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ACCOUNTING FOR ENVIRONMENTAL LIABILITIES IN BANKRUPTCY

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I. INTRODUCTION

The financial statements of companies near or in bankruptcy may reflect significant amounts for environmental liabilities. Yet, these so-called “provisions” (also sometimes called “reserves”) can be highly misleading. These misnomers mistakenly imply that assets have been set aside to resolve the liability, which is rarely the case. They can also convey false assurance that the amount of a company’s environmental obligations is fully known and accounted for when in fact the amounts recorded in the financial statements often represent only the tip of the iceberg. How can that be? The “answer” lies in the peculiarities and shortcomings of current environmental accounting standards and practices, which can surprise not only counterparties in bankruptcy transactions but also the debtor’s management. The consequences of misperceptions about the value of environmental liabilities can be compounded by misunderstandings about the treatment of environmental liabilities in bankruptcy.

The purpose of this chapter is to explain how environmental liabilities differ from other types of claims in bankruptcy in important ways that are frequently misunderstood, how accounting principles and practices applicable to environmental liabilities can result in misperceptions of valuation of environmental obligations, how these misperceptions can lead to misjudgments in bankruptcy, and how well-informed bankruptcy practitioners and interested stakeholders, including credit ratings agencies and equity analysts, can overcome these misperceptions and use them to their advantage.

Common misperceptions about environmental liabilities include:

- Environmental liability provisions (also called “reserves”) represent cash or other assets set aside to resolve environmental liabilities when in fact they reflect only the management’s (potentially flawed or self-serving) estimates of future cash outflows.
- Environmental liabilities are contingent when in fact most environmental remediation liabilities and all asset retirement obligations are noncontingent.
- Environmental liabilities arise from litigation in which the debtor disputes liability and (or) damages when in fact most environmental liabilities are statutory asset retirement obligations that arise outside of litigation and are uncontested by the debtor.
- Environmental liabilities are like other *financial* liabilities (obligations to deliver cash) when in fact they are most often *nonfinancial* liabilities (obligations to deliver services) and thus are not “claims” in bankruptcy.
- Environmental liability provisions reflect all of the debtor’s known environmental liabilities and contingencies when in fact they reflect only

those matters for which management has determined liability is both “probable and reasonably estimable”.

- Environmental liability provisions represent the expected cash outflows required to fully settle, resolve or transfer the company’s liability when in fact they often represent only the low end of the range of possible outcomes.
- Audited fair value estimates of environmental liabilities reliably reflect the true economic value of these obligations when in fact they may not.

These misperceptions can lead to misjudgments in bankruptcy, such as:

- Bankruptcy practitioners and stakeholders may assume that environmental liabilities are immaterial when in fact they may be highly material to issues of solvency and plan feasibility if properly valued.
- Bankruptcy practitioners and stakeholders may assume that environmental liabilities are general unsecured claims that can be impaired and discharged when in fact they most often are priority administrative expenses or even “super priorities” that must be paid in full and cannot be discharged.
- Bankruptcy practitioners and stakeholders may assume that environmental liabilities can be transferred to a buyer along with the sale of the related assets when in fact environmental regulators may have the power to prevent the sale until the obligations are adequately secured.
- Bankruptcy practitioners and stakeholders may assume that environmental liabilities must be paid from the bankruptcy estate when in fact other responsible parties, such as predecessors-in-interest, successors-in-interest, lenders, and affiliated entities may be jointly and severally liable.

To build confidence with debtor-in-possession lenders, prepetition creditors, the U.S. Trustee and the bankruptcy court, Chapter 11 debtors must present a true picture of environmental liabilities in their initial filings. By doing so debtors and their representatives may facilitate timely approval of their plan of reorganization. To verify whether debtors have in fact fairly presented the nature and magnitude of their environmental liabilities and to avoid unpleasant surprises later on, creditors and other stakeholders should consider the following steps:

1. Compare the debtor’s schedule of liabilities with its audited financial statements to ensure that all reported environmental liability provisions are listed in the schedule.
2. Distinguish between the debtor’s *financial* environmental liabilities (those subject to a right to payment) and the debtor’s *nonfinancial* environmental liabilities (those requiring performance of services).
3. Perform sufficient environmental due diligence to assess the likelihood of significant unreported environmental liabilities and contingencies.²

² See C. Gregory Rogers, *Environmental Disclosure Due Diligence*, Business Law Today, Volume 16, No. 5, May/June 2007.

4. Perform a high level forensic analysis to determine whether reported environmental provisions appear reliable.³
5. If reported environmental provisions appear unreliable, inquire about the accounting processes followed to generate these estimates, including the processes for identification, assessment, measurement, and reporting of environmental liabilities.
6. Determine which environmental liabilities have fair value estimates and which do not. Assume that non-fair value estimates do not reflect fair value.
7. With respect to fair value estimates, inquire about the methodologies and inputs used to determine expected cash outflows, market risk premium, discount rates and the discount period.
8. Calculate adjusted estimates based on alternative assumptions about inputs (e.g., use of a risk free rate instead of a credit adjusted rate) and assess the materiality of the adjusted estimates to the issues of solvency and plan feasibility.
9. When environmental liabilities appear to be material to the determination of the prior solvency of the debtor or to the feasibility of the proposed plan of reorganization, develop ground-up estimates using the principles of fair value measurement described in this chapter.

By following these steps, interested parties can better ensure that environmental liabilities are appropriately estimated with the objectives of fairly assessing the value of claims as well as maximizing the value and viability of the debtor upon emergence from bankruptcy.

Practice Note: Past experience with environmental liabilities, especially asset retirement obligations, in bankruptcy may not be indicative of future results due to the rapidly changing economic environment for energy resources. For example, for many years coal mining companies and the most astute bankruptcy practitioners, debtor-in-possession lenders, and distressed debt investors have believed that asset retirement obligations and related environmental liabilities could be safely ignored. Indeed, in 2015 one of the heads of the nation's largest distressed debt funds stated to the authors:

Your conclusion that undervalued obligations for asset retirement and related cleanup could dramatically affect creditor rights certainly appears to be well reasoned and correct, but I have been investing in distressed debt and bankruptcy situations for 30 years and I have never seen a case where these liabilities made a difference. In my experience, companies come into bankruptcy with these obligations and get

³ See C. Gregory Rogers, *A Board's-Eye View of Environmental Liabilities*, NACD Directorship, Vol. 36 Issue 1, p66 (Feb/Mar 2010); see also www.era-tos-thenes.com.

discharged with them or they are transferred to a buyer, and nothing really changes.

Like musical chairs, obligations for asset retirement and related cleanup often can be deferred or passed along to others who acquire the assets until the music stops. In 2016 the music stopped for the coal industry as a whole and many players were left without a chair when countless mines became non-economic and subject to immediate retirement. Other energy-related industries may be next as the world transitions to a low-carbon economy.

II. ENVIRONMENTAL LIABILITIES

Environmental liabilities have unique characteristics that may bear on their relevancy and valuation in a bankruptcy context.

Practice Note: Common misperceptions about environmental liabilities include the following:

- *Environmental liabilities arise from litigation in which liability and (or) damages are disputed when in fact most environmental liabilities are statutory asset retirement obligations that arise outside of litigation and are uncontested by the debtor.*
- *Environmental liabilities bear similar characteristics to the debtor's other liabilities when in fact "nonfinancial" environmental liabilities are not "claims" in bankruptcy.*
- *Environmental liabilities are general unsecured claims that can be impaired and discharged when in fact they most often are priority administrative expenses or even "super priorities" that must be paid in full and cannot be discharged.*
- *Environmental liability provisions (also called "reserves") represent cash or other assets set aside to resolve environmental liabilities when in fact they reflect only management's (potentially flawed or self-serving) estimates of future cash outflows.*
- *Environmental liabilities must be paid from the bankruptcy estate when in fact other responsible parties, such as predecessors-in-interest, successors-in-interest, lenders, and affiliated entities may be jointly and severally liable.*

Combined, these misperceptions can lead debtors to omit uncontested environmental liabilities from schedules and lull credit ratings agencies, equity analysts, counterparties, trustees and courts into overlooking the effect of these liabilities on solvency and plan feasibility, their possible priority over other claims, and potential alternative sources of funding outside of the bankruptcy estate.

A. SOURCE OF OBLIGATION

Environmental liabilities are legal obligations arising under laws designed to protect human health and the environment. They may stem from historical releases of hazardous substances that predate modern environmental protection laws, sudden and accidental releases such as the Gulf Oil Spill, criminal or improper waste management practices, or in the case of decommissioning, restoration and environmental rehabilitation obligations (known as “asset retirement obligations”), the normal course of operations.⁴

B. MATERIALITY

The pressure on companies to meet legal obligations and global standards aimed at protection of the environment is significant and rising. The estimated costs to fulfill existing regulatory obligations for environmental remediation and decommissioning add up to sizable present liabilities, particularly for the chemicals, oil and gas, and metals and mining industries.⁵

The prevalent types of environmental liabilities reflected in corporate financial statements vary by industry. Chemical companies tend to have mainly environmental remediation liabilities (see Section III.C.2). The majority of environmental liabilities in the oil and gas and metals and mining industries are asset retirement obligations (see Section III.C.3). In 2006, Standard & Poor’s (S&P) found that reported asset retirement obligations and environmental remediation liabilities combined averaged approximately 50%, 40% and 10%, respectively, of reported financial debt in the oil and gas, metals and mining, and chemicals industries.⁶

Credit rating agencies such as S&P treat provisions for asset retirement obligations as additions to debt.⁷ Asset retirement obligations represent a significant part of the

⁴ See C. Gregory Rogers, *Financial Reporting of Environmental Liabilities and Risks after Sarbanes-Oxley* (Wiley, 2005) (hereinafter “Rogers”).

⁵ Standard & Poor’s Ratings Direct: *Poor Disclosure by Europe’s Chemicals, Oil & Gas, And Metals & Mining Companies Gives Limited Insight into Decommissioning and Environmental Provisions* (September 27, 2007) (hereafter “S&P Environmental Provisions”), available at <http://www.endseurope.com/docs/70927b.pdf>.

⁶ *Id.*

⁷ See Standard & Poor’s *Encyclopedia of Analytical Adjustments for Corporate Entities* (2007).

financial risk of these companies because the majority of cash outflows occur at the end of the project's life.⁸ Environmental remediation liabilities also can represent a significant financial risk during a downward business cycle.⁹

C. UNCERTAINTY

Nonfinancial environmental liabilities are characterized by uncertainty. Often, there is uncertainty as to the existence of liability—is there a current obligation arising from a past event that will result in a future cost to the company? When the existence of liability is certain, or at least probable, there will remain uncertainty as to the timing and amount of the cost—the cash outflows required to pay for the services required to settle the obligation. Consequently, judgment is required in many instances to determine the probability of a contingent liability, ranging from 0 percent to 100 percent, and whether the existence of liability is sufficiently likely to be recognized on the company's balance sheet. Judgment is required in almost every instance to estimate the ultimate cost. Rarely, are nonfinancial environmental liabilities fully liquidated.

D. OBLIGATING EVENTS

An obligating event is an event that results in the existence of liability and leaves the obligor little or no discretion to avoid the future transfer or use of assets to settle the obligation.¹⁰ An obligating event giving rise to environmental liability results from a combination of facts and law. For example, an obligating event for an asset retirement obligation requires certain facts—the acquisition, construction, development or normal operation of a long-lived asset—and certain legal conditions—an existing or enacted law, statute, ordinance, or contract that mandate specified activities or outcomes upon permanent retirement of the asset.¹¹

Unlike amending a contract between two parties where both parties must consent to the change, governments can change environmental laws—through the political process or by promulgating new or modified regulations—and thereby create or modify a regulated entity's liability retroactively.¹² Enactment of a new law or a

⁸ S&P Environmental Provisions.

⁹ See, e.g., *In re Tronox Incorporated*, 503 B.R. 239 (Bankr. S.D New York 2013).

¹⁰ See ASC 410-20-55-3.

¹¹ See ASC 410-20-15-2.

¹² See *Rogers* at p. 34.

change in the interpretation of existing laws can give rise to new environmental liabilities or change the expected activities and costs to settle existing environmental liabilities.¹³

E. CONNECTION TO ONGOING BUSINESS

Environmental remediation liabilities may involve cleanup of contaminated sites connected with past activities or may be the result of a spill or release resulting from current business operations. Asset retirement obligations, by definition, arise from the acquisition, construction, development or normal operation of a long-lived asset. Asset retirement activities may include dismantling and removal of production facilities and returning production sites back to their original condition subject to environmental standards in effect at the time of asset retirement.

F. CONNECTION TO ASSETS

Unlike most other types of liabilities, environmental liabilities are often inextricably linked to a company's assets in that the asset is either contaminated or subject to special end-of-life abandonment, recycling, or disposal requirements. Asset retirement obligations, by definition, are legal obligations associated with the retirement of tangible long-lived assets. The legal obligation to retire an asset in accordance with environmental laws cannot be separated from the asset itself. Environmental remediation liabilities may exist with respect to either owned or leased properties, such as a factory site, or non-owned sites, such as waste disposal landfills owned or operated by a third party. When a company's environmental liabilities are directly associated with its assets this link can make them more difficult, or even impossible, to abandon or discharge in bankruptcy.¹⁴

G. STRICT, RETROACTIVE, JOINT AND SEVERAL LIABILITY

The liability scheme under environmental remediation laws, such as the Comprehensive Environmental Response, Compensation, and Liability Act

¹³ *Statement of Financial Accounting Standards No. 143, Accounting for Asset Retirement Obligations* ("SFAS 143"), at ¶ B54.

¹⁴ *See e.g., In re CMC Heartland Partners*, 966 F.2d 1143 (7th Cir.1992), in which the debtor owned a hazardous waste site and went through bankruptcy under the Bankruptcy Act of 1898. Subsequently, EPA issued an order pursuant to CERCLA § 106, 42 U.S.C. § 9606, to the debtor, who still owned the site, requiring removal and remediation activity. The Seventh Circuit Court of Appeals held that the order, which was based on ownership of the land, survived reorganization.

(CERCLA), is dramatically different from traditional common law and statutory liability schemes. CERCLA is characterized by the way in which it imposes strict, retroactive, and joint and several liability on persons deemed to be responsible for environmental contamination, including current owners of contaminated property, whether or not they caused or contributed to the contamination.¹⁵ Laws governing decommissioning requirements for offshore oil and gas production have adopted similar approaches.¹⁶

H. NONFINANCIAL LIABILITIES

In accounting, a *financial liability* is broadly defined as a contractual obligation to deliver cash; whereas, a *nonfinancial liability* is an obligation to deliver goods or services.¹⁷ Nonfinancial liabilities include asset retirement and environmental cleanup obligations, and the term *nonfinancial liability* seems destined to replace such traditional terms as *provision* and *reserve* to describe these obligations.¹⁸ Some have expressed concern to accounting regulators about the term *nonfinancial liability*, noting that all liabilities may be described as financial in its broadest sense. Notwithstanding, the potential for confusion, U.S. and international accounting standards boards are committed to using the term.¹⁹ Bankruptcy practitioners need not be concerned about evolving accounting terminology. Instead, we draw attention to the term *nonfinancial liability* because the distinction between financial and nonfinancial environmental liabilities has important—indeed *critical*—consequences in bankruptcy, as will be explained below. Most significantly, pre-petition nonfinancial environmental liabilities are not “claims” within the definition of Bankruptcy Code section 101(5).

¹⁵ See ASC 410-30-05.

¹⁶ See generally 30 CFR § 250.1701(a) (re oil and gas pipelines) (“Lessees and owners of operating rights are jointly and severally responsible for meeting decommissioning obligations for facilities on leases, including the obligations related to lease-term pipelines, as the obligations accrue and until each obligation is met.”).

¹⁷ See Statement of Financial Accounting Standards No. 157, *Fair Value Measurements*, ¶15; see also International Accounting Standard No. 32, *Financial Instruments: Presentation*, ¶11.

¹⁸ See Exposure Draft of International Accounting Standard No. 37, *Provisions, Contingent Liabilities and Contingent Assets*, ¶10.

¹⁹ See IAS 37 Redeliberations: *Scope of IAS 37*, at ¶¶18-33, available at <http://www.ifrs.org/Meetings/MeetingDocs/IASB/Archive/Liabilities/Development%20of%202nd%20ED/IAS37-0603b05a.pdf>.

Environmental liabilities may be financial in nature, but are most often nonfinancial in nature. Environmental liabilities are financial in nature when the obligation has been or can be reduced to a monetary claim. Examples of environmental liabilities that are financial in nature include government claims for reimbursement of pre-petition asset retirement and remediation expenses and contractual claims for indemnification of environmental losses. Environmental liabilities are nonfinancial in nature when the debtor has an obligation to deliver services. These services may include, for example, remediating historical environmental contamination, properly disposing of previously-generated hazardous wastes, or decommissioning and restoring production assets such as mines, landfills, oil and gas wells and asbestos building materials in accordance with environmental laws and regulations. In any case where the government retains the ability to compel the performance of future (*i.e.*, post-petition) cleanup or asset retirement activities to protect the environment and public health, the obligation is nonfinancial in nature.

Nonfinancial environmental liabilities differ from financial obligations in several important respects. For example:

- Governments are free to retroactively change laws and regulations imposing or affecting nonfinancial environmental liabilities related to *pre-existing* conditions.
- As laws governing existing asset retirement and cleanup obligations or enforcement of existing laws become more stringent, a responsible party's compliance costs can increase dramatically.
- Nonfinancial environmental liabilities do not have a principal amount and have no monetary cap—it costs whatever it costs to complete the activities necessary to achieve legally mandated outcomes.
- Nonfinancial environmental liabilities involve negative cash flows where there is no counterparty to receive the positive cash flows. The debtor must spend money on services to settle the obligation, but the holder of the obligation (usually the government) receives services or an outcome rather than money.
- Nonfinancial environmental liabilities do not have a recorded entry price at the onset of the obligation or an active trading market to set prices thereafter.²⁰ Certain types of asset retirement obligations are estimated in connection with financial assurance requirements for future asset retirement

²⁰ For accounting purposes, an "entry price" is defined as "The price paid to acquire an asset or received to assume a liability in an exchange transaction." ASC 820-10-20. An "active market" is defined as "A market in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis." ASC 820-10-20.

activities such as mine reclamation.²¹ However, even in these cases, there is no entry price.

