

ASTM E-1527-13 Updates and Impacts on Vapor Intrusion Evaluation



Presented by Gordon Cobb, PhD
ENVIRON International Corporation

Quick Poll

How familiar are you with Phase I Environmental Site Assessment (ESA) process?

- 1 I am familiar with and have been involved in multiple transactions involving Phase I ESAs
- 2 I am aware of the Phase I ESA process, but have only gone through it once or twice
- 3 I've heard the term Phase I ESA, but have never been through the process
- 4 I am unfamiliar with what a Phase I ESA is

Today's Starting Lineup

- ASTM Standard Practice for Environmental Site Assessments – Phase I Environmental Site Assessment Process (E1527-13)
 - *Practice – a definitive set of instructions that underscores a general usage principle that must be followed*
- ASTM Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions (E2600-10)
 - *Guide – a compendium of information or series of options that suggests an approach, but does not recommend or require a specific course of action*

Background

- First ASTM Phase I ESA Standard issued in early 1990s
- Most recent update had been in 2005; recognized as compliant with AAI by Congress
- ASTM required to update existing standards at least every eight years
- Starting ~2010, ASTM Phase I ESA task group began work on updates/revisions to 2005 version
- Draft revised standard delivered to USEPA in mid-2013

Background

- On August 15, 2013, USEPA issued a *Federal Register* notice of intent to amend AAI to endorse E1527-13
 - 1 Direct Final Rule
 - 2 Companion Proposed Rule invited comment on DFR
- These two Rules recognized both the prior (E1527-05) and revised (E1527-13) versions as acceptable for meeting AAI
- USEPA withdrew DFR on October 29, 2013 after receiving negative comments

Current Status

- ASTM issued the final E1527-13 Standard in November 2013
- USEPA issued a Final Rule on December 30, 2013
 - Confirmed E1527-13 meets AAI requirements
 - Affirmatively recommended use of the revised Standard
 - Indicated a Proposed Rule would be issued in the near future to remove reference to E1527-05 as still acceptable within the AAI Rule (still pending)

Key Changes

- Revised and new **definitions**
- Increased emphasis on **regulatory file reviews**
- Clarification of **vapor migration**
- Revisions to **user responsibilities**

Revised REC Definition

Recognized Environmental Condition (REC)

The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property:

- 1 Due to any release to the environment;
- 2 Under conditions indicative of a release to the environment; or
- 3 Under conditions that pose a material threat of a future release to the environment

Similar to previous REC definition in content, but intended to be more:

- 1 Clear and concise
- 2 Consistent with CERCLA (and landowner liability protections under AAI)

Revised HREC Definition

Historical Recognized Environmental Condition

- A REC that has been addressed to the satisfaction of the applicable regulatory authority or meets unrestricted use criteria, **without subjecting the site to controls**
- Requires confirmation by EP that “original” finding is no longer a REC (i.e., cleanup standards have not changed)

ASTM Task Group members reported extensive confusion in marketplace over HREC in past

Revised definition does not significantly alter the meaning, but provides clarity

New Definition: Controlled REC

Controlled Recognized Environmental Condition

- A REC that has been addressed to the satisfaction of the applicable regulatory authority
- Hazardous substances or petroleum products allowed to remain in place subject to implementation of controls (e.g., AULs, deed restriction, engineering controls)
- CRECs must be identified in the Conclusions section of the report
- Does not mean an EP has evaluated or confirmed the implementation, adequacy, or continued effectiveness of controls

Revised Definition

De Minimis Condition

“A condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.”

- No change to past wording, but now a standalone definition (pulled out of REC definition)
- Clearly separate from CREC (and HREC)

Effects of Changes

What will be the effect of these new definitions?

