ODOT has been assigned FHWA’s responsibilities pursuant to the Surface Transportation Project Delivery Program, otherwise known as NEPA Assignment. The environmental review, consultation, and other actions required by Section 4(f) of the Department of Transportation Act are being carried out by ODOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 11, 2015, and executed by FHWA and ODOT.
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1. INTRODUCTION

In general, ESAs (Environmental Site Assessments) are conducted in response to two federal laws: CERCLA (Comprehensive Environmental Response, Compensation and Liability Act) of 1980 (Public Law #96-510) as amended by SARA (Superfund Amendment and Reauthorization Act) of 1986 (Public Law #99-499) and RCRA (Resource Conservation and Recovery Act) of 1976 (Public Law #94-580) as amended by HSWA (Hazardous and Solid Waste Amendments) of 1984. RCRA deals with waste management including the manufacture, storage, transportation, use, treatment, and disposal of wastes including hazardous waste. HSWA amended RCRA by establishing bans and restrictions on the disposal of untreated hazardous waste on land; created USEPA’s (United States Environmental Protection Agency) RCRA Corrective Action Program; and initiated regulation of USTs (Underground Storage Tanks). CERCLA establishes liability that forces cleanup costs of contaminated sites to responsible parties. SARA modified CERCLA to provide defenses to the liability provisions for contaminated sites.

Property owners have three defenses to CERCLA liability. They are an act of God, an act of war, and an act or omission of a third party. The "third party defense" is supported by establishing that "... the defendant (a) exercised due care with respect to the hazardous substance concerned, taking into consideration the characteristics of such hazardous substance, in light of all relevant facts and circumstances, and (b) took precautions against foreseeable acts or omissions of any such third party and the consequences that could foreseeably result from such acts or omissions." These two defenses are commonly referred to as "due care" and "due diligence", respectively. In addition, SARA provides government agencies an additional defense known as "eminent domain". Case law defines "sovereign immunity" which provides another layer of defense for government agencies.

As directed under the Small Business Liability and Brownfield Revitalization Act, the USEPA published 40 CFR Part 312, also known as the All Appropriate Inquiry Rule or AAI, on November 1, 2005. This manual has been revised based in part on the AAI rule. The other revisions in the manual are based on several factors specific to transportation project planning. All transportation projects that receive federal and/or state funding must address several environmental concerns under the National Environmental Policy Act (NEPA). As required by NEPA, ODOT must consider and potentially mitigate the impacts to historic and archeological resources, wetlands, endangered species, environmental justice, and concerns for increased noise and air pollution in addition to assessing the liability of acquiring potentially contaminated property and the proper management of contaminated soils and groundwater generated as part of the ESA process or during the construction of the project.
Approval of NEPA documents is under the guidance of Federal Highway Administration (FHWA). ODOT has developed its Project Development Process (PDP) which incorporates NEPA requirements into the project planning process.

The time limits in AAI for the information collected in the Phase I ESA are generally shorter than the time it takes a transportation project to be approved through NEPA/PDP. ODOT’s Office of Real Estate may begin to acquire property for a project with federal funds only after the NEPA document has been approved since ODOT may only acquire property necessary for the project and no more.

Since the last revision of this manual, FHWA reviewed the remediation and reuse of brownfields across the country. As a result FHWA has published a white paper which reversed its position on contaminated properties. Originally, DOT’s had to consider avoidance of contaminated properties. Through the white paper, FHWA now encourages DOTs to build through brownfields properties without fear of losing federal funding for the project.

The interview portion of the Phase I ESA has been modified from AAI. While AAI is to address liability concerns between a willing seller and a willing buyer, property being acquired by ODOT for a project is not typically part of an advertised sale of property. If the owner will not voluntarily sell the property for the project, ODOT may acquire the property as part of an eminent domain action and compel the sale of the land. Because of this, property owners and/or tenants may not be willing to take part in the interview for the Phase I ESA. They may avoid the consultant by either not being available or missing several appointments or refuse outright to be interviewed. In very rare instances, ODOT may direct that the property owner/tenant not be contacted due to ODOT receiving a threat from the property owner to anyone associated with the transportation project.

For the regulatory information, ODOT typically contacts the regulatory agencies for sites where there are active and/or on-going remedial or enforcement actions. Based on this information, ODOT either communicates with the regulatory agency to ensure that open/active regulatory issues are resolved prior to the sale of the project or coordinates with the regulatory agency on the actions that must take place during the construction of the transportation project. Therefore, database reviews conducted as part of the ODOT ESA process do not have a specific time limit since the most current regulatory information is obtained directly from the agency involved.

The procedures detailed in this manual are designed to address issues involving “due diligence” and “due care” during the PDP (see Appendix A). All projects with federal and/or state funding must follow
these procedures. This includes locally administered projects, as per the Manual of Procedures, Locally Administered Transportation Projects. Due diligence issues address the potential liability of acquiring a portion or all of a property, while due care issues pertain to the proper management of any hazardous or regulated waste generated during the construction of a project. While conducting literature search reviews, care should be taken not to overlook potential environmental concerns during this early level of research. A release during construction of a project could cause a negative impact on public health causing ODOT potential liability, delay of the project’s completion, and increased project cost. To ensure the appropriate level of inquiry is undertaken, consultants performing ESAs for ODOT must be pre-qualified with the Office of Contracts. In addition, the consultants should be familiar with regulatory agency policies, rules, and regulations concerning all appropriate legislation including, but not limited to, SARA, CERCLA, RCRA, HSWA, and applicable state environmental regulations.

ODOT’s ESA process comprises several levels of investigation that include historical/environmental research, visual assessments, and sampling and testing. Subsequently, documentation of ESA activities is generally presented in the form of an ESA Screening, Phase I ESA, or a Phase II ESA. However, there can be some projects that may require other ESA studies (i.e. No ROW ESA Screening, Phase II ESA Work Plan, additional Phase II ESA, etc.) depending on the nature and complexity of the project.

The Red Flag Summary for environmental site assessment issues is conducted for projects under ODOT’s PDP. The Red Flag Summary consists of a search of environmental databases maintained by the USEPA and the OEPA, as well as from local and state agencies such as the health department and BUSTR (Bureau of Underground Storage Tank Regulations), and ground truthing this information. The goal of the Red Flag Summary is to identify and locate properties with known or suspected environmental contamination which could control or influence project corridor locations. The identification of these types of properties also will assist in the development of a realistic project schedule if they cannot be avoided.

The ESA Screening is used to identify suspect parcels very early in project development. All properties within the project or corridor are screened at this level. The purpose of the ESA Screening is to provide a method for ODOT to investigate projects and to identify suspect parcels requiring Phase I ESA investigation without obtaining large amounts of parcel specific information. The properties/parcels identified in the ESA Screening as potential environmental concerns are advanced for further investigation.
The Phase I ESA is a more detailed investigation based on the accumulation and review of parcel-specific information. This includes investigation of the historic ownership of a property, current and former land uses, physical characteristics of the surrounding area and a photographic log to document the present conditions. In addition to historic and present land uses of a parcel, the Phase I ESA identifies potential sources of contamination and other environmental concerns associated with parcels requiring further investigation. Based on the findings of the Phase I ESA, the proposed ROW (right-of-way) and proposed construction activities, Phase II ESA sampling and testing recommendations may be warranted.

If the Phase I ESA indicates that there is a reasonable likelihood that contamination is present on a specific parcel, then a Phase II ESA consisting of a sampling and testing program is implemented. The Phase II ESA includes field sampling and laboratory analyses to verify the presence or absence of contaminants. This process ordinarily would provide adequate information to aid in the further development of the project. If avoidance of a parcel is not possible, then the issues of due care associated with the property must be studied within the context of the project.

We hope that this manual will be useful to everyone conducting ESAs during the development of transportation projects and how the information is collected and used. We have tried to provide clarification and insights into conducting environmental site assessment investigations for ODOT from the previous versions of this manual and incorporate USEPA's AAI to ensure that all the necessary data are collected to make the best informed decision for ODOT's projects.
2. THE RELATIONSHIP BETWEEN ENVIRONMENTAL SITE ASSESSMENT AND THE PROJECT DEVELOPMENT PROCESS

Planning and developing transportation projects includes complying with many legislative requirements set forth by the state and federal government. One of the primary laws which govern the planning and development process for federally funded transportation projects is the NEPA (National Environmental Policy Act) of 1969. NEPA requires the consideration of environmental impacts caused by a transportation project using interdisciplinary studies. Once environmental studies have been completed, the findings are compiled into an environmental document which identifies the impacts associated with the transportation project as well as what steps will be taken to mitigate the impacts. In addition to NEPA, many other laws have been established to protect human health and the environment which are considered during the project planning and development stage. Laws such as CERCLA and RCRA must be addressed regardless of the funding source.

In general, the following table shows the relationship between ODOT’s Project Development Process and ESA Investigations.
## Relationship Between the PDP and ESA Investigation

<table>
<thead>
<tr>
<th>Red Flag Summary</th>
<th>Minimal Project</th>
<th>Minor Project</th>
<th>Major Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 – Conducted on Project Study Area</td>
<td>Step 1</td>
<td>Step 1</td>
<td>Step 2</td>
</tr>
<tr>
<td><strong>No ROW ESA Screening</strong></td>
<td>Not applicable</td>
<td>Step 1 - For projects with no ROW &amp; deep excavation</td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>ESA Screening</strong></td>
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<td>Step 1 – Conducted on all alternatives</td>
<td>Step 5 – Conducted on all Conceptual Alternatives</td>
</tr>
<tr>
<td><strong>Phase I ESA</strong></td>
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<td>Step 3 – Conducted on Preferred Alternative</td>
<td>Step 6 – Conducted on Feasible Alternative(s)</td>
</tr>
<tr>
<td><strong>Phase II ESA Work Plan</strong></td>
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<td>Not applicable</td>
<td>Step 7 – Conducted on Preferred Alternative</td>
</tr>
<tr>
<td><strong>Phase II ESA</strong></td>
<td>Not applicable</td>
<td>Step 4 – Conducted on Preferred Alternative</td>
<td>Step 7 – Conducted on Preferred Alternative</td>
</tr>
</tbody>
</table>
3. PLANNING, PRODUCTION AND REAL ESTATE ACQUISITION

In the past, ODOT has purchased contaminated properties at the full market value while assuming all of a property’s liability and cost of remediation. There have been instances where the amount of ROW acquired for a property has been greatly increased after the NEPA document is approved because of rules that Real Estate must adhere to during real estate negotiations. Some of these acquisitions have occurred without the knowledge of the District Environmental Coordinator (DEC) or Environmental Services and have caused change orders during the project's construction when the contractor encounters contaminated materials not addressed in the plans. In order to encourage dialog between Planning and Real Estate, a new procedure has been developed for the acquisition of contaminated properties. This policy is also presented in Real Estate’s Special Acquisitions Procedures, 5320, The Acquisition of Contaminated Property, January 16, 2001 (see Appendix B).

There are two (2) methods to initiate this dialog. The first method involves the DEC notifying the District Real Estate Administrator (DREA) and the Real Estate Regional Project Manager (RPM) during the NEPA process that a property has contamination. Once the DREA is notified of the contamination, they will arrange a meeting to discuss the issues of acquiring the property. This method should be used when it is known that a contaminated property will be acquired in its entirety (i.e. gas station, dry cleaning facility) or the site is highly regulated (i.e. Superfund site, RCRA large quantity generator). The DEC shall memorialize the meeting detailing the relevant issues and distribute them to the DREA and the RPM.

The second method should be the one used for most projects. After the approval of the NEPA document, the District Environmental Coordinator shall write an Inter-Office Communication (IOC) to the DREA and copy the RPM. The IOC should detail the properties that are contaminated, if the environmental site assessment studies were conducted based on a strip acquisition or acquisition of the entire property, and if a property would require additional environmental site assessment investigation of the entire property (i.e. gas stations, dry cleaning facilities). For example, if an operating gas station had a Phase II ESA conducted for strip acquisition, the results would be evaluated for waste management only since none of the source areas (i.e, USTs, pump island) would be acquired. However, if during real estate negotiations, the operating gas station is then completely acquired, the original Phase II ESA does not address the liability issues associated with acquiring the entire property. An additional Phase II ESA would need to be completed and a potential reduction of the property price may be required if ODOT must address the contamination on the property.
The goal of this IOC is to alert the DREA and the RPM to contact the DEC if the acquisition for these properties increases beyond what was studied for the NEPA document so that the property may be reassessed with additional environmental site assessment studies. If the ROW increases during Real Estate's acquisition negotiations, the RPM will coordinate a meeting with the necessary personnel to discuss the relevant issues. A list of relevant personnel and issues are listed below.

Based on this meeting, a site specific course of action will be developed; however, more than one meeting may be needed if there is not sufficient information to develop a course of action.

The meeting should have the following personnel involved:

- District - DEC and DREA
- Regional Real Estate - RPM, Realty Specialist Manager, & Appraisal Program Manager
- Office of Environmental Services - ESA Supervisor
- Central Office Real Estate - Appraisal Program Manager
- Chief Legal Office - Staff Attorney
- Ohio Attorney General's Office - Assistant Attorney General with knowledge of contaminated properties

Items for discussion include:

- Type and extent of contamination
- BUSTR/OEPA information
- Environmental site assessment studies completed
- Would contamination have been found if ODOT's project had not impacted the property?
- Would the owner have been required to remediate the property if ODOT's project had impacted the property?
- How would the property be remediated in the private sector?
- What is the cost to the site?
- Would a lending institution loan money to someone to purchase the property, and if so, under what conditions?
- What property right should be purchased?
The discussion at each meeting will be site specific and more than one meeting may be necessary to determine a course of action for the site. A consultant may be required to assess the extent of contamination, if unknown, or the estimated cost of remediation to determine the course of action.