- Nonfinancial environmental liabilities have no fixed payment dates and may call for settlement upon conditional future events, such as the permanent retirement of a mine or oil and gas production facility.
- Nonfinancial environmental liabilities do not bear interest.
- Nonfinancial environmental liabilities are subject to the extraordinary regulatory and police powers of state and federal governments.

Nonfinancial environmental liabilities are not debts in bankruptcy. The Bankruptcy Code defines the term *debt* as “liability on a claim”.²² The Code defines the term *claim* as—

(A) right to payment, whether or not such right is reduced to judgment, liquidated, unliquidated, fixed, contingent, matured, unmatured, disputed, undisputed, legal, equitable, secured, or unsecured; or (B) right to an equitable remedy for breach of performance if such breach gives rise to a right to payment, whether or not such right to an equitable remedy is reduced to judgment, fixed, contingent, matured, unmatured, disputed, undisputed, secured, or unsecured.²³

Nonfinancial environmental liabilities, by definition, are not a right to payment or a right to an equitable remedy for breach of performance that gives rise to a right to payment.²⁴ Because nonfinancial environmental liabilities are not *debts*, they

²¹ See e.g., Nevada BLM Bonding Guidelines for Notices and Plans of Operations Authorized Under 43 CFR 3809, available at http://www.blm.gov/style/medialib/blm/nv/information/laws__regs____policies/ibs__ims/2005/ims.Par.59592.File.dat/nvim2005-063a1.pdf.

²² 11 U.S. Code § 101(12).

²³ 11 U.S. Code § 101(5).

²⁴ Because debts are dischargeable in Chapter 11, it is critical in a bankruptcy case to determine whether the debtor’s environmental obligations are financial liabilities or nonfinancial liabilities. For an example of an environmental financial liabilities, see *Ohio v. Kovacs*, 469 U.S. 274, 105 S.Ct. 705, 83 L.Ed.2d 649 (1985) (concluding that the state had a “right to payment” and thus possessed a “claim” against the debtor on basis that the debtor no longer had possession of the contaminated site nor control over the cleanup and all the state sought from the debtor was money to fund the cleanup). For examples of nonfinancial environmental liabilities, see *U.S. v. Apex Oil Co., Inc.*, 579 F. 3d 734 (7th Cir. 2009) (rejecting the argument that the cost of complying with an equitable decree to perform cleanup should be deemed a money claim, and hence dischargeable)

cannot be discharged in bankruptcy.²⁵ Moreover, as explained below, post-petition expenses to resolve nonfinancial environmental liabilities may be afforded administrative expense priority or even super priority ahead of debtor-in-possession loans.

I. FINANCIAL ASSURANCE

A common misperception is that an accounting “provision” (also sometimes called a “reserve” or an “accrual”) represents assets set aside to resolve environmental liability. However, accounting provisions for environmental liability are not assets at all. Instead, they are simply formal acknowledgements of obligations to be settled in the future. There is no “lock box,” and these accounting entries do not indicate that there is money in a reserve or that assets have been provisioned to settle the company’s environmental obligations. As stated by the Financial Accounting Standards Board, “Accounting accruals do not provide protection against losses”:

Accrual of a loss related to a contingency does not create or set aside funds to lessen the possible financial impact of a loss.... The Board believes that confusion exists between accounting accruals (sometimes referred to as "accounting reserves") and the reserving or setting aside of specific assets to be used for a particular purpose or contingency. Accounting accruals are simply a method of allocating costs among accounting periods and have no effect on an enterprise's cash flow. An enterprise may choose to maintain or have access to sufficient liquid assets to replace or repair lost or damaged property or to pay claims in case a loss occurs. Alternatively, it may transfer the risk to others by purchasing insurance. Those are financial decisions, and if enterprise management decides to do neither, the presence or absence of an accrued credit balance on the balance sheet will have no effect on the consequences of that decision.²⁶

Some environmental laws require companies to provide evidence of financial assurance (e.g., letters of credit, insurance policies, surety bonds, and “self-bonding”

and *In re Torwico Electronics, Inc.*, 8 F. 3d 146 (3rd Cir. 1993) (state's attempt to force a party to clean up a waste site which poses an ongoing hazard is not a "claim" as defined by the Bankruptcy Code).

²⁵ See e.g., 11 U.S. Code § 1141(d)(1)(A) (the confirmation of a plan discharges the debtor from any “debt” that arose before the date of such confirmation).

²⁶ SFAS 5, *Accounting for Contingencies*, ¶ 61.

through demonstration of financial wherewithal) that they can satisfy their obligations as they come due.²⁷ However, financial assurance programs, especially those that allow self-bonding, frequently fail to fully secure environmental obligations.²⁸

Self-bonding for asset retirement obligations is increasingly under attack. A spate of coal bankruptcies in 2015-16 prompted calls for elimination of self-bonding for mine reclamation costs.²⁹ In June 2016, U.S. Senator Maria Cantwell [D-WA] introduced legislation to end the practice of self-bonding under the Surface Mining Control and Reclamation Act (SMCRA).³⁰ In August 2016, the head of the U.S. Office of Surface Mining and Reclamation Enforcement (OSMRE) announced the agency's intent to toughen what he called "out-of-date" rules for guaranteeing mine cleanups. Similarly, the United States Department of the Interior Bureau of Ocean Energy Management issued new rules that cut back on self-bonding for decommissioning liability in the Outer Continental Shelf.³¹

III. ACCOUNTING FOR ENVIRONMENTAL LIABILITIES

Environmental liabilities and contingencies must be recorded ("recognized") in a company's financial statements when certain criteria are met. This section discusses the criteria for recognition and initial measurement of environmental liabilities under U.S. and international accounting standards.

Bankruptcy practitioners must understand what can reasonably be inferred from the presence or absence of environmental liability accounting estimates in financial statements.

²⁷ See *Rogers* at p. 273.

²⁸ See proposed rule to update regulations and program oversight for Outer Continental Shelf (OCS) financial assurance requirements, 70 Fed. Reg. 49027 (August 19, 2014); see also James Boyd, *Financial responsibility for environmental obligations: Are bonding and assurance rules fulfilling their promise?*, Resources for the Future (2001) at <http://core.ac.uk/download/pdf/9307839.pdf>.

²⁹ See e.g., *Self-Bonding in an Era of Coal Bankruptcy: Recommendations for Reform*, Institute for Policy Reform, New York University School of Law (August 2016).

³⁰ Senate Bill 3066, "A bill to protect taxpayers from liability associated with the reclamation of surface coal mining operations, and for other purposes."

³¹ NTL No. 2016-N01, at <http://www.boem.gov/BOEM-NTL-2016-N01>.

Practice Note: In determining fair valuation, bankruptcy courts discount the value of contingent claims to reflect the probability that a future event will or will not occur. It is a common misperception that environmental liabilities are contingent when in fact most environmental liabilities are noncontingent. This misperception can cause credit ratings agencies, equity analysts, and parties in bankruptcy to midjudge the amount and timing of cash flows to resolve environmental liabilities and their potential significance with respect to solvency and plan feasibility.

A. ACCOUNTING AUTHORITIES

Audited financial statements issued by U.S. listed companies must be prepared in accordance with generally accepted accounting principles (U.S. GAAP) established by the Financial Accounting Standards Board (FASB).³² Financial statements filed with the Securities Exchange Commission (SEC) that are not prepared in accordance with U.S. GAAP are presumed to be misleading or inaccurate, unless the SEC has otherwise provided.³³

Outside the U.S., most companies adhere to accounting standards established by the International Accounting Standards Board (IASB) in London.³⁴ Accounting standards issued by the IASB are generally referred to as International Financial Reporting Standards (IFRS).

B. LIABILITIES AND CONTINGENCIES

For accounting purposes, *liabilities* are defined as probable future sacrifices of economic benefits arising from present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events.³⁵ *Loss contingencies* are defined as an existing condition, situation, or set of circumstances involving uncertainty as to possible loss to an enterprise that will ultimately be resolved when one or more future events occur or fail to occur. Resolution of the uncertainty may confirm the loss or impairment of an asset or the incurrence of a liability.³⁶

³² ASC 105-10-15.

³³ 17 CFR § 240.4-01(a)(1).

³⁴ See <http://www.ifrs.org/Use-around-the-world> for a current list of countries that have adopted IFRS.

³⁵ See Statement of Financial Accounting Concepts No. 6 ¶ 35.

³⁶ ASC 450-20-20.

C. ENVIRONMENTAL LIABILITIES AND CONTINGENCIES

For purposes of U.S. GAAP, there are three types of environmental liability estimates—1) environmental loss contingencies,³⁷ 2) environmental remediation liabilities,³⁸ and 3) asset retirement obligations.³⁹ Under International Financial Reporting Standards (IFRS) issued by the IASB, these are known respectively as 1) contingent environmental liabilities, 2) environmental remediation provisions, and 3) decommissioning, restoration and environmental rehabilitation provisions.⁴⁰

Accounting Standards Codification (ASC) Topic 410, *Asset Retirement and Environmental Obligations*, governs accounting for environmental liabilities under U.S. GAAP. Under IFRS, decommissioning (asset retirement) liabilities and environmental obligations are accounted for in accordance with the general principles in IAS 37, *Provisions, Contingent Liabilities and Contingent Assets*, and IFRIC 1, *Changes in Existing Decommissioning, Restoration and Similar Liabilities*. Table 1 provides a high-level simplified summary of accounting terms and treatments of environmental liabilities under U.S. GAAP and IFRS.

³⁷ ASC 450-20.

³⁸ ASC 410-30.

³⁹ ASC 410-20.

⁴⁰ International Accounting Standard (IAS) 37, *Provisions, Contingent Liabilities and Contingent Assets*, at ¶ 10 and IFRIC Interpretation 1, *Changes in Existing Decommissioning, Restoration and Similar Liabilities*.

TABLE 1 ENVIRONMENTAL LIABILITIES

U.S. GAAP	Environmental loss contingencies	Environmental remediation liabilities	Asset retirement obligations
IFRS	Contingent environmental liabilities	Environmental remediation provisions	Decommissioning, restoration and environmental rehabilitation provisions
Nature of Liability	Contingent	Contingent or Noncontingent	Noncontingent
When Recorded	When “probable ⁴¹ and reasonably estimable”	When “probable and reasonably estimable”	When reasonably estimable
How Measured	If no best estimate, minimum in range (midpoint or expected value under IFRS)	If no best estimate, minimum in range (midpoint or expected value under IFRS)	Fair value or expected present value ⁴²
Discount Rate U.S. GAAP	Market based but no higher than risk free rate if discounting is allowed	Market based but no higher than risk free rate if discounting is allowed	Credit adjusted risk free rate considering liability-specific risks ⁴³
Discount Rate IFRS	Pre-tax market rate considering liability-specific risks	Pre-tax market rate considering liability-specific risks	Pre-tax market rate considering liability-specific risks
Claim Value in Bankruptcy	Fair valuation	Fair valuation	Fair valuation

⁴¹ Both IFRS and U.S. GAAP contain a probability threshold for the recognition of an environmental liability. *Probable* within IFRS is defined as more likely than not (i.e., more than 50%), whereas probable is not as clearly defined under U.S. GAAP (but is interpreted in this context to be a percentage as high as 80%).

⁴² IFRS requires a decommissioning liability to be measured initially at the best estimate of the expenditure required to settle the obligation. U.S. GAAP requires such liabilities to be measured at fair value. Although there may be differences in the initial measurement of decommissioning liabilities under IFRS and U.S. GAAP, they are generally measured using an expected present value technique under both standards, and the resulting estimates should be reasonably comparable.

⁴³ Subsequent measurement of a decommissioning obligation is accounted for differently under IFRS and U.S. GAAP with respect to discount rates. Under IFRS, a decommissioning obligation is remeasured each reporting period giving consideration to changes in the amount or timing of cash outflows and changes in the discount rate; whereas, under U.S. GAAP, the obligation is adjusted only for changes in the amount or timing of cash outflows (i.e., the obligation continues to be measured using the rate when the decommissioning obligation was incurred). If incremental cash outflows are required to be included in the measurement of the liability recorded under U.S. GAAP, those cash outflows are included using the current discount rate resulting in a “layering” of a decommissioning obligation at different discount rates if the obligation is incurred or adjusted over time.

1. ENVIRONMENTAL LOSS CONTINGENCIES

Contingent environmental liabilities, also known as environmental loss contingencies, include—(a) *possible obligations* that arise from past events (commonly the release of pollutants to the environment) and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the debtor (e.g., a neighbor’s discovery of offsite migration of contaminated groundwater or enforcement of a claim by a regulatory agency); and (b) *present obligations* that arise from past events where it is *not probable* that assets must be transferred to settle them (e.g., an environmental guaranty contained in a property sales contract).⁴⁴ With contingent environmental liabilities, there is uncertainty as to whether an obligating event imposing liability on the debtor has occurred or will occur in the future.

Contingent environmental liabilities may arise from pending or threatened litigation and actual or possible claims and assessments. In such cases, the following factors must be considered in determining whether a liability has been incurred for accounting purposes:

- The period in which the underlying cause of the pending or threatened litigation or of the actual or possible claim or assessment occurred.
- The degree of probability of an unfavorable outcome.
- The ability to make a reasonable estimate of the amount of loss.⁴⁵

Contingent environmental liabilities may also arise from unasserted claims, in which case the reporting entity must determine the degree of probability that a suit may be filed or a claim or assessment may be asserted and the possibility of an unfavorable outcome,⁴⁶ or first-party claims (e.g., where a property owner discovers historical contamination for which it is responsible and which is covered by environmental insurance). Claims for environmental liability may not be brought until years after the obligating event, if at all. Long delays may be due to several factors, including:

- Historical pollution conditions often go undiscovered or unreported for long periods.
- The cause or source of historical pollution conditions may be difficult to determine.

⁴⁴ See IAS 37 ¶ 10.

⁴⁵ SFAS 5, *Accounting for Contingencies*, ¶ 33.

⁴⁶ SFAS 5, *Accounting for Contingencies*, ¶ 38.

- Physical manifestations of bodily injury caused by exposure to toxic substances may take long periods to develop.

Contingent environmental liabilities are recorded as liabilities in a company's books only after management concludes that it is probable that an obligating event has occurred and the amount of the liability can be reasonably estimated.⁴⁷ Qualitative or quantitative descriptions of contingent environmental liabilities that are not both probable and reasonably estimable may be disclosed in the notes to the financial statements, but point estimates⁴⁸ are not recognized and recorded as liabilities.⁴⁹

2. ENVIRONMENTAL REMEDIATION LIABILITIES

Environmental remediation liabilities are obligations that arise under environmental remediation laws.⁵⁰ A unique characteristic of environmental remediation laws such as the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)⁵¹ and corresponding state laws is that they impose strict, retroactive and joint and several liability.⁵² Under the doctrine of joint and several liability, each potentially responsible party (PRP) is potentially liable for the entire cost of cleanup, and it is the responsibility of the PRPs to allocate shares of liability among themselves.⁵³

Like environmental loss contingencies, environmental remediation liabilities are recorded as liabilities in a company's books only after management concludes that it is probable that an obligating event has occurred and the amount of the liability can be reasonably estimated.⁵⁴ Qualitative or quantitative descriptions of

⁴⁷ ASC 450-20-25.

⁴⁸ A "point estimate" is an amount selected for recognition or disclosure in the financial statements as an accounting estimate. A point estimate is selected from within a range of possible outcomes. See AU-C Section 540, *Auditing Accounting Estimates, Including Fair Value Accounting Estimates, and Related Disclosures*, available at <http://www.aicpa.org/Research/Standards/AuditAttest/DownloadableDocuments/AU-C-00540.pdf>.

⁴⁹ ASC 450-20-50.

⁵⁰ See ASC 410.30.05.

⁵¹ 42 USC §§ 9601 *et. seq.*

⁵² For a general background on environmental remediation laws as they relate to financial accounting, see ASC 410-30-05-5.

⁵³ ASC 410-30-05-21 & 22.

⁵⁴ ASC 410-30-25-1.

environmental remediation liabilities that are not both probable and reasonably estimable may be disclosed in the notes to the financial statements, but point estimates are not recognized and recorded as liabilities.⁵⁵

3. ASSET RETIREMENT OBLIGATIONS

Asset retirement obligations are legal obligations associated with the retirement of a tangible long-lived asset that result from the acquisition, construction, or development and (or) the normal operation of a long-lived asset, including any legal obligations that require disposal of a replaced part that is a component of a tangible long-lived asset.⁵⁶

Asset retirement obligations may arise under an existing or enacted law, statute, ordinance, or written or oral contract or by legal construction of a contract under the doctrine of promissory estoppel.⁵⁷ Retirement refers to the other-than-temporary removal of a long-lived asset from service and encompasses sale, abandonment, recycling, or disposal in some other manner.⁵⁸ Most asset retirement obligations arise under laws intended to protect human health and the environment—for example, statutes governing plugging and abandonment of wells are intended to prevent contamination of groundwater and surface water for all of geologic time. This explains why U.S. GAAP addresses asset retirement obligations under the heading “Asset Retirement and Environmental Obligations.”

An obligation that would otherwise be considered an ERL, but which results from the normal operation (as opposed to the improper operation) of a long-lived asset and that is associated with the retirement of that asset, is an asset retirement obligation.⁵⁹

Asset retirement obligations are recorded as liabilities in a company’s books at the time they are incurred unless the fair value of the liability cannot be reasonably

⁵⁵ ASC 410-30-50.

⁵⁶ ASC 410-20-15-2(a).

⁵⁷ ASC 410-20-55-1; *see* ASC 410-20-20 (defining “Promissory estoppel” by reference to Black’s Law Dictionary as “The principle that a promise made without consideration may nonetheless be enforced to prevent injustice if the promisor should have reasonably expected the promisee to rely on the promise and if the promisee did actually rely on the promise to his or her detriment.”)

