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INVESTOR IN PEOPLE

# AN EXPERIMENTAL INVESTIGATION OF THE INTENTIONS TO ACCRUE AND DISCLOSE ENVIRONMENTAL LIABILITIES

Stephanie M. Weidman, Anthony P. Curatola and  
Frank Linnehan

## ABSTRACT

*There is ample evidence that many firms do not fully disclose environmental liabilities. Since it is likely that full disclosure of these liabilities may lead to greater accountability by a firm, it is important to identify factors related to the treatment and disclosure of these specific liabilities. This study reports on factors found to be related to the intentions of 263 financial executives to accrue and disclose environmental liabilities based on scenarios developed for this research. Using the Theory of Planned Behavior, we find that intentions to accrue and disclose environmental liabilities are positively related to an executive's attitudes, subjective norms, perceived behavioral control, and sense of obligation. We also provide evidence that the magnitude of the environmental and financial consequences has a positive, significant relation to these*

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*intentions and find that financial executives from privately held companies are less likely to accrue and disclose environmental liabilities than those from companies that are publicly traded. These findings suggest that encouraging positive attitudes toward environmental accruals and disclosures, enhancing the behavioral control of financial executives over the accrual decision, and heightening their moral obligation to disclose these liabilities may lead to better accounting treatment and transparency of environmental matters.*

## INTRODUCTION

It has been argued by critical and social accounting theorists that accounting helps to shape social reality (Lehman, 1995; Wright, 1994; Gray, 1992; Arrington & Puxty, 1991). Accounting is not an objective conveyance of numbers and facts; it is aligned with interests (Arrington & Puxty, 1991; Tinker, Merino, & Neimark, 1982). By making firms' environmental actions and associated costs more visible to those outside the firm, accounting can be a mechanism for improving the environmental responsibility of companies. Accounting disclosures make organizational boundaries more transparent, allowing society to hold firms accountable for their environmental actions. Gray (1992) speaks of the role of the accounting function as a means of fostering *accountability* and *transparency*: Gray defines accountability as the duty to supply information to which others have a right. This right to receive information and duty to account derives not only from law and quasi-law, but also from the barometers of public opinion, which can be viewed as society's expressions of the implicit social contract between itself and organizations (Gray, 1992).

In applying the concept of accountability to companies' environmental activities, it implies that those having the power to affect natural resources have an obligation to provide an account of their actions to society. Society's expectations regarding the natural environment have been institutionalized through a number of activities, including the passage of numerous laws and regulations regarding pollution control, the formation of environmental pressure groups, the passing of 'sunshine laws', and the promulgation of accounting standards pertaining to environmental liabilities in the United States and elsewhere.

The present study is motivated by the desire to see firms more fully disclose their environmental liabilities in hopes that improved accountability

may lead to improved performance in the area of environmental management. Studies have provided evidence that many firms do not fully disclose environmental liabilities (Daley & Schuler, 1999; Freedman & Stagliano, 1998; Mitchell, 1997; Gray, Owen, & Adams, 1996; Tilt, 1994; United Nations, 1994). Disclosure practice with respect to these liabilities remains diverse, resulting in financial statements that may not be comparable among firms that face similar environmental risks (Freedman & Stagliano, 1998; Mitchell, 1997; SEC, 1993). Further reinforcing the difficulty in determining the meaning of disclosures, Hughes, Anderson, and Golden (2001) found that disclosures alone were not sufficient to accurately classify firms by their actual environmental performance. Factors such as the social impact of environmental concerns, the significance of environmental clean-up costs and the potential effect full disclosure may have on a firm's stakeholders are reasons why it is important to increase the overall level and quality of disclosure of firms' environmental liabilities.

The flexibility allowed by accounting standards for environmental liability recognition and disclosure contributes to the diverse accounting practice in this area. In issuing Statement Number 143, *Accounting for Asset Retirement Obligations* (FAS 143), the Financial Accounting Standards Board (FASB) acknowledged that the "diverse accounting practices that have developed for obligations associated with the retirement of tangible long-lived assets make it difficult to compare the financial positions and results of operations of companies that have similar obligations but account for them differently" (FASB, 2001, p. 2). FAS 143, along with FASB Interpretation No. 47 (FIN 47), attempt to provide more stringent guidance for the recognition and disclosure of contingent liabilities that impair asset values, many of which arise due to environmental damage (FASB, 2005). Additionally, a July 2004 report by the Government Accountability Office recommends that the SEC improve its tracking and transparency of environmental disclosure information (U.S. GAO, 2004). Within the framework of accounting guidance and regulatory oversight, management must exercise judgment in estimating the costs and probabilities associated with environmental liabilities, and determine the accrual and disclosure of those liabilities.

The present study extends prior research in this area by exploring situational, personal, and issue-specific factors that may be related to these accrual and disclosure decisions. A survey of 263 financial executives is conducted to gain an understanding of their intentions to accrue and disclose environmental liabilities based on scenarios developed for this research. Using the theory of planned behavior (Ajzen, 1991), the study explores the

relation of these intentions to the participants' attitudes, perceived social norms, sense of control over and moral obligation about these decisions. The study also explores the relation between the intentions to accrue and disclose environmental liabilities with their magnitude and financial consequences.

The remaining sections of this chapter are organized as follows: the second section discusses prior literature, the theoretical background of the research, and the development of hypotheses; next the research method, data collection, and variable measurement are discussed; the following section presents the results; and the final section is a summary of the study's conclusions and a discussion of their implications.

## BACKGROUND AND HYPOTHESES DEVELOPMENT

### *Review of Relevant Literature*

Previous research in the field of corporate social reporting (CSR), of which environmental reporting is a component, has attempted to examine the frequency of such reporting and identify some variables that may be associated with it.

Numerous studies have demonstrated a significant positive relation between firm size and corporate social reporting (e.g., Tagesson, Blank, Broberg, & Collin, 2009; Reverte, 2009; Stanny & Ely, 2008; Hossain & Reaz, 2007; Ho & Taylor, 2007; Adams, Hill, & Roberts, 1998; Hackston & Milne, 1996; Cowen, Ferreri, & Parker, 1987; Trotman & Bradley, 1981). Recent studies have tested determinants of CSR using companies listed on specific national exchanges, and some have incorporated CSR published via web-based reports (Tagesson et al., 2009; Holder-Webb, Cohen, Nath, & Wood, 2009; Branco & Rodrigues, 2008). The importance of firm size as a determinant of CSR may be based on legitimacy theory, which asserts that companies with high visibility (usually large firms) may engage in CSR to legitimize their activities in the eyes of society and their important stakeholder groups.

Industry classification has been identified as another factor that may affect CSR practices. Industry effects are found in a number of studies (Holder-Webb et al., 2009; Tagesson et al., 2009; Ho & Taylor, 2007; Adams et al., 1998; Cowen et al., 1987), and companies in environmentally sensitive industries have been shown to engage in higher levels of CSR (Reverte, 2009; Hackston & Milne, 1996; Roberts, 1992).

The relation between CSR and other outcomes has been the focus of other lines of research. Early studies that have explored the link between CSR and financial performance reported a weak, yet positive relation between social responsibility and performance (Mangos & Lewis, 1995). Recent studies, however, offer conflicting results, some finding support for a positive relation (Tagesson et al., 2009; Roberts, 1992), some negative (Ho & Taylor, 2007), and others finding no support for a significant relation (Reverte, 2009; Cowen et al., 1987). Vafeas and Nikolaou (2001) examine the relation between financial performance and corporate environmental performance, based on Council for Economic Priorities (CEPs) classification. They conclude that firms with a poor environmental CEP rating perform worse than firms with good or mixed CEP ratings based on accounting and market measures of performance.

Adams (2002) suggests a helpful framework for categorizing factors thought to influence social disclosures, and she describes the following categories:

- (a) corporate characteristics such as those discussed earlier, including company size, industry classification, and profitability;
- (b) general contextual factors such as country of origin, social and political context, economic context, cultural context, and time period of reporting;
- (c) internal contextual factors such as the reporting processes within companies and the views and attitudes of individuals involved in the reporting processes.

Adams finds that there are significant internal contextual variables that are likely to impact on the extent, quality, quantity, and completeness of CSR, including the attitudes of interviewees.

Within the CSR literature there are a number of studies that seek to identify the factors that specifically influence firms' environmental disclosures. Such studies provide evidence that environmental liability disclosure is positively correlated with regulatory pressure (Freedman & Stagliano, 1998; Stanny, 1998; Barth, McNichols, & Wilson, 1997; Mitchell, 1997), frequency of access to capital markets (Barth et al., 1997), the number of times a firm is named as a potentially responsible party (Barth et al., 1997; Mitchell, 1997), environmental liability size (Barth et al., 1997; Mitchell, 1997), and firm size (Mitchell, 1997). Environmental liability disclosure is negatively correlated with proxies for managements' allocation uncertainty, and proxies for firms' litigation and negotiation concerns (Barth et al., 1997). Some of these factors

are company characteristics and some are general contextual factors. None are measures of internal contextual factors.

Although other studies have examined CSR as a behavioral outcome at the level of the firm, the present study directly engages those responsible for financial statement preparation to understand the determinants of their behavioral intentions regarding environmental liability treatment and disclosure. It extends the work of Adams (2002) in understanding internal contextual variables, and is unique in its ability to test for the influence of company ownership characteristics by including privately held and not-for-profit organizations, as well as publicly traded companies, in its sample.

#### *Theoretical Model*

We use the Theory of Planned Behavior (TPB; Ajzen, 1991, 1988) as the organizing framework in examining intentions to accrue and disclose environmental liabilities. The origins of the TPB are based in social-psychology and the theory has been successfully applied in understanding behavioral intentions across many different business settings (e.g., Flannery & May, 2000; Chang, 1998; Kurland, 1995; Dubinsky & Loken, 1989). The TPB, along with its predecessor, the theory of reasoned action (TRA; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), postulates that human behavior is directly related to behavioral intentions. The theory posits that the intention to perform a specific behavior is the best predictor of that behavior (Fishbein & Ajzen, 1975).