Early acquisition of contaminated properties follow a similar path except the DREA notifies the DEC of the properties that are to be acquired so the DEC can arrange the necessary environmental site assessment investigations. At the very least, an Environmental Site Assessment Screening must be conducted on all non-residential properties. Contaminated properties will then require the DREA to arrange a meeting to discuss the best course of action for the property similar to contaminated properties acquired after the approval of the NEPA document. This policy is also presented in Real Estate's Special Acquisitions Procedures, 5301.07 Early Acquisition of Contaminated Property (see Appendix B).
4. RED FLAG SUMMARY

A Red Flag Summary – ESA Section is typically performed during Step 1 of the Minimal and Minor Projects and Step 2 in the Major projects of the PDP for projects.

The purpose of a Red Flag Summary is to identify and locate major areas of known environmental concern for hazardous wastes within the study area that may influence or control the development of the corridors (i.e. through avoidance, minimization, or remedial activities). Databases maintained by USEPA, OEPA, and health agencies must be researched and ground-truthed to confirm the sites are within the study area. Each site is then identified and located on a map of the study area. Environmental database companies are typically contracted to conduct the database search. Sites which are of concern include Superfund sites, sites on the NPL (National Priority List) and CERCLIS list, sites on the Ohio Master Sites List, former or current landfills, sites undergoing RCRA closure, RCRA large quantity generators, RCRA TSDs (Transportation, Storage, and Disposal facilities) and large industrial sites. The Red Flag Summary also assists in the development of realistic project schedules for projects that involve these types of sites.

The database information obtained during the Red Flag Summary can be used for the ESA process (i.e. in the ESA Screening). However, keep in mind that the ESA Screening will involve other activities in addition to obtaining database information. The Red Flag Summary is not the first step in the environmental site assessment process and is not used to determine if environmental site assessment is conducted on a project.

The mapping of all identified sites on study area base mapping and identification of each site with the source of the regulatory listing must be provided. A discussion of sites that can potentially influence or control the development of the project should be included and provided with the study area exhibit. For a more detailed discussion on the Red Flag Summary, including the search radii, please refer to ODOT’s PDP Manual.
5. ENVIRONMENTAL SITE ASSESSMENT SCREENING

The Environmental Site Assessment (ESA) Screening is conducted on Minor Projects during Step 1 for all alternatives under study and in Step 5 for Major Projects for all conceptual alternatives. The intent of the ESA Screening is to identify all parcels within a study area and provide sufficient investigation to develop a list of suspect properties which require Phase I ESA. Gathering and reviewing present day and some historic land use information, as well as regulatory databases, is the primary focus of the ESA Screening. Additional information such as significant physical characteristics of the study area and project history should also be included in the ESA Screening. All properties within the project study area are screened at this level.

Although an ESA Screening does not imply a need to enter a property which may be contaminated with hazardous substances, some level of field reconnaissance will be necessary to verify the database information. The ESA Screening process notes potential sources of contamination. This visual inspection should be conducted from existing public right of way or through normal project field reviews.

The following outline identifies the elements of the ESA Screening report along with several sources of information which should be reviewed; however, it does not preclude the use of other pertinent information such as ESA Screening Checklists and supportive information such as historical aerial photographs, project plan sheets, copies of regulatory records, and/or photographic logs.

5.1 Elements of the ESA Screening

5.1.1 Executive Summary

The executive summary is a portion of the report which provides a summary of the transportation project and the findings of the ESA Screening. The executive summary is generally one page in length and should include a listing of the properties recommended for additional investigation.
5.1.2 Introduction

An introduction should be provided which discusses the proposed transportation project and other relevant information such as the physical setting of the project and overall land use of the area. It is not necessary to provide more than a brief discussion of the physical setting. The introduction should include a description of the proposed transportation project and a general discussion of the improvements to the facility or transportation system (i.e., the number of lanes to be added, any drainage features to be added or modified, etc.)

5.1.3 Mapping

Mapping must be included which clearly delineates the project study area or corridor and specifically identifies commercial, industrial, or any other properties or activities which may pose an environmental concern. The following maps must be included in the report as a minimum:

**USGS (United States Geological Services) Topographic Quadrangle Maps** - These maps are published by the USGS which provide information such as local topography, drainage, roads and other land uses which were active at the time of mapping. Topographic maps are to be presented in the correct scale. If the consultant wishes to provide an enlarged topographic map, this is to be in addition to the copy at the correct scale. These maps are available for sale in 7.5 minute quadrangle at several organizations including ODNR (Ohio Department of Natural Resources) and ODOT-Office of Aerial Engineering (see Appendix C).

**County and/or City Road Maps** - These maps include roads, municipalities and other features in the study area.

**Aerial Photography** - Aerial photographs provide information about current and past land uses and potential source areas of contamination. Aerial photographs for several different periods should be obtained and reviewed to identify land use changes. At a minimum, a cursory review and discussion is required. Aerial photographs are available through ODOT (through the Office of Aerial Engineering; aerials are available on print(s) or as JPEG and TIFF files on CD(s)), ODNR (Ohio Department of Natural Resources), NRCS (Natural Resources Conservation Service), USGS (United States Geological Survey), County Engineer's Office, and local planning organizations. These sources often have aerial photographs dating to the late 1930’s. These are the preferred sources for aerial photographs. The lack of historical aerials from a
database search firm is not an indication that there are no historical aerials for the project and
does not release the consultant from obtaining historical aerials to satisfy this requirement.

Aerials must be an interpretable scale (1"=1000' or less) for reviewing individual properties or
small project areas. Larger scales may be acceptable when reviewing large project study areas
or corridors with agricultural areas or other low density areas. A reviewable aerial photocopy
must be provided. Unclear aerial photos will not be acceptable. Suspect parcels and the
project area must be clearly marked on all the aerial photographs.

Preliminary Project Mapping and/or Plans - Available project maps and/or preliminary project
plan sheets must be included in the report. These materials can be obtained from the ODOT
District Offices or, for locally sponsored projects, from the local sponsor (see Appendix C).

Oil and Gas Well Mapping - When oil and gas wells are located within the project study area or
corridor, then mapping must indicate the locations of these wells. These maps are available
through ODNR, Division of Oil and Gas.

Fire Insurance Maps - Although obtaining and reviewing fire insurance maps is not required in
this step, ODOT recognizes that this type of review may be an appropriate and prudent
investigative tool for less typical projects or properties. Fire insurance maps are still a
requirement of the Phase I ESA regardless of their presence in the ESA Screening.

5.1.4 Regulatory Database Review

A review of regulatory database information should be conducted to identify environmental
concerns within one-quarter mile of the project study area or corridor. Consultants must be
cognizant of the project’s anticipated construction limits and undertake the search appropriate to
these limits. Specifically, linear searches (rather than point searches) will be necessary for most
projects to ensure the 0.25-mile search limit is met for the entire project corridor. The consultant is
responsible for ground-truthing to provide accurate information on whether identified regulatory
sites are located within and/or immediately adjacent to the project corridor. Several lists are
available through the USEPA, OEPA, and BUSTR that provide database information related to
hazardous substances. Several national database research service firms provide comprehensive
environmental database searches which generally include mapping of the identified sites with
respect to the project study area or corridor. At a minimum, the ESA Screening should include the
following regulatory databases:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPL</td>
<td>National Priority List</td>
</tr>
<tr>
<td>Proposed NPL</td>
<td>Proposed National Priority List</td>
</tr>
<tr>
<td>CERCLIS</td>
<td>Comprehensive Environmental Response, Compensation &amp; Liability Information System</td>
</tr>
<tr>
<td>CERC-NFRAP</td>
<td>CERCLIS No Further Remedial Action Planned</td>
</tr>
<tr>
<td>CORRACTS</td>
<td>Corrective Action Report</td>
</tr>
<tr>
<td>MSL</td>
<td>No Ohio Master Sites List</td>
</tr>
<tr>
<td>RCRA-GEN</td>
<td>Resource Conservation Recovery Act Information</td>
</tr>
<tr>
<td>ERNS</td>
<td>Emergency Response Notification System</td>
</tr>
<tr>
<td>SWF/LF</td>
<td>Licensed Solid Waste Facilities</td>
</tr>
<tr>
<td>UST/LUST</td>
<td>Registered and Leaking Underground Storage Tank File</td>
</tr>
<tr>
<td>VAP</td>
<td>Voluntary Action Program Sites</td>
</tr>
<tr>
<td>NCL</td>
<td>No Contact List (Fish Advisory)</td>
</tr>
</tbody>
</table>

For a more extensive list of supplemental databases used for regulatory review see Appendix C.

5.1.5 GIS Database Search

When ODOT conducts a GIS (Geographical Information Systems) database search for a project study area, as part of a Red Flag Summary, the information gathered during this database search shall be used in the ESA Screening, unless directed otherwise by the Office of Environmental Services or the District Environmental personnel. The ODOT GIS database search will be provided by either the Office of Environmental Services or District Environmental personnel.
5.1.6 Site Inspection

A site inspection of each property in the project area must be conducted, regardless of current land use, for features that indicate the potential for contamination by hazardous substances. This level of inspection does not require the investigator to enter onto a property and may be done from the existing ROW for the majority of projects.

The items that should be noted during the site inspection are evidence of staining, any part of a UST (Underground Storage Tank) system, soil disturbance (for suspected buried waste), drums, surface lagoons, distressed vegetation, or other features indicative of hazardous material handling, storage, or disposal. Photographic logs of the inspection are required and should be included in the appendices of the report. The photographic log must adequately document the project. Individual photographs shall be provided for all properties with current or historical commercial and/or industrial uses. It is recommended that the site inspection occur after the review of the regulatory database search and historical aerials since they may indicate a previous land use that may not be apparent during the site inspection.

5.1.7 Special Circumstances

Parcels identified as current or historic gasoline service stations or other parcels which contain petroleum USTs will typically be advanced for Phase I ESA. However, further investigation is usually not warranted when no new ROW acquisition is proposed and minimal construction involving shallow earth disturbing activities (i.e. new driveway, curb, sidewalk, etc.) is planned adjacent to the gasoline service station or parcel with a petroleum UST system.

Featureless and open railroad track does not warrant more than an ESA Screening. However, where features are indicative of environmental concerns such as spills or releases, USTs, spurs, sidings, loading/unloading areas, buried cars and railroad yards along railroad right-of-way, Phase I and/or Phase II ESA may be warranted to determine potential impacts to the project (see Appendix C).

Electrical equipment (i.e. transformers, capacitors, etc.) often contain PCBs (polychlorinated biphenyls). PCBs are compounds that are injurious to living organisms and have been used as lubricants, heat transfer fluids, and dielectric fluids. Electrical transformers (pole mounted or ground situated) owned by a utility company are not an environmental concern unless there is visual
evidence of a release since the utility company will be responsible for the relocation of their transformers for the transportation project. These are the majority of transformers encountered during a project and a letter from the utility company stating they own these transformers is not necessary. Transformers associated with private ownership are more of a concern since they are a part of the liability that may be assumed with the acquisition of the property. These privately owned transformers are typically found at manufacturing sites that required large amounts of energy during the manufacturing process. Because of the liability and potential waste management issues that may be involved if they are acquired as part of the project, privately owned transformers will typically require a detailed investigation.

While it is not necessary at this stage to conduct interviews with individual property owners, local officials from the fire department, health department or other emergency response agencies, interviews may be conducted at this level to acquire information regarding spills or releases of hazardous substances in the project study area.

5.1.8 Conclusions and Recommendations

The conclusions and recommendations section must include a discussion of the findings of the investigation and recommendations of all of the properties within the project. Properties recommended for a Phase I ESA should be in the project. Only on rare occasion will a property outside of the project be investigated. If a property is recommended for a Phase I ESA, the reason(s) for this recommendation must be provided. Residential and/or agricultural properties that do not have any concerns may be grouped together; however, residential and/or agricultural properties with concerns (i.e. commercial non-farm USTs) must be listed separately. If a large number of parcels are included in the project, this information may be provided in tabular format.

5.2 ESA Screening Checklist Form

An ESA Screening Checklist Form for screening projects is available (see Appendix E); it is also available in electronic form and can be used as supportive information. A screening checklist form should be completed for each commercial and/or industrial parcel investigated. One form may address a group of residences and/or agricultural fields. Screening checklist forms must be included in the appendices of the ESA Screening report.
The Environmental Records section of the screening checklist form should be completed. At a minimum, environmental databases searched should include the NPL List, Proposed NPL List, CERCLIS, CERC-NFRAP, CORRACTS, RCRA-GEN, ERNS, SWF/LF, UST List, VCP File, No Contact List (Fish Advisory).

5.3 Reporting Requirements For Consultant Produced Reports

The title page must include ODOT's project identification which contains the county, route, section, and Project Identification Number (PID) for the project. Information obtained for the ESA Screening such as regulatory database records, mapping, and visual observations should be summarized and the relevant information included and discussed in the report. Clear and concise conclusions must be provided which are supported by the included data. Recommendations for further investigation should be based on the conclusions of the ESA Screening and should be parcel-specific. The signature page should identify the report’s primary author and reviewers. Typically, the Office of Environmental Services, ESA Unit, and the District Office’s Environmental Department each require one hard copy of the report. The following is the preferred format of the ESA Screening report.

Consultant Produced Reports

- Table of Contents
- Signature Page
- Executive Summary
- Introduction
- Historical Aerial Photo Review
- Regulatory Database Review
- Site Inspection
- Conclusions and Recommendations
- Appendices
  - ESA Screening Checklist form
  - Topographic map identifying project limits
  - Map identifying suspect properties
  - Historical aerial photographs
  - Regulatory database information
  - Project plans (if applicable)
  - Photographic logs
5.4 Reporting Requirements for ODOT Produced Reports

ODOT produced reports must include a description of the project, and the county, route and section, and the PID. The ESA Screening Checklist form should include information from the aerial photo review, GIS database search, and visual inspection. The attachments should include the ESA Screening Checklist form, mapping, aerial photographs, the GIS database search, project plans if available, and photographs of the project area.

