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# Ad Valorem Taxation and Environmental Devaluation

## Part I: An Overview of the Issues and Processes

This is the first of a two-part, comprehensive study of the impact of environmental laws on real property in the U.S. Part I covers such aspects as impaired valuation theory, the effect of environmental laws on market value, and policy, financial, and reporting considerations. Part II, which will appear in the Fall issue, will focus on case law and standards of proof

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**IN 1990**, WE at Environmental Analysis & Valuation, Inc. (EAV), along with our associated professionals and industry experts, attempted to quantify the probable impact on real property values resulting from environmental legislation ranging from the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, or Superfund) through the various laws governing asbestos in buildings. As a result of our investigations we came to the conclusion that the impact on real property values would be in the range of \$2 trillion to \$3 trillion dollars. Based on the estimate that the total value of all real property was in the range of \$10 trillion to \$12 trillion dollars, this implies that between 17 and 30 percent of all real estate value has been lost to this one factor.

As a result of this and other work over the past two years, EAV presented a seminar on the subject in Denver, Colorado, in January 1993. This seminar brought together appraisal,

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legal, judicial, ratepayer, and assessment experts from around the country. This article is a synopsis of the materials prepared for that seminar, and the discussions that took place during it.

This article is divided into two major parts. The first part covers the general background and valuation theory for impaired property and introduces definitions of critical terms, phrases, and concepts that may be unfamiliar to the reader. In addition, it discusses several peripheral issues that, while not directly within the province of the tax appeal, are extremely important to the client's overall preparation for making environmental impairment information publicly available. The second part, which will appear in the *Journal of Property Tax Management*, Fall 1993, discusses the legal issues and case background of impaired property appeals to date.

## GENERAL BACKGROUND AND IMPAIRED VALUATION THEORY

### General Discussion and Definition of Terms and Concepts

Before discussing the technical details of establishing impaired values and the appeal process, it is necessary to establish certain general points and definitions. It should be clearly understood that some of the terms used have specific legal definitions within environmental law, and that those definitions have only been approximated here in order to simplify the discussion. Some of these terms follow:

**CERCLA facility.** The Environmental Protection Agency (EPA) has defined a facility generally as that volume of soils and groundwaters contaminated by an uncontrolled release of a hazardous substance. Note that under the terms of this definition, property boundaries as we have come to think of them in real property valuation have essentially no meaning; a facility can be wholly contained within one parcel, or may involve many parcels.

**CERCLA owner.** The term owner under CERCLA has a simultaneous dual interpretation; it can refer to the owner of the property on which an uncontrolled release of a hazardous substance occurred and (in some sense) the facility resulting therefrom, or it can mean the owner of the hazardous substance. Generally, title to a hazardous substance becomes vested forever in the party disposing of the substance without regard to whether the substance is disposed on the substance owner's real property, or real property owned by another.

**Source Owner, Non-source Owner.** Because CERCLA defines a facility without regard to legal parcel boundaries, it is necessary to distinguish between the owner of the real property on which the uncontrolled release occurred—the source owner—and the owner of another property that became a part of the facility through the transport of the substance by some natural mechanism (groundwater, for example)—the non-source owner. The legal responsibility of the source owner of the facility is clear and is strict, joint and several for the costs of remediation (defined broadly). The legal responsibilities of the non-source owner

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ENVIRONMENTAL DEVALUATION

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are not as clear, except to say that the responsibility is less direct and probably less burdensome.

The problem with being a source owner of a facility lies in the responsibilities with respect to dealing with that part of the facility not contained within that owner's fee estate. This is an issue of much current legal debate and the outcome can influence the values of both source and non-source owners significantly.

*Hazardous Substance, Hazardous Waste.* CERCLA defines a hazardous substance through the listing of substances defined to be hazardous in the Federal Register. The Resource Conservation and Recovery Act (RCRA) defines a hazardous waste by either listing the specific waste, or by defining a set of criteria that, if met, determine a waste to be hazardous. Generally, a hazardous waste will contain a hazardous substance, but a hazardous substance may or may not be a hazardous waste.

*Interior Versus Exterior Environmental Problems.* Generally, environmental problems may be divided into those wholly contained within a structure, and those that are not, thereby affecting soils, groundwater, and surface water. This distinction is important here because, in terms of value impacts, interior problems generally can be much more accurately quantified than exterior problems. We know how to cure an asbestos problem in a building and can therefore accurately estimate its cost, but the removal of lead from soil and groundwater is almost impossible to estimate accurately.

*Phase I Environmental Value Assessment (EVA).* The Phase I EVA is designed to answer two questions:

1. Is there a reasonable basis to suspect the presence of an environmental risk (the subject matter of the classic Phase I Audit)?
2. Are there environmental restrictions on the use of the property?

The ASTM (formerly the American Society for Testing and Materials) has developed a uniform protocol identified as the Phase I Environmental Site Assessment that will probably become an industry standard. It does not, and is not intended to, allow an appraiser to establish the impaired value of a property.

*Phase II EVA.* The Phase II EVA, given that the Phase I EVA has found a reasonable basis to suspect the presence of an environmental risk, is designed to demonstrate, to a reasonable degree of scientific certainty, that the suspect environmental risk is or is not present. The reasonableness of the level of remaining uncertainty is a client decision. This definition follows the classic Phase II Audit definition.

*Phase III EVA.* Given that the Phase II EVA has demonstrated the presence of an environmental risk, the Phase III is designed to accomplish the following objectives:

1. To quantify the type and extent of the environmental risk;

2. To develop a remediation plan that will be acceptable under the National Contingency Plan (NCP), which is a part of CERCLA, or other governing rules and regulations;
3. To develop budget estimates for the implementation of the remediation plan; and
4. To identify any restrictions on use or incremental operating costs required to prevent or minimize future environmental liabilities.

Items 1, 2, and 3 are normal parts of Phase III Audits; item 4 is specific to valuation and rarely, if ever, a part of a traditional Phase III Audit.

*Environmental Risk.* An environmental risk has four component parts (see Figure 1):

1. The *risk source* is the source of potential damage to human health and/or the environment.
2. The *primary control mechanism* is the means by which the risk source is maintained under control to prevent damage to human health and/or the environment.
3. The *transport/secondary control mechanisms* are the available means by which the risk source, given a failure of the primary control mechanism, may be transported to the immediate vicinity of the target. Secondary control mechanisms are natural or man-made obstructions contained within the transport mechanism that may retard the movement of the risk source.
4. The *target* may be human beings or sensitive environments such as nature preserves or wetlands or endangered species of plant or animal.

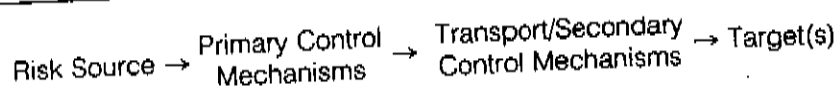
Each of these components must be evaluated according to a specific set of protocols outlined in the NCP in order to determine first if a risk exists and, if it does, the appropriate response plan.

*Environmental Impairment (to Value).* Given that an environmental risk exists, then an environmental impairment to value may exist if the risk: (1) restricts the use of the property; (2) imposes incremental ownership costs on the property; and/or (3) makes the property less desirable in the marketplace.

*Uncertainty.* Uncertainty is a condition where an event cannot be assigned a probability of occurrence.

*Risk.* Risk is a condition where an event can be assigned a probability of occurrence. Therefore, risk can be quantified while uncertainty cannot be quantified (although attempts can be made to estimate the magnitude or range of values for an uncertain event).

**FIGURE 1.** Environmental Risk System



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ENVIRONMENTAL DEVALUATION

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*Stigma.* The value impact of uncertainties. For the purposes of this discussion, stigma refers to the value impact of environmentally-related uncertainties, uncertainties resulting from the presence or assumed presence of an environmental risk.

*Unimpaired Value.* The unimpaired value of a property is the value considering all restrictions on use and costs of ownership other than those imposed by the presence of an environmental risk.

*Impaired Value.* The impaired value is derived from the unimpaired value according to the following relationship. It is the value given due consideration to the impact of environmental risks, known or assumed to be present.

$$I = U - C_{NCP} - C_R - C_F - S$$

Where:

- I = Impaired value
- U = Unimpaired value
- $C_{NCP}$  = Cost to implement the NCP-defined remediation plan
- $C_R$  = Cost of restrictions on use and/or environmental liability prevention.
- $C_F$  = Impaired financing cost
- S = Stigma, or negative intangible costs

Note that  $C_{NCP}$  will be the environmental equivalent of the "typical" construction cost. Many courts have held that the only recoverable environmental costs for a third party are those costs consistent with the NCP.

