



Fox Rothschild LLP
ATTORNEYS AT LAW

CONSIDERATION OF CHEMICAL VAPORS IN TRANSACTIONS AND ASTM INTERNATIONAL'S DEVELOPMENT OF VAPOR SCREENS

By: **Christopher M. Roe**

In March 2008, ASTM International issued E 2600-08, *Standard Practice for Assessment of Vapor Intrusion into Structures on Property Involved in Real Estate* ("E 2600-08"). This Standard Practice established a screening tool for determining whether vapor intrusion may be an issue at a property that was the subject of a transaction. Unfortunately, E 2600-08 was ill-conceived.¹

Since the issuance of E 2600-08, the author and others, including Edward L. Strohhahn, Jr. of Bingham LLP, have been working hard to have E 2600-08 replaced by a document that is less potentially harmful to the interests of property owners and more consistent with what may be possible given the limited information available in an environmental site assessment prior to sampling. The proposed E 2600-10, *Standard Guide for the Assessment of Vapor Encroachment onto Property Involved in Real Estate Transactions* ("Proposed VE Standard Guide") was balloted within ASTM International's Committee E 50 in March 2010 and is expected to be issued later this year. As the title suggests, Proposed VE Standard Guide will be a very different document, if issued as currently revised and balloted, than E 2600-08 is.

This Article has two parts. The purpose of Part I is to describe ASTM International's efforts to establish a screening mechanism for the potential presence of vapors at a property in a transaction.

The purpose of Part II of the article is to describe the relationship between the Proposed VE Standard Guide and "all appropriate inquiries" under the federal Comprehensive Environmental Response Compensation and Liability Act, 42 U.S.C. §§ 9601, et. seq. ("CERCLA"), at 9601(35)(B) and the United States Environmental Protection Agency ("USEPA") regulations promulgated to provide the standards and practices that comprise "all appropriate inquiries" under CERCLA, 40 CFR Part 312 ("AAI Rules"). This article

¹ Articles explaining the fundamental problems with E 2600-08 include *New ASTM Standard for Assessment of Vapor Intrusion: More Harm Than Good?*, Christopher M. Roe, BNA Environment Reporter, 39 ER 1027, May 23, 2008; and *Assessment of Vapor Intrusion: Inappropriate Presumptions*, Edward L. Strohhahn, Jr., BNA Environment Reporter, 40 ER 1330 (June 5, 2009).

Christopher M. Roe is a partner in the Chester County office of Fox Rothschild LLP where he counsels clients on a wide range of local and national environmental-related matters. Chris can be reached at croef@foxrothschild.com, or 610-458-4987.

also discusses the relationship between the Proposed VE Standard Guide and ASTM International's *Standard Practice for Environmental Assessments: Phase I Environmental Site Assessment Process* ("E 1527-05").

I. Background

First, some background on why the presence of vapors at a property has become an issue of real importance, as well as on and why ASTM International's initial efforts need correction.

A. Vapor Intrusion – Why Vapors Matter

Vapor intrusion is the migration of volatile chemicals from subsurface soil or groundwater contamination into overlying buildings. The chemicals volatilize from the impacted soil or groundwater and migrate as soil gas through pore spaces between soil particles toward areas of lower pressure and chemical concentration (usually toward the surface). The soil gas can enter buildings through cracks in foundations and utility conduits. The chemicals that enter a building have the opportunity to accumulate and cause human exposures to a degree that they would not if dispersed in open, ambient air.

At least three things are true about the potential for volatile contaminants to migrate into buildings as vapors (vapor intrusion):

1. Vapor intrusion is subject to growing scrutiny;
2. Vapor intrusion determinations are complex and are not easily made;
3. Vapor intrusion determinations are inherently high stakes because they are determinations about unacceptable health risks in the breathing air of building inhabitants.

Concerns about vapor intrusion, as discussed here, have arisen out of the context of the investigation, assessment and cleanup of contaminated soil and groundwater under the federal superfund and hazardous waste laws, as well as comparable state statutes. Assessment of the vapor intrusion pathway is part of conducting a human health risk assessment where the contamination at issue involves volatile chemicals.

There is no question that vapor intrusion is the subject of growing scrutiny. For example, as noted in the materials that accompany E 2600-08, more than 26 states have developed or adopted vapor intrusion guidance in the last few years. EPA required the indoor air pathway to be addressed in its environmental indicators evaluations² and issued its current draft guidance in November 2002.³ The Interstate Technology and Regulatory

² *Interim Final Environmental Indicator Guidance under RCRA (Feb. 5, 1999)*, available on the Web at http://www.epa.gov/epaoswer/hazwaste/ca/eis/ie_guide.pdf.