**ODOT Produced Reports**

- Project Description
- Aerial Photo Cursory Review
- Regulatory Database Review
- Visual Inspection
- Conclusions and Recommendations
- Appendices
  - ESA Screening Checklist form
  - Map identifying suspect properties
  - Aerial photographs
  - Regulatory database information
  - Project plans (if applicable)
  - Photographic logs
6. NO RIGHT OF WAY ESA SCREENING

The No Right-of-Way (ROW) ESA Screening is restricted to Minor Projects and occurs in Step 1. The No ROW ESA Screening is used when a project has no ROW acquisition but deep excavation will occur and is restricted to identification of the petroleum contaminated soils. It may also be used for projects that may have very little ROW and deep excavation such as a small triangle of ROW taken only to place a strain pole for signal upgrades. If a project has the potential for other types of contamination, the No ROW ESA Screening cannot be used. Since there is no or very little ROW to be acquired, the only issue is the management of petroleum contaminated soils expected to be encountered during the construction of the project. Therefore, additional environmental site assessment is not warranted for these projects.

As with the ESA Screening, all parcels within the study area are identified, present and historical land use information is collected, a regulatory database review is conducted, and significant physical characteristics are noted. In addition, a BUSTR regulatory file review is conducted for BUSTR sites noted within the project area. The need for a plan note to properly manage petroleum contaminated soils is based on the BUSTR file review.

Although a No ROW ESA Screening does not imply a need to enter a property which may be contaminated with petroleum products, some level of field reconnaissance will be necessary to verify the database information. The No ROW ESA Screening process notes potential sources of contamination. This visual inspection should be conducted from existing public rights of way or through normal project field reviews.

The following outline identifies the elements of the No ROW ESA Screening report along with several sources of information which should be reviewed; however, it does not preclude the use of other pertinent information such as ESA Screening Checklists and supportive information such as historical aerial photographs, project plan sheets, copies of regulatory records, and/or photographic logs.
6.1 Elements of the No ROW ESA Screening

6.1.1 Executive Summary

The executive summary is a portion of the report which provides a summary of the transportation project and lists the sites that need a petroleum contaminated soils (PCS) plan note based on the findings of the No ROW ESA Screening. The executive summary is generally one page in length.

6.1.2 Introduction

An introduction should be provided which discusses the proposed transportation project and other relevant information such as the physical setting of the project and overall land use of the area. It is not necessary to provide more than a brief discussion of the physical setting. The introduction should include a description of the proposed transportation project and a general discussion of the improvements to the facility or transportation system (i.e., any drainage features to be added or modified, location of strain poles, etc.)

6.1.3 Mapping

Mapping must be included which clearly delineates the project study area or corridor and specifically identifies commercial, industrial, or any other properties or activities which may pose an environmental concern. The following maps must be included in the report as a minimum:

**USGS (United States Geological Services) Topographic Quadrangle Maps** - These maps are published by the USGS which provide information such as local topography, drainage, roads and other land uses which were active at the time of mapping. These maps are available for sale in 7.5 minute quadrangle at several organizations including ODNR (Ohio Department of Natural Resources) and ODOT-Office of Aerial Engineering (see Appendix C).
**County and/or City Road Maps** - These maps include roads, municipalities and other features in the study area.

**Aerial Photography** - Aerial photographs provide information about current and past land uses and potential source areas of contamination. Aerial photographs for several different periods should be obtained and reviewed to identify land use changes. At a minimum, a cursory review and discussion is required. Aerial photographs are available through ODOT (available on print or cd), ODNR, NRCS (Natural Resources Conservation Service), USGS, County Engineer's Office, and local planning organizations. These sources often have aerial photographs dating to the late 1930's. These are the preferred sources for aerial photographs. The lack of historical aerials from a database search firm is not an indication that there are no historical aerials for the project and does not release the consultant from obtaining historical aerials to satisfy this requirement.

Aerials must be at an interpretable scale (1"=1000' or less) for reviewing individual properties or small project areas. Larger scales may be acceptable when reviewing large project study areas or corridors with agricultural areas or other low density areas. A reviewable aerial photo copy must be provided. Unclear aerial photos will not be acceptable. Suspect parcels and the project area must be clearly marked on the aerial photos.

**Preliminary Project Mapping and/or Plans** - Available project maps and/or preliminary project plan sheets must be included in the report. These materials can be obtained from the ODOT District Offices (see Appendix C).

**Oil and Gas Well Mapping** - When oil and gas wells are located within the project study area or corridor, then mapping must be included indicating the locations of these wells. These maps are available through ODNR, Division of Oil and Gas.

**Fire Insurance Maps** - Although obtaining and reviewing fire insurance maps is not required in this step, ODOT recognizes that this type of review may be an appropriate and prudent investigative tool for less typical projects or properties. Fire insurance maps are still a requirement of the Phase I ESA regardless of their presence in the ESA Screening.
6.1.4 **Regulatory Database Review**

A review of regulatory database information should be conducted to identify environmental concerns within one-quarter (0.25) mile of the project study area or corridor. Consultants must be cognizant of the project’s anticipated construction limits and undertake the search appropriate to these limits. Specifically, linear searches (rather than point searches) will be necessary for most projects to ensure the 0.25-mile search limit is met for the entire project corridor. The consultant is responsible for ground-truthing to provide accurate information on whether identified regulatory sites are located within and/or immediately adjacent to the project corridor. Several lists are available through the USEPA, OEPA, and BUSTR that provide database information related to hazardous substances. Several national database research service firms provide comprehensive environmental database searches which generally include mapping of the identified sites with respect to the project study area or corridor. At a minimum, the ESA Screening should include the following regulatory databases:

<table>
<thead>
<tr>
<th>Database</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPL</td>
<td>National Priority List</td>
</tr>
<tr>
<td>Proposed NPL</td>
<td>Proposed National Priority List</td>
</tr>
<tr>
<td>CERCLIS</td>
<td>Comprehensive Environmental Response, Compensation &amp; Liability Information System</td>
</tr>
<tr>
<td>CERC-NFRAP</td>
<td>CERCLIS No Further Remedial Action Planned</td>
</tr>
<tr>
<td>CORRACTS</td>
<td>Corrective Action Report</td>
</tr>
<tr>
<td>MSL</td>
<td>No Ohio Master Sites List</td>
</tr>
<tr>
<td>RCRA-GEN</td>
<td>Resource Conservation Recovery Act Information</td>
</tr>
<tr>
<td>ERNS</td>
<td>Emergency Response Notification System</td>
</tr>
<tr>
<td>SWF/LF</td>
<td>Licensed Solid Waste Facilities</td>
</tr>
<tr>
<td>UST/LUST</td>
<td>Registered and Leaking Underground Storage Tank File</td>
</tr>
<tr>
<td>VAP</td>
<td>Voluntary Action Program Sites</td>
</tr>
<tr>
<td>NCL</td>
<td>No Contact List (Fish Advisory)</td>
</tr>
</tbody>
</table>

For a more extensive list of supplemental databases used for regulatory review see Appendix C.

6.1.5 **GIS Database Search**

When ODOT conducts a GIS (Geographic Information Systems) database search for a project study area, as part of a Red Flag Summary, the information gathered during this database search shall be used in the ESA Screening, unless directed otherwise by the Office of Environmental Services or the District Environmental personnel. The ODOT GIS database search will be provided by either the Office of Environmental Services or District Environmental personnel.
6.1.6 Regulatory Records Review

The activities involved in this section include further research of a parcel's regulatory history. This research involves completing a BUSTR file review for each site identified in the regulatory database search and summarizing relevant information including the potential of encountering petroleum contaminated soils during construction. Any pertinent registration, closure, corrective action, engineering controls, institutional controls, covenants, and/or release notification information should be reviewed, summarized, and documented in the report. This information is particularly important for sites where the BUSTR report has given the site a No Further Action (NFA) letter, since many sites are now given an NFA letter based on a site-specific risk-based assessment. NFAs based on a risk assessment address only liability issues and allow petroleum contaminated soils to remain onsite and non-remediated. If these contaminated soils are excavated, they are considered a waste and need special management during construction. To determine if a PCS note is warranted for a site, compare the soil data in the BUSTR file(s) to the BUSTR Re-use Action Levels via Table 1 of OAC 1301:7-9-16(D) (see Appendix J).

The raw data from the file review should be included in an appendix. This raw data included with the file review should include the pertinent portions of the Closure Report and other BUSTR required reports. Examples of this required raw data includes, but is not limited to: soil and groundwater analytical data (tables of laboratory results will suffice in place of rather lengthy laboratory analytical printouts, as long as all the laboratory results from the printouts are in the tables), maps that depict the location(s) of the UST(s), pump island(s), vent pipes, contamination, monitoring wells, soil borings, etc. This data should be included even if the site has received an NFA. Typically, copies of the chain of custodies, lab data already presented in a data table, QA/QC reports, etc. should not be included.

When sites do not have a BUSTR file but have evidence that they previously managed petroleum products (i.e. evidence of USTs, pump islands, interviews, etc.), it will be assumed that PCS will be encountered and a PCS note warranted for any deep excavation on that site. For the BUSTR contacts see Appendix F.
6.1.7 Site Inspection

A site inspection of each property in the project area must be conducted, regardless of current land use, for features that indicate the potential for contamination by hazardous substances. This level of inspection does not require the investigator to enter onto a property and may be done from the existing ROW for the majority of projects.

The items that should be noted during the site inspection are evidence of staining, any part of a UST (Underground Storage Tank) system, soil disturbance (for suspected buried waste), drums, surface lagoons, distressed vegetation, or other features indicative of hazardous material handling, storage, or disposal. Photographic logs of the inspection are helpful and should be included in the appendices of the report. The photo log must adequately document the project. Individual photographs shall be provided for all properties with current or historical commercial and/or industrial uses. It is recommended that the site inspection occur after the review of the regulatory database search and historical aerials, since they may indicate a previous land use that may not be apparent during the site inspection.

6.1.8 Special Circumstances

While it is not necessary at this stage to conduct interviews with individual property owners, local officials from the fire department, health department or other emergency response agencies, these interviews may be conducted to acquire information regarding sites that potentially had managed petroleum products or had petroleum releases in the project area.

6.1.9 Conclusions and Recommendations

The conclusions and recommendations section must include a discussion of the findings of the investigation for all properties within the project and identify which sites, if any, warrant a PCS plan note. Because there is no ROW, further environmental site assessment will not be warranted for the project.
6.2 ESA Screening Checklist Form

An ESA Screening Checklist Form for screening projects is available (see Appendix E). It is also available in electronic form and can be used as supportive information. A screening checklist form should be completed for each commercial and/or industrial parcel investigated. One form may address a group of residences and/or agricultural fields. Screening checklist forms must be included in the appendices of the ESA Screening report.

The Environmental Records section of the screening checklist form should be completed. At a minimum, environmental databases searched should include the NPL List, Proposed NPL List, CERCLIS, CERC-NFRAP, CORRACTS, RCRA-GEN, ERNS, SWF/LF, UST List, VCP File, No Contact List (Fish Advisory).
6.3 Reporting Requirements for Consultant Produced Reports

The title page must include ODOT's project identification which contains the county, route, section, and PID (Project Identification Number) for the project. Information obtained for the ESA Screening such as regulatory database records, mapping, and visual observations should be summarized and the relevant information included and discussed in the report. Clear and concise conclusions must be provided which are supported by the data included. Recommendations for a petroleum contaminated soils plan note should be based on the conclusions of the No ROW ESA Screening and should be parcel-specific. The signature page should identify the report's primary author and reviewers. Typically, the Office of Environmental Services, ESA Unit and the District Office's Environmental Department each require one hard copy of the report. The following is the preferred format of the ESA Screening for consultant produced reports.

Consultant Produced Reports

- Table of Contents
- Signature Page
- Executive Summary
- Introduction
- Aerial Photo Cursory Review
- Regulatory Database Review
- Visual Inspection
- Conclusions and Recommendations
- Appendices
  - ESA Screening Checklist form
  - Map identifying suspect properties
  - Aerial photographs
  - Regulatory database information
  - Raw data from BUSTR file review(s)
  - Project plans (if applicable)
  - Photographic logs
6.4 Reporting Requirements for ODOT Produced Reports

ODOT produced reports must include a description of the project, the county, route, and section, and the PID. The ESA Screening Checklist form should include information from the aerial photo review, GIS database search, and visual inspection. The attachments should include the ESA Screening Checklist form, mapping, aerial photographs, the GIS database search, project plans if available, and photographs of the project area.

**ODOT Produced Reports**

- Project Description
- Aerial Photo Cursory Review
- Regulatory Database Review
- Visual Inspection
- Conclusions and Recommendations
- Appendices
  - ESA Screening Checklist forms
  - Map identifying suspect properties
  - Aerial photographs
  - Regulatory database information
  - Raw data from BUSTR file review(s)
  - Project plans (if applicable)
  - Photographic logs
7. PHASE I ENVIRONMENTAL SITE ASSESSMENT

The Phase I Environmental Site Assessment is typically the next step in the ESA process in determining the presence of hazardous substances within a Minor or Major Project. This occurs in Step 3 for Minor Projects after the Preferred Alternative has been selected. For Major Projects, the Phase I ESA occurs in Step 6 on all feasible alternatives. In general, parcels which require a Phase I ESA have been identified in the ESA Screening. The intent of the Phase I ESA is to determine the potential of encountering hazardous substances or petroleum products from a specific property. For the purpose of Phase I ESA investigations, property is referred to as a “site” prior to land acquisition and/or construction activities.

Since a single site can contain multiple parcels of land, the Phase I ESA should cover all parcels within the site and include both the area to be acquired and the outside of the proposed ROW. The Phase I ESA involves researching and reviewing site-specific information in order to determine a list of suspect sites which require a Phase II ESA. In general, the Phase I ESA should not be conducted without having performed an ESA Screening. The ESA Screening deals with all sites within a project area. The Phase I ESA involves only the suspect sites in the project. The following outline documents the elements of a Phase I ESA. This outline is not intended to preclude the use of any available information which could aid in assessing a site for potential contamination.

7.1 Elements of the Phase I Environmental Site Assessment

7.1.1 Executive Summary

This section should include a brief general description of the project location and type of proposed transportation project. In addition, a brief discussion of activities conducted and general conclusions and recommendations for further environmental site assessment should be included.