*Remediation.* Remediation can consist of one or more of the following methods for dealing with a specific environmental situation:

1. *Do Nothing.* This is not to be taken literally. The do nothing option consists of a determination that a specific physical action is not required at the present time, but that continuous observation (as with an operations & maintenance program) may be required to identify changed circumstances that may require implementation of another method in the future to protect human health and/or the environment.
2. *Repair.* The restoration of the primary control mechanism(s) to a functional state whereby the risk source may be maintained in a condition such that human health and/or the environment are protected.
3. *Operations and Maintenance Program.* A specific, written program of daily functions, training, equipment, and discipline intended to provide observation of the environmental risk and the maintenance of the primary and man-made secondary control mechanisms. Under the Occupational Safety and Health Administration's (OSHA) Hazard Communications Rules, an operations and maintenance program is now virtually required for almost any organization coming under OSHA or OSHA-equivalent jurisdiction.
4. *Isolation.* The prevention of access to a risk source except possibly by trained and equipped personnel. Isolation may be accomplished by something as simple as a fence, or by something as complex as a controlled atmosphere structure.

5. *Encapsulation.* The construction or application of a physically (to the risk source) impermeable membrane. The purpose of the encapsulation is to isolate the risk source from the transport mechanism and thereby the targets. A hydraulic barrier created by a groundwater extraction well system may be thought of as encapsulation.
6. *Enclosure.* The construction of a physically impermeable and structurally sound barrier around the risk source and its primary control mechanism. The difference between encapsulation and enclosure is in the structural strength of the barrier. A slurry wall to prevent the migration of groundwater may be thought of as an enclosure.
7. *Removal with Disposal.* The physical removal of the risk source usually involving the destruction of the primary control mechanism and the disposal of the risk source in another location. Removal with disposal does not end the owner's (at the time of removal) financial risk; it freezes title to the risk source with that owner for so long as the risk source may exist in its new location. This may involve the risk source owner in later Superfund liabilities even if the risk source is relatively benign.
8. *Removal with Destruction.* Destruction means the reduction or transformation of the risk source to nonrisk elements or form. If it can be accomplished, the destruction of the risk source after removal is the only method for cutting off future liability for the risk source, although it will do nothing for any liabilities associated with the past presence of the risk source or with the actual removal and destruction activities. Generally, removal with destruction is technically difficult and very expensive.

*Applicable and Relevant and Appropriate Requirements (ARAR).* Applicable requirements are defined as "cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location or other circumstance at a CERCLA site." Relevant and appropriate requirements are defined as "substantive environmental protection requirements promulgated under federal or state law that, while not 'applicable' ... address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site."<sup>1</sup> Application of the ARARs, under the NCP component of CERCLA, defines the remediation methodology and thereby the costs and timing for the factors that will influence the property's value.

*Cost to Control/Cost to Cure.* Especially with respect to soil, surface water, and ground water contamination, the concept of a "cure" for an environmental impairment is essentially meaningless, at least over any reasonable economic time frame such as several decades. For this reason the use of the phrase "cost to cure" can be extremely misleading, especially for exterior environmental problems, and the more accurate phrase "cost to control" should be applied to remediation activities. A careful examination of the major environmental laws such as CERCLA or RCRA will clearly indicate that control is the objective, cure being implicitly recognized as a usually unattainable goal.

1. CERCLA Compliance with Other Laws Manual: Overview of ARARs; Office of Solid Waste & Emergency Response, USEPA, Pub 9234.2-03/FS, Quick Ref Fact Sheets, Dec 1989.

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ENVIRONMENTAL DEVALUATION

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**A Statutory Overview**

Probably the major legislation affecting property values the most is CERCLA. A primary feature of CERCLA is to establish strict liability for releases. A "release" is defined to include virtually any means by which a substance escapes into the air, water, or soil. The provisions of CERCLA broadly imposed joint and several liability on potentially responsible parties (PRPs), which are defined to include:

1. Owners and operators of the land at the time of disposal of the hazardous substances;
2. Transporters of those substances; and
3. Generators and persons who arrange for the disposal of hazardous substances.

However, the potential impact of this liability is substantially increased by the breadth of the definition of a release, which includes ongoing leaching of contaminant substances into ground waters from adjoining contaminated soil (thereby creating an EPA-defined facility). Under such an interpretation, even a subsequent owner or operator with no involvement whatsoever in the seminal spill or dumping is exposed to liability for a release since leaching is presumed to be continuous.

The landowner was made liable retroactively and regardless of whether the landowner participated in or benefitted from the release of the regulated substances. All PRPs were liable regardless of whether they were negligent. The EPA was given discretion to determine, based upon a hierarchy of sites most in need of cleanup efforts (the National Priorities List), whether cost recovery actions would be initiated against all or only some of the PRPs, with cleanup financed by the Superfund only in emergency situations.

CERCLA was substantially amended by the Superfund Amendments and Reauthorization Act (SARA) in the fall of 1986. Among the effects of SARA was to restrict the EPA's previous flexibility in deciding permissible levels of contamination. Pressure from the states and environmental groups led Congress to add a new section to CERCLA requiring that, if there is any federal or state standard established legally concerning permissible levels of a substance (i.e., ARARs), then cleanup must meet that level.

SARA further clarified the limited defense for a truly "innocent purchaser." An innocent purchaser must establish:

" . . . by a preponderance of the evidence that (a) he exercised due care with respect to the hazardous substance concerned, taking into account the circumstances of such hazardous substance in light of all relevant facts and circumstances, and (b) he took precautions against foreseeable acts or omissions by any such third party and the consequences that could foreseeably result from some acts or omissions." (42 U.S.C. § 9607(b)(3))

Under this defense, an innocent purchaser is not liable if he or she can establish that the purchaser (including any agents or contractors) had nothing to do with the release on the property, had no knowledge of the presence of hazardous substances on the property after reasonable investigation at the time of purchase, and had continuously exercised due care in subsequently managing the property. However, it is important to observe that Congress intended purchasers to be held to a standard that would become more exacting over time, and expected almost no one to qualify after testing standards and procedures were developed.<sup>2</sup>

CERCLA and SARA were matched in many respects by state legislation that complemented or supplemented the federal laws. It is reported that the states responded by enacting more than 100 laws relating to environmental issues. For example, the Minnesota legislature passed the Minnesota Environmental Response and Liability Act (MERLA) in 1983.<sup>3</sup> MERLA authorizes the Minnesota Pollution Control Agency (MPCA) to take whatever steps are necessary in order to accomplish the cleanup of hazardous waste sites.

#### **The Effect of Environmental Laws on Market Value**

The impact of environmental concerns on market value may be traced directly to two facets of the environmental legislation:

1. The liability to any owner of contaminated property without regard to participation or negligence on the one hand; and
2. The theoretical immunity offered by the "innocent purchaser" defense on the other.

These dual facets to the environmental legislation gave birth almost overnight to a new industry: environmental advisors and consultants to prudent purchasers of real property. The purpose of this new industry was to conduct environmental assessments or audits as the basis for limited opinions regarding the presence of environmental liabilities at a site. These environmental assessments or audits became a new and necessary element of the due diligence of a prudent purchaser of real property.

A fundamental relationship exists between this development, the resultant conduct of prudent purchasers in the marketplace, and the definition of the term "market value," which is generally used in the property tax statutes. Market value is defined by the Appraisal Institute as:

2. Conf Rpt HR 2005, HR Rpt 962, 99th Cong, 2nd Sess (1986).

3. Minn Stat Ch 115B.

## ENVIRONMENTAL DEVALUATION

“(T)he most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to fair sale, with buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress.”<sup>4</sup>

This definition is fundamental because it directs the valuation professional to formulate the actions of a prudent purchaser who is well-informed or well-advised in the purchase of real property. This definition is also decisive since the growing uniformity of custom and practice among consultants and advisors to prudent purchasers has created an identifiable but evolving standard of the actions properly taken in the course of the purchase of real property. The ASTM Phase I ESA protocols are a quantum step in the effort to standardize purchaser environmental due diligence.

In analyzing the conduct of a prudent purchaser, it is important to note the significance of qualification under the innocent purchaser defense. If that defense is not available, the purchaser, as the owner under CERCLA, may be held liable for the cleanup regardless of whether the purchaser had any direct or indirect involvement with the contamination in question. Recourse against prior owners, operators, or other parties responsible for the contamination often proves to be most difficult and costly litigation. (For a recent example of such an effort with a successful resolution, see *Gopher Oil Company, Inc. v. Union Oil Company of California*<sup>5</sup>; see also *Am International, Inc. v. International Forging Equipment*.<sup>6</sup>)

In fact, any recovery may be illusory as illustrated by two federal courts, which held that Superfund liabilities are discharged in a bankruptcy proceeding under Chapter 11. In *In re Jensen*, the court held that environmental liabilities were contingent claims that arose when the release or threatened release of hazardous substance occurred, not when the cleanup costs were actually incurred.<sup>7</sup> Similarly, in *In re Chateaugay Corporation*, the court reasoned that if CERCLA response costs not yet incurred are not bankruptcy claims, “some corporations facing substantial environmental claims will be [unable] to reorganize at all.”<sup>8</sup> According to these two decisions, discharge in bankruptcy is available so long as proper

4. Appraisal Inst, Appraisal of Real Estate, 10th ed (1992), at 29.

5. *Gopher Oil Co Inc v Union Oil Co of Calif*, 955 F2d 519 (8th Cir 1992) 757 F Supp 988 (D Minn 1991).

