
MAKING THE POLLUTER PAY: EPA'S EXPERIENCE IN RECAPTURING A VIOLATOR'S ECONOMIC BENEFIT FROM NONCOMPLIANCE¹

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SUMMARY

Civil penalties are an integral part of the Environmental Protection Agency's (EPA) enforcement program. While obtaining prompt compliance is the primary goal in all enforcement actions, the government must impose appropriate civil penalties if it wants to deter regulatees from violating the law. If all the Agency did was bring the polluter into compliance in each enforcement action, the regulatees would only rarely comply voluntarily. They would just wait until they were caught violating the law; only then would they comply. The cornerstone of EPA's civil penalty program is to recapture any economic benefit a violator obtains from violating the law. In each enforcement action, the Agency first determines what a violator's economic benefit is from violating the law.² Then the Agency adds to this figure an amount reflecting the seriousness of the violation. The resulting figure becomes the EPA's bottom line civil penalty that it will accept in settlement. This benefit recapture approach has had a major impact on EPA's civil penalty program, helping to make the "polluter pays" principle a reality rather than just a concept.

1 GENESIS OF THE BENEFIT RECAPTURE PROGRAM

In the late 1970's, the United States Congress gave EPA the authority to impose substantial civil penalties in what was then its four major statutory programs: Clean Water Act (also referred to as the Federal Water Pollution Control Act), Clean Air Act, Toxic Substances Control Act (TSCA), and the Resource Conservation and Recovery Act (RCRA). The Agency realized that the water and air cases³ would be generating large civil penalties, and the EPA sought to make the assessment of civil penalties a rational process. On April 11, 1978, the Agency issued a penalty policy⁴ addressing the major air and water violations. That policy directed litigation teams to calculate the violator's economic benefit from violating the law as part of the penalty assessment process.

1.1 How Violators Obtain an Economic Benefit from Violating the Law

Violators obtain an economic benefit from violating the law by delaying compliance, avoiding compliance or achieving an illegal competitive advantage. In delaying compliance, the violators eventually comply, but they have the use of the money that should have been spent on compliance. The polluters then use that money for profit making investments. In a very simple sense, the violators "gain" the interest on the amount of money that should have been invested in pollution control equipment. A typical example is where a factory delays installation of a required waste water treatment facility. If the facility costs \$1,000,000 to install, and the

violator waits until it gets caught three years later before it complies, the violator probably saved about \$280,000 by delaying compliance. This initial economic benefit will continue to grow until the economic benefit is “disgorged” from the violator in the form of a penalty.

When a violator avoids compliance, it essentially will never incur those costs that would have been necessary to come into compliance. In a very simple sense, when a violator avoids a pollution control expenditure, it has the use of that money (i.e. the interest) and it gets to keep the principal (i.e. the actual cost of the avoided expenditure). The violator then uses both the principal and the interest for profit making investments. A typical example would be where a factory avoids the operation and maintenance costs for the above mentioned waste water treatment plant for the three years the polluter was out of compliance. If the facility’s annual operation and maintenance costs are \$100,000, then the violator probably saved about \$200,000 by avoiding the operation and maintenance costs.⁵

The third type of economic benefit is derived from an illegal competitive advantage. There are four main varieties of this benefit type: 1) operating a plant at a higher capacity than the pollution control system would allow; 2) using economic savings to under-price competing goods and capture more market share, 3) selling banned products and 4) moving into a market earlier than a firm legally could. In the first variety, the violator is operating a plant beyond the capacity of its pollution control system, and the violator makes an illegal profit from the “extra” output. In the second variety, the violator uses its lower production costs to keep its prices below its complying competitors. In doing so, it can capture more of the market share for its products. In the third type, the polluter is selling banned products (e.g. a banned pesticide). Here any money made from the sale of those products would be illegal. The fourth variety is called an “early mover” illegal competitive advantage. Here the violator derives the benefit from entering the market earlier than it should have. For example, under section 5 of TSCA, a firm must allow EPA to review any new chemical before that firm can begin making it. EPA can take up to 180 days to review it, and impose any restrictions on the production and use of that substance it feels appropriate. If a chemical company wants to get into the market quickly with the new substance, it might start producing the chemical before submitting the chemical to EPA for review, thus undermining the whole regulatory scheme. Any sales of that chemical before EPA finished its review would be illegal. Consequently, any income generated from the sale of that substance prior to completion of the review would be an “early mover” competitive advantage.⁶

Interestingly, if one analyzes any of these illegal competitive advantage cases from a delayed or avoided cost perspective, the benefits are often negligible. In the golf course example, the economic benefits from delaying a wetlands filling permit application for six months are probably negligible. But because the illegal competitive advantage is usually very difficult to determine, the Agency in the last twenty years has focused almost exclusively on the benefits derived from delayed and avoided costs. This is changing as the EPA is planning to move into this area strongly in the next few years. The Agency plans to issue guidance on this subject by December of 1998.

1.2 Change in EPA Policy Makes Recapture of Benefit the Cornerstone of the Penalty Assessment Program

While there was extensive enforcement activity from the late 1970’s through the mid-1980’s,⁷ the EPA’s total annual civil penalty assessments reached the \$10 million level only once during that period.⁸ In fact, the yearly average for total assessed civil penalties for fiscal years 1977 through 1984 was only about \$6 million.⁹ There were two main reasons for this. First, the relevant penalty guidance directed the litigation teams to multiply any proposed civil penalty by the chance of prevailing in court. If the litigation team thought they had only a 60% chance of

prevailing in court, then they reduced the proposed penalty by 40%. The result of this policy was that virtually all penalties were quickly compromised, and EPA enforcement actions rarely recaptured the violators' economic gain from violating the law. Thus in many of these major enforcement actions, the violators still ended up saving money by violating the law.

The second reason why the penalties were so low during this period of time was that the EPA enforcement staff did not have a effective tool to calculate economic benefit. The Agency adopted the CIVPEN computer model to calculate the economic benefit of noncompliance in 1978. CIVPEN, while an important first step in this area, was too complex for our enforcement personnel to operate. In addition, it required our litigation teams to do extensive research into the financial background of each violator.¹⁰ Because the model was so user-unfriendly, it soon fell into disuse.

The Agency addressed both these problems in adopting a new penalty policy approach in February of 1984.¹¹ This policy made the recapture of economic benefit the cornerstone of the penalty assessment process. The Agency would no longer settle a case for a penalty below the economic benefit except in unusual circumstances. In addition, the new policy essentially abandoned the CIVPEN model and adopted two simple rules of thumb for calculating delayed and avoided costs, respectfully. But the policy committed the Agency to the development of a new computer model to perform these calculations. The BEN model was the fulfillment of that commitment.

