

Letter to our Readers

May 2006

Dear Colleague,

The role of the Corporate Environmental Manager has evolved from one requiring a strong science background and project management skills to one necessitating financial knowledge as well as management skills. Among the responsibilities of the Environmental Manager are environmental liability estimates, originally used to primarily provide cost controls for corporations, but now prepared for a variety of purposes and under increasing scrutiny as a result of the Sarbanes-Oxley Act of 2002. This issue of *Trends* explores the complex interface of today's environmental and accounting requirements.

Contributors to this issue include Dr. David Langseth, a professional engineer and expert in evaluating and managing environmental liabilities, and Mr. Andrew Bittner and Mr. Kurt Herman, both Gradient environmental engineers. Joining them as our guest author is Scott Deatherage, Esq., an attorney at Thompson & Knight, who provides insight into the maze of asset retirement obligations.

We expect this issue of *Trends* will give you a better appreciation of the increasingly challenging roles of and expectations placed on today's environmental managers.

Yours truly,



Neil Shifrin, Ph.D.  
 President and Founder

# Environmental Liability Management

By David E. Langseth, Sc.D., P.E.

*While the growth in new environmental regulations has slowed, emerging rules on how environmental liabilities are estimated and reported are imposing new obligations on environmental professionals.*

Corporate environmental liability management (ELM) has evolved dramatically over the past 40 years. Developed initially as a response to the rapid growth in

federal and state environmental legislation that started in the 1970s, emerging ELM concepts are now being driven by new accounting requirements for identification, estimation, and disclosure of potential environmental liabilities and increasingly sophisticated financial management techniques.

Early ELM approaches most often involved "end-of-the-pipe" technical

solutions – focusing on treatment and disposal of wastes or remediation of past releases – to achieve compliance with new environmental regulations. As early as the 1970s, a few companies recognized the value of process changes to minimize waste generation. By the late 1980s and early 1990s, this concept was becoming widespread, and led to ELM issues being addressed by a broader spectrum of staff within corporations, including product planning and production departments.

Compared to the 1970s and 1980s, the pace of new environmental law and regulation development has slowed over the past 15 years. This has allowed approaches for dealing with these regulations to mature. But the emergence of Generally Accepted Accounting Principals (GAAP) related to ELM has

*Further pressures on financial disclosures related to environmental issues are coming from both investor activist groups and federal government agencies.*

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# Environmental Liability Management