6. *Am Intl, Inc v Intl Forging Equipment*, 31 ERC 1659 (ND Ohio 1990) (court vitiated an environmental indemnity provision in a sale contract based upon CERCLA § 107(c)(1); cf *Jones-Hamilton Co v Kop-Coat*, DC D Cal No C-90-0169 (Nov 20, 1990), & *Robenbeck v Marathon Petroleum Co*, 32 ERC 1237 (ND Ind 1990) (decisions uphold the environmental indemnity provisions).

7. *In re Jensen*, 127 BR 27 (9th Cir Bkcy App 1991).

8. *In re Chateaugay Corp*, 945 F2d 1205 (2nd Cir 1991).

notice is given to the claim holder in the bankruptcy (*Contra, U.S. v Union Scrap Iron Metal.*<sup>9</sup>)

### Policy Considerations

For an owner or operator of real property, environmental problems present enormous expense and liability. Even if the level of contamination and risk to the public health is not such that cleanup is currently mandated by public authorities, the property owner is nevertheless confronted with a reality which, if unaddressed, may have a significant effect any time the property is sold, mortgaged, or leased.

Some early comments suggested that the statutory requisites of market value may be subordinated to overriding moral concerns; namely, an owner of property affected by a contamination problem may not receive a reduction in its taxable market value, and thereby shift fiscal burdens to other property owners. This moralistic approach is devoid of support in traditional appraisal theory, but such claims are still proposed in some quarters to this day. The better view, as reflected in more recent decisions, makes it clear that such an analysis is improper and inappropriate. (See, for example, *Reliable Electronic Finishing Co., Inc. v. Board of Assessors*,<sup>10</sup> *Northwest Cooperage, infra*; *Firestone, infra*; *Inmar Associates, Inc. v. Borough of Carlstadt*.<sup>11</sup>)

The self-interest of property owners, as well as the overriding public interest in cleaning up contamination, is best served by policies and judicial guidelines that encourage and enable property owners to identify environmental and health risks, examine and assemble prudent and practicable remedial plans, and then actually proceed to implement those remedial plans.

## FINANCIAL AND REPORTING CONSIDERATIONS

### The Lending Community

In assembling the context of deliberations in the marketplace, even a cursory introduction must of necessity mention the reaction of the lending community. The availability of financing and the impact of financing requirements are critical to the analysis of market value. If financing is not available, the analysis of the property's highest and best use and the market of potential buyers for a particular property may be severely affected. As a general proposition, "mortgageability" is an important factor in determining the market value and the marketability of a property.

9. *US v Union Scrap Iron Metal*, 123 BR 831 (D Minn 1990).

10. *Reliable Electronic Finishing Co, Inc v Bd of Assessors*, 410 Mass 381, 573 NE2d 959 (1991).

11. *Northwest Cooperage, infra*; *Firestone, infra*; *Inmar Associates, Inc v Borough of Carlstadt*, 112 NJ 593, 549 A2d 38 (NJ 1988).

## ENVIRONMENTAL DEVALUATION

The introduction of the similar but distinct concerns of the lending community with respect to liability for environmental conditions imposes an additional and external perspective to the prudent purchaser's decision-making criteria. The impact on market value presented by any existing or potential environmental condition must not only survive the analysis of the buyer or developer, but must also satisfy the external scrutiny of a lender whose analysis may be substantially more cautious. It is well established that the reduced availability or increased cost of financing has a depressant effect on the value of property.<sup>12</sup>

The conduct of the lending community is substantially motivated by the landmark decision in *U.S. v. Maryland Bank and Trust Company* and subsequent decisions.<sup>13</sup> In *Maryland Bank*, the court found a lender, which had acquired title through foreclosure, liable for cleanup costs in excess of the unimpaired value of the collateral despite the lender's lack of knowledge of the contamination. Subsequent decisions such as *U.S. v. Fleet Factors Corp.*,<sup>14</sup> *In re Bergsoe Metal Corp.*,<sup>15</sup> and *Guidice v. BFG Electroplating*<sup>16</sup> heightened concern in the lending community. *Fleet Factors* held a lender liable if it has the "capacity to influence waste practices" (even if that capacity was not actually exercised), while in contrast, *Bergsoe Metal* found there had to be actual management by the creditor in areas affecting hazardous wastes in order to impose Superfund liability. *Guidice* affirmed liability where the lender forecloses and becomes the owner.

Although federal laws and some state laws contain exclusions from liability for lenders, such provisions provide minimal comfort relative to existing loans and no genuine impetus to the origination of new loans secured by contaminated property.<sup>17</sup> EPA final regulations, published on April 29, 1992, offer restricted permission for lenders to engage in traditional lending activities in order to protect security interests in contaminated property without incurring liability for cleanup.<sup>18</sup> These regulations permit a lender to require environmental audits and to monitor businesses for compliance with environmental laws. Even if the lender is not liable merely as holder of a security interest in the property, the lender is nevertheless faced with collateral that may have little or no value after foreclosure, and foreclosure rights that are restricted by potential liability for cleanup costs if the lender fails to comply with requirements in the EPA regulations applicable to collateral disposition.

12. See, for example, Intl Assn of Assessing Officers, *Property Assessment Valuation*, 198-202 (1977).

13. *US v Maryland Bank & Trust Co.*, 632 F Supp 573 (D Md 1986).

14. *US v Fleet Factors Corp.*, 901 F2d 1550 (11th Cir 1990), cert den 111 S Ct 752 (1991).

15. *In re Bergsoe Metal Corp.*, 31 ERC 1785 (9th Cir 1990).

16. *Guidice v BFG Electroplating*, 732 F Supp 556 (WD Pa 1989).

17. See CERCLA § 101(20)(A)(ii); see, for example, Minn Stat § 115B.02, subd. 11.

18. 40 CFR § 300.1100 (1992).

In what may be the initial decision based upon the new regulations, *Ashland Oil Inc. v. Sonford Products Corp.*, the court found a lender shielded from liability where the property was found to be contaminated after foreclosure.<sup>19</sup> The court further upheld the express intent of the 1992 EPA regulations to extend a safe harbor to actions occurring prior to the effective date of the regulations.

In sum, while the recent EPA regulations create significant safe harbors for lenders, they do not resolve a number of serious questions concerning a lender's exposure to environmental liabilities for actions that may be deemed to constitute involvement in management of the borrower or control of the property.

#### **Auditors and Balance Sheet Issues**

As a prelude to this brief primer in this area, it is important to note that issues related to the impact of environmental concerns on value do not arise in a vacuum. Any prudent analysis of the value of an environmentally impaired property must, of practicality if not necessity, be mindful of the collateral sources of financial exposure that may be raised by the mere process of evaluating the impaired value of property. It is advisable that the financial and balance sheet issues be understood from the beginning, and not merely after the fact.

**Recognition of Varied Nature of Financial Risks.** The environmental laws discussed above have given rise to a series of financial risks raised by the presence of environmental considerations. The risks evaluated by accountants and auditors tend to mirror the questions faced by a prudent buyer of environmentally impaired property.

The first financial risk is the broad category of costs of compliance with environmental laws. These costs may include capital expenditures for required equipment, amounts that often effectively increase production costs and that the company may not be able to fully pass on to customers. These capital expenditures may lead to a decrease in future earnings, whether the amounts expended have been capitalized or expensed. The costs of compliance also include permits, regulatory fees, incremental engineering, administrative personnel, and disposal fees.

The second financial risk consists of fines and penalties for noncompliance with environmental laws. Fines and penalties may be assessed on a strict liability basis, regardless of intention or intervening cause. This category of financial risk also includes the possibility of punitive damages. Particularly in cases where contamination has reached drinking water supplies, courts have imposed punitive damages based upon a finding that appropriate preventive action had not been taken.

19. *Ashland Oil Inc v Sonford Products Corp.*, DC Minn No 3-91-715 (Dec 24, 1992).

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ENVIRONMENTAL DEVALUATION

Remediation or cleanup costs constitute a third category of financial risk. The evolution of the technological sciences and the legal standards in this area may generate a legal requirement to modify business processes in a way that had not been envisioned just years earlier. These remediation or cleanup costs may be on-site or off-site, particularly as state and federal agencies pursue liability for waste disposal practices. There are countless episodes in which unsuspecting companies, which had contracted with unrelated third parties to handle waste disposal, subsequently find that they have been victimized by the third party and are now faced with joint and several liability for site remediation of proportions enormously in excess of the original waste disposal costs.

Finally, a fourth category of financial risk consists of the company's potential exposure to toxic tort liability for personal injury or property damage. News media periodically report stories of accidents by truck or by rail, of fires or natural disasters at manufacturing facilities, and other circumstances that result in injuries, deaths, or property damage. Toxic tort liability lawsuits rely on a wide variety of theories including product liability, negligence or strict liability, and trespass and nuisance. Even where the consequences are not cataclysmic, the litigation may be.

**Financial Reporting Standards.** The accounting profession is struggling to cope with these issues on a theoretical and principled basis. The most significant accounting pronouncements concerning these issues are Financial Accounting Standards Board (FASB) Statement No. 5, "Accounting for Contingencies," and Emerging Issues Task Force of the American Institute of Certified Public Accountants (EITF) Issues Nos. 90-8 "Capitalization of Costs to Treat Environmental Contamination," and 89-13, "Accounting for the Cost of the Asbestos Removal."