1.3 EPA Issues a Much Improved Computer Model Called BEN

In November of 1984, EPA issued the BEN model for calculating the economic benefit from delayed and avoided compliance expenditures for settlement purposes. BEN had several advantages over the CIVPEN model. The main advantage was that it only required as little as seven pieces of data to operate. Those seven were: the name of the case, the cost of the equipment, the cost of any onetime expenditures unrelated to equipment, annual costs (such as operation and maintenance), the date noncompliance began, the date compliance was or would be achieved and the projected penalty payment date. (A detailed explanation of how the model actually works is presented in Appendix A.) BEN eliminated the data fields that were not needed for the calculation. In addition, the model provided standard values for the more complicated and difficult to obtain data such as: the useful life of the equipment, the violator's combined federal and state tax rates, the inflation rate and the violator's cost of capital. This enabled our enforcement professionals to run a BEN analysis in as little as ten minutes. With CIVPEN, the effort might take as long as two weeks. Thus while the EPA was now requiring its litigation teams to recapture the violator's economic benefit, it was empowering them to do the actual calculations themselves.

BEN is not the only way to calculate the economic benefit from delayed and avoided costs for settlement purposes. As mentioned previously, one could use a "rule of thumb" approach.¹²

In trials or hearings, the Agency almost always uses an expert witness to calculate the economic benefit. The experts always calculate the benefit based on their expertise. Their approaches are usually very similar to BEN, but they are almost always different in some regard. But as far as settlement negotiations are concerned, the EPA is convinced that the BEN model is the best approach. And since over 95% of the Agency's cases are settled, BEN has become the tool of choice.

Citizen plaintiffs have also sought to recapture the economic benefit from polluters. The Clean Water Act provides this remedy for private citizens when the federal or state regulatory agency fails to take an enforcement action. In fact much of the case law in the area of benefit recapture has come from these citizen suits. Just as with EPA, the citizen plaintiffs almost always rely on experts for calculating economic benefit in a trial.

The recapture of economic benefit was only one part of the 1984 Policy on Civil Penalties. That policy also directed enforcement professionals to calculate a separate component of the penalty to reflect the seriousness of the violative conduct. The policy referred to this as the gravity component. The policy directed our enforcement professionals to add the gravity component to the benefit component. The resulting figure was the bottom line penalty figure in any negotiations. Both components were needed to produce deterrence. If all the Agency did was recapture the economic benefit, the polluter would still be no worse off than the firm that complied on time. Thus it is essential that the penalty be bigger than the economic benefit component. Otherwise the penalty would only make the violator indifferent to noncompliance. In a sense, the real penalty is the gravity component.¹³

1.4 Penalties Increase Sharply

The impact on the penalty assessment process was dramatic. As mentioned previously, for the ten years prior to the introduction of the BEN model, the total annual penalty assessments averaged about \$6 million per year.¹⁴ In fiscal year 1985, the first year BEN was available, the total assessed penalties jumped to \$23 million.¹⁵ In fiscal year 1988, the penalties were already at the \$37 million level,¹⁶ and by fiscal year 1994, they exceeded \$100 million.¹⁷ The success of this policy change was probably due to making the recapture of economic benefit a requirement, and giving EPA enforcement professionals a reliable user-friendly tool to measure that benefit.

An additional factor in this dramatic increase was that the BEN model introduced a high degree of objectivity into EPA's penalty calculations. This greatly enhanced the confidence EPA enforcement professionals had in their penalty figures. The 1984 Policy on Civil Penalties directed each program in the EPA to develop its own penalty policy based on the guidance it contained. As mentioned above, there were generally two components to every penalty calculation: economic benefit and gravity. The program-specific penalty policies that came out of the 1984 policy¹⁸ focused on the gravity component as the economic benefit calculation was the same for all programs. While these penalty policies have been extraordinary helpful in the assessment of civil penalties, those policies are based on the subjective judgment of their respective authors. The BEN model, on the other hand, is totally objective. When our enforcement professionals began running the model, they realized that the violators were obtaining substantial economic savings by violating the law. That made them much more determined to seek penalties large enough to deny polluters any gain from their violations. This greatly energized EPA's civil penalty program.

There were of course other factors at work that probably helped bring about this result such as changes in case selection considerations and penalty policy revisions. In addition, the changes in enforcement perspective that resulted from the departure of former EPA Administrator Anne Burford and the return to the Agency of former EPA Administrator William D. Ruckelshaus in 1983 also began having their full impact in fiscal year 1985. Furthermore, the Agency greatly increased its oversight over the penalty assessment process during this period. But even these changes could not account for the spectacular increase in the penalty

amounts that began in fiscal year 1985. If the changes regarding the benefit recapture requirement did not directly cause the substantial increase in civil penalties, they at least facilitated it.

2 LEGISLATIVE ISSUES

As mentioned above, the EPA adopted the consideration of economic benefit in its penalty assessments in 1978. At that time, none of our statutes even suggested looking at the economic benefit of noncompliance as a factor in penalty assessments. The statutes directed the Agency to consider such factors as the size of the violator, the history of noncompliance, and the seriousness of the violation. Nevertheless, the fact that the statutes were silent on the subject of economic benefit was never an issue in any of our litigated cases. Judges had no difficulty imposing substantial civil penalties based on economic benefit regardless of the statutory language.¹⁹ Neither was this an issue in any of our negotiated settlements.

2.1 Why Statutory Language Has Not Been an Issue

There were probably two main reasons why it did not become an issue. First the amount of civil penalty imposed is very much within the discretion of the presiding judge. In order for a polluter to get a federal court of appeals to reverse a district court's imposition of a penalty, it has to demonstrate that the judge abused his or her discretion.²⁰ This is a very difficult standard to meet. Thus it usually does not make sense for litigants to appeal the way the judge imposed the civil penalty. In negotiation, the Agency is free to use any approach as long as the defendants have the opportunity to dispute the penalty assessment. The inclusion of economic benefit as a penalty factor was certainly reasonable within the negotiation context. The second reason why this probably never became an issue is that the courts in the first few decisions involving economic benefit supported the consideration of economic benefit in the penalty calculation²¹

2.2 Congress Adds Economic Benefit Language to Some of the Penalty Provisions

Over the years, Congress amended the Clean Air Act and the Clean Water Act. In both statutes, Congress added language directing the Administrator to consider economic benefit in assessing civil penalties. In fact, the Senate Report discussing the inclusion of economic benefit as a factor in Clean Water Act cases provided some extremely helpful language in regard to proving economic benefit:

Violators should not be able to obtain an economic benefit vis-a-vis their competitors due to their noncompliance with environmental laws. The determination of economic benefit or other factors will not require an elaborate or burdensome evidentiary showing. Reasonable approximations of economic benefit will suffice.²²

The courts have often cited this language in their decisions in Clean Water Act cases.²³ But the Senate's discussion about what evidence would be needed to prove economic benefit in a Clean Water Act case should be applicable to all environmental enforcement actions as proving economic benefit in water cases is no different than any other medium.