According to the TRA, behavioral intentions are a function of the attitude toward the behavior and the subjective norm about the behavior. Attitudes are defined as the degree to which a person has a favorable or unfavorable evaluation of the behavior in question; subjective norm is a social factor that refers to the perceived social pressure to perform or not to perform the behavior (Ajzen, 1991). Generally, people establish intentions to perform a behavior when they have a positive attitude toward it and when they think that others who are important to them believe they should perform it and they wish to comply with their wishes.

In situations where control is perceived to be incomplete (as would be the case for most accrual and disclosure decisions in an organizational setting), the TPB includes the antecedent variable perceived behavioral control (PBC) in the model explaining behavioral intentions. This variable measures an individual's confidence in his/her ability to perform the behavior based on available resources and requisite opportunities (Ajzen, 1991). The TPB

postulates a strong direct relation between PBC and behavioral intention. Furthermore, research has shown that the addition of a fourth antecedent, perceived moral obligation, makes a significant contribution to the prediction of behavioral intentions (Kurland, 1995; Ajzen, 1991; Randall & Gibson, 1991). As it is likely that environmental disclosures may be seen as having a moral component, including a financial executive's sense of moral obligation has the potential for enhancing the explanatory power of the TPB in predicting accrual and disclosure intentions. Another potentially important construct in the study of ethical behavior is moral intensity (Jones, 1991). Jones (1991) argues that in addition to the personal and situational variables that influence ethical decision choice, ethical decision making is also highly issue dependent, varying across types of ethical problems (e.g., Weber, 1990; Fritzsche & Becker, 1983). Jones (1991) maintains that characteristics of the issue itself, collectively called moral intensity, influence all stages of the ethical decision-making process. Although Jones (1991) posits that moral intensity is comprised of six components, we focus on the dimension of moral intensity that has been demonstrated in prior studies to have the greatest impact on ethical decisions, the magnitude of consequences (Frey, 2000; Morris & McDonald, 1995; Singer & Singer, 1997).

#### *Hypotheses Development*

Fig. 1 shows the hypothesized relation among the constructs of interest in this study. A person's favorable or unfavorable attitude toward a particular behavior is related to the intention to engage or not engage in that behavior (Ajzen, 1988; Fishbein & Ajzen, 1975). An attitude is the best predictor of intention when it is directly compatible with the targeted behavioral intention (Fishbein & Ajzen, 1975). Numerous studies support the influence of attitude in establishing intention to engage or not to engage in specific behaviors (Sheppard, Hartwick, & Warshaw, 1988). In this study, we measure executives' attitudes and intentions toward both accrual and disclosure of environmental liabilities, leading to the following hypothesis, consistent with the TPB:

**H1.** There is a significant, positive relation between attitude toward environmental liability accrual and disclosure, and intention to accrue and disclose environmental liabilities.

The TPB posits that social pressure to perform a particular behavior will be positively related to behavioral intentions. Social pressure is a component

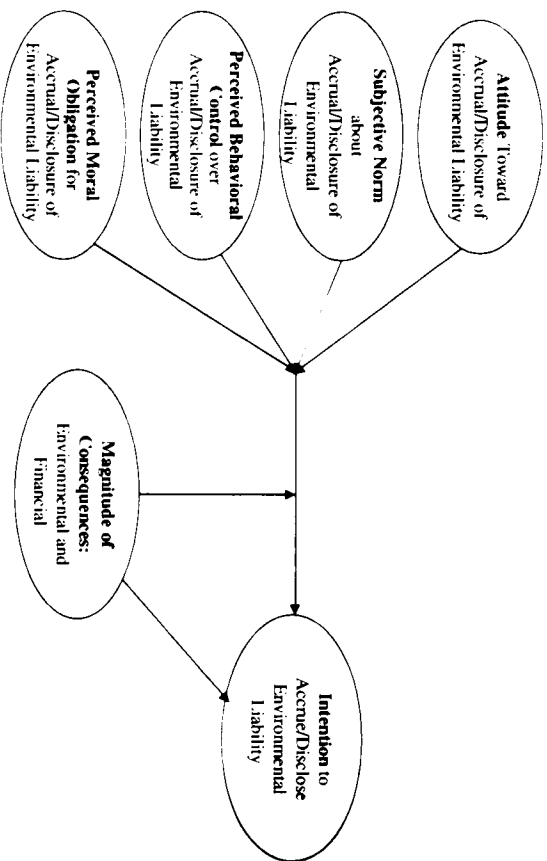


Fig. 1. Factors Influencing Environmental Liability Accrual/Disclosure. An Adaptation and Extension of Ajzen's (1991) Theory of Planned Behavior.

of subjective norms, which are typically measured by asking respondents the extent to which important others would approve or disapprove of the behavior (i.e., normative beliefs) and how much the individual cares about the opinions of these others (motivation to comply). In this study, we measure subjective norm by using specific referents important to the decision-maker in their decision to accrue/disclose environmental liabilities, and refer to this as the belief-based measure of subjective norm. The list of referents used in the study was developed through interviews with a convenience sample of 18 executives representing 14 companies or firms. Those interviewed were senior executives (chairmen, CEOs, presidents, CFOs, controllers, comptrollers, and partners) of a cross-section of companies and firms involved with environmental liabilities from a variety of perspectives (manufacturing, construction, consumer products, environmental engineering, public accounting, environmental law practice, and state regulatory agency). The sample included personal contacts of the researchers, members of the business advisory boards of the researchers' universities, or referrals from one of the advisory board members.

**H2.** There is a significant, positive relation between the belief-based measure of subjective norm regarding environmental liability accrual and disclosure, and the intention to accrue and disclose environmental liabilities.

Perceived behavioral control (PBC) as conceptualized by Ajzen (1991) in the TPB is consistent with Bandura's (1997) concept of self-efficacy, which is the perception of how well one can execute specific courses of action. A number of studies find support for the additive effect of self-efficacy on intention, beyond the influence of attitude and subjective norm (e.g., Chang, 1998; Kurland, 1995; Madden, Ellen, & Ajzen, 1992; Beck & Ajzen, 1991). Regarding the accrual and disclosure of environmental liabilities, individual executives may have varying degrees of perceived control over these decisions, and this may affect their intentions to accrue and disclose. Without the perceived ability to perform an action, the behavioral intention will be lower across the range of attitudes and subjective norms; thus, we hypothesize:

**H3.** After controlling for attitude and subjective norm, there is a significant positive relation between perceived behavioral control over environmental liability accrual and disclosure, and the intention to accrue and disclose such a liability.

Several studies of business ethics based on the TPB include perceived moral obligation (PMO) as a determinant of intentions. For example, Kurland (1995) reports that moral obligation is the strongest predictor of insurance agents' ethical intentions. Randall and Gibson (1991) also find moral obligation to be a significant factor predicting intent. Other researchers support the inclusion of the moral obligation variable in the TPB as an antecedent to intention when the target behavior had moral content (e.g., Beck & Ajzen, 1991; Gotsuch & Orberg, 1983). As it is highly likely that decisions pertaining to environmental liability accrual and disclosure have a moral content for financial executives, we hypothesize:

**H4.** There is a significant, positive relation between perceived moral obligation to accrue and disclose an environmental liability, and the intention to accrue and disclose such a liability. The greater the moral obligation, the more likely decision-makers will intend to accrue and disclose the liability.

A number of studies demonstrate that issue-specific context is meaningful in influencing ethical intentions or behaviors (Morris & McDonald, 1995; Jones, 1991; Weber, 1990). Accordingly, we hypothesize that the magnitude of consequences (MOC) of the situation is positively related to intentions to accrue and disclose an environmental liability:

**H5.** There is a significant, positive relation between the magnitude of environmental and financial consequences and the intention to accrue and

disclose environmental liabilities. The greater the magnitude, the more likely it is that decision-makers will intend to accrue and disclose the liability.

In addition to the hypothesized main effect on accrual and disclosure intention, MOC may also act as a moderator between intention and the decision-maker's attitude, subjective norm, behavioral control, and moral obligation. Specifically, it is expected that in the face of heightened financial and environmental consequences (i.e., high MOC), the influence of other antecedent variables will be diminished. We base this hypothesis on Flannery and May's work (2000), which finds MOC to be an important moderating variable in environmental ethical decisions.

**H6.** The antecedent variables of attitude, subjective norm, behavioral control, and moral obligation will have stronger influence over intentions to accrue and disclose an environmental liability when the magnitude of consequences is low than when it is high.

## RESEARCH METHOD

### *Subjects and Sample*

The sample for this study was randomly selected from the U.S.-based members of the Institute of Management Accountants (IMA) whose job title code lists them as an Executive Officer, Corporate Officer, Vice President, or Controller. We used this source based on the belief that decisions to accrue and disclose environmental liabilities are made at the high-levels of company hierarchies. To confirm this belief, we conducted 18 interviews with CEOs, CFOs, and other financial executives, corporate environmental officers, environmental lawyers, environmental consultants, and public accountants. Our interviews confirmed the importance of these decisions, and Reimers' (1992) assertion that financial executives and corporate counsel have the ultimate responsibility for these types of decisions supports this view. We mailed a total of 2,500 surveys, with 10 returned due to bad addresses and 29 respondents indicating their inability to participate because they were retired or unfamiliar with the issues. Excluding these 39 surveys, 263 usable responses represent an 11% response rate. Although the response rate is low, tests for non-response bias showed no significant differences for any of the demographic, dependent, or independent variables of the study.<sup>1</sup> Additionally, the absolute number of responses of 263 provides

enough data points for the analysis. The survey successfully reached targeted respondents, with nearly 90% of respondents classified as financial executives at or above the controller level of the organization.

