adopted v1/7-14-76; effective 9-1-76; amended v2/6-13-79.
REGULATION 5.11 Standards of Performance for Existing Processes and Process Equipment Sources Emitting Toxic Air Pollutants

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control
Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and make and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of toxic air pollutant emissions from existing processes and process equipment sources.

SECTION 1 Kentucky References
Except as provided in Section 6, Kentucky Regulation 401 KAR 63:021 (11-11-86) for control of toxic air pollutant toxics emissions from existing processes and process equipment sources is hereby adopted and incorporated by reference. It is not the intent of this regulation to allow the use of taller stacks to effect compliance by application of the correction factor in Appendix C. However, in certain situations in which the requirement to control cannot be justified, the District may permit such usage. Further, in no event shall application of this regulation result in emissions of any pollutant that would exceed the emissions allowed by any applicable standard under Part Regulation 5, 6, or 7.

SECTION 2 Summary and Applicability
This regulation Kentucky Regulation 401 KAR 63:021 controls emissions of toxic air pollutants from processes and process equipment that were in existence before November 11, 1986, existing sources by specifying either an allowable emissions limit or by requiring the application of reasonably available control technology.

SECTION 3 General Definition
In 401 KAR 63:021 (11-11-86), "Cabinet" shall be read as "District".

SECTION 4 Compliance Schedules
Existing sources in Jefferson County shall fulfill their obligations for Compliance schedules and control plans as required by this regulation shall be submitted to 401 KAR 63:021 by filing them with the District.

SECTION 5 Availability
Copies of 401 KAR 63:021 (11-11-86) are available from:

Division for Air Quality
803 Sehenkel Lane
Frankfort, KY 40601-1403

or
Air Pollution Control District
850 Barret Avenue
SECTION 6 Adjusted Significant Level Determination
When determining the adjusted significant levels of individual pollutants from existing processes and process equipment at a stationary source, the height of release (H) used to enter the table in Appendix C shall be a weighted average derived by dividing the sum of the products of emission rates and heights of release of the individual points of release by the total emission rate of a pollutant from all points of release. If the weighted height of release falls between two values in the table in Appendix C, the lesser value shall be used.

SECTION 7 Savings Clause
Any emission standard established pursuant to this regulation shall remain in effect until replaced by an emission standard established pursuant to Regulation 5.21 Environmental Acceptability for Toxic Air Contaminants.

Adopted v1/12-17-86; effective 12-17-86; amended v2/5-20-98.
REGULATION 5.12 Standards of Performance for New or Modified Processes or Process Equipment Sources Emitting Toxic Air Pollutants

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control
Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt, make and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of toxic air pollutant emissions from new or modified processes or process equipment.

SECTION 1 Kentucky References
Except as provided in Section 5, Kentucky Regulation 401 KAR 63:022 (11-11-86) for control of toxic air pollutant emissions from new or modified processes or process equipment is hereby adopted and incorporated by reference. It is not the intent of this regulation to allow the use of taller stacks to effect compliance by application of the correction factor in Appendix C. However, in certain situations in which the requirement to control cannot be justified, the District may permit such usage. Further, in no event shall application of this regulation result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under Part Regulation 5, 6, or 7.

SECTION 2 Summary and Applicability
This regulation controls emissions of toxic air pollutants from new or modified processes or process equipment, that were constructed or modified during the time period from November 11, 1986, until [insert the effective date of Version 3 of this regulation], by specifying either an allowable emissions limit or by requiring the application of best available control technology.

SECTION 3 General Definition
In 401 KAR 63:022 (11-11-86), "Cabinet" shall be read as "District".

SECTION 4 Availability
Copies of 401 KAR 63:022 (11-11-86) are available from:
- Division for Air Quality
- 803 Schenkel Lane
- Frankfort, KY 40601-1403
- or
- Air Pollution Control District
- 850 Barret Avenue
- Louisville, KY 40204-1745

SECTION 5 Adjusted Significant Level Determination
When determining the adjusted significant levels of individual pollutants at a source, the height of
release (H) used to enter the table in Appendix C shall be a weighted average derived by dividing
the sum of the products of emission rates and heights of release of the individual points of release
by the total emission rate of a pollutant from all points of release. If the weighted height of release
falls between two values in the table in Appendix C, the lesser value shall be used.

When determining the adjusted significant levels of individual pollutants from a new or modified
process or process equipment addition or modification at a source, the height of release (H) used to
enter the table in Appendix C shall be a weighted average derived by dividing the sum of the
products of emission rates and heights of release of the individual points of release of the new or
modified process or process equipment by the total emission rate of a pollutant from all points of
release of the new or modified process or process equipment in the addition or modification. If the
weighted height of release falls between two values in the table in Appendix C, the lesser value shall
be used.

SECTION 6 Savings Clause
Any emission standard established pursuant to this regulation shall remain in effect until replaced
with an emission standard established pursuant to Regulation 5.21 Environmental Acceptability for
Toxic Air Contaminants.

Adopted v1/12-17-86; effective 12-17-86; amended v2/5-20-98.
REGULATION 5.20 Methodology for Determining Benchmark Ambient Concentration of a
Toxic Air Contaminant

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control
Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and
enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS
Chapter 77. This regulation establishes the methodology for determining the benchmark ambient
concentration for a toxic air contaminant.

SECTION 1 Use of Benchmark Ambient Concentration
A benchmark ambient concentration for a toxic air contaminant developed pursuant to this regulation
shall be used in Regulation 5.21 Environmental Acceptability for Toxic Air Contaminants to
determine environmental acceptability.

SECTION 2 Determination that a Toxic Air Contaminant is a Carcinogen
2.1 A toxic air contaminant (TAC) shall be determined to be a carcinogen if any of the following
provisions is met:
2.1.1 A carcinogenic unit risk estimate, or alternatively, a concentration representative of a
specified level of additional lifetime cancer risk, for the TAC is included in any of the
information sources identified in sections 3.3.1 to 3.3.3 or derived by using one of the
methodologies listed in section 3.3.5,
2.1.2 The TAC is listed as either “known to be a human carcinogen” or “reasonably anticipated
to be a human carcinogen” in the most recent Report on Carcinogens published by the
National Toxicology Program pursuant to Section 301(b)(4) of the Public Health Service
Act as Amended by Section 262, PL 95-622, available on the Internet at
“http://ehp.niehs.nih.gov/roc”,
2.1.3 The TAC is classified as to potential carcinogenic risk to humans as “Group 1: The
agent (mixture) is carcinogenic to humans,” “Group 2A: The agent (mixture) is probably
carcinogenic to humans,” or “Group 2B: The agent (mixture) is possibly carcinogenic
to humans” by the International Agency for Research on Cancer (IARC). The IARC list
is available on the Internet at “http://www-cie.iarc.fr/monoeval/chrhall.html”, or
2.1.4 The District determines that the TAC should be considered to be a carcinogen because
there is sufficient, credible information that any of the following criteria is met:
2.1.4.1 Known to be a human carcinogen: There is sufficient evidence of carcinogenicity
from studies in humans which indicates a causal relationship between exposure to the
agent, substance, or mixture and human cancer,
2.1.4.2 Reasonably anticipated to be a human carcinogen:
2.1.4.2.1 There is limited evidence of carcinogenicity from studies in humans, which
indicates that causal interpretation is credible, but that alternative explanations,
such as chance, bias, or confounding factors, could not adequately be excluded,
2.1.4.2.2 There is sufficient evidence of carcinogenicity from studies in experimental
animals which indicates there is an increased incidence of malignant or a
combination of malignant and benign tumors: (1) in multiple species or at
multiple tissue sites, or (2) by multiple routes of exposure, or (3) to an unusual
degree with regard to incidence, site, or type of tumor, or age at onset, or

2.1.4.2.3 There is less than sufficient evidence of carcinogenicity in humans or laboratory
animals, however; the agent, substance, or mixture belongs to a well defined,
structurally-related class of substances whose members are listed in the most
recent Report on Carcinogens published by the National Toxicology Program as
either a known to be human carcinogen or reasonably anticipated to be human
carcinogen, or there is convincing relevant information that the agent acts through
mechanisms indicating it would likely cause cancer in humans.

In making a determination pursuant to section 2.1.3, the following provisions shall apply:

2.2.1 Conclusions regarding carcinogenicity in humans or experimental animals are based on
scientific judgment, with consideration given to all relevant information. Relevant
information includes, but is not limited to, dose response, route of exposure, chemical
structure, metabolism, pharmacokinetics, sensitive sub populations, genetic effects, and
other data relating to mechanism of action or factors that may be unique to a given
substance. This applies to both the "known to be a human carcinogen" and the
"reasonably anticipated to be a human carcinogen" categories, and

2.2.2 For an agent to be determined "known to be a human carcinogen," evidence from studies
of humans is required. This may include traditional cancer epidemiology studies, data
from clinical studies, or data derived from the study of tissues from humans exposed to
the substance in question and useful for evaluating whether a relevant cancer mechanism
is operating in humans.

SECTION 3 Cancer Risk Benchmark Determination Methodology

3.1 The benchmark ambient concentration for a toxic air contaminant (TAC) determined to be
a carcinogen (BAC_c) shall be calculated as follows:

\[
BAC_c = \frac{1 \times 10^{-6}}{URE} \quad [\text{Equation 1}]
\]

Where:

\( BAC_c \) = Benchmark Ambient Concentration for a carcinogen, a concentration
representative of an additional lifetime cancer risk of 1 in 1,000,000 (1\( \times 10^{-6} \)),
in units of micrograms per cubic meter (\( \mu g/m^3 \)),

\( URE \) = Unit Risk Estimate - Additional lifetime cancer risk occurring in a population
in which all individuals are exposed continuously for life (70 years) to a
concentration of 1 \( \mu g/m^3 \) of the chemical in the air they breathe, in units of
(\( \mu g/m^3 \))\(^{-1} \). The URE shall be determined according to the methodology in
section 3.3, and

\( 1 \times 10^{-6} \) = An upper bound additional lifetime cancer risk of 1 in 1,000,000.

3.2 Alternatively, if in any of the sources of information identified in section 3.3, the
concentration of a carcinogen, expressed in \( \mu g/m^3 \), that is representative of an additional
lifetime cancer risk of 1\( \times 10^{-6} \) is identified instead of the URE, then the BAC_c is that
identified concentration. The URE can be calculated by using Equation 1.
84 3.3 The following provisions shall apply to the derivation of a unit risk estimate (URE), or
alternatively a BAC_C directly, for a TAC determined to be a carcinogen:
86 3.3.1 If a URE for a TAC has been developed by the U.S. Environmental Protection Agency
(EPA) and included in the EPA's Integrated Risk Information System (IRIS), available
on the Internet at "http://www.epa.gov/iris/", then that URE shall be used to determine
the BAC_C.
90 3.3.2 If a URE for a TAC has not been derived pursuant to section 3.3.1 but a URE for that
TAC has been developed by the California Office of Environmental Health Hazard
Assessment, available on the Internet at "http://www.arb.ca.gov/toxics/healthvaV
contable.pdf", then that URE, found in the column "Inhalation Unit Risk (μg/m³)¹", shall
be used to determine the BAC_C.
95 3.3.3 If a URE for a TAC has not been derived pursuant to section 3.3.1 or 3.3.2 but an Initial
Risk Screening Level (IRSL) for that TAC has been developed by the Michigan Air
Quality Division, available on the Internet at "http://www.deq.state.mi.us/
documents/deq-aqd-toxics-itslcas.pdf" sorted by Chemical Abstract Services (CAS)
number or "http://www.deq.state.mi.us/documents/deq-aqd-toxics-itslalph.pdf" sorted
in alphabetical order, then that IRSL shall be used as the BAC_C.
101 3.3.4 If a TAC has been determined to be a carcinogen, but a URE, or a BAC_C directly, has
not been derived pursuant to section 3.3.1, 3.3.2, or 3.3.3, then the URE may be derived
using one of the following:
104 3.3.4.1 The methodology in Air Toxics Risk Assessment Reference Library, Volume 1,
Technical Resource Manual, Chapter 12 Inhalation Toxicity Assessment, U.S.
Environmental Protection Agency, EPA-453-K-04-001A, April 2004, which is
hereby adopted and incorporated by reference,
108 3.3.4.2 The methodology in Guidelines for Carcinogen Risk Assessment, U.S. Environmental
Protection Agency, NCEA-F-0644, July 1999, Review Draft, which is hereby
adopted and incorporated by reference,
111 3.3.4.3 The methodology in Guidelines for Carcinogen Risk Assessment, U.S. Environmental
Protection Agency, EPA/630/R-00/004, September 24, 1986, 51 FR 33992-34003,
which is hereby adopted and incorporated by reference,
114 3.3.4.4 The methodology in R 336.1231 Cancer risk assessment screening methodology
(2)(b) and (3) of the Michigan Administrative Code, which is hereby adopted and
incorporated by reference, or
117 3.3.4.5 Any alternative cancer risk assessment methodology that can be demonstrated to the
satisfaction of the District to be more appropriate based on biological grounds and
that is supported by the scientific data.
120 3.3.5 If a URE for a TAC has not been derived pursuant to section 3.3.1, 3.3.2, 3.3.3 or 3.3.4,
then the BAC_C shall be the default value 0.0004 μg/m³.
122 3.4 An annual average time period shall be used for a BAC_C.