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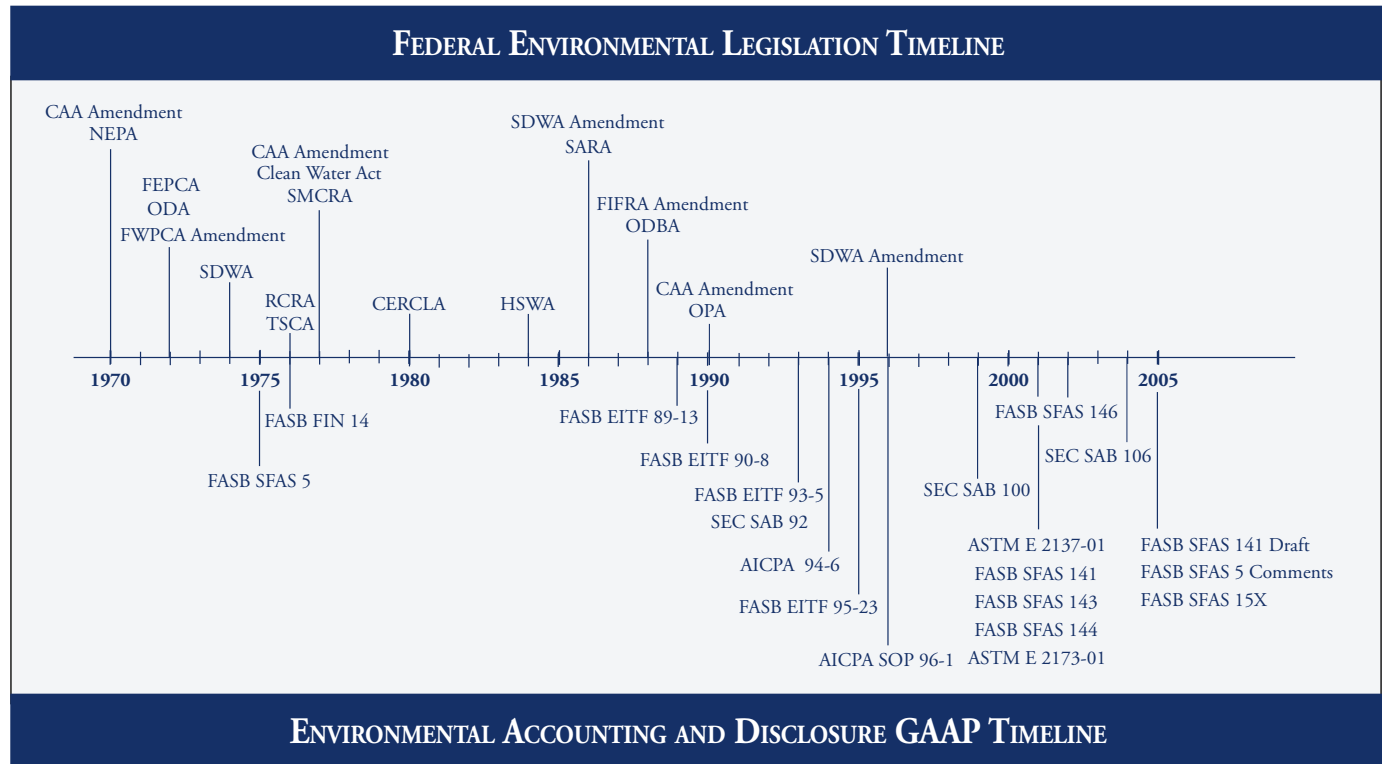
accelerated. The timeline shows that for the past few years GAAP development for environmental issues parallels where environmental legislative development was in the 1970s and 1980s. Although GAAP are primarily directed to accountants, these new GAAP influence how environmental liabilities are estimated and reported, and impose obligations to identify and report some environmental liabilities that are not imposed by environmental laws and regulations (see related articles). Thus, many corporate environmental specialists now need to develop a working knowledge of the GAAP listed on the timeline. GAAP include some rules created pursuant to legislation, but also substantial authoritative guidance created by private organizations, notably the Financial Accounting Standards Board (FASB) and the American Institute of Certified Public Accountants. Of the 18 items from GAAP listed on the timeline (ASTM standards are not part of GAAP), only three originated with a government agency.

Contingent liability estimation and accounting has been part of the ELM landscape since 1975, but the dizzying array of new GAAP has left many environmental and accounting professionals in a quandary about how to proceed today. For

example, it may be known that there is soil contamination under a building that will need to be remediated when the building is taken out of service, but the timing of that event and the extent of contamination or required remediation are uncertain. As a result of the complexity of these GAAP, several companies have recently announced delayed Securities and Exchange Commission filings related to dealing with FASB Interpretation 47 on Contingent Asset Retirement Obligations, which are liabilities related to taking an asset (e.g., building, equipment, or land) out of service for which the timing or amount of the liability is uncertain.

Compounding these issues, the Sarbanes-Oxley Act of 2002 is shining a brighter spotlight on all financial reporting, making compliance with new GAAP increasingly important. Further pressures on financial disclosures related to environmental issues are coming from both investor activist groups and federal government agencies. For example, the Rose Foundation released a 2004 report titled “Fooling Investors and Fooling Themselves: How Aggressive Corporate Accounting and Asset Management Techniques Can Lead To Environmental Accounting Fraud.” The Government Accounting Office published a July 2004 report on Environmental Disclosure suggesting actual environmental liabilities might be substantially