³ *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils*, (67 FR 71169, Nov. 29, 2002), available on the Web at <http://www.epa.gov/correctiveaction/eis/vapor.htm>

Council (ITRC), a coalition led by state and federal regulatory personnel, issued *Vapor Intrusion Pathway: A Practical Guide* in January 2007.⁴ California passed legislation requiring consideration of the vapor intrusion pathway in clean-ups there.⁵

Vapor intrusion determinations are complicated by a number of factors, including: 1) their reliance on modeling, including the various inputs to the models and the inherent difficulty of assessing preferential pathways; 2) varied methodologies and models are being applied by regulators, and 3) the various sources of volatile chemicals in indoor air, including ambient air concentrations, indoor sources, and subsurface contaminants. According to EPA, “the vapor intrusion pathway is complex and, consequently, we recommend a comprehensive assessment of this pathway using all available lines of evidence be conducted before drawing conclusions about the risks posed by this pathway.”⁶

Vapor intrusion analysis is inherently high stakes because it is a form of human health risk assessment regarding a particularly intimate media, the breathing air found in homes and offices. The Interstate Technology and Regulatory Council opens its *Practical Guide* by stating: “Degradation of indoor air quality causes more apprehension and anxiety among building occupants than are typically associated with other environmental problems.”⁷ The lawsuit filed against IBM in January 2008 by residents and businesses in IBM’s birthplace, Endicott, New York,⁸ and more recent lawsuits filed against DuPont and Royle Systems Group by residents of Pompton Lakes, New Jersey, highlight this. These lawsuits, to a great degree, are about the alleged intrusion of vapors from contaminated groundwater into homes and workplaces.

B. ASTM’s Attempt at a Vapor Intrusion Screen

With these truths as backdrop, ASTM International, through its Committee E50 and Subcommittee E50.02, set out to develop a tool for evaluating vapor intrusion issues in the context of the purchase and sale of real estate. The result was E 2600-08. Unfortunately, the E 2600-08 did not adequately take into account the complexity of vapor intrusion analysis or the high stakes nature of vapor intrusion determinations.

(hereinafter, *Draft Subsurface Intrusion Guidance*). Despite repeated statements of the intention to do so, EPA has not issued a final version of this guidance. However, in December 2009, USEPA restated its commitment to develop and issue final vapor intrusion guidance in response to a report from the USEPA Inspector General evaluation report *Evaluation Report: Lack of Final Guidance on Vapor Intrusion Impedes Efforts to address Indoor Risks* (Dec. 14, 2009).

⁴ ITRC also issued *Vapor Intrusion Pathway: Investigative Approaches for Typical Scenarios* in January 2007. Both are available at http://www.itrcweb.org/gd_VI.asp.

⁵ California A.B. 422 (2007) amending the Carpenter-Presley-Tanner Hazardous Substance Accounts Act (California Superfund Act) and Porter-Cologne Water Quality Control Act to require that risk assessments consider vapor intrusion (38 ER 2310, 10/26/07).

⁶ *Draft Subsurface Vapor Intrusion Guidance*, p. 21.

⁷ ITRC *Practical Guide*, Section 1.1.

⁸ *Blaine, et al. vs. International Business Machines Corp.*, N.Y. Sup. Ct. No. 2008/000012, 1/3/08 (39 ER 96, 1/11/08).

Moreover, in issuing the VI Standard Practice, Committee E50 decided it needed to “clarify” its own *Standard Practice for Environmental Assessments: Phase I Environmental Site Assessment Process* (“E 1527-05”) as to the potential presence of vapors at a target property. E 1527-05, of course, has been deemed by the Environmental Protection Agency to satisfy “all appropriate inquiries” under the federal superfund law⁹ and the regulations promulgated thereunder.¹⁰ ASTM E 1527-05 provides the guidelines for the Phase I environmental site assessments performed everyday.

The issuance and application of E 2600-08 had the potential to do harm in two principal ways:

1. It directs environmental professionals to speculate in written conclusions about the presence of unhealthy levels of volatile chemicals in the indoor air of inhabited buildings.
2. It undermines E 1527-05, and Phase I environmental site assessments, as constituting all appropriate inquiry under the federal superfund law, by appearing to suggest that the consideration of the presence of chemical vapors at a property were somehow carved out of E 1527-05.