SECTION 4 Chronic Noncancer Risk Benchmark Determination Methodology
The benchmark ambient concentration for the noncarcinogenic effects of a toxic air contaminant
(BAC_NO), a concentration that is likely to be without an appreciable risk of deleterious effects during
a lifetime, shall be determined as follows:
4.1 If a Reference Concentration (RfC) for a TAC has been developed by the EPA and included
in the EPA's Integrated Risk Information System (IRIS), available on the Internet at “http://www.epa.gov/iris/”, then that RfC shall be used as the $BAC_{NC}$:

$$BAC_{NC} = RfC \quad [Equation \ 2]$$

Where:

- $BAC_{NC}$ = Benchmark Ambient Concentration for the noncarcinogenic effects of a TAC, in units of $\mu g/m^3$, and
- $RfC$ = Reference Concentration, in units of $\mu g/m^3$.

A 24-hour average time period shall be used for a $BAC_{NC}$ determined pursuant to section 4.1.

4.2 If a $BAC_{NC}$ for a TAC has not been determined pursuant to section 4.1 but a Reference Exposure Level (REL) for that TAC has been developed by the California Office of Environmental Health Hazard Assessment, available on the Internet at “http://www.arb.ca.gov/toxics/healthval/contable.pdf”, then that REL, found in the column “Chronic Inhalation ($\mu g/m^3$), shall be used as the $BAC_{NC}$:

$$BAC_{NC} = REL \quad [Equation \ 3]$$

Where:

- $BAC_{NC}$ = Benchmark Ambient Concentration for the noncarcinogenic effects of a TAC, in units of $\mu g/m^3$, and
- $REL$ = Reference Exposure Level, in units of $\mu g/m^3$.

A 24-hour average time period shall be used for a $BAC_{NC}$ determined pursuant to section 4.2.

4.3 If a $BAC_{NC}$ for a TAC has not been determined pursuant to section 4.1 or 4.2 but an Oral Reference Dose (RfD) for that TAC has been developed by the EPA and included in the EPA’s IRIS, available on the Internet at “http://www.epa.gov/iris/”, and data are not available to indicate that oral-route to inhalation-route extrapolation is inappropriate, then that RfD shall be used to calculate the $BAC_{NC}$ as follows:

$$BAC_{NC} = \frac{RfD \times 70 \text{ kg}}{20 \text{ m}^3/\text{day}} \quad [Equation \ 4]$$

Where:

- $BAC_{NC}$ = Benchmark Ambient Concentration for the noncarcinogenic effects of a TAC, in units of $\mu g/m^3$,
- $RfD$ = Reference Exposure Level, in units of $\mu g/kg-day$,
- $70 \text{ kg}$ = The average body weight of a human, and
- $20 \text{ m}^3/\text{day}$ = The average daily inhalation rate for a human.

A 24-hour average time period shall be used for a $BAC_{NC}$ determined pursuant to section 4.3.

4.4 If a $BAC_{NC}$ for a TAC has not been determined pursuant to section 4.1 to 4.3 but an Initial Threshold Screening Level (ITSL) for that TAC has been developed by the Michigan Air Quality Division, available on the Internet at “http://www.deq.state.mi.us/
documents/deq-aqd-toxics-itslcas.pdf” sorted by Chemical Abstract Services (CAS) number or “http://www.deq.state.mi.us/documents/deq-aqd-toxics-itslalph.pdf” sorted in alphabetical order, then that ITSL shall be used as the BAC\textsubscript{NC}:

\[
BAC_{NC} = ITSL \quad \text{[Equation 5]}
\]

Where:

- \( BAC_{NC} \) = Benchmark Ambient Concentration for the noncarcinogenic effects of a TAC, in units of \( \mu \text{g/m}^3 \), and
- \( ITSL \) = Initial Threshold Screening Level, in units of \( \mu \text{g/m}^3 \).

The average time period as listed for a specific ITSL shall be used for a BAC\textsubscript{NC} determined pursuant to section 4.4.

4.5 If a BAC\textsubscript{NC} for a TAC has not been determined pursuant to section 4.1 to 4.4 but an occupational exposure level (OEL) exists for that TAC, then the OEL may be used to calculate the BAC\textsubscript{NC} as follows:

\[
BAC_{NC} = \frac{OEL}{100} \quad \text{[Equation 6]}
\]

Where:

- \( BAC_{NC} \) = Benchmark Ambient Concentration for the noncarcinogenic effects of a TAC, in units of \( \mu \text{g/m}^3 \),
- \( OEL \) = Occupational Exposure Level, that, for the TAC, is the lowest value of either the National Institute of Occupational Safety and Health (NIOSH)-recommended exposure level listed in current edition of the NIOSH pocket guide to chemical hazards or the time-weighted average or ceiling Threshold Limit Value (TLV) listed in the current edition of the American Conference of Governmental and Industrial Hygienists Threshold Limit Value (TLV) booklet, in units of \( \mu \text{g/m}^3 \), and
- \( 100 \) = A composite safety factor to account for differences in susceptibility between the healthy, adult worker population compared to the general population that is more diverse and may contain individuals or subpopulations more sensitive to the effects of the toxic air pollutant (safety factor of 10). Additionally, the composite safety factor accounts for the difference in exposure duration (in hours per week and years working versus a lifetime) for the worker population compared to the general population:

\[
\frac{1}{10} \otimes \frac{40 \text{ hours/week}}{168 \text{ hours/week}} \otimes \frac{30 \text{ years}}{70 \text{ years}} = \frac{1}{100}.
\]

An 8-hour average time period shall be used for a BAC\textsubscript{NC} determined pursuant to section 4.5 based upon a time-weighted OEL and a 1-hour average time period shall be used for a BAC\textsubscript{NC} determined pursuant to section 4.5 based upon a ceiling OEL.
If a $BAC_{NC}$ for a TAC has not been determined pursuant to section 4.1 to 4.5 but a 7-day, inhalation, no observed adverse effect level (NOAEL) or lowest observable adverse effect level (LOAEL) is available for that TAC, then the NOAEL or LOAEL may be used to calculate the $BAC_{NC}$ as follows:

$$BAC_{NC} = \frac{NOAEL}{35 \times 100} \times \frac{Hr \text{ Exposed}}{24 \text{ Hr} / \text{Day}} \quad [\text{Equation 7}]$$

$$BAC_{NC} = \frac{LOAEL}{35 \times 100 \times UF} \times \frac{Hr \text{ Exposed}}{24 \text{ Hr} / \text{Day}} \quad [\text{Equation 8}]$$

Where:

- $BAC_{NC}$ = Benchmark Ambient Concentration for the noncarcinogenic effects of a TAC, in units of $\mu g/m^3$,
- NOAEL = No observed adverse effect level (inhalation study), in units of $\mu g/m^3$,
- LOAEL = Lowest observed adverse effect level (inhalation study), in units of $\mu g/m^3$,
- 35 = A safety factor to account for using a NOAEL or LOAEL from a 7-day exposure period to estimate a NOAEL or LOAEL for a lifetime study,
- 100 = A standard composite safety factor comprised of a safety factor of 10 to account for differences between animals and humans and a safety factor of 10 to account for the differences between individuals in the human population, and
- UF = Uncertainty Factor, a value from 1 to 10, applicable when using a LOAEL (lowest effect) instead of a NOAEL (no effect), determined by the District on a case-by-case basis, considering the type and severity of effect. For example, a value of 1 would be used when the lowest effect was a skin rash; a value of 10 would be used when the lowest effect was death.

An annual average time period shall be used for a $BAC_{NC}$ determined pursuant to section 4.6.

If a $BAC_{NC}$ for a TAC has not been determined pursuant to section 4.1 to 4.6 but a 7-day, oral NOAEL or oral LOAEL is available for that TAC, then the oral NOAEL or oral LOAEL may be used to calculate the $BAC_{NC}$ as follows:

$$BAC_{NC} = \frac{Oral \ NOAEL}{35 \times 100} \times \frac{W_A}{I_A} \times \frac{b}{a} \quad [\text{Equation 9}]$$

$$BAC_{NC} = \frac{Oral \ LOAEL}{35 \times 100 \times UF} \times \frac{W_A}{I_A} \times \frac{b}{a} \quad [\text{Equation 10}]$$

Where:
BAC$_{NC}$ = Benchmark Ambient Concentration for the noncarcinogenic effects of a TAC, in units of $\mu$g/m$^3$.

NOAEL = No observed adverse effect level (oral study), in units of $\mu$g/kg-day,

LOAEL = Lowest observed adverse effect level (oral study), in units of $\mu$g/kg-day,

35 = A safety factor to account for using a NOAEL or LOAEL from a 7-day exposure period to estimate a NOAEL or LOAEL for a lifetime study,

100 = A standard composite safety factor comprised of a safety factor of 10 to account for differences between animals and humans and a safety factor of 10 to account for the differences between individuals in the human population,

UF = Uncertainty Factor, a value from 1 to 10, applicable when using a LOAEL (lowest effect) instead of a NOAEL (no effect), determined by the District on a case-by-case basis, considering the type and severity of effect. For example, a value of 1 would be used when the lowest effect was a skin rash; a value of 10 would be used when the lowest effect was death,

$W_A$ = Body weight of experimental animal in kilograms (kg),

$I_A$ = Daily inhalation rate of experimental animal in m$^3$/day,

$b$ = Absorption efficiency (percent absorbed) by the oral route of exposure, and

$a$ = Absorption efficiency (percent absorbed) by the inhalation route of exposure.

If approved by the District, the BAC$_{NC}$ may be determined on a case-by-case basis using an oral NOAEL or oral LOAEL from repeated dose studies other than 7-day studies.

An annual average time period shall be used for a BAC$_{NC}$ determined pursuant to section 4.7.

4.8 If a BAC$_{NC}$ for a TAC has not been determined pursuant to section 4.1 to 4.7 but an inhalation LC$_{50}$ from a study that is 4 or more hours in duration is available for that TAC, then the LC$_{50}$ may be used to calculate the BAC$_{NC}$ as follows:

$$BAC_{NC} = \frac{LC_{50}}{500 \times 100}$$

[Equation 11].

Where:

BAC$_{NC}$ = Benchmark Ambient Concentration for the noncarcinogenic effects of a TAC, in units of $\mu$g/m$^3$,

LC$_{50}$ = Concentration of material used in an inhalation study that causes death of 50% of the group of test animals when administered as a single dose in a specific time period, in units of $\mu$g/m$^3$,

500 = A factor to account for using an LC$_{50}$ to estimate a no observed adverse effect level (NOAEL) for a lifetime study, and

100 = A standard composite safety factor comprised of a safety factor of 10 to account for differences between animals and humans and a safety factor

5.20 - 7
of 10 to account for the differences between individuals in the human population.

An annual average time period shall be used for a $BAC_{NC}$ determined pursuant to section 4.8.

4.9 If a $BAC_{NC}$ for a TAC has not been determined pursuant to section 4.1 to 4.8 but an $LC_{50}$ from a 1-hour inhalation study is available for that TAC, then the 1-hour $LC_{50}$ may be used to calculate the $BAC_{NC}$ as follows:

$$BAC_{NC} = \frac{(1-Hr)\, LC_{50}}{500 \otimes 100 \otimes 40} \quad [Equation \ 12].$$

Where:

- $BAC_{NC}$ = Benchmark Ambient Concentration for the noncarcinogenic effects of a TAC, in units of $\mu g/m^3$,
- $LC_{50}$ = Concentration of material used in an inhalation study that causes death of 50% of the group of test animals when administered as a single dose in a specific time period, in units of $\mu g/m^3$,
- $500$ = A factor to account for using an $LC_{50}$ to estimate a no observed adverse effect level (NOAEL) for a lifetime study,
- $100$ = A standard composite safety factor comprised of a safety factor of 10 to account for differences between animals and humans and a safety factor of 10 to account for the differences between individuals in the human population, and
- $40$ = A safety factor to account for the uncertainty of using a one-hour inhalation $LC_{50}$ compared to an exposure duration of four hours or more.

An annual average time period shall be used for a $BAC_{NC}$ determined pursuant to section 4.9.