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CAA = Clean Air Act, NEPA = National Environmental Policy Act, FEPCA = Federal Environmental Pesticide Control Act, FWPCA = Federal Water Pollution Control Act, ODA = Ocean Dumping Act, SDWA = Safe Drinking Water Act, RCRA = Resource Conservation and Recovery Act, TSCA = Toxic Substances Control Act, SMCRA = Surface Mining Control and Reclamation Act, CERCLA = Comprehensive Environmental Response Compensation and Liability Act, FIFRA = Federal Insecticide, Fungicide and Rodenticide Act, HSWA = Hazardous and Solid Waste Amendments, SARA = Superfund Amendments and Reauthorization Act, ODBA = Ocean Dumping Ban Act, OPA = Oil Pollution Act, FASB = Financial Accounting Standards Board, SFAS = Statement of Financial Accounting Standards, FIN = FASB Interpretation Number, EITF = Emerging Issues Task Force, SEC = Securities and Exchange Commission, SAB = Staff Advisory Bulletin, AICPA = American Institute of Certified Public Accountants, SOP = Statement of Position, GAAP = Generally Accepted Accounting Principals

# Liability Estimation Frameworks

By David E. Langseth, Sc.D., P.E. and Kurt D. Herman, M.Eng.

*A general trend toward estimating environmental liabilities at "fair value" could have significant ramifications.*

Since 1975, Generally Accepted Accounting Principles

*These changes are part of a broader trend in which both U.S. and international accounting standards are converging on a fair value approach to asset and liability recognition.*

(GAAP) have required companies to estimate and report contingent environmental liabilities, such as polluted site cleanup costs, when the liability has been created by a government agency claim or a lawsuit. The primary GAAP governing

such reporting is Financial Accounting Standards Board (FASB) Statement of Financial Accounting Standards (SFAS) No. 5, and the associated FASB Interpretation No. 14. Under these rules, if a liability is both probable and can be reasonably estimated, a company is required to accrue for the liability. The accrued value is required to be either the most likely value in the potential range of values, or the minimum value, if a most likely value cannot be determined. The maximum potential value also must be disclosed, although not accrued, if this information is material

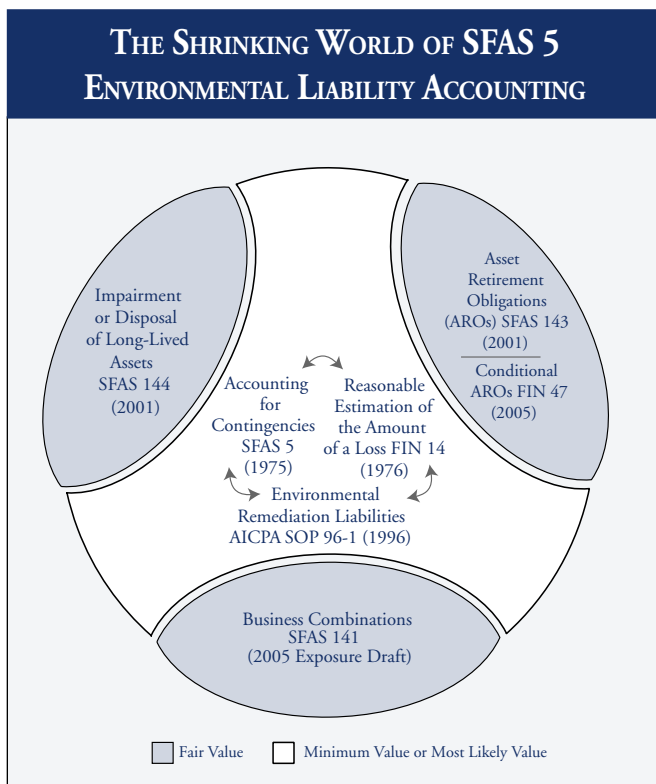
to the financial condition of the company. Other methods of estimating contingent liabilities (such as expected value models, including Monte Carlo analysis and decision tree analysis, which blend various possible future events into a single representative value) may provide better characterization of a liability (ASTM 2001), but have not been prescribed for use in corporate accounting for contingent liabilities.

As the timeline presented in the first article shows, there has been a dramatic increase in the number and complexity of environmental liability reporting requirements in recent years, all of which are moving away from the concepts of SFAS 5/FIN 14, requiring instead that environmental liabilities be estimated *via* "fair value" methods.