After two years of effort, the E 2600 Task Group generated a redraft of E 2600 that includes the following proposed fundamental changes:

1. E 2600 would become a Standard Guide, rather than Standard Practice.
2. E 2600 would become a screen for vapor *encroachment* to properties, not for vapor *intrusion* into buildings.
3. Presumptions based on releases within specified distances would be eliminated.
4. E 2600 would no longer hold itself out as “good commercial and customary” practice, a phrase taken from the all appropriate inquiries language of CERCLA.
5. The secondary area of concern distances would be eliminated.
6. In addition, the relationship between E 2600 and E 1527-05 would be further clarified.

Part II of this article sheds light on how the evaluation of the potential presence of vapor fits into the context of environmental site assessments.

⁹ Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9601(35)(B).

¹⁰ 40 CFR. 312.11.

In general, the changes to E 2600 recognize that a simple mechanism to screen for potential vapor intrusion into buildings is unsupported scientifically and potentially disruptive to the interests of the parties to a transaction. E 2600 is being scaled back in a manner that eliminates most of its harmful effects.

II. Evaluation of the Potential Presence of Vapors in Environmental Site Assessments.

A. Summary

“All appropriate inquiries” under CERCLA are conducted to evaluate whether hazardous substances¹¹ from a release are or may be present at the property that is the subject of the proposed acquisition.¹² The term hazardous substance in CERCLA is not limited to solids and liquids and USEPA has consistently taken the view that the vapor phase of volatile hazardous substances must be considered and addressed under CERCLA. Therefore, the potential presence of volatile chemicals in gas or vapor form in the subsurface of a property (from a CERCLA release at the property itself or a nearby property) is appropriately considered in the conduct of all appropriate inquiries under CERCLA, the AAI Rules, and a Phase I environmental site assessment (“Phase I ESA”) pursuant to E 1527-05.¹³

The stated objectives for the development of the Proposed VE Standard Guide include synthesizing and putting in writing a practical guide and a reasonable screening process to assess whether a volatile chemical¹⁴ from a release may encroach upon a property that is the target of a proposed acquisition.¹⁵

The Proposed VE Standard Guide does not hold itself out as a “good commercial or customary” standard or practice for determining whether a CERCLA hazardous substance is or is likely present at the target property. The good commercial and customary standards and practices that constitute “all appropriate inquiries” are those that USEPA establishes by regulation. USEPA has not determined that the VE Standard

¹¹ “Hazardous substance” includes all substances designated as hazardous under other statutes referred to in CERCLA or designated as hazardous substance by USEPA under CERCLA itself. 42 USC § 9601(14). Petroleum, including crude oil and any fraction thereof, and natural gas are excluded.

¹² Note that “all appropriate inquiries” are, as USEPA says, “legally distinct” from the more general concepts or processes of “environmental site assessment” and “environmental due diligence.” See, e.g., USEPA’s discussion of this matter in its preamble to the final AAI Rules, 70 Fed.Reg. 66069, 66072 (Nov. 1, 2005).

¹³ This article does not address the separate issue, not raised by the Proposed VE Standard Guide, of whether *vapor intrusion* analysis, as described in guidance issued by USEPA and state agencies, would ever be required under the AAI Rules or to satisfy the definition of recognized environmental condition under E 1527-05 Phase I. Vapor intrusion analysis determinations are sensitive and complex and the information necessary to complete them would not typically be gathered by the environmental professional performing all appropriate inquiries or a Phase I under E 1527-05.

¹⁴ Note that the VE Standard Guide is not limited to CERCLA “hazardous substances.”

¹⁵ VE Standard Guide, Section 1.2.

Guide is appropriate or necessary to satisfy all appropriate inquiries under CERCLA, nor that it satisfies any requirement of the AAI Rules.

The Proposed VE Standard Guide also is not part of E 1527-05, nor is it a supplement to, amendment of, or replacement for any part of E 1527-05.

In summary, the Proposed VE Standard Guide is not a requirement or component of all appropriate inquiries, and its results are not determinative of whether hazardous substances from a release are or may be present at the property for the sake of all appropriate inquiries or E 1527-05. However, conducting a Proposed VE Standard Guide vapor encroachment screen may be helpful to the prospective buyer and the environmental professional in conducting an environmental site assessment of a target property.