FASB Statement No. 5 deals with loss contingencies for recognition and measurement of environmental cleanup liabilities. Statement No. 5 describes a "loss contingency" as:

"an existing condition, situation, or set of circumstances involving uncertainty as to a possible...loss...to an enterprise that will ultimately be resolved when one or more future events occur or fail to occur."

The resolution might be the loss or impairment of an asset or the incurrence of a liability. Financial statement treatment of a loss contingency is based upon two factors: the probability that future events will confirm a loss, and the extent the amount of the loss can currently be estimated. It should be observed that the very process of developing the analysis of the value of environmentally impaired property may generate information that significantly affects the foregoing analysis. An environmental analysis may result in information with

considerable impact on the accountant's analysis of these two factors. In any event, an appraisal of the affected property that incorporates and opines to value based upon the supporting analysis and reports of environmental professionals is likely to have a significant impact upon these factors.

From a theoretical perspective, the financial risks of environmental considerations are generally reflected in financial statements as follows:

1. If it appears probable that an environmental risk has resulted in a liability or an impaired asset, and the amount of the loss can be reasonably estimated, the loss is accrued by a charge to income and appropriate disclosures are made, provided the loss is measured based upon the best loss estimate; if there is no best estimate, then a minimum loss is recorded.
2. If it is determined that a loss has not accrued because it either is not probable or there is no reasonable estimate, it may nevertheless be appropriate to disclose a financial risk due to environmental factors in footnotes to the financial statements.

EITF Issue No. 90-8 provides guidance on when certain expenditures related to environmental considerations should be capitalized or expensed. As a general proposition, the consensus is that costs should be expensed immediately when incurred "to remove, contain, neutralize, or prevent existing or future environmental contamination." Such expenditures are to be capitalized only if recoverable because they extend the life, capacity, safety, or efficiency of property; prepare for sale a property currently held for sale; or mitigate or prevent environmental contamination likely to result from future operations.

EITF Issue No. 89-13 generally surveys the primary situations in which the decision to expense or capitalize asbestos treatment costs arises, and the several arguments supporting each conclusion. EITF Issue No. 89-13 is an initial foray into this area, and it offers no clear guidance or conclusions concerning the expense/capitalize analysis.

The circumstances contributing to uncertainty and ambivalence in this area may be quite overwhelming. The dollar amounts are often staggering. The specter of joint and several liability under federal and state laws can be harsh and seemingly unfair. The evolving technical and legal standards, in conjunction with creative efforts by lawyers and businessmen to respond to these issues, raise circumstances that are often difficult if not chaotic.

The March 1992 issue of the *Journal of Accountancy* includes a report of a 1990 survey of 125 major U.S. corporations by the accounting firm of Price Waterhouse.<sup>20</sup> This report is insightful insofar as it reflects actual practice in these areas. Among the many interesting findings is the statement that only 11 percent of the corporations surveyed had accounting policies specifically addressing environmental accounting issues. Moreover, fewer than one-third of that 11 percent disclosed the policies in financial statement footnotes. Surprisingly,

20. John P. Surma & Albert A. Vondra, "Accounting for Environmental Costs; a Hazardous Subject," *J of Accountancy*, Mar 1992, 51-55.

## ENVIRONMENTAL DEVALUATION

**TABLE 1. Recording Liability for Environmental Cleanup**

<i>Time of Recording</i>	<i>Percentage of Respondents</i>
At sale, disposal, or abandonment of facility	20
On completion of a remedial investigation and feasibility study	20
Expensed as incurred during clean-up	18
On settlement offer made by the company	15
On initial notification by relevant regulatory authority	12
Charges to income over useful life of property	8
On signing of consent to conduct remedial investigation and feasibility study	5
On notification of clean-up obligation through internal company procedures	2

the timing of recording liability for cleanup varied greatly. The percentage of respondents that recorded liabilities as of the respective time periods is set forth in Table 1.

Key factors to be studied in the process of developing a reliable estimate of the environmental risk and measurement of the loss include evolving remediation technology; changing regulatory standards; experience at similar sites; existence and quality of records supporting amounts and types of waste contributed; and materiality of waste contributed.

Finally, the survey reportedly showed an accepted practice of recording a loss net of expected insurance recoveries depending on individual facts and circumstances. In contrast, as the Surma and Vondra article acknowledged, staff of the Securities and Exchange Commission (SEC) have stated it is "inappropriate to reduce a probable liability with a reasonably possible insurance recovery."<sup>21</sup>

The analysis and determination of the appropriate representation of the impact of an environmental consideration under generally accepted accounting principles is not at all dispositive. Under appropriate circumstances, disclosure of a financial risk arising from an environmental consideration, including its potential impact on future earnings, may be necessary to ensure that financial statements are not misleading. For example, if a company is subject to new state or federal laws or regulations requiring the incurrence of significant additional compliance costs in production, the absence of appropriate treatment in the footnotes may fail to disclose negative impacts on earnings or profit margins. Under circumstances in which a company's processes or waste disposal practices result in widely publicized environmental contamination, the financial statements may need to disclose an anticipated

21. *Id.*

decline in sales. The SEC imposes disclosure requirements upon registration statements, annual reports, shareholder proxy materials, and other situations.

#### **Securities and Exchange Commission Disclosure Requirements**

The first SEC environmental rules were adopted in 1971. SEC Regulation S-K item 1 requires the disclosure of any material effect that compliance with federal and state environmental laws may have on capital expenditures, earnings, and competitive position. This includes estimated capital expenditures for environmental control facilities for the current fiscal year, the succeeding fiscal year, and "such further periods as the registrant may deem material." Item 103 of Regulation S-K requires disclosure of pending administrative or judicial proceedings arising under federal or state environmental laws, including "such proceedings known to be contemplated by governmental authorities." SEC regulations require companies not only to reveal their status as defendants in pending administrative or judicial proceedings, but also to gauge whether a known environmental condition is reasonably likely to have a material effect on future capital expenditures. Item 303 of Regulation S-K requires the consideration of environmental risks on a company's financial position, earnings trend, liquidity, and capital expenditure commitments in preparing the management discussion and analysis (MD&A). The SEC's 1989 MD&A Release goes so far as to require disclosure of designation as a PRP, even before it is determined whether insurance or third-party indemnification is available. The key factors that the SEC will scrutinize are anticipated environmental liability expenses, availability of insurance coverage, and the prospect of third-party indemnification or contribution for damages.

It is reported that the SEC and the EPA have initiated a system whereby the EPA provides quarterly listings to the SEC with respect to several categories, including:

- All parties receiving CERCLA notice letters
- All filed RCRA and CERCLA cases
- All recently concluded civil cases under federal environmental laws
- All facilities barred from government contracts under the Clean Water Act and Clean Air Act, and
- All RCRA facilities subject to clean-up requirements.<sup>22</sup>

In addition, several small companies have reportedly begun to compile databases containing information on filings public companies have made with federal and state environmental agencies that were not disclosed in SEC documents.<sup>23</sup>

22. Ruder, Hackett, & Kelly, "Disclosure of Environment Problems," September, 1991 citing 18 Pesticide and Toxic Chemical News (March 29, 1990).

23. Ruder, Hackett, & Kelly, *supra*, citing Henriques, "Tracking Environmental Risks," NY Times, Apr 28, 1991, Sect 3 (Business) at 13.

## ENVIRONMENTAL DEVALUATION

A review of early published decisions in this area is illustrative of the nature of the violations, the SEC position, and the sanctions imposed or agreed to by the companies involved.

In *SEC v. Allied Corporation*, the defendant, a chemical manufacturer, knew that its discharges of toxic chemicals, including Kepone, were adversely affecting animal and marine life.<sup>24</sup> Allied also knew that it had exposure to significant liability to companies, individuals, and governmental entities on the basis of the chemical discharges. Nevertheless, Allied failed to make any reference to such financial exposure in its reports to shareholders and the investing public. In response to the SEC's action seeking injunctive relief, Allied consented to a permanent injunction against further violations of the anti-fraud and reporting provisions of the securities laws. Allied also agreed to undertake an independent investigation of its environmental risks and to provide a constant stream of environmental information both to the SEC and to its management and directors.

A corporation's failure to disclose the financial impact of coming into compliance with environmental laws was addressed in *In the Matter of United States Steel Corporation*.<sup>25</sup> With the passage of the Clean Air Act in 1970 and the Federal Water Pollution Control Act in 1972, United States Steel Company (USSC) engineers prepared cost estimates of compliance with the new legislation. Even though USSC disclosed in its SEC filings both its past environmental compliance expenditures and its projected compliance expenditures over the coming two to three years, the SEC found fault with USSC for not having disclosed its engineers' long-range estimates of capital expenditures necessitated by evolving environmental laws and regulations.

The SEC also faulted USSC for failing to disclose pending environmental administrative proceedings, administrative orders, and notices of violation. While USSC had disclosed pending judicial proceedings involving environmental matters, that was not good enough for the SEC. As a result of its nondisclosures, USSC agreed to, *inter alia*: include a summary of the consent order in its reports to its shareholders and prospective stock purchasers and in its next annual report; amend its past filings with the SEC; appoint an independent consultant to estimate the potential cost of environmental compliance; submit the consultant's report to the board and the SEC; and follow a course of implementing the consultant's recommendations.