- 1 Initially, possible confusion about meaning of CREC, particularly relative to an HREC
- 2 Need to (re-)educate users
- 3 Eventually, greater clarity and understanding about the current status of site conditions:
 - known/suspect contamination (REC)
 - agency closure, no known contamination remaining (HREC)
 - agency closure, some contamination remaining (CREC)
 - nominal contamination (*de minimis*)

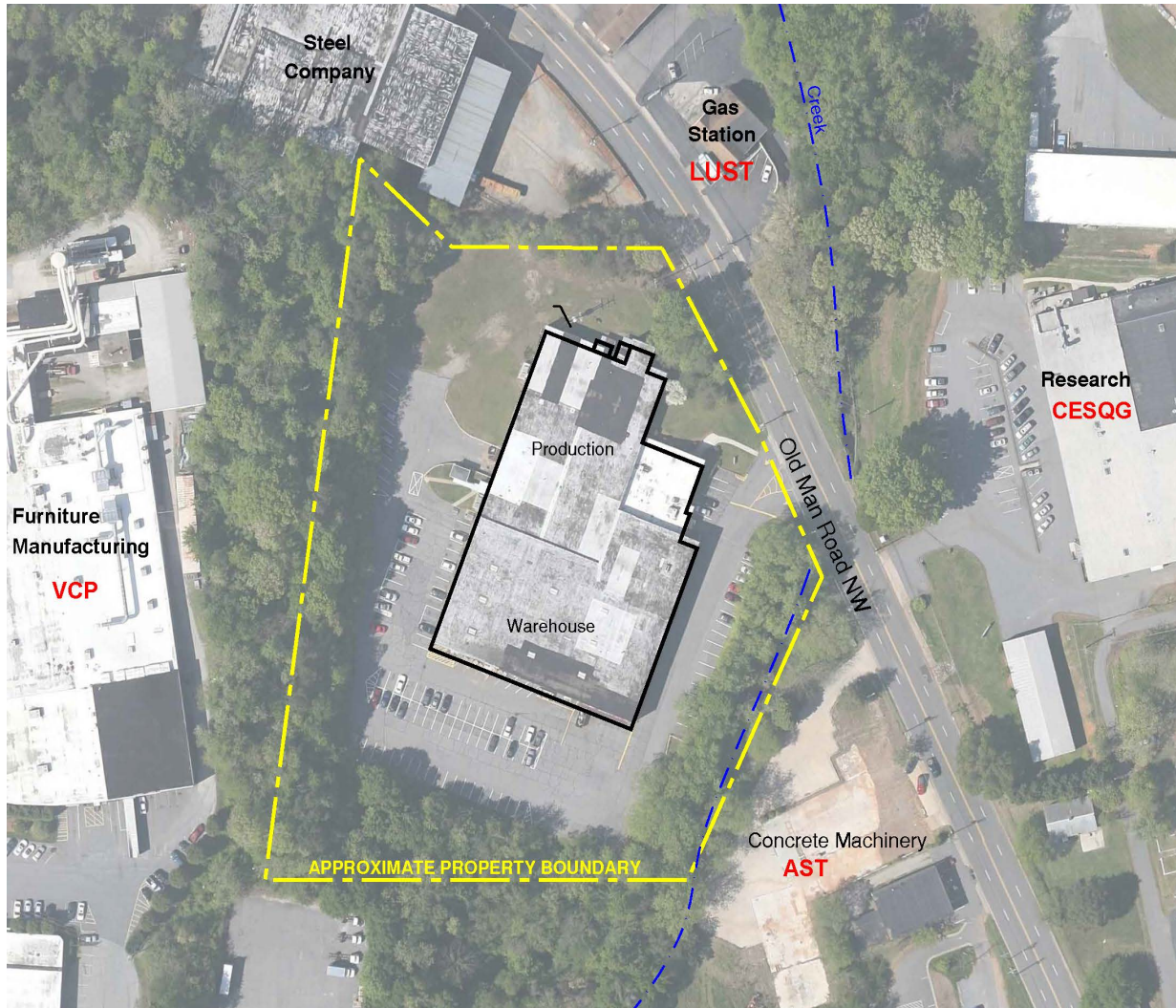
Greater Emphasis on File Review

- Goal: help identify RECs
- Previously, no requirement to do regulatory file review
- Revised Standard:
 - Regulatory file/records **should** be reviewed, if property or adjoining property is listed on a **standard environmental record source**
 - EP may determine that file review is not warranted, but must justify that decision in the ESA report