B. Background: Owner Liability and Liability Protections

In general, a building or property at which a hazardous substance has been disposed or at which a hazardous substance has otherwise come to be located is a “facility” subject to CERCLA.¹⁶ The owner of a facility is a party liable for response costs and natural resource damages under CERCLA,¹⁷ unless the owner can establish by a preponderance of evidence each of the elements of one of the limited defenses or the landowner liability protections that the statute provides.¹⁸

CERCLA provides three core “defenses” to liability which, stated generally as to an owner, are that the release and damages from the release were caused by: 1) act of God; 2) act of war; or 3) act of a third party unaffiliated (including by contractual relationship) with the owner if the owner a) exercised due care with regard to the hazardous substance; and b) took precautions against foreseeable acts and omissions of third parties and the related consequences (this third defense is referred to hereafter as “Third Party Defense”).¹⁹

For the purposes of the Third Party Defense, a land contract or deed is a contractual relationship.²⁰ To provide some relief to unwitting, ‘innocent’ buyers of property at which releases had occurred in the past, Congress established the so-called “innocent landowner” or “innocent purchaser” provision. This provision makes the Third Party Defense potentially available to buyers of properties at which releases occurred before they acquired the properties if the buyers meet each of the innocent landowner requirements in the definition of “contractual relationship” at Section 9601(35), including having no reason to know of the presence of the hazardous substance at the property after performing pre-acquisition all appropriate inquiries.

¹⁶ 42 USC § 9601(9).

¹⁷ 42 USC § 9607(a)(1).

¹⁸ Note that the bona fide prospective purchaser protection (9607(r) and 9601(40)), may leave the owner subject to a lien for unrecovered response costs against an increase in value of the property due to clean-up.

¹⁹ 42 USC § 9607(b).

²⁰ 42 USC § 9601(35)(A).

An owner of property that is affected by a hazardous substance migrating from a release at a separate, nearby property often has had no contractual or other relationship with the party that caused the release. This “off-site” landowner would be the owner of a CERCLA facility but may be eligible for the Third Party Defense, if he or she can establish the exercise of due care as to the hazardous substance at issue and the taking of precautions against foreseeable acts of others. Note that where no contractual relationship exists with the person who caused the release *the Third Party Defense does not include an express requirement that the landowner perform pre-acquisition all appropriate inquiries.*²¹

In addition, in 2002, Congress added a provision (referred to as the “contiguous property provision”) to CERCLA that provides that owners (and operators) of property to which hazardous substances have migrated from a nearby release will not be considered “owners or operators” for CERCLA liability purposes if they meet a number of criteria. These criteria include having no reason to know of the presence of the hazardous substance at the properties after performing pre-acquisition all appropriate inquiries.²²

A more significant protection for landowners (both for owners of lands that are the sources of releases and those to which the hazardous substances have migrated) added by Congress in 2002 is the *bona fide* prospective purchaser provision, which provides liability protection even when property is purchased with knowledge of contamination, if pre-acquisition all appropriate inquiries are performed and all of the other requirements of the protection are satisfied.²³

Innocent landowner, contiguous property owner and *bona fide* prospective purchaser are commonly referred to as CERCLA’s landowner liability protections. As noted above, an element of each of the landowner liability protections (note that this does not include the Third Party Defense where no contractual relationship exists) is that a buyer of commercial or industrial property has conducted pre-acquisition “all appropriate inquiries” to determine whether the property is a place at which a hazardous substance is present or is likely to be present as a result of a CERCLA release.²⁴ In other words, if a

²¹ See, for example, *New Windsor v. Tesa Tuck, Inc., et al.*, 935 F.Supp. 310 (S.D.N.Y. 1996) (landowner established the Third Party Defense despite having not taken steps to discover the contamination at its property from the encroachment of a neighboring landfill).

²² 42 USC § 9607(q). This provision was added in the “Small Business Liability Relief and Brownfields Revitalization Act of 2002,” the stated purpose of which was to “provide certain relief for small businesses from liability” under CERCLA and “to promote the cleanup and reuse of brownfields....” It is likely inconsistent with these purposes for the contiguous property owner provision to be read to effectively incorporate the requirements of the contiguous property owner provision into the ‘due care’ or ‘precaution’ requirements of the Third Party Defense (9607(b)(3)(a) and (b)) for offsite landowners. However, USEPA guidance has not addressed this nor has it been addressed in caselaw to date.

²³ 42 USC § 9607(r) and § 9601(40).