### *Survey Instrument*

The research instrument for our study consisted of a hypothetical vignette that described a potential environmental liability presented by the discovery of underground storage tanks. Hypothetical vignettes are commonly used to investigate topics that respondents may consider socially sensitive (Morris, Rehbein, Hosseini, & Armacost, 1995; Armacost, Hosseini, Morris, & Rehbein, 1991). Many companies consider the reporting of environmental liabilities a sensitive issue due to the potential dollar magnitude and legal liabilities often associated with environmental issues. In addition to the advantages of reducing apprehension about sensitive issues and mitigating social desirability bias, the use of a common scenario for all respondents improves the validity of responses in that it holds the particular facts of the situation constant (Cavanagh & Fritzsche, 1985). Our vignette was reviewed by environmental specialists for realism, remediation cost estimates, and accurate terminology. The vignette presented the scenario from the perspective of a chief financial officer, and provided information for and against the accrual and disclosure of a contingent liability. The uncertainty of the situation was controlled by identifying possible outcomes (described as Best Case, Moderate Case and Worst Case scenarios), along with their associated costs and probabilities. To test the moderating effect of MOC, two different versions of the vignette were created (describing either a low or high magnitude of consequences) and were randomly sent to the participants. Along with the vignette, we provided an excerpt from SFAS No. 5, Accounting for Contingencies (FASB, 1975), followed by the questionnaire. The vignettes and full questionnaire are included as the appendix to this chapter.

### *Variable Measurement*

#### *Dependent Variables*

Since accrual and disclosure of contingent environmental liabilities are two related but separate decisions, we explore both (1) intention to accrue a material contingent environmental remediation liability (hereafter, intention

to accrue) and (2) intention to make full disclosure in the notes to the financial statements about a contingent environmental liability (hereafter, intention to disclose). We measured the accrual and disclosure variables in two ways. First, following Fishbein and Ajzen (1975), we measure the likelihood of accrual by asking respondents to indicate on a seven-point scale the likelihood that they would accrue a material dollar amount if faced with the hypothetical situation. Similarly, we measured likelihood of disclosure by asking respondents to indicate the likelihood they would make full disclosure in the notes to the financial statements if they faced a situation in their company similar to the one in the hypothetical case.

We also measured intention to disclose by asking the respondent to make a choice from among six financial footnote options that represented increasing levels of disclosure with 1 being no disclosure and 6 being full disclosure. Finally, we asked respondents how much they would accrue, if any, if they faced a situation in their own company similar to the one presented in the hypothetical case.

#### *Independent Variables*

*Attitude.* Consistent with the TPB, we measured the respondent's attitude toward accrual and disclosure of environmental liabilities by averaging the responses to three semantic differential scale items, each of which asked respondents to rate the target behavior along a seven-point scale ranging from 1 = strongly disagree to 7 = strongly agree. These semantic differential items described the target behavior at a level of specificity that corresponds with the measurement of behavioral intention.

*Subjective Norm.* To measure subjective norm, we began with a convenience sample of financial executives from a pilot study to elicit normative beliefs about those others who are likely to be important to the decisions to accrue or disclose environmental liabilities. We found the salient referents include the company CEO, outside auditors, internal legal counsel, external legal counsel, engineers/technical experts, and the company board of directors/audit committee. In the present study, normative belief was measured as the extent to which the participants believed that each of these six individuals or groups would want them to accrue/disclose the environmental liability if they faced a situation in their company similar to the one in the vignette. We also asked respondents how likely they would be to comply with the opinion of each referent, called motivation to comply. The subjective norm measure was calculated as the sum of the cross products of normative belief and motivation to comply.

*Perceived Behavioral Control.* Following a number of previous studies that use the TPB to understand and predict behavior (Flannery & May, 2000; Cordano & Frieze, 2000; Beck & Ajzen, 1991), we measured perceived behavioral control (PBC) by averaging three items that asked respondents to rate the extent to which they felt control over the behavior in question, and the ease or difficulty of executing the behavior. These items are measures of the extent to which financial executives believe they have the authority and knowledge to make decisions about the accrual or disclosure of environmental liabilities.

*Perceived Moral Obligation.* We developed three items to measure perceived moral obligation (PMO) based on scales used in previous studies (e.g., Flannery & May, 2000; Beck & Ajzen, 1991; Randall & Gibson, 1991; Gorsuch & Orberg, 1983). These items measured the extent to which respondents felt a sense of moral obligation to accrue or disclose an environmental liability if faced with a situation such as that described in the vignette.

*Magnitude of Consequences.* Magnitude of consequences was manipulated in a between-subjects test of its influence on intention to accrue and disclose. The vignette was varied between high and low values of MOC by describing the contents of the underground storage tanks as having been either waste fuel oil with little environmental impact (low MOC) or chlorinated solvents known to be highly toxic and persistent in the environment (high MOC). The manipulation was strengthened by increasing the cost estimates of cleaning up the underground storage tanks in the high MOC vignette versus the low MOC vignette. MOC is coded as a dummy variable, with "0" indicating the low MOC treatment, and "1" indicating the high MOC treatment.

*Other Variables.* A number of variables were included to control for possible extraneous influences over the dependent variables. These were age, gender, job title, environmental liability experience, years in current position, years with present company, ownership characteristics of company, company size, and industry classification of employing company. We also employed a measure of social desirability bias to control for its effects, adapted from Fischer and Frick (1993).

## RESULTS

### Descriptive Statistics

Table 1 displays the descriptive statistics for the demographic variables measured in the study. The majority of the respondents report having had some personal experience with environmental liability decisions, with 13% indicating that they deal with such issues routinely and another 45% indicating that they have been involved in these decisions to some extent during their careers.<sup>2</sup> The average age of the respondents is between 45 and 50 years, and 80% of respondents are male. The average years in their current position is seven years, and the average time with their present company is eight years and eight months. Respondents were well dispersed across industry classification and firm size.

Table 2 shows correlations of the variables as well as the Cronbach alpha coefficients (on the diagonal) for the multi-item scales (Cohen, Cohen, West, & Aiken, 2003; Cronbach, 1951). Tests indicate acceptable reliability,<sup>3</sup> and evidence that multicollinearity is not a significant problem for the models tested (Cohen et al., 2003).<sup>4</sup> A principal components factor analysis with varimax rotation provides evidence of convergent and divergent construct validity for the measures.<sup>5</sup>

The descriptive statistics for the intention to accrue (likelihood of accrual and amount accrued) and the intention to disclose (likelihood of disclosure and disclosure category), as well as for all interval scaled independent variables, are shown in Table 3. The mean (median) value for likelihood of accrual is 5.24 (6.00) on a seven-point scale, pointing to a relatively high level of intention to accrue. This high accrual intention is noteworthy, given the discretionary nature of the liability recognition for the internally discovered underground storage tank. The mean likelihood of disclosure is lower (4.68, median = 6.0), indicating a greater reluctance to fully disclose the contingent liability in the notes to the financial statements than to accrue it.

### Control Variables

To remove any extraneous influences from the model, we control for covariates that are potentially linked to the dependent variables. An effective covariate is one that is highly correlated with the dependent variable(s) but not correlated with the independent variables. Additionally, the covariates must have a homogeneity of regression effect, meaning that the effect of the

Table 1. Demographic Characteristics of Sample.

	Mean	Standard Deviation	Minimum	Maximum	Percentage
Age (based on midpoints of ranges)	46.7		26	75	
Years in current position	7.0	6.1	1	33	
Years with company	8.7	8.3	1	39	
Gender					
Female					18
Male					82
Job title					
Owner/CEO/President					4
Chief Financial Officer					24
VP Finance/Treasurer					12
Controller/Assistant Controller					49
Other					11
Environmental liability experience					
None					42
Some					45
Routine					13
Ownership structure of company					
Publicly held					31
Privately held					44
Not-for-profit/Government					25
Company size					
<= 100 Employees					30
101-1000 Employees					45
> 1001 Employees					25
Industry classification					
Food/Textiles/Lumber					12
Chemicals/Petroleum Refining					8
Primary/Fabricated Metals					11
Machinery/Equipment/Autos					14
All Other Manufacturing					15
Mining/Utilities/Transportation					6
Construction					7
Wholesale-Retail Trade					10
Other (Finance/Government/other)					17

covariates on the dependent variables must be equal across all treatment groups (Hair, Anderson, Tatham, & Black, 1998). Applying these criteria, we analyze the relationships between the demographic variables (age, gender, job title, environmental liability experience, years in current position, years with present company, ownership characteristics of company, company size, and industry classification) and all dependent variables (likelihood of accrual, likelihood of disclosure, amount accrued, and disclosure category). Because many of the demographic variables are categorical, we analyze the relationships between these factors and the dependent variables by performing one-way analysis of variance (ANOVA).<sup>6</sup>

**Table 2.** Pearson Correlation Coefficients and Scale Reliabilities (Cronbach Alphas) of Key Variables.

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Likelihood of accrual	NA											
2. Likelihood of disclosure	.42**	NA										
3. Amount accrued	.27**	.24**	NA									
4. Disclosure category	.47**	.63**	.22**	NA								
5. General attitude–accrual	.64**	.41**	.22**	.50**	(.82)							
6. General attitude–disclosure	.30**	.41**	.22**	.50**	.57**	(.84)						
7. Subjective norm–accrual	.47**	.36**	.25**	.38**	.54**	.35**	(.85)					
8. Subjective norm–disclosure	.23**	.50**	.24**	.37**	.36**	.56**	.71**	(.85)				
9. Perceived behavioral control–accrual	.31**	.13*	.06	.08	.25**	.06	.24**	.13*	(.85)			
10. Perceived behavioral control–disclosure	.24**	.19**	.08	.12*	.13*	.20**	.22**	.28*	.79**	(.86)		
11. Perceived moral obligation–accrual	.53**	.40**	.22**	.39**	.67**	.42**	.54**	.35**	.27**	.18**	(.70)	
12. Perceived moral obligation–disclosure	.21**	.56**	.19**	.43**	.38**	.73**	.36**	.60**	.05	.26**	.60**	(.83)

Cronbach alphas are shown on diagonal. Reliabilities are not applicable for those variables measured using a single item.