Congress also enacted a series of major new environmental statutes since the Agency began routinely considering economic benefit: Superfund, EPCRA, and the Safe Drinking Water Act are the prime examples. In Superfund and EPCRA, the Congress wanted economic benefit considered, but in the Safe Drinking Water Act, Congress did not include it as a factor.

2.3 Current Statutory Approaches to Looking at Economic Benefit of Noncompliance

There are currently three main approaches to penalty assessment as expressed in our environmental statutes. The first type does not mention anything about economic benefit (RCRA, Federal Insecticide, Rodenticide and Fungicide Act (FIFRA), and the Marine Protection, Research, and Sanctuaries Act (MPRSA)). But even the lack of any mention has not proven to be an impediment in getting courts to include substantial benefit components in, for example, RCRA penalty actions.²⁴ The second type does not mention economic benefit specifically, but it includes a catch all usually called "other factors as justice may require" (Toxic Substances Control Act (TSCA), and the Safe Drinking Water Act (SDWA)). With this approach, one could argue that the recapture of the violator's economic benefit is one of those factor that justice requires. For proof, one could turn to the court decisions where virtually every judge addressing the recapture of economic benefit in a case involving a for-profit entity has agreed that the benefit should be recaptured.²⁵ The third approach is where the statute specifically mentions the economic benefit factor (Clean Water Act, Clean Air Act, Superfund and EPCRA). But none of these statutes actually requires recapture of the benefit; they only require consideration.²⁶ The recapture of benefit is essentially an EPA policy that has been adopted by the courts. The current penalty provisions of the Agency's major environmental statutes are set out in Appendix B.

3 JUDICIAL TREATMENT OF ECONOMIC BENEFIT ISSUES

Most of the judges presiding over environmental enforcement actions do not have a corporate finance background. Yet the decision as to how much benefit the violator obtained is clearly a question that calls for the application of corporate finance principles. Despite this fact, the judges, as in most cases involving expert witnesses, rely on the evidence in the case and apply the law to the facts. The district court judges and the EPA's administrative law judges have been receptive to recapturing economic benefit. EPA's and the state enforcement agencies' main challenge is proving the benefit.

3.1 Most Judges Do Not Have a Corporate Finance Background

Virtually all of the judges, both in the district courts and in the administrative arena, do not have any corporate finance background. A small number may have some accounting or commercial litigation experience such that they are familiar with some of the aspects of calculating economic benefit. But even these few judges are not familiar with the basic approach of calculating benefit through an application of discounted cash-flow analysis. While it would be very useful to educate them about these issues, such education poses certain practical problems. First, very few federal, state or local enforcement agencies routinely consider economic benefit in their enforcement actions. In the district court setting, judges rarely see any environmental cases. And only a fraction of all the environmental cases contains an economic benefit issue. Thus a district court judge could go an entire career without seeing a benefit calculation issue. Consequently, it would be virtually impossible to determine which judges needed the training. In the administrative arena, the judges are usually assigned to handle the environmental agencies' cases. Thus they tend to see benefit issues on a more routine basis.

Obviously, it would be very beneficial to train this group of administrative law judges. But any training would have to proceed very carefully in order to avoid any appearance of compromising the independence of the judiciary.

3.2 Judges and Administrative Law Judges Have Been Very Supportive of the Benefit Recapture Concept

Despite the judiciary's lack of experience with corporate finance issues, judges have been very supportive of the Agency's effort to recapture the economic benefit of noncompliance. As mentioned previously, with one exception, judges have agreed with the concept of benefit recapture in every case involving for-profit violators. We suspect the reason for this support is that it is very difficult for a judge in an enforcement action to allow a violator to make money from its violations. Judges probably recognize that if violators end up with a profit even after paying a penalty, there will be very little incentive for others to comply.

3.3 The Main Issue is Proving the Benefit

The real challenge in trials and hearings is to prove what benefit the violator obtained. There is usually substantial disagreement between the enforcing agency and the violator on this subject. The environmental agency presents its benefit of noncompliance calculation through an expert witness. As mentioned previously, the computer model, BEN, is designed primarily for settlement purposes. The current DOS-based version of BEN makes certain simplifying assumptions that are appropriate for settlement, and it performs some highly complex calculations that the user never sees. This is all done towards the goal of promoting settlement.²⁷

But once the economic benefit calculation needs to be presented in a trial or hearing, the complex calculations need to be explained. While it is tempting just to run the BEN model and introduce the results in court or hearing, the defendant can be expected to demand that the witness introducing the BEN analysis explain what the model did to produce the benefit figure. Thus the government needs to produce an expert in financial economics to explain the calculations. But any expert testifies based on his or her own expertise, not the model's specific calculations, which may differ slightly from the expert's calculations. Consequently, the Agency almost never uses the current version of the BEN model in court or hearing.²⁸ The only exceptions would be if the defendant stipulated that it could be used, or if the expert witness' methodology was the same as the model's.

4 TRAINING IS CRITICALLY IMPORTANT TO THE PROGRAM

Despite the fact that the BEN model is very user-friendly, it is absolutely essential to the benefit recapture effort to train enforcement personnel how to use the model. Any training courses need to cover the basic theory behind the model, discuss the type of data the model needs and where to find it, explain how to use the model analyses effectively in negotiation, and allow all the trainees an opportunity to run the model through a series of sample problems. This last point may be the most important. The enforcement personnel will not feel comfortable using the model unless they can get an opportunity to actually run the model themselves.

4.1 EPA's Experience in Conducting BEN Model Training

The Agency first began presenting training courses on the BEN model in 1984. The approach then was to merely provide a lecture and a demonstration. No trainees got the opportunity to run the model. The result was that very few enforcement personnel became regular users. EPA recognized this problem in 1988, and began an aggressive training program to reach each EPA regional office once every 18 months with an improved hands-on version of the BEN training course. The results were dramatic. The user base increased from about 40 to 700, and the penalties, which were already rapidly increasing, doubled less than three years after the first round of enhanced training courses.²⁹ By the time the third round was completed, the penalties exceeded the \$100 million level.³⁰

Now that the Agency training programs have reached the regional offices at least three times since 1988, the main challenges are to: 1) maintain the training of the current users and 2) train new employees. For the current users, some of them do not use the model frequently so their familiarity with the model lessens over time. These users need some sort of refresher course once in a while. The second challenge stems from the turnover in staff and from new staff positions created to meet the demand of the Agency's increasing responsibilities. In either case, it is vital that the Agency reach these employees.