⁵⁸ ASC 410-20-20.

⁵⁹ ASC 410-20-15-2.

estimated.⁶⁰ If a reasonable estimate of fair value cannot be made in the period the asset retirement obligation is incurred, the liability is recognized when a reasonable estimate of fair value can be made. If a tangible long-lived asset with an existing asset retirement obligation is acquired, a liability for that obligation is recognized at the asset's acquisition date as if that obligation were incurred on that date.⁶¹

IV. PRIORITY IN BANKRUPTCY

Environmental liabilities will often have priority over other claims in bankruptcy. When environmental liabilities are present, it is therefore important to determine the nature of the obligations and the amount and timing of the cash flows necessary to resolve them.

Practice Note: Common misperceptions about the priority of environmental liabilities in bankruptcy include the following:

- *Environmental liabilities are general unsecured claims that can be impaired and discharged when in fact nonfinancial environmental liabilities are priority administrative expenses that cannot be discharged and must be paid in full.*
- *Only liabilities that arise after the petition date can qualify as administrative expenses, when in fact post-petition expenditures to satisfy pre-petition obligations for asset retirement and cleanup are administrative expenses if they are found to be "actual, necessary costs and expenses of preserving the estate."*
- *Secured creditors stand in front of environmental liabilities when in fact liens on assets encumbered by significant nonfinancial environmental liabilities may be undersecured and potentially worthless.*
- *Asset retirement obligations are unmatured, discounted obligations that can simply pass through bankruptcy when in fact they may be fully matured obligations that are immediately due and payable.*
- *Environmental liabilities can be transferred to a purchaser of the debtor's assets when in fact assets subject to nonfinancial environmental liabilities may have negative value and therefore be unsalable.*
- *A debtor can sell its "good assets" (and transfer any related environmental liabilities to the buyer) and liquidate its "bad assets" (thereby transferring any related nonfinancial environmental liabilities to the public) when in fact government regulators may have the power to prevent such sales.*

⁶⁰ ASC 410-30-25-1.

⁶¹ ASC 410-20-25-4.

- *Governments lack the power or incentive to enforce settlement of nonfinancial environmental liabilities in bankruptcy when in fact they are capable and increasingly motivated to protect their interests.*

Combined, these misperceptions can lead credit ratings agencies, equity analysts, debtors, creditors, trustees and courts to misjudge the priority and credit risk implications of post-petition expenses required to protect the environment and public health.

A. THE PRIORITY SCHEME

The Bankruptcy Code prescribes a priority scheme for distributing assets to creditors.⁶² Under that scheme, secured creditors (*i.e.*, creditors with properly perfected liens on the debtor's property) are afforded the highest priority. Following secured claims in priority are administrative post-petition claims, priority pre-petition claims (*e.g.*, certain employee and tax claims), non-priority general unsecured claims (*e.g.*, trade claims, contract/lease claims, deficiency claims of secured creditors), contractually subordinated claims, statutory subordinated claims, and equity interests.

The priority scheme dictates the order in which claims are paid in a bankruptcy reorganization or liquidation. It also determines the degree to which the contractual rights of different classes of claim holders will be impaired, and hence who may object to a proposed plan of reorganization.

B. PRIORITY ADMINISTRATIVE EXPENSES

The Bankruptcy Code grants "administrative expense priority" (*i.e.*, a priority in right of payment) to certain post-petition expenses if they are considered "actual, necessary costs and expenses of preserving the estate."⁶³ In the context of environmental claims, courts have expanded the meaning of "preserving the estate" under Section 503 of the Bankruptcy Code to encompass protection of the environment and public health. Because Section 959(b) of the Bankruptcy Code requires a debtor-in-possession or a trustee to comply with applicable laws,

⁶² 11 U.S.C. § 507.

⁶³ 11 U.S.C. § 503(b)(1)(A).

including environmental laws, any future cleanup necessarily benefits the estate as it permits the estate to remain in compliance.⁶⁴

Courts have held that post-petition costs to perform asset retirement activities necessary to protect the environment and public health, such as plugging and abandoning oil and gas wells, preparing an offshore oil platform for decommissioning, or performing mine reclamation are priority administrative expenses.⁶⁵ Moreover, priority administrative expenses to comply with environmental law are not limited to post-petition costs that will be incurred prior to plan approval but also include estimated expenses to be incurred after the debtor emerges from bankruptcy.⁶⁶

As priority administrative expenses, post-petition costs to satisfy obligations for asset retirement and cleanup will have priority over all other unsecured claims, including pre-petition priority unsecured claims and general unsecured claims.⁶⁷ To confirm a reorganization plan, the debtor must pay all priority administrative expense claims in full, rather than at a fraction of the claim amount generally afforded to unsecured claims.

For these reasons, bankruptcy practitioners and stakeholders must be careful to distinguish between a debtor's financial environmental obligations and nonfinancial environmental liabilities (*see* II.H, Nonfinancial Liabilities). The debtor's financial environmental obligations (e.g., government or third-party claims for reimbursement or indemnification of pre-petition expenses for asset retirement and

⁶⁴ *See In re Stevens*, 68 B.R. 774, 778 (Bankr. D. Me. 1987); *In re Laurinburg Oil Co.*, 49 B.R. 652, 654 (Bankr. M.D.N.C. 1984); *cf. In re Allen Care Centers*, 175 B.R. 397, 299 (D. Or. 1994).

⁶⁵ *See In re H.L.S. Energy Co.*, 151 F.3d 434, 439 (5th Cir. 1998) (Texas Railroad Commission's post-petition expenses to plug inactive oil wells held to be priority administrative expenses) and *In re American Coastal Energy Inc.*, 399 B.R. 805 (Bankr. S.D. Texas 2009) (Texas Railroad Commission's post-petition expenses to remediate environmental risks for which debtor had ongoing responsibility held to be priority administrative expenses).

⁶⁶ *In re Appalachian Fuels, LLC, et. al.*, Case No. 09-10343 (Bankr. E.D. Kentucky 2014) (granting West Virginia Department of Environmental Protection's application for allowance of an administrative expense claim against the debtors for estimated future mine reclamation costs and penalties).

⁶⁷ 11 U.S.C. § 507.

cleanup costs) are general unsecured claims, which will be treated under the debtor's plan together with all similar claims, such as the claims of unsecured bondholders and trade creditors. Conversely, the debtor's nonfinancial environmental liabilities (i.e., costs to perform post-petition services required to comply with laws intended to protect the environment and public health) will generally be afforded priority administrative expense status. Also, as discussed previously, the debtor's nonfinancial environmental liabilities are not "claims" and cannot be discharged in bankruptcy.

C. MATURITY

An asset retirement obligation is incurred upon any event that imposes a legal obligation to perform specified activities when an asset is ultimately retired. From a legal and accounting perspective, the obligation to perform the asset retirement activity is unconditional even though uncertainty may exist about the timing and method of settlement, and even though settlement may not be required for many years or decades.⁶⁸ An asset retirement obligation does not mature until the asset, or some portion thereof, is permanently removed from service.

Unmatured asset retirement obligations pose little concern in a Chapter 11 bankruptcy. The debtor can either continue to own or operate the asset itself or sell the asset to a buyer who will assume the obligation and provide any required financial assurance. This explains why asset retirement obligations often simply "pass through" the bankruptcy.

Mature asset retirement obligations are conceptually challenging. Practitioners and courts may incorrectly assume that because an asset retirement obligation matured prior to filing, it is a pre-petition claim. As noted above, however, asset retirement obligations are not "claims" within the scope of Section 101(5) of the Bankruptcy Code because they cannot be reduced to a monetary claim. Asset retirement obligations can only be satisfied through the performance of services.

If the debtor does not fulfill these services as required by law, a surety or government regulator may perform the services and seek reimbursement from the debtor. The debtor or others may contend that the expenditures were for a pre-petition liability and that only liabilities that arise after the petition date can qualify as a Section 503(b)(1)(A) administrative expense. But this is not the case.

⁶⁸ See ASC 410-20-25-7.

The Court holds that the [Texas Railroad] Commission's claim for recovery of its post-petition expenditures [to plug and abandon four oil and gas wells] is an administrative expense under § 503(b)(1)(A). Debtors-in-possession must manage the bankruptcy estate in compliance with state and federal environmental and safety laws. The fact that [the debtor's] prepetition activities led to the necessity of the post-petition remediation does not alter [debtor's] continuing post-petition obligation to conform with the law. Consequently, the costs to bring the estate into compliance with such laws are costs that are actual and necessary to preserve the estate, entitled to administrative expense characterization under § 503(b)(1)(A).⁶⁹

Asset retirement costs incurred by a surety or regulator prior to the petition date can be reduced to a monetary claim. Accordingly, claims to recover such costs in bankruptcy will be treated as general unsecured claims.⁷⁰

Energy bankruptcies tend to be caused by or associated with heavily impaired coal and oil and gas reserves and related assets. The economic life of these assets has ended due to declining commodity prices, rising costs, or both. There is no buyer to "pick up the permit" for these assets, which will often have negative value after considering the related asset retirement and cleanup obligations. Applicable law now requires that the assets be properly decommissioned and restored. The asset retirement obligations are fully mature and cannot simply pass through the bankruptcy because the debtor has a continuing post-petition obligation to comply with the law.

D. VALUATION AND ALLOCATION

As noted above, an allowed claim of a creditor secured by a lien on the debtor's property has priority over post-petition administrative expenses. However, the priority of secured claims is limited to the value of the collateral. If the value of the debtor's interest in the collateral is less than the amount of the claim, Section 506(a)

⁶⁹ *In re American Coastal Energy Inc.*, 399 B.R. 805 (Bankr. S.D. Texas 2009).

⁷⁰ *See Ohio v. Kovacs*, 469 U.S. 274, 105 S.Ct. 705, 83 L.Ed.2d 649 (1985) (concluding that the state had a "right to payment" and thus possessed a "claim" against the debtor on basis that the debtor no longer had possession of the contaminated site nor control over the cleanup and all the state sought from the debtor was money to fund the cleanup).

of the Bankruptcy Code splits the claim into secured and unsecured components, as follows:

An allowed claim of a creditor secured by a lien on property in which the estate has an interest, or that is subject to setoff under section 553 of this title, is a secured claim to the extent of the value of such creditor's interest in the estate's interest in such property, or to the extent of the amount subject to setoff, as the case may be, *and is an unsecured claim to the extent that the value of such creditor's interest or the amount so subject to setoff is less than the amount of such allowed claim.* Such value shall be determined in light of the purpose of the valuation and of the proposed disposition or use of such property, and in conjunction with any hearing on such disposition or use or on a plan affecting such creditor's interest.⁷¹

The bifurcation of a debtor's obligation to a secured creditor into secured and unsecured claims depends on the value of the collateral. For example, if a lender had made a loan of \$500 million secured by a property once worth \$1 billion, and the property declined in value to \$100 million at the plan confirmation date, the secured creditor would have a secured claim for \$100 million and an unsecured claim for \$400 million.

Often there is a vigorous dispute as to how the value of collateral is to be determined: liquidation value, market value or foreclosure value. The Code provides that only that "Such value shall be determined in light of the purpose of the valuation and of the proposed disposition or use of such property, and in conjunction with any hearing on such disposition or use or on a plan affecting such creditor's interest." Courts vary in their approaches to determining value depending on the circumstances (e.g., a Chapter 7 liquidation versus a Chapter 11 reorganization). In *In re Heritage Highgate, Inc.*,⁷² the Court of Appeals for the Third Circuit ruled that, in a Chapter 11 reorganization, the term "value," as applied to section 506(a), should mean the fair market value of collateral as of plan confirmation.

In situations where the collateral is encumbered by existing asset retirement obligations or environmental remediation liabilities, the fair market value of the

⁷¹ 11 U.S.C. § 506(a) (emphasis added).

⁷² 679 F.3d 132 (3d Cir. 2012).

collateral will reflect the fair value of these liabilities. It is self-evident that environmentally impaired assets are worth less than were they not so impaired.

In *In re LTV Steel Co., Inc.*,⁷³ the debtor had sold substantially all of its integrated steel assets in a single transaction. Some of the assets were environmentally contaminated, while others were not, and the cleanup liabilities were not discharged. The buyer agreed to indemnify the debtor for any environmental liability and reduced the net cash price as a result.

In situations like *LTV* where some collateral is impaired and other collateral is not, sale proceeds must be attributed to individual assets before the treatment of liens on each asset can be considered.⁷⁴ Courts allocate sale proceeds between individual assets based upon each asset's portion of the total value of all of the assets.⁷⁵ Before determining each asset's portion of the cash proceeds, each asset must be valued.

In *LTV*, different creditors, each with claims of unique priority, held security interests in the individual assets, which were not valued individually within the purchase agreement. The court's job was to determine each asset's value and allocate the sale proceeds between the individual assets to permit distribution of proceeds to lienholders. The debtor proposed a valuation model based upon Section 506(a), and various lienholders objected, arguing, among other things for "compartmentalizing," which the court described as "the perceived ability to carve off the fruit of an asset (*i.e.*, a facility's equipment) and assign that carved off piece's value to the secured claims, while ignoring or leaving behind the poisoned stems

⁷³ 285 BR 259 (N.D. Ohio 2002).

⁷⁴ See *Id.* at 267-68, citing *In re Wesley Corp.*, 18 F.Supp. at 349. "[A] lien on less than all of the several parcels of property sold in one lot may be transferred to the gross proceeds only to the extent as the particular property covered by the lien contributed to the whole fund"; *In re Mannington Pottery Co.*, 104 F.Supp. at 520 (citation omitted); and *In re Wesley Corp.*, 18 F.Supp. at 350.

⁷⁵ See *Id.* at 267-68, citing *Leslie v. Knight Soda Fountain Co.* (In re Wilkes), 55 F.2d 224 (2d Cir.1932); *In re 26 Trumbull Street*, 77 B.R. 374; *First Federal Savings & Loan Assoc. of Pine Bluff v. Dickinson* (In re Port City Construction Co., Inc. & Oak Park Heating & Air Conditioning Co., Inc.), 387 F.Supp. 236 (E.D. Ark. 1975); *Moudy*, 164 F.Supp. 490; *In re Mannington Pottery Co.*, 104 F.Supp. 506; *In re Beardsley*, 38 F.Supp. 799; *In re Wesley Corp.*, 18 F.Supp. 347; *In re Bovenzi*, 2 F.Supp. 538.

and roots, the environmental liabilities associated with the facility from which the asset was removed.”⁷⁶

Debtor argues for valuing the assets on a going concern basis using facility by facility analysis, e.g. Indiana Harbor Works, Hennepin, LTV Tech Center, and so on. Objectors argue for compartmentalizing. ... The effect of the difference is obvious. Valuable equipment is far less so if it must be valued as a package with the environmentally damaged site. Debtor valued each site as a part of the going concern whole, thus offsetting in whole or in part the value of personal property or fixtures attached to environmentally sensitive real estate. If correct, the question is not merely the accuracy of objectors' equipment appraisals, but the materiality of the appraisals if personal property value is inseparable from the premises. The net effect of Debtor's approach is to place the cost of environmental liabilities on the secured creditors, for the benefit of the public at large. [Footnote omitted.] Conversely, objectors' approach would preserve the value of the assets for secured creditors and place the cost of environmental liabilities on the public and, to the extent of any dividend, unsecured creditors. Persuasive policy arguments may be made for either position, but the Court need not decide which is appropriate. The die was previously cast by the terms of 506(a). Section 506(a) requires that “[s]uch value shall be determined in light of the purpose of the valuation and of the proposed disposition or use of such property[.]” The disposition or use was a sale as a going concern to be operated as a going concern. ISG [the buyer] agreed to indemnify the Debtor for any environmental liability and the net cash price was reduced as a result. This result is counterintuitive to bankruptcy participants, because going concern sales normally result in higher valuations. This expected result does not occur in this case because the going concern value premium, whether denominated as goodwill or otherwise, is more than offset by the perceived environmental cost assumed. Section 506(a) does not mandate that going concerns are valued higher. That is a common, but sometimes misplaced, assumption. Rather, section 506(a) dictates valuation in light of the proposed disposition or use. In this case, the disposition and use was as a going concern. Personalty and realty were bundled together, their positive

⁷⁶ *Id.* at 267.

and negative values inextricably intertwined. Much like the pathologist, objectors prove much, but too late. The sale was as a going concern, purposefully cutting off environmental liabilities, and knowingly reducing the cash price. Personal property, fixtures, real estate, and intangibles were sold together to be operated as a going concern. Section 506(a) cast the die and the Sale Order was forged in it. The result is impelled by 506(a) and any balancing of harm or policy considerations could only be made at the time of the sale. Once approved, the nature and structure of the sale became a fact dictating the valuation analysis through the application of 506(a).⁷⁷

The lesson of *LTV* is that when secured assets are bundled together with asset retirement obligations and cleanup liabilities, their positive and negative values inextricably intertwined, secured creditors cannot preserve the value of the assets for themselves and place the cost of environmental liabilities on the public and, to the extent of any dividend, unsecured creditors. In coal and oil and gas bankruptcies, the principal collateral will often be reserve bearing mineral interests or leaseholds that are subject to nonfinancial environmental liabilities for asset retirement and cleanup costs. When such assets become non-economic, their fair value, after consideration of the attendant (and now fully matured) environmental liabilities, often will be negative.

In these situations, secured creditors will stand behind the priority administrative expense claims of government creditors and their secured liens may be rendered undersecured or worthless by the combined effect of the decline in the value of the “liened up” collateral and the scale of the priority administrative expenses necessary to decommission and reclaim the estate’s assets. Moreover, as discussed below, under the applicable environmental statutes hedge funds that are both lenders and owners of debtors in bankruptcy are potentially at risk of being held jointly and severally liable for the entirety of the debtor’s environmental liabilities, including liabilities unrelated to the secured collateral, because of their pre- or post-petition control of the debtor (*see* Section V.J.8.c)(4)(h), *Direct and Derivative Liability of Owners and Lenders*).⁷⁸

⁷⁷ *Id.* at 268-69.