\* $p < .05$  (two-tailed tests).

\*\* $p < .01$  (two-tailed tests).

**Table 3.** Descriptive Statistics.

Variable	Mean	Standard Deviation
1. Likelihood of accrual	5.24	1.95
2. Likelihood of disclosure	4.68	2.06
3. Amount accrued	\$99,188	\$149,415
4. Disclosure category	4.57	1.85
5. General attitude accrual	4.95	1.40
6. General attitude disclosure	4.74	1.51
7. Subjective norm–accrual	35.49	40.98
8. Subjective norm–disclosure	31.50	41.47
9. Perceived behavioral control accrual	4.69	1.59
10. Perceived behavioral control–disclosure	4.32	1.63
11. Perceived moral obligation accrual	5.46	1.35
12. Perceived moral obligation–disclosure	5.23	1.56
13. Social desirability	4.19	.87

Of the possible control variables considered, only the ownership characteristic of the organization is correlated with any of the dependent variables – specifically with likelihood of accrual and disclosure category. The ANOVA shows that respondents from privately held companies are less likely to accrue an environmental liability and generally choose a lower level of disclosure than those from publicly held companies or government/not-for-profit organizations. The ANOVA indicates that there is a significant difference in the mean of likelihood of accrual ( $F_{2, 256} = 4.173$ ,  $p = .016$ ) and the mean of disclosure category ( $F_{2, 251} = 3.018$ ,  $p = .051$ ) between the three classifications of ownership characteristics. The present study is unique in its ability to test the impact of ownership characteristic in that the sample of firms includes privately held and not-for-profit organizations, as well as publicly traded corporations. It is interesting to note that company size is not significantly related to the likelihood of accrual or disclosure. This seems to run counter to prior research, which has supported the notion that company size affects environmental liability disclosure (Cowan et al., 1987).

Based on the results of the correlation analysis and the ANOVA, the demographic variable ownership characteristic of company is entered into the regression equations to control for its effect on the dependent variables likelihood of accrual and disclosure category. We use two dummy variables (public and not-for-profit/government) to code the three levels of the ownership characteristic variable. As such, the referent condition is privately held firms.

### Manipulation Check

Two questions on the survey instrument were designed to test the success of the manipulation of magnitude of consequences by asking respondents to rate the extent of environmental hazard (1 = low and 10 = high) and the extent of the financial impact (1 = low and 10 = high) of the hypothetical scenario. It was expected that those participants who had received the low MOC scenario (Vignette 1) would rate these two items low and those who had received high MOC scenario (Vignette 2) would rate the two items high. Analysis of these two survey items indicates that 140 of the 263 respondents rate these items consistent with expectations: that is, they rate them less than or equal to 5 for the low MOC scenario and greater than or equal to 5 for the high MOC scenario. The inference drawn from this analysis is that these 140 respondents attended to and understood the intended manipulation of MOC.

H1 through H4 (pertaining to the influences of attitude, subjective norm, perceived behavioral control and perceived moral obligation) do not depend on the manipulation of magnitude of consequences. Accordingly, the full sample ( $n = 263$ ) is used to test these hypotheses. H5 and H6, which pertain specifically to the expected influence of magnitude of consequences, are tested using the restricted sample ( $n = 140$ ).

### Relationship between Independent Variables and Intention to Accrue an Environmental Liability

The following ordinary least squares regression equation represents the full model used to test our hypotheses.<sup>8</sup> By employing the method of hierarchical regression analysis, independent variables were entered in steps according to the TPB.

$$\begin{aligned} \text{Likelihood of accrual} = & \beta_0 + \beta_1 \text{SocDes} + \beta_2 \text{Public} + \beta_3 \text{NFP/Gov} \\ & + \beta_4 \text{Att}_{\text{Accrual}} + \beta_5 \text{SN}_{\text{Accrual}} + \beta_6 \text{PBC}_{\text{Accrual}} \\ & + \beta_7 \text{PMO}_{\text{Accrual}} + \beta_8 \text{MOC} + \beta_9 (\text{MOC} \\ & \times \text{Att}_{\text{Accrual}}) + \beta_{10} (\text{MOC} \times \text{SN}_{\text{Accrual}}) \\ & + \beta_{11} (\text{MOC} \times \text{PBC}_{\text{Accrual}}) + \beta_{12} (\text{MOC} \\ & \times \text{PMO}_{\text{Accrual}}) \end{aligned} \quad (1)$$

### Investigation of Intentions to Accrue and Disclose Environmental Liabilities

where:

SocDes	Social desirability bias
Public	Publicly traded companies (component of ownership characteristics)
NFP/Gov	Not-for-profit/Government (component of ownership characteristics)
Att <sub>Accrual</sub>	Attitude toward accrual
SN <sub>Accrual</sub>	Subjective norm regarding accrual
PBC <sub>Accrual</sub>	Perceived behavioral control over accrual
PMO <sub>Accrual</sub>	Perceived moral obligation to accrue
MOC	Magnitude of consequences

In the first step of the regression analysis, likelihood of accrual is regressed on the ownership characteristics (Public and NFP/Gov) and social desirability bias (adjusted  $R^2 = .041$ ,  $F$  Change  $\lambda_{.254} = 4.66$ ,  $p = .002$ ). In the second step, we enter the independent variables associated with the TPB: attitude toward accrual, subjective norm regarding accrual, and PBC for accrual. This model has an adjusted  $R^2$  of .442, representing an improvement in the model that is significant at the .001 level ( $F$  Change  $\lambda_{.251} = 61.93$ ). PMO to accrue is added in the third step, and the model adjusted  $R^2$  again improves significantly to .448 ( $F$  Change  $\lambda_{.250} = 3.56$ ,  $p = .030$ ). These results suggest that the TPB, as modified to include PMO as an independent variable, account for a significant amount of the variance in the likelihood to accrue an environmental liability.

H1 asserts that the more positive the attitude of executives toward environmental liability accrual, the stronger will be their intention to accrue. As shown in Table 4, the results of the regression analysis are consistent with H1, with Attitude<sub>Acc</sub> significantly and positively related to the likelihood of accrual ( $p = .000$ ).<sup>9</sup>

H2 predicts that intention to accrue is positively associated with subjective norm (Subjective Norm<sub>Acc</sub>). Table 4 shows that this hypothesis is supported for likelihood of accrual ( $p = .011$ ), indicating that the decisions to accrue an environmental liability are significantly related to what decision-makers believe important referents (such as their CEO, auditors, and legal counsel) will think they should do. However, this effect is not significant when the MOC variable is added to the equation in step 4. As expected in H3, the likelihood of accrual is significantly and positively related to the respondents' PBC ( $p = .001$ ), suggesting that individuals who perceive themselves to be in control of environmental liability accrual decisions will be the most likely to establish the intention to accrue.

**Table 4.** OLS Regression Results for Intention to Accrue Environmental Liabilities.

Dependent Variable	Likelihood of Accrual		Amount Accrued	
	Full sample TPB	Restricted sample w/MOC	Full sample TPB	Restricted sample w/MOC
Independent variable	Predicted sign	$\beta$	Predicted sign	$\beta$
Social desirability	+	.032	+	.004
Public	+	.094	NA	NA
Not-for-profit/Government	+	.058	NA	NA
Attitude <sub>Acc</sub>	+	.453**	+	.077
Subjective norm <sub>Acc</sub>	+	.102*	+	.164*
Perceived behavioral control <sub>Acc</sub>	+	.140**	+	.013
Perceived moral obligation <sub>Acc</sub>	+	.124*	+	.082
Magnitude of consequences	+		+	
Attitude <sub>Acc</sub> × MOC			+	.110*
Subjective norm <sub>Acc</sub> × MOC				
PBC <sub>Acc</sub> × MOC				
PMO <sub>Acc</sub> × MOC				
N		258		136
F (Change)	+	3.56*	+	0.91
Adjusted R <sup>2</sup> (full sample)		.448		.055
Adjusted R <sup>2</sup> (restricted sample)		.515		.523

One-sided *p*-values are reported for variables with predicted signs; otherwise, two-sided *p*-values are used.  
 \*\* *p* < .01.  
 \* *p* < .05.

H4 adds PMO to the TPB as a determinant of intention to accrue an environmental liability, based on the presumption that these decisions have moral content. The relatively high mean values for PMO (5.46) substantiate the claim that respondents believe these decisions are ethical in nature. The beta coefficient for PMO is significant and positive ( $p = .030$ ), supporting H4; that is, the higher the degree of perceived moral obligation to accrue an environmental liability, the more likely will be the intention to accrue such a liability. As with subjective norm, PMO is not significant when MOC is added in step 4.

H5 and H6 pertain to the main and moderating effects of MOC. Using the restricted sample ( $n = 140$ ), the first three steps of the regression are repeated, with similar results.<sup>10</sup> MOC is added to the model in Step 4 of the

regression. The addition of MOC to the model results in a significant improvement in the model's adjusted  $R^2$ , ( $F$  Change  $_{1, 127} = 3.22, p = .038$ ), indicating that the higher the MOC, the more likely respondents are to accrue an environmental liability. Step 5 of the regression adds the interaction variables, created by multiplying MOC by each of the other centered independent variables, to test the moderating effect of MOC. The addition of the interaction terms, however, does not result in a significant improvement in the model adjusted  $R^2$ , ( $F$  Change  $_{4, 123} = 0.83, p = .256$ ), indicating a lack of support for the hypothesized moderating effect of MOC on likelihood of accrual. Consequently, it is not meaningful to examine the individual beta coefficients of the interaction terms (Hair et al., 1998; Cohen & Cohen, 1983), and this step is not reported in Table 4.