In *Grossman v. Waste Management, Inc.*, plaintiff investors brought suit against defendant corporation and its principals for securities fraud on the grounds that the defendants had not disclosed environmental violations.<sup>26</sup> In *Grossman*, the defendant corporation stored,

24. *SEC v Allied Corp*, Civ No 77-373 (DDC Filed Mar 4, 1977).

25. *In the Matter of United States Steel Corp*, Rel No 34-223 (Sept 27, 1979).

26. *Grossman v Waste Management, Inc*, Fed Sec L. Rep (CCH) E 99, 530 (ND Ill 1983).

collected, processed, and disposed of chemical wastes. Unknown to the investors at the time of their purchases of stock, the defendant corporation had been shut down in three states for environmental violations. In addition, the company had illegally disposed of toxic substances in four other states. In two reported decisions, the court denied the defendant's motion to dismiss and denied the defendant's motion to stay the securities action pending the result of environmental claims against the defendant.

Occidental Petroleum Corporation (Oxy) got in trouble with the SEC for failing to make timely disclosures of a variety of environmental problems.<sup>27</sup> For example, when Oxy learned on June 8, 1978, that the EPA was going to bring a criminal action against a subsidiary of Oxy for violation of air pollution standards, Oxy failed to make the disclosure in its quarterly report for the April through June 1978 time period. It reported the criminal action and the subsequent *nolo contendere* plea in its next quarterly report. However, that was too late for the SEC.

The SEC went on to find a number of other areas where Oxy was less than forthcoming in its disclosures to the SEC and its shareholders about its environmental liabilities. One investigation was the Love Canal site in New York where an Oxy subsidiary estimated that it had dumped more than 21,000 tons of chemical waste. Notwithstanding the fact that the City of Niagara Falls began investigation of the site in April, 1977, Oxy failed to disclose its potential exposure to the substantial financial risk for the year ended December 31, 1977. The SEC noted that the State of New York eventually commenced an action against Oxy and its subsidiary for \$635 million to clean up the Love Canal.

As a result of Oxy's failure to disclose its exposure for those and other past environmental violations, Oxy agreed to designate a director as being responsible for preparing an environmental report to assess Oxy's total exposure for environmental matters; and to appoint a senior environmental officer to work with that director and an independent consultant to establish a group of recommendations that, once implemented, would assure both Oxy's environmental and disclosure compliance.

### **Confidentiality and Privacy Concerns**

The foregoing discussion has focused upon requirements that obligate or encourage companies to make disclosure concerning the impact of environmental issues upon their operations or properties. Equally important, however, is recognition of the circumstances in which a company may also have a substantial interest in managing the confidentiality of an environmental consideration.

Examples of these circumstances are both obvious and illustrative. In the many circumstances in which a company's processes require chemical compounds (either as a raw material or a cleaning agent), reports related to the handling and disposal of these chemical

27. In the Matter of Occidental Petroleum Corp, Rel No 34-16950 (July 2, 1980).

## ENVIRONMENTAL DEVALUATION

compounds, or their derivatives, may raise issues concerning trade secrets and proprietary commercial information. Under other circumstances, notwithstanding the preceding discussion of obligations to disclose, widespread public dissemination of the presence of an environmentally sensitive material (such as asbestos) in an office building may have extremely deleterious impacts on the property owner's relationship with new and potential tenants. Finally, public association of a company with a contaminated site that threatens or impacts upon public drinking waters or other health and safety concerns may have substantial adverse public relations impact on sales of the company's goods and services, whether the identification of the company with the problem is appropriately handled or not.

Among the issues to be considered at an early date is the advisability of securing a confidentiality or privacy order. Obviously, to the extent state statutes require the filing of information with the EPA or the state pollution control agency, the efficacy of a confidentiality or privacy agreement may be seriously undermined. If a privacy agreement cannot be negotiated with the appropriate governmental authority, the Federal Rules of Civil Procedure and the comparable provisions under state rules generally provide the courts with authority to issue protective orders. Many courts are familiar with the issues raised by requests for protective orders, and protective orders are issued on a fairly regular basis. The cases and context in which the courts have issued protective orders are too numerous for citation.<sup>28</sup>

Privacy agreements may be appropriately issued even in those states with statutory provisions providing for the privacy and/or public availability of documents and information furnished to governmental agencies. For example, Minnesota has a Government Data Practices Act (Minnesota Statute Chapter 13), which was originally enacted as a "sunshine" law, but was amended to provide limitations on the discoverability of information given to assessors. The Minnesota appellate courts have made extremely favorable comments on the utilization of privacy agreements notwithstanding the provisions of the Data Practices Act.<sup>29,30</sup>

Even in courts that may be reluctant to issue protective orders, the circumstances of environmental considerations (subject to established concerns for risks to public health and safety) present contexts in which the merits for securing a protective order are substantial.<sup>31</sup>

28. See, for example, 8 Wright & Miller, Fed Prac & Proc, § 2043, 305-6, and the cases cited therein.

29. See *Montgomery Ward & Co, Inc v County of Hennepin*, 450 NW2d 299 (Minn 1990): "relevant valuation data that the government has in its files must be made available, subject to an appropriate confidentiality order."

30. *State by Johnson v Colonna*, 371 NW2d 629 (Minn App 1985) at 364, where the court recognized that privacy interests contemplated by the Minnesota Government Data Practices Act: "can be met by a carefully awarded protective order, which limits discovery... and prevents information from becoming the subject of public revelation or discussion. It is common practice for trial courts to impose protective conditions on discovery matters when justice requires the parties or person to be protected from annoyance, embarrassment, undue burden, or other types of concern. See Minn R Civ P 26.03. Such a protective order should be utilized in this case."

31. Contrast *Midwest Plaza Limited Partnership v Hennepin Co*, Minn Tax Court File Nos TC-7639, TC-9087, TC-10032 (Sept 19, 1990), with *DHS Investments v Hennepin Co*, Minn Tax Court File No TC-8538.

**Appeal Decision Factors**

One of the most important factors to keep in mind is that this is an emerging field; there are relatively few guidelines. This makes the process considerably more difficult because both parties are struggling for an understanding of the issues and how to deal with them. The following is a brief list of considerations that are not directly related to an appeal, but that must be considered prior to an appeal.

**Legal Requirements of Notification.** There are a large number of parties that may need to be notified of the presence of an environmental problem. Among these are tenants, employees, short-term workers (e.g., telephone repairpersons, plumbers, electricians, and the like), neighbors, lenders, environmental authorities, and others. Often these individuals must be notified of the presence of an environmental problem whether an appeal is filed or not. However, if an appeal is to be filed, special care and attention must be given to whether or not the notifications have been properly accomplished. In addition, the form, content, and method of notification can sometimes influence the value of the property.

Employees generally have the most explicitly defined legal right to notification of the presence of an environmental problem. In particular, if OSHA regulations govern, then explicit notification requirements are contained in the Hazard Communications Rules. These rules require the employer to have a written program of notification and training for all employees who may come into contact with hazardous substances, materials containing hazardous substances, or hazardous wastes. These rules require the maintenance of a file of Manufacturer's Safety Data Sheets (MSDSs) for all products maintained on the premises, training in the proper handling and disposal of materials containing hazardous substances, and similar provisions. These obligations are generally well understood, but often overlooked is the fact that the Hazard Communications Rules do not cover just those items for which MSDSs can be obtained. For example, if a building was constructed with asbestos-containing materials, certain employees will fall within the notification provisions.

From the point of view of filing an appeal on a building containing asbestos fireproofing, the question must be asked: Have the appropriate employees been notified as required by the OSHA rules and regulations? This question is not as simple as it may appear because OSHA defines an asbestos-containing material differently than the Asbestos Hazard Emergency Response Act amendments to the Toxic Substances Control Act (the governing regulations for schools). These rules define an asbestos containing building material to be a substance containing more than 1 percent asbestos. The OSHA rules define a material of concern as containing more than 0.1 percent of a known or suspected carcinogen. Since asbestos is a known carcinogen, the problem should be obvious.

Short-term workers represent a major notification problem. A short-term worker is rarely an employee of the property owner, but the presence of a short-term worker and an environmental problem together can present a significant possibility of liability to the owner if

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ENVIRONMENTAL DEVALUATION

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proper notification has not been accomplished. To ensure that any short-term worker entering the premises has been properly notified of the presence of an environmental problem is difficult at best, but if a public appeal of ratable value is to be based on the presence of that problem, then notification becomes especially important.

The form and content of notification, and especially the methods utilized to notify a tenant are sometimes critical to the economics of the owner. To simply tell all tenants that, by virtue of their presence in the owner's building, they are exposed to a known carcinogen is hardly likely to generate a premium in rental income. On the other hand, the tenant must be made aware of the presence of the problem prior to reading in the evening paper that the appeal has been filed.

The point is that notification is critical to both the liability exposure position of the owner and to the economic well-being of the property. Proper notification is a highly complex legal and public relations problem that must be carefully considered. Note that notification and appeal are separate issues; notification must occur if the circumstances warrant.