The first major shift to fair value estimation for environmental liabilities was in SFAS 143 (June 2001), though few recognized the impact on environmental liability reporting at that time. SFAS 143 required that liabilities related to retirement of assets, such as asbestos removal when a building is taken out of service, must be separately reported at the fair value of that liability. FASB Interpretation 47 (March 2005) clarified that these rules applied to contingent (uncertain) asset retirement obligations, including a broad range of environmental issues. Previously, if such liabilities were separately reported, the SFAS 5 valuation methods would have been used. SFAS 144, which required financial impairment of long-lived assets to be evaluated using fair value estimates, was also released in 2001. More recently, an exposure draft version of SFAS 141, on business combinations, will, if adopted, require that liabilities associated with mergers and acquisitions be reported at fair value (see related article). These changes are part of a broader trend in which both U.S. and international accounting standards are converging on a fair value approach to asset and liability recognition. The figure shows the shrinking universe of contingent liabilities to which the SFAS 5 accounting approach can be applied.

The concept of fair value is relatively simple – it is essentially an open market price – but specific approaches to estimating fair value are still evolving. In 2005, FASB released a working draft of SFAS 15X, establishing a hierarchy of fair value estimation methods with quoted prices being the best, observable market prices next best, and "other" valuation methods least preferred. Such "other" valuation methods include the expected values approach discussed above, but do not include the SFAS 5 methods.

The SFAS 15X "best" fair value estimation methods are not readily available for environmental liabilities. Some newer



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# M&A Emerging Issues and Requirements

By Andrew B. Bittner, M.Eng., P.E.

*New accounting rules are dramatically shaping how environmental liabilities must be addressed during mergers and acquisitions.*

In 2005, the U.S. EPA promulgated the All Appropriate Inquiry (AAI) rule on Environmental Site Assessments (ESAs), prescribing the investigation process that prospective property purchasers must perform to gain protection from Superfund liability. At approximately the same time, the Financial

*The new SFAS 141 rule, thus, makes evaluation of the consistency between ESA results and liabilities already recognized on the acquired company's books an increasingly important part of the due diligence process.*

Accounting Standards Board published their "Exposure Draft Statement of Financial Accounting Standards (SFAS) 141 on Business Combinations" redefining how public companies must account for assets and liabilities acquired during mergers and acquisitions. These

new rules change how certain environmental liabilities are recognized, and require increased assessment effort and financial reporting transparency.

ESAs are used during property transactions to evaluate the potential for environmental contamination and provide protection to the prospective purchaser from Superfund liability. The new AAI rule, which will become effective on November 1, 2006, addresses the 1986 Superfund Amendments and Reauthorization Act liability defense that landowners must demonstrate that they "did not know and had no reason to know" about environmental impacts at the time the property was purchased. That defense requires purchasers to conduct "all appropriate inquiries" regarding ownership, uses, and history of the property. Prior to the AAI Rule, a series of non-binding ASTM standards had been the benchmark for ESA practices, even when potential Superfund liability was not a primary issue.

Under the AAI rule, an Environmental Professional (EP) must prepare an opinion regarding the likely presence of contamination at the prospective property. Information the EP must consider includes interviews with past and present owners and occupants, visual inspections of the facility and adjoining properties, historical sources of information such as aerial photos and insurance maps, government records, and a comparison of the purchase price to the value that would be expected if the property had no environmental impacts.

Exposure Draft SFAS 141, if approved, will replace the

current SFAS 141. The draft retains the primary requirement of the current SFAS 141 that the same accounting methodology must be used for all mergers and acquisitions. Previous accounting guidelines allowed the use of alternative methods to report assets and liabilities, which led to inconsistencies in the accounting for similar transactions. SFAS 141 requires that acquired assets and liabilities be recognized separately (rather than pooling the value of assets and liabilities together into a net value). This means that businesses must allocate their purchase price between assets and liabilities using the "fair value" at the time of purchase. These same liabilities might appear on the acquired company's books at the minimum potential value under the SFAS 5/FIN 14 rules. The new SFAS 141 rule, thus, makes evaluation of the consistency between ESA results and liabilities already recognized on the acquired company's books an increasingly important part of the due diligence process.