7.1.2 Introduction

A discussion of the project location, a description of the transportation project, and description of the proposed ROW acquisition should be provided in this section. While some of this information may be limited or not available, this information should be provided and used to assess the potential environmental impacts to the transportation project. In addition, a summary of any
7.1.3 Geographical/Geological Setting of the Project Study Area

Information regarding the physical setting of the project study area or corridor should be included in this section. The report should include information about geographical and general geological features. This information is meant to be general and not parcel-specific; however, should there be local deviations in the geology for the project area, they should be documented. Information such as soil type, regional bedrock, surface drainage, topography, ground water usage, etc., should be included in the report. In addition, the report should include a USGS 7.5 minute topographic map with the quadrangle name and project limits indicated.

7.1.4 Site-Specific Information

The All Appropriate Inquiry Rule does not specify sources of land use history. Historic resources vary greatly across the nation. However, based on ODOT’s experience conducting environmental site assessments since 1988 and researching historical architecture for projects, the following resources are available for the majority of the state. This objective data are of great value in determining land use and potential source areas. If a data gap occurs for any of these sources, the attempts taken to obtain this information shall be explained in the report.

7.1.4.1 Site History

Historical land use information must be reviewed for each property and documented in the report to assess the potential for the presence of regulated materials on a site. A chronology should be provided for each parcel indicating the address, owner and/or lessee, the use or business, and a date or date range of the usage. Historical land use research should be traced to the earliest date of development. The earliest date of development is used since many industrial and manufacturing sites started in the mid to late 1800’s and have been redeveloped into other uses over time. Information gathered from this research should be examined in order to draw clear conclusions and recommendations about the historical land use for each site. The following sources, at a minimum, must be reviewed:
A. **Aerial Photographs**

Aerial photographs may indicate land use activities which could contribute hazardous substances and/or petroleum products to the site. Aerial photos for several periods should be obtained and reviewed to identify land use changes. Newer aerial photos are useful; however, older material is of particular interest. A review and discussion is required within the site specific discussion. Items to be included are any change in usage historically such as buildings, areas of excavation, apparent location of drum storage areas, pump islands, UST cavities, changes in streams, etc. Each aerial photo obtained for review should note the year of any changes.

Aerial photographs are available through ODOT (available on print or cd), ODNR, NRCS (Natural Resources Conservation Service), USGS, County Engineer's Offices, and local planning organizations. These sources often have aerial photographs dating to the late 1930's. These are the preferred sources for aerial photographs. The lack of historical aerials from a database search firm is not an indication that there are no historical aerials for the project and does not release the consultant from obtaining historical aerials to satisfy this requirement.

The aerial photos must be at an interpretable scale (1000' or less) for identifying potential site-specific sources of contamination. A reviewable aerial photocopy must be provided. Unclear aerial photos will not be acceptable. Suspect sites and the project area must be clearly marked on all aerial photos.

B. **Fire Insurance Maps**

These maps were developed for insurance purposes detailing past industrial and commercial land uses and are available for many areas in Ohio. These maps can help identify potential sources of contamination, specific activities which took place on a property, and areas where these activities took place. These items are essential in the Phase I ESA. All Phase I ESA sites must be identified on the fire insurance maps. Companies such as Sanborn, Hopkins, and Chadwick are producers of these maps. Fire insurance mapping may be obtained from the OhioLink Media Center, local libraries, historical societies, college or university libraries, or from environmental database companies. Copies of the fire insurance maps reviewed must be included in the Phase I ESA report. It is not a violation of the copyright to include this information.
C. City/County Business Directories

These directories are published by private or government sources and show ownership and/or use of parcels by reference to street addresses. Often, these directories are available at local libraries, college or university libraries, or historical societies. Directories are also available from database search companies; however, it is unacceptable to use a database search firm as a sole source for directory information. The database search companies purchase information from a limited number of directory firms. Unlike fire insurance maps, the directory firms have not been consolidated under one firm, making the information obtained from a database search firm less reliable than the other readily accessible sources.

7.1.4.2 Supplemental Sources

The following are also excellent sources of historical land use information and should be consulted if the previous sources do not provide sufficient information:

A. Property Deeds

Property deeds research is conducted to determine past owners and, if possible, past land use at a parcel. The deed search should establish parcel ownership and may reveal an environmental line on a parcel and/or if a parcel was leased to another individual or entity. In addition, the sale of USTs and other equipment may be documented if it is part of the land transfer and therefore the actual deed should be reviewed. Although property deeds research is not required, ODOT acknowledges that this type of research may be an appropriate and prudent investigative tool for some properties.

B. County Atlases or Plat Maps

Counties may have maintained atlases of ownership and property boundaries, which sometimes contained drawings of the exterior of manufacturing facilities. Plat maps may include data about the historic location of landfills and manufacturing and commercial activities.

C. Historical USGS Topographic Maps

Historic USGS maps are available from a variety of sources local universities, libraries, and database search firms. ODOT's Office of Environmental Services and the Districts have access to historic USGS topographic maps for various years. This information may be either paper or electronic. This information is available upon request. In addition, Maptech hosts a historical USGS collection at http://historical.maptech.com/.
D. **Property Tax Files**

These files are maintained by the local jurisdiction where the property is located and may include records of past ownership, appraisals, maps, sketches, photos, or other information pertaining to the property.

E. **Building Permits**

The local government agency in charge of building permits maintains records of buildings and/or demolition on the property.

F. **Local History**

Local historical groups often write the history of their area and often include local businesses, both past and present, in these histories.

7.1.4.3 **Regulatory Records Review**

The activities involved in this section include further research of a parcel's regulatory history. This research involves completing a regulatory agency file review for each Phase I ESA site identified in the regulatory database search and summarizing relevant information. For example, if a site was identified on a USEPA, OEPA, and/or BUSTR database during the ESA Screening, then a regulatory agency file review must be conducted. Any pertinent registration, closure, corrective action, engineering controls, institutional controls, covenants, and/or release notification information should be reviewed, summarized, and documented in the report. Typically, copies of the chain of custodies, lab data already presented in a data table, QA/QC reports, etc. should not be included. This information is particularly important for sites where the regulating agencies have determined that no further actions are required. These sites typically achieve this status through a site specific risk assessment. The risk assessment does not address the waste status for these materials and they often have deed restrictions which will effect the construction and/or ROW acquisition for the transportation project. The pertinent raw data from the file review shall be included in an appendix to the report. Examples of this raw data includes, but is not limited to: soil and groundwater analytical data (tables of laboratory results will suffice in place of rather lengthy laboratory analytical printouts, as long as all the laboratory results from the printouts are in the tables), maps that depict the location(s) of the UST(s), pump island(s), vent pipes, contamination, monitoring wells, soil borings, etc. This data should be included even if the site has received an NFA. Typically, copies of the chain of custodies, lab data already presented in a data table, QA/QC reports, etc. should not be included. If a regulatory database review was not conducted during the ESA Screening process through either an environmental database search firm or through an ODOT GIS search, then
both the regulatory database review and the regulatory records review should be conducted as part of the Phase I ESA, otherwise the regulatory database review is not to be repeated in the Phase I ESA (see ESA Screening, GIS Database Search, Page 15 – 16). For a list of OEPA and BUSTR contacts see Appendix F.

7.1.4.4 Interviews

The parcel owner and/or tenant must be interviewed regarding any commercial and industrial operations involving hazardous materials and petroleum products on the parcel. It is preferred that the interview be conducted during the site reconnaissance. For commercial or industrial properties being studied, key employees (managers, supervisors, foremen, etc.) should be interviewed, since they are likely to be able to provide information about past and/or present on-site hazardous material practices. Interviews are required with neighbors or former employees who may also provide valuable information. In addition, interviews with local officials from the fire department, health department and/or other emergency response agencies should be conducted at this level to acquire information regarding spills or releases of hazardous substances in the project study area. We recognize that some interviews and inquiries about availability of files are effectively conducted by telephone. All persons interviewed should be identified by their name, title, and length of association with the parcel. With the introduction of USEPA's “All Appropriate Inquiry Rule,” interviews with past and present owners, operators, or occupants must be conducted.

It should be recognized that property owners typically do not have their property up for sale. The owner of a property may not be motivated to conclude the land transaction and obtaining an interview as required under AAI may be difficult. If the property owner and/or tenant cannot be contacted within a reasonable period of time or declines to be interviewed, the report should document the attempts to contact them. On rare occasions, the property owner will contact ODOT to deny any and all access to the property and/or any information concerning their property. In these situations, ODOT will inform the consultant not to contact or enter the site. This situation should also be documented as part of the Phase I ESA.

7.1.4.5 Site Reconnaissance

This consists of a detailed visual inspection of the site for evidence of contamination or potential contamination by hazardous substances. It is suggested that the property owners be notified prior to entering the property to conduct the site reconnaissance. Typically, the appropriate ODOT District provides this notification (see Appendix G). The notification letter may include
investigations for other environmental issues (i.e. historical architecture). If access to the subject property is denied, contact the DEC (District Environmental Coordinator). ODOT will obtain access or provide direction on a site specific basis. Where proposed ROW acquisition from a parcel is a strip take and does not include the building, it will not be necessary to investigate the interior of the building. While conducting the reconnaissance, items of particular interest are evidence of surface contamination, distressed vegetation, underground and aboveground storage tanks, soil disturbance (suspected buried waste), drums, surface lagoons, or other features indicative of hazardous materials handling, storage, or disposal. Where proposed ROW acquisition includes buildings, it will be necessary to investigate the interior of the building and note potential environmental concerns such as floor drains and sumps. The use of chemicals and generation of waste products should be identified and the information reflected in the recommended analytical parameters for the Phase II ESA, if applicable.

When a gasoline service station or other parcel containing a petroleum UST is advanced for Phase I ESA, several areas of concern must be addressed. The reconnaissance must document the locations of all portions of the UST system including vent pipes, fill caps, and the UST cavity. It must also document other areas of concern on the parcel such as vehicle maintenance activities, storage areas for drums and/or batteries, etc. It should also determine any discrepancies between the number of registered USTs and the actual number of USTs noted on the parcel. ODOT understands that all pertinent UST information is not always available. If certain information is not known and all resources were checked, then these findings should be documented.

In many cases, petroleum UST sites are being monitored under the direction of BUSTR via monitoring wells (MWs). If MWs are identified within the proposed or existing ROW and/or construction limits, then this information must be provided since ODOT will need to coordinate the abandonment or maintenance of these MWs with BUSTR and the property owner prior to construction of the project.

The apparent last date of use of a UST system should be documented. In the instance when a UST system was in use on November 8, 1984, or brought into service after that date, the land owner is the responsible party. For UST systems in use before November 8, 1984, but no longer in use on that date, the person who owned the UST system immediately before the discontinuation of its use is the responsible party. These USTs are considered to be orphan USTs. This determination affects ODOT Real Estate when purchasing property, and ODOT Construction when owners are no longer living when the UST systems became orphaned.

Electrical equipment (i.e. transformers, capacitors, etc.) often contain polychlorinated biphenols
PCBs). PCBs are compounds that are injurious to living organisms and have been used as lubricants, heat transfer fluids, and dielectric fluids. Electrical transformers (pole mounted or ground situated) owned by a utility company are not an environmental concern, unless there is visual evidence of a release, since the utility company will be responsible for the relocation of their transformers for the transportation project. These are the majority of transformers encountered during a project and a letter from the utility company stating they own these transformers is not necessary. Transformers associated with private ownership are more of a concern since they are a part of the liability that may be assumed with the acquisition of the property. These privately owned transformers are typically found at manufacturing sites that required large amounts of energy during the manufacturing process. Because of the liability and potential waste management issues that may be involved if they are acquired as part of the project, privately owned transformers will typically require a detailed investigation.

Buildings and some structures may contain Asbestos-Containing Materials (ACMs). ACMs improperly disposed of on a property are an issue that should be addressed in the report; however, asbestos in buildings is handled as part of the real estate acquisition process and, as such, will not require assessment in the Phase I ESA. Bridge structures may contain ACMs and should be inspected by a certified asbestos inspector prior to demolition and/or renovation; however, a bridge inspection for asbestos is a separate and distinct activity and is not a part of the Phase I ESA. Bridge structures may also contain lead paint. Lead paint materials improperly disposed of on a property is an issue that should be addressed in the report; however, lead paint on bridges will not require assessment in the Phase I ESA. Lead paint is an issue on bridge painting projects, while not an issue for bridge demolition projects.

A. **Site Reconnaissance of Adjacent Properties**

The properties immediately adjacent to the subject property will be inspected. The adjacent properties should be viewed from the subject property line, public ROW, etc. The discussion of the adjacent properties should be in relation to the proposed ROW for the project. In addition, the adjacent property use should be noted on the site diagram. In many cases, the properties immediately adjacent to the site have already been investigated during the ESA Screening and may not require detailed discussion. In some cases, the ESA Screening may have determined no further environmental site assessment was necessary for the site, or the property was included as part of the Phase I ESA investigation. If this is the case, the discussion should state that the ESA Screening determined this site was not of concern or it is being addressed as part of the Phase I ESA for the project.
7.1.4.6 Proposed Right-of-Way and Construction Activities

A discussion of the proposed ROW and construction activities for each parcel must be included. This involves providing the magnitude of the proposed ROW acquisition (i.e. 10’ strip, whole take, etc.) and the proposed work involving earth disturbing activities (i.e. installation of storm/sanitary sewers, signal pole foundations, catch basins, cuts for new ditch lines, etc.).

7.1.4.7 Diagram

A diagram for each investigated parcel must be included in the report which delineates the location of potential contamination sources (USTs, drums, surface staining, stressed vegetation, etc.) in relation to the ROW limits and proposed work involving earth disturbing activities (see Appendix H). For whole parcel acquisitions, the diagram must indicate building features (i.e. floor drains, sumps, etc.). Diagrams are not required to be drawn to scale, yet the approximate distances of potential contamination sources to the project should be provided.