⁷⁸ *See Regulators Fear \$1 Billion Coal Cleanup Bill*, *New York Times*, June 6, 2016 (“In the case of Patriot Coal, another large mining company that declared bankruptcy last year, West Virginia sought to hold its hedge fund lenders directly liable for mine reclamation.”)

E. SUPER PRIORITY

As previously discussed, asset retirement obligations are typically connected to current operations and inextricably linked to a debtor's assets. Timely settlement of asset retirement obligations and compliance with financial assurance obligations is necessary to remain in compliance with laws intended to protect the environment and public health. In Chapter 11 cases, this combination of factors grants government creditors power to demand enhanced security or funding of asset retirement obligations tied to non-economic assets as a precondition to plan confirmation.

For example, in the Chapter 11 bankruptcy of Energy Future Holdings (EFH) the Railroad Commission of Texas negotiated a court-approved \$1.1 billion carve out with super-priority status over all other pre-petition and post-petition claims, *including the DIP Financing*, for EFH's previously self-bonded lignite mine reclamation obligations.⁷⁹

In the bankruptcy of Alpha Natural Resources, the U.S. Department of the Interior refused to grant consent to Alpha's proposed sale and assignment of federal coal leases, grazing leases, and mineral materials sales contracts in Wyoming based on Alpha's inability to satisfy its asset retirement and related financial assurance obligations in Kentucky, Tennessee, Virginia, and West Virginia:

DOI has not consented to the proposed assumption and assignment for various reasons. Foremost, the assumption and assignment are proposed as part of a Plan that, as currently proposed, would transfer the Debtors' most valuable assets (including the subject leases) to a new entity, while leaving the less valuable assets – and the very significant associated environmental liabilities – behind in what presently is proposed to be an inadequately funded and infeasible reorganized entity.⁸⁰

Alpha's proposed plan was to sell its "good assets" for the benefit of secured creditors and leave the "bad assets" for the public to clean up. By withholding its consent to the transfer of federal leases to the point of forcing a liquidation, the United States was able to negotiate significant concessions from the debtor, the

⁷⁹ Case 14-10979-CSS, Doc 856 filed 06/06/14, available at <http://dm.epiq11.com/EFH/Docket>.

⁸⁰ *Alpha Natural Resources, Inc. et al*, Case 15-33896-KRH Doc 2724 (June 20, 2016).

purchaser, and the secured lenders for the benefit of U.S. and state environmental regulators.⁸¹

The bankruptcy of Peabody Coal followed the precedent set in prior coal bankruptcies. In July and August 2016 Peabody granted super priority status for mine reclamation liabilities to the states of Illinois, Indiana, New Mexico and Wyoming. The following table shows the amount of Peabody's self-bonded liability and the amount of the approved super priority claim.

State	Self-Bonded Liability	Super Priority Claim
Indiana	\$145,200,000	\$17,916,529
Illinois	\$92,200,000	\$12,897,495
New Mexico	\$181,000,000	\$31,603,771
Wyoming	\$726,800,000	\$126,942,205

Peabody's court-approved stipulation agreements with the four states recited the relevant precedent, as follows:

- *In re Alpha Natural Res.*, No. 15-33896 (KRH) (Bankr. E.D. Va. Oct. 8, 2015) (Docket No. 628) (order approving settlement providing Wyoming with a \$61 million superpriority claim to resolve a \$411 million substitution demand).
- *In re Alpha Natural Res.*, No. 15-33896 (KRF) (Bankr. E.D. Va. Dec. 22, 2015) (Docket No. 1158) (order approving settlement providing the West Virginia Department of Environmental Protection with a \$15 million letter of credit and \$24 million superpriority claim to resolve an approximately \$244 million substitution demand).
- *In re Arch Coal, Inc.*, No. 16-40120-705 (Bankr. E.D. Mo. Feb. 29, 2016) (Docket No. 432) (order approving settlement providing Wyoming with a \$75 million superpriority claim and approximately \$17 million in third-party bonding obligations to resolve \$485.5 million in reclamation obligations).

In addition to obtaining super priority status to assure payment of mature asset retirement obligations, states also have successfully negotiated 100% security for unmatured asset retirement obligations as a condition of plan confirmation. For

⁸¹ See *In re Chapter 11 Alpha Natural Resources, Inc., et al.*, Case 15-33896-KRH Document 2985, *Notice of Filing of Certain Agreements with the United States in Connection with Resolution of Reclamation Obligations* (July 7, 2016), available at <http://www.kccllc.net/alpharestructuring/document/1533896160707000000000011>.

example, Arch's approved plan of reorganization required it to replace all former Wyoming self-bonds with surety, cash or collateralized financial assurances.⁸²

In cases where assets essential to preservation of the estate are subject to discretionary permit renewals or transfers, as in the Alpha, Arch, Peabody and EFH cases, regulators have significant leverage to prioritize environmental liabilities ahead of all other claims. As demonstrated in the Alpha bankruptcy, governments can use this leverage to reprioritize secured collateral for the benefit of the public. And, as shown in the Arch bankruptcy, regulators can also use this leverage to improve their post-bankruptcy security position.

V. ESTIMATION OF ENVIRONMENTAL LIABILITIES

The principal challenge in accounting for environmental liabilities is uncertainty. The same is true when valuing environmental liabilities in bankruptcy. Although accounting estimates are not determinative of fair value in a bankruptcy context, accounting estimates and the methodologies by which they are generated may be instructive to bankruptcy practitioners.

As explained below, accounting standards address uncertainty in widely differing and inconsistent ways depending on the type of liability. The accounting standards governing asset retirement obligations, for example, attempt to value uncertainty in the manner that financial markets value uncertainty. Conversely, the accounting standards governing environmental remediation liabilities and environmental contingencies largely ignore the valuation of uncertainty in favor of minimum values that are more objective and auditable.

In situations where there is no active trading market to price uncertainty, valuation of uncertainty necessarily involves subjectivity, judgment and speculation. Today, no active trading markets exist for the transfer of environmental liabilities. As a result, even where applicable accounting standards call for market valuation of uncertainty, there is wide diversity of practice in how this is done.

This section describes the types of uncertainty associated with environmental liabilities and the various techniques used to value uncertainty. Bankruptcy practitioners can use this section to understand why a debtor's accounting

⁸² *In re Arch Coal, Inc.*, No. 16-40120-705 (Bankr. E.D. Mo. Sept. 13, 2016) Order Confirming Debtors' Joint Plan of, Reorganization.

estimates should never be accepted at face value and how to go about determining a fair valuation.

Practice Note: Common misperceptions about environmental liabilities include the following:

- *Environmental liability provisions reflect all of the debtor's known environmental liabilities and contingencies when in fact they reflect only those matters for which management has determined liability is both "probable and reasonably estimable".*
- *Environmental liability provisions represent the expected cash outflows required to fully settle, resolve or transfer the company's liability when in fact they often represent only the low end of the range of possible outcomes.*

Combined, these misperceptions can lead credit ratings agencies, equity analysts, debtors, creditors, trustees and courts to misjudge the materiality of these liabilities with respect to solvency and plan feasibility.

A. TRANSPARENCY

Environmental liability estimates used for financial accounting purposes tend to be based on management's judgment rather than independent third-party appraisals.⁸³ This contrasts with pension provisions, where third parties provide significant input as to obligations for future payments.⁸⁴ Significant disclosure is required in order for an outside analyst to deconstruct a company's accounting estimates and assess the reasonableness of the embedded assumptions. Sufficient disclosures, however, are most often unavailable.

S&P has observed that, "Current disclosure makes comparative assessment difficult as the details on timing and nature of the decommissioning and environmental provisions is opaque"; "Poor disclosure is making understanding the basis and reasons for changes in such provisions guesswork"; and "Clearer reporting of

⁸³ Reporting entities are not required to use specialists, such as appraisers or actuaries, to estimate asset retirement and environmental obligations. Accordingly, they are subject to the possibility of management bias. See AU-C Section 540 *Auditing Accounting Estimates, Including Fair Value Accounting Estimates, and Related Disclosures*, ¶ .21 and .A28, available at <http://www.aicpa.org/Research/Standards/AuditAttest/DownloadableDocuments/AU-C-00540.pdf>.

⁸⁴ See *S&P Environmental Provisions*.

decommissioning and environmental provisions would provide greater guidance for analysis.”

The U.S. Government Accountability Office (GAO) reached a similar conclusion:

Little is known about the extent to which companies are disclosing environmental information in their filings with SEC. Determining what companies should be disclosing is extremely challenging without access to company records, considering the flexibility in the disclosure requirements. ... One cannot determine whether a low level of disclosure means that a company does not have existing or potential environmental liabilities, has determined that such liabilities are not material, or is not adequately complying with disclosure requirements.⁸⁵

Because of the high levels of subjectivity and general insufficiency of disclosure, third parties should view management’s reported accounting estimates with skepticism.

B. UNCERTAINTY

Environmental liabilities are often subject to two basic types of uncertainty—uncertainty as to the existence of liability and uncertainty as to the timing and amount of cash outflows.

1. EXISTENCE OF LIABILITY

For accounting purposes, a “liability” is a present obligation arising from past transactions or events.⁸⁶ For liability to exist, an obligating event must have occurred. Obligating events are as varied as a release of hazardous substances to the environment, the assumption of ownership of a contaminated site, construction of a new asset, a change in law, or a court judgment. In some instances, such as with most asset retirement obligations, existence of liability is clear from the outset. In other cases, the existence or non-existence of liability only becomes evident over time.

Where the existence of liability is contingent on one or more future events or non-events, valuation of the legal uncertainty can be addressed in one of several ways.

⁸⁵ United States Government Accountability Office, *Environmental Disclosure: SEC Should Explore Ways to Improve Tracking and Transparency of Information* (July 2004).

⁸⁶ See Statement of Financial Accounting Concepts No. 6 ¶ 35.

One way is to conclude that no liability exists at all, or at least not yet; therefore, there is no need to value it until liability is certain.⁸⁷ Another way is to value the contingency by multiplying the probability from 0% to 100% that liability has been or will be incurred by the amount of the loss that will be suffered if and when liability is imposed.⁸⁸ Yet another way is to value the contingency only when the existence of liability reaches a subjective probability threshold (e.g., when liability is deemed “probable” or “more likely than not”).⁸⁹

In accounting terms, if the existence of liability is uncertain, the possible, but as yet uncertain, obligation is called a “loss contingency” or a “contingent liability”. Contingent environmental liabilities are possible obligations where the existence of liability capable of giving rise to a loss remains uncertain. An example of an environmental loss contingency is a threatened but as yet unasserted environmental lawsuit related to historical releases of hazardous substances.

Environmental contingencies are not recorded as “liabilities” for financial accounting purposes until certain criteria are met. Under U.S. GAAP and IFRS, an environmental contingency becomes an environmental liability only when the existence of liability becomes *probable* and the amount of the liability becomes reasonably estimable.

Although not recorded as liabilities on the balance sheet, contingent environmental liabilities do have an exit price. In other words, a third party would charge *something* to assume or guaranty the debtor’s possible obligation, even if the probability of liability is remote. The theoretical exit price is largely a function of the probability and magnitude of possible loss.

⁸⁷ This is the approach typically taken by defendants in litigation. See *Disclosure Dilemma: Financial Reporting of Contingent and Environmental Liabilities*, Academic Case Study A200, by Alan D. Jagolinzer, Nathan T. Blair, C. Gregory Rogers (Harvard Business Publishing 2008).

⁸⁸ This is the approach followed by bankruptcy courts. See *In re W.R. Grace & Co.*, 281 B.R. 852 (Bankr.D.Del.2002) (it is necessary to discount contingent claims by the probability that the contingency will never occur),

⁸⁹ See ASC 450-20-25-2(a) (a contingent liability is recognized only when it is “probable” that a liability has been incurred and the amount of the loss can be reasonably estimated).

Environmental remediation liabilities usually begin as loss contingencies and then gradually mature into noncontingent liabilities as more information becomes available.

An entity's environmental remediation obligation that results in a liability generally does not become determinable as a distinct event, nor is the amount of the liability generally fixed and determinable at a specific point in time. Rather, the existence of a liability for environmental remediation costs becomes determinable and the amount of the liability becomes estimable over a continuum of events and activities that help to frame, define, and verify the liability.⁹⁰

The evolution of environmental remediation liabilities from contingencies to liabilities may depend on whether the company is contesting liability in ongoing legal proceedings. Although they may be disclosed in notes to financial statements, environmental remediation liabilities are rarely if ever recorded in the financial statements so long as the company is contesting liability. To recognize a liability for accounting purposes at a time when liability remains contested could be deemed a prejudicial admission of liability.⁹¹ Few companies are willing to risk the possible prejudicial effect of recognizing an environmental remediation liability until the existence of contested liability is virtually certain.

Similarly, companies rarely if ever record environmental liabilities for latent pollution conditions known only to it. Management is more likely to conclude that a “don’t ask, don’t tell” policy is the better course of action.⁹²

If an environmental remediation liability is on the books, it is likely that the company is no longer seeking to avoid liability and is already making payments on the debt—incurring cash expenditures for pre-cleanup activities, remediation

⁹⁰ “Although environmental remediation liabilities is not one of the examples discussed in paragraph 450-20-05-10, environmental remediation liabilities are loss contingencies.” ASC 410-30-05-25.

⁹¹ See *Disclosure Dilemma: Financial Reporting of Contingent and Environmental Liabilities*, Academic Case Study A200, by Alan D. Jagolinzer, Nathan T. Blair, C. Gregory Rogers (Harvard Business Publishing 2008).

⁹² See *Corporate Environmental Disclosure Policy*, by C. Gregory Rogers, ABA Environment, Energy, and Resources Law Summit: 17th Section Fall Meeting, September 2009, available at [http://www.fin47.com/documents/Corporate Environmental Disclosure Policy.pdf](http://www.fin47.com/documents/Corporate%20Environmental%20Disclosure%20Policy.pdf).

activities, or post-remediation monitoring activities, which are being charged against the accounting reserve created for the liability.

In contrast to early stage environmental remediation liabilities, uncertainty about the existence of liability with respect to asset retirement obligations is generally quite low from the outset. Although the timing and method of settlement of asset retirement obligations are often conditional on future events (e.g., the timing of asset retirement), the source and timing of the obligating event is generally clear.

[W]hen an existing law, regulation, or contract requires a company to perform an asset retirement activity, an unambiguous requirement to perform the retirement activity exists, even if that activity can be deferred indefinitely. At some point, deferral is no longer possible, because no tangible asset will last forever (except land). Therefore, the obligation to perform the asset retirement activity is unconditional even though uncertainty exists about the timing and (or) method of settlement.⁹³

Although the timing of settlement may be conditional on a future event, liability for asset retirement obligations is incurred upon the acquisition, construction, development or normal operation of the asset.⁹⁴

2. TIMING AND AMOUNT OF CASH OUTFLOWS

Environmental liabilities are almost always subject to uncertainty about the timing and amount of cash outflows necessary to resolve them. Uncertainty often exists with regard to, among other things, the resolution of contractual, investigative, technological, regulatory, legislative, and judicial issues, all of which could affect the timing and amount of cash outflows to resolve asset retirement obligations and environmental remediation liabilities.

⁹³ FASB Interpretation No. 47, *Accounting for Conditional Asset Retirement Obligations*.

⁹⁴ See *In re Appalachian Fuels, LLC. al.*, Case No. 09-10343 (Bankr. E.D. Kentucky 2014) (finding that “under the Environmental Laws, surface coal mining activities can only be conducted under the auspices of a permit. [citations omitted] In order for a permit to be issued, among other requirements, an applicant must submit and obtain approval of a detailed reclamation plan. [citations omitted] The permittee and all successor permittees and operators of the permitted site become obligated to comply with all permit requirements as a condition of permit issuance, including correction of existing violations. [citations omitted] Thus, an operator's duty to perform reclamation arises from the moment it begins to operate under the auspices of a permit and any breach of that duty subjects it to civil liability as well as criminal penalties.”).

A basic principle of accounting is that unliquidated and disputed liabilities should be recorded in the balance sheet only when they can be reasonably, or reliably, estimated.⁹⁵ This principle requires companies to answer two questions—(1) when is an uncertain liability reasonably estimable?; and (2) how is uncertainty to be addressed in calculating a reasonable estimate? Accounting standards answer these questions differently for asset retirement obligations and environmental remediation liabilities.

a) ASSET RETIREMENT OBLIGATIONS

The timing of settlement of an asset retirement obligation may be conditional on the uncertain timing of a future event (e.g., permanent cessation of operations). In some cases, sufficient information about the timing of settlement may not be available to reasonably estimate fair value. Oil companies rarely record asset retirement obligations for refineries because they believe they cannot reasonably estimate when a refinery will be permanently shuttered. Similarly, railroad companies rarely record asset retirement obligations for contaminated rail yards on the basis that these assets have an indefinite useful life.

But there is uncertainty about the timing of settlement of recorded asset retirement obligations as well. Retirement of long-lived assets can be accelerated by regulatory, economic, or natural events beyond the debtor's control. For example, in 2010 the U.S. Department of Interior issued an "idle iron" order requiring oil and gas producers operating in the Gulf of Mexico to set permanent plugs in nearly 3,500 nonproducing completed wells and dismantle about 650 production platforms no longer being used.⁹⁶ This action by the Department of Interior forced oil companies to permanently retire assets that had been temporarily idled for years and might otherwise have remained so for many years or decades longer. The Fukushima nuclear disaster in Japan is an example of how unforeseen natural disasters can accelerate asset retirement and dramatically increase the cost.

For accounting purposes, asset retirement obligations are considered reasonably estimable unless there is insufficient information to reasonably estimate a range of settlement dates, potential methods of settlement, or the probabilities associated with the potential settlement dates and potential methods of settlement.⁹⁷ If these

⁹⁵ See ASC ¶¶ 410-20-55-14, 410-30-25-1(b) and 450-20-25-2(b).