4.2 Three Main Approaches to Training

The three main approaches EPA has employed are 1) live, in-person training, 2) conducting training via a two-way satellite broadcast, and 3) lending out videotapes of the course. By far the most effective approach is live, in-person training. Nothing can replace the interaction that takes place between instructor and trainee particularly when the instructor is in the same room as the trainee. The main difficulty is the expense associated with taking the training course to each of the Agency's ten regional offices and headquarters. The next best option is the two-way satellite training. There still is that critical interaction between instructor and trainee, but the interaction is restricted because of the barriers raised by instructor being located at a different site. Furthermore, there is no opportunity for the instructor to observe how the trainees are handling the actual operation of the computer model during the hands-on part of the training. In addition, there are significant costs associated with a three hour satellite broadcast. Although they are usually less than the cost of an in-person course. The least effective approach is to lend out copies of a videotaped lecture. There is no opportunity to ask clarifying questions, nor is there any help available for those running the model. While this last approach is very inexpensive, it is only used when the trainees do not have any access to live training. The EPA will be experimenting with different techniques to see if the videotape approach can be made more effective.

5 TIMELY USER SUPPORT CRUCIAL TO THE SUCCESS OF THE PROGRAM

With the introduction of the BEN model in 1984, EPA quickly learned that user support was needed even for a user-friendly computer model. In addition, effective user support had to be delivered on timely basis. With EPA having only limited resources to support this function, the Agency came up with some creative ways of providing user support.

5.1 Efforts to Simplify the Model Have Only Been Partially Successful

While the EPA succeeded in greatly simplifying the economic benefit recapture computer model, the BEN model still needs a user support system. The most common issues arise over characterizing compliance costs, interpreting compliance scenarios, interpreting the model's outputs, applying relevant policy and guidance and customizing the cost of capital (i.e. the discount rate) for a violator who raises this issue. In addition, there are many occasional users at the federal, state and local government level who are not conversant with how the model operates and need the most basic assistance. Fortunately, most of these issues can be dealt with easily; the challenge is responding quickly. Most of this support has come from headquarters over the past fourteen years. In addition, most of the regional offices have hired financial analysts to respond to these inquiries. But this system still cannot cope with the volume of inquiries from EPA and the states. Nor can it be responsive to highly complex benefit situations. EPA's solution has been to obtain the services of experts in financial economics through contracts. The contractor responds to inquiries directly through a helpline³¹ except where the inquiry involves a legal or policy issue. Those inquiries are referred to headquarters. In addition, the contractor is responsible for updating the model, implementing improvements, conducting training and providing expert advice to headquarters.

5.2 EPA Still Needs More Financial Analysts for Effective User Support

Even with the extensive contractor and headquarters support, the Agency still needs a significantly larger group of financial analysts. With the increased use of the BEN model at the federal, state and local levels, the need for solid user support is even more critical. While the helpline has helped cover much of the need, it is far better to have several financial analysts located in headquarters and each regional office. There are several advantages of locating adequate numbers in each office. The main advantage is that they directly service the needs of regional enforcement personnel. Enforcement staff are far more likely to seek help when the analyst is in the same building than when the analyst is available only by phone. In addition, these analysts can also assist regional personnel in evaluating ability to pay claims and determining the value of SEP's. They can also provide training thus alleviating some of the training burden on headquarters. Finally, they can assist the states and local governments in their efforts to determine the economic benefit of noncompliance.

6 REACTION FROM REGULATEES

While the regulatees are not enthusiastic about EPA's benefit recapture approach, this is certainly not a surprise. They would of course prefer that EPA assess no penalties at all. There is however a grudging acceptance of the Agency's routine use of the BEN model. In fact the more sophisticated violators focus on the data inputs and discount rate assumptions rather than object to the application of the model to their violations. Since the model is readily available both through the National Technical Information Service (NTIS) and the EPA's web site,³² Agency enforcement personnel often see BEN analyses produced by the violators themselves.

6.1 Unsophisticated Attacks by Violators

The unsophisticated violators have advanced some very creative explanations why the BEN model does not apply to them. The typical argument is that since they had enough money in the bank to cover all their compliance expenditures, their cost of capital (i.e. their "time value

of money”) was zero, and thus their economic benefit must also be zero.³³ But even though a firm might have the money for pollution control expenditures in the bank, current corporate finance theory tells us that in reality the firm will be forced ultimately to raise money by increasing the level of equity investment in the company (e.g. selling more shares of stock) and borrowing from banks. The company’s time value of money is hence represented by a weighted average of both types of financing and is called the weighted average cost of capital, or WACC.

6.2 Attacks by Violators’ Expert Witnesses

The more plausible arguments come from the violator’s expert witnesses. The attacks on the Agency’s benefit analyses focus usually on the appropriate costs, offsets, discount rate selection or discounting assumptions. There is often a substantial dispute over what compliance will cost. Obviously, the more expensive compliance costs, the higher the benefit. Offsets may be relevant where the violator may be incurring increased costs because its violations will necessitate an expensive clean-up that would have not have been necessary had it been in compliance in the first place. The extra costs could offset the benefit of noncompliance in appropriate cases. The discount rate (i.e. the violator’s cost of money), is often the most contentious issue in a benefit analysis. This rate reflects the riskiness of investing in the firm, and the government may have to develop one from the financial data of the violator or of other similar corporations.

The most interesting arguments occur over the Agency’s discount rate assumptions. As explained above and in Appendix A, the Agency assumes that pollution control investments are financed at the WACC. For a typical firm, this is about 10.6%. The leading experts for the violators agree that part of the analysis should employ a WACC rate, but they claim that the other part of the calculation should be based on the after-tax risk-free rate of about 2.6%. Depending on the exact methodology the violator’s expert employs, use of this rate can reduce the benefit analysis by as much as half, or even mysteriously turn a large economic benefit into a negative result (implying that the violator inexplicably lost money by delaying a large capital investment). EPA firmly believes that its approach is the most realistic way to analyze how violator finance pollution control expenditures. Interestingly, the only court decisions directly on point support either the EPA’s approach³⁴ or the use of an even higher discount rate based solely on the equity portion of the WACC rate.³⁵ This rate would be about 15% or higher and would yield much higher benefit numbers than a discount rate based solely on the equity portion of the WACC rate.

7 REACTION FROM STATE AND LOCAL GOVERNMENTS

EPA is actively encouraging the state agencies to at least consider the economic benefit of noncompliance in their environmental enforcement actions. While some states have enthusiastically embraced the concept, many are still resistant.

7.1 Why Some States Do Not Use BEN

There are three reasons why the states are not using BEN³⁶. First many of the state personnel have not had access to training, and they quite understandably feel uncomfortable using the model. The remedy for this problem is quite simple: get them the training they need. The problem as mentioned above is getting the resources to bring the training program to those who need it. The second reason why states do not like to use the model is that often produces numbers that seem “too large”. But the reason those numbers are as large as they are is because that is what the polluter actually saved by violating the law. Part of the concern over the size of the benefit component may also come from some states’ fears that imposing large

civil penalties will give people the impression that their respective states are not “business friendly”. While this fear has proved unfounded, it nevertheless persists. Obviously, EPA will need to overcome this attitude if it is to make consideration of economic benefit a routine matter in state enforcement actions.

