



# EMC

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## Purpose of a Phase I ESA

The purpose of a Phase I Environmental Site Assessment (ESA) is to assess

- (1) the likelihood of contamination of the subject site as a result of either past or present land-use practices; and
- (2) the potential for future environmental contamination which may occur as a result of current conditions or operations and maintenance activities at either the subject site or properties adjoining the subject site, thereby identifying real or potential environmental or economic impact to the subject site.

In this way, the client may satisfy a requirement to qualify for the innocent landowner defense to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) liability by completing "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial and customary practice."

To meet these objectives, *EMC* attempts to complete the tasks outlined in the Scope of Work below.

## Scope of Work

The Scope of Work that to be followed for an assessment is identified as:

### 1. The Site Description

Site photographs are taken during the **Site Reconnaissance** (see Task 2 below). Then *EMC* reviews pertinent, reasonably ascertainable information on the soil types ([click for an example](#)) and groundwater conditions ([click for an example](#)) in the vicinity of the subject site. For the purposes of this assessment, the depth from the ground surface and the direction (or gradient) of the groundwater flow are of particular significance. Such findings are used by *EMC* report writers, in conjunction with additional information about environmental conditions on nearby sites, to assess the risk that is faced by the subject site from off-site sources of contamination.

It should be noted that *EMC*'s geological and hydrological research does not include investigation of seismological concerns (i.e., fault lines) that may affect the area of the subject site. Although the existence of faults in an area may be of concern to property owners and residents in that area, it is not considered to be an environmental concern, and so is not usually a component of a Phase I Environmental Site Assessment. (However, in the event that it is required, *EMC* can assist the client in completing a seismological investigation.)



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## 2. Site Reconnaissance

A *EMC* field assessor conducts a visual reconnaissance of the subject property to identify observable signs of environmental impairments, including on-site operations and maintenance activities which may lead to possible environmental impairment. As a part of the site reconnaissance, *EMC* visually inspects the site for obvious indications of:

- Existing and previously existing storage tanks (aboveground and underground)
- Hazardous substances storage and handling
- Clarifiers, sumps, trenches, and industrial discharge sources
- Equipment which may contain polychlorinated biphenyls (PCB) (fluorescent light ballasts are not inspected)
- Indications of spillage of hazardous substances, and the general condition of concrete, asphalt, soil, and other surfaces
- Indications of stressed vegetation as a result of on-site contamination

During the site reconnaissance, *EMC* field assessors may make note of basic compliance issues which may be environmental in nature, however are not issues directly associated with the potential for site contamination (i.e., the specific objective of our assessment). However, as a service to our clients, and because these compliance issues may contribute to our overall understanding of site operations, *EMC* may comment on the site's basic compliance status. The review of the site's compliance status is not intended to be complete or comprehensive and may or may not include all items identified during the site reconnaissance.

Again, the compliance review is not intended as a comprehensive compliance audit. Rather, the compliance review is only intended to aid *EMC* in determining the likelihood that the subject site may have been impacted by releases of hazardous substances.

When the storage or use of hazardous substances is encountered on a site, the *EMC* field assessor will look for or inquire about the on-site presence of Material Safety Data Sheets (MSDSs). MSDSs ([click for an example](#)) are prepared by the manufacturers of hazardous substances (pursuant to OSHA's Hazard Communication Standard), and they detail the components, dangers, and proper handling procedures for the hazardous substance for which they have been prepared.

The presence or absence of MSDSs for on-site hazardous substances will be noted. However, some sites may use or store hundreds of various chemical compounds. In such cases, it is practically impossible for the field assessor to match-up each substance with its corresponding MSDS. Still, the field assessor will inquire about MSDSs and copies of representative MSDSs that were made available will be included.



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*EMC* may have (based on contract) inspected and reviewed information for the subject site regarding the presence of specific hazardous substances which are relatively common sources of environmental concern. The substances in question include:

- Common building materials that may contain or are suspected of containing asbestos
- Radon (at elevated levels)
- Lead-contaminated drinking water
- Lead-based paints

Based on ASTM E1527-05 AND E1527-13, federal, state, and other regulatory agency guidelines, the following presumptions were in force if and when *EMC* inspects the subject site for specific hazardous substances:

- Structures built after 1980 are considered asbestos-free.
- Structures built after 1979 are considered lead-free (with respect to both water and painted surfaces).
- Fluorescent light ballasts will be considered PCB-free and will not be noted in the report regardless of their date of manufacture, unless *EMC* is instructed to do otherwise in writing by the client.

*EMC* also inspects the properties that adjoin the subject site. In general, this inspection included a "drive-by" survey to note the operations which may pose an imminent or potential environmental threat to the subject site.

### **3. Review of Historical Information**

For this assessment, *EMC* may review reasonably ascertainable historical aerial photographs and United States Geologic Survey (U.S.G.S.) topographic maps of the subject site and vicinity. This review consisted of examining the reasonably ascertainable available photographs and topographic maps ([click for example](#)) for evidence of activities on or development of the subject site and adjoining sites that may show an environmental condition or concern which may currently affect the subject site.