Notification of lenders may also be required by loan documentation, either of environmental problems specifically associated with the property, or with the enterprise as a whole. Here the question of when to notify a lender may govern, although certainly before it hits the media.

**Public Relations in General.** During the course of registering people for the seminar, one individual commented that his superiors wanted tax appeals filed whenever justified and "so long as our name does not appear in the news." Although somewhat tongue-in-cheek, this comment should be carefully considered. I know of several major properties where appeals have not been filed even though several hundreds of thousands of dollars in tax bill reduction would have resulted, because the property was a major portion of the local tax base funding the school system.

How to tell the public that an environmental problem exists and how to justify to the concerned public that a reduction in tax value is appropriate is a very difficult topic because "public" must be considered in the plural sense. The public includes groups such as employees, shareholders, bondholders, other taxpayers, school administrators, lenders, and neighbors. Each of the particular viewpoints of these groups needs to be carefully considered and addressed prior to filing.

Consider the problem of the general public as a whole and its possible influence on the appeal process. Suppose that the case represents a significant amount of money from the point of view of the local populace. The public is likely to consider a reduction in value to be immoral—rewarding the polluter for having polluted. What appeal considerations may mitigate this reaction? Is it reasonable to consider an appeal based on the idea that the reduction in taxes will be applied to the remediation of the problem? If this were the case,

the presentation of the appeal may be significantly altered. The time for such alteration is probably before the public has an opportunity to voice its concern.

An appeal of ratable value, considered in the context of the cost to remediate the property, may represent a major portion of the difference between a successful property and an unsuccessful one. Should this fact be made public, and if so, how? A bald-faced statement that a failure to grant the request will result in the economic failure of the property may not be in the best interests of anyone. It may be better to present the cost of remediation and the offset in that cost resulting from the reduction as a "matched pair."

### **Impaired Value Opinion Development**

The model for the development of an impaired value opinion has already been provided. In this section I will discuss the meaning and methodology for developing the impaired value opinion in some detail, including cautions in developing the unimpaired value opinion, (U).

**Development of the Unimpaired Value Opinion.** The unimpaired value opinion is the basis for the development of an impaired value opinion, should one be required. Unimpaired opinion development can be accomplished in much the same way as value opinions have been developed in the past utilizing the sales comparison, income, and cost approaches, but with some cautions.

The cost approach is probably the least vulnerable to distortions resulting from environmental impairments, provided that we recognize that "typical" construction may be considerably different from what has previously been considered typical in the marketplace. Take for example an industrial facility that is to be constructed on virgin land in a municipality. The local publicly owned treatment works (POTW, or sewage plant to most of us) will have a National Pollution Discharge Elimination System (NPDES) permit that allows it to accept and handle specific quantities and types of wastes. If the industrial plant will discharge wastes other than those the POTW is permitted to handle, or in quantities greater than those allowed, then the typical construction of the industrial facility will have to include a pretreatment works that will be required to have its own NPDES permit. If the facility will be processing liquid hazardous materials it may need to have a stainless steel floor drain system and special overflow catch basins. The facility may need storm water catch basins and may need to pretreat storm water, and it may need a specially constructed area for the storage of solid and liquid hazardous substances and wastes. All of these items would have to be considered to be typical construction given present day environmental rules.

The income approach offers a more complicated problem for establishing the unimpaired value. Specifically, the existing income and expense streams may be influenced by the presence of hazardous substances through depressed rental rates or inflated expenses. Ideally, the expenses associated with environmental issues in the operation of a property should

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ENVIRONMENTAL DEVALUATION

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have their own line item in the budgets and records—for example, a line item for the operations & maintenance program. Unfortunately, owners do not yet recognize the value of specifically identifying their budgets for dealing with environmental problems. The appraiser must exercise care to ensure that these income offsets and expense increases are identified and adjustments made to arrive at the unimpaired value. Otherwise, the impaired value opinion may include a second adjustment for the same items, effectively lowering the value of the property twice for the same concerns.

The sales comparison approach offers the greatest possibilities for problems in establishing the unimpaired value because comparables may not be comparable. Can you be certain that the comparable sale prices do not have adjustments, downward or upward, for undisclosed environmental problems? Owners are reluctant to reveal that a plume of contaminated groundwater underlies their property to anyone other than the buyer, and the buyer may be motivated to pay a premium price for the property because it is their plume. If the environmental problem were known, without detailed information on the specific cost to remediate that specific problem an adjustment to sale price will be difficult to impossible to make, unless one of the parties to the transaction is willing to reveal the amount of the adjustment.

A knowledge of the local marketplace is critical to establishing the unimpaired value, especially when the local marketplace's reaction to an environmental concern tends to be strong or the local authorities are contemplating changing the environmental criteria for properties. The unimpaired value opinion must be just that, the value of the subject as if no environmental impairments exist. If it is not, then the relationship for establishing the impaired value opinion will be compromised.

Note also that the sales comparison approach generally cannot be used to directly establish the impaired value. The impact of an environmental problem on value is unique and therefore there are generally no comparables, nor are there any acceptable methods for adjusting one environmentally impaired property value to make it approximately comparable to another. This will have an important bearing on any tax tribunal that attempts to insist on market sales proof of impaired value, for in all probability market data for impaired properties simply will not exist.

**The Cost of NCP-defined Remediation.** It would be nice to be able to provide a single impaired value opinion for a property instead of a range of impaired values. Unfortunately, this is not possible unless the client is prepared to pay for Phase III-level work and to wait a period of months. Short of Phase III work, all that will be possible is to provide a range of values that, depending on the quality of the Phase I and II work, may be relatively broad. This is a result of the uncertainties involved in developing estimates based on incomplete information in a number of critical areas, as discussed below. The situation prior to Phase

III is roughly equivalent to asking a contractor to estimate the cost of a building before the specific site is known or the floor plans or structural/architectural design has reached a higher than conceptual stage.

The NCP sets forth the protocols for determining how the human health and/or environmental risks will be mitigated. Generally these protocols require the following steps.

1. Characterization of the environmental risk. Specifically, the identification of each of the risk sources present; identification of the primary control mechanisms and their current and likely future status with respect to protecting human health and/or the environment; analysis of the transport and secondary control mechanisms to determine their efficiency in bringing the risk source and the targets into proximity to each other; and identification of targets, whether human or sensitive environments.
2. Analysis of the environmental risks to determine if an actual threat to human health and/or the environment exists, and the extent of severity of that threat.
3. Identification of the Applicable and Relevant and Appropriate Requirements (ARARs) that will govern the objectives and methodology for site remediation. Simply identifying the federal, state, and local remediation requirements is a major task and may consume hundreds or thousands of man-hours of risk assessment and site engineering work, and require large quantities of analytical data. In the simplest cases of the remediation of asbestos in a commercial office building or the remediation of a leaking underground storage tank, the need to formally identify the ARARs have been dealt with through codification of the responses required for these common situations. The uncommon situations require far more highly specialized analysis.
4. Development of risk/benefit estimates and implementation budgets for each of the available remediation alternatives.
5. The selection of the most appropriate remediation strategy based on the following objectives in order of priority:
  - a. Protection of human health and/or the environment.
  - b. Technological feasibility.
  - c. Economic feasibility.
  - d. Local considerations such as those developed through public hearings, or specialized requirements (e.g., capabilities of the local POTW or landfill).

From the appraisal viewpoint this process is critical and produces the value for the cost of implementing NCP-defined remediation ( $C_{NCP}$ ), which is needed in the impaired value relationship. It is the environmental equivalent of the "typical" construction cost. From the owner's viewpoint something even more important may result. If litigation for recovery of remediation costs is even remotely contemplated, it will be necessary to demonstrate that this process has been utilized to establish the methods and thereby the recoverable costs.

The NCP process will provide to the owner and the appraiser several key items of information. First, it provides the estimated costs and timing for remediation activities, from which a present value of remediation costs can be calculated. Second, the process should provide a clear outline of restrictions on use resulting from the presence of the environmental

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ENVIRONMENTAL DEVALUATION

risk at all stages of the projected remediation—before, during, and after. Third, the process should reveal some specialized areas of concern for the owner and appraiser, particularly in the evaluation of stigma. This may include the possibility of litigation against the owner for contamination of neighboring properties or damage to individuals or natural resources.

As mentioned earlier, the development of the value of  $C_{NCP}$  is equivalent to the specification of the "typical" cost of an improvement. The value of  $C_{NCP}$  can only be developed through the formal consideration of the NCP for the specific site, called the Remedial Investigation/Feasibility Study (RI/FS), or through a less formal analysis that nevertheless considers all of the same issues. The minimum information required to develop  $C_{NCP}$  is normally that produced through the Phase III analysis of the subject property; Phase I or II data will be insufficient for anything other than an approximation over a broad range as a result of large uncertainties.