4.10 If a $BAC_{NC}$ for a TAC has not been determined pursuant to section 4.1 to 4.9 but an animal oral $LD_{50}$ is available for that TAC, then the $LD_{50}$ may be used to calculate the $BAC_{NC}$ as follows:

$$BAC_{NC} = \frac{LD_{50} \ (mg/kg)}{500 \otimes 100 \otimes 40 \otimes 0.167} \otimes \frac{W_A}{I_A} \quad [Equation \ 13].$$

Where:

- $BAC_{NC}$ = Benchmark Ambient Concentration for the noncarcinogenic effects of a TAC, in units of $\mu g/m^3$,
- $LD_{50}$ = Amount of material administered in a single dose by a route other than inhalation, e.g., oral, that causes death of 50% of the group of test animals, in units of $\mu g/kg$,
- $500$ = A factor to account for using an $LC_{50}$ to estimate a no observed adverse effect level (NOAEL) for a lifetime study,
- $100$ = A standard composite safety factor comprised of a safety factor of 10 to account for differences between animals and humans and a safety factor
of 10 to account for the differences between individuals in the human population,

A safety factor to account for the uncertainty of estimating an LC50 from an LD50,

A factor to convert the daily dose to a 4-hour time frame (4 ÷ 24 = 0.167),

Body weight of experimental animal in kilograms (kg), and

Daily inhalation rate of experimental animal in m³/day.

An annual average time period shall be used for a BACNC determined pursuant to section 4.10.

4.11 If a BACNC for a TAC has not been determined pursuant to section 4.1 to 4.10, then the BACNC shall be the default value:

\[
BAC_{NC} = 0.04 \mu g/m^3
\]  

[Equation 14].

Where:

\(BAC_{NC}\) = Benchmark Ambient Concentration for the noncancerous effects of a TAC, in units of \(\mu g/m^3\).

An annual average time period shall be used for a BACNC determined pursuant to section 4.11.

4.12 Notwithstanding the methodologies in sections 4.3, 4.7, and 4.10, a BACNC shall not be derived from one of these methodologies, which consider route-to-route extrapolation, unless the District has affirmatively determined that the use of oral toxicity data is appropriate. The use of oral toxicity data is not appropriate in the following cases:

4.12.1 When groups of chemicals have different toxicity by the two different routes (e.g., metals, irritants, and sensitizers),

4.12.2 When a first-pass effect by the respiratory tract is expected,

4.12.3 When a first-pass effect by the liver is expected,

4.12.4 When a respiratory tract effect is established, but dosimetry comparison cannot be clearly established between the two routes,

4.12.5 When the respiratory tract is not adequately studied in the oral studies, and

4.12.6 When short-term inhalation studies, dermal irritation, in vitro studies, or characteristics of the chemical indicate potential for portal-of-entry effects at the respiratory tract, but studies themselves are not adequate for the development of a benchmark ambient concentration.

SECTION 5 Consideration of Acute Noncancer Effects

If the District determines that compliance with the BACNC over the applicable averaging time specified in Section 4 does not provide adequate protection from the acute effects of a TAC, then the District may establish a different acute benchmark ambient concentration (BAC_{NCa}) and shorter averaging time that would provide adequate protection.
SECTION 6  Available Documents

The District will maintain on its web page, “http://www.apcd.org”, links to the documents identified as available on the Internet and maintain at its office a copy of all documents identified in this regulation. In addition, the District will maintain a current list of the benchmark ambient concentrations that have been developed pursuant to this regulation and maintain this current list on its web page.

Adopted v1/________ ; effective __________.
REGULATION 5.21  Environmental Acceptability for Toxic Air Contaminants

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control
Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes the criteria for determining the environmental acceptability of emissions of toxic air contaminants.

SECTION 1 Definitions
Terms used in this regulation that are not defined in this regulation shall have the meaning given to them in Regulation 1.02 Definitions or Regulation 5.01 General Provisions.

1.1 “Best available technology for toxics” or “T-BAT” means an emission standard that reflects the maximum degree of toxic air contaminant (TAC) emission reduction that the District determines can be reasonably achieved by the process or process equipment, taking into account energy, environmental, and economic impacts and health and welfare benefits. In determining T-BAT, the District shall consider work practices, raw material substitutions, production limitations including limitations on the hours of operation, alternative processes and process design characteristics, air pollution control equipment, and pollution prevention measures.

1.2 “Environmentally acceptable” or “environmental acceptability” (EA) means the ambient concentration, including an averaging time frame, of a TAC, or the sum of the ambient concentrations, including an averaging time frame, of multiple TACs, that is less than or equal to the ambient goals and standards established in this regulation. These EA goals and standards are collectively referred to as “EA levels.”

1.3 “Existing process or process equipment” means, for the provisions of this regulation, one of the following:

1.3.1 A process or process equipment, for which the construction permit did not qualify under any of the circumstances described in section 1.5, that involves the potential emission of a Category 1 or 2 TAC from a Group 1 or 2 stationary source, excluding the process and process equipment for the initial transfer of gasoline into the fuel tank of a new motor vehicle at an automobile or truck assembly plant, or

1.3.2 A process or process equipment located at a permitted stationary source that involves the potential emission of a TAC for which the District determines that the emissions do not comply with the general duty clause of Regulation 5.01 Section 3.

1.4 “Hazard quotient” or “HQ” means the ratio between the concentration of a TAC and the benchmark ambient concentration for noncarcinogenic effects for that TAC (BACNC). A hazard quotient is a unitless numerical value.

1.5 “New or modified process or process equipment” means, for the provisions of this regulation, a process or process equipment for which the District has received a construction permit application that meets one of the following circumstances:

1.5.1 The application involves the potential emission of a Category 1 or 2 TAC from a Group 1
or 2 stationary source and the construction permit is issued by the District on or after [insert the effective date of this regulation],

1.5.2 The application involves the potential emission of a Category 3 or 4 TAC from a Group 1 or 2 stationary source, but does not involve the potential emission of a Category 1 or 2 TAC, and an administratively complete construction permit application was received by the District on or after [insert the effective date of this regulation], unless the construction permit application had been received by the District before June 30, 2004, or

1.5.3 The application involves the potential emission of a TAC from a permitted stationary source and the District determines that the emission would not comply with the general duty clause of Regulation 5.01 Section 3.

1.6 "Permitted stationary source" means a stationary source that is subject to the permit requirements of Regulation 2.03 section 1.1 or 1.2.

1.7 "Source sector" means the general grouping of sources of air contaminants used by the District for developing anthropogenic emissions inventories. These source sectors are as follows:

1.7.1 Point source - industrial or commercial stationary source that is subject to the permit requirements in Regulation 2.03 section 1.1 or 1.2 (permitted stationary source).

1.7.2 Area source - non-permitted commercial stationary source or other anthropogenic source of emissions that is not included in section 1.7.1, 1.7.3, or 1.7.4.

1.7.3 Mobile source - motorized vehicle that is registered for use on the public roads and highways.

1.7.4 Nonroad mobile source - motorized vehicle that is not registered for use on the public roads and highways or any other equipment with a fossil fuel-fired engine that is not a point source.

SECTION 2 Ambient Goals and Standards for Environmental Acceptability for Toxic Air Contaminants

2.1 The allowed emissions of TACs, excluding de minimis emissions and the Category 3 and 4 TAC emissions for which the allowed emissions were approved pursuant to section 3.1.2.2, from new or modified processes or process equipment, as defined in section 1.5, shall not exceed the ambient levels of environmental acceptability (EA levels) for TACs in section 2.2, except as provided in section 2.3.

2.2 The following table establishes the EA goals for TACs for new or modified processes or process equipment:
### Notes for section 2.2 (also applicable to section 2.5):

1. Process or process equipment is abbreviated P/PE.

2. \( R_C \), or the risk, in units of risk in one million, from an individual TAC that is determined to be a carcinogen, as applicable to section 2.2.1 (or section 2.5.1), means the cancer risk from an individual TAC from an individual process or process equipment, derived from the following equation:

\[
R_C = \frac{\text{Maximum concentration}_{i,j}}{BAC_{C_i}} \quad \text{[Equation 1]}
\]

Where:
- \( i \) = an individual carcinogenic TAC, from
- \( j \) = an individual new or modified process or process equipment,
- \( BAC_{C_i} \) = the benchmark ambient concentration for that carcinogenic TAC, as determined pursuant to Regulation 5.20 Section 3, and

Maximum concentration = the highest concentration of a TAC in the ambient air, taking into account the applicable averaging time frame for the TAC, as determined pursuant to Regulation 5.22 Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant.

3. \( R_C \), or the risk, in units of risk in one million, from all TACs that are determined to be carcinogens, as applicable to section 2.2.3 (or section 2.5.3), means the sum of the cancer risks at a single point from all individual TACs from all applicable individual processes or process equipment, derived from the following equation:

\[
R_C = \sum_{i=1}^{n} \sum_{j=1}^{m} \frac{\text{Maximum concentration}_{i,j}}{BAC_{C_i}} \quad \text{[Equation 2]}
\]

Where:
- \( i \) = an individual carcinogenic TAC, from
- \( j \) = an individual process or process equipment,
n = the total number of carcinogenic TACs to be included in the demonstration of environmental acceptability,

m = the total number of processes or process equipment from which carcinogenic TAC \("i\) may be emitted,

\(BAC_{CI}\) = the benchmark ambient concentration for that carcinogenic TAC, as determined pursuant to Regulation 5.20 Section 3, and

Maximum concentration = the concentration of a toxic air contaminant in the ambient air at the point of maximum risk of all applicable \("i\) emissions from all applicable \("j\) processes or process equipment, taking into account the applicable averaging time frame for the TAC, as determined pursuant to Regulation 5.22.

\(R_{NC}\), or the risk from the noncarcinogenic effects of an individual TAC, as applicable to section 2.2.1 (or 2.5.1), means the hazard quotient of the TAC from an individual process or process equipment, derived from the following equation:

\[ R_{NC} = HQ_i \]  

Where:

\(i\) = an individual TAC, from

\(j\) = an individual process or process equipment,

\(BAC_{NC}\) = the benchmark ambient concentration for the noncarcinogenic effects of the TAC, as determined pursuant to Regulation 5.20 Section 4, and

Maximum concentration = the highest concentration of a toxic air contaminant in the ambient air, taking into account the applicable averaging time frame for the TAC, as determined pursuant to Regulation 5.22.

\(R_{NC}\), or the risk from the noncarcinogenic effects of an individual TAC from all applicable individual processes or process equipment, as applicable to section 2.2.2 (or 2.5.2), means the hazard quotient of the TAC at a single point from all applicable processes or process equipment, derived from the following equation:

\[ EAL_{NC} = HQ_i = \sum_{j=1}^{m} \frac{Maximum\ concentration_{i,j}}{BAC_{NC_{i,j}}} \]  

Where:

\(i\) = an individual TAC, from

\(j\) = an individual process or process equipment,

\(m\) = the total number of processes or process equipment from which TAC \("i\) may be emitted,

\(BAC_{NC}\) = the benchmark ambient concentration for the noncarcinogenic effects of the TAC, as determined pursuant to Regulation 5.20 Section 4, and

Maximum concentration = the concentration of a toxic air contaminant in the ambient air, taking into account the applicable averaging time frame for the TAC, as determined pursuant to Regulation 5.22.
contaminant in the ambient air at the point of maximum concentration of the "i" emissions from all applicable "j" processes or process equipment, taking into account the applicable averaging time frame for the TAC, as determined pursuant to Regulation 5.22.

6 The EALc Risk is in units of risk in one million.

2.3 Modification of the EA goals.

2.3.1 After providing an opportunity for public review and comment, the District may approve a written request from the owner or operator of a new or modified process or process equipment to exceed:

2.3.1.1 One or both of the EA goals in section 2.2.1, provided that the applicable EA goals in sections 2.2.2 and 2.2.3 are met, and

2.3.1.2 One or both of the EA goals in sections 2.2.2 and 2.2.3, provided that the applicable EA standards in sections 2.5.2 and 2.5.3 are met.

2.3.2 As part of the request pursuant to section 2.3.1, the owner or operator shall submit a demonstration that each element of T-BAT that is listed in section 1.1 has been considered and that practices and measures potentially applicable to the process or process equipment, including technology transfer, from readily available information from any jurisdiction have been reviewed.

2.3.3 In making the determination whether to approve the request, the District shall consider, among other factors, whether, and the extent to which, the allowed emissions from the process or process equipment reflect the application of the best available technology for toxics (T-BAT). The District shall also consider relevant, including both current and up to 25 years in the future, demographic and land use factors.

2.4 The allowed emissions of TACs, as specified in sections 2.4.1 to 2.4.3, excluding de minimis emissions, from processes and process equipment at a point source, as specified in sections 2.4.1 to 2.4.3, shall not, taking into account the compliance schedule for the various categories of TACs in section 4.5, exceed the EA levels for TACs in section 2.5 as follows, except as provided in sections 2.6 and 2.7:

2.4.1 The EA goals in section 2.5.1 are applicable to Category 1 and 2 TACs from existing processes and process equipment,

2.4.2 The EA standards in sections 2.5.2 and 2.5.3 are applicable to Category 1 and 2 TACs from all existing processes and process equipment and Category 1, 2, 3, and 4 TACs from all new or modified processes or process equipment, excluding the Category 3 and 4 TAC emissions for which the allowed emissions were approved pursuant to section 3.1.2.2, and

2.4.3 The EA goals and standards in section 2.5 are applicable to a process or process equipment for which the District determines that the emissions of a TAC do not comply with the general duty clause of Regulation 5.01 Section 3.