In addition to using likelihood of accrual as the dependent variable, we also regressed the amount the respondent indicated should be accrued on the same variables shown in Eq. (1).

$$\begin{aligned} \text{Amount accrued} = & \beta_0 + \beta_1 \text{SoeDes} + \beta_2 \text{Att}_{\text{Accrual}} + \beta_3 \text{SN}_{\text{Accrual}} \\ & + \beta_4 \text{PBC}_{\text{Accrual}} + \beta_5 \text{PMO}_{\text{Accrual}} + \beta_6 \text{MOC} \\ & + \beta_7 (\text{MOC} \times \text{Att}_{\text{Accrual}}) + \beta_8 (\text{MOC} \times \text{SN}_{\text{Accrual}}) \\ & + \beta_9 (\text{MOC} \times \text{PBC}_{\text{Accrual}}) \\ & + \beta_{10} (\text{MOC} \times \text{PMO}_{\text{Accrual}}) \end{aligned} \quad (2)$$

where all variables are defined as in Eq. (1) earlier. These results are also shown in Table 4. Step 2 indicates that both attitude toward accrual ( $p = .050$ ) and subjective norm ( $p = .006$ ) have significant positive associations with the amount that respondents chose to accrue. No significant improvement in the model is observed in step 3 with the addition of PMO to accrue. The addition of MOC in step 4 significantly improves the model ( $F$  Change  $_{1, 128} = 6.62, p = .006$ ). This result is consistent with the expectation that respondents would accrue more in the case where the financial impact was expected to be higher (i.e., in the high MOC scenario). The addition of the interaction terms in step 5 does not significantly improve the model adjusted  $R^2$  ( $F$  Change  $_{4, 124} = 0.38, p = .412$ ); thus, step 5 is not reported in Table 4.

#### *Relation between Independent Variables and Intention to Disclose an Environmental Liability*

The next series of regression analyses focus on the dependent variable intention to disclose an environmental liability, using likelihood of disclosure as the first measure of intention (Table 5).

**Table 5.** OLS Regression Results for Intention to Disclose Environmental Liabilities.

Dependent Variable	Likelihood of Disclosure			Disclosure Category			
		Full sample TPB	Restricted sample w/MOC		Full sample TPB	Restricted sample w/MOC	Restricted sample w/ interactions
Independent variable	Predicted sign	$\beta$	$\beta$	Predicted sign	$\beta$	$\beta$	$\beta$
Social desirability	+/-	.023	.070	+ -	-.010	.010	.037
Public	NA	NA	NA	+ -	.086	.094	.097
Not-for-profit/Government	NA	NA	NA	+ +	.080	.032	.023
Attitude <sub>Dis</sub>	+	.564**	.557**	+	.495**	.458**	.835**
Subjective norm <sub>Dis</sub>	+	.147**	.205**	+	.085	.116	.382*
Perceived behavioral control <sub>Dis</sub>	+	.016	-.036	+	-.012	-.078	.106
Perceived moral obligation <sub>Dis</sub>	+	.049	-.105	+	.017	-.155	-.547**
Magnitude of consequences	+		.050	+		.178*	.132
Attitude <sub>Dis</sub> × MOC	-			-			-.507**
Subjective norm <sub>Dis</sub> × MOC	-			-			-.281
PBC <sub>Dis</sub> × MOC	-			-			-.213
PMO <sub>Dis</sub> × MOC	-			-			.469**
N		259	137		253	135	135
F Change	+	0.48	0.47	+	0.04	4.59*	4.52**
Adjusted R <sup>2</sup> (full sample)		.482			.308		
Adjusted R <sup>2</sup> (restricted sample)		.385	.382		.207	.229	.306

One-sided *p*-values are reported for variables with predicted signs; otherwise, two-sided *p*-values are used.

\*\* *p* < .01.

\* *p* < .05.

$$\begin{aligned}
 \text{Likelihood of disclosure} = & \beta_0 + \beta_1 \text{SocDes} + \beta_2 \text{AttDis} + \beta_3 \text{SNDis} + \beta_4 \text{PBCDis} \\
 & + \beta_5 \text{PMODis} + \beta_6 \text{MOC} + \beta_7 (\text{MOC} \times \text{AttDis}) \\
 & + \beta_8 (\text{MOC} \times \text{SNDis}) + \beta_9 (\text{MOC} \times \text{PBCDis}) \\
 & + \beta_{10} (\text{MOC} \times \text{PMODis})
 \end{aligned} \tag{3}$$

where:

- SocDes Social desirability bias
- AttDis Attitude toward disclosure
- SNDis Subjective norm regarding disclosure
- PBCDis Perceived behavioral control over disclosure
- PMODis Perceived moral obligation to disclose
- MOC Magnitude of consequences

This model achieves an adjusted *R*<sup>2</sup> of .482 in the third step. The beta coefficient estimate for the respondent's attitude toward disclosure is positive and significant (*p* = .000), which supports H1 for intentions to disclose environmental liabilities as measured by likelihood of disclosure. H2, which expects likelihood of disclosure to be positively related to subjective norm, is also supported by the data (*p* = .002). H3 and H4 are not supported in that the variables PBC and PMO are not significantly related to the dependent variable likelihood of disclosure.

Paralleling the analysis of Hypotheses 5 and 6 for likelihood of accrual, the main and moderating effects of MOC on the dependent variable likelihood of disclosure are tested using the restricted sample. MOC does not have a significant effect on likelihood of disclosure, either alone or in interaction with the other dependent variables.

To examine the content of the disclosure intention, respondents were asked to select from among a series of disclosure statements the one that best described the note to the financial statements they would use if they faced a situation similar to the one in the hypothetical case. Disclosure category is regressed on the independent variables using hierarchical regression analysis similar to that described earlier for likelihood of disclosure.

$$\begin{aligned}
 \text{Disclosure category} = & \beta_0 + \beta_1 \text{SocDes} + \beta_2 \text{Public} + \beta_3 \text{NFP/Gov} + \beta_4 \text{AttDis} \\
 & + \beta_5 \text{SNDis} + \beta_6 \text{PBCDis} + \beta_7 \text{PMODis} + \beta_8 \text{MOC} \\
 & + \beta_9 (\text{MOC} \times \text{AttDis}) + \beta_{10} (\text{MOC} \times \text{SNDis}) \\
 & + \beta_{11} (\text{MOC} \times \text{PBCDis}) + \beta_{12} (\text{MOC} \times \text{PMODis})
 \end{aligned} \tag{4}$$

where all variables are defined as in Eqs. (1) and (3). The results are shown in Table 5. A significant change in adjusted  $R^2$  results when the variables pertaining to the TPB are added in step 2 ( $F$  Change  $3.246 = 36.50, p < .001$ ), but the addition of PMO in step 3 does not result in a significant improvement in the adjusted  $R^2$ . The individual variables with significant and positive beta coefficients are attitude toward disclosure ( $p = .000$ ) and subjective norm (marginally significant at  $p = .107$ ).

Using the restricted sample, the addition of MOC in step 4 significantly improves the model adjusted  $R^2$  from .207 to .229 ( $F$  Change  $1.126 = 4.59, p = .017$ ), indicating a positive influence over disclosure category. The disclosure category is the only dependent variable for which the interaction terms are significant. The addition of the interaction terms in step 5 of the regression significantly improves the model adjusted  $R^2$  from .229 to .306 ( $F$  Change  $4.122 = 4.52, p = .001$ ). The individual interaction terms that have significant beta coefficients are: attitude toward disclosure  $\times$  MOC ( $p = .001$ ) and PMO  $\times$  MOC ( $p = .007$ ). Plotting the nature of these interactions (Figs. 2a and 2b) shows support for Hypothesis 6, that the influence of the predictor variable attitude toward disclosure on the response variable disclosure category is reduced when magnitude of consequences is high versus when it is low. However, contrary to our

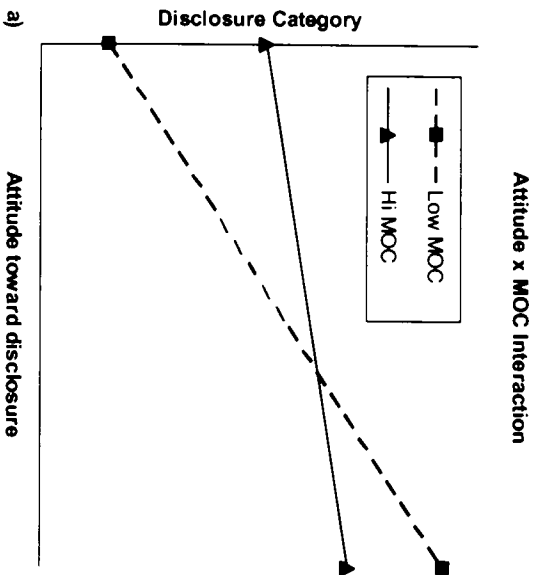


Fig. 2a. Plot of Interaction between Attitude toward Disclosure and Magnitude of Consequences.