7.1.4.8 Conclusions and Recommendations

A. Minor Projects

Based on the data collected, clear conclusions must be drawn for each site investigated. If a Phase II ESA is warranted for a site, then site specific recommendations for a Phase II ESA should include a discussion of the potential contaminants as well as proposed testing and analyses which include field-screening, sampling methods, analytical parameters including EPA method numbers as stated in USEPA publication SW-846, number of borings and/or MWs, terminal depth of borings, and soil sampling interval. In the event proposed test methods are other than USEPA SW-846 standards, approval must be acquired from the ODOT ESA Unit prior to its use. In addition, a site-specific diagram indicating the proposed locations of soil borings and/or MWs in relation to the proposed and/or existing ROW, proposed work, and potential sources of contamination, must be provided. If a Phase II ESA is not warranted for a parcel, then a discussion should be provided to substantiate that conclusion.

If a geophysical survey is recommended on a specific site, then a discussion should be provided to substantiate this claim. Specific recommendations should be included such as the proposed investigative technique and equipment, limitations, and a site diagram indicating the proposed area of survey in relation to the transportation project.
All recommended soil borings must be advanced within the proposed ROW (right-of-way). Monitoring wells are not typically warranted for strip takes. In the event there is no proposed ROW, sampling must be conducted within the existing ROW. In general, sampling locations and depth of soil borings are dependent upon the potential sources of contamination and, if available, upon the proposed depth of construction. In some instances, proposed depth of borings may be in accordance with or based on regulations from BUSTR or OEPA.

Where the whole property will be acquired, not only will the potential to encounter contaminated materials be assessed, but also the liabilities of acquiring the source areas on the property for the project. This will typically require the placement of soil borings and monitoring wells on the property.

**B. Major Projects**

For Major Projects, general Phase II ESA recommendations should be provided such as the site names and addresses, the alignment the site is in, types of potential contaminants, presence of any ground water problems, etc. Once the preferred alternative is selected, a Phase II ESA Work Plan consisting of site-specific Phase II ESA recommendations will be prepared for that alternative. Hence, the Phase II ESA will be conducted after the preferred alternative has been selected and the Phase II ESA Work Plan is accepted. However, it should be recognized that in some cases, the Phase II ESA may be performed on multiple alternatives to aid in selecting the preferred alternative.
7.2 Reporting Requirements

The title page of the report must contain ODOT's project identification including the county, route, section, and PID for the project. The introduction should include all background information, including the project information and summary of previous investigations.

The body of the report should include a discussion of each site including the address, history, regulatory records review, interview information, reconnaissance, proposed ROW and construction activities, and conclusions and recommendations. The body should describe the methodology, including all sources consulted. If a source is consulted but information not available, this should also be noted in the report.

All available and relevant data on the site should be summarized and documented within each site's discussion; however, the raw data should be included in the appendices. This includes copies of relevant information from environmental reports, fire insurance maps, aerial photos, photo logs, diagrams, newspaper articles, interviews, records of enforcement actions, and other environmental investigations to document the site as completely as possible. Construction plan sheets should be provided which may include ROW plans, cross-sections, and/or plan and profile sheets. If construction plan sheets have not been developed, then this information should be documented. The Office of Environmental Services, ESA Unit, and the District Office's Environmental Department each require one copy of the report.

The results of the research should clearly present the potential for contamination being encountered within the transportation project. Discussion in the report must clearly relate problem areas (potential areas of contamination) to the project. The following is the preferred format of the Phase I ESA report:
**Reporting Requirements**

- Executive Summary
- Introduction
- Geography/Geology for the Project Study Area
- Information For Each Site History
- Regulatory Records Review
- Interviews
- Parcel Reconnaissance
- Proposed Right-of-Way and Construction Activities
- Conclusions
  - Site Requiring Phase II ESA (Major Projects)
  - Site Specific Phase II ESA Recommendations (Minor Projects)
- Appendices
  - Project location maps (including topographic and county maps)
  - Aerial photographs
  - Fire insurance maps
  - Directories
  - Regulatory file review information
  - Parcel diagrams
  - Proposed boring/MW location diagram (Minor Projects only)
  - Photographs
  - Preliminary project plan sheets

### 7.3 Phase I ESA Updates

The decision to update the Phase I ESA for a project will be made on a project specific basis and not on the time limitation listed in AAI. Based on the results of ODOT’s environmental site assessment investigations, ODOT is typically in discussion and/or negotiations with regulatory agencies for sites with concerns. In addition, the District typically monitors the project area for significant changes and notifies OES if there are concerns. Therefore, the updating of Phase I ESA reports is not solely dependent on time prior to acquisition of a property.
8. PHASE II ENVIRONMENTAL SITE ASSESSMENT WORK PLAN

Phase II ESA Work Plans are prepared only for Major Projects in Step 7. These projects are more complex and have several alignments under consideration which involve varying amounts of ROW, type of work and types of structures. The Phase II ESA Work Plan is a separate submission which documents the site specific recommendations for Phase II ESA work based on the proposed ROW for the Preferred Alternative for each site of concern noted in the Phase I ESA. Once the Phase II ESA Work Plan is accepted by ODOT, the Phase II ESA may proceed. Occasionally, some projects will have a Phase II ESA Work Plan prepared and a Phase II ESA conducted on the Feasible Alternatives to aid in the selection of the Preferred Alternative.

8.1 Elements of the Phase II ESA Work Plan

8.1.1 Introduction

A discussion of the project location, the nature and purpose of the transportation improvement, and description of the proposed ROW acquisition for each site should be provided in this section. This information should be provided by the District Environmental Coordinator or the prime consultant. In addition, a summary of any previous environmental site assessments of this project (i.e. ESA Screening, Phase I ESA) should be included in this section. This section should also include a brief discussion of parcels requiring Phase II ESAs, the rationale, and potential constituents of concern.

8.1.2 Field Activities and Sampling Procedures

8.1.2.1 Soil Boring/Monitoring Well Locations

The number of soil borings and monitoring wells should be discussed and their locations placed on a diagram for each site to be investigated in the Phase II ESA. It is preferred that soil borings be placed in areas of potential concern within the proposed ROW for strip ROW acquisitions to determine if there is a potential to encounter contaminated materials during construction. This typically will not require the placement of monitoring wells within the proposed ROW. Where the whole property will be acquired, not only will the potential to encounter contaminated materials be assessed but also the liabilities of acquiring the source
areas on the property for the project. This will typically require the placement of soil borings and monitoring wells on the property.

8.1.2.2 Sampling Methods

A discussion of the proposed method to be used for soil borings and/or installation of groundwater monitoring wells must be included. In addition, the proposed number of and terminal depth of soil borings must be included. If applicable, methodologies for collecting samples other than soil or groundwater (i.e. surface water, near surface, sediment, etc.) must also be included.

For proposed strip ROW, direct push technology is the preferred method of soil sampling and should be utilized to minimize or eliminate the generation of investigation-derived waste. Proper management and subsequent disposal of investigation-derived waste shall be the responsibility of the consultant (see Appendix K). Investigation-derived waste shall not be placed back into the bore hole.

Soil sampling should be conducted in a manner consistent with ASTM D 1586-99. Soil borings should be abandoned in accordance with the State Coordinating Committee on Groundwater's Technical Guideline for Sealing Unused Wells, which may be found on ODNR's website.

For properties that will be wholly acquired as part of the project, soil borings and monitoring wells may be placed using either conventional methods or direct push technology. Monitoring wells placed on these properties should be permanent wells unless otherwise approved by OES (Office of Environmental Services). If direct push technology is used, the monitoring wells should consist of pre-packed well screens. This will ensure the well has a proper filter pack. All activities should be consistent with OEPA's Technical Guidance Manual for Hydrogeologic Investigations and Groundwater Monitoring Programs prepared by the State Coordinating Committee on Groundwater.

8.1.2.3 Field Screening and Sample Selection Methods

A discussion of proposed field screening and sample selection methods must be included. In general, soil borings should be sampled continuously and one sample from each soil boring sent to a laboratory for chemical analysis. Selection of samples for analysis can be based on several factors. All soils being analyzed for VOCs (Volatile Organic Compounds) and/or Semi-VOCs (semi-VOCs or SVOCs) should be field screened using a PID (Photo Ionization Detector) or PID/FID. The sample with the highest field reading should be sent for analysis. The sample
with the highest field reading should be sent for analysis. If the field readings are inconclusive, then the sample exhibiting the highest amount of visual, or other signs of contamination, is sent for analysis. If this information is inconclusive, then the sample obtained at the soil/water interface should be sent for analysis. If groundwater is not encountered, then the sample from the terminal depth of boring for that parcel should be sent for analysis.

It should be noted that there may be cases where multiple samples per boring are analyzed, (i.e. the sample which shows the most contamination, the highest field screening value, the most staining, or the most olfactory evidence) and the sample collected at the bottom of the boring may be sent to the analytical laboratory for analysis. Submitting multiple samples per boring requires prior approval from OES.

The field screening and sampling discussion needs to include the methods and instruments to collect the following pertinent data from a MW prior to sampling groundwater. Each MW should have the static water level collected to determine if free product is present, and the free product’s thickness if it is present. This information is typically collected by using an Interface probe or other water level measuring devices. For sites that will be wholly acquired and multiple MWs placed, each MW should have its top-of-casing elevation measured and surveyed in order to produce a potentiometric map.

8.1.2.4 Analytical Methods

Analytical methods for environmental samples must be provided. These parameters must be in accordance with Test Methods for Evaluating Solid Waste SW-846 prepared by the USEPA. In the event other test methods are proposed, justification and supporting information must be provided in the Phase II ESA Work Plan. The ODOT ESA Unit must also approve these methods.

8.1.2.5 Quality Assurance/Quality Control

Proposed QA/QC (Quality Assurance/Quality Control) procedures should be included to allow for assessment of the quality of the data collected. QA/QC measures may include written decontamination procedures, instrument calibration, the preparation and analysis of trip blanks, equipment blanks, duplicate samples, and/or other types of QA/QC samples.

8.1.2.6 Geophysical Survey

A geophysical survey may be conducted on parcels that are suspected of having buried concerns such as USTs and drums where their locations are not known. A geophysical survey
may also be conducted to determine the location of all or part of a UST system so that it may be avoided during drilling activities. A geophysical survey utilizes non-intrusive techniques to delineate these subsurface objects. In some instances, it may be used to delineate subsurface features such as contaminant plumes. Geophysical methods that may be employed include ground penetrating radar, electromagnetic conductivity testing, and magnetometer surveys. The results of the geophysical survey can be used to adjust soil boring/monitoring well locations in the field to better address the site’s resource areas. The geophysical survey is conducted prior to Phase II ESA field activities and is included in the Phase II ESA report.

If a geophysical survey is proposed on a parcel, then this section should include a detailed discussion of the investigative technique and its limitations, equipment description, and potential interferences. In addition, mapping must be provided which delineates the area of the geophysical survey, the proposed ROW, any structures on the parcel, and any features which may be related to the use, storage, and/or disposal of hazardous substances and regulated wastes (i.e. underground storage tanks, drums, etc).

8.1.3 Parcel Diagrams

A diagram for each parcel proposed for investigation should be included which indicates the sampling locations and delineates the location of potential contamination sources (USTs, drums, sumps, lagoons, etc.) and the proposed geophysical survey area (if applicable) in relation to the proposed and/or existing ROW limits and proposed work involving earth disturbing activities (installation of storm/sanitary sewers, foundations for signal poles, catch basins, etc.). Diagrams are not required to be drawn to scale; however, approximate distances of proposed sampling locations and potential contamination sources in relation to the transportation project should be provided (see Appendix H).

8.1.4 Project Management Plan

A Project Management Plan should be prepared, including a listing of all key administrative and technical personnel to be used during the investigation and their duties.
8.2  Reporting Requirements

The title page of the report must contain ODOT's project identification including the county, route, section, and PID for the project. Typically, the Office of Environmental Services, ESA Unit and the District Office's Environmental Unit each require one copy of the report. The following is the preferred format of the Phase II ESA Work Plan:

**Phase II ESA Work Plan Requirements**

- Introduction
- Field Activities/Sampling Procedures
- Sampling Method
- Field-Screening and Sample Selection Method
- Analytical Methods
- Quality Assurance/Quality Control
- Geophysical Survey Discussion (if applicable)
- Parcel Diagrams
- Project Management Plan
9. PHASE II ENVIRONMENTAL SITE ASSESSMENT

In the Project Development Process for Minor and Major Projects, by steps 4 and 7 respectively, the Preferred Alternative has been selected and the proposed ROW for the project has been determined prior to conducting the Phase II Environmental Site Assessment. The Phase II ESA is used to determine the presence or absence of hazardous substances and/or petroleum products on suspect parcels identified in the Phase I ESA. Where contamination is known to exist on a parcel, the Phase II ESA may also serve to identify the nature and extent of contamination. This is determined through intrusive sampling and testing of soils and/or groundwater.

The Phase II ESA provides a higher level of confidence about the degree of environmental risk associated with a specific parcel and is based on the parcel’s current and historical land uses that were identified in the Phase I ESA. The Phase II ESA will rarely be conducted without having completed a Phase I ESA, since the selection of sampling locations and analytical test methods are based on the findings of the Phase I ESA and the amount of property required for the project.

9.1 Elements of the Phase II ESA

9.1.1 Executive Summary

This section must include a brief general description of the transportation project and location. This section should also include a brief discussion of the data evaluation and regulatory interpretation. A brief discussion of the conclusions and recommendations should also be included.

9.1.2 Introduction

A discussion of the project location, the nature and purpose of the transportation improvement, and description of the proposed ROW acquisition and construction activities should be provided in this section.
9.1.3 Background Information

This section should include information of the transportation project area such as the physical setting, general land use, and general geological and regional hydro-geological information. This section should also include a brief discussion of parcels requiring Phase II ESAs, the rationale, and constituents of concern.