⁹⁶ United States Department of the Interior, Bureau of Ocean Energy, Management and Regulation, NTL No. 2010-G05 (September 15, 2010).

⁹⁷ ASC ¶ 410-20-25-8(b).

factors can be reasonably estimated, uncertainty is factored into the estimate using an expected present value technique described below.⁹⁸

b) ENVIRONMENTAL REMEDIATION LIABILITIES

Certainty about the timing and amount of cash outflows for environmental remediation liabilities tends to emerge over time as the remedial process (i.e., investigation, feasibility study, remedial design, operation and maintenance, closure, and post-closure care and monitoring) develops. At the early stages of the remediation process, a responsible party will have varying amounts of information related to the different components. For example, it may be able to estimate the most likely value of the cost of investigation and the low and high end of the range of the possible costs for the feasibility study, but have no reasonable basis to develop a range of possible costs for any of the other component phases of the cleanup.

For accounting purposes, environmental remediation liabilities are first broken up into their component parts. Individual component parts are considered reasonably estimable if a range of possible costs can be reasonably estimated. If there is an amount that appears to be a better estimate than any other amount within the range, that amount is recorded as a liability. Otherwise, the low end of the range is recorded.⁹⁹ Accordingly, the overall liability that is recorded may be based on amounts representing best estimates within ranges of costs of some components of the liability (e.g., investigation), the lower end of a range of costs for other components of the liability (e.g., feasibility study), and zero for other components of the liability.¹⁰⁰ Unlike asset retirement obligations, environmental remediation liabilities are measured in a way that avoids the use of probabilistic methods such as expected value to factor uncertainty into the estimate. Moreover, early-stage estimates often do not include any costs whatsoever for the most expensive components of the overall liability, including remedial design, operation and maintenance, closure, and post-closure care and monitoring.

The manner in which accounting standards deal with uncertainty varies significantly from how bankruptcy courts deal with uncertainty. Bankruptcy courts do not postpone recognition of liability until an amount can be reasonably estimated and they do not value environmental liabilities at the low end of the range of possible outcomes.

⁹⁸ ASC ¶ 410-20-25-7.

⁹⁹ See ASC ¶¶ 410-30-30-17 and 450-20-30-1.

¹⁰⁰ See ASC ¶ 410-30-25-9.

[T]he object of a solvency analysis is to assign a "fair valuation" to all debts, with the term "debt" defined as a liability on a claim, and "claim" defined in the "broadest possible sense" to include contingent, unmatured and unliquidated claims. The resulting solvency analysis is often used in connection with a bankruptcy filing, where all debts are accelerated and debtors are obligated to send notice of the requirement of filing a proof of claim to every known potential environmental creditor.¹⁰¹

Unwary creditors, ratings agencies, equity analysts, corporate managers and bankruptcy practitioners may be shocked to learn that the unfunded "reserves" for environmental liability shown in the debtor's balance sheet do not come close to approximating fair value. For example, in its 10-K for the year ended December 31, 2005, Tronox Inc. reported that, "As of December 31, 2005, we had reserves in the amount of \$223.7 million for environmental matters and receivables for reimbursement for such matters of \$56.7 million."¹⁰² Tronox later argued in bankruptcy that that the net present value of its environmental remediation liabilities as of November 2005 was \$278.1, but the court found that a fair valuation of Tronox's environmental liabilities for solvency purposes was \$1.5 billion at November 2005.¹⁰³

When long-term environmental liabilities are estimated for accounting purposes at the low end of the range, if they are recognized at all, the result is often a recorded reserve balance that never decreases, notwithstanding ongoing expenditures to resolve the liability. The court's findings in Tronox are indicative:

[In considering the reasonableness of Tronox's environmental liability estimate of \$278.1 million, which was developed from Kerr-McGee's pre-spinoff estimate] it bears recalling that Kerr-McGee's environmental expenditures during the five years prior to the IPO had averaged \$160 million per year, that it had spent \$580 million just at the West Chicago site, that it had received a demand from the EPA for \$179 million for cleanup at a Superfund site in Manville, New Jersey,

¹⁰¹ *In re Tronox Incorporated*, 503 B.R. 239 (Bankr. S.D New York 2013).

¹⁰² Available at <http://www.sec.gov/Archives/edgar/data/1328910/000114118506000045/tronox10k2005.htm>.

¹⁰³ *In re Tronox Incorporated*, 503 B.R. 239 (Bankr. S.D New York 2013).

and that Tronox succeeded to virtually all of the Kerr-McGee sites. It was a common refrain of Defendants that Kerr-McGee's environmental costs were diminishing, but as discussed elsewhere, this contention is not supported by the record.¹⁰⁴

C. EXISTING LAWS AND INTERPRETATIONS

Because liabilities, by definition, are current obligations arising from past obligating events, liability estimates cannot consider possible future changes in law or changes in the interpretation of existing laws.

A legal obligation may exist even though no party has taken any formal action. In assessing whether a legal obligation exists, an entity is not permitted to forecast changes in the law or changes in the interpretation of existing laws and regulations.¹⁰⁵

As environmental regulations change over time, companies must revise their prior liability estimates to reflect new or modified obligations. Environmental liabilities tend to be long-term in nature, often spanning several decades from inception to settlement. Consequently, changes in environmental regulations over the lifespan of an environmental liability can have a significant impact on the nature of the obligation and the cash outflows ultimately required to settle it.

D. KNOWN MINIMUM VALUE

Under U.S. GAAP, contingent environmental liabilities and environmental remediation liabilities are measured at the low end of the range of possible outcomes unless there is a better estimate (i.e., a single most likely outcome).

If some amount within a range of loss appears at the time to be a better estimate than any other amount within the range, that amount shall be accrued. When no amount within the range is a better estimate than any other amount, however, the minimum amount in the range shall be accrued. Even though the minimum amount in the range is not necessarily the amount of loss that will be ultimately

¹⁰⁴ Id.

¹⁰⁵ SFAS 143 ¶ A3.

determined, it is not likely that the ultimate loss will be less than the minimum amount.¹⁰⁶

The minimum in the range of possible liability is also used when there is uncertainty about the timing of expenditures:

The measurement of environmental remediation liabilities shall be based on the reporting entity's estimate of what it will cost to perform each of the elements of the remediation effort when those elements are expected to be performed. Although this approach is sometimes referred to as considering inflation, it does not simply rely on an inflation index (cost estimates submitted to the Environmental Protection Agency usually include a prescribed inflation factor) and should take into account factors such as productivity improvements due to learning from experience with similar sites and similar remedial action plans. In situations in which it is not practicable to estimate inflation and such other factors because of uncertainty about the timing of expenditures, a current cost estimate would be the minimum in the range of the liability to be recorded until such time as these cost effects can be reasonably estimated.¹⁰⁷

ASTM E 2137-01, *Standard Guide for Estimating Monetary Costs and Liabilities for Environmental Matters*,¹⁰⁸ states that, “When the outcome and cost uncertainties are so great that it is premature to estimate a range of values or a most likely value, then a minimum value including component costs (e.g., contracts entered, initial studies) that are reasonably certain to be incurred should be estimated.”¹⁰⁹ Of course, subjective judgment is required to determine “when the outcome and cost

¹⁰⁶ ASC ¶ 450-20-30-1.

¹⁰⁷ ASC 410-30-30-17.

¹⁰⁸ This ASTM standard is not authoritative accounting guidance for purposes of U.S. GAAP or IFRS. It states in Section 1.1 that, “it is not intended to supersede accounting and actuarial standards including those by the Financial Accounting Standards Board and the U.S. [Securities Exchange Commission]. This standard does not address the establishment of reserves or disclosure requirements.” However, E 2137 is widely regarded by valuation experts in bankruptcy as authoritative for determining the fair valuation of environmental liabilities in bankruptcy. *See, e.g., In re Tronox Incorporated*, 503 B.R. 239 (Bankr. S.D New York 2013).

¹⁰⁹ ASTM E 2137-01 § 5.4.4.

uncertainties are so great that it is premature to estimate a range of values or a most likely value.”

Like environmental loss contingencies, environmental remediation liabilities are generally subject to uncertainty regarding the amount or timing of cash outflows and are commonly reported at the minimum in the range of liability, which may be the amount of the company’s current budget forecast for remediation expenditures.¹¹⁰

Known minimum value estimates have the benefit of avoiding speculation, but at the cost of also avoiding recognition of economic reality. Unwary observers that mistake known minimum value estimates for fair valuations stand to be unpleasantly surprised.

E. MIDPOINT OF RANGE

Under IFRS, if there is a range of equally likely outcomes, the midpoint of the range, as opposed to the low end of the range, is considered the best estimate. The midpoint between the high and low cost estimates is typically not the most likely value.¹¹¹

Rarely, if ever, is there is a range of equally likely outcomes for an environmental liability. Midpoint estimates may be more reliable than known minimum value estimates, but they are not a reasonable proxy for fair value.

F. MOST LIKELY VALUE

A most likely value (MLV) estimate represents a technical and regulatory scenario that is most likely to occur. U.S. GAAP and IFRS implicitly assume that a most likely value does not exist “when there is a range of equally likely outcomes” or “when no amount within the range is a better estimate than any other amount.” ASTM E2137 states that:

When an expected value approach is not practical or appropriate, a most likely value could be developed using engineering estimates. This MLV captures the cost of the scenario believed to be most likely to occur (for example, a stated preferred remedy). Typically, the estimator exercises a priori judgments (based on experience) about

¹¹⁰ See Rogers, C. Gregory, *A Board's-Eye View of Environmental Liabilities*, NACD Directorship, Vol. 36 Issue 1, p. 66 (Feb/Mar 2010).

¹¹¹ ASTM E 2137-01 § 5.4.2.

the ranking of likely outcomes, but because of cost or other considerations does not develop a full range of possible outcomes to support an expected value estimate.¹¹²

A most likely value estimate can be just as deceptive as a known minimum value. Consider, for example, an environmental liability with only two possible outcomes—(1) a 51 percent chance of costing \$1 million, and (2) a 49 percent chance of costing \$100 million. In this example, the most likely value and known minimum value are both \$1 million.

G. EXPECTED VALUE

The FASB describes expected value, in statistical terms, as the weighted average of a discrete random variable's possible values where the respective probabilities are used as weights.¹¹³ The expected value technique starts with a set of cash outflows that, in theory, represents all possible cash outflows (expected cash outflows). Because all possible cash outflows are probability weighted, the resulting expected cash outflow is not conditional upon the occurrence of any specified event.¹¹⁴ Possible outcomes should be limited to realistic outcomes with statistically significant probabilities to avoid shifting the expected value through the addition of extreme outcomes with insignificant probabilities of occurrence.¹¹⁵

Under IFRS, if there is a range of equally likely outcomes, then the midpoint of that range is considered the best estimate.¹¹⁶ If outcomes within the range differ in likelihood, a probability-weighted expected value is the best estimate.¹¹⁷ For U.S. GAAP, expected value is a component of expected present value and fair value measurements discussed below.

H. EXPECTED PRESENT VALUE

Present value is a tool used to link future amounts (for example, expected cash outflows used to develop an expected value estimate) to a present amount using a

¹¹² *Id.*

¹¹³ SFAS 157 ¶ B12.

¹¹⁴ *Id.*

¹¹⁵ ASTM E 2137-01 § 5.4.1.2.

¹¹⁶ IAS 37 ¶ 39.

¹¹⁷ *Id.*

discount rate.¹¹⁸ Expected present value combines probability-weighted cash flow estimates (expected value) with present value discounting. The expected present value approach allows use of present value (discounting) techniques when the timing of cash outflows is uncertain, by developing a probabilistic weighted average of various possible future scenarios.

Expected present value is a starting component in developing an exit price or fair value estimate.

I. EXIT PRICE

An “exit price” is the price that would be received to sell an asset or paid to transfer a liability. The transaction to sell the asset or transfer the liability is a hypothetical transaction, considered from the perspective of a market participant that holds the asset or owes the liability. An exit price is not necessarily the same as an “entry price,” the price that would be paid to acquire the asset or received to assume the liability.¹¹⁹ Thus, a mining company at the time of permitting a new mine might value the assumed asset retirement obligation for future mine reclamation (entry price) different from what it would expect to pay to immediately transfer that same asset retirement obligation to a financial investor (exit price).

J. FAIR VALUE

Mark-to-market or fair value measurement refers to accounting for the “fair value” of an asset or liability based on the current market price, or for similar assets and liabilities, or based on a hypothetical market valuation. Fair value accounting has long been viewed in academia as the gold standard for preparing financial statements, and has been a part of U.S. GAAP since the early 1990s.¹²⁰

Because fair value measurement seeks to measure the price to “exit” the liability through a market transaction, when faithfully applied, we believe it offers both—(1) the best methodology to account for environmental liabilities in financial statements, and (2) an appropriate and perhaps the best methodology for estimating the fair valuation of environmental liabilities in bankruptcy for purposes

¹¹⁸ ASC 820-10-55-5.

¹¹⁹ SFAS 157 ¶ 7.

¹²⁰ See *Mark-to-Market Accounts Signal Caution for Investors*. Bloomberg. May 2, 2012, available at <http://www.bloomberg.com/news/2012-05-02/mark-to-market-accounts-signal-caution-for-investors.html>.

of valuing claims, administrative expenses and super-priorities, determining solvency, and evaluating plan feasibility.

1. MEASUREMENT OBJECTIVE

The objective of fair value measurement is to determine an exit price.¹²¹ With respect to the estimation of liabilities, a fair value measurement assumes that the liability is exchanged in an orderly transaction between market participants to transfer the liability at the date of measurement. The hypothetical transaction assumes that the liability to the counterparty continues. The liability is transferred, but not settled, and the nonperformance risk relating to the liability is the same before and after its transfer.¹²²

The transaction assumes time to allow for marketing activities that are usual and customary for transactions involving such liabilities; it is not a forced liquidation or distress sale. The transaction is viewed from the perspective of a market participant that owes the liability. Therefore, the objective of a fair value measurement is to determine the price that would be paid to transfer the liability.

2. UNBUNDLED LIABILITIES

A fair value estimate of a liability implicitly assumes that the liability is transferred by itself, unbundled from any accompanying assets. So, for example, the fair value of an environmental remediation liability would not include the value of the contaminated real estate associated with the cleanup liability, and the fair value of an asset retirement obligation would not include the value of the related asset.

It's like trading in a used car when buying a new one. If the dealer credits \$5,000 over market for a trade-in as an inducement to get the buyer to pay the full MSRP for a new car, the trade-in credit does not reflect the fair value of the used car. Similarly, the value internally assigned to decommissioning, plugging and abandonment costs to be assumed by a prospective purchaser of a late life oil and gas field are not necessarily reflective of the fair value of these asset retirement obligations in the hands of the seller.

3. NO ACTIVE MARKET

Environmental liabilities are routinely transferred in business combinations involving the negotiated sale or transfer of part or all of the assets and liabilities of a business. Also, there is a negotiated market for the transfer of environmental remediation liabilities, often along with the contaminated real estate. However,

¹²¹ *Id.*

¹²² SFAS 157 ¶ 15.

there is no active market with quoted prices for the transfer of environmental liabilities standing alone. Consequently, it is not possible to determine the fair value of environmental liabilities based on current market prices for the same or similar liabilities.

4. APPLICABILITY

Under U.S. GAAP, asset retirement obligations are measured at fair value, but contingent environmental liabilities and environmental remediation liabilities are not. The FASB adopted a standard that would have applied fair value to contingent environmental liabilities and environmental remediation liabilities assumed in a business combination, but later reversed its decision when preparers, auditors, and members of the legal profession expressed concerns, including the following:

- Determining the fair value of litigation-related contingencies.
- Supporting the recognition and measurement of liabilities arising from legal contingencies when supporting information may be subject to attorney-client privilege.
- Disclosing potentially prejudicial information in financial statements.¹²³

The FASB has since made no effort to expand the scope of fair value measurement to include environmental liabilities other than asset retirement obligations. As a result, different types of environmental liabilities are measured in fundamentally different ways under U.S. GAAP, with asset retirement obligations measured at fair value and environmental remediation liabilities measured at the low end of the range or most likely value.

5. METHODOLOGY

Valuation techniques consistent with the market approach, income approach, and/or cost approach are used to measure fair value.¹²⁴ The market approach uses prices and other relevant information generated by market transactions involving identical or comparable assets or liabilities.¹²⁵

¹²³ For more on the topic of prejudicial effect, see *Disclosure Dilemma: Financial Reporting of Contingent and Environmental Liabilities*, Academic Case Study A200, by Alan D. Jagolinzer, Nathan T. Blair, C. Gregory Rogers (Harvard Business Publishing 2008), available at <http://www.gsb.stanford.edu/faculty-research/case-studies/disclosure-dilemma-financial-reporting-contingent-environmental>.

¹²⁴ SFAS 157 ¶ 18.

¹²⁵ *Id.*

The income approach uses valuation techniques, such as present value, option-pricing models, and binomial models, to convert future amounts (for example, cash outflows or earnings) to a single discounted present value amount. The measurement is based on the value indicated by current market expectations about those future amounts.¹²⁶

The cost approach is based on the amount that currently would be required to replace the service capacity of an asset (often referred to as current replacement cost).¹²⁷

Because there is no active market for the transfer of environmental liabilities, an expected present value technique (an income approach) is most often the only feasible means by which to estimate the fair value of these obligations.¹²⁸

6. INPUTS

Inputs refer broadly to the assumptions that market participants would use in pricing the liability, including assumptions about risk. Such risks might include, for example, the risk inherent in the inputs to the valuation technique. Inputs may be observable or unobservable.¹²⁹

Observable inputs are inputs that reflect the assumptions market participants would use in pricing the asset or liability developed based on market data obtained from sources independent of the reporting entity. Unobservable inputs are inputs that reflect management's own assumptions about the assumptions market participants would use in pricing the asset or liability.¹³⁰

Estimation of environmental liabilities generally must rely on unobservable inputs because there are no active markets for identical or similar liabilities. To comply with accounting standards for fair value measurement, unobservable inputs must reflect—(1) the reporting entity's own assumptions about the assumptions that market participants would use in pricing the liability; (2) the best information about

¹²⁶ *Id.*

¹²⁷ *Id.*

¹²⁸ See ASC 410.20.30-1.