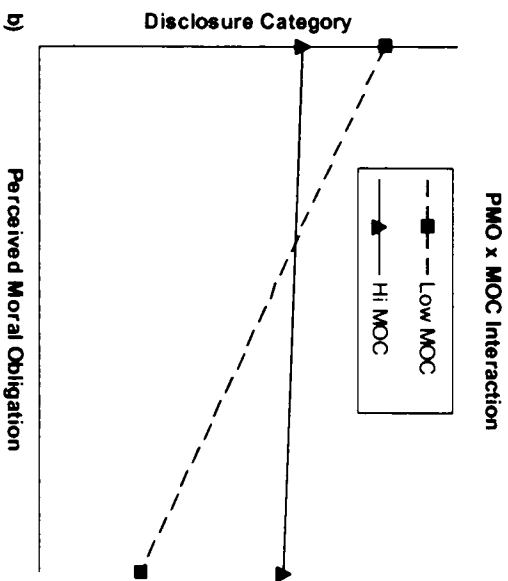


Fig. 2b. Plot of Interaction between Perceived Moral Obligation and Magnitude of Consequences.

expectations, perceived moral obligation actually has a greater influence on disclosure category in the case where magnitude of consequences is high.

## DISCUSSION AND CONCLUSIONS

### *Discussion of Results*

The models developed in this study, based on the theory of planned behavior, are successful in explaining nearly 50% of the variation in the likelihood that financial executives will accrue and disclose a discretionary contingent environmental liability. The findings indicate that the intentions to accrue and disclose environmental liabilities are significantly related to individual and social variables, with individual factors having the greatest weight. The most important of these individual factors is attitude, and this is related to underlying beliefs, both favorable and unfavorable, about the outcomes associated with accrual and disclosure of environmental liabilities.

In addition to providing evidence of the importance of attitudes, this study also supports the contention that the intention to accrue is related to executives' perceived behavioral control. It suggests that individuals who

perceive that they are in control of environmental liability accrual decisions are most likely to make an accrual. Perceived moral obligation appears to have a significant positive effect on the likelihood that an executive would accrue an environmental liability, but not on the intention to disclose it. The results of this study also suggest that social variables play an important role in the intentions of financial executives to accrue and disclose environmental liabilities. Subjective norm is highly correlated with these intentions when the specific referent groups of company CEO, the Board of Directors/Audit Committee, outside auditors, legal counsel, and technical experts are named.

The magnitude of environmental and financial consequences can also play an important role in influencing accrual and disclosure intentions. Our results suggest that decision-makers are more likely to accrue an environmental liability, intend to accrue more, and will choose a higher level of disclosure when the magnitude of consequences is high. This is a rather encouraging result, and arguments might have been made to the contrary – that respondents would be reluctant to disclose environmental liabilities for which the environmental and financial stakes are high. Nonetheless, this study provides evidence that a high degree of financial and environmental consequence is associated with a higher likelihood of disclosure and more likely accrual.

Another notable result of the present study is the difference between publicly traded and privately held companies. The data suggests that executives from privately held companies are significantly less likely to accrue an environmental liability, and choose a lower level of disclosure than their publicly traded counterparts. It may be that the greater scrutiny felt by publicly traded companies serves as an incentive in ensuring more responsible environmental accounting practices.

#### *Limitations*

It should be noted that the scope of the study is limited to environmental liability accrual and disclosure intentions associated with an internally discovered potential liability. The findings should, therefore, be interpreted only in this context and cannot be generalized to other types of environmental liability situations. Another potential limitation of the study is the fact that it attempts to capture a complex decision in an experimental setting. Although we were careful to incorporate realistic information in the case, decision-makers in a real decision would likely have more extensive

information available to them. The ability to generalize the results is further limited by all survey respondents being from the U.S. members of the Institute of Management Accountants.

We acknowledge the possibility of common method variance as a potential bias to the study results. Common method variance may be present when all variables are measured using the same survey instrument (Converse & Presser, 1986). Following Konrad and Linnehan (1995), we tested for the possible effects of common method variance using principal components factor analysis. Since multiple factors emerged, and the first factor accounts for a relatively small percentage of the total variation, common method variance does not appear to be a source of bias for this study's results.

Finally, as with any cross-sectional survey, we cannot make claims to the direction of causality in our model. The application of a well-tested social psychology theory, however, provides some credence to the hypothesized relation among the variables.

#### *Implications and Further Research*

The focus of this study is on the behavioral intentions of individuals who influence the accounting treatment and disclosure of discretionary environmental liabilities. Understanding the factors that motivate the intentions of individual decision-makers is an important component of understanding the behavioral outcomes at the organizational level. When faced with a situation such as the one presented in the hypothetical vignette, a majority of respondents indicated a high likelihood of accruing and disclosing the environmental liability. Sixty-four percent indicated that they would be quite likely or extremely likely to make this accrual, with only 17% saying that they would be quite or extremely unlikely to accrue the expense. When questioned about their reasons for charging this expense to current income, the reasons that were most highly correlated with their likelihood of accrual included their desire to fulfill their obligation to fully inform users of financial statements, to show a conservative approach to financial reporting, and to have one's company viewed as acting responsibly in managing environmental issues. In terms of disclosure, 68% said that they would make a footnote disclosure in the financial statements acknowledging the accrual, although a small portion of these would not state the dollar amount of the accrual. Fewer than 17% indicated that they would not disclose the potential for environmental costs or would make a statement indicating

that no material adverse effect on the company was expected from the environmental issue.

Clearly there are contextual factors that mediate and moderate the relation between individual intentions and organizational behaviors. These factors very likely include other elements of internal context, such as corporate structure, governance processes, and organization culture (Adams, 2002). External contextual factors and organizational characteristics may also impact the nexus of individual intentions and organizational outcomes. Factors such as firm size and industry classification, which have been consistently shown in the literature as being correlated with CSR, do not seem to play a role in influencing the intentions of individual respondents to accrue and disclose environmental liabilities. But these variables may well influence the outcomes at the level of the organization. The weight of these various influences over the eventual accrual and disclosure of environmental liabilities continues to be of interest to those who seek greater organizational transparency and accountability for environmental liabilities, and this offers fertile ground for future study. This chapter has attempted to contribute to this work by examining the influences on individual decision-makers and their behavioral intentions in the domain of environmental liability reporting. These findings suggest that encouraging positive attitudes toward environmental accruals and disclosures, enhancing the behavioral control of financial executives over the accrual decision, and heightening their moral obligation to disclose these liabilities may lead to better accounting treatment and transparency of environmental matters.

## NOTES

1. Non-response bias is tested by comparing the means of the first and last 5% of respondents, and again, using the first and last 10% of respondents. This method assumes that late respondents are similar to non-respondents (Pace, 1939). The tests indicate no significant differences for any of the dependent or independent variables.
2. An analysis of variance (ANOVA) shows that there is no significant difference in the mean values of any of the dependent variables across the three classifications of environmental liability experience levels (none, some or routine).
3. Acceptable reliability is defined by Nunnally and Bernstein (1994) as greater than .70 for predictive or construct validation research.
4. All tolerance statistics exceed .20 for the variables in question (Cohen et al., 2003).
5. Discriminant validity of the measures is supported by the factor analysis for the variables subjective norms, PBC, and amount accrued. All items measuring attitude

toward accrual load on the same factor, as do the items measuring attitude toward disclosure. There is minor overlap in factor loadings for the items measuring PMO and attitude, indicating that the variables for attitude and PMO seem to be closely related.

6. Since the cell sizes are not equal, Kruskal-Wallis non-parametric tests are also run to determine the influence of the demographic variables on the dependent variables. The results are nearly identical to the results of the ANOVA, with *ownership characteristic* the only demographic variable having a significant effect on the dependent variable *likelihood of accrual* ( $\chi^2 = 8.545$ , d.f. = 2,  $p = .014$ ).

7. The restricted sample is also used for all analyses; the results are essentially the same as the full sample with one notable exception. For the dependent variable *likelihood of accrual*, the predictor variables *perceived moral obligation to accrue* and *subjective norm* are significant using the full sample ( $p$ -values equal to .030 and .040, respectively) but are not significant using the restricted sample ( $p$ -values equal to .396 and .472, respectively).

8. Diagnostic tests of the regression model support the assumptions of linearity of the relationships, independent error terms, and non-influential outliers. The evidence as to normality of the variables and residuals, and the homogeneity of variance, is mixed. Non-parametric tests were considered, but given that our sample size is relatively large and that our tests are complex (e.g., testing for interactions), we felt that the parametric tests were the preferred analytical tools.

9. All directional hypotheses regarding the influence of independent variables are tested using one-tailed  $t$  test of significance.

10. When using the restricted sample, step 3 of the regression model shows less significant coefficients for *perceived moral obligation* and *subjective norm* than when using the full sample.

11. The adjusted  $R^2$  after step 3 is .308 using the full sample, but is only .207 using the restricted sample. Thus, the step 4 adjusted  $R^2$  of .229 is an improvement over .207, using the restricted sample.

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## APPENDIX. RESEARCH INSTRUMENT

### *Underground Storage Tanks (Vignette 1.*

#### *Low Magnitude of Consequences)*

Chris Carr, the Chief Financial Officer of a manufacturing company, has become aware of a situation that may require recording a contingent liability for environmental clean-up costs.

In a recent conversation with the plant controller from one of the company's manufacturing sites, mention was made of the discovery of an old underground tank field, comprised of three 10,000-gallon storage tanks. The tanks had once stored fuel oil, but have not been in use for many years. The tanks are currently empty, but no one is sure if any leakage has occurred over the years. This is of some concern, as the tanks are situated near an aquifer that feeds the water supply of nearby communities. However, this concern is lessened by the fact that petroleum has a tendency to dissipate over time and distance, and simple filtration systems are able to remove it.

At present, the environmental regulatory agencies are not aware of the tanks, and the company has not engaged in a formal Preliminary Assessment/Site Investigation. Nonetheless, the plant engineers and cost accountants have worked up rough estimates of the costs associated with several possible scenarios, as shown below:

Scenario	Description	Cost Estimate	Likelihood of Scenario (%)
Best case	Removal of tanks, piping, and pumps; no leakage	\$15,000-\$20,000	15-20
Moderate case	Removal of tanks; evidence of leakage; remediation of adjacent soil required	\$50,000-\$60,000	45-55
Worst case	Removal of tanks; evidence of leakage; significant contamination of ground water; extensive ground-water clean-up required	\$340,000-\$350,000	25-35

The company's threshold for materiality is about \$35,000. Total assets are currently \$5,000,000 and pre-tax income from continuing operations averages about \$700,000 per year.