9.1.4 Field Activities and Sampling Procedures

9.1.4.1 The State of Ohio’s Right of Entry

There are two state laws that govern ODOT right and responsibility to conduct any necessary testing for a transportation project. ORC §163.03 and ORC §5517.01 (see Appendix I) allows ODOT and/or their representative to enter a property to conduct necessary testing. Property owner approval to enter a site to conduct the Phase II ESA, while desired, is not necessary. The property owner must be notified at least 48 hours before entering a property but the entry must take place no more than 30 days from the date of the notification letter. The District or the prime consultant is responsible for providing notification to the property owner. Examples of notification letters are presented in Appendix G. If the property owner does not allow access after receiving the notification, contact the ODOT District Environmental Coordinator and/or the prime consultant who will work with the property owner to resolve any issues. On very rare occasions these issues may not be resolved. In these instances, ODOT will review the situation, the reason for the Phase II ESA and any other information to determine the next step for this property. If ODOT determines that the Phase II ESA will be conducted, the consultant will be escorted by law enforcement onto the property to conduct the field activities. This action is a last resort and should not be used unless all other options and/or discussions with the property owner fail.

9.1.4.2 Sampling Methods

A discussion of the methodologies used for conducting soil borings and/or installing groundwater monitoring wells must be included. In addition, the proposed number and terminal depth of soil borings must be included. If applicable, methodologies for collecting samples other than soil or groundwater (i.e. water, near surface, sediment, etc.) must also be included.
Prior to sampling groundwater, each MW should be measured for its static water level and determine the presence and thickness of any free product. This information is typically collected by using an Interface probe or other water level measuring devices. For sites that will be wholly acquired and multiple MWs placed, each MW should have its top-of-casing elevation measured and surveyed.

For most ODOT projects, direct push technology is the preferred method of soil sampling and should be utilized to minimize or eliminate the generation of investigation-derived waste. Proper management and subsequent disposal of investigation-derived waste shall be the responsibility of the consultant (see Appendix K). Investigation-derived waste shall not be placed back into the bore hole. However, some projects will require conventional drilling techniques when soil conditions are not favorable for using direct push equipment.

In the event conventional soil boring and monitoring well installation is proposed in lieu of direct push technology, then these activities should be conducted in a manner consistent with OEPA’s Technical Guidance Manual for Hydrogeologic Investigations and Groundwater Monitoring Programs and the Technical Guidelines For Well Construction and Ground Water Protection prepared by the State Coordinating Committee on Ground Water. Monitoring wells placed using direct push should consist of pre-packed well screens and placed in accordance with OEPA’s Technical Guidance for Hydrogeologic Investigations and Groundwater Monitoring Programs.

Soil sampling should be conducted in a manner consistent with ASTM D 1586-84. In addition, the abandonment of soil borings and monitoring wells must be conducted in accordance with the State Coordinating Committee on Groundwater’s Technical Guidelines for Sealing Unused Wells, found on the ODNR website.

9.1.4.3 Field Screening and Sample Selection Methods

A discussion of field screening and sample selection methods must be included. In general, soil borings should be sampled continuously and one sample from each soil boring sent to a laboratory for chemical analysis. All soils being analyzed for VOCs and/or SVOCs should be field screened using a PID or PID/FID. The sample with the highest field reading should be sent for analysis. If the field readings are inconclusive, then the sample exhibiting the highest amount of visual, olfactory or other signs of contamination is sent for analysis. If this information is inconclusive, then the sample sent for analysis should be obtained just above the soil/water interface. If groundwater is not encountered, then the sample sent for analysis should be from the terminal depth of the boring.
It should be noted that there may be unique cases where multiple samples per boring are analyzed, (i.e. the sample which shows the most contamination, the highest field screening value, the most staining, or the most olfactory evidence) and the sample collected at the bottom of the boring may be sent to the analytical laboratory for analysis. Submitting multiple samples per boring requires prior approval from OES.

9.1.4.4 Analytical Methods

Analytical methods for environmental samples must be provided in accordance with Test Methods for Evaluating Solid Waste (SW-846) prepared by the USEPA. In general, test methods for USTs follow BUSTR guidelines unless the ODOT ESA Unit has given approval to an alternative method.

At no time shall a groundwater sample be substituted for a soil sample, or vice versa, without prior approval from the OES ESA Unit. In addition, PIDs and PID/FIDs are to be used as a screening tool to determine which sample from a soil boring should be selected for analysis. At least one soil sample per boring shall be submitted for chemical analysis. At no time shall PID, PID/FID, or any OVA readings be used as a substitute for chemical analysis.

9.1.4.5 Quality Assurance/Quality Control

Quality Assurance/Quality Control (QA/QC) procedures should be included to allow for an overview of the quality of the data collected. QA/QC measures should include written decontamination procedures, instrument calibration, the preparation and analysis of trip blanks, equipment blanks, duplicate samples, or other types of QA/QC samples. The QA/QC program conducted by the chemical laboratory should be included in the report. Phase II ESA investigations which involve a limited number of samples may only warrant standard laboratory QA/QC. More involved Phase II ESA investigations may warrant a more extensive QA/QC program. In these situations, the number of QA/QC samples is 10% of the total number of primary samples submitted for analysis.

9.1.4.6 Geophysical Survey

A geophysical survey may be conducted on parcels that are suspected of having buried concerns such as USTs or drums where their locations are not known. A geophysical survey may also be conducted to determine the location of all or part of a UST system so that it may be avoided during drilling activities. A geophysical survey utilizes non-intrusive techniques to delineate these subsurface objects. In some instances, it may be used to delineate subsurface
features such as contaminant plumes. Geophysical methods that may be employed include ground penetrating radar, electromagnetic conductivity testing, and magnetometer surveys. The geophysical survey must be conducted as part of the Phase II ESA field activities but conducted prior to drilling activities. A detailed discussion of the investigative technique, equipment, any limitations of the investigative method, and interferences with the results of the geophysical survey should be included.

9.1.5 Phase II ESA Findings; Data Evaluation; Regulatory Interpretation

9.1.5.1 Field Screening Results

A discussion of field screening results and apparent trends should be included. In addition, all field-screening data should be tabularized and included in the soil boring logs. As an option to using tables, a parcel diagram may be used to show the results associated with the soil boring and/or monitoring well location.

9.1.5.2 Boring Log Descriptions

A discussion of the geology and hydrology (if applicable) for each parcel based on the soil boring logs should be included. This discussion should be used to assess likely routes of contaminant transport. Soil boring logs should be completed and indicate information such as soil characteristics (i.e. texture, color, moisture content, etc.), terminal depth, samples submitted for analysis, and where the saturated zones were encountered. If a groundwater monitoring well is installed, then the boring log should indicate the static water level measured prior to ground water sampling.

For some parcels where the level of concern is great and a whole ROW take is anticipated, the direction of groundwater flow and the hydraulic gradient should be determined. Where strip ROW is required from a site, determining the direction of groundwater flow and the hydraulic gradient is generally not necessary.

9.1.5.3 Analytical Test Results

A discussion of the analytical test results and apparent trends must be included. In addition, all analytical test data should be tabularized. As an option to using tables, a site diagram may be used to show the analytical test results associated with the soil boring and/or monitoring well location.
9.1.5.4 Quality Assurance/Quality Control Results

A discussion of the QA/QC results as they relate to the primary analytical test results should be provided. In addition, results of decontamination procedures should be included. If the QA/QC results are used to support conclusions and recommendations, then this must be documented.

All laboratory analytical detection limits should be at or below the practical quantization limits or within acceptable ranges as stated in USEPA SW-846. Analytical limits which do not meet SW-846 should be justified and a discussion included in the report by the laboratory.

9.1.5.5 Data Evaluation Criteria/Regulatory Discussion

A discussion of the analytical test results in relation to ARARS (Applicable or Relevant and Appropriate Requirements set by federal or state authorities) or risk-based values (such as OEPA Voluntary Action Plan) must be included.

When a site is suspected of having petroleum contamination, the BUSTR Re-use Action Levels (see Appendix J) are to be used to determine if the site requires a plan note for petroleum contaminated soil (PCS) which is used for material management purposes.

For non-petroleum based contamination, a site's liability should be compared to the commercial and industrial land use levels under Ohio EPA VAP. To determine if an excavated material may be a waste, Ohio EPA's VAP residential land use levels should be used.

If a standard does not exist for a chemical in a particular medium, the consultant should use criteria or guidelines to determine whether the chemical could potentially be considered a waste if excavated and/or threaten human health or the environment.

The actual waste characterization for disposal typically occurs during the construction of the project and not during the environmental site assessment process.

9.1.5.6 Geophysical Survey Results

A discussion of the geophysical survey results, including conclusions, must be provided. In addition, mapping should be provided which delineates the area of the geophysical survey, the proposed ROW, any structures on the parcel, and any features which may be related to the use, storage, and disposal of hazardous substances (i.e. underground storage tanks, drums, suspicious areas detected by the survey, etc.).
9.1.5.7 Conclusions and Recommendations

Conclusions and recommendations should be based on the data evaluation and interpretation and details of the proposed transportation improvement. If the analytical test results identify hazardous substances, then the potential risks associated with the proposed ROW and construction involving earth disturbing activities must be discussed. Conclusions and recommendations may involve no further work, additional sampling and testing, the development of a plan note, or the development of remedial alternatives.

If additional sampling and testing is required, then specific recommendations must be provided such as sampling and field-screening methods, proposed number and locations of environmental samples, analytical parameters for chemical analysis, and terminal depth of soil borings.

9.1.6 Parcel Diagrams

A diagram for each parcel investigated should be included. The diagram should indicate the sampling locations and potential contamination sources (USTs, drums, sumps, lagoons, etc.) in relation to the proposed and/or existing ROW limits and proposed work involving earth disturbing activities (installation of storm/sanitary sewers, foundations for signal poles, catch basins, etc.). Diagrams are not required to be drawn to scale; however, approximate distances of sampling locations and potential contamination sources in relation to the transportation project should be provided (see Appendix H).

There will be situations where a whole take of a site is involved. If this is the case, and if applicable, a separate map should be included which indicates well elevations, groundwater elevations, bench marks, and the groundwater flow and potentiometric lines of the groundwater. If soil and/or groundwater contamination is identified, mapping should be provided which indicates the area and extent of known contamination, direction of contaminant and/or groundwater flow, and the media affected based on the data obtained. ODOT will conduct any coordination with the appropriate regulatory agency as necessary.

9.1.7 Site Specific Health and Safety Plan

It is the consultant's responsibility to determine if a SSHSP (Site Specific Health and Safety Plan) for Phase II ESA field activities as per 29 CFR 1910.120 is required. The SSHSP is not required to be included in the Phase II ESA report.
9.1.8 Environmental Plan Notes

If the Phase II ESA has determined that hazardous substances and/or petroleum contaminated soils will be encountered during construction, then the Phase II ESA recommendation may be to develop an environmental plan note to place in the construction plans. The plan note describes the management of these materials during construction and is incorporated into the construction contract. Environmental plan notes will not be developed as part of the Phase II ESA activities and are developed at a later date (i.e. once detailed design information is available). The ODOT ESA Unit can be contacted for guidance on developing these plan notes.

9.1.9 Remedial Design

If the Phase II ESA determines that acquisition of a contaminated parcel of land is necessary for highway development, then a Phase II ESA recommendation may be to prepare a remedial design to ensure that contaminated media is remediated and/or managed in a manner which is consistent with the appropriate environmental regulations. In short, remedial design will consist of a set of instructional statements, including any applicable drawings both of which should be prepared in standard ODOT construction contract format instructing a contractor on how to execute the remedial effort. This is typically developed at a later date and outside of the environmental site assessment process. A remedial design may involve developing a stand-alone contract that is separate from a roadway construction contract. Remedial design can range from a typical underground storage tank removal to a situation as complex as a large scale remediation plan (i.e. groundwater treatment system). A consultant involved with remedial design must be pre-qualified with ODOT’s Office of Contracts.

9.1.10 Investigation-Derived Waste

All wastes generated during Phase II ESA investigations will be managed and disposed of as per ODOT’s Revised Guidance Regarding the Management of Investigation-Derived Waste (see Appendix K).

9.2 Reporting Requirements

The title page of the Phase II ESA report must contain ODOT’s project identification including the county, route, and section as well as the PID for the project. The introduction of the report should include all background information, including project information and a summary of previous environmental site assessments. The signature page should indicate the primary author.
The body of the report should include a discussion of the field activities/sampling procedures used for conducting the Phase II ESA, the results of the geophysical survey (if applicable), the Phase II ESA findings, evaluation and regulatory interpretation of the field screening and analytical test results, and conclusions and recommendations.

All available relevant data on a parcel should be documented and the raw data included in the appendices to the report. This may include copies of reports, project location maps (including topographic and county maps), parcel diagrams indicating sampling locations, soil boring logs, laboratory analytical reports, chain of custody forms, geophysical survey report (if applicable), and other environmental investigations to document a parcel as completely as possible. If available, relevant construction plan sheets should be provided which may include ROW plans, cross-sections, and/or plan and profile sheets. If plan sheets are not available, then this information should be documented. Typically, the Office of Environmental Services, ESA Unit and the District Office’s Environmental Unit each require one copy of the report.