The third problem is the difficulty in finding reliable cost data to run the BEN model. While sometimes the compliance cost data are readily available, many times they are not. This is particularly so when the polluter is unsophisticated and does not know what it needs to comply. It can also be a problem with sophisticated violators that refuse to furnish the data to the state agency. While discovery is often a useful option, it is sometimes unavailable legally or for some other practical reason. EPA runs into these problems, but because of its access to expertise, it usually is not much of an obstacle. Nonetheless, EPA is in the process of developing a computerized data base for RCRA hazardous waste program compliance costs. This will allow users to quickly develop realistic compliance cost scenarios for RCRA cases. Should this effort prove effective, it is likely that similar data bases will follow for air and water cases, the two biggest users of BEN.

7.2 EPA is Encouraging States to Consider Economic Benefit in Penalty Assessments

The Agency is now actively encouraging the states to routinely consider the violator’s economic benefit in all cases where it is relevant. While the EPA is not requiring that the benefit actually be recaptured, it reserves the right to file a parallel federal enforcement action should the state penalty be inadequate. The Agency does not require the states to use the BEN model, but it instead makes it available to them and provides some training. But since the states lack access to financial analysts, and there is no real effective alternative to the BEN model,³⁷ BEN is the best tool for them. The key question then becomes getting the state and local government enforcement staffs trained. State and local government personnel are invited to virtually every EPA training course, and many attend those courses. The problem is that many state and local government enforcement agencies lack the travel money to attend BEN training courses in the EPA’s respective regional offices. Where possible, EPA has conducted BEN training courses in state capitals and in the offices of local government agencies.³⁸ When resources permit state and local government on-site training, EPA will be responsive, but the first priority still is training EPA staff in headquarters and the regional offices.

8 CASE STUDIES

This paper will now present three case studies where the determination of economic benefit was a major issue. The trier of fact in each of these cases handled the benefit issue very differently, but each provides a very good illustration of what can happen in these sorts of cases.

8.1 *United States v. Smithfield Foods, Inc.*³⁹

Smithfield is a large meat processor located in the State of Virginia. Smithfield’s violations of the Clean Water Act were massive and flagrant. The government presented evidence at trial that large pieces of butchered hogs were seen floating down the river next to the factory. It became apparent that the polluter saved a great deal of money by delaying and avoiding compliance, and the judge determined that the economic benefit in the case was \$4.2 million. She also determined that the gravity component was \$8.4 million for a total civil penalty

of \$12.6 million. This was the largest penalty ever assessed under the Clean Water Act, and Smithfield has appealed. The violator brought in two of the top defendants' experts in an attempt to minimize the benefit, but the judge clearly rejected the defendant's theory. She instead accepted the government's expert's discount rate approach, specifically validating the use of a company's weighted average cost of capital as a discount rate.

8.2 *In re: B.J. Carney Industries, Inc.*⁴⁰

B.J. Carney operated a wood pole treatment operation in Sandpoint, Idaho and was caught discharging untreated process waste water into the local publicly owned treatment works (POTW). The violations began in 1984, and continued until the plant shut down in 1990. At the hearing in 1993, the government's expert clearly established that B.J. Carney obtained a substantial economic benefit by avoiding compliance. The benefit was so large, that it exceeded the statutory cap on Clean Water Act administrative enforcement actions of \$125,000. B.J. Carney's defense counsel tried to shake our expert's testimony, but could not do so. And the respondent never presented its own expert. Instead, the respondent's attorney tried to make a series of invalid attacks on the Agency's approach. Nevertheless, the presiding officer decided that the government had not proved that the respondent obtained any benefit and ruled that the economic benefit was zero. While the result was disturbing, the administrative law judge's (ALJ) reasoning was far more troubling.

At the urging of the author of this article, the EPA appealed the decision to the Agency's Environmental Appeals Board. The Board, in reversing the ALJ's decision, sided with the Agency on virtually every issue. One of the more significant holdings was the adoption of the approach suggested in the Senate report on the Clean Water Act amendments that stated that the Agency would not have to establish economic benefit by an "elaborate or burdensome evidentiary showing". The Board remanded the case for reconsideration of the economic benefit component. On remand, a different ALJ agreed with the Agency's expert that the benefit exceeded the statutory maximum and awarded the \$125,000. B.J. Carney has appealed to the Federal Court of Appeals for the Ninth Circuit.

8.3 *United States v. Municipal Auth. of Union Township*⁴¹

While the name of this case suggests it was an enforcement action against a POTW, Union Township was only the first party named in the case. The government settled with Union Township leaving the industrial user, Dean Dairy, to contend with. The case is usually referred to as the "Dean Dairy" case. Dean Dairy is one of the largest milk processors in the United States. But their plant, located in Pennsylvania, did not have any pretreatment. Instead, it paid some very substantial fees for handling their industrial wastewater at Union Township's POTW. But the POTW had no way of handling that wastewater, and it essentially dumped it untreated into a nearby stream. The resulting damage was extensive. The government sued, and in conducting a BEN analysis of the delayed and avoided costs, we found that the benefits were totally offset by the very large fees paid to Union Township. Thus the government stipulated that there was no economic benefit from delayed or avoided costs.

But it was unclear how early the pretreatment option had been available to Dean Dairy, and whether Dean Dairy could have complied without reducing its output. Had output reduction have been necessary, Dean Dairy's own documents established that they would have lost a major customer, Penn Maid, whose business was worth \$417,000 per year in earnings. The judge found that there were 4.8 years of violation, and multiplied the \$417,000 by 4.8 to yield

a benefit component of \$2,015,500. And to promote deterrence, she multiplied that figure by two to yield a final penalty figure of \$4,031,000. On July 20, 1998, the Federal Court of Appeals for the Third Circuit upheld the district court's decision.

This case helps illustrate two issues in particular. The first is that regardless of whether there is any economic benefit based on delayed or avoided costs, one should always make an attempt to determine if there is any economic benefit based on illegal competitive advantage. The second issue is the importance of thinking creatively. The litigation team came up with this approach totally on their own, and proved it without an expert witness. They just relied on the defendant's own documents and witnesses.

9 CONCLUSION

The adoption of the benefit recapture requirement along with the development of the BEN computer model in 1984 revolutionized the Agency's civil penalty program. EPA provided its enforcement professionals with the tools, training and encouragement to seek substantial civil penalties in order to recover economic benefit. And the enforcement staff has responded by obtaining annual civil penalties that are ten times the previous record amount. The major challenges on the horizon for the benefit recapture approach are the introduction of a new windows version of the BEN model which should be ready this fall, development of effective guidance on the issue of benefit based on illegal competitive advantage and ensuring that all federal, state and local government enforcement personnel receive the BEN training they need.