2.5 The following table establishes the EA levels for TACs for processes and process equipment, as specified in sections 2.4.1 to 2.4.3, at a point source:

5.21-5
### Notes for section 2.5: See the notes for section 2.2.

#### 2.6 Modification of the EA goals.

2.6.1 After providing an opportunity for public review and comment, the District may approve a written request from the owner or operator of a process or process equipment subject to the EA goals in section 2.5.1 to exceed one or both of those EA goals, provided that the corresponding EA standards in sections 2.5.2 and 2.5.3 are met.

2.6.2 As part of the request pursuant to section 2.6.1, the owner or operator shall submit a demonstration that each element of T-BA T listed in section 1.1 has been considered and that practices and measures potentially applicable to the process or process equipment, including technology transfer, from readily available information from any jurisdiction have been reviewed.

2.6.3 In making the determination whether to approve the request, the District shall consider, among other factors, whether, and the extent to which, the allowed emissions from the process or process equipment reflect the application of T-BAT. The District shall also consider relevant, including both current and up to 25 years in the future, demographic and land use factors.

2.7 The owner or operator of a new or modified process or process equipment, except for a new or modified process or process equipment that was approved by the District to exceed one or both of the EA goals in section 2.2.2 or 2.2.3 pursuant to the provisions of section 2.3, is not required to demonstrate compliance with the EA standards in sections 2.5.2 or 2.5.3 until required to do so pursuant to the provisions of section 4.1, taking into account the schedule for the various categories of TACs.

2.8 The EA goals for TACs, applicable to the emissions from existing processes and process equipment, as defined in section 1.3, and new or modified processes and process equipment, as defined in section 1.5 (including the Category 3 and 4 TAC emissions for which the allowed emissions were approved pursuant to section 3.1.2.2), excluding de minimis...
emissions, are as follows:

<table>
<thead>
<tr>
<th>Applicable Source Sector</th>
<th>Applicable Source of Emission</th>
<th>Applicable TACs Standard (×10⁻⁶)</th>
<th>Goal or Standard</th>
<th>EAL₉ Risk³ (×10⁻⁶)</th>
<th>EAL₉ Risk² HQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.8.1</td>
<td>Point source</td>
<td>Individual TAC</td>
<td>Goal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Applicable processes and process equipment</td>
<td></td>
<td></td>
<td></td>
<td>HQ = 1.00</td>
</tr>
<tr>
<td>2.8.2</td>
<td>Point source</td>
<td>Total for all applicable TACs</td>
<td>Goal</td>
<td>10.0</td>
<td></td>
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<tr>
<td></td>
<td>Applicable processes and process equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes for section 2.8:

1. \( R_c \), or the risk, in units of risk in one million, from all TACs that are determined to be carcinogens, as applicable to section 2.8.2, means the sum of the cancer risks at a single point from all individual TACs from all applicable stationary sources, derived from the following equation:

\[
R_c = \sum_{i=1}^{n} \sum_{j=1}^{m} \frac{\text{Maximum concentration}_{ij}}{BACC_i}
\]

[Equation 5]

Where:

- \( i \) = an individual carcinogenic TAC, from
- \( j \) = an individual source of emission,
- \( n \) = the total number of carcinogenic TACs to be included in the demonstration of environmental acceptability,
- \( m \) = the total number of sources of emission from which carcinogenic TAC “\( i \)” may be emitted,
- \( BACC_i \) = the benchmark ambient concentration for that carcinogenic TAC, as determined pursuant to Regulation 5.20 Section 3, and
- Maximum concentration = the concentration of a toxic air contaminant in the ambient air at the point of maximum risk of all applicable “\( i \)” emissions from all applicable “\( j \)” sources of emission, taking into account the applicable averaging time frame for the TAC, as determined pursuant to Regulation 5.22.

2. \( R_{NC} \), or the risk from the noncarcinogenic effects of an individual TAC, as applicable to section 2.8.3, means the hazard quotient of the TAC from all applicable stationary sources, derived from the following equation:
\[ R_{NC} = HQ_i = \sum_{j=1}^{m} \frac{\text{Maximum concentration}_{ij}}{\text{BAC}_{NC_i}} \]  

[Equation 6]

Where:

- \( i \) = an individual TAC, from
- \( j \) = an individual source of emission,
- \( m \) = the total number of sources or emission from which TAC “\( i \)” may be emitted,
- \( \text{BAC}_{NC} \) = the benchmark ambient concentration for the noncarcinogenic effects of the TAC, as determined pursuant to Regulation 5.20 Section 4, and
- \( \text{Maximum concentration} \) = the concentration of a toxic air contaminant in the ambient air at the point of maximum concentration of the “\( i \)” emissions from all applicable “\( j \)” sources of emission, taking into account the applicable averaging time frame for the TAC, as determined pursuant to Regulation 5.22.

3 The EAL\(_C\) Risk is in units of risk in one million.

### Section 3 New or Modified Process or Process Equipment that May Emit a Toxic Air Contaminant

3.1 A construction permit required by the provisions of the Part 2 regulations for a new or modified process or process equipment that may emit a TAC shall, except as exempted pursuant to section 3.2, incorporate the following provisions:

3.1.1 The permit conditions shall contain an allowed emission standard for a Category 1 or 2 TAC from a Group 1 or 2 stationary source that has been demonstrated to comply with the environmental acceptability goals of section 2.2, except as provided in section 2.3.

3.1.2 The permit conditions shall contain an allowed emission standard for a Category 3 or 4 TAC from a Group 1 or 2 stationary source that meets one of the following:

3.1.2.1 The allowed emission standard has been demonstrated to comply with the environmental acceptability goals of section 2.2 except as provided in section 2.3, or

3.1.2.2 The allowed emission standard has been demonstrated to comply with Section 3 of Regulation 5.01. If the owner or operator chooses this option for compliance, then, prior to issuing the construction permit, the District shall provide an opportunity for public review and comment, and

3.1.3 If determined appropriate by the District, then the construction permit shall require the owner or operator of the new or modified process or process equipment to install, calibrate, operate, and maintain a continuous or intermittent emissions or parametric monitoring system. Applicable records shall be maintained for a period of at least 5 years, made available to the District upon request, and submitted to the District as specified in the construction permit.

3.2 Sections 3.1.1 and 3.1.2 shall not apply to a TAC emission that is a de minimis emission as defined in Regulation 5.01 section 1.6.
SECTION 4 Demonstration of Environmental Acceptability and Compliance Plans for Permitted Stationary Sources

4.1 The owner or operator of a Group 1 or Group 2 stationary source shall determine, according to the procedures in this regulation, whether the allowed emissions from all processes and process equipment at the stationary source comply with the EA levels in sections 2.5.1 to 2.5.3. When making this determination, the owner or operator may include the effect on the allowed emissions of a process or process equipment pursuant to a promulgated Clean Air Act §112(d) maximum achievable control technology (§112(d) MACT) standard, provided that the change in allowed emissions and the compliance deadline are identified.

The owner or operator shall, for each process or process equipment, submit to the District the results and the supporting documentation of the determination according to the following schedule:

4.1.1 For a Group 1 stationary source, the following:

4.1.1.1 For Category 1 TACs, by December 31, 2005, and

4.1.1.2 For Category 2 TACs, by December 31, 2007, and

4.1.2 For a Group 2 stationary source, the following:

4.1.2.1 For Categories 1 and 2 TACs, by September 30, 2008.

4.1.3 For cause, the District may extend the compliance date of section 4.1.1.1 by up to 6 months. To be eligible for this extension, the owner or operator of the process or process equipment shall submit all of the information that is available by the compliance date and a written request to the District explaining why the extension is necessary and the actions that were taken to minimize the needed extension.

4.2 If the District determines that the concentration of a TAC in the ambient air is, or may be, greater than the EA goal in section 2.8.1 or 2.8.2 and a potentially responsible entity for the emissions of the TAC is identified, then the Board may require the owner or operator of an identified stationary source to submit the information identified in Section 4 of Regulation 1.06 Stationary Source Self-Monitoring, Emissions Inventory Development, and Reporting and meet the requirements of sections 4.1, 4.4, and 4.5 of Regulation 5.21 on an accelerated schedule. In this case, the District shall notify the owner or operator in writing and shall specify the dates for complying with these requirements.

4.3 If the allowed emissions, or, if the applicable permit does not contain an allowed emission standard, then the potential emissions, of a TAC from a process or process equipment are determined, pursuant to section 4.1, to exceed one or more of the EA levels in sections 2.5.1 to 2.5.3 but the actual emissions do not exceed these EA levels, then the owner or operator may request, in writing, that the District revise the appropriate permit conditions to reduce the allowable emissions, or establish an allowable emission standard that is consistent with new source review requirements, specifying the new level of allowed emissions. Upon receipt by the District of the request, the new emission standard may be used for demonstrating environmental acceptability and shall be an enforceable requirement of the applicable permit for the affected process and process equipment.

4.4 If the allowed emissions of a TAC from a process or process equipment are determined, pursuant to the provisions of section 4.1, to exceed one or both of the EA goals in section 2.5.1 (and the District has not given approval to exceed those EA goals pursuant to section 2.6) or the EA standards in section 2.5.2 or 2.5.3, then the owner or operator shall submit to the District a compliance plan and schedule for compliance with the applicable EA level...
according to the following schedule:

4.4.1 For a Group 1 stationary source, as follows:

4.4.1.1 For Category 1 TACs, by June 30, 2006, and

4.4.1.2 For Category 2 TACs, by December 31, 2008, and

4.4.2 For a Group 2 stationary source, as follows:

4.4.2.1 For Categories 1 and 2 TACs, by September 30, 2009.

4.4.3 For cause, the District may extend the compliance date of section 4.4.1.1 by up to 6 months. To be eligible for this extension, the owner or operator of the process or process equipment shall submit all of the information that is available by the compliance date and a written request to the District explaining why the extension is necessary and the actions that were taken to minimize the needed extension.

4.5 A compliance plan required pursuant to section 4.4 shall provide for compliance as soon as practicable but no later than the following dates:

4.5.1 For a Group 1 stationary source, the following:

4.5.1.1 For Category 1 TACs, December 31, 2007, and

4.5.1.2 For Category 2 TACs, December 31, 2009, and

4.5.2 For a Group 2 stationary source, the following:

4.5.2.1 For Categories 1 and 2 TACs, September 30, 2010.

4.5.3 For cause, the District may extend the compliance date of section 4.5.1.1 by up to 6 months and the compliance date in sections 4.5.1.2 and 4.5.2.1 by up to 12 months. To be eligible for this extension, the owner or operator of the process or process equipment shall complete as much of the compliance plan as can be done by the applicable compliance date and submit a written request to the District explaining why the extension is necessary and the actions that were taken to minimize the needed extension.

4.5.4 The District may extend the applicable compliance date of section 4.5.1 or 4.5.2 that would otherwise be applicable to a process or process equipment that is subject to a §112(d) MACT standard, provided that the §112(d) MACT standard is promulgated at the time that the compliance plan is due pursuant to section 4.4. If the compliance date is extended, then the owner or operator shall timely and fully comply with the requirements of the §112(d) MACT standard. An extension of the compliance date for the process or process equipment subject to this §112(d) MACT standard does not affect the applicable compliance date of section 4.5.1 or 4.5.2 for any other process or process equipment at the stationary source.

4.6 A compliance plan and schedule pursuant to the provisions of section 4.4 shall, at a minimum, contain the following milestone steps and dates:

4.6.1 Perform an engineering analysis of potential solutions,

4.6.2 Prepare a bid package for vendors for equipment,

4.6.3 Submit to the District a construction permit application for new equipment and any required modifications,

4.6.4 Select a vendor and issue a purchase order for equipment,

4.6.5 Commence construction,

4.6.6 Complete construction,

4.6.7 Prepare and submit a proposed compliance testing protocol to the District for approval,

4.6.8 Perform the required compliance testing,

4.6.9 Prepare and submit a final compliance testing report to the District for approval, and
Submit quarterly progress reports.

After providing an opportunity for public review and comment, the District may approve a compliance plan and schedule from a stationary source and the approved compliance plan and schedule shall be an enforceable requirement of the applicable District permit for the process and process equipment included in the compliance plan.

If the District determines, based upon the information submitted to the District pursuant to section 4.1 or other information, that an EA goal in section 2.8.1 or 2.8.2 would be exceeded, then the following process shall be followed:

The District shall prepare a proposed Risk Reduction Plan (Plan). The Plan shall set forth the information relied upon in making the determination, the assumptions and calculations in support of the Plan, and the analysis and rationale from section 4.8.2. The Plan shall specify the additional reductions from each stationary source contributing to the exceedance of the EA goal that are necessary to achieve compliance with the applicable EA goal.