The results of the research should be clearly presented with respect to their bearing on the potential for contamination being encountered within the project area and the potential for ODOT to purchase contaminated property which may result in liability. Discussion in the report should clearly relate problem areas and potential areas of contamination to the proposed construction. The following is the preferred format of the Phase II ESA report:
Phase II ESA Report Requirements

- Executive Summary
- Signature Page
- Introduction
- Background Information
- Geological Information, Physical Setting, Regional Hydrology
- Geophysical Survey Discussion
- Field Activities and Sampling Procedures
  - Geophysical Survey
  - Field Screening and Sample Selection
  - Analytical Test Results
  - Quality Assurance/Quality Control
- Findings, Data Evaluation and Regulatory Interpretation
  - Geophysical Survey Results
  - Field Screening Results
  - Boring Log Descriptions
  - Analytical Test Results
  - Quality Assurance/Quality Control
  - Conclusions and Recommendations
- Appendices
  - Project location maps (including topographic and county maps)
  - Diagrams with sampling locations
  - Potentiometric (if necessary)
  - Geophysical survey report
  - Soil boring logs
  - Laboratory analytical reports and chain of custody
  - Other regulatory reports and/or data (if necessary)
APPENDIX A

Project Development Process
SPECIAL ACQUISITION PROCEDURES

prior to being required to surrender possession of its property

C. For any property that is donated prior to NEPA clearance, the environmental document must contain the following clauses:

1. All alternatives to a proposed alignment will be studied and considered pursuant to NEPA.

2. The acquisition of such property will not influence the environmental analysis of the project including the need to construct the project or the selection of a specific location; and

3. The property will be re-vested in the grantor or its successors in interest if such property is not required for the alignment chosen after a public hearing, if required, and completion of the environmental document.

   a. See Section 5501.331 of the Ohio Revised Code.

5301.07 Early Acquisition of Contaminated Property

A. Any non-residential property that is to be acquired early shall, prior to any purchase, have an environmental site assessment investigation to determine the extent, if any, of any contamination that affects the property. To avoid contaminated property affecting the ODOT highway project:

1. The District shall seek guidance from the Office of Environmental Services.

2. Testing of property needed for the project is permitted under Section 163.03 of the Ohio Revised Code. This code explicitly details the notice requirements before ODOT can enter upon any owner’s property.

B. Acquiring real property that is contaminated presents unique challenges and as a result, no one policy or procedure will work in every instance. When dealing with contaminated properties, the most cost effective decisions should occur during the environmental and/or preliminary plan process. Projects can potentially be designed around contaminated properties at this stage of a highway project, thus avoiding costly clean ups, appropriation and litigation for cost recovery.

C. In the event a contaminated property must be acquired for the project, a meeting must occur so that all known facts can be discussed regarding the unique contamination issues. Participants of this meeting are to include:

1. From the District
SPECIAL ACQUISITION PROCEDURES

a. District Real Estate Administrator
b. District Environmental Coordinator

2. From the Region
   a. Region Projects Manager and or Realty Specialist Manager
   b. Appraisal Program Manager

3. From Central Office
   a. Office of Environmental Services
   b. Office of Real Estate

4. Transportation Section of the Ohio Attorney General's Office or the Office of Chief Legal Counsel

D. The purpose of this meeting is to discuss the following information:

1. Ohio Environmental Protection Agency (OEPA) issues and/or United States Environmental Protection Agency (USEPA) issues.

2. The type and extent of contamination within the take area and outside the take area.

3. Pertinent information from BUSTER (Bureau of Underground Storage Tank Regulation).

4. Environmental audits and the results of these audits.

5. Determine if the contamination would have been found if ODOT's highway project had not impacted the property.

6. Determine if the owner would be required to clean the site if ODOT's project had not impacted the property.

7. Ignoring the way ODOT handles contaminated dirt, determine how a property owner would typically clean or remediate the site.

8. Determine the cost to remediate the site.

9. Determine if a lending institution would lend mortgage money to someone to purchase this property and if so, under what conditions, i.e. type of environmental audits, interest rate, number of years, down payment, finance charges.

10. Discuss the appropriation risk for this parcel.

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SPECIAL ACQUISITION PROCEDURES

11. Determine of the property is a land fill or USEPA site - if so, there needs to be special approval.

12. Determine if Federal Highway Administration expects ODOT to seek recovery of clean up costs.

E. After the team has discussed these relevant issues and anything else that may be pertinent to this particular contaminated property, decisions can be made regarding:

1. Should ODOT acquire the property or avoid the property.

2. Determine the property right to be acquired such as WD or SH.

3. Determine how the property is to be valued such as:

   a. Appraise the property “as clean” and ignore the known contaminants; or,

   b. Appraise the property as it really exists “as contaminated”; or,

   c. Appraise the property “as clean” and subtract the cost to clean the site.

F. For more information regarding contaminated property procedures, see Section 5319 of the Real Estate Manual.
SPECIAL ACQUISITION PROCEDURES

Price of [Insert $ from Line 1, Section 1], and the difference between the two sums, namely [Insert $ difference between Total Purchase Price and Appraised Value of “E” parcel], shall be paid in cash or equivalent by [Insert Purchaser or Seller, whoever owes balance] to the other party.

D. The negotiator is to sufficiently document this process to show compliance with the Ohio Revised Code and these procedures.

5319.05 Conveying the Excess Disposal Parcel to the Owner

A. The conveyance of any disposal parcel under this section shall be by Governor’s Deed as prescribed in Section 5501.34 (G) of the Ohio Revised Code which states the following:

1. Conveyances of real property under this section shall be by deed executed by the governor, shall bear the great seal of the state of Ohio, and shall be in the form as prescribed by the attorney general. Section 5301.13 of the Revised Code, relating to the sale of public lands, shall not apply to conveyances made pursuant to this section. The director, shall keep a record of all such conveyances. This section applies to all real property acquired by the department, regardless of how or from whom the property was acquired.

B. Generally, the District Real Estate Administrator shall start the process for the creation of the Governor’s Deed. The procedures for the Governor’s Deed are in Section 7400 of the Real Estate Manual under Property Disposal.

5320 The Acquisition of Contaminated Property

5320.01 General

A. The acquisition of contaminated property requires an immense amount of communication between the District Offices of Planning and Production, the Regional Office and Central Office Real Estate, the Office of Environmental Services, the Office of Chief Legal and the Ohio Attorney General’s Office.

B. These are unique acquisitions that require much information at the start of the acquisition process so that wise decisions are made and so the appraiser can be adequately scoped so that the resulting appraisal is valid.

C. Additionally, no properties should be purchased on such an accelerated schedule that adequate environmental studies have not been completed and which result in the purchase of a property that is heavily contaminated and where ODOT paid full market value and was not aware of the contamination.
SPECIAL ACQUISITION PROCEDURES

5320.02 The Line of Communication and Responsibilities

A. A highway project starts and evolves through the planning stage and flows into the production stage where R/W plans are eventually created and finalized and into the acquisition phase where the R/W is acquired and then flows into the construction phase.

B. The responsibility for the identification of contaminated property is the District Environmental Coordinator. This identification can occur at any time during the Plan Development Process (PDP).

C. At no time shall the District Environmental Coordinator provide direction/information or guidance to a Regional Office without coordinating/involving the District Office of Production/District Real Estate Administrator.

The line of communication regarding contamination shall always be as follows:

<table>
<thead>
<tr>
<th>District Planning</th>
<th>District Production</th>
<th>Regional Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Issues</td>
<td>Real Estate Issues</td>
<td>Acquisition of Real Estate</td>
</tr>
</tbody>
</table>

D. Contaminated properties may be identified during planning phase of a highway project and meetings may be required to work out relevant issues. Regional Office staff may be involved in these meetings.

1. The District Environmental Coordinator (DEC) shall memorialize the meeting by taking notes detailing the relevant issues that were discussed and will distribute these notes by an IOC (Interoffice Communication) to the Region Projects Manager (RPM) and the District Real Estate Administrator (DREA) prior to the acquisition phase of the highway project.

2. If contamination is discovered during the planning phase of a highway project and no meeting is coordinated by the District, the DEC will notify the DREA at the initiation of the acquisition phase of the highway project by IOC and copy the RPM regarding the contamination that was found.

E. Acquisition starts when the District Real Estate Administrator (DEC) communicates to a Regional Office that right of ways plans are finalized and Federal funding has been authorized for acquisition. If there are contaminated properties that need to be acquired, it is the responsibility of the District Environmental Coordinator to communicate through the District Real Estate Administrator (REA) to advise the Region Projects Manager (RPM) that a particular property is contaminated (see section 5320.02 (D) of these procedures for more detail).
SPECIAL ACQUISITION PROCEDURES

1. The REA will provide the RPM the IOC from the DEC concerning contaminated properties in the project. The REA will coordinate and facilitate any necessary communication and action between the DEC and the RPM for contaminated properties.

F. Once the Region Projects Manager (RPM) is aware of the contamination, he/she shall take the following steps:

1. Coordinate a meeting that will involve those people having adequate knowledge of contamination so that a decision can be made as to how ODOT should value the property.

2. It is recommended that the following people are involved:
   a. From the Region Office: 1) Region Projects Manager; 2) Realty Specialist Manager who is in charge of the project; 3) Appraisal Program Manager.
   b. From the District Office: 1) District Environmental Coordinator; 2) District Real Estate Administrator.
   c. From Central Office of Environmental Services: 1) the Environmental Site Assessment Supervisor.
   d. From Central Office Real Estate: 1) Appraisal Program Manager
   e. From the Ohio Attorney General’s Office: 1) An Assistant Attorney General who is knowledgeable of legal issues regarding contaminated properties.
   f. Someone from the Office of Chief Legal.

3. At this meeting, all issues regarding the contamination shall be discussed and ultimately a decision will be made about how to value the property.

These discussions should include: 1) The type and extent of contamination within the take and on the residue property; 2) Information from BUSTR (Bureau of Underground Storage Tank Regulation; 3) Environmental site assessment investigations that have been done and the results of those investigations; 4) Would the contamination have been found if ODOT’s project had not impacted the property; 5) Would the owner be required to clean the site if ODOT’s project had not impacted the property; 6) Ignoring the way ODOT handles contaminated dirt, how would a property owner typically clean or remediate the site; 7) What is the cost to remediate the site; 8) Would a lending institution loan money to someone

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to purchase this property and if so, under what conditions; 9) What property right should be purchased.

4. Generally, there will be three valuation options:

  a. Assume there is no contamination and value the property as if it were clean.

  b. Assume there is no contamination and value the property as if it were clean (minus) the cost to clean the site or remediate the contamination.

  c. Make no assumptions and value the property as it exists - as contaminated.

5. The Appraisal Program Manager will then decide which appraisers have the competency for this particular valuation assignment, select an appraiser and then scope the appraiser based the information from the group meeting (see meeting discussions from section 5320.02 (F) (3)).

G. The Region Office will perform all acquisition functions needed to acquire the property and if agreement cannot be reached, will turn the property over to the Ohio Attorney General’s Office for appropriation.

5321 Addendum
APPENDIX C

Internet Sites, Databases, & ReferenceDocuments
Internet Sites

http://www.dot.state.oh.us/
(ODOT's main web page)

http://www.dot.state.oh.us/contract/
(ODOT's Office of Contracts’ web page)

http://www.dot.state.oh.us/aerial/
(ODOT's Office of Aerial Engineering’s web page)

http://www.epa.state.oh.us
(OEPA main web page)

http://www.epa.gov/region5
(USEPA Region 5 web page)

http://www.com.state.oh.us/sfm/bustr/
(Bureau of Underground Storage Tank Regulations’ web page)

http://www.dnr.state.oh.us
(Ohio Department of Natural Resources’ main web page)

http://www.odh.state.oh.us
(Ohio Department of Health’s main web page)

http://dmc.ohiolink.edu/cgi/i/image/image-idx?page=index;c=sanborn
(OhioLink Digital Media Center's Sanborn Fire Insurance Maps page)
Environmental Regulatory Databases

http://www.epa.gov/oerrpage/superfund/
(CERCLIS Sites, RODs, and NFRAP (unlisted CERCLA sites)

http://www.epa.gov/superfund/sites/npl/oh.htm
(USEPA National Priorities List)

http://www.epa.state.oh.us/dsiwm
(List of sites regulated by OEPA Division of Solid and Infectious Waste Management)

http://www.epa.state.oh.us/dhwm/database.html
(Ohio RCRA Notifier’s List (must be downloaded)

http://www.epa.gov/epahome/commsearch.htm
(List of EPA-regulated facilities by zip code)

Regulatory Reference Documents

http://www.epa.state.oh.us/ddagw/tgmweb.htm
(Technical Guidance Manual for Hydrogeologic Investigations and Groundwater Monitoring)

http://www.epa.state.oh.us/ddagw/Documents/wellsealguid.pdf
(Well Sealing Guidance Document)
REGULATORY DATABASES

FEDERAL ASTM STANDARD

CERCLIS  Comprehensive Environmental Response, Compensation, and Liability
         Information Site
CERC-NFRAP CERCLIS No further Remedial Action Planned
CORRACTS  Corrective Action Report
ERNS      Emergency Response Notification System
NPL       National Priority List
PROPOSED NPL Proposed National Priority List Sites
RCRA-TSDF Resource Conservation and Recovery Act Information
RCRA-LQG  Resource Conservation and Recovery Act Information (Large/Small Quantity
          Generator)

STATE ASTM STANDARD

SHWS      This state does not maintain a SHWS list. See the Federal CERCLIS list and
          Federal NPL list.
SWF/LF    Licensed Solid Waste Facilities
UST       Underground Storage Tank File
VCP       Voluntary Action Program Sites
LUST      Ohio Leaking Underground Storage Tank List

FEDERAL ASTM SUPPLEMENTAL

CONSENT   Superfund (CERCLA) Consent Decrees
DELISTED NPL National Priority List Deletions
DOCKET    Civil Enforcement Docket
DOD       Department of Defense Sites
FINDS     Facility Index System/Facility Identification Initiative Program Summary Report.
FTTS INSP FIFRA/TSCA Tracking System
          FIFRA (Federal Insecticide, Fungicide & Rodenticide Act)
          TSCA (Toxic Substances Control act)
<table>
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<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>FUDS</td>
<td>Formerly Used Defense Sites</td>
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<tr>
<td>HMIRS</td>
<td>Hazardous Materials Information Reporting System</td>
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<td>INDIAN RESERV</td>
<td>Indian Reservations</td>
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<tr>
<td>MLTS</td>
<td>Material Licensing Tracking System</td>
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<tr>
<td>MINES</td>
<td>Mines Master Index File</td>
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<td>Federal Superfund Liens</td>
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<tr>
<td>ODI</td>
<td>Open Dump Inventory</td>
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<tr>
<td>PADS</td>
<td>PCB Activity Database System</td>
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<tr>
<td>RAATS</td>
<td>RCRA Administrative Action Tracking System</td>
</tr>
<tr>
<td>ROD</td>
<td>Records of Decision</td>
</tr>
<tr>
<td>SSTS</td>
<td>Section 7 Tracking Systems</td>
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<tr>
<td>TRIS</td>
<td>Toxic Chemical Release Inventory System</td>
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<tr>
<td>TSCA</td>
<td>Toxic Substances Control Act</td>
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<td>UMTRA</td>
<td>Uranium Mill Tailings Sites</td>
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<td>US ENG CON</td>
<td>Engineering Controls Sites List</td>
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**STATE OR LOCAL ASTM SUPPLEMENTAL**