#### **Historical Maps**

*EMC* may also review any reasonably ascertainable historic maps of the subject site and vicinity. Such maps have been prepared by fire insurance companies in order to determine the potential risk of fire damage to buildings in metropolitan areas ([click for an example](#)). These maps have been produced since the mid-1850s and, for some areas, they are still produced today. For the purposes of a Phase I Environmental Site Assessment, these maps may contain helpful information on the ages and past uses of buildings, as well as information about on the storage of hazardous and flammable substances.



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However, because it was only worthwhile for fire insurance companies to map metropolitan areas, the scope of coverage of these maps is somewhat limited.

### **Historical Directories**

One of the least known yet most complete and comprehensive historical sources are historical city or street directories ([click for an example](#)). These texts may be reviewed by *EMC* to the extent that they have provided coverage of the subject site and are reasonably ascertainable. *EMC* reviews historical city or street directories (also known as criss cross or reverse indexed directories) for information on the past occupants of and activities on the subject site and adjoining sites. These directories were prepared by companies that catered to the needs of salespeople by providing the names of the occupants at a given address (that is, unlike a traditional telephone book, the entries of a reverse directory are arranged by address, not by name). However, like historical maps, the scope of coverage of these directories is limited to mostly metropolitan areas. If they are reasonably ascertainable, they would be reviewed and thence listed.

### **Government Contact**

As part of the Historical Information Review *EMC* contacts various state, county, and municipal agencies that have current or past jurisdiction over the subject site, in an attempt to review reasonably ascertainable records that contain specific information about environmental conditions on the subject site that these agencies may have on file, or to establish that no environmentally relevant records are on file for the subject site. If no specific address has been assigned to a site, then, typically, no environmental records related to the site will be forthcoming from the state, county, or municipal regulatory agencies.

### **Environmental Records Database Search**

*EMC* will also supply, and then review an environmental records database, which is a computer-generated federal, state, and regional one-mile regulatory database search, in an effort to determine whether the subject site is listed on an agency environmental database and to identify possible regulatory-listed sites of concern within a one-mile radius of the subject site ([click for an example](#)). In general, these documents list known or suspected hazardous-waste generators, release sites, landfills, unauthorized disposal sites, sites with registered underground storage tanks, and sites currently under investigation for known or suspected environmental violations or releases.

In conjunction with the findings on the geological and hydrological conditions, information obtained from the database search can be used to assess the environmental risk faced by the subject site from past or present off-site sources of contamination. Additionally, these database groups, if knowledgeably reviewed, may provide information about on-site sources of contamination.



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## Chain-of-Title Review

When requested, *EMC* will also compile and review a chain-of-title abstract for the subject property. The chain-of-title abstract ([click for an example](#)) can help the client and *EMC* to better understand the history of the use of the subject site. The chain-of-title abstract is typically compiled from documents obtained from the County Recorder's Office or Tax Assessor's Office. The County Assessor also may be contacted to determine whether the subject site has been assigned addresses in the past which are different from its current address. It is the client's responsibility to supply *EMC* with any records of environmental liens or other such documents.

## Additional Records

On occasion, the client, the client's representatives, or on-site personnel will make available environmental documents pertaining to the subject site. These documents may be prior Phase I Reports, environmental site remediation reports, foundation soil reports, or occupancy records, among others. If these are made available prior to the issuance of the report, *EMC* will review the conclusions of these documents, which may help to confirm or disprove any tentative findings that *EMC* has developed independently.

After the above information from existing historical records, regulatory agencies, interviews, and other additional environmental documents has been reviewed and evaluated, *EMC* presents the site uses for the subject property as well as adjoining site uses in a chronological table. This historic site use summary assists the client, as well as the field assessors and reviewers to have a perspective of the historical uses of the subject site.

## 4. Interviews

*EMC* attempts to interview ([click for an example interview format](#)) various individuals who may have knowledge of various aspects of the subject site. Typically, the interviewees might include:

- Current and previous owners
- Site and operations managers
- Tenants
- Local regulatory personnel

The interviews are summarized in Section 5.0 and interview notes are included in Appendix F.



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## 5. Conclusions and Recommendations

The final section in our report puts forth our *Conclusions and Recommendations*, which provides detailed descriptions of the recognized environmental conditions, the *de minimis* conditions, historical recognized environmental conditions, and controlled recognized environmental conditions that, in the professional opinion of *EMC*, currently affect the subject site.

## Interpretation of the Report

Following the completion of the tasks outlined above, *EMC* prepares a report to present our findings and conclusions clearly and consistently. In an attempt to aid the reader and bring organization to pieces of seemingly unrelated information, *EMC* has developed a report format that is both innovative and concise. Each piece of information is described in the context of the research or assessment task under which it was found. Typically, an environmental condition will incorporate a number of specific findings. So, in the final Report, the various particular findings are grouped together and collectively presented with the description of the environmental condition that is corroborated by those findings.

*There are many other maps, data-base search listings, site photos and narratives associated with a Phase I Environmental Site Assessment. Often financial institutions requires Reliance Letters, Small Business Association compliance, USDA compliance, Errors & Omissions Insurance certification, etc.*

*EMC has fulfilled since 1987, and continues to fulfill, such requirements.*

Give us a call, or use "[CONTACT US](#)" page on this website

Sincerely,

Jack (John) Akin, MS, PE, IC, HMS, CAI  
EMC-Engineers/Scientists, LLC