¹²⁹ SFAS 157 ¶ 21.

¹³⁰ *Id.*

market participant assumptions that is reasonably available without undue cost and effort.¹³¹

Inputs to fair value estimates of asset retirement obligations should include all of the following elements:

- An estimate of future cash outflows to settle the obligation.
- Expectations about possible variations in the amount and timing of the cash outflows representing the uncertainty inherent in the cash outflows.
- The time value of money, represented by the rate on risk-free monetary assets that have maturity dates or durations that coincide with the period covered by the cash outflows and pose neither uncertainty in timing nor risk of default to the holder (that is, a risk-free interest rate).¹³²
- The price for bearing the uncertainty inherent in the cash outflows (that is, a market risk premium).
- Other factors that market participants would take into account in the circumstances.
- The nonperformance risk relating to that liability, including but not limited to the debtor's own credit risk (read more about credit risk below).¹³³

Cash flows and discount rates should reflect assumptions that market participants would use when pricing the liability and should take into account only the factors attributable to the specific liability being measured.¹³⁴

7. MARKET RISK PREMIUM

Fair value estimates of environmental liabilities should include a market risk premium. U.S. GAAP defines *market risk premium* as the price that a third party would demand and could expect to receive for bearing the uncertainties and unforeseeable circumstances inherent in the obligation.¹³⁵

¹³¹ FAS 157 ¶ 30.

¹³² For present value computations denominated in nominal U.S. dollars, the yield curve for U.S. Treasury securities determines the appropriate risk-free interest rate.

¹³³ ASC 820-10-55-5.

¹³⁴ ASC 820-10-55-6.

¹³⁵ ASC 410-20-55-13(d).

Pricing market risk premium for purposes of fair value measurement might be difficult. However, the degree of difficulty alone is not a sufficient reason to exclude a risk premium.¹³⁶

Market risks associated with environmental liabilities include uncertainty about the amount and timing of future cash outflows and lack of liquidity, or stated differently, the inability to easily transfer such obligations to other market participants.

a) UNCERTAINTY IN EXPECTED CASH OUTFLOWS

The risk premium for bearing the uncertainty in the amount and timing of the cash outflows required to settle an environmental obligation can be measured by comparison to a certainty-equivalent cash flow.

A certainty-equivalent cash flow refers to an expected cash flow (as defined), adjusted for risk such that one is indifferent to trading a certain cash flow for an expected cash flow. For example, if one were willing to trade an expected cash flow of \$1,200 for a certain cash flow of \$1,000, the \$1,000 is the certainty equivalent of the \$1,200 (the \$200 would represent the cash risk premium). In that case, one would be indifferent as to the asset held.¹³⁷

The example above can be changed slightly to address the expected cash outflows to settle a liability. For example, consider the price at which one would be indifferent as to the assumption of two different obligations where the transferee agrees to assume the obligation to make future cash payments in exchange for receipt of a single lump sum payment today. Obligation A has an expected value of \$1,000 with a fat tail (i.e., low probabilities of cash outflows far in excess of \$1,000) and no cost ceiling. Obligation B is a fixed certain amount. At what fixed certain amount of Obligation B would one be indifferent between assuming it or the uncertain amount of Obligation A? The difference between that price and \$1,000 reflects a market risk premium.

Environmental liabilities often involve high levels of uncertainty in the amount and timing of future cash outflows. In addition, unlike financial debt instruments, environmental liabilities typically have no cost ceiling. The responsible party must complete the required activities regardless of their cost.

¹³⁶ ASC 820-10-55-8.

¹³⁷ SFAS 157 ¶ E14.

Experienced environmental practitioners understand that environmental regulators rarely if ever agree to completely release responsible parties prior to completion of all legally mandated activities, even in exchange for a cost premium, which most responsible parties would happily pay in exchange for certainty. Regulators know that the market risk premium for environmental liabilities is high due to high levels of uncertainty about the amount and timing of the required cash outflows.

b) LIQUIDITY RISK

Liquidity risk is the risk stemming from the lack of marketability of an investment that cannot be bought or sold quickly enough to prevent or minimize a loss.¹³⁸ There is no active trading market for the transfer of environmental liabilities. As a result, these obligations are highly illiquid. A market participant accepting payment in exchange for the assumption of environmental liabilities would reasonably assume that it would have to pay a premium on estimated value or pay high transactions costs to liquidate its liability position or transfer the obligation, if it is indeed possible to do so at any price. Accordingly, it will demand a payment amount that is higher than its estimated cost of the liability to be assumed.

To illustrate this point, consider two scenarios. In the first scenario, Party B agrees to assume financial responsibility for Party A's asset retirement obligations due in 30 years. Party B receives a risk-free put option to transfer the obligations back to Party A at any time prior to settlement at 100 percent of their current estimated cost with no penalty. In the second scenario, Party B receives no similar put option. All other things being equal, the price that the Party B will charge is less in the first scenario than the second scenario because there is less liquidity risk. In real life, the put option would come at a cost, and the negotiated price of the option would reflect the market risk premium for illiquidity.

8. DISCOUNTING

Discounting is the process of determining the present value of future cash outflows, either in the form of a lump sum payment or a stream of cash outflows, which may be either constant or variable. Discounting requires three basic inputs—the amount of expected future cash outflows, the time period over which these cash outflows are expected to occur, and a discount rate.

Under U.S. GAAP, the discount rate used to estimate the fair value of environmental liabilities is the reporting entity's credit adjusted risk free rate after taking into consideration the effects of all terms, collateral, and existing guarantees that would

¹³⁸ See Investopedia definition at <http://www.investopedia.com/terms/l/liquidityrisk.asp>.

affect the amount required to settle the liability.¹³⁹ A credit adjusted risk free rate includes three subcomponents:

- The estimated *real* risk free rate
- The estimated rate of inflation
- The estimated credit risk¹⁴⁰

a) RISK FREE RATE

The *real* risk free rate is the theoretical rate of return of an investment with absolutely zero default risk and no premium to offset the effect of inflation. The *nominal* risk free rate is the real risk free rate plus the inflation rate premium.

In the United States, the Treasury Bond rate is usually considered to be the appropriate indicator of the nominal risk free rate, and the Treasury Inflation Protected Security (TIPS) rate is usually chosen as the real risk free rate. When choosing an indicative real risk free rate, care must be given to choosing a risk free security of the same maturity and duration of the obligation to be discounted that has no currency or reinvestment rate risk. For example, in the United States if a company had a lump sum asset retirement obligation due in 30 years, the 30-year zero coupon TIPS rate would be used as an indicator of the real risk free rate as it has no reinvestment rate risk (as Treasury Bonds do) or currency risk.¹⁴¹

b) INFLATION

¹³⁹ “An entity shall discount expected cash outflows using an interest rate that equates to a risk-free interest rate adjusted for the effect of its credit standing (a credit-adjusted risk-free rate). In determining the adjustment for the effect of its credit standing, an entity should consider the effects of all terms, collateral, and existing guarantees on the fair value of the liability.” ASC 410-20-55-15.

¹⁴⁰ If a market risk premium is not priced separately as described in the previous section, it may be incorporated into a discount rate. “An entity that performs an expected cash flow approach that encompasses many different cash flow probabilities may effectively incorporate the implicit market risk premium associated with variability into those cash outflows. Arguably the more robust an expected cash flow approach is, the less likely a premium for variability in cash outflows would be significant. Entities may also include an implicit market risk premium in their determination of an appropriate discount rate when explicit evidence of such a premium is not available. In this case, the discount rate would no longer be solely the credit-adjusted risk-free rate.” *Asset Retirement Obligations* (Ernst & Young, June 2011).

¹⁴¹ See <http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=realyield>.

The estimated rate of inflation is the expected loss in the purchasing power of money over the discount period expressed as an annual percentage. Assumptions about cash outflows and discount rates should be internally consistent with respect to inflation. For example, nominal cash outflows, which include the effect of inflation, should be discounted at a rate that includes the effect of inflation. The nominal risk-free interest rate includes the effect of inflation. Real cash outflows, which exclude the effect of inflation, should be discounted at a rate that excludes the effect of inflation.¹⁴²

c) CREDIT RISK

Credit risk premium, or default premium, is the premium charged to compensate a creditor for the risk of loss of principal or loss of a financial reward stemming from a debtor's failure to repay a loan or otherwise meet a contractual obligation.¹⁴³ FASB specifically considered whether adjustments for the reporting entity's own credit standing (sometimes called "own credit risk") should be reflected in the discount rate or the expected cash outflows when estimating the fair value of liabilities and determined that it should be reflected in the discount rate.¹⁴⁴ The key point for bankruptcy practitioners to understand is this: As counter-intuitive as it may seem, all other things being equal, higher liability default risk equates to lower recorded liability estimates.

(1) CONTROVERSY

Few issues in accounting generate the kind of gut-level reaction that this issue provokes. Some have termed the idea of including an entity's credit standing in the measurement of its liabilities a perfidious doctrine. Others argue that reporting the effect of changes in an entity's credit standing is counterintuitive or even dangerous.

The principal argument against incorporating credit risk in accounting estimates of liabilities is that doing so can mask impending bankruptcy for an extended period by depressing the value of recorded liabilities and when actual bankruptcy

¹⁴² ASC 820-10-55-6(d).

¹⁴³ See definition of "default premium" at Investopedia at <http://www.investopedia.com/terms/d/defaultpremium.asp>.

¹⁴⁴ SFAS 157 § E23. A credit-adjusted risk-free rate is an interest rate that equates to a risk-free interest rate adjusted for the effect of the company's credit standing. In determining the adjustment for the effect of its credit standing, an entity should consider the effects of all terms, collateral, and existing guarantees that would affect the amount required to settle the liability. See SFAS 143 ¶ A21.

intervenes the liability may be marked down even to zero on an accounting basis if it, in fact, becomes worthless in the marketplace.

(2) RATIONALE

In response to detractors, U.S. accounting regulators unofficially justify inclusion of the debtor's own credit risk in valuing its liabilities as follows:

Some argue that incorporating credit standing produces counterintuitive reporting. They observe that a decrease in an entity's credit standing would, if incorporated in measurement, produce a decrease in the recorded liability. The offsetting credit to this debit would be a gain. The entity would appear to be profiting from its deteriorating financial condition. On the other hand, an increase in an entity's credit standing would produce an increase in the recorded liability. The entity would appear to be worse off as a result of the improvement. Those results are certainly unfamiliar, but are they really counterintuitive? A balance sheet is composed of three classes of elements—the entity's economic resources (assets), claims against those resources held by non-owners (liabilities) and the residual claims of owners (equity). In a corporation, the value of owners' residual claims cannot decline below zero; a shareholder cannot be compelled to contribute additional assets. When an entity's credit standing changes, the relative values of claims against the assets change. The residual interest—the stockholders' equity—can approach, but cannot go below, zero. The value of creditors' claims can approach, but probably can never reach, default risk free. Traditional financial statements have ignored those economic and legal truisms, so any measurement more consistent with real world relationships will necessarily be unfamiliar.¹⁴⁵

FASB's official position on incorporating credit risk in the fair value measurement of liabilities, including asset retirement obligations, is based on the Statement of Financial Accounting Concepts No. 7.¹⁴⁶ According to FASB:

The most relevant measure of a liability always reflects the credit standing of the entity obligated to pay. Those who hold the entity's

¹⁴⁵ *Understanding the Issues: "Credit Standing and Liability Measurement,"* by Michael Crooch, FASB Member, and Wayne S. Upton, FASB Senior Project Manager.

¹⁴⁶ See paragraphs 78-88.

obligations as assets incorporate the entity's credit standing in determining the prices they are willing to pay. When an entity incurs a liability in exchange for cash, the role of its credit standing is easy to observe. An entity with a strong credit standing will receive more cash, relative to a fixed promise to pay, than an entity with a weak credit standing.

The effect of an entity's credit standing on the fair value of particular liabilities depends on the ability of the entity to pay and on liability provisions that protect holders. Liabilities that are guaranteed by governmental bodies (for example, many bank deposit liabilities in the United States) may pose little risk of default to the holder. Other liabilities may include sinking-fund requirements or significant collateral. All of those aspects must be considered in estimating the extent to which the entity's credit standing affects the fair value of its liabilities.

(3) CREDIT RISK IS LIABILITY-SPECIFIC

Both U.S. GAAP and IFRS call for consideration of the risks specific to the liability when determining the appropriate discount rate.¹⁴⁷ IFRS provides that the discount rate should include only those risks specific to the liability. U.S. GAAP provides that estimated credit risk should take into consideration "the effects of all terms, collateral, and existing guarantees that would affect the amount required to settle the liability".¹⁴⁸

(4) CREDIT RISK CONSIDERATIONS SPECIFIC TO ENVIRONMENTAL LIABILITIES

In determining the adjustment for the effect of its credit standing, an entity should consider "the effects of all terms, collateral, and existing guarantees on the fair value of the liability."¹⁴⁹ Our research shows that companies frequently estimate the fair value of asset retirement obligations using a credit risk adjustment based on their incremental unsecured borrowing rate above a risk free rate (credit spread) on debt of similar maturity. For example, if the interest rate on a 30-year U.S. Treasury is 2.5 percent and the interest rate on the reporting entity's 30-year unsecured bonds is 6.5 percent, the credit spread is 4.0 percent.

¹⁴⁷ Indeed, IFRS instructs the debtor to consider *only* those risks specific to the liability.

¹⁴⁸ ASC 410-20-55-15.

¹⁴⁹ SFAS 143 ¶ A21, note 18.

Use of the entity’s credit spread in estimating the fair value of environmental liabilities implicitly assumes that the “terms, collateral, and existing guarantees” applicable to a company’s unsecured corporate bonds are the same as those applicable to its environmental liabilities. However, this assumption is not valid.

The following example illustrates how default risks specific to environmental liabilities are quite different from the standard reference point of a long-term unsecured corporate bond.

Assume that the U.S. government holds a 30-year corporate unsecured zero coupon debenture¹⁵⁰ issued by PetroCo and PetroCo has an asset retirement obligation arising under federal law that is expected to be settled in 30 years. What are the comparative risks of default from the perspective of the holder specific to each of these two different obligations, and how do these risks affect the appropriate credit risk adjustment to the discount rate used to value them? Answering these questions requires separate consideration of the terms, collateral, guarantees and other conditions associated with the two different obligations.¹⁵¹

TABLE 2 COMPARISON OF DEFAULT RISKS FOR CORPORATE DEBENTURE AND ASSET RETIREMENT OBLIGATION

Terms	Corporate Debenture	Asset Retirement Obligation
Principal amount	Fixed amount	Indeterminate amount
Maturity	Fixed date	Indeterminate due date
Interest rate	Fixed or adjustable	No interest
Collateral	None	Secured by related asset
Other security	None	Regulatory financial assurance
Tax effects	Principal payments not tax deductible	Principal payments are tax deductible
Priority in Bankruptcy	Lowest priority for general unsecured claims	Can be administrative expense priority or super-priority
Obligors	Issuer only	Other jointly and severally liable parties

¹⁵⁰ A debenture is a type of debt instrument that is not secured by physical assets or collateral. Debentures are backed only by the general creditworthiness and reputation of the issuer. See <http://www.investopedia.com/terms/d/debenture.asp#ixzz3cX0wYeX6>.

¹⁵¹ The terms and conditions of a bond are usually set forth in a bond’s indenture. A bond indenture is a legal and binding contract between a bond issuer and the bondholders, and it specifies all of the important terms and conditions of a bond such as its principal amount, its maturity date, the timing of interest payments, the rate of interest, whether the bond may be called by the issuer or put back to the issuer by the holder and if so, upon what terms and conditions. Other critical terms and conditions include covenants made by the issuer.

With respect to the asset retirement obligation, there are several terms and conditions that protect the holder (the U.S. government) against default by the debtor. Examples of such terms and conditions are summarized in Table 2 and described more fully below.

(a) MATURITY

Asset retirement obligations have an indeterminate maturity date that is subject to acceleration due to unilateral government action, natural disasters, economic disruption, or other causes. As observed by S&P with respect to asset retirement obligations:

Uncertainties inherent in their estimation include ... The timing of asset retirement, which is subject to assumptions that can change materially. For example, in extractive projects, future price expectations for hydrocarbon or minerals affect the economic life of the assets. For power generators, asset-retirement timing depends notably on local regulatory decisions. Their impact might be favorable (i.e., in the case of an operating license extension) or unfavorable (i.e., in the case of an early mandated closure).¹⁵²

(b) INTEREST RATE

Asset retirement obligations do not carry interest. Accordingly, there is no risk of default on accrued but unpaid interest on the debt as would be the case with a corporate bond. Therefore, the risk of default is lower.

(c) COLLATERAL

The related asset secures the asset retirement obligation. If the value of the asset exceeds the value of the asset retirement obligation, as can always be reasonably assumed at the time the asset retirement obligation is incurred, the obligation is fully secured. The asset can be sold to a third party who will then assume the obligation. In this case the holder of the asset retirement obligation (the government) may now have the security of the new owner in addition to the prior owner as well as the asset (see “Strict and Joint and Several Liability” below).

In addition, the asset retirement obligation may be effectively cross-collateralized by other assets of the debtor, such as the privilege to operate on other government property. For example, immediately following the BP Oil Spill, the U.S. government

¹⁵² Standard & Poor’s Encyclopedia of Analytical Adjustments for Corporate Entities.

effectively threatened to revoke BP's license to do business in the United States until it committed to put \$20 billion into a trust fund to secure payment for damages. Finally, at the end of the asset's useful life, there may still be significant salvage value that can be used to offset asset retirement costs.

(d) OTHER FORMS OF SECURITY

Many of the environmental statutes under which asset retirement obligations arise require the debtor to provide financial assurance in the form of trust funds, surety bonds, letters of credit, insurance, corporate guarantees, or some combination thereof. In some cases, debtors may "self-bond" based on a showing of financial strength; however, the financial criteria used in self-bonding are specifically designed to ensure that the debtor poses an acceptably small default risk.