Both of the aforementioned rules are changing how environmental liabilities must be addressed during mergers and acquisitions. These rules will require more effort to assess potential environmental liabilities before an asset is acquired and more transparency in reporting the environmental liabilities that come with the acquisition.

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## References:

- Federal Register. 2005. Environmental Protection Agency. 40 CFR Part 312. Standards and Practices for All Appropriate Inquiries; Final Rule. November 1.
- ASTM. 2005. Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process – E1527-05.

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## Liability Estimation Frameworks

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approaches for managing environmental liabilities may, however, indirectly provide some of the needed market information, such as: 1) remediation cost cap insurance quotes; and 2) liability transfer cost estimates by "wrap-around" remediation contractors who are willing to buy the liability (pollution) along with the asset (the property). This trend towards estimating contingent environmental liabilities at fair value will require companies to develop new approaches and may have significant financial repercussions if liabilities previously accrued at minimum values fall under the new rules.

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## What's New at Gradient

### Appointments

**Dr. Barbara Beck** was elected junior councilor of the Metals Specialty Section at the Society of Toxicology.

**Dr. Barbara Beck** was selected as specialty editor for *Toxicology and Applied Pharmacology*.

### Upcoming Presentations

**New York, NY. May 18, 2006. Peter A. Valberg** will serve as the technical expert on potential health risks associated with nanomaterials for the mock NEPA hearing at the 5th annual NanoBusiness Alliance Conference.

**Cambridge, MA. June 19, 2006. Peter A. Valberg.** "Particle Deposition, Clearance, and Retention in the Lungs," presentation at the Harvard School of Public Health.

**Indianapolis, IN. August 21-24, 2006. Lorenz R. Rhomberg** will be a panelist in a TCE Roundtable at the Midwestern States Risk Assessment Symposium.

**Philadelphia, PA. September 27, 2006. Lorenz R. Rhomberg.** "Fundamentals of Applying Toxicology to Risk Assessment," presentation in the American Chemical Society short-course "Toxicology: Principles and Applications."

### Recent Articles

**Goodman, J.E.,** L.E. Mechanic, B.T. Luke, S. Ambs, S. Chanoock, and C.C. Harris. 2005. Exploring SNP-SNP interactions and colon cancer risk using polymorphism interaction analysis. *Int. J. Cancer*. 118(7):1790-7 (April 1).

Jansen, K.L., T.V. Larson, J.Q. Koenig, T.F. Mar, C. Fields, J. Stewart, and M. Lippmann. 2005. Associations between health effects and particulate matter and black carbon in subjects with respiratory disease. *Environ Health Perspect*. 113(12):1741-6 (December).

Stout, N.C., and **P.A. Valberg**. 2005. Bayes' Law, Sequential Uncertainties, and Evidence of Causation in Toxic Tort Cases. *Michigan Jour. of Law Reform* 38(4):781-910.

**Saxe, J.K., T.S. Bowers,** and **K.R. Reid**. 2005. Arsenic. In "Environmental Forensics: Contaminant Specific Guide" (Eds. Morrison, R.D. and B.L. Murphy), Academic Press, Burlington, MA, pp. 279-292.

Cohen, S.M., L.L. Arnold, M. Eldan, **A.S. Schoen,** and **B.D. Beck**. 2006. Methylated arsenicals: The implications of metabolism and carcinogenicity studies in rodents to human risk assessment. *Crit. Rev. in Toxicol*. 36:99-133.

**Beck, B.D., M.R. Seeley,** R.S. Ghosh, **P.J. Drivas,** and **N.S. Shifrin**. 2006. Human health risk assessment of cyanide compounds in water and soil. *Cyanide in Water and Soil: Chemistry, Risk, and Management* (Eds: Dzombak, D., R. Ghosh, and G.M. Wong-Chong), Taylor & Francis, Boca Raton, FL, pp. 309-330.