²⁴ AAI is only one component of these landowner liability protections. Others include that the landowner is not otherwise liable under CERCLA or affiliated with a liable party; did not cause, contribute to or consent to the release; and has satisfied what is referred to as ‘continuing obligations’ with regard to the property. See e.g., *Interim Guidance Regarding Criteria Landowners Must Meet in Order to Qualify for Bona Fide Prospective Purchaser, Contiguous Property Owner, or Innocent Landowner Limitations on*

buyer of real property hopes to qualify for a landowner liability protection, the buyer must have conducted all appropriate inquiries to determine whether the property he or she is buying may be a “facility” as defined by CERCLA due to a CERCLA release, before completing the purchase.²⁵

C. AAI Under CERCLA Is Pre-Acquisition Inquiry into the Presence of Hazardous Substances from a Release at a Property

As noted above, a prerequisite for each of the landowner liability protections is that the owner conduct “all appropriate inquiries,” into the previous ownership and uses of the target property “in accordance with generally accepted good commercial and customary standards and practices” (“AAI”), as established by USEPA by regulation, before buying the property.

The object of these pre-acquisition inquiries is to determine whether the target property is a CERCLA “facility” as to which CERCLA liability may arise, that is, whether “any hazardous substance which is the subject of the release or threatened release was disposed of on, in, or at the [property].”²⁶

1. AAI Rules Establish Standards and Practices for the Inquiry into the Presence of Hazardous Substances from a Release at a Property

Congress established interim criteria for meeting the “all appropriate inquiries” standard under CERCLA, but mandated that USEPA promulgate regulations to establish “standards and practices” for how all appropriate inquiries would be performed.²⁷ USEPA’s AAI Rules were issued November 2005 and became effective on November 1, 2006.²⁸

According to USEPA, and consistent with CERCLA, the scope of the AAI Rules is:

“In the case of persons claiming one of the CERCLA landowner liability protections, the scope of today’s rule includes the conduct of all appropriate inquiries for the purpose of identifying releases and threatened releases of hazardous substances on, at, in or to the property that would be the subject of a response action” Preamble to the Final AAI Rules, 70 Fed.Reg. at 66076.

The environmental professional hired to perform AAI must provide:

CERCLA Liability (known as the “Common Elements” Guidance), USEPA Office of Enforcement and Compliance Assurance (Mar. 2003).

²⁵ CERCLA’s definition of “facility” is intended to be expansive and includes every place where hazardous substances come to be located. *United States v. Conservation Chemical Company*, 619 F. Supp. 162, 185 (W.D.Mo. 1985)

²⁶ 42 USC § 9601(35)(A)(i).

²⁷ 42 USC § 9601(35)(B)(ii).

²⁸ 70 Fed. Reg. 66070(40 CFR 312).

An opinion as to whether the inquiry has identified *conditions indicative of releases or threatened releases of hazardous substances . . . on, at, in, or to the subject property*. 40 CFR 312.11(C)(I). (Emphasis added.)

Therefore, all appropriate inquiries, under CERCLA and the AAI Rules, is a process for determining whether hazardous substances have been released at the target property through the application of good commercial and customary standards and practices established by USEPA in the AAI Rules.

2. AAI is Not Limited to Releases That Originate at the Target Property

Consistent with CERCLA's requirements, USEPA has provided that AAI includes consideration by the environmental professional of environmental conditions at properties adjoining or nearby the subject property that could result in the presence of hazardous substances at the subject property. CERCLA required USEPA to include in the AAI Rules the review of records concerning "contamination at or near the facility" and visual inspections of "adjoining properties."²⁹

Similarly, CERCLA includes in the definition of "facility" sites where hazardous substances have "otherwise come to be located,"³⁰ and the contiguous property owner landowner liability protection in the statute expressly requires that the landowner has conducted all appropriate inquiries and "did not know or have reason to know that the property was or could be contaminated by a release . . . *from other real property not owned or operated*" by the landowner.³¹

The AAI Rules establish distances from the target property within which the environmental professional should gather and consider information on environmental conditions.³² According to the AAI Rules, these distances can be modified based on a number of factors, including, "potential migration pathways (e.g., groundwater flow direction, prevalent wind direction)."³³

²⁹ 42 USC § 9601(35)(B)(iii)(V) and (VI).

³⁰ 42 USC § 9601(9)(B).