(e) TAX EFFECTS

Asset retirement costs are tax deductible. Thus, tax savings, which are not considered in the estimated cash outflows used to calculate the asset retirement obligation, should be deducted from the principal amount of the obligation when calculating the amount of the debt. Because the principal amount of the debt is smaller relative to the debtor's assets, default risk is reduced.

(f) PRIORITY IN BANKRUPTCY

As discussed in Section IV, non-financial environmental liabilities will often have administrative priority and may be accorded super-priority status above DIP financing and secured claims.

(g) JOINT AND SEVERAL LIABILITY

Strict liability and joint and several liability are hallmarks of environmental law. asset retirement obligations that arise under environmental laws may be subject to strict liability and joint and several liability. For example, under regulations governing decommissioning of offshore wells in the Gulf of Mexico, lessees and owners of operating rights are jointly and severally responsible for meeting decommissioning obligations for facilities on leases, including the obligations related to lease-term pipelines, as the obligations accrue and until each obligation is met.¹⁵³ Also, the Department of the Interior has consistently interpreted "operator" under the Surface Mining Control and Reclamation Act (SMCRA) to include both

¹⁵³ 30 CFR § 250.1701.

mining contractors and landowners, and has declared them to be jointly and severally liable for SMCRA reclamation fees.¹⁵⁴

Owners and operators facing environmental remediation liabilities arising under the Comprehensive Environmental Response, Compensation, and Liability Act and the Clean Water Act may also be subject to strict, joint and several liability. Remediation liabilities are often associated with asset retirement obligations.¹⁵⁵

The ability of a creditor to pursue predecessors and successors in interest if the debtor cannot satisfy its obligation reduces default risk. In effect, other entities have guaranteed the debtor's obligation.¹⁵⁶ Parties that pay decommissioning costs may be subrogated to the economic rights of the United States in claims against other jointly and severally liable parties.¹⁵⁷

(h) DIRECT AND DERIVATIVE LIABILITY OF OWNERS
AND LENDERS

Under statutory and case law governing environmental protection, a corporate parent, shareholder or lender that actively participates in, and exercises control over, the operations of a corporation's assets and asset retirement activities might be held directly liable for the corporation's environmental liabilities. Moreover, courts have shown a greater willingness in environmental protection cases to "pierce the corporate veil"—overriding an accepted principle of corporate law that shareholders are not liable for the actions of the corporation—when the corporate

¹⁵⁴ *U.S. v. Manning Coal Corp.*, 977 F. 2d 117 (4th Cir. 1992), *citing* 46 Fed. Reg. 60780 (Dec. 11, 1981), 42 Fed. Reg. 62713 (Dec. 13, 1977), and 49 Fed. Reg. 31412 (Aug. 7, 1984). *See also*, *Liabilities of Non-Permit Holders Under the Surface Mining Control and Reclamation Act*, 16 E. Min. L. Inst. ch. 8 (1997).

¹⁵⁵ *See Rogers* for a detailed discussion on the differences between asset retirement obligations and environmental remediation liabilities.

¹⁵⁶ *See In re ATP Oil & Gas Corporation*, Case No. 12-36187, (Bankr. S.D. Tex. 2013) (finding that "Anadarko E & P Onshore LLC is a predecessor-in-interest to ATP with respect to a portion of the Gomez Properties. As a predecessor-in-interest, Anadarko has potential liability for all or a portion of the decommissioning costs. ATP's abandonment of the property prior to decommissioning may force Anadarko to absorb all or a portion of the more than \$100,000,000 cost.").

¹⁵⁷ *See In re Tri-Union Development Corp.*, 314 B.R. 611 (Bankr. S.D. Tex. 2004).

form would otherwise be misused to accomplish certain wrongful purposes, most notably fraud, on the shareholders' behalf.¹⁵⁸

Such arguments may be particularly persuasive in instances where the debtor has paid dividends or engaged in stock buy-backs at a time when it could not meet its asset retirement obligations. The possibility that the value of owners' residual claims (i.e., their equity interests) could decline below zero and that lenders could be directly liable for a borrower's environmental liabilities reduces the debtor's environmental liability default risk.

Hedge funds that are both lenders and owners of debtors in bankruptcy are at risk of being held directly liable for the debtor's environmental liabilities. In Patriot Coal's bankruptcy commenced in 2015, West Virginia sought to hold Patriot's hedge fund lenders directly liable for mine reclamation on the basis that the hedge fund group had exercised some degree of control over and had played a significant role in Patriot's management since the new board of directors assumed control after consummation of a previous chapter 11 plan in 2013.¹⁵⁹ West Virginia was able to reach an agreement with Patriot to set aside more than \$50 million for the company's environmental cleanup responsibilities. Patriot's hedge fund investors agreed to provide the additional cash needed to fund Patriot's obligations.¹⁶⁰

(i) NON-ABANDONMENT

Under section 554(a) of the Bankruptcy Code, after notice and a hearing, the trustee may abandon any property of the estate that is burdensome to the estate or that is of inconsequential value and benefit to the estate.¹⁶¹ However, the U.S. Supreme Court has ruled that a trustee may not abandon property in contravention of a state statute or regulation that is reasonably designed to protect the public health or safety from identified hazards.¹⁶² Chapter 11 debtors cannot abandon assets and

¹⁵⁸ See *U.S. v. Bestfoods*, 524 U.S. 51, at 63-64 (stating that when (but only when) the corporate veil may be pierced, may a parent corporation be charged with derivative CERCLA liability for its subsidiary's actions); and n.9 (stating that veil-piercing can subject a parent corporation to derivative liability as both an owner or operator).

¹⁵⁹ *In re Patriot Coal Corporation*, Case 15-32450-KLP Doc 1161 (09/09/15).

¹⁶⁰ WVDEP, Patriot Coal Reach Agreement, 10/6/2015, available at <http://www.dep.wv.gov/news/Pages/WVDEP,-Patriot-Coal-Reach-Agreement.aspx>.

¹⁶¹ 11 U.S.C. § 544(a).

¹⁶² *Midlantic Nat'l. Bank v. New Jersey Dept. of Environmental Protection*, 474 U.S. 494, 507 (1986) (holding that contaminated property could not be abandoned prior to its decontamination, as abandonment in a contaminated state would be in contravention

thereby avoid nonfinancial environmental liabilities associated with those assets absent conditions that will adequately protect the public's health and safety, such as the existence of a jointly and severally liable predecessor-in-interest or the assumption of liability by a buyer.¹⁶³

(j) EXTRAORDINARY POWERS OF GOVERNMENTS

Governments face many challenges in promulgating and enforcing financial assurance requirements,¹⁶⁴ including the need to balance environmental and economic objectives. However, governments have extraordinary resources at their disposal to enforce environmental obligations. If governments fail to ensure full settlement of environmental debts, it is in part due to their failure to fully exercise their power to require adequate financial assurance or exercise their enforcement authority, or both.

(5) APPROPRIATE CREDIT RISK ADJUSTMENT

Taking fully into account the factors affecting credit risk on environmental liabilities reduces credit risk essentially to zero. As described below, this is consistent with the positions of the IASB, the SEC, environmental regulatory agencies, and bankruptcy courts.

(a) SEC GUIDANCE

Under U.S. GAAP, estimated future cash outflows for environmental remediation liabilities may be discounted to reflect the time value of money only if the aggregate amount of the liability and the amount and timing of cash payments for the liability are fixed or reliably determinable.¹⁶⁵

The measurement of the remediation liability should not have been discounted at any point during the period under discussion because

of a state statute or regulation that is reasonably designed to protect the public health or safety from identified hazards.)

¹⁶³ See *In re ATP Oil & Gas Corporation*, Case No. 12-36187, (Bankr. S.D. Tex. 2013) (allowing debtor to abandon offshore oil and gas leases and avoid related AROs with consent of the United States government which could look to predecessor-in-interest for settlement of the ARO).

¹⁶⁴ See *e.g.*, Advance notice of proposed rulemaking on Risk Management, Financial Assurance and Loss Prevention by the Bureau of Ocean Energy Management, 79 Fed. Reg. 160 at 49027, Tuesday, August 19, 2014.

¹⁶⁵ ASC 410-30-35-12.

the amount of the obligation and the amount and timing of cash payments were not fixed or reliably determinable.¹⁶⁶

If an environmental remediation liability meets the conditions for recognition on a discounted basis in the paragraph above, the SEC has stated that the rate used to discount the estimated future cash outflows should be “the rate that will produce an amount at which the liability could be settled in an arm's-length transaction with a third party and should not exceed the interest rate on monetary assets that are essentially risk free and have maturities comparable to that of the liability.”¹⁶⁷

In practice, estimated future cash outflows for environmental remediation liabilities are rarely discounted under U.S. GAAP, but if discounted, they are to be discounted at a rate equal to or less than the estimated risk free rate without adjustment for the debtor’s estimated credit risk. Given its stated position on environmental remediation liabilities, there is no reason to expect that the SEC would sanction use of a credit-adjusted rate to discount asset retirement obligations.

(b) IASB GUIDANCE

Under the provisions of IAS 37, estimated future cash outflows for environmental liabilities are discounted, “where the effect of the time value of money is material, using a pre-tax discount rate (or rates) that reflect(s) current market assessments of the time value of money and those ‘risks specific to the liability’ that have not been reflected in the best estimate of the expenditure.”¹⁶⁸ The IASB has specifically considered whether the ‘risks specific to the liability’ include an adjustment for the entity’s own credit risk, finding that—

- There is diversity of practice under IFRS regarding whether ‘risks specific to the liability’ include credit risk.
- Some reporting entities believe that credit risk is a ‘risk specific to the liability’ and either the cash outflows or the discount rate should be adjusted for this risk, and these entities find it practically simpler to adjust the cash outflows for risk, instead of the discount rate.¹⁶⁹

¹⁶⁶ 410-30-55-51.

¹⁶⁷ SAB Topic 5.Y, Accounting and Disclosures Relating to Loss Contingencies, ASC 450-20-S99-1.

¹⁶⁸ IAS 37 ¶¶ IN6 and ¶¶ 47

¹⁶⁹ Adjustments to expected cash outflows instead of the discount rate cannot be observed in an entities’ calculated accretion rate. Thus, it is not possible for an analyst to assess the amount of such adjustments.

- The predominant view is that credit risk is not a ‘risk specific to the liability’, and therefore the measurement of (non-financial) liabilities should not include an adjustment for credit risk. Proponents of this view think that non-financial liabilities are quite different from financial liabilities; so including credit risk in the measurement of the latter has little bearing on the same treatment for non-financial liabilities.
- The issue is both more significant and more urgent for oil and gas entities, for which a credit risk adjustment can increase asset retirement obligation estimates by 100% to 125%.¹⁷⁰

The IASB ultimately determined that objections were not persuasive to overturn the predominant practice to exclude own credit risk from ‘risks specific to the liability’ in IAS 37 paragraph 47. Under IFRS, the rate used to discount environmental liabilities should not include the debtor’s own credit risk.

(c) FINANCIAL ASSURANCE

Environmental regulatory agencies do not consider the regulated entity’s own credit risk in determining the amounts required for financial assurance to demonstrate that adequate funds will be readily available to settle asset retirement obligations.¹⁷¹

(d) BANKRUPTCY COURTS

Bankruptcy courts have also addressed the issue of the debtor’s own credit risk. Over time, the debtor’s credit standing may vary up or down. In the most extreme case, when a debtor faces liquidation, the risk of default on unsecured obligations may rise to 100 percent and market valuations may fall to zero. However, bankruptcy courts do not consider the debtor’s current credit standing and its effect on the market valuations of its tradable debt securities:

‘If holders of claims are fully informed of the debtor’s affairs and the asset values are less than the face amount of the claims, they would

¹⁷⁰ See IFRS Interpretations Committee Meeting Staff Paper on “IAS 37 Provisions, Contingent Liabilities and Contingent Assets - discount rate,” (November 2010) and IFRS Interpretations Committee meeting – 10-11 (March 2011) at http://www.iasplus.com/en/meeting-notes/ifrs-ic/2011/agenda_ifric_1103/agenda1775.

¹⁷¹ See *e.g.*, U.S. Environmental Protection Agency Final Rule on Financial Assurance Mechanisms for Local Government Owners and Operators of Municipal Solid Waste Landfill Facilities 61 Fed. Reg. 60328 (Nov. 27, 1996) (authorizing State Directors to allow discounting at an essentially risk free rate of interest for closure, post- closure care, and corrective action cost estimates under certain conditions).

never value their claims at more than the value of the assets. Likewise, the fully informed debtor would never be willing to pay claimants more than claimants would be willing to take. Thus, the value of the claims would never exceed the value of the assets and insolvency could never occur.’ We agree with this reasoning. If [defendant’s] argument were correct, insolvency could never occur, which is an absurd result. Therefore, we conclude for purposes of determining whether a debtor is insolvent under section 547, the liabilities of the debtor must be valued at face value.¹⁷²

In *In re Tronox Inc.*,¹⁷³ the court specifically considered the question of whether the debtor’s own credit risk should be included in the discount rate used to calculate the present value of future environmental response costs and concluded that it should not:

The final step in valuing the environmental liabilities as of the date of the IPO is to reduce the future costs to present value. Prof. Newton used a rate of 2.5% as a risk-free rate, based on the yields of U.S. treasury obligations and high-grade corporate bonds. Mr. Shifrin’s colleague, Mr. White, advocated the use of a 5% discount rate on the ground there should be an element of risk built into the rate. There is no question that a risk element is built into an analysis of income to be received in the future, on the ground that the expected income may never be received. However, a valuation of environmental and similar liabilities does not take into account the possibility that the debtor may not be able to pay the obligation; it attempts to arrive at a “fair valuation” of the liability regardless of ability to pay. Accordingly, Newton’s discount rate is appropriate, and Defendants 5% rate results in an unduly small present value.¹⁷⁴

U.S. GAAP might at first appear to be in conflict with other authorities on whether the debtor’s credit risk should be included in the discount rate used to estimate environmental liabilities. However, U.S. GAAP and the other authorities can be reconciled in their application by concluding that the appropriate credit risk

¹⁷² *In re ORBCOMM Global, L.P.*, 2003 WL 21362192, at *3 (citation omitted).

¹⁷³ 503 B.R. 239 (S.D. New York 2013).

¹⁷⁴ *Id.*

adjustment on environmental liabilities is essentially zero for the reasons described above.

In summary, bankruptcy courts, the SEC, the IASB, environmental regulators, and U.S. GAAP all reach the same conclusion: the debtor's credit risk should not be included in the discount rate used to estimate environmental liabilities. Instead, environmental liabilities should be discounted at a rate no higher than the risk free rate.¹⁷⁵

VI. TRUTH IN ACCOUNTING

Audited financial accounting estimates, even fair value estimates, may fail to accurately fairly reflect the economic value of environmental liabilities. This failure may be due to shortcomings in the applicable accounting standard or in the application of the standard.

Practice Note: Ratings agencies, equity analysts and bankruptcy practitioners may assume that audited financial accounting estimates for environmental liabilities, especially fair value estimates, fairly reflect economic value when they in fact may significantly understate fair value for a variety of reasons. This misperception may lead analysts, debtors, creditors, trustees and courts to rely on the debtor's audited accounting estimates instead of performing an independent analysis.

A. INCOMPLETENESS

An entity's financial statements may not reflect all of its environmental liabilities, and a debtor's schedules of liabilities may not reflect all of the environmental liabilities recorded in its financial statements.¹⁷⁶ Companies are supposed to record

¹⁷⁵ As explained above, the credit adjustment to the risk free rate approaches zero after taking into account the effects of "all terms, collateral, and existing guarantees" on the fair value of asset retirement obligations under U.S. GAAP.

¹⁷⁶ See e.g., *Magnum Hunter Resources Corporation v. Hall, Kistler & Company, LLP*, Civil Action No. 12-70-KSF. (U.S. Distr. Court, E.D. Kentucky 2013) (Following Magnum Hunter's \$124 million acquisition of NGAS, a publicly traded oil and gas exploration and production company, Magnum Hunter sued NGAS's auditor for issuing an unqualified opinion that NGAS' financial statements were in conformity with generally accepted accounting principles when in fact NGAS had failed to record asset retirement obligations associated with the retirement of oil and gas wells in the amount of \$6,677,688 and mine reclamation costs in the amount of \$2,000,000.).

environmental obligations as a liability in their financial statements when certain criteria are met (i.e., when probability is deemed to be probable and reasonably estimable).¹⁷⁷

In addition, to comply with GAAP and U.S. securities laws, companies may be required to disclose certain quantitative and non-quantitative information about environmental liabilities and contingencies. But companies, even public companies with audited financial statements, don't always do what they are supposed to do, and auditors can not always be counted on to assure full and fair presentation.

Moreover, environmental laws afford companies a great deal of discretion on whether to look for and acknowledge the existence of unasserted environmental claims, especially those impairing its own assets. Charged with preserving corporate assets, management may conclude it is best to let sleeping dogs lie.¹⁷⁸

B. MEASUREMENT PRINCIPLE

An entity's reported estimates may not accurately reflect the fair value its environmental liabilities because some or all of the individual estimates were determined using a measurement principle other than fair value measurement. Estimates based on the low end of the range of possible outcomes, for example, do not purport to reflect fair value. Thus, the proper application of accounting standards will not necessarily result in estimates that reflect "truth".

As stated by Standard & Poor's:

[T]he issuer's financial statements (historical or projected) are not necessarily viewed as "Truth"—i.e., the optimal or ultimate depiction of the economic reality of the issuer's financial performance and

¹⁷⁷ Generally, environmental obligations are recorded as liabilities in the financial statements only after the company first determines that legal liability is probable and the amount required to settle the obligation can be reasonably estimated. Obligations that are merely possible or that cannot be reasonably estimated are not recorded as liabilities in the financial statements and may or may not be disclosed.