Chris Carr has spoken to the head of Corporate Counsel about the situation with the storage tanks. The attorney suggested that if the Worst Case Scenario exists, with significant contamination to the water supply, another \$350,000 liability could arise due to legal fees and litigation. There is no potential recovery from third parties; Carr's company has been the sole owner of the manufacturing site since its inception.

#### *Accounting Guidance*

Seeking guidance from Generally Accepted Accounting Principles about the appropriate accounting treatment for this potential liability, Carr finds that the issue falls under the guidance of Financial Accounting Standards Board (FASB) Statement No. 5, *Accounting for Contingencies*, which requires the accrual of a liability if

- information available prior to the issuance of the financial statements indicates that it is probable that an asset has been impaired or a liability has been incurred at the date of the financial statements and
- the amount of the loss can be reasonably estimated.

FASB No. 5 further states that if no accrual is made for a loss contingency because one or both of the above conditions are not met, or if

an exposure to loss exists in excess of the amount accrued, *disclosure* of the contingency shall be made when there is at least a reasonable possibility that a loss or an additional loss may have been incurred. Disclosure is not required of a loss contingency involving an unasserted claim unless it is considered probable that a claim will be asserted and there is a reasonable possibility that the outcome will be unfavorable.

#### *Underground Storage Tanks (Figure 2, High Magnitude of Consequences)*

Chris Carr, the Chief Financial Officer of a manufacturing company, has become aware of a situation that may require recording a contingent liability for environmental clean-up costs.

In a recent conversation with the plant controller from one of the company's manufacturing sites, mention was made of the discovery of an old underground tank field, comprised of three 2,000-gallon storage tanks. The tanks had once stored waste chlorinated solvents, but have not been in use for many years. The tanks are currently empty, but no one is sure if any leakage has occurred over the years. This is a significant concern, as the tanks are situated near an aquifer that feeds the water supply of nearby communities. The concern is heightened by the fact that chlorinated solvents are known to be highly toxic and persistent in the environment, and waste chlorinated solvents are classified as "hazardous waste" by the EPA.

At the present time, the environmental regulatory agencies are not aware of the tanks, and the company has not engaged in a formal Preliminary Assessment/Site Investigation. Nonetheless, the plant engineers and cost accountants have worked up rough estimates of the costs associated with several possible scenarios, as shown below:

Scenario	Description	Cost Estimate	Likelihood of Scenario (%)
Best case	Removal of tanks, piping, and pumps; no leakage	\$30,000-\$35,000	15-20
Moderate case	Removal of tanks; evidence of leakage; remediation of adjacent soil required	\$95,000-\$105,000	45-55
Worst case	Removal of tanks; evidence of leakage; significant contamination of ground water; extensive ground-water clean-up required	\$1,000,000+	25-35

The company's threshold for materiality is about \$35,000. Total assets are currently \$5,000,000 and pre-tax income from continuing operations averages about \$700,000 per year.

Chris Carr has spoken to the head of Corporate Counsel about the situation with the storage tanks. The attorney suggested that if the Worst Case Scenario exists, with significant contamination to the water supply, another \$1,000,000 liability could arise due to legal fees and litigation. There is no potential recovery from third parties; Carr's company has been the sole owner of the manufacturing site since its inception.

#### *Accounting Guidance*

Seeking guidance from Generally Accepted Accounting Principles about the appropriate accounting treatment for this potential liability, Carr finds that the issue falls under the guidance of Financial Accounting Standards Board (FASB) Statement No. 5, *Accounting for Contingencies*, which requires the accrual of a liability if

- (a) information available prior to the issuance of the financial statements indicates that it is probable that an asset has been impaired or a liability has been incurred at the date of the financial statements and
- (b) the amount of the loss can be reasonably estimated.

FASB No. 5 further states that if no accrual is made for a loss contingency because one or both of the above conditions are not met, or if an exposure to loss exists in excess of the amount accrued, *disclosure* of the contingency shall be made when there is at least a reasonable possibility that a loss or an additional loss may have been incurred. Disclosure is not required of a loss contingency involving an unasserted claim unless it is considered probable that a claim will be asserted and there is a reasonable possibility that the outcome will be unfavorable.

#### *Environmental Liability Accrual and Disclosure Survey*

This survey relates to the hypothetical case that you just read concerning underground storage tanks, and the accounting for potential environmental liabilities associated with that situation. Most questions ask what your response would be if you faced a

situation in your company similar to the one described in the hypothetical case.

#### Definition of Terms:

- *Accrual of an environmental liability* means the recognition of a liability on the balance sheet and a corresponding charge to income in the current period.
- *Full disclosure* of an environmental liability means disclosing the amount of the liability accrued, if any, and a statement that an additional liability (or a liability) is possible.
- *A material accrual* for the hypothetical company is defined as an amount greater than or equal to \$35,000. In answering the survey, you should consider an amount that would be material to your company.

If you faced a situation in your company similar to that faced by Chris Carr, and taking into consideration the pressures and trade-offs that would influence this decision, what dollar amount, if any, would you accrue?: \_\_\_\_\_

Again, assuming that you faced a similar situation in your company, please circle the number corresponding to the statement that best describes the note to the financial statements you would use:

1. No disclosure in the notes to the financial statements regarding a contingent environmental liability.
2. A note stating that no material adverse effect on the financial position or results of operations of the company is expected from environmental liabilities.
3. A note stating that although a loss due to a contingent environmental liability is probable, the amount cannot be reasonably estimated at this time.
4. A note acknowledging an accrual, without stating the amount.
5. A note acknowledging an accrual, with disclosure of the dollar amount.
6. A note disclosing the dollar amount of the accrual, with a statement that an additional liability is possible.
7. Some other statement. Please specify: \_\_\_\_\_

Please circle your response in the boxes below.							
1 = Extremely unlikely; 2 = Quite unlikely; 3 = Slightly unlikely; 4 = Neutral; 5 = Slightly likely; 6 = Quite likely; 7 = Extremely likely							
If you faced a situation in your company similar to that faced by Chris Carr, and taking into consideration the pressures and trade-offs that would influence this decision, how likely would you be to accrue a material dollar amount (> \$35,000) for a contingent environmental liability for the situation described?	Extremely Unlikely ..... Extremely Likely						
	1	2	3	4	5	6	7
For the situation described in the hypothetical case, how likely would you be to make full disclosure (statement #6 above) in the notes to the financial statements regarding the potential environmental liability?	1	2	3	4	5	6	7
1 = Strongly disagree; 2 = Disagree; 3 = Somewhat disagree; 4 = Neither disagree nor agree; 5 = Somewhat agree; 6 = Agree; 7 = Strongly agree							
Please indicate your disagreement/agreement with the following statements by circling your response.							
For a situation such as the one in the hypothetical case, . . .	Strongly Disagree ..... Strongly Agree						
Making a material accrual for a contingent environmental liability is generally desirable	1	2	3	4	5	6	7
Making full disclosure in the notes to the financial statements about the contingent environmental liability is generally desirable	1	2	3	4	5	6	7
Accruing a material contingent liability for environmental costs generally has more favorable outcomes than unfavorable outcomes	1	2	3	4	5	6	7

Full disclosure in the notes to the financial statements about the contingent environmental liability generally has more favorable outcomes than unfavorable outcomes	1	2	3	4	5	6	7
Accruing a material dollar amount for a contingent environmental liability would be responsible financial reporting	1	2	3	4	5	6	7
Full disclosure of a contingent environmental liability represents responsible financial reporting	1	2	3	4	5	6	7
Most people who would influence my decision would think that I should accrue a material contingent environmental liability	1	2	3	4	5	6	7
Most people who would influence my decision would think that I should fully disclose the environmental liability	1	2	3	4	5	6	7
There would be an ethical obligation to accrue a material environmental liability	1	2	3	4	5	6	7
There would be an ethical obligation to fully disclose the environmental liability in the notes to the financial statements	1	2	3	4	5	6	7
1 = Very undesirable; 2 = Quite undesirable; 3 = Slightly undesirable; 4 = Neither desirable nor undesirable; 5 = Slightly desirable; 6 = Quite desirable; 7 = Very desirable							
How desirable or undesirable is each of the following to you? (Please circle your response)	Very Undesirable ..... Very Desirable						
Creating a reserve for future utilization	1	2	3	4	5	6	7
Adversely affecting share price borrowing costs	1	2	3	4	5	6	7
Having your company viewed as acting responsibly in managing environmental issues	1	2	3	4	5	6	7

Having questions raised about the accuracy of estimates in the financial statements	1	2	3	4	5	6	7
Fulfilling the obligation to fully inform users of financial statements	1	2	3	4	5	6	7
Increasing the risk of lawsuits	1	2	3	4	5	6	7
Adversely affecting profits in the current period	1	2	3	4	5	6	7
Showing a conservative approach to financial reporting	1	2	3	4	5	6	7
Increasing regulatory oversight of the company	1	2	3	4	5	6	7
Drawing management attention to environmental issues	1	2	3	4	5	6	7

(Please use the following scale for the next two sets of statements.)