Alternative to Regulatory File Review

- Other sources of information can be used in place of regulatory records/file review
 - Site records/files
 - User-provided information
 - Interviews with regulatory officials/other knowledgeable individuals
- Must discuss/opine in report whether information obtained from alternate sources is sufficient

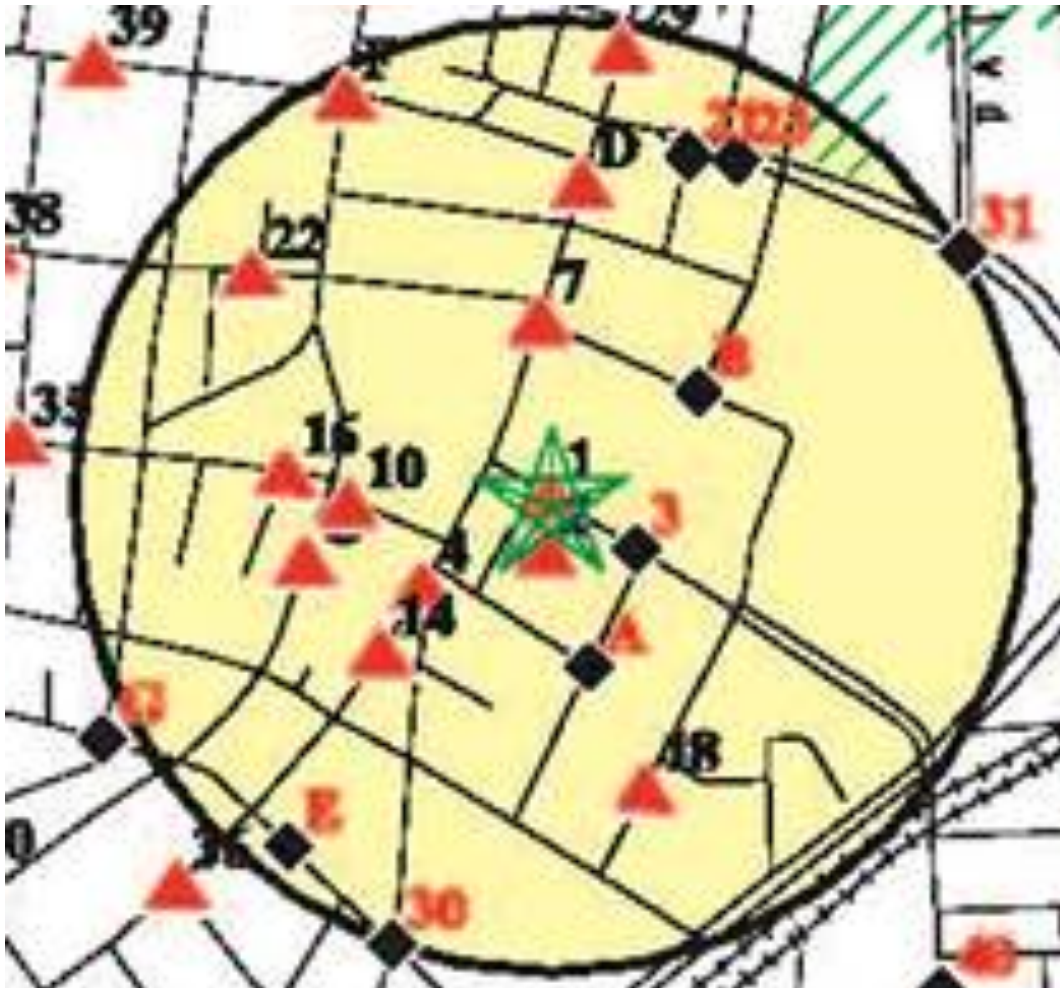
File Review Requirements – Example 1



File review for adjoining sites could be required if listed on:

- CERCLIS/NPL
- SHWS
- CORRACTS
- VCP
- Brownfields
- LUST
- RCRA Generators
- USTs
- ASTs

File Review Requirements – Example 2



What do you do when there are multiple adjoining sites, particularly in older/urban areas?
File reviews could be time consuming and costly

Effect of New File Review Requirement

- Possible increased costs for some Phase I ESAs
- Potential project delays – no guarantee of timely agency response/support
- Inconsistent application of requirements
- Last minute issues

Clarification of Vapor Migration

- E1527-13 clarifies that migration of vapors in subsurface should be considered
- Need to evaluate whether vapor migration is indicative of a release or threatened release
- Vapor migration considered no differently from contaminated groundwater migration
- Vapor migration evaluation **does not** address vapor intrusion and **is not** a vapor encroachment screen; **terminology use is key**
- Significant and challenging environmental issue

Vapor Migration – Clarified

“Migrate/migration” defined in new standard:

“

Section 3.2.56 ... movement of hazardous substances or petroleum products in any form, including, for example, solid and liquid at the surface or subsurface, and **vapor** in the subsurface.

”

Indoor Air Quality as a “non-scope consideration” clarified:
“unrelated to releases... into the environment”

E1527-13 references ASTM Standard Guide for Vapor Encroachment Screening (E2600-10), but does not require its use

Effect of Vapor Migration Revisions

- Greater attention and focus on the vapor migration pathway
- Additional findings in reports
- Re-openers for past regulatory / REC determinations where vapor pathway was not considered
- Possible Phase II follow-on

User Responsibilities

Clarifications of User Responsibilities in Standard

- User responsibilities are required only of:
 - Parties seeking CERCLA liability protections
 - USEPA Brownfield assessment and characterization grantees
- Tasks required to be performed by the “user”
 - EP must request the user to provide the results
 - If not provided, EP should consider the significance of the data gap

Key Point for Users to Remember

- An ESA conducted per ASTM E1527 (and AAI) affords a user certain liability protections under CERCLA only, not other federal/state/local laws (e.g., RCRA CORRACTS)

Other General Revisions and Clarifications

- Clarifications to Site Reconnaissance
 - View property from all adjacent thoroughfares
 - Evaluate use of on-site roads with no outlet
- “Interviews” can occur in writing
- Recommendations are **NOT** a required part of report
- Revisions to non-binding appendices
 - Discussion of Non-Scope Considerations
 - Suggested Table of Contents less prescriptive

Vapor Encroachment Screen – E2600-10

- More rigorously/robustly defined approach than in E1527-13, but not required by, nor does it alter or define E1527-13 (i.e., a “guide” not a “practice”)
- A VES is concerned with:
 - “chemicals of concern (COC) that may migrate as vapors onto a property as a result of contaminated soil and groundwater on or near the property.”

Vapor Encroachment Condition (VEC)

- The goal of a VES is to identify a VEC:
“the presence or likely presence of COC vapors in the sub-surface of the target property (TP) caused by the release of vapors from contaminated soil or groundwater either on or near the TP as identified by Tier 1 or Tier 2 procedures”
- Tier 1 Screening – ESA-type information collection
 - site/local area use
 - records review
 - potential pathways
- Tier II Screening – application of numeric screening criteria to soil, soil gas and/or groundwater test data

Numeric Screening Criteria

- Plume Test / Critical Distance Determination
 - 30 feet in any direction – dissolved petroleum hydrocarbon
 - 100 feet in any direction – other COCs
 - EP can modify distance based on site factors/COCs
- Influence of Off-site Properties
 - Upgradient
 - Crossgradient
 - Downgradient

Contact Information



Gordon Cobb
ENVIRON International Corporation
Atlanta, Georgia
gcobb@environcorp.com
678 388-1645