In determining the additional reductions, the District shall consider the extent to which each contributing process and process equipment has applied T-BAT, the other factors to be considered in sections 2.3 and 2.6, and other factors necessary and appropriate upon which to base a fair, equitable, and effective apportionment of the responsibility for additional reductions.

The Board shall provide an opportunity for public review and comment on the proposed Plan.

Following the opportunity for public review and comment, the Board shall take action on the proposed Plan. Board action may include, but is not limited to, approval, modification and approval, or denial of the proposed Plan.

Within 180 days of Board approval of a Plan, the owner or operator of each affected stationary source shall submit a compliance plan and schedule that shall, at a minimum, contain the milestone steps and dates identified in section 4.6. Compliance with the required reductions identified in the approved Plan shall be achieved as soon as practicable but no later than 18 months after Board approval of the compliance plan and schedule.

Anymore stringent emission standard, and the schedule for complying with this emission standard, shall be an enforceable requirement of the applicable District permit for the affected process and process equipment.

In the alternative to the provisions of sections 4.1.2, 4.4.2, and 4.5.2 applicable to Group 2 stationary sources, the Board may, by regulation, establish specific requirements for a class of stationary sources. If the Board adopts a new regulation or amends an existing regulation in lieu of requiring compliance with these provisions by individual stationary sources in that class, then the District shall notify the owner or operator of each stationary source in that class that compliance with these provisions is not required.

If the District determines that the presence of 2 or more TACs, at concentrations that comply with the EA levels in sections 2.2, 2.5, and 2.8, would result in a synergistic or additive toxicological effect that may adversely affect human health, or that there is human exposure from routes of exposure other than direct inhalation, then the District shall prepare a
proposed Risk Reduction Plan and the procedures specified in section 4.8 shall be followed. Any more stringent emission standard, and a schedule for complying with this emission standard, shall be an enforceable requirement of the applicable District permit for the affected process and process equipment.

4.11 Upon written notification by the District that a benchmark ambient concentration established pursuant to Regulation 5.20 for a TAC that is, or may be, emitted by the stationary source has become more stringent, the owner or operator of the stationary source shall, within 6 months of this notification, make a revised determination, according to the procedures in Regulation 5.21, whether the allowed emissions from the stationary source comply with the EA levels in section 2.5 based upon the revised benchmark ambient concentration and submit the results to the District. If one or more of these EA levels is exceeded, then the owner or operator shall, within 18 months of the initial notification, submit a compliance plan and schedule meeting the provisions of section 4.6, providing for compliance as soon as practicable but no later than 36 months after the initial notification. Upon approval by the District of the compliance plan and schedule, the approved compliance plan and schedule shall be an enforceable requirement of the applicable District permit for the process and process equipment included in the compliance plan.

4.12 If a benchmark ambient concentration established pursuant to Regulation 5.20 for a TAC becomes less stringent, the owner or operator may request that an emission standard based upon the more stringent benchmark ambient concentration be revised to reflect compliance with the EA levels based upon the revised benchmark ambient concentration. The District may approve the request and revise the emission standard, provided that the revision complies with all other applicable requirements and the effectiveness of an existing emissions control measure is not reduced or eliminated.

4.13 If the District determines that the concentration of a TAC in the ambient air resulting from any TAC emission of a stationary source is, or may be, greater than an EA level in section 2.5 or 2.8, then the District may require emission reductions of that TAC. In this case, the written notification shall include the date for submittal of a compliance plan and schedule to the District and the date for compliance with the EA levels. Any more stringent emission standard and the compliance schedule shall be an enforceable requirement of the applicable District permit for the affected process and process equipment.

4.14 If the owner or operator submits a revised demonstration of compliance with the EA levels in sections 2.2 or 2.5, based upon the use of an EPA-approved dispersion model update or replacement model, that justifies a change to an applicable emission standard for the process or process equipment, then the District may revise the permit standard accordingly, consistent with applicable new source review requirements.

450 Adopted v1/_______; effective __________.
REGULATION 5.22

Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes the procedures for determining the maximum concentration of a toxic air contaminant in the ambient air.

SECTION 1 Determining the Maximum Ambient Concentration of a Toxic Air Contaminant

1.1 The maximum ambient concentration of a toxic air contaminant determined by one of the procedures in Sections 2 to 5 shall be used to determine compliance with the ambient levels for environmental acceptability (EA levels) established in Regulation 5.21 Environmental Acceptability for Toxic Air Contaminants.

1.2 For intermittent emissions, the average emission rate may be used to determine the maximum ambient concentration if the average rate is not less than 10% of the maximum hourly rate. Intermittent emissions are emissions that are not allowed to be emitted continuously for the entire length of the time specified in Regulation 5.20 Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant as the applicable averaging time for a benchmark ambient concentration.

1.3 Each procedure in Sections 2 to 5 represents an acceptable method for determining the maximum ambient concentration of a toxic air contaminant, although there are stated limitations for the use of the Tier 2 procedure. In general, the intent is that the Tier 1 procedure is the most simple to use, requires the least amount of process- and process equipment-specific information, and provides the most conservative maximum ambient concentration; proceeding on a continuum, the Tier 4 procedure is the most complex to use, requires the greatest amount of process- and process equipment-specific information, and provides the least conservative maximum ambient concentration. The following is a brief description of the four procedures:

1.3.1 Tier 1 - Table 1: Simple Factor for Determining Maximum Ambient Concentration: The allowed emission rate for the appropriate averaging time for the specific toxic air contaminant is divided by a factor from the table to give the maximum ambient concentration.

1.3.2 Tier 2 - Table 2: Annual Factor: The allowed hourly emission rate is divided by the appropriate annual factor from the table to give the maximum ambient concentration. The annual factor from the table depends on the building height, stack height-to-building height ratio, and the distance to the closest secured property line, and the annual factor from the table may be adjusted depending on the averaging time of the benchmark ambient concentration for the specific toxic air contaminant.

1.3.3 Tier 3 - SCREEN3 and TSCREEN Models: The output of these screening models is the maximum hourly ambient concentration. The maximum hourly ambient concentration...
may be multiplied by an adjustment factor depending on the averaging time of the benchmark ambient concentration for the specific toxic air contaminant. The models contain different algorithms based upon the type of release, for example, stack or fugitive. Basic dispersion modeling parameters are required, such as building height and dimensions, stack height, stack diameter, exhaust gas flow rate, exhaust gas temperature, and emission rate for a stack emission.

1.3.4 Tier 4 - EPA-Approved Dispersion Model: The output of these highly complex models is the maximum ambient concentration for the identified averaging time, which is set within the model depending on the averaging time of the benchmark ambient concentration for the specific toxic air contaminant. The models contain different algorithms based upon the type of release, for example, stack or fugitive. Detailed dispersion modeling parameters are required.

1.4 If there is not an established applicable emission limit for a toxic air contaminant (TAC), then the potential to emit for that TAC shall be used. However, pursuant to Regulation 5.21 Section 4.3, the owner or operator of the stationary source may request a new emission limit for that TAC that, upon receipt by the District, may be used to determine the maximum ambient concentration pursuant to Regulation 5.22.

1.5 If the District determines that the model chosen, model options, or model inputs are not appropriate to model the emissions from a process or process equipment, then the District may disapprove the results of the modeling demonstration.

SECTION 2 Tier 1 - Table 1: Simple Factor for Determining Maximum Ambient Concentration

2.1 The maximum concentration of a toxic air contaminant from a process or process equipment in the ambient air may be determined by using the appropriate factor from Table 1 and the applicable Equation 1 to 4. The appropriate factor is determined by the averaging time for a specific toxic air contaminant, which is established in Regulation 5.20. The calculated maximum concentration is then used in determining compliance with the EA levels in Regulation 5.21 by using the applicable equation in Regulation 5.21 section 2.2, 2.5, or 2.8. If Table 1 contains two factors for a benchmark ambient concentration averaging time, then the factor that results in the greater maximum concentration shall be used.

2.2 Table 1 Simple Factor for Determining Maximum Concentration reads as follows:

<table>
<thead>
<tr>
<th>BAC[^1] Averaging Time</th>
<th>Annual Factor ([F_A])^2</th>
<th>24-Hour Factor ([F_{24h}])^3</th>
<th>8-Hour Factor ([F_8])^4</th>
<th>1-Hour Factor ([F_1])^5</th>
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<td>24 hours</td>
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<td>8 hours</td>
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</table>

5.22-2
Notes for Table 1:
1. BAC is the benchmark ambient concentration of a toxic air contaminant as determined pursuant to Regulation 5.20.
2. The Annual Factor $F_A$ is in units of (lb/year)/(ug/m$^3$). Use Equation 1.
3. The 24-Hour Factor $F_{24}$ is in units of (lb/24 hours)/(ug/m$^3$). Use Equation 2.
4. The 8-Hour Factor $F_8$ is in units of (lb/8 hours)/(ug/m$^3$). Use Equation 3.
5. The 1-Hour Factor $F_1$ is in units of (lb/1 hour)/(ug/m$^3$). Use Equation 4.

\[
\text{Maximum Concentration}_{i,j} = \frac{\text{Allowed annual emission}_{i,j}}{F_A} \quad \text{Equation 1}
\]

\[
\text{Maximum Concentration}_{i,j} = \frac{\text{Allowed 24-hour emission}_{i,j}}{F_{24}} \quad \text{Equation 2}
\]

\[
\text{Maximum Concentration}_{i,j} = \frac{\text{Allowed 8-hour emission}_{i,j}}{F_8} \quad \text{Equation 3}
\]

\[
\text{Maximum Concentration}_{i,j} = \frac{\text{Allowed 1-hour emission}_{i,j}}{F_1} \quad \text{Equation 4}
\]

Where:
- $i$ = an individual toxic air contaminant, from
- $j$ = an individual process or process equipment,
- Allowed emission is in units of pounds per the applicable time period,
- and
- Maximum Concentration is in units of ug/m$^3$.

**SECTION 3 Tier 2 - Table 2: Annual Factor for Determining Maximum Ambient Concentration**

3.1 The maximum concentration of a toxic air contaminant from a process or process equipment in the ambient air may be determined by using the appropriate annual factor from Table 2 (adjusted if appropriate) and Equation 5. The calculated maximum concentration is then used in determining compliance with the EA levels in Regulation 5.21 by using the applicable equation in Regulation 5.21 section 2.2, 2.5, or 2.8.

3.2 The use of Table 2 requires information about the dispersion characteristics of the source of emissions, namely, the distance to the nearest secured property line, the height of the stack, and, as described in section 3.7.2, the height of the influential building.

3.3 Table 2 shall not be used if any of the following provisions applies:

- 3.3.1 The stack height is less than 10 feet or the emission is a fugitive emission,
- 3.3.2 The influential building height is more than 100 feet,
- 3.3.3 There are terrain elevations that are more than 25% of the discharging stack height within a distance of 500 feet from the stack, or
- 3.3.4 The analysis is for an elevated receptor, for example, a hospital air intake.

3.4 The annual factor value derived from Table 2 is the ratio of the annual averaged hourly
emission rate divided by the maximum annual ambient impact, in units of (lbs/hr)/(µg/m³).

The annual factor shall be adjusted if the averaging time of the benchmark ambient concentration (BAC) for the specific toxic air contaminant as determined pursuant to Regulation 5.20 is different than annual. This adjustment is done as follows:

\[
24\text{-hr factor (lbs/hr)/(µg/m³)} = \text{annual factor} \times 0.091.
\]

\[
8\text{-hr factor (lbs/hr)/(µg/m³)} = \text{annual factor} \times 0.046.
\]

\[
1\text{-hr factor (lbs/hr)/(µg/m³)} = \text{annual factor} \times 0.02.
\]

Determine the maximum concentration. This is done by using the allowed hourly emission limit (lb/hr), taking into account the intermittent emission provision of section 1.2, for a toxic air contaminant from a process or process equipment; the annual factor as derived from Table 2 and, if appropriate, making the adjustment pursuant to section 3.5; and performing the calculation in Equation 5. The resulting maximum concentration is in units of µg/m³:

\[
\text{Maximum Concentration}_{ij} = \frac{\text{Allowed 1-hour emission}_{ij}}{\text{annual (adjusted) factor}}
\]

Equation 5

Where:  
i = an individual toxic air contaminant, from
j = an individual process or process equipment, and
annual (adjusted) factor is the annual factor derived from Table 2, including any adjustment required by section 3.5.