³¹ 42 USC § 9607(q)(1)(A)(viii)(II). Emphasis added. For more on USEPA's views on the contiguous property owner liability protection, the potential liability of offsite property owners, and USEPA exercise of enforcement discretion in this regard, see, e.g., *Interim Enforcement Discretion Guidance Regarding Contiguous Property Owners*, Memorandum, USEPA Office of Enforcement and Compliance Assurance, (Jan. 2004); *Final Policy Towards Owners of Property Containing Contaminated Aquifers*, Memorandum, USEPA Office of Site Remediation Enforcement (May 1995); and *Policy Towards Owners of Residential Property at Superfund Sites*, Memorandum, USEPA Office of Solid Waste and Emergency Response (July 1991).

³² 40 CFR 312.26(c).

³³ 40 CFR 312.26(d).

Therefore, the overall objective of AAI is to determine whether, in the environmental professional's judgment, any hazardous substance is present at the target property as a result of a CERCLA "release"³⁴ at or near the property.

3. ASTM International's Standard Practice E 1527-05 Can Be Used to Conduct All Appropriate Inquiries

In promulgating the AAI Rules, USEPA determined that ASTM International's E 1527-05 could be used to satisfy AAI.³⁵

The express purpose of E 1527-05 is to set forth a practice that constitutes "all appropriate inquiries into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined at 42 USC § 9601(35)(B).³⁶ Consistent with CERCLA and the AAI Rules, the express goal of the process established by E 1527-05 is to identify "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property."³⁷

E 1527-05 labels the presence or likely presence of a hazardous substance (or petroleum) a determination of a "recognized environmental condition" ("REC").³⁸

In other words, the environmental professional's determination pursuant to an AAI procedure that a hazardous substance (or petroleum) from a release is or is likely to be present at the property results in the identification of a REC under E 1527-05.

D. Chemicals in a Gas or Vapor Form Are Hazardous Substances Subject to All Appropriate Inquiries

1. Chemicals in Gas or Vapor Form May Be Hazardous Substances

The definition of "hazardous substance" in CERCLA is broad and it is not limited to chemicals in solid or liquid forms.³⁹ For example, the term hazardous substance specifically includes hazardous air pollutants listed under section 112 of the Clean Air

³⁴ CERCLA defines "release" to include "any spilling, leaking, pumping, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment . . ." 42 USC § 9601(22).

³⁵ 40 C.F.R. Part 312, at 312.11.

³⁶ E 1527-05, Section 1.1.

³⁷ E 1527-05, Section 1.1.1. Note that E 1527-05 includes petroleum and is not limited to CERCLA hazardous substances. See Section 1.1.2 of E 1527-05 which explains that E 1527-05 includes petroleum products because they are a concern in assessing real estate, but not because of any applicability of CERCLA to petroleum products.

³⁸ E 1527-05, Section 1.1.1.

³⁹ 42 USC § 9601(14).

Act.⁴⁰ Hazardous air pollutants include benzene, trichloroethylene (“TCE”) and tetrachloroethylene (“PCE”), common groundwater contaminants that may migrate to a property in groundwater and in soil gas.⁴¹

In addition, the definition of “release” in CERCLA includes “emitting” and “escaping” into the “environment,” which is itself defined to include ambient air.⁴²

2. Migration of Hazardous Substances as Vapors Is Subject to CERCLA Assessment and Remediation

USEPA has long recognized that CERCLA hazardous substances can volatilize and migrate from releases as vapor. For example, USEPA addressed that potential as part of the CERCLA risk assessment process.⁴³ Courts have included costs of investigation and remediation of hazardous substance vapors as potentially recoverable response costs under CERCLA.⁴⁴

USEPA’s issuance of its *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils*,⁴⁵ confirms USEPA’s determination that hazardous substances that migrate from CERCLA releases are subjects for risk assessment and potentially other response actions under CERCLA. That guidance was intended by USEPA as an aid in evaluating the potential for human exposure via the vapor intrusion pathway based on the state-of-the-science in 2002.⁴⁶

3. All Appropriate Inquiries and the AAI Rules Are Not Limited to Solid and Liquid Forms of Hazardous Substances or to Particular Migration Pathways

The language in CERCLA does not limit all appropriate inquiries only to certain types, phases or forms of hazardous substances. In addition, while recognizing that the hazardous substance might originate at an adjoining or nearby property, the statute does not identify only certain migration pathways to be evaluated or considered.

Similarly, the AAI Rules use the term hazardous substance and are not expressly limited to certain types, phases or forms of hazardous substance.⁴⁷ The AAI Rules specifically include “potential migration pathways” “(e.g., groundwater flow direction, prevalent

⁴⁰ 42 USC § 9601(14)(E).

⁴¹ 40 CFR 61.01(a) and <http://www.epa.gov/ttn/atw/188polls.html>.