1 = Extremely unlikely; 2 = Quite unlikely; 3 = Slightly unlikely; 4 = Neutral;  
5 = Slightly likely; 6 = Quite likely; 7 = Extremely likely

*How likely is it that the following things would happen if one accrued a material liability or fully disclosed the environmental liability for the situation described in the case?*

How Likely is It that:	... If One Accrued a Material Environmental Liability?							... If One Fully Disclosed the Environmental Liability?						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
A reserve would be created for future utilization...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Share price/borrowing costs would be adversely affected...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Company would be viewed as acting responsibly in managing environmental issues...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Questions would be raised about the accuracy of the estimate...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
The obligation to fully inform users of financial statements would be fulfilled...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
The risk of lawsuits would be increase...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Profit would be adversely affected in the current period...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
A conservative approach to financial reporting would be demonstrated...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Regulatory oversight of the firm would be increased...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Management attention would be drawn to this environmental issue...	1	2	3	4	5	6	7	1	2	3	4	5	6	7

If you faced a situation in your company similar to the one in the case, how likely is it that each of the following people or groups of people would want you to accrue a material liability or fully disclose the environmental liability?

How Likely is It that:	... Want You to <i>Accrue</i> a Material Environmental Liability?							... Want You to <i>Fully Disclose</i> the Environmental Liability?						
Your company's CEO would...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Outside auditors would...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Internal legal counsel would...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
External legal counsel would...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Engineers/technical experts would...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Board of Directors/Audit Committee would...	1	2	3	4	5	6	7	1	2	3	4	5	6	7

1 = Extremely unlikely; 2 = Quite unlikely; 3 = Slightly unlikely; 4 = Neutral; 5 = Slightly likely; 6 = Quite likely; 7 = Extremely likely

(Please circle the appropriate number in each column for each statement).

How likely is it that you would want to comply with the wishes of:	... concerning the <i>accrual</i> of a material environmental liability?							... concerning the <i>full disclosure</i> of the environmental liability?						
Your company's CEO	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Outside auditors	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Internal legal counsel	1	2	3	4	5	6	7	1	2	3	4	5	6	7
External legal counsel	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Engineers/technical experts	1	2	3	4	5	6	7	1	2	3	4	5	6	7
<b>Board of Directors/Audit Committee</b>	1	2	3	4	5	6	7	1	2	3	4	5	6	7

1 = Strongly disagree; 2 = Disagree; 3 = Somewhat disagree; 4 = Neither disagree nor agree; 5 = Somewhat agree; 6 = Agree; 7 = Strongly agree

(Please indicate your disagreement/agreement with the following statements by circling your response in each column).

If I faced a situation in my company similar to the one in the case,	...to <i>accrue</i> a material environmental liability.							...to <i>fully disclose</i> an environmental liability.						
I would have control over the decision...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
It would be very easy for me...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
The authority given my position is sufficient...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
I feel confident that my skills, abilities, and knowledge qualify me to make the decision...	1	2	3	4	5	6	7	1	2	3	4	5	6	7
As a financial executive, I would have a moral obligation....	1	2	3	4	5	6	7	1	2	3	4	5	6	7
It would go against my principles not...	1	2	3	4	5	6	7	1	2	3	4	5	6	7

(For the next two questions, please circle the number to indicate your response choice).

In thinking about the situation described in the case, how would you rate the environmental risk to human health and safety?

Low	1	2	3	4	5	6	7	8	9	10	High
-----	---	---	---	---	---	---	---	---	---	----	------

In thinking about the situation described in the case, how would you rate the financial impact on the hypothetical company?

Low	1	2	3	4	5	6	7	8	9	10	High
-----	---	---	---	---	---	---	---	---	---	----	------

What was the lowest cost estimate for the Best Case Scenario? (\$ amount)

What was the highest cost estimate for the Worst Case Scenario, including the additional legal fees and litigation? (\$ amount)

The remaining questions are not related to the hypothetical case, but are questions concerning your background and present company. These questions are for research purposes only. No effort will be made to identify you or your company. If you are presently retired or unemployed, please answer the following questions as they pertain to your most recent employer and job position.

**INSTRUCTIONS:** Please answer the following in terms of how it actually is in your company, not how you would prefer it to be. Please be as candid as possible; remember, all your responses will remain strictly confidential. No one at your company will see your responses.

1 = Completely false; 2 = Mostly false; 3 = Somewhat false; 4 = Somewhat true; 5 = Mostly true; 6 = Completely true						
To what extent are the following statements true about your company? False..... True	Completely False ..... Completely True					
People in my company have a strong sense of responsibility to the outside community	1	2	3	4	5	6

In my company, each person is expected, above all, to work efficiently	1	2	3	4	5	6
In my company, people protect their own interest above other considerations	1	2	3	4	5	6
People in my company are actively concerned about the customer's, and the public's, interest	1	2	3	4	5	6
The major responsibility for people in my company is to consider profitability first	1	2	3	4	5	6
In my company, people are mostly out for themselves	1	2	3	4	5	6
The effect of decisions on the customer and the public are a primary concern in my company	1	2	3	4	5	6
Efficient solutions to problems are always sought here	1	2	3	4	5	6
In my company, people look out for each other's good	1	2	3	4	5	6
In my company, it is expected that one will always do what is right for the customer and public	1	2	3	4	5	6
The most efficient way is always the right way, in my company	1	2	3	4	5	6

The following questions ask about your perception of your company's ethical climate.

Please place an "X" above your response choice:  
Do you feel that the ethical principles of your company are consistent with your personal ethical principles?

Inconsistent \_\_\_\_\_ Consistent  
 Extremely Quite Slightly Neither Slightly Quite Extremely

To what extent does the ethical climate of your company make it difficult/easy for you to do what you think is right?

Difficult \_\_\_\_\_ Easy  
 Extremely Quite Slightly Neither Slightly Quite Extremely

To what extent are you generally satisfied with the overall ethical climate in your company?

Dissatisfied \_\_\_\_\_ Satisfied  
 Extremely Quite Slightly Neither Slightly Quite Extremely

Please be as candid as possible in responding to the following items:

1 = Strongly disagree; 2 = Disagree; 3 = Somewhat disagree; 4 = Somewhat agree; 5 = Agree; 6 = Strongly agree	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
I am sometimes irritated by people who ask favors of me	1	2	3	4	5	6	6
There have been occasions when I took advantage of someone	1	2	3	4	5	6	6
I sometimes try to get even rather than forgive and forget	1	2	3	4	5	6	6
At times I have really insisted on having things my own way	1	2	3	4	5	6	6

The following information is for statistical purposes only. Please indicate by circling the appropriate number. Note: If you are presently retired or unemployed, please answer the following questions as they pertain to your most recent employer and job position.

Are you presently employed:  
 1. Yes  
 2. No

Investigation of Intentions to Accrue and Disclose Environmental Liabilities

Your job title:

1. Chairman of the Board
2. Owner
3. President/CEO
4. Chief Financial Officer
5. Vice President
6. Treasurer
7. Controller
8. Other (Please specify) \_\_\_\_\_

Number of years in this position: \_\_\_\_\_

Number of years employed by present company: \_\_\_\_\_

Professional certifications currently held, please list:

Number of times that you have been involved in decisions regarding the accrual or disclosure of environmental liabilities:

1. Never
2. One or two times in my career
3. One or two times per year
4. Three to five times per year
5. More than five times per year

Your age in years:

1. Less than 25
2. 26-35
3. 36-45
4. 46-55
5. 56-65
6. Greater than 65

Your gender:

1. Female
2. Male

Ownership structure of your company:

1. Publicly traded
2. Privately held

- 3. Government
- 4. Not-for-profit

*Approximate size of your company:*

- 1. Less than 100 employees
- 2. Between 100 and 1000 employees
- 3. Between 1001 and 2500 employees
- 4. More than 2500 employees

Please circle the number next to the industry category that best describes your company's major business: (*Summary level SIC codes are in parentheses.*)

*Manufacturing:*

- 1. Food and kindred products (2000)
- 2. Textiles (2200, 2300)
- 3. Lumber and Wood Products, Paper, Printing (2400, 2600, 2700)
- 4. Chemicals and Allied Products (2800)
- 5. Petroleum (Refining) and Coal Products (2900)
- 6. Primary Metal Industries (3300)
- 7. Fabricated Metal Products (3400)
- 8. Machinery, Equipment, and Components (3500, 3600)
- 9. Transportation Equipment (Autos) (3700)
- 10. Instruments and Related Products (3800)
- 11. All other manufacturing (2100, 2500, 3000, 3100, 3200, 3900)

*Mining*

- 12. Oil and Gas Extraction (1300)
- 13. All other mining (1000, 1100, 1200, 1400)

*Transportation*

- 14. Electric, Gas and Sanitary Services (Utilities) (4900)
- 15. All other transportation (4000 - 4800)
- 16. Construction (1500 - 1700)
- 17. Agriculture and Forestry (0100 - 0800)
- 18. Wholesale Trade (5000 - 5100)
- 19. Retail Trade (5200 - 5900)
- 20. Finance and Real Estate (6000 - 6700)
- 21. Other (7000 - 9900)

*The following items relate to your perceptions of the present regulatory and economic environment in which your company operates.*

1 = Strongly disagree; 2 = Disagree; 3 = Somewhat disagree; 4 = Somewhat agree; 5 = Agree; 6 = Strongly agree

Please indicate your disagreement/agreement with the following statements by circling your response.

	Strongly Disagree ..... Strongly Agree					
	1	2	3	4	5	6
The environmental regulatory climate at the federal level is presently pro-business						
The current federal environmental regulations are relaxed						
The SEC oversight concerning the reporting of environmental liabilities is presently relaxed. ( <i>Please skip this question if your company is not publicly traded</i> )						
External auditor oversight concerning the reporting of environmental liabilities is presently relaxed						
At the present time, the industry in which my company operates is more profitable than the general economy						
My company is currently more profitable than other companies in our industry						
The industry in which my company competes is competitive						

If there are any comments you would like to add, please feel free to do so in the space below:

*Thank you very much for your time and participation in this survey. Your opinions are extremely valuable in furthering the understanding of the accounting for environmental liabilities.*

*If you are interested in receiving a copy of the survey results, please send an email message to xxxxxxxxxxxx.*