Instructions for deriving the annual factor from Table 2 are as follows:

- Determine the height of the discharging stack from ground level in feet (H_s).
- Determine the height of the influential building in feet (H_b). This is done by first identifying all buildings, including buildings on-site and off-site, located within a distance of 5 times their height from the discharging stack. Then, determine which building is the highest. This is the influential building, with height (H_b) in feet. If the stack is not attached to a building, then a building height of 40% of the stack height shall be assumed.
- Determine the ratio of the stack height to the influential building height by dividing the stack height, in feet, by the influential building height, in feet, \( \frac{H_s}{H_b} \).
- Determine the minimum distance, in feet, from the discharging stack to the secured property line. If there is no secured property line, then a distance of 25 feet shall be used.
- Determine the appropriate annual factor from Table 2. This is done by selecting the column with the appropriate influential building height and \( \frac{H_s}{H_b} \) ratio, and selecting the row with the appropriate minimum distance to the secured property line.

3.7.5.1 If the influential building height is between values in the column headings, then use the lower value or interpolate between values in the column headings.
3.7.5.2 If \( H_s < H_b \), then set the influential building height equal to the stack height and use the 1.25 \( \frac{H_s}{H_b} \) column.
3.7.5.3 If \( H_s / H_b \) is between 1 and 1.25, then select the 1.25 column.
3.7.5.4 If \( H_s / H_b \) is between 1.25 and 1.75, then use the 1.25 column or interpolate between the 1.25 and 1.75 columns.
3.7.5.5 If \( H_s / H_b \) is between 1.75 and 2.5, then use the 1.75 column or interpolate between the 1.75 and 2.5 columns.
3.7.5.6 If \( H_s / H_b \) is greater than or equal to 2.5, then use the 2.5 column.
3.7.5.7 If the minimum distance to the secured property line is between 2 distances in the row headings, then use the lower value, for example, if the distance is 250 feet, then use the 200 foot distance row in Table 2.

3.8 Table 2 Annual Factor reads as follows:

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<th>20</th>
<th>30</th>
<th>40</th>
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<td>2.50</td>
<td>1.25</td>
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5.22-6
### Table 2 Annual Factor (Con’t)

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<td>1.147</td>
<td>3.049</td>
</tr>
<tr>
<td>E 500</td>
<td>1.185</td>
<td>3.049</td>
</tr>
<tr>
<td>600</td>
<td>1.244</td>
<td>3.049</td>
</tr>
<tr>
<td>F 700</td>
<td>1.316</td>
<td>3.049</td>
</tr>
<tr>
<td>T 800</td>
<td>1.404</td>
<td>3.049</td>
</tr>
<tr>
<td>900</td>
<td>1.502</td>
<td>3.086</td>
</tr>
<tr>
<td>1000</td>
<td>1.634</td>
<td>3.289</td>
</tr>
<tr>
<td>1500</td>
<td>2.358</td>
<td>4.505</td>
</tr>
<tr>
<td>2000</td>
<td>3.049</td>
<td>5.618</td>
</tr>
</tbody>
</table>

Notes for Table 2:
- Bldg Ht is the building height, in feet,
- H_s / H_b is the ratio of the stack height to the building height,
- Stack Ht is the stack (or release) height, in feet, and
- The annual factor is in units of (lbs/hr)/(kg/m³).

### Section 4 Tier 3 - SCREEN3 and TSCREEN Models

#### 4.1
The maximum concentration of a toxic air contaminant from a process or process equipment in the ambient air may be determined by using the EPA SCREEN3 or TSCREEN models, using the appropriate algorithm for the type of emission release, for example, stack or fugitive. The maximum concentration derived from the use of one of these models, with the
adjustment identified in section 4.2 as appropriate, is then used in determining compliance
with the EA levels in Regulation 5.21 by using the applicable equation in Regulation 5.21
section 2.2, 2.5, or 2.8.

The resulting maximum concentration from the SCREEN3 or TSCREEN model is in units
of $\mu g/m^3$ for a 1-hour averaging time. If the averaging time for a benchmark ambient
centration (BAC) for the specific toxic air contaminant as determined pursuant to
Regulation 5.20 is other than 1 hour, then the resulting maximum concentration shall be
adjusted as follows:

For a BAC with an 8-hour averaging time, multiply by 0.44,
For a BAC with a 24-hour averaging time, multiply by 0.22, and
For a BAC with an annual averaging time, multiply by 0.02.

The SCREEN3 model shall be run in the “regulatory default mode” as described in the
SCREEN3 User’s Guide (EPA-454/B-95-004). This document is available on the Internet
at “www.epa.gov/scram001/userg/screen/screen3d.pdf”.

If the TSCREEN model is used, the model inputs and options used shall be included with the
modeling results submitted to the District pursuant to Regulation 5.21.

The SCREEN3 model may be downloaded for free from the Internet at “www.epa.gov/
scram001/tt22.htm#SCREEN3”.

The TSCREEN model may be downloaded for free from the Internet at “www.epa.gov/
scram001/tt22.htm#TSCREEN”.

SECTION 5  Tier 4 - EPA-Approved Dispersion Model

The maximum concentration of a toxic air contaminant from a process or process equipment
in the ambient air may be determined by using the EPA Industrial Source Complex Model
(ISC3) model or another appropriate model included in Appendix A Summaries of Preferred
Additionally, a model included in Appendix B Summaries of Alternative Air Quality Models
of 40 CFR Part 51 Appendix W may be used, provided that the use of the Appendix B model
meets one of the three conditions for approval specified in Appendix B section B.0
Introduction and Availability and prior approval is given by the District. The maximum
concentration derived from the use of one of these models is then used in determining
compliance with the EA levels in Regulation 5.21 by using the applicable equation in
Regulation 5.21 section 2.2, 2.5, or 2.8.

In running one of the models allowed pursuant to section 5.1, the model shall be set to report
the maximum concentration for the averaging time period consistent with the averaging time
established for the toxic air contaminant pursuant to Regulation 5.20.

The ISC3 model shall be run in the “regulatory default mode” as described in the User’s
This document is available on the Internet at “www.epa.gov/scram001/userg/
regmod/isc3v1.pdf”.

The ISC3 model may be downloaded for free from the Internet at “www.epa.gov/scram001/
tt22.htm#ISC”.

Adopted v1/ ; effective .
SECTION 1  Category 1 Toxic Air Contaminants

1.1 The Category 1 Toxic Air Contaminants list includes the compounds monitored in the 2000 to 2001 West Louisville Air Toxics Study at a concentration representative of a cancer risk greater than $1.0 \times 10^{-6}$ or a non-cancer Hazard Quotient (HQ) greater than 1.0.

1.2 The Category 1 Toxic Air Contaminants list reads as follows:

Category 1 Toxic Air Contaminants

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>107-13-1</td>
</tr>
<tr>
<td>2.</td>
<td>7440-38-2</td>
</tr>
<tr>
<td>3.</td>
<td>71-43-2</td>
</tr>
<tr>
<td>4.</td>
<td>75-25-2</td>
</tr>
<tr>
<td>5.</td>
<td>106-99-0</td>
</tr>
<tr>
<td>6.</td>
<td>7440-43-9</td>
</tr>
<tr>
<td>7.</td>
<td>56-23-5</td>
</tr>
<tr>
<td>8.</td>
<td>67-66-3</td>
</tr>
<tr>
<td>9.</td>
<td>126-99-8</td>
</tr>
<tr>
<td>10.</td>
<td>7440-47-3</td>
</tr>
<tr>
<td>11.</td>
<td>106-46-7</td>
</tr>
<tr>
<td>12.</td>
<td>140-88-5</td>
</tr>
<tr>
<td>13.</td>
<td>50-00-0</td>
</tr>
<tr>
<td>14.</td>
<td>75-09-2</td>
</tr>
<tr>
<td>15.</td>
<td>7440-02-0</td>
</tr>
<tr>
<td>16.</td>
<td>127-18-4</td>
</tr>
<tr>
<td>17.</td>
<td>79-01-6</td>
</tr>
<tr>
<td>18.</td>
<td>75-01-4</td>
</tr>
</tbody>
</table>
Category 1 Toxic Air Contaminants notes:

For all listings above that contain the word "compounds," the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., arsenic, cadmium, chromium, and nickel) as part of that chemical's infrastructure.

SECTION 2 Category 2 Toxic Air Contaminants

2.1 The Category 2 Toxic Air Contaminants list includes the compounds with 2002 Toxics Release Inventory (TRI) reported air emissions for Jefferson County, Kentucky, with an EPA Risk-Screening Environmental Indicators (RSEI) Full Model Relative Risk Score equal to or greater than 500 that are not included in Category 1 Toxic Air Contaminants.

2.2 The Category 2 Toxic Air Contaminants list reads as follows:

Category 2 Toxic Air Contaminants

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 7429-90-5</td>
<td>Aluminum (fume or dust)</td>
</tr>
<tr>
<td>2. 7664-41-7</td>
<td>Ammonia</td>
</tr>
<tr>
<td>3. 7637-07-2</td>
<td>Boron trifluoride</td>
</tr>
<tr>
<td>4. 141-32-2</td>
<td>Butyl acrylate</td>
</tr>
<tr>
<td>5. 7782-50-5</td>
<td>Chlorine</td>
</tr>
<tr>
<td>6. 7440-48-4</td>
<td>Cobalt</td>
</tr>
<tr>
<td>&amp; various &amp; cobalt compounds</td>
<td></td>
</tr>
<tr>
<td>7. 7440-50-8</td>
<td>Copper</td>
</tr>
<tr>
<td>&amp; various &amp; copper compounds</td>
<td></td>
</tr>
<tr>
<td>8. Various</td>
<td>Diisocyanates¹</td>
</tr>
<tr>
<td>9. Various</td>
<td>Glycol ethers²</td>
</tr>
<tr>
<td>10. 7647-01-0</td>
<td>Hydrochloric acid [Hydrogen chloride]</td>
</tr>
<tr>
<td>11. 7664-39-3</td>
<td>Hydrofluoric acid [Hydrogen fluoride]</td>
</tr>
<tr>
<td>12. Various</td>
<td>Lead compounds</td>
</tr>
<tr>
<td>13. 7439-96-5</td>
<td>Manganese</td>
</tr>
<tr>
<td>&amp; various &amp; manganese compounds</td>
<td></td>
</tr>
<tr>
<td>14. 91-20-3</td>
<td>Naphthalene</td>
</tr>
<tr>
<td>15. 7697-37-2</td>
<td>Nitric acid</td>
</tr>
<tr>
<td>16. 7664-93-9</td>
<td>Sulfuric acid</td>
</tr>
<tr>
<td>17. 108-88-3</td>
<td>Toluene</td>
</tr>
<tr>
<td>18. 95-63-6</td>
<td>1,2,4-Trimethylbenzene</td>
</tr>
<tr>
<td>19. 1330-20-7</td>
<td>Xylene (mixed isomers)</td>
</tr>
<tr>
<td>**</td>
<td>o-Xylene</td>
</tr>
<tr>
<td>**</td>
<td>m-Xylene</td>
</tr>
<tr>
<td>**</td>
<td>p-Xylene</td>
</tr>
</tbody>
</table>

Category 2 Toxic Air Contaminants notes:
The specific isomer is included in the “mixed isomers” listing.

For all listings above that contain the word "compounds,” the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., cobalt, copper, lead, and manganese) as part of that chemical's infrastructure.

Diisocyanates include the specific chemicals listed in the 2003 Reporting Year List of TRI Chemicals, available on the Internet at "http://www.epa.gov/tri/chemical/RY2003ChemicalList.pdf”.

Includes mono- and di-ethers of ethylene glycol, diethylene glycol, and triethylene glycol

\[ \text{R-(OCH}_2\text{CH}_2\text{n-OR')} \]

where:

- \( n = 1, 2, \text{ or } 3; \)
- \( \text{R = alkyl C7 or less, or} \)
- \( \text{R = phenyl or alkyl substituted phenyl; and} \)
- \( \text{R' = H or alkyl C7 or less, or} \)
- \( \text{OR' consisting of carboxylic acid ester, sulfate, phosphate, nitrate, or sulfonate, but excludes ethylene glycol monobutyle ether (EGBE, CAS No. 111-76-2).} \)

### SECTION 3 Category 3 Toxic Air Contaminants

3.1 The Category 3 Toxic Air Contaminants list includes the compounds identified by the EPA pursuant to Section 112(k) of the Clean Air Act as presenting significant risks to public health in urban areas that are not included in Category 1 Toxic Air Contaminants or Category 2 Toxic Air Contaminants.