⁴² 42 USC § 9601(22).

⁴³ See for example, *Risk Assessment Guidance for Superfund*, Volume I, Human Health Evaluation Manual, (Part A), Interim Final, EPA/540/1-89/002, Dec. 1989; “*Assessing Potential Indoor Air Impacts for Superfund Sites*,” 1992; “*Options for Developing and Evaluating Mitigation Strategies for Indoor Air Impacts at Superfund Sites*,” 1993.

⁴⁴ See for example, *Action Manufacturing Co., Inc. v. Simon Wrecking Co.*, 428 F. Supp. 2d 288, 307, 332 (E.D.Pa. 2006).

⁴⁵ 67 Fed.Reg. 71169-71172 (Nov. 29, 2002).

⁴⁶ USEPA Draft VI Guidance, I.F. pg. 4.

⁴⁷ See, e.g., 40 CFR 312.1(c)(1).

wind direction)⁴⁸ among the factors an environmental professional may consider in adjusting search distances.

No basis appears to exist for excluding the gaseous or vapor form of a chemical from the definition of hazardous substances under CERCLA or from the hazardous substances whose presence in the subsurface of a property could cause the property to be considered a facility under CERCLA. Similarly, no basis appears to exist for excluding the evaluation of the potential presence of the gaseous or vapor forms of hazardous substances in the subsurface in the performance of all appropriate inquiries.

4. E 1527-05 Is Not Limited to Solid and Liquid Forms of Hazardous Substances or to Particular Migration Pathways

E 1527-05 is expressly written to meet the requirements of all appropriate inquiries and to identify the presence or potential presence at a target property of hazardous substances from a release. Consistent with these objectives, nothing in E 1527-05 excludes hazardous substances in vapor or gaseous phases from consideration in the conduct of a Phase I ESA.

In recent years, however, with the increased focus on the vapor intrusion risk pathway, some have argued that the listing of “indoor air quality” as a non-scope item in Section 13 of E 1527-05 may somehow exclude from the performance of an E 1527-05 Phase I consideration of the migration of volatile contaminants as vapors: 1) to the subsurface of the target property; and/or 2) into structures on the property.

First, the evaluation of whether vapors from a CERCLA release may have migrated to the *subsurface* of the property -- vapor encroachment -- is not in any way an evaluation of “indoor air quality,” and therefore, this evaluation cannot be reasonably considered non-scope on that basis.

Second, it would be inconsistent with the intent that E 1527-05 satisfies all appropriate inquiries to exclude consideration of vapor migration to the subsurface or into the structures on the property from the performance of a Phase I. As discussed above, the purpose set forth in section 1.1 of E 1527-05 is to establish a practice for conducting an ESA to permit the user to satisfy “all appropriate inquiry,” under CERCLA 42 USC 9601(35), including that the user had no reason to know that “any hazardous substance which is the subject of the release . . . was disposed of on, in, or at the facility.”

Third, there is no justification in the language of E 1527-05 itself for the position that vapor migration to the property or into structures on the property was excluded by E 1527-05 under the non-scope listing of “indoor air quality.”

The language of section 13.1.1 of E 1527-05 acknowledges that there may be environmental issues or conditions at a property that are outside the scope of E 1527-05. These are referred to as non-scope considerations.

⁴⁸ 40 CFR 312.26(d)(6).

Section 13.11 states:

“As noted by the legal analysis in [the Legal Appendix] of this practice, some substances may be present on a property in quantities and under conditions that may lead to contamination of the property or of nearby properties but are not included in CERCLA’s definition of hazardous substances ... or *do not otherwise present potential CERCLA liability*. In any case, they are beyond the scope of this practice.” (Emphasis added.)

The Legal Appendix that accompanies E 1527-05 explains why many of the non-scope considerations are non-scope (though no such explanation is provided for “indoor air quality”).⁴⁹ Each explanation provided turns on the fact that the non-scope condition discussed is *not* a condition from which CERCLA liability arises. Note especially the discussion of why consideration of the presence of radon in the indoor air is deemed beyond the scope of E 1527-05.⁵⁰ This analysis points out that radon is a CERCLA hazardous substance, the building into which radon migrates is a CERCLA facility, and the owner would be a responsible party, except that CERCLA does not authorize removal or remedial actions with respect to naturally occurring substances.⁵¹ Therefore, because no CERCLA liability attaches to the presence of radon, evaluation of its presence is non-scope.