¹⁷⁸ The criteria for disclosing or booking environmental liabilities often allow for significant management discretion. For a review of management incentives, disincentives and policy options, see *Corporate Environmental Disclosure Policy*, C. Gregory Rogers, ABA Environment, Energy, and Resources Law Summit: 17th Section Fall Meeting, September 2009, at <http://www.advancedenvironmentaldimensions.com/documents/Corporate%20Environmental%20Disclosure%20Policy.pdf>.

position. The financial analysis process necessitates making certain analytical adjustments to financial statements, to arrive at measures [S&P believes] are more reflective of creditors' risks, rights, and benefits; enable more meaningful peer and period-over-period comparisons; and facilitate more robust financial forecasts.

Adjusting financials long has been [S&P's] practice, and is an integral part of the rating process. Although such adjustments revise certain amounts reported by issuers under applicable Generally Accepted Accounting Principles (GAAP), that does not imply that [S&P challenges] the application of GAAP by the issuer, the adequacy of its audit or financial reporting process, or the appropriateness of GAAP accounting to fairly depict the issuer's financial position and results for other purposes.

Rather, it reflects a fundamental difference between accounting and analysis. The accountant necessarily must find one number to use in presenting financial data. The analyst, by definition, picks apart the numbers. Good analysis looks at multiple perspectives—and utilizes adjustments as an analytical technique to depict a situation differently for a specific purpose or to gain another vantage point.¹⁷⁹

Even fair value estimates may fall short of the “truth” due to wide “diversity in practice” in the manner in which different companies apply the principles of fair value measurement.

C. DIVERSITY IN PRACTICE

“Diversity in practice” is the term used by an accounting standards board to indicate that companies are applying its standards in significantly different ways. For example, the IASB has identified diversity in practice regarding consideration of credit risk in discount rates.¹⁸⁰ Our research shows that there is also wide diversity in practice under U.S. GAAP on this issue, with a majority of companies including the entity's credit spread in the interest rates used to discount asset retirement

¹⁷⁹ Standard & Poor's Encyclopedia of Analytical Adjustments for Corporate Entities.

¹⁸⁰ See IFRS Interpretations Committee Meeting Staff Paper on “IAS 37 Provisions, Contingent Liabilities and Contingent Assets - discount rate,” (November 2010) and IFRS Interpretations Committee meeting – 10-11 (March 2011) at http://www.iasplus.com/en/meeting-notes/ifrs-ic/2011/agenda_ifric_1103/agenda1775.

obligations and a minority of companies using a risk free rate. Our consulting experience also points to wide diversity in practice in estimating key inputs into fair value measurements, including expected cash outflows, market risk premium and expected settlement dates.

There is also the matter of cost-effectiveness. It is a basic accounting principle that financial reporting should not entail “undue cost and effort”—in other words the cost to preparers should not exceed the value to financial statement users. The level of effort required to produce reliable fair value asset retirement obligation estimates, for example, can be significant, especially for companies with many thousands of assets. Accounting standards appropriately offer some leeway for process simplification, but this opens the door to more diversity in practice.¹⁸¹

We believe that fair value measurement offers an appropriate methodology for estimating the true economic value of environmental liabilities. However, because small differences in the application of fair value measurement principles can result in widely differing results, one cannot reasonably assume that reported fair value estimates, even when audited by a reputable public accounting firm, in fact fairly present fair value.

D. SUBJECTIVITY

Because there are no active markets for identical or similar liabilities, environmental liability estimates, including fair value estimates of asset retirement obligations, must largely be developed using unobservable inputs. Accordingly, environmental liability estimates generally involve high degrees of subjectivity and judgment based on management’s own assumptions and biases.

In its description of analytical adjustments to corporate asset retirement obligation estimates, Standard & Poor’s offers the following explanation of uncertainty in the estimation of asset retirement obligations:

ARO measurement involves a high degree of subjectivity and measurement imprecision. Our starting point is the reported liability

¹⁸¹ See e.g., ASC 410-20-55-11 (“If assets with asset retirement obligations are components of a larger group of assets (for example, a number of oil wells that make up an entire oil field operation), aggregation techniques may be necessary to derive a collective asset retirement obligation. This Subtopic does not preclude the use of estimates and computational shortcuts that are consistent with the fair value measurement objective when computing an aggregate asset retirement obligation for assets that are components of a larger group of assets.”)

amount, which may be adjusted for anticipated reimbursements, asset salvage value, and tax reductions, further adjusted for any assumptions we view as unrealistic.

Most AROs involve obligations to incur costs that may extend well into the future. Uncertainties inherent in their estimation include:

- The amount of the ultimate cost of asset retirement, which will depend on the relevant country's laws and asset-specific environmental regulations at retirement; the condition of the markets for the specific assets' retirement services; possible economies of scale for the operator; and whether the activities ultimately are performed by the operator or by a third party.
- The timing of asset retirement, which is subject to assumptions that can change materially. For example, in extractive projects, future price expectations for hydrocarbon or minerals affect the economic life of the assets. For power generators, asset-retirement timing depends notably on local regulatory decisions. Their impact might be favorable (i.e., in the case of an operating license extension) or unfavorable (i.e., in the case of an early mandated closure).
- The discount rate to be used in the present value calculation. U.S. GAAP requires the use of an entity-specific discount rate. Hence, the stronger the entity's credit, the lower the discount rate—and the higher the liability. Similarly, the periodic accretion rate is lower for stronger credits, and higher for weaker credits. If nothing else, this hinders comparability across companies using U.S. GAAP, as well as to IFRS-reporting companies, which use market-related rates adjusted to risk-specific factors attributable to the liability.¹⁸²

Each of these areas of uncertainty is subject to management's assumptions and biases. Moreover, variances in individual inputs can have a compounding distortion effect on final estimates.

VII. VALUATION OF ENVIRONMENTAL LIABILITIES IN BANKRUPTCY

Fair valuation of environmental liabilities in bankruptcy may be an important consideration for purposes of valuing claims, administrative expenses and super-priorities, determining solvency, and evaluating plan feasibility.

¹⁸² Standard & Poor's Encyclopedia of Analytical Adjustments for Corporate Entities.

Practice Note: Financial accounting principles are not controlling for purposes of fair valuation in bankruptcy and, for the reasons explained in this chapter, accounting estimates of environmental liabilities should never be accepted at face value. Bankruptcy practitioners may assume therefore that accounting principles have no useful purpose in bankruptcy valuations when in fact fair value measurement is arguably the most rigorous methodology for determining the fair valuation of environmental liabilities. This misperception may lead debtors, creditors, trustees and courts to ignore the debtor's current and prior accounting estimates instead of systematically testing them against the principles of fair value measurement. Systematic analysis of current and former accounting estimates may show that the debtor failed to fairly present its financial condition in accordance with applicable accounting principles and securities laws, which could give rise to other legal remedies.

A. CONTINGENCIES

Bankruptcy courts use an expected value methodology to estimate contingent liabilities by discounting the amount of potential liability by the likelihood that actual liability will (or will not) occur.

[T]o avoid creating the unsettling impression that contingent liabilities must for purposes of determining solvency be treated as definite liabilities even though the contingency has not occurred ... it is necessary to discount [a contingent liability] by the probability that the contingency will occur and the liability become real.¹⁸³

B. ENVIRONMENTAL REMEDIATION LIABILITIES

Bankruptcy courts have considered whether environmental remediation liabilities are contingent or noncontingent simply because they are subject to uncertainty and found that they are noncontingent.

[Defendant's "conceptual probability" matrix, which assigned a 10% probability to response actions deemed "unlikely but possible," a 30% probability to response actions that were "possible," a 50% probability to response actions that were "equally likely," a 70% probability to response actions that were "more likely than not", and a 90% probability to response actions that were highly likely,] tends to assume that the environmental claims at issue here are mere

¹⁸³ *In re Xonics Photochemical, Inc.*, 841 F.2d 198, 200-01 (7th Cir. 1988).

contingent claims that should be subject to a discount for the probability they will never be pursued, whereas in fact environmental claims are claims that can be brought (or filed in a bankruptcy case) without satisfaction of a contingency.¹⁸⁴

C. ASSET RETIREMENT OBLIGATIONS

In certain industries, such as surface mining and nuclear power generation, where state or federal law requires companies to obtain a permit before commencing operations, the permittee may be required to provide financial assurance that it can satisfy the amount of pre-determined estimated costs to comply with asset retirement obligations, such as decommissioning, reclamation, cleanup and restoration requirements.¹⁸⁵ The financial assurance may be in the form of trust funds, surety bonds, letters of credit, insurance, corporate guarantees, or some combination thereof.

The face amount of these financial assurance obligations is unlikely to match the debtor's accounting estimates, if for no other reason than because financial assurance estimates are generally not discounted and accounting estimates for asset retirement obligations are. Government regulators may also fail to maintain accurate and complete data on asset retirement costs. In a 2015 investigation of the U.S. Department of Interior's management of decommissioning liabilities from offshore oil and gas production, the Government Accountability Office found:

Unless and until Interior obtains accurate and complete data on decommissioning costs, Interior may not have reasonable assurance that its cost estimates of decommissioning liabilities in the Gulf are accurate, or that it is requiring sufficient amounts of financial assurance based on these estimates.

Nonetheless, when given the choice between a debtor's accounting estimates and a government-approved financial assurance amount, bankruptcy courts have found the latter to be more credible evidence of fair value:

Finally, the bankruptcy court held that the Debtor's [coal mine] reclamation liability, one of the Debtor's most significant liabilities,

¹⁸⁴ *In re Tronox Incorporated*, 503 B.R. 239 (Bankr. S.D New York 2013).

¹⁸⁵ In other cases, such as onshore and offshore oil and gas drilling, laws require companies seeking drilling licenses to demonstrate some form of financial responsibility, but do not require a pre-commencement estimate of closure costs.

had a fair value in excess of \$1,000,000. The court again refused to apply the Debtor's book value of \$432,000, stating that "[t]he most credible proof is that the liability is in the amounts required by the governmental entities for the debtor's bonds. From our review of the record, these factual findings are not clearly erroneous.¹⁸⁶

Even when estimated and approved in advance by the government, environmental liability estimates may nonetheless warrant careful review due to changes in conditions or applicable laws and legal interpretations. For example, increased regulatory concern about high selenium concentrations in surface water runoff have caused coal mining companies to incur significant unexpected expenditures and to increase their asset retirement obligation estimates:

In 2012, Debtors [Patriot Coal] spent approximately \$43.6 million dollars on selenium treatment and related activities and \$46.8 million dollars on reclamation. Reclamation involves water treatment ... and the restoration to the surface of a coal mine to at least its pre-mining conditions. Debtors were also required to close several mines that could not be brought into compliance with environmental requirements.... Debtors, like many of Debtors' competitors, have also received adverse court dispositions in environmental cases. As a result of these lawsuits — and related court orders and consent decrees — Debtors recorded \$443 million dollars in asset retirement obligations on selenium water treatment projects as of December 31, 2012.¹⁸⁷

D. PRESENT VALUE

In *In re Tronox*, the bankruptcy court for the Southern District of New York explicitly acknowledged that the fair valuation of environmental liabilities in a solvency analysis requires the application of discounting to produce a present value estimate—“The final step in valuing the environmental liabilities as of the date of the IPO is to reduce the future costs to present value.” Also, as discussed in below, the *Tronox* court specifically considered the question of whether the debtor’s own credit risk should be included in the discount rate used to calculate the present value of future environmental response costs and concluded that it should not.

¹⁸⁶ *In re Sunset Sales, Inc.*, 220 B.R. 1005 (Bankr. App. Panel 10th Cir. 1998).

¹⁸⁷ *In re Patriot Coal Corporation*, 493 B.R. 65 (Bankr. E.D. Missouri 2013).

E. FAIR VALUE AND FAIR VALUATION

Valuation of liabilities is of particular importance in proceedings to determine the debtor's solvency. For entities other than partnerships and municipalities, the Bankruptcy Code defines "insolvent" as:

a financial condition such that the sum of such entity's debts is greater than all of such entity's property, at a fair valuation, exclusive of (i) property transferred, concealed, or removed with intent to hinder, delay, or defraud such entity's creditors; and (ii) property that may be exempted from property of the estate under section 522 of [the Bankruptcy Code].¹⁸⁸

The Bankruptcy Code does not define "fair valuation,"¹⁸⁹ but courts have construed the term to refer to the fair market value of the debtor's assets and liabilities within a reasonable time of the transfer.¹⁹⁰

[F]air value does not mean the amount the property would bring in the worst circumstances or in the best. . . . For example, a forced sale price is not fair value though it may be used as evidence on the question of fair value. . . . The general idea of fair value is the amount of money the debtor could raise from its property in a short period of time, but not so short as to approximate a forced sale, if the debtor operated as a reasonably prudent and diligent businessman with his

¹⁸⁸ 11 U.S.C.A. § 101(32)(A).

¹⁸⁹ [Update and rephrase] See, e.g., *Liquidation Trust of Hechinger Inv. Co. of Del., Inc. v. Fleet Retail Fin. Group* (In re Hechinger Inv. Co. of Del.), 327 B.R. 537, 548 (Bankr. D. Del. 2005) ("The Bankruptcy Code does not mandate what constitutes a 'fair valuation.'"); *Total Technical Servs., Inc. v. Whitworth* (In re Total Technical Servs., Inc. and TTS, Inc.), 150 B.R. 893, 900 (Bankr. D. Del. 1993) ("Fair value is not defined by the Bankruptcy Code."). See also *Travellers Int'l AG v. Trans World Airlines, Inc.* (In re Trans World Airlines, Inc.), 203 B.R. 890, 893 (D. Del. 1996) ("The meaning ascribed to the term 'fair valuation' is crucial, in that it guides the interpretation of a debtor's financial data, which then enables a court to determine if the debtor's liabilities exceed its assets, that is, whether the debtor is insolvent."), rev'd in part on other grounds, 134 F.3d 188 (3d Cir.), cert. denied, 523 U.S. 1138 (1998).

¹⁹⁰ *In re Ohio Corrugating Co.*, 91 B.R. 430 (Bankr. N.D. Ohio 1988), citing *Briden v. Foley*, 776 F.2d 379, 382 (1st Cir.1985).

interests in mind, especially a proper concern for the payment of his debts.¹⁹¹

Although courts attribute varying degrees of evidentiary significance to accounting estimates, it is well accepted that financial accounting conventions are not controlling in determining the fair valuation of the debtor's environmental liabilities.¹⁹²

The fair value of a liability for accounting purposes—i.e., “the price that would be paid to transfer a liability in an orderly transaction between market participants at the measurement date”¹⁹³—is essentially identical to judicial interpretations of “fair valuation” in bankruptcy. Accordingly, we believe that fair value measurement provides an appropriate methodology—if not the best available methodology—for determining the fair valuation of environmental liabilities in bankruptcy.

Although fair value measurement under U.S. GAAP is currently applied only to asset retirement obligations, we believe the methodology can be applied equally well to environmental remediation liabilities and environmental loss contingencies. Uncertainty about the existence of liability or the timing and amount of cash outflows does not prevent the determination of a reasonable estimate of fair value because that uncertainty can be factored into the measurement through assignment of probabilities to cash outflows in the same way bankruptcy courts value contingencies.¹⁹⁴

¹⁹¹ *In re Joe Flynn Rare Coins, Inc.*, 81 B.R. 1009 (Bankr.D.Kan.1988).

¹⁹² *In re Tronox Incorporated*, 503 B.R. 239 (Bankr. S.D New York 2013) (“A principal reason why financial statements are of little use in a solvency analysis is that generally accepted accounting principles (GAAP) require reserves only for claims that are ‘probable and reasonably estimable.’ [citations omitted] The record is replete with evidence that [the defendant] misapplied this standard and thereby understated its liabilities for GAAP purposes.”); *Heilig-Meyers Co. v. Wachovia Bank, N.A.* (In re Heilig-Meyers Co.), 328 B.R. 471, 488 (E.D. Va. 2005) (“Although the values reported in financial statements to shareholders are based on accounting methods that are inapplicable to the determination of solvency under the Bankruptcy Code, such reported values are ‘competent evidence from which inferences about a debtor’s insolvency may be drawn.’”).

¹⁹³ ASC 820-10-20.

¹⁹⁴ See SFAS 143 ¶ A17 (“Uncertainty about whether performance will be required does not defer the recognition of a retirement obligation; rather, that uncertainty is factored into the measurement of the fair value of the liability through assignment of

We believe fair value measurement, faithfully applied, offers the most robust available methodology for valuing the inherent uncertainty associated with environmental liabilities. It starts by determining probability-weighted expected cash flows, but it does not end there. Probability-weighted expected cash flows alone do not reflect the market value of the uncertainty in the cash flows (e.g., fat-tailed distributions with no cost ceiling) nor the liquidity risk that exists because there is no active trading market for environmental liabilities. The market premium associated with these risks can be significant and should be included in a fair valuation of environmental liabilities. Finally, fair value measurement provides a sound and well-articulated methodology for determining the appropriate interest rate to be used in discounting environmental liabilities—that is, a risk free rate.

For the foregoing reasons, we recommend the use of fair value measurement, as proscribed under U.S. GAAP, to determine the fair valuation of all environmental liabilities in bankruptcy. We rush to caution, however, that we do not believe that a debtor's reported fair value accounting estimates warrant significant evidentiary value in bankruptcy for the reasons discussed in Section VI (Truth in Accounting).

VIII. CONCLUSION

Many bankruptcy practitioners and interested stakeholders, including credit ratings agencies and equity analysts, may operate under common misperceptions about the nature and magnitude of corporate environmental liabilities. Estimates recorded in a debtor's financial statements and schedules may significantly understate the fair value of its environmental liabilities. With more detailed information about how environmental liability estimates are developed and recorded, practitioners and stakeholders can, hopefully, avoid being surprised by these misperceptions, and, indeed, help ensure that environmental liabilities are appropriately estimated with the objectives of fairly assessing the value of claims as well as maximizing the value and viability of debtors upon emergence from bankruptcy.

probabilities to cash flows. Uncertainty about performance of conditional obligations shall not prevent the determination of a reasonable estimate of fair value.”)