3.2 The Category 3 Toxic Air Contaminants list reads as follows:

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 75-07-0</td>
<td>Acetaldehyde</td>
</tr>
<tr>
<td>2. 107-02-8</td>
<td>Acrolein</td>
</tr>
<tr>
<td>3. 7440-41-7</td>
<td>Beryllium &amp; various and beryllium compounds</td>
</tr>
<tr>
<td>4. None</td>
<td>Coke oven emissions</td>
</tr>
<tr>
<td>5. 542-75-6</td>
<td>1,3-Dichloropropene</td>
</tr>
<tr>
<td>6. None</td>
<td>Diesel particulate matter</td>
</tr>
<tr>
<td>7. 106-93-4</td>
<td>Ethylene dibromide [1,2-Dibromoethane]</td>
</tr>
<tr>
<td>8. 107-06-2</td>
<td>Ethylene dichloride [1,2-Dichloroethane]</td>
</tr>
<tr>
<td>9. 75-21-8</td>
<td>Ethylene oxide</td>
</tr>
<tr>
<td>10. 118-74-1</td>
<td>Hexachlorobenzene</td>
</tr>
<tr>
<td>11. 302-01-2</td>
<td>Hydrazine</td>
</tr>
</tbody>
</table>
### Category 3 Toxic Air Contaminants (Con’t)

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.</td>
<td>7439-97-6 Mercury &amp; various mercury compounds</td>
</tr>
<tr>
<td>13.</td>
<td>1336-36-3 Polychlorinated biphenyls [PCBs]</td>
</tr>
<tr>
<td>14.</td>
<td>50-32-8 Polycyclic organic matter(^1) [POM] [Benzo[a]pyrene] &amp; various (also represented as 7-PAH)</td>
</tr>
<tr>
<td>15.</td>
<td>78-87-5 Propylene dichloride [1,2-Dichloropropane]</td>
</tr>
<tr>
<td>16.</td>
<td>91-22-5 Quinoline</td>
</tr>
<tr>
<td>17.</td>
<td>79-34-5 1, 1, 2, 2-Tetrachloroethane</td>
</tr>
</tbody>
</table>

**Category 3 Toxic Air Contaminants notes:**

For all listings above that contain the word "compounds," the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., beryllium and mercury) as part of that chemical's infrastructure.

\(^1\) Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100°C. The seven polycyclic aromatic hydrocarbon (7-PAH) compounds are Benz[a]anthracene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[a]pyrene, Chrysene, Dibenz[a,h]anthracene, and Indeno[1,2,3-cd]pyrene.

### Section 4 Category 4 Toxic Air Contaminants

4.1 The **Category 4 Toxic Air Contaminants** list includes the Hazardous Air Pollutants (HAPs) listed by the EPA pursuant to Section 112(b) of the Clean Air Act that are not included in **Category 1 Toxic Air Contaminants, Category 2 Toxic Air Contaminants, or Category 3 Toxic Air Contaminants**.

4.2 The **Category 4 Toxic Air Contaminants** list reads as follows:

**Category 4 Toxic Air Contaminants**

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>60-35-5 Acetamide</td>
</tr>
<tr>
<td>2.</td>
<td>75-05-8 Acetonitrile</td>
</tr>
<tr>
<td>3.</td>
<td>98-86-2 Acetophenone</td>
</tr>
<tr>
<td>4.</td>
<td>53-96-3 2-Acetylaminofluorene</td>
</tr>
<tr>
<td>5.</td>
<td>79-06-1 Acrylamide</td>
</tr>
<tr>
<td>6.</td>
<td>79-10-7 Acrylic acid</td>
</tr>
<tr>
<td>7.</td>
<td>107-05-1 Allyl chloride</td>
</tr>
<tr>
<td>8.</td>
<td>92-67-1 4-Aminobiphenyl</td>
</tr>
<tr>
<td>9.</td>
<td>62-53-3 Aniline</td>
</tr>
<tr>
<td>10.</td>
<td>90-04-0 o-Anisidine</td>
</tr>
</tbody>
</table>
### Category 4 Toxic Air Contaminants (Con’t)

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-36-0</td>
<td>Antimony &amp; various antimony compounds</td>
</tr>
<tr>
<td>1332-21-4</td>
<td>Asbestos</td>
</tr>
<tr>
<td>151-56-4</td>
<td>Aziridine [Ethyleneimine]</td>
</tr>
<tr>
<td>114-26-1</td>
<td>Baygon [Propoxur]</td>
</tr>
<tr>
<td>92-87-5</td>
<td>Benzidine</td>
</tr>
<tr>
<td>106-51-4</td>
<td>p-Benzoquinone [Quinone]</td>
</tr>
<tr>
<td>98-07-7</td>
<td>Benzotrichloride</td>
</tr>
<tr>
<td>100-44-7</td>
<td>Benzyl chloride</td>
</tr>
<tr>
<td>92-52-4</td>
<td>Biphenyl</td>
</tr>
<tr>
<td>117-81-7</td>
<td>Bis (2-ethylhexyl) phthalate [DEHP]</td>
</tr>
<tr>
<td>111-44-4</td>
<td>Bis (2-chloroethyl) ether [Dichloroethylether]</td>
</tr>
<tr>
<td>542-88-1</td>
<td>Bis (chloromethyl) ether</td>
</tr>
<tr>
<td>74-83-9</td>
<td>Bromomethane [Methyl bromide]</td>
</tr>
<tr>
<td>78-93-3</td>
<td>2-Butanone [Methyl ethyl ketone] [MEK]</td>
</tr>
<tr>
<td>156-62-7</td>
<td>Calcium cyanamide</td>
</tr>
<tr>
<td>133-06-2</td>
<td>Captan</td>
</tr>
<tr>
<td>63-25-2</td>
<td>Carbaryl</td>
</tr>
<tr>
<td>75-15-0</td>
<td>Carbon disulfide</td>
</tr>
<tr>
<td>463-58-1</td>
<td>Carbonyl sulfide</td>
</tr>
<tr>
<td>120-80-9</td>
<td>Catechol</td>
</tr>
<tr>
<td>133-90-4</td>
<td>Chloramben</td>
</tr>
<tr>
<td>57-74-9</td>
<td>Chlordane</td>
</tr>
<tr>
<td>8001-35-2</td>
<td>Chlorinated camphene [Toxaphene]</td>
</tr>
<tr>
<td>79-11-8</td>
<td>Chloroacetic acid</td>
</tr>
<tr>
<td>532-27-4</td>
<td>2-Chloroacetophenone</td>
</tr>
<tr>
<td>108-90-7</td>
<td>Chlorobenzene</td>
</tr>
<tr>
<td>510-15-6</td>
<td>Chlorobenzilate</td>
</tr>
<tr>
<td>106-89-8</td>
<td>1-Chloro-2,3-epoxypropane [Epichlorohydrin]</td>
</tr>
<tr>
<td>75-00-3</td>
<td>Chloroethane [Ethyl chloride]</td>
</tr>
<tr>
<td>74-87-3</td>
<td>Chloromethane [Methyl chloride]</td>
</tr>
<tr>
<td>107-30-2</td>
<td>Chloromethyl methyl ether [CMME]</td>
</tr>
<tr>
<td>1319-77-3</td>
<td>Cresol/Cresylic acid (mixed isomers)</td>
</tr>
<tr>
<td>95-48-7</td>
<td>o-Cresol</td>
</tr>
<tr>
<td>108-39-4</td>
<td>m-Cresol</td>
</tr>
<tr>
<td>106-44-5</td>
<td>p-Cresol</td>
</tr>
<tr>
<td>98-82-8</td>
<td>Cumene [Isopropylbenzene]</td>
</tr>
<tr>
<td>72-55-9</td>
<td>DDE [1,1-Dichloro-2,2-bis(p-chlorophenyl)ethylene]</td>
</tr>
<tr>
<td>334-88-3</td>
<td>Diazomethane</td>
</tr>
<tr>
<td>132-64-9</td>
<td>Dibenzofuran</td>
</tr>
<tr>
<td>96-12-8</td>
<td>1,2-Dibromo-3-chloropropane</td>
</tr>
<tr>
<td>84-74-2</td>
<td>Dibutylphthalate</td>
</tr>
</tbody>
</table>
Category 4 Toxic Air Contaminants (Con’t)

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>91-94-1</td>
<td>3,3’-Dichlorobenzidine</td>
</tr>
<tr>
<td>72-55-9</td>
<td>1,1-Dichloro-2,2-bis(p-chlorophenyl) ethylene [DDE]</td>
</tr>
<tr>
<td>75-34-3</td>
<td>1,1-Dichloroethane [Ethylidene dichloride]</td>
</tr>
<tr>
<td>75-35-4</td>
<td>1,1-Dichloroethylene [Vinylidene chloride]</td>
</tr>
<tr>
<td>111-44-4</td>
<td>Dichloroethyl ether [Bis (2-chloroethyl) ether]</td>
</tr>
<tr>
<td>94-75-7</td>
<td>2,4-Dichlorophenoxyacetic acid [2,4-D]</td>
</tr>
<tr>
<td>62-73-7</td>
<td>Dichlorvos</td>
</tr>
<tr>
<td>123-91-1</td>
<td>1,4-Diethyleneoxide [1,4-Dioxane]</td>
</tr>
<tr>
<td>64-67-5</td>
<td>Diethyl sulfate</td>
</tr>
<tr>
<td>119-90-4</td>
<td>3,3’-Dimethoxybenzidine</td>
</tr>
<tr>
<td>60-11-7</td>
<td>4-Dimethylaminoazobenzene</td>
</tr>
<tr>
<td>121-69-7</td>
<td>N,N-Dimethylaniline</td>
</tr>
<tr>
<td>119-93-7</td>
<td>3,3’-Dimethylbenzidine</td>
</tr>
<tr>
<td>79-44-7</td>
<td>Dimethylcarbamoyl chloride</td>
</tr>
<tr>
<td>68-12-2</td>
<td>N,N-Dimethylformamide [DMF]</td>
</tr>
<tr>
<td>57-14-7</td>
<td>1,1-Dimethylhydrazine</td>
</tr>
<tr>
<td>131-11-3</td>
<td>Dimethyl phthalate</td>
</tr>
<tr>
<td>77-78-1</td>
<td>Dimethyl sulfate</td>
</tr>
<tr>
<td>534-52-1</td>
<td>4,6-Dinitro-o-cresol</td>
</tr>
<tr>
<td>51-28-5</td>
<td>2,4-Dinitrophenol</td>
</tr>
<tr>
<td>121-14-2</td>
<td>2,4-Dinitrotoluene</td>
</tr>
<tr>
<td>123-91-1</td>
<td>1,4-Dioxane [1,4-Diethyleneoxide]</td>
</tr>
<tr>
<td>122-66-7</td>
<td>1,2-Diphenylhydrazine</td>
</tr>
<tr>
<td>106-89-8</td>
<td>Epichlorohydrin [1-Chloro-2,3-epoxypropane]</td>
</tr>
<tr>
<td>106-88-7</td>
<td>1,2-Epoxybutane</td>
</tr>
<tr>
<td>100-41-4</td>
<td>Ethylbenzene</td>
</tr>
<tr>
<td>51-79-6</td>
<td>Ethyl carbamate [Urethane]</td>
</tr>
<tr>
<td>75-00-3</td>
<td>Ethyl chloride [Chloroethane]</td>
</tr>
<tr>
<td>107-21-1</td>
<td>Ethylene glycol</td>
</tr>
<tr>
<td>151-56-4</td>
<td>Ethyleneimine [Aziridine]</td>
</tr>
<tr>
<td>96-45-7</td>
<td>Ethylene thiourea</td>
</tr>
<tr>
<td>75-34-3</td>
<td>Ethylidene dichloride [1,1-Dichloroethane]</td>
</tr>
<tr>
<td>76-44-8</td>
<td>Heptachlor</td>
</tr>
<tr>
<td>87-68-3</td>
<td>Hexachlorobutadiene</td>
</tr>
<tr>
<td>58-89-9</td>
<td>1,2,3,4,5,6-Hexachlorocyclohexane</td>
</tr>
<tr>
<td>77-47-4</td>
<td>Hexachlorocyclopentadiene</td>
</tr>
<tr>
<td>67-72-1</td>
<td>Hexachloroethene</td>
</tr>
<tr>
<td>822-06-0</td>
<td>Hexamethylene-1,6-diisocyanate</td>
</tr>
</tbody>
</table>
**Category 4 Toxic Air Contaminants (Con’t)**