**Cost of Restrictions on Use.** The number and type of environmental restrictions on use is large and increasing. The Clean Air Act provides for a system of discharge permits that, in certain local jurisdictions, may extend to the local body shop or dry cleaner and specify the annual quantity of particular substances that the facility may release into the atmosphere. If the facility will exceed the permitted level, then either technological means must be employed to reduce emissions below the specified level, the facility must purchase from another facility additional discharge capacity, or the facility must restrict its operation. The highest and best use of the property may be restricted to some upper limit of discharge capacity, and thereby some upper limit of productive use.

In a similar vein, the NPDES permits may significantly restrict the upper capacity limit of a property's highest and best use, or preclude certain uses altogether due to a lack of any discharge capacity for liquid wastes. In a different category, the ability of a firm to dispose of its solid waste may be severely limited by the capacity of landfills or other storage facilities to accept the waste. The local environmental lobby may also provide limiting factors on the use to which a specific property may be put, with or without formal regulatory restrictions.

Restrictions on use may also come in the form of wetlands or sensitive environment concerns, and these limitations may be in the form of permanent or semi-permanent impediments to development. The cost of development of a property containing wetlands will be significantly greater than the cost of development for a property without wetlands if the wetlands are to be disturbed in any way. The cost of simply obtaining a 404 Dredge and Fill Permit from the Army Corps of Engineers can be substantial in terms of both direct engineering costs to support the application and the delay in development time. If the wetlands are to be destroyed, then, depending on the jurisdiction and type of wetlands, mitigation in the form of the construction of replacement wetlands at an area destroyed to

replacement area ratio ranging from 1:1 to greater than 1:3 may be required. Replacement may not be possible thereby precluding the intended use. Replacement wetlands may also carry an ongoing maintenance cost to the owner of the original wetlands property that can be both substantial and perpetual. The presence of endangered species may totally preclude development. Bear in mind that endangered species include both flora and fauna.

The Clean Water Act, Clean Air Act, Solid Waste Disposal Act, Endangered Species Act, National Environmental Policy Act (if federal funds are involved), Toxic Substances Control Act, and others may all place restrictions on how a property may be operated and its ultimate productive capacity.<sup>32</sup>

**Stigma, or the Impact of Uncertainties.** To this point I have dealt with issues that have presumably been quantifiable. In actual point of fact they have only been partially quantifiable. Until remediation has been accomplished there are a great number of areas in the foregoing where only rough estimates can be provided regardless of the amount spent in investigation or analysis. It is for this reason that a number of impaired property valuation experts have argued that prior to the completion of remediation the marketplace may extract a premium over the estimated cost of remediation of as much as 100 to 200 percent of that estimated cost. Note that this premium, which may rightly be titled stigma, is based primarily on the estimated cost of remediation, not on the unimpaired value of the property. *There is no relationship between the magnitude of an environmental liability and the unimpaired value of the property.*

With respect to the valuation of environmental impairments, the word stigma has been both touted and maligned. Stigma, or negative intangible impacts on the value of a property resulting from environmental impairments, is real and may, at times, represent a significant portion of the diminution in value. However, it must be clearly understood that stigma is generally a reaction by the marketplace to the uncertainties involved in a specific situation. By its very definition, uncertainty cannot be predicted with accuracy. Stigma may be best understood both in terms of its behavior over time, and in terms of the major components of uncertainty that provide the basis for marketplace perceptions.

Based on what is currently known, stigma may be broken down into a series of component factors that must be dealt with in the appraisal of an impaired property. These are:

$$S = f(U_E, U_R, U_M, U_F, C)$$

Read  $S = f()$  as: Stigma is a function of the variables inside the ().

32. Clean Air Act (42 USCA §§ 7401 et seq. (1970)); Clean Water Act (33 USCA §§ 1316 et seq. (1972)); Safe Drinking Water Act (42 USCA §§ 300 et seq. (1976)); Resource Conservation Recovery Act (42 USCA §§ 6901 et seq. (1976)); Toxic Substances Control Act (15 USCA §§ 2601 et seq. (1979)).

## ENVIRONMENTAL DEVALUATION

Where:

$U_E$  = Uncertainty concerning engineering estimates of cost to control.

$U_R$  = Uncertainty concerning regulatory requirements, present and future.

$U_M$  = Uncertainty concerning the marketplace's reaction to the presence of an impairment in a given condition.

$U_F$  = Uncertainty concerning the financial marketplace's reaction to the presence of an impairment in a given condition.

$C_t$  = Change in marketplace's reaction to the presence, or past presence, of an impairment over time.

The explanations of the symbols used above are as follows:

$U_E$ : The uncertainty concerning engineering estimates for the cost to control or cure. The problem is that the engineering estimate is not for something as simple as the cost to build a building. Typically a remediation project, especially one involving soils or groundwater, is actually conducted on the basis of "dig until there is nothing more to dig." Punching a few holes in the ground in an effort to determine where the contamination is will not provide more than an approximation of the true final volume of soils to be removed or treated, for example. Therefore stigma must contain an element that represents this uncertainty in the engineering estimate versus the audited, after-completion cost.

$U_R$ : Along with the uncertainty concerning engineering estimates goes the uncertainty concerning regulatory decisions that govern a specific situation. Unfortunately, regulatory decisions are not based on pure science, but on science, politics, and sometimes the individual reaction of the specific regulator assigned to the case. In addition, regulations change, resulting in a change in the scope of remediation work or a need to completely redo the work. Regulatory decisions on the achievement of cleanup status are contingent, not final. All of these items lead the marketplace to consider the impact of regulatory uncertainty on the value of the property. Under certain circumstances, the uncertainty can operate in the opposite direction—for example, when the published governing agency guidance requires a complex approach, but approval of a less complex approach is considered possible.

$U_M$ : The uncertainty concerning the marketplace's reaction to the presence (past or present) of an environmental impairment is the most often discussed component of stigma. Some may, with justice, argue that it is stigma and is comparable to the reaction of the marketplace to a deficiency. This view may overlook the importance of the other factors identified here.

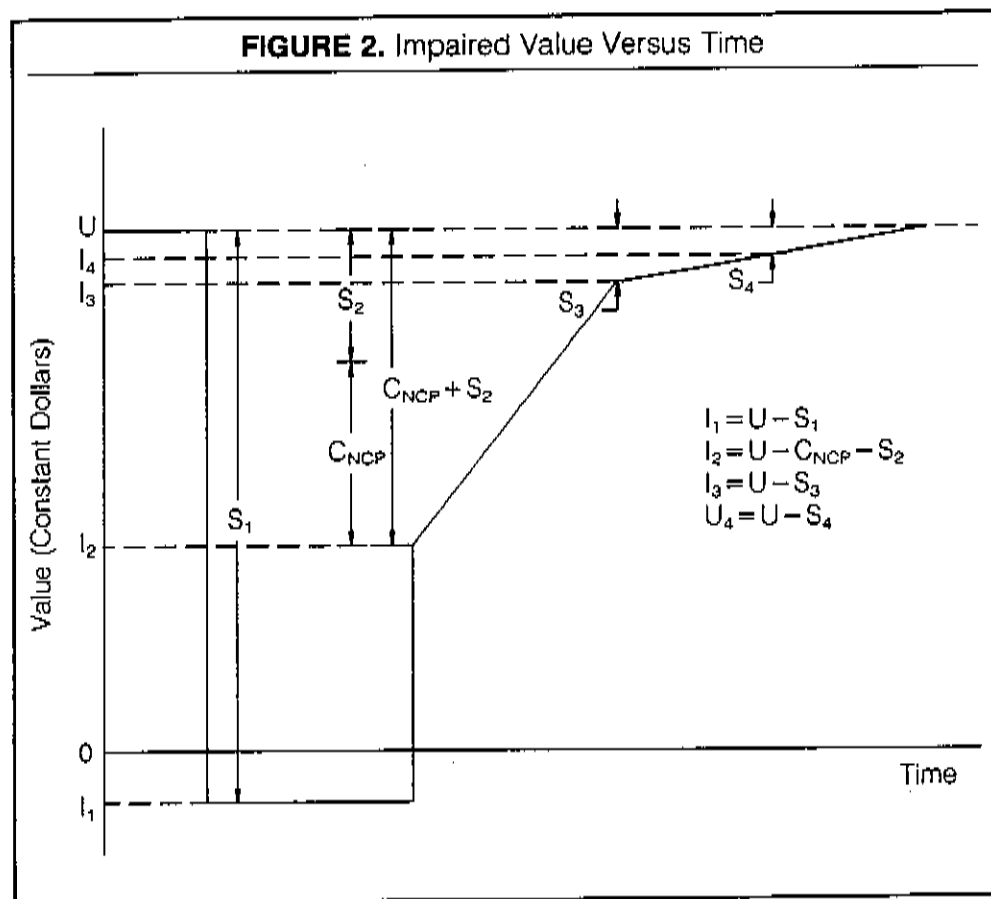
Marketplace uncertainty is generally a function of three factors:

1. The strength of demand for the subject property in the marketplace (stronger demand, less uncertainty);
2. The knowledge of the buyer relative to the environmental impairment (greater familiarity, less uncertainty); and
3. The quality of the remediation estimates (higher perceived quality, less uncertainty).