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<tr>
<td>CDL</td>
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<tr>
<td>ENG CONTROLS</td>
<td>Sites with Engineering Controls</td>
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<td>HIST LF</td>
<td>Old Solid Waste Landfill</td>
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<td>MSL</td>
<td>Master Sites List</td>
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<td>OH SPILLS</td>
<td>Emergency Response Database</td>
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<tr>
<td>OHIO EPA DERR</td>
<td>Ohio Environmental Protection Agency Division of Emergency &amp; Remedial Response Databases</td>
</tr>
<tr>
<td>TOWNGAS</td>
<td>DERR Towngas Database</td>
</tr>
<tr>
<td>UNREG LTANKS</td>
<td>Ohio Leaking UST File</td>
</tr>
<tr>
<td>USD</td>
<td>Urban Setting Designation Sites</td>
</tr>
<tr>
<td>VAP</td>
<td>Ohio Voluntary Action Program Sites</td>
</tr>
</tbody>
</table>
HISTORICAL DATABASES

COAL GAS
Former Manufacturing Gas (Coal Gas) Sites

BROWNFIELDS DATABASES

BROWNFIELDS
Ohio Brownfield Inventory

INST CONTROL
Sites with Institutional Engineering Controls

US BROWNFIELDS
A Listing of Brownfields Sites

US INST CONTROL
Sites with Institutional Controls

VCP
Voluntary Action Program Sites

ODOT ADDITIONAL DATABASES

State No Contact Advisory
(www.epa.state.us/dsw/fish_advisory/donot_wade.html)
APPENDIX D

Guidance Regarding Railroad Right-of-Way
ENVIRONMENTAL SITE ASSESSMENT GUIDANCE FOR RAILROAD RIGHT-OF-WAY

In the past, ODOT has conducted Environmental Site Assessments (ESA) including sampling and testing on featureless, open railroad tracks due to potential environmental concerns such as polychlorinated biphenol (PCB) oils leaking from hydraulic systems, herbicides, and chemical spills. In many instances, Phase II ESAs were conducted to determine the presence of common railroad track contaminants such as creosotes, heavy metals, PCBs, and other semi-volatile organic compounds. However, OES have compiled and evaluated analytical data from railroad ROW which indicates that there is a very low likelihood of encountering said contaminants on featureless tracks. Based on these findings, it has been determined that Phase II ESAs are generally not warranted on featureless, open railroad tracks.

In most instances, railroad ROW will be investigated during the ESA Screening and/or Phase I ESA to determine the potential of encountering hazardous substances prior to land acquisition and/or construction involving earth disturbing activities. This is especially true when the railroad is situated in urban or industrial areas. Where features are indicative of environmental concerns such as reported spills or releases, USTs, spurs, sidings, loading/unloading areas, buried cars and railroad yards along railroad right-of-way, Phase II ESA may be warranted to determine their potential impacts to the project.

In general, it has been ODOT’s policy not to require ESAs for projects which involve upgrading or widening of an existing perpendicular at-grade railroad crossing. However, if large amounts of material are proposed to be excavated from the railroad bed at these locations, then limited Phase II ESA sampling may be conducted to determine the regulatory status of the material for management or disposal purposes. It should be noted that work at perpendicular at-grade railroad crossings is often performed by the railroad and is not administered by ODOT.

A common use of abandoned railroads is for bikeways and hiking trails which may include acquisition of long stretches of railroad right-of-way in both rural and urban areas. At a minimum, an ESA Screening must be performed for these projects to identify both land uses on railroad right-of-way as well as adjacent land uses which may pose an environmental concern. If the ESA Screening has identified an environmental concern in terms of hazardous substances, then a Phase I ESA should be conducted.
APPENDIX E

Environmental Site Assessment Screening
Checklist Form
ENVIRONMENTAL SITE ASSESSMENT SCREENING CHECKLIST

NAME: ___________________________ DATE: ___________
TITLE: ___________________________ DISTRICT: ___________
COUNTY/ROUTE/SECT: ___________ PID: ___________
PROJECT DESCRIPTION: ___________________________

Parcel No./Owner/Address: ___________________________

Project Right-of-Way (Row) Requirements from Parcel:
No New _____ Strip _____ Minor _____ Whole Parcel _____ Not _____

LAND USE:
Current Land Use (For Commercial/Industrial land use, specify type and tenant):

Past Land Use (For Commercial/Industrial land use, specify type and tenant):

Environmental Records
National Priority List (NPL) Date Queried /Result
Comprehensive Environmental Response, Compensation and
OEPA Master Site List (MSL)
Resource Conservation and Recovery Act (RCRA)
Bureau of Underground Storage Tank Regulation (BUSTR)
Other State/Local Lists

NPL/CERCLIS/OEPA MSL in vicinity (type of facility and location in relation to project):

Visual Inspection

<table>
<thead>
<tr>
<th>UST’s</th>
<th>AST’s</th>
<th>Drums</th>
<th>Landfills</th>
<th>Pond/Lago</th>
<th>Surface Staining</th>
<th>Sheens</th>
<th>Damaged</th>
<th>Odors</th>
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</table>

Phase I ESA required  Yes _____ No _____
APPENDIX F

Regulatory File Review Contacts
BUSTR
Nancy Caldwell
(614) 387-7412
8895 E. Main St.
Reynoldsburg, OH 43068

USEPA – Region 5
Freedom of Information Officer
U.S. EPA Region 5
(MI-9J)
77 West Jackson Blvd.
Chicago, IL 60604-3590
Fax – (312) 886-1515
E-mail - r5foia@epa.gov

Ohio EPA – CDO
Lisa Ottman
(614) 728-0793
50 West Town Street
Suite 700
Columbus, Ohio 43207

Ohio EPA – NEDO
Lily Aaron
(330) 963-1200
2110 Aurora Rd
Twinsburg, OH 44087
Fax (330) 487-0769

Ohio EPA – NWDO
Linda Tilse
(419) 373-3081
347 N. Dunbridge Rd.
Bowling Green, OH 43402
Fax (419) 352-8468

Ohio EPA – SEDO
Angie Hardesty
(740) 385-8501
2195 Front St.
Logan, OH 43138
Fax (740) 385-6590

Ohio EPA – SWDO
Sally Brown
(937) 285-6249
401 E. Fifth St.
Dayton, OH 45402
Fax (937) 285-6549

Updated June 18, 2009
APPENDIX G

Owner Notification Letter Example
(Date)

(Name and address of Property Owner, Tenant, or Authorized Agent)

Dear (Name of Property Owner, Tenant, or Authorized Agent):

The Ohio Department of Transportation intends to (relocate) (improve) portions of (State Route No.) to provide a modern highway to better serve the needs of the traveling public.

(Various) (Preliminary) alignments are being studied to determine the new location of the highway and in connection with such studies it is necessary to do certain survey work and to make some drillings to determine earth and soil compositions.

While it may be quite some time before the recommended alignment is selected and the right-of-way and design features are known, it is possible that your property could be affected if one of the alignments under consideration is determined to be most favorable.

Accordingly, we wish to advise that it will be necessary for our work crews to enter upon your property in the next few days to obtain certain field data needed in connection with this highway study. Sections 5517.01 and 163.03 of the Ohio Revised Code authorize such entries but also require that reimbursement be made for any actual damage resulting from such work. Our work crews have received strict instructions concerning the preservation of private property and public lands. However, in the event that any valuable vegetation must be cleared in order to accomplish our work, you will be so notified and informed as to the procedure to follow in preparing a claim for reimbursement. In all cases, however, removal of vegetation as well as other damage will be held to a minimum. If at any time you feel that our representatives have not given proper attention to private property, please notify us at once.

Our work crews will not be able to give any definite information or answers to your questions. They will simply be collecting information necessary to determine either the best alignment or data required for the preparation of final plans. However, a right-of-way representative of the Transportation Department will contact you as soon as definite information becomes available should the ultimate design of the project affect your property or lands.

We sincerely appreciate your cooperation and assistance so that this worthwhile project can be completed at the earliest possible date.

Very truly yours,

District Deputy Director

SAMPLE
SAMPLE
Ohio Department of Transportation
District 8, 505 South S.R. 741, Lebanon, Ohio 45036-9518
(513) 932-3030 or 1-800-831-2142
Transportation Planning & Programs Department

Date: November 10, 2004

Re: HAM - 126 - 22.38
    PID 17228
    Bridge Replacement

Henry W. Schneider, Trustee
8110 Plainfield Road
Cincinnati, OH 45236

Dear Mr. Schneider:

The Ohio Department of Transportation intends to replace the deteriorating stone arch culvert bridge at HAM-126-22.38. Along with this bridge replacement, minor stream channelization will take place.

Accordingly, we wish to advise you that it will be necessary for our work crews to enter upon your property in the next few weeks to obtain certain field data needed in connection with the highway project. Section 5517.01 and 163.03 of the Ohio Revised Code authorized such entries but also requires that reimbursement be made for any actual damage resulting from such work. Our crews have received strict instructions concerning the preservation of private property and public lands. In the event that any valuable vegetation must be cleared in order to accomplish our work, you will be so notified and informed as to the procedure to follow in preparing a claim reimbursement. In all cases, however, removal of vegetation as well as other damage will be held to a minimum. If at any time you feel that our representatives have not given proper attention to your private property, please notify us at once at the following address:

Ohio Department of Transportation District 8 Office
Attn: Hans R. Jindal, P.E., District Planning and Environmental Engineer
505 South State Route 741
Lebanon, OH 45036-9518
Telephone Number: 1-800-831-2142

Our work crews will not be able to give you any definite answers to your questions. They will simply be collecting data required for preparing the Environmental Document, developing alternatives, and eventual Plan development. However, a right-of-way representative of ODOT will contact you as soon as definite information becomes available should the ultimate design of the project affect your property or lands.

We sincerely appreciate your cooperation and assistance so that this worthwhile project can be completed at the earliest possible date. If you have any questions regarding the above, please contact Nick Smith, Project Coordinator at 1-800-831-2142 extension 933-6708.

Respectfully,

[Signature]

Hans R. Jindal, P.E.
District 8 Planning & Environmental Engineer

HRJ:KS:SNWS:smwh
cc: Jindal/PKE. Julie Darniss. Rebecca Florianaci. N. Smith. rf.
APPENDIX H

Sample Parcel Diagram
APPENDIX I

Right of Entry Laws
ORC §163.03 Entry upon real property; notice; damages.

Any agency may, upon the notice prescribed in this section, prior to or subsequent to the filing of a petition pursuant to Section 163.05 of the Revised Code, enter upon any lands, waters, and premises for the purpose of making such surveys, soundings, drillings, appraisals, and examinations as are necessary or proper for the purpose of the agency. Under Sections 163.01 to 163.22, inclusive, of the Revised Code, and such entry shall not constitute a trespass. Notice of such proposed entry shall be given to the owner or the person in possession by such means as are reasonably available not less than forty-eight (48) hours or more than thirty (30) days prior to the date of such entry.

The agency shall make restitution or reimbursement for any actual damage, resulting to such lands, waters, and premises and to improvements or personal property located in, on, along, over, or under such lands, water, and premises, as a result of such activities. If the parties are unable to agree upon restitution or other settlement, damages are recoverable by civil action to which the state or agency hereby consents.


ORC § 5517.01 Proposed projects; claims arising from execution of survey; unloading points and routes for transportation of materials.

The director of transportation shall make a map in outline and profile, and plans, specifications, profiles, and estimates covering proposed projects. When completed the director shall indorse upon such maps, profiles, plans, specifications, and estimates of quantities his approval of the same and cause one copy thereof to be placed on file in his office and another in the office of the district deputy director of transportation, for public inspection on or before starting the publication of notice to bidders. The director may sell prints or copies of any plans, specifications, or contracts for a charge not to exceed the cost of such prints or copies. The money received from such sale shall be deposited with the state treasury to the credit of the appropriate fund.

In the execution of any survey authorized by the director, any person, firm, or corporation, without doing unnecessary injury thereto, may enter upon any lands within the state for the purpose of inspecting, surveying, leveling, or doing any work deemed necessary to carry out Chapters 5501., 5503., 5511., 5512. /D, 5513., 5515., 5516., 5517., 5519., 5521., 5523., 5525., 5527., 5528., 5529., 5531., 5533., and 5535. of the Revised Code. If the person, firm, or corporation, whose premises are
entered upon for this purpose, makes any claim for compensation or damages for injury thereto, and the parties cannot agree as to the amount to be paid, either party may petition the probate court of the county in which such land is situated. The court shall appoint a time for a preliminary hearing in such petition, notify the parties interested, fix a time for hearing of the matter in controversy, and the court may view the premises if it sees fit, hear evidence relating thereto, and assess such compensation or damages as the court deems just. When a petition is filed with the probate court it shall require the party filing such petition to give bond in such sum as it may fix to cover costs of proceedings on appeal. If either party is not satisfied with the judgment of the court, he may ask for a jury trial, and the court shall thereupon summon a jury and the trial shall proceed as provided by law relating to appeals in road cases.

The director may in the preparation of plans for any improvement include a designation of the unloading points for materials to be used in such improvement, and he may also include in the plans a designation of the routes over which materials for use in such improvement shall be transported. Any designation of unloading points or routes for the transportation of materials so made shall be clearly and conspicuously shown upon the plans for such improvement, and any person awarded the contract for such constructing such