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## Environmental Liability Management

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understated by the amount of liabilities that are disclosed.

Insurance coverage for environmental matters was pulled from many corporate general liability policies as the new scope of liabilities related to the legislation of the 1970s and 1980s became known. But today, insurance has returned to the business market as a potential tool for ELM. Some companies are supplementing investigative efforts with insurance as a way to deal with the potential liabilities associated with acquisitions. Additionally, the emergence of fixed-price remediation contracts depends on the availability of effective remediation cost cap insurance. Insurance also has become a key tool, along with

bonding, for meeting increasingly stringent financial assurance requirements.

Initially dominated by engineers, scientists, and lawyers trying to achieve compliance with the emerging environmental laws and regulations, ELM today has evolved into an activity that requires the attention of the entire organization, from product conception to external financial auditing. It will likely be several years before comprehensive approaches to dealing with the new GAAP for environmental issues are fully developed.

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# Guest Editorial: Asset Retirement Obligations

By Scott D. Deatherage, Esq.

*Although there are no guidelines for how to identify asset retirement obligations, responsible companies should have an established practice in place.*

New accounting standards and interpretations are creating

***Environmental investigation has, to some extent, been governed by a "Don't Ask, Don't Tell" approach.***

challenging issues for companies with environmental liability issues. The Financial Accounting Standards Board's Interpretation No.

47 requires that entities complying with GAAP shall identify all of their asset retirement obligations (AROs). What FIN 47 does not adequately address is the extent to which companies must investigate these AROs. For public companies, the requirements of the Sarbanes-Oxley Act, subsequent amendments to securities regulations, and statements by the Public Accounting Oversight Board may add another level of concern and potential liability with respect to investigating and reporting AROs.

Environmental investigation has, to some extent, been governed by a "Don't Ask, Don't Tell" approach. Environmental laws generally do not require that a company test for contamination, and previous standards for environmental disclosure generally did not require that liabilities be reported unless a claim had been asserted. While FIN 47 imposes a duty to identify all asset retirement obligations, it does not specify how to investigate these obligations. Particularly unclear is how much effort must be undertaken to evaluate facilities that have not been investigated, but for which, based on the history of their operations, an environmental assessment would be likely to reveal recognized environmental conditions.

The ARO standards state that an environmental remediation liability that results from the normal operation of a long-lived asset and that is associated with the retirement of that asset may qualify as an ARO. One exception is a catastrophic spill event, beyond normal operations. On the other hand, spills

arising from normal operations must be evaluated under the ARO accounting principles.

For public companies considering what process to establish, the Public Accounting Oversight Board pursuant to Sarbanes-Oxley has stated that financial internal controls include "the identification, measurement, and reporting of all material actual loss events which have occurred, including controls over the monitoring and risk assessment of areas in which, given the nature of the company's operations, such actual loss events are reasonably possible." Identification of environmental liabilities of waste management companies were offered as an example.

In applying FIN 47, auditors significantly influence this duty to investigate by reviewing the process the company has established for identifying AROs. The major financial auditing firms appear to agree that companies must have a process for investigating asbestos removal costs in buildings. However, there does not appear to be a consensus on investigating other potential AROs, such as RCRA management units, underground or aboveground tanks, process units, or surface impoundments.

FIN 47 and securities laws may place many companies in a quandary as to their duty to investigate AROs, but it is clear that it behooves a company to have a well thought out and documented process to investigate AROs.

*The author is an attorney at Thompson & Knight and may be reached at Scott.Deatherage@tklaw.com.*

## BY THE WAY...

**Mergers and acquisitions and asset retirement obligations are predicted to drive the greatest need for unique environmental liability cost estimates over the next three years, while environmental managers state they are least satisfied with current estimating approaches for these purposes.**

Source: 2006 Gradient Environmental Liability Management Benchmark Study.

### In the next issue:

*Measuring Ecological Risk*

*Modeling Natural Resource Damages*

*Ecological Models for Product Safety*

*Guest Editorial: NRD and Ecological Risk Assessment Can Learn from Each Other*

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