ENDNOTES

1. The views expressed in this article are the author's and do not necessarily reflect the views of the U.S. EPA.
2. In many of our enforcement actions, the benefit is zero either because the violator did not save any money from its violations or because the Agency cannot prove there was a benefit.
3. Virtually all of these air cases came from the stationary source program, and very few came from the mobile source program.
4. EPA, "Civil Penalty Policy" (1978)
5. In the typical case, the BEN model would calculate both the benefit from delayed expenditures and avoided costs simultaneously to yield a total economic benefit figure of \$480,000.
6. There are different opinions as what is the appropriate measure of economic benefit here. Benefit can be based on: 1) the gross receipts for the illegal sales; 2) the net profit on the illegal sales; 3) an analysis of what producing the new substance early means in regard to increasing the value of the business.

Another very different example of an early mover advantage would be where a firm needed a government permit before it could fill a wetland in order to build a golf course. But instead of waiting for the approval, it went ahead six months prior to the approval, filled the wetland, and constructed the golf course. The violator did this because it wanted to have the golf course completed in time for the start of the golf

season. But the first six months of income from the golf course would be an illegal competitive advantage. Even though the government approval eventually came and there was no environmental damage, the violator's conduct does violence to entire regulatory scheme. And the primary motivation to violate the law was clearly economic.

7. EPA, "Enforcement Accomplishments Report - FY 1989" (1990) at p. 18.
8. Id. at 15-17.
9. Id.
10. For example, users were required to determine the violator's debt to equity ratio, tax rate, equity rate of return.
11. EPA, "Policy on Civil Penalties," (1984); and its companion document, "A Framework for Statute-Specific Approaches to Penalty Assessments," (1984). Both these documents have been codified in the General Enforcement Policy Compendium as PT-1.1 and PT-1.2, respectively.
12. In one of the early court decisions involving the economic benefit of noncompliance, the trial judge actually applied the rule of thumb from the 1984 penalty policy in determining the economic benefit of noncompliance. Chesapeake Bay Foundation v. Gwaltney of Smithfield, 611 F.Supp. 1542 (D.Va 1985) *aff'd*, 791 F.2d 304 (4th Cir.1986), *rev'd on other grounds*, 108 S.Ct. 376 (1987).
13. In some violations, there are virtually no delayed or avoided costs. Neither is there any benefit from an illegal competitive advantage. These are typically paperwork types of violations (e.g. failure to label a PCB transformer under TSCA). While the potential consequences for such a violation could be devastating, there really is no benefit of noncompliance to speak of. In such cases, the penalties are based solely on the gravity component.
14. See footnote 6, supra.
15. Id.
16. Id.
17. EPA, "Enforcement Accomplishments Report for Fiscal Year 1994", (1995) p. 4-5. In recent years, the total penalty amount has not exceeded the \$100 million level, but some of this may be due to the Agency's efforts to encourage violators to mitigate their civil penalties by performing supplemental environmental projects (SEP's). The Agency evaluates each SEP using a variant of the BEN model, PROJECT. PROJECT provides the litigation team with the real cost of the SEP to the violator (i.e. the after-tax, net-present value of a proposed SEP). The value of those SEP's is reported on the enforcement programs central data base along with penalty and compliance cost information. When one adds the value of all the SEP's to the penalty information, the real totals have been about \$160 million in fiscal year 1996 and \$180 million in fiscal year 1997. EPA, "FY 1997 RECAP Measures of Success Management Report", (1998) p. 28.
18. As of this writing, there were thirty-three different penalty policies.

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19. Chesapeake Bay Foundation v. Gwaltney of Smithfield, 611 F.Supp. 1542 (D.Va 1985)aff'd, 791 F.2d 304 (4th Cir.1986), rev'd on other grounds, 108 S.Ct. 376 (1987); Ohio ex rel. Brown v. Dayton Malleable, Inc., Case No. 78-694, 8 (October 10, 1979), rev'd, No. 6722 (Ct. App., Montgomery County, 1979), rem'd for partial reinstatement, 1 Ohio St. 3d 151, 438 N.E.2d 120 (Sup. Ct. 1982).
 20. United States v. Municipal Auth. of Union Township, 1998 U.S. App. LEXIS 16440; Sasser v. EPA, 990 F.2d 127 (4th Cir. 1993).
 21. Id.
 22. S.Rep. No. 50, 99th Cong., 1st Sess. 25 (1985) (emphasis added).
 23. Sierra Club v. Cedar Point, 73 F.3d 546, 576 (5th Cir. 1996); Public Interest Research Group of New Jersey, Inc. v. Powell Duffryn Terminals Inc., 720 F.Supp. 1158, 1166 (D.N.J. 1989), aff'd in part and rev'd in part, 913 F.2d 64, 79 (3d Cir. 1990), cert. denied, 111 S.Ct. 1018 (1991); In re: B.J. Carney Industries, Inc., CWA Appeal No. 96-2 (Docket No. 1090-09-13-309(g)) at page 70.
 24. United States v. Ekco Housewares, Inc.,853 F.Supp. 975 (N.D. Ohio 1994) *aff'd in part, rev'd in part* 62 F.3d 806 (6th Cir. 1995).
 25. When the violator is a municipality or some other not-for-profit entity, I suspect that judges might be hesitant about recapturing the entire benefit from noncompliance.
 26. Section 120 of the Clean Air Act actually requires the recapture of economic benefit, but it is rarely used at best. It has its own unique computer model that has gone through rulemaking.
 27. The soon to be released Windows-based version of BEN improves on its predecessor by tailoring many of its assumptions to the case-specific facts, and by displaying all of the details for its highly complex calculations.
 28. The Agency does anticipate that its experts will use the new Windows-based version in many future cases. Other cases, however, may require more complex calculations for which customized computer spreadsheets are necessary. Still others may be so simple that BEN will not be necessary, and even less complicated analytical tools may be suitable.
 29. EPA, "Enforcement Accomplishments Report FY 1993", (1994) p. 12.
 30. Id.
 31. The international toll-free number staffed by our contractor, Industrial Economics, Incorporated, is: (888) 326-6778 or (888) ECONSP.T. In addition, the helpline can be reached by electronic mail at: benabel@indecon.com. Callers can obtain copies of the BEN model and printed documentation, as well as receive assistance with running the model. The helpline also provides assistance for the Agency's other computer models, which evaluate the true cost to a violator of supplemental environmental projects (SEP's), and also assess the ability of violators (whether corporations, individuals, or municipalities) to pay for environmental expenditures.

32. The address of the web site is <http://es.epa.gov/oeca/models>. EPA's other financial analysis computer models are also located at this site. They are three that deal with ability to pay claims: ABEL looks at claims from for-profit entities, INDIPAY looks at claims from individuals and MUNIPAY looks at claims from municipalities, towns, villages, sewer authorities and drinking water authorities. The last model, PROJECT, determines the out-of-pocket cost of a supplemental environmental project (SEP) to a violator. Violators propose SEP's in the hope of mitigating their penalty liability. This model tells what the SEP actually costs the violator. All these models are also available through the NTIS.
33. Unsophisticated counsel for sophisticated regulatees have made the same mistake.
34. United States v. Smithfield Foods, Inc., 972 F.Supp. 338 (E.D. Va. 1997). This case is discussed in section 8.1.
35. Friends of the Earth v. Laidlaw Environmental Services, 890 F.Supp. 470, 518 (D.S.C. 1995) rev'd on other grounds 1998 U.S.App. LEXIS 166298; PIRG of New Jersey Inc. v. Magnesium Elektron Inc., 40 ERC 1917, 1928 (1995).
36. While there is no hard data available from which one could determine how many states routinely seek to recapture the benefit of noncompliance, anecdotal information suggests that only a handful of them do this.
37. On October 9, 1996, the EPA issued a Federal Register notice requesting comment on the Agency's benefit recapture approach. One of the issues the Agency was particularly interested in was whether there were any alternatives to the BEN model for environmental enforcement agencies. Despite the fact that the notice specifically requested commenters to present or suggest alternatives, none were formally submitted. One state representative informally commented that they used something else. But an analysis of that supposedly simpler approach revealed that it was harder to use than BEN and produced very inaccurate results.
38. EPA has conducted such on-site training in the following states: Alaska, Arkansas, Connecticut, Idaho, Indiana, Louisiana, Maryland and New Jersey. EPA has also scheduled a course for Arizona in September. In addition, EPA has conducted BEN courses at the South Coast Air Management District (California) and Broward County (Florida).
39. 972 F.Supp. 338 (E.D. Va. 1997).
40. CWA Appeal No. 96-2 (Docket No. 1090-09-13-309(g)).
41. 929 F.Supp. 800 (M.D. Pa. 1996) *aff'd* 1998 U.S. App. LEXIS 16440.

APPENDIX A**HOW THE MODEL WORKS¹**

This Appendix provides a more detailed explanation of how the BEN model works. It is a fairly broad overview of the major steps the model takes in performing its calculations. This Appendix also provides a simple example for BEN analysis. For a more detailed explanation, see the BEN Users Manual, 1998 edition.

The BEN model assumes that if funds are not spent on pollution control, they will be internally invested in projects that will benefit the entity through increased revenues. In contrast, while pollution control is a necessary cost of doing business, it does not generate revenue for the entity.² Thus delaying compliance means that the violator can use money that should have been spent on pollution control for revenue producing activities. In determining the economic benefit of noncompliance, BEN calculates the cost difference in complying with environmental requirements on time and complying late.

The basic financial principle supporting BEN is the "time value of money". Cash flows (i.e. payment or receipt of funds) occurring in different years are not directly comparable. The only way to directly compare them is to convert all cash flows to dollars of the same year. This conversion is accomplished through an application of the financial theory known as present value. This theory is based upon the principle that a dollar today is worth more than a dollar a year from now. Today's dollar can be immediately invested and earn a return over the coming year. For example, \$100 today invested at 10% per year interest is equal to \$110.00 a year from now. Conversely, assuming the same 10% "discount rate", \$110 one year from now is equal to \$100 today. The earlier a cost is incurred, the greater the potential return and economic impact. BEN accounts for the "time value of money" effect by discounting all estimated future cash flows to their present value equivalents.

The model constructs two analyses for each case. The first calculates compliance costs as if the violator complied on time. Second, the model calculates the cost of complying late. It converts all compliance costs to the date the noncompliance began, and then subtracts the delay case compliance costs from the on-time case costs. This yields the initial economic benefit as of the noncompliance date.³ The initial benefit is stated in the dollar value of the year compliance was required (i.e. when noncompliance began). Then the model compounds the initial benefit forward to the actual benefit (i.e. the benefit as of the date the penalty will be paid) by a rate equal to the violator's cost of capital (i.e. its cost of money).

The following is a simplified application of the BEN model to a typical violation. The violator was supposed to install and have operating a pretreatment system on July 1, 1994. In 1997, an EPA inspector discovered that the violator never installed the proper equipment. EPA estimates that the equipment cost \$1,000,000 in 1996 dollars and that the annual operation and maintenance costs are \$100,000 in 1996 dollars. EPA expects the violator to comply by December 1998 and that settlement and penalty payment will occur in June of 1999. The output produced by the DOS version of BEN follows on the next page, along with the data inputs for this case.

In summary, BEN first constructs a parallel case where the firm achieves compliance on-time, and determines that total on-time compliance costs were \$1,663,000 in 1994 dollars (see item B). BEN then determines that compliance will only cost \$1,153,000 in 1994 dollars if the violator complies in December 1998 instead of July 1994 (see item C). BEN then subtracts the delay case costs from the on-time case costs to yield an initial economic benefit of \$510,000 in 1994 dollars (see item D). But this amount reflects the benefit in 1994. In fact, the violator

will have had the use of this money up to June 1999 the time EPA anticipates that the violator will pay its civil penalty. In order to convert this figure to 1999 dollars, BEN compounds the \$510,000 forward at a rate equal to the violator's cost of capital (discount rate). In this case the model used 10.6% to yield an economic benefit figure of \$837,000 in 1999 dollars (see item E). The Agency's policy is to recapture this amount by assessing a civil penalty of at least \$837,000.

XYZ CORPORATION BEN VERSION4.4 AUGUST 3, 1998

- A VALUE OF EMPLOYING POLLUTION CONTROL ON-TIME AND
OPERATING IT FOR ONE USEFUL LIFE IN 1994 DOLLARS \$1,183
- B VALUE OF EMPLOYING POLLUTION CONTROL ON-TIME AND
OPERATING IT FOR ONE USEFUL LIFE PLUS ALL FUTURE
REPLACEMENT CYCLES IN 1994 DOLLARS \$1,663
- C VALUE OF DELAYING EMPLOYMENT OF POLLUTION CONTROL
EQUIPMENT BY 53 MONTHS PLUS ALL FUTURE REPLACEMENT
CYCLES IN 1994 DOLLARS \$1,153
- D ECONOMIC BENEFIT OF A 53 MONTH DELAY IN 1994 DOLLARS
(EQUALS B MINUS C) \$ 510
- E THE ECONOMIC BENEFIT AS OF THE PENALTY PAYMENT DATE
59 MONTHS AFTER NONCOMPLIANCE \$ 837

(Dollars in Thousands)

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->->->->-> THE ECONOMIC BENEFIT CALCULATION ABOVE <-<-<-<-<-<-<-
USED THE FOLLOWING VARIABLES:

USER SPECIFIED VALUES

1A	CASE NAME =	XYZ CORPORATION
1B	PROFIT STATUS =	FOR-PROFIT
1C	FILING STATUS =	C-CORPORATION
2	INITIAL CAPITAL INVESTMENT (RECURRING)=\$	1000000 (1996 DOLLARS)
3	ONE-TIME NONDEPRECIABLE EXPENDITURE =	\$0
4	ANNUAL EXPENSE =	\$ 100000 1996 DOLLARS
5	FIRST MONTH OF NONCOMPLIANCE =	7, 1994
6	COMPLIANCE DATE =	12, 1998
7	PENALTY PAYMENT DATE =	6, 1999

STANDARD VALUES

8	USEFUL LIFE OF POLLUTION CONTROL EQUIPMENT =	15 YEARS
9	MARGINAL INCOME TAX RATE FOR 1986 AND BEFORE =	49.6 %
10	MARGINAL INCOME TAX RATE FOR 1987 TO 1992 =	38.6 %
11	MARGINAL INCOME TAX RATE FOR 1993 AND BEYOND =	39.4 %
12	ANNUAL INFLATION RATE =	1.8 %
13	DISCOUNT RATE: WEIGHTED-AVERAGE COST OF CAPITAL	10.6 %

REFERENCE

- 1 Most of this explanation was taken from an earlier article I wrote that appeared in Volume XXXV, No. 2 (Symposium Issue, 1990) for the South Dakota Law Review. This was in turn updated and reprinted, with the permission of the University of South Dakota Law Review, in the National Environmental Enforcement Journal, April 1991.
- 2 In rare cases, the violator may actually lose money by delaying or avoiding compliance with the law. This could happen through tax law changes (e.g., the new tax code deletes a tax credit for pollution control equipment investments). This could also happen if the new nonpolluting equipment is more cost effective than the old polluting equipment. Thus delaying compliance forced the violator to forgo substantial cost savings. In such cases, one should always go beyond the BEN analysis to see if there might have been another motivation to violate the law. In many of these situations, the real benefit is from an illegal competitive advantage. For example, the new complying equipment was more cost effective, but it produced an inferior product. The violator was really motivated to violate the law by the desire to maintain its customer base.
- 3 In rare cases, the violator may actually lose money by delaying or avoiding compliance with the law. This could happen through tax law changes (e.g. the new tax code deletes a tax credit for pollution control equipment investments). This could also happen if the new nonpolluting equipment is more cost effective than the old polluting equipment. Thus delaying compliance forced the violator to forgo substantial cost savings. In such cases, one should always go beyond the BEN analysis to see if there might have been another motivation to violate the law. In many of these situations the real benefit is from an illegal competitive advantage. For example, the new complying equipment was more cost effective, but it produced an inferior product. The violator was really motivated to violate the law by the desire to maintain its customer base.

APPENDIX B**PENALTY PROVISIONS FROM ENVIRONMENTAL STATUTES****Clean Air Act**

Section 7413(e)(1)

In determining the amount of any penalty to be assessed under this section or section 7604(a) of this title, the Administrator or the court, as appropriate, shall take into consideration (in addition to such other factors as justice may require) the size of the business, the economic impact of the penalty on the business, the violator's full compliance history and good faith efforts to comply, the duration of the violation as established by any credible evidence (including evidence other than the applicable test method), payment by the violator of penalties previously assessed for the same violation, the economic benefit of noncompliance, and the seriousness of the violation.

Section 7524(b)

In determining the amount of any civil penalty to be assessed under this subsection, the court shall take into account the gravity of the violation, the economic benefit or savings (if any) resulting from the violation, the size of the violator's business, the violator's history of compliance with this title, action taken to remedy the violation, the effect of the penalty on the violator's ability to continue in business, and such other matters as justice may require.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA or Superfund)

Section 9609(a)(3)

In determining the amount of any penalty assessed pursuant to this subsection, the President shall take into account the nature, circumstances, extent and gravity of the violation or violations and, with respect to the violator, ability to pay, any prior history of such violations, the degree of culpability, economic benefit or savings (if any) resulting from the violation, and such other matters as justice may require.

Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA)

Section 11045(b)(1)(C)

In determining the amount of any penalty assessed pursuant to this subsection, the Administrator shall take into account the nature, circumstances, extent and gravity of the violation or violations and, with respect to the violator, ability to pay, any prior history of such violations, the degree of culpability, economic benefit or savings (if any) resulting from the violation, and such other matters as justice may require.

Federal Insecticide, Fungicide, and Rodenticide Act

Section 136(a)(4)

Determination of penalty.-- In determining the amount of the penalty, the Administrator shall consider the appropriateness of such penalty to the size of the business of the person charged, the effect on the person's ability to continue in business, and the gravity of the violation. Whenever the Administrator finds that the violation occurred despite the exercise of due care or did not cause significant harm to health or the environment, the Administrator may issue a warning in lieu of assessing a penalty.

Federal Water Pollution Control Act

Section 1319(d)

In determining the amount of a civil penalty the court shall 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, the economic impact of the penalty on the violator, and such other matters as justice may require.

Section 1319(g)(3)

In determining the amount of any penalty assessed under this subsection, the Administrator or the Secretary, as the case may be, shall take into account the nature, circumstances, extent and gravity of the violation, or violations, and, with respect to the violator, ability to pay, any prior history of such violations, the degree of culpability, economic benefit or savings (if any) resulting from the violation, and such other matters as justice may require.

Marine Protection, Research, and Sanctuaries Act of 1972

Section 1415(a)

In determining the amount of the penalty, the gravity of the violation, prior violations, and the demonstrated good faith of the person charged in attempting to achieve rapid compliance after notification of a violation shall be considered by said Administrator.

Safe Drinking Water Act

Section 300g-3(b)

The court may enter, in an action brought under this subsection, such judgment as protection of public health may require, taking into consideration the time necessary to comply and the availability of alternative water supplies; and, if the court determines that there has been a violation of the regulation or schedule or other requirement with respect to which the action was brought, the court may, taking into account the seriousness of the violation, the population at risk, and other appropriate factors, impose on the violator a civil penalty of not to exceed \$25,000 for each day in which such violation occurs.

Solid Waste Disposal Act (Resource Conservation and Recovery Act, RCRA)

Section 6928

In assessing such a penalty, the Administrator shall take into account the seriousness of the violation and any good faith efforts to comply with applicable requirements.

Toxics Substance Control Act

Section 2615(a)(2)(B)

(B) In determining the amount of a civil penalty, the Administrator shall take into account the nature, circumstances, extent, and gravity of the violation or violations and, with respect to the violator, ability to pay, effect of ability to continue to do business, any history of prior such violations, the degree of culpability, and such other matters as justice may require.