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>81.</td>
<td>Hexamethylphosphoramide</td>
</tr>
<tr>
<td>82.</td>
<td>Hexane</td>
</tr>
<tr>
<td>83.</td>
<td>Hexone [Methyl isobutyl ketone]</td>
</tr>
<tr>
<td>84.</td>
<td>Hydroquinone</td>
</tr>
<tr>
<td>85.</td>
<td>Iodomethane [Methyl iodide]</td>
</tr>
<tr>
<td>86.</td>
<td>Isophorone</td>
</tr>
<tr>
<td>98-82-8</td>
<td>Isopropylbenzene [Cumene]</td>
</tr>
<tr>
<td>58-89-9</td>
<td>Lindane and all stereo isomers</td>
</tr>
<tr>
<td>&amp; various</td>
<td>see 1,2,3,4,5,6-Hexachlorocyclohexane</td>
</tr>
<tr>
<td>87.</td>
<td>Maleic anhydride</td>
</tr>
<tr>
<td>88.</td>
<td>Methanol</td>
</tr>
<tr>
<td>89.</td>
<td>Methoxychlor</td>
</tr>
<tr>
<td>90.</td>
<td>2-Methylaziridine [1,2-Propylenimine]</td>
</tr>
<tr>
<td>74-83-9</td>
<td>Methyl bromide [Bromomethane]</td>
</tr>
<tr>
<td>74-87-3</td>
<td>Methyl chloride [Chloromethane]</td>
</tr>
<tr>
<td>71-55-6</td>
<td>Methyl chloroform [1,1,1-Trichloroethane]</td>
</tr>
<tr>
<td>78-93-3</td>
<td>Methyl ethyl ketone [MEK] [2-Butanone]</td>
</tr>
<tr>
<td>60-34-4</td>
<td>Methylhydrazine</td>
</tr>
<tr>
<td>74-88-4</td>
<td>Methyl iodide [Iodomethane]</td>
</tr>
<tr>
<td>108-10-1</td>
<td>Methyl isobutyl ketone [Hexone]</td>
</tr>
<tr>
<td>62-84-3</td>
<td>Methyl isocyanate</td>
</tr>
<tr>
<td>80-62-6</td>
<td>Methyl methacrylate [MMA]</td>
</tr>
<tr>
<td>1634-04-4</td>
<td>Methyl tert-butyl ether [MTBE]</td>
</tr>
<tr>
<td>101-14-4</td>
<td>4,4’-Methylene bis (2-chloroaniline)</td>
</tr>
<tr>
<td>101-77-9</td>
<td>4,4’-Methylenedianiline</td>
</tr>
<tr>
<td>98-95-3</td>
<td>Nitrobenzene</td>
</tr>
<tr>
<td>92-93-3</td>
<td>4-Nitrobiphenyl</td>
</tr>
<tr>
<td>100-02-7</td>
<td>4-Nitrophenol</td>
</tr>
<tr>
<td>79-46-9</td>
<td>2-Nitropropane</td>
</tr>
<tr>
<td>684-93-5</td>
<td>N-Nitroso-N-methylurea</td>
</tr>
<tr>
<td>62-75-9</td>
<td>N-Nitrosodimethylamine</td>
</tr>
<tr>
<td>59-89-2</td>
<td>N-Nitrosomorpholine</td>
</tr>
<tr>
<td>56-38-2</td>
<td>Parathion</td>
</tr>
<tr>
<td>82-68-8</td>
<td>Pentachloronitrobenzene [Quintobenzene]</td>
</tr>
<tr>
<td>87-86-5</td>
<td>Pentachlorophenol</td>
</tr>
<tr>
<td>108-95-2</td>
<td>Phenol</td>
</tr>
<tr>
<td>106-50-3</td>
<td>p-Phenilenediamine</td>
</tr>
<tr>
<td>75-44-5</td>
<td>Phosgene</td>
</tr>
<tr>
<td>7803-51-2</td>
<td>Phosphine</td>
</tr>
<tr>
<td>7723-14-0</td>
<td>Phosphorus</td>
</tr>
<tr>
<td>&amp; various</td>
<td>and phosphorus compounds</td>
</tr>
<tr>
<td>85-44-9</td>
<td>Phthalic anhydride</td>
</tr>
</tbody>
</table>

5.23-7
Category 4 Toxic Air Contaminants (Con’t)

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>114. 1120-71-4</td>
<td>1,3-Propane sultone</td>
</tr>
<tr>
<td>115. 57-57-8</td>
<td>beta-Propiolactone</td>
</tr>
<tr>
<td>116. 123-38-6</td>
<td>Propionaldehyde</td>
</tr>
<tr>
<td>* 114-26-1</td>
<td>Propoxur [Baygon]</td>
</tr>
<tr>
<td>117. 75-56-9</td>
<td>Propylene oxide</td>
</tr>
<tr>
<td>* 75-55-8</td>
<td>1,2-Propylenimine [2-Methylaziridine]</td>
</tr>
<tr>
<td>* 106-51-4</td>
<td>Quinone [p-Benzoquinone]</td>
</tr>
<tr>
<td>* 82-68-8</td>
<td>Quintobenzene [Pentachloronitrobenzene]</td>
</tr>
<tr>
<td>118. 100-42-5</td>
<td>Styrene</td>
</tr>
<tr>
<td>119. 96-09-3</td>
<td>Styrene oxide</td>
</tr>
<tr>
<td>120. 1746-01-6</td>
<td>2,3,7,8-Tetrachlorodibenzo-p-dioxin</td>
</tr>
<tr>
<td>121. 7550-45-0</td>
<td>Titanium tetrachloride</td>
</tr>
<tr>
<td>122. 95-80-7</td>
<td>Toluene-2,4-diamine</td>
</tr>
<tr>
<td>123. 584-84-9</td>
<td>2,4-Toluene disocyanate [TDI]</td>
</tr>
<tr>
<td>124. 95-53-4</td>
<td>o-Toluidine</td>
</tr>
<tr>
<td>* 8001-35-2</td>
<td>Toxaphene [Chlorinated camphene]</td>
</tr>
<tr>
<td>125. 120-82-1</td>
<td>1,2,4-Trichlorobenzene</td>
</tr>
<tr>
<td>* 71-55-6</td>
<td>1,1,1-Trichloroethane [Methyl chloroform]</td>
</tr>
<tr>
<td>126. 79-00-5</td>
<td>1,1,2-Trichloroethane</td>
</tr>
<tr>
<td>127. 95-95-4</td>
<td>2,4,5-Trichlorophenol</td>
</tr>
<tr>
<td>128. 88-06-2</td>
<td>2,4,6-Trichlorophenol</td>
</tr>
<tr>
<td>129. 121-44-8</td>
<td>Triethylamine</td>
</tr>
<tr>
<td>130. 1582-09-8</td>
<td>Trifluralin</td>
</tr>
<tr>
<td>131. 540-84-1</td>
<td>2,2,4-Trimethylpentane</td>
</tr>
<tr>
<td>* 51-79-6</td>
<td>Urethane [Ethyl carbamate]</td>
</tr>
<tr>
<td>132. 108-05-4</td>
<td>Vinyl acetate</td>
</tr>
<tr>
<td>133. 593-60-2</td>
<td>Vinyl bromide</td>
</tr>
<tr>
<td>* 75-35-4</td>
<td>Vinilidene chloride [1,1-Dichloroethylene]</td>
</tr>
<tr>
<td>134. 57-12-5</td>
<td>Cyanide</td>
</tr>
<tr>
<td>&amp; various</td>
<td>and cyanide compounds¹</td>
</tr>
<tr>
<td>135. N/A</td>
<td>Fine mineral fibers²</td>
</tr>
<tr>
<td>136. 10043-92-2</td>
<td>Radon</td>
</tr>
<tr>
<td>137. 7782-49-2</td>
<td>Selenium</td>
</tr>
<tr>
<td>&amp; various</td>
<td>and selenium compounds</td>
</tr>
<tr>
<td>138.</td>
<td>&amp; various</td>
</tr>
</tbody>
</table>

Category 4 Toxic Air Contaminants notes:

* This compound is also listed under a different name and the other listing has a listing number.

** The specific isomer is included in the “mixed isomers” listing.
Category 4 Toxic Air Contaminants (Con’t)

Category 4 Toxic Air Contaminants notes (con’t):

For all listings above that contain the word "compounds," the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, cyanide, phosphorus, and selenium) as part of that chemical's infrastructure.

1. X'CN where X = H' or any other group where a formal dissociation may occur. For example, KCN or Ca(CN)₂
2. Includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less.
3. A type of atom which spontaneously undergoes radioactive decay.

Section 5 Exemptions from the Definition of Toxic Air Contaminant

As used in these regulations, the following substances shall not be considered to be a toxic air contaminant:

5.1 Any substance for which there is a national ambient air quality standard, but only to the extent that a particular substance is treated in a generic fashion, for example, as particulate matter or a volatile organic compound,
5.2 Carbon dioxide,
5.3 Ethane,
5.4 Grain dust,
5.5 Helium,
5.6 Hydrogen,
5.7 Liquified petroleum gas,
5.8 Methane,
5.9 Nitrogen,
5.10 Oxygen,
5.11 Propane, and
5.12 Water vapor.

Adopted v1/_______ ; effective ________.
REGULATION 5.30  Report and Plan of Action for Identified Source Sectors

Air Pollution Control District of Jefferson County

Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control
Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes the requirement for the District to develop a proposed report and plan of action to assess and address the toxic air contaminant emissions from minor stationary sources, area sources, non-road mobile sources, and mobile sources.

SECTION 1  Definitions

Terms used in this regulation that are not defined in this regulation shall have the meaning given to them in Regulation 1.02 Definitions or Regulation 5.01 General Provisions.

1.1 “Source sector” means the general grouping of sources of air contaminants used by the District for developing anthropogenic emissions inventories. These source sectors are as follows:

1.1.1 Point source - industrial or commercial stationary source that is subject to the permit requirements in Regulation 2.03 section 1.1 or 1.2 (permitted stationary source).

1.1.1.1 Major or moderate point source - a Group 1 or Group 2 stationary source as defined in Regulation 5.01 sections 1.8 and 1.9.

1.1.1.2 Minor stationary source - a point source that is not a major or moderate point source.

1.1.2 Area source - non-permitted commercial stationary source or other anthropogenic source of emissions that is not included in section 1.1.1, 1.1.3, or 1.1.4.

1.1.3 Mobile source - motorized vehicle that is registered for use on the public roads and highways.

1.1.4 Nonroad mobile source - motorized vehicle that is not registered for use on the public roads and highways or any other equipment with a fossil fuel-fired engine that is not included as a point source.

SECTION 2  Report and Plan of Action

2.1 By no later than June 30, 2006, the District shall submit to the Board a proposed Report and Plan of Action to assess and address the risk to human health and welfare from ambient air concentrations of toxic air contaminants (TACs) from minor stationary sources, area sources, non-road mobile sources, and mobile sources.

2.2 The Report shall, at a minimum:

2.2.1 Include a general identification of the sources and, to the extent that it can reasonably be determined, estimates, by TAC, of the emissions from each source sector and the relative ambient air risk from each sector,

2.2.2 Evaluate the status of and need for improvement of TAC emission inventories for these source sectors,

2.2.3 Identify and evaluate existing and likely programs at the federal level and in Kentucky.
that are intended to reduce emission from these sources,
Identify and evaluate existing and likely programs in other jurisdictions that are intended to reduce emission from these sources,
Identify appropriate risk goals and standards for these source sectors,
Assess any needs for monitoring of the sources,
Identify any special considerations relating to addressing risk from these sectors,
Identify all resources necessary to implement the Plan of Action, and
Identify a process for active and meaningful stakeholder involvement in the development of, and review and comment on, the proposed Report and Plan.

The proposed Plan of Action shall suggest specific programs, activities, areas to be addressed by regulation, if any, and a timetable to achieve the identified risk goals and standards by no later than December 31, 2012. Programs may include, but are not limited to, the following:

For area sources, in addition to any appropriate emission reductions, strategies such as land use mechanisms to minimize impacts, especially on sensitive sub-populations such as the young, the elderly and those with health conditions,

For non-road mobile sources, cleaner fuels and cleaner equipment, including accelerating their availability and use, and

For mobile sources, promoting and accelerating the use of alternative fuel vehicles, cleaner fuels, cleaner vehicles, effective transportation policies such as improved and increased public transit, improved and increased bike and pedestrian facilities, promoting urban in-fill policies, and diesel retrofits.

Adopted v1/___________; effective __________.
RISK ASSESSMENT & COMMUNICATION

Mark J. Klan, Ph.D.
ETRS, LLC
Shelbyville, Kentucky

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SECTION 1
Risk Assessment & Communication

Mark J. Klan, Ph.D.
ETRS, LLC
Environmental Toxicology & Risk Assessment Services
Shelbyville, Kentucky
502-485-9798
mjklan@bluegrass.net

Risk Assessment and Risk Communication: What it is, What it is not, Applications.

Major Areas of Discussion:

- **Elements of a Risk Assessment:**
  Introduction, Site Characterization, Toxicity Assessment, Exposure Assessment, Risk Characterization

- **Risk Characterization:**
  Science, Regulation, Reality

- **Risk Communication:**
  Regulators, the “Public”

- **Risk Management and Applications of Risk Assessment**
  Regulations, Remediation, Litigation, Public Relations

For more information, please contact Dr. Mark J. Klan.

Dr. Klan has provided scientific expertise for a wide variety of clients and projects with emphasis in the areas of toxicology, human health and ecological risk assessment, risk communication, risk management, litigation support and environmental regulations. Projects have ranged from the toxicological evaluation of new products and processes to brownfields redevelopments. Dr. Klan served on the Governor’s Brownfields Task Force to assist in establishing new regulations for environmental remediation projects (VERP) and is currently serving on Kentucky’s Air Toxics Workgroup organized by the EPPC.