Inclusion of the general term “indoor air quality” as non-scope makes sense to the extent that indoor air quality generally and most indoor air contaminants (like the mold, fungi, microbes, radon and asbestos fibers that are also excluded as “non-scope” under E 1527-05), are not usually associated with hazardous substances from a CERCLA release or CERCLA liability. To read “indoor air quality” to exclude consideration of the presence of hazardous substances at the property as a result of a CERCLA release would put E 1527-05 at odds with the statute and the AAI Rules.

In addition, the fundamental term and objective of E 1527-05 -- REC -- specifically includes the migration of releases “into structures.” Reading the “indoor air quality” listing to exclude from an E 1527-05 Phase I assessment any consideration of hazardous substances that are present in the subsurface of the property from a CERCLA release and could potentially migrate as vapors into a building would be reading part of the definition of REC out of E 1527-05. This is unnecessary would be contrary to USEPA’s determination that E 1527-05 meets the requirements of the AAI Rules.

⁴⁹ E 1527-05, Appendix X1, *Legal Background to Federal Law and the Practices on Environmental Assessments in Commercial Real Estate Transactions*, Section X1.8.

⁵⁰ E 1527-05, Appendix X1, Section X1.8.3.

⁵¹ E1527-05, Appendix X1, at Section X1.8.3.3.

E. Relationship of the Proposed VE Standard Guide to a Practice E 1527 Phase I ESA

The Proposed VE Standard Guide makes clear that it is not part of or required by CERCLA or by the AAI Rules. In addition, the Proposed VE Standard Guide also makes clear that performance of its screening process does not determine whether a recognized environmental condition does or does not exist at the property for the purposes of an E 1527-05 Phase I.⁵²

Section 5.1 of the Proposed VE Standard Guide states:

5.1 Identification of a REC Pursuant to a Phase I ESA - RECs are identified only through the performance of a Practice E 1527 Phase I ESA. Thus, a finding pursuant to this guide that a VEC exists or likely exists at the TP or that a VEC cannot be ruled out for the TP is not a determination that a REC is identified at the TP. Whether a REC exists at a TP due to the impact of possible vapor migration to the subsurface of the TP is a separate determination to be made by the environmental professional pursuant to Practice E 1527. This guide does not constitute or meet the requirements for conducting “all appropriate inquiry” or any part of “all appropriate inquiry” as defined by U.S. EPA under CERCLA and the regulations thereunder, including 40 CFR Sec. 312.11.

The stated objectives in the development of the Proposed VE Standard Guide were “(1) to synthesize and put into writing a practical guide for conducting a [vapor encroachment screen]... and (2) to provide that the process to screen for [vapor encroachment] is practical and reasonable.”⁵³

The Proposed VE Standard Guide is a guide and a screening mechanism developed by Committee E-50.02 for the purpose of assisting proposed property buyers and environmental professionals in determining whether volatile chemical constituents in vapor may encroach upon the property. The Proposed VE Standard Guide identifies concepts and considerations that may be helpful in the environmental site assessment of a property. However, conduct of the Proposed VE Standard Guide does not substitute for or constitute any part of AAI.

III. Conclusion

The presence of a hazardous substance in vapor or gas form at a property from a CERCLA release may cause the property to be a facility under CERCLA and may subject the owner to potential CERCLA liability. Therefore, the conduct of all appropriate inquiries appropriately includes consideration of whether volatile chemicals from a CERCLA release have migrated to or encroached upon the subsurface of the property and

⁵² Note, among other differences, that the search distances for offsite releases in the VE Standard Guide do not satisfy the search distance criteria set forth in E 1527-05. Only E 1527-05 has been evaluated and deemed by USEPA to satisfy the AAI Rules and all appropriate inquiries.

⁵³ VE Standard Guide, Section 1.2.

the AAI process must be performed in accordance with and as mandated by 40 CFR Part 312.

For whatever reason, ASTM International developed and is still selling E 2600-08, a simplistic mechanism aimed at quickly, and based on very little information, determining whether vapor intrusion in structures on a property is potentially occurring. This effort was fundamentally flawed. The proposed vapor encroachment standard is an effort to cure deficiencies of E 2600-08. It is currently being balloted and is expected to be issued as E 2600-10 this year.

The Proposed VE Standard Guide is not part of or required by all appropriate inquiries and does not determine whether a REC exists. However, the technical members of the E 2600 Task Group have determined that it may be helpful to the environmental professional in environmental site assessment, especially in determining whether vapor migration is likely to be an issue at a property.