$U_F$ : Uncertainty concerning the financial marketplace's reaction to the presence of an environmental impairment. The financial marketplace has widely varying reactions to the presence of an environmental impairment. The reaction appears to be dependent upon a number of objective and subjective factors including:

- The financial strength of the institution
- The status of the subject property's local economy and market demand
- The type and extent of the environmental impairment
- The perceived quality of the technical analysis of the environmental impairment
- The perceived status of the regulatory attitudes toward the impairment
- The visibility and quality of the impairment's remediation.

$C_i$ : The impact of stigma on the value of a property has a strong time-dependent relationship. The following discussion is based on Figure 2.



## ENVIRONMENTAL DEVALUATION

Suppose for purposes of discussion that we have a property that has an unimpaired value of  $U$  at time  $t_0$ , and that some time later it is discovered that the property has a case of the polygoshawfuls. We will ignore the issues of restrictions on use and incremental changes in financing cost for the moment to simplify the discussion.

At first the marketplace finds itself unfamiliar with polygoshawful and the severity of the contamination is not known so no one is willing to purchase or finance the property. The new market value ( $I_1$ ) at this time ( $t_1$ ) cannot be greater than zero (no willing buyer, possibly no willing seller, and no financing, therefore at least no market value). This may be thought of as a pure stigma effect, ( $S_1$ ) and is primarily dependent on the marketplace's reaction to all of the uncertainties.

This condition will extend for some period of time, generally until the extent of the problem has become reasonably quantified (until the cost for remediation under the NCP has been established, for example). At the point the value of  $C_{NCP}$  becomes known, the value of the property becomes  $I_2$ .  $I_2$  is greater than  $I_1$  both because  $C_{NCP}$  has become known and some of the uncertainty has been resolved.

In general note that  $I_2$  is still less than the unimpaired value ( $U$ ) minus the estimated cost to deal with the problem ( $C_{NCP}$ ). The difference is accounted for as the new stigma amount,  $S_2$ . The reason for the difference is that while some of the uncertainties have been resolved, some uncertainties continue to exist. The marketplace still does not know if the actual cost to deal with the problem has been correctly estimated ( $U_E$ ), whether the regulators will approve the remediation program ( $U_R$ ), whether the property will be truly clean or if the definition of clean will change rendering the property once again unclean ( $U_R$  again), whether lenders will lend and if so on what terms ( $U_F$ ), etc.

When the remediation activity required under the NCP has been completed, there is a new market value established,  $I_3$ . This new value is likely to be greater than  $I_2 + C_{NCP}$  because again some of the residual uncertainties will have been resolved, particularly the uncertainty in the engineering estimate ( $U_E$ ) and some (although not all) of the uncertainty in the regulatory reaction ( $U_R$ ). The uncertainty in the marketplace's reaction to the contamination ( $U_M$ ), even though cleanup has been effected, will still remain to some extent, as will the uncertainty concerning financing ( $U_F$ ), resulting in a new stigma amount  $S_3$ . From this time ( $t_3$ ) to a point in time in the future ( $t_4$ ) these uncertainties appear to dissipate and the property achieves a new market value of  $I_4$  that, while not quite back to the original unimpaired value  $U$ , is close to that value, leaving a new stigma of  $S_4$ . Indications are that the time required to achieve this status is on the order of three to five years after the completion of remediation.

After time  $t_4$  the property will probably gradually close the gap between the value  $I_4$  and the unimpaired value  $U$ . That is, the magnitude of  $S_4$  will shrink toward zero. This gap may never completely close, however, if there is an incremental transaction cost levied

against the property for increased "due diligence" on the part of each new buyer because of the past existence of an environmental risk.

There may be other factors influencing the magnitude of stigma, but the foregoing will hopefully paint a somewhat more detailed picture of the manner in which stigma operates in influencing the impaired value of a property.

**Impaired Financing Cost.** At this point we should be able to establish or estimate financing cost penalties associated with the property. The report of the environmental experts and a knowledge of the unimpaired financing cost should provide the basis for developing a clear and accurate picture of how financing institutions will likely view the situation. Given the new lender liability rules promulgated by the EPA, the position of the lender is beginning to clarify, although not necessarily to the extent that lenders would like, and some assurances regarding lender liability have been provided. The key parameter is that the lender not become overly involved in the management of the debtor's business to the extent that the management of environmental risks is influenced. As long as this separation is maintained, the lender can be reasonably assured of the "secured creditor" exemption offered under CERCLA.

While the lender liability rule is important, credit concerns may be more important. The provision of several key items of information developed in the foregoing  $C_{NCP}$  and  $C_R$  analyses may positively influence the credit decision and the financing costs. For example, if the lender knew that the debtor's budget planning included provisions for the remediation of existing environmental risks, provisions for protection against future additional environmental risks, a self-insurance fund to provide financing for emergencies, and similar provisions, it would seem that a more positive response would be forthcoming. It is even possible that the more forward-thinking lenders may choose to assist in the financing of such programs and would at least recognize that the development and implementation of these specific budgets can provide key information on what the lender must not disturb if involvement in the debtor's financial operations should become necessary.

In any event, the willingness of lenders or others in the financial marketplace to finance an environmentally risky situation, and the terms of that financing compared to the terms of financing for a similar but nonrisky situation will allow for the development of the last key piece of information necessary to the establishment of the impaired value opinion, the incremental cost of financing. Both debt and equity holders have a significant place in this part of the analysis as both may demand increased rates of return to compensate for increased risks.

### Conclusions Concerning Establishing the Impaired Value

The impaired value opinion, defined as:

$$I = U - C_{NCP} - C_R - C_F - S$$

will be a difficult and complex valuation assignment if something more than a very broad range of impaired values are to be provided to the client, and much of the information required is simply not within the area of normal value data development. The valuer must rely heavily on complex technical assessments performed by other experts who are not generally familiar with the broad scope of information required to establish value. To deal with these concerns, it would seem that the valuer should follow several practices with respect to both the client and the suppliers of information on environmental impacts.

With respect to the client, the valuer should make the following points clear from the beginning:

1. That an unimpaired value opinion can be rendered subject to the quality of verifiable data available within each of the approaches used to establish value.
2. That a so-called Phase I Audit *will not* allow the valuer to express an impaired value opinion and is unlikely to provide critical information about restrictions on the highest and best use resulting from environmental regulations. Further, the Phase I Audit and even the ASTM Phase I Environmental Site Assessment are only a part of the basic information required to determine if an environmental impairment to value exists.
3. That environmental experts must be retained by the client, and analytical investigations conducted to a level of assurance acceptable to the client that will provide reasonable quantitative estimates of the remediation plan, budgets, and use restrictions on the subject property. Without these plans, budgets, and use restrictions it is not possible to provide a reasonable range of estimated impaired values for the subject property.
4. That until the completion of remediation it will only be possible to specify a range of values, possibly with a most likely value, for the impaired value opinion. The breadth of the range of values will be totally dependent on the quality and completeness of the environmental expert's work. It is not within the control of the appraiser.

To support the development of  $C_{NCP}$  to cover expenditures for existing environmental impairments,  $C_R$  to cover restrictions on use,  $C_F$  to estimate the incremental cost of financing, and  $S$  to estimate the impact of uncertainties on the marketplace's perception of value, the environmental expert must provide to the appraiser the following key assurances and information based on that expert's work.

1. Assurance that all reasonable efforts have been expended within the constraints of time, available resources, and defined scope of work as set forth by the client to identify the environmental risks associated with the property, and all reasonably identifiable environmental constraints on the use or operation of the property.
2. Assurance that at least an informal analysis of the existing situation has been performed in reasonable conformance with the National Contingency Plan or its applicable equivalent, and that the expert's budgets and recommendations are in reasonable conformance with those requirements.

3. A budget, including expenditure timing that may extend 20–30 years into the future, that covers the planned response actions for dealing with the existing environmental impairments.
4. A budget for the operations & maintenance program that will almost certainly be required for any commercial or industrial property. This may be limited in form to the cost for the owner to reasonably ensure that tenants are complying with all applicable environmental laws, but because the owner of the property is the first party that will be held responsible without regard to who actually created the problem, this is a reasonable cost of ownership.
5. A budget to accrue funds for emergency response to environmental problems. This is essentially the provision of a self-insurance fund and will be highly dependent on the specific property situation and use.
6. A budget for the implementation of needed upgrades to the property to bring it into compliance with applicable environmental laws and regulations and to minimize future liabilities. This will generally be a capital expenditure budget and may be an integral part of the construction costs for a new facility. The appraiser's concern will be to recognize whether or not these expenditures are a necessary part of the typical improvement under the specific circumstances.

With respect to stigma, the environmental experts should provide quantitative information on the sensitivity of their estimates to changes in fundamental assumptions, such as the quantity of materials to be remediated, changes in remediation costs or restrictions on use if the contamination is more or less severe than indicated, the probability of the acceptance of the remediation plan by the governing authorities, and an estimate as to the possibility that, at the completion of remediation, no further contamination will be discovered at a later date or that the rules governing the cleanliness of the site will not change in a manner that will result in re-remediation. Note that these will be expressions of uncertain future events; at best they will be highly qualified and qualitative, and the appraiser will have to form an opinion as to how the value of the property will be perceived by the marketplace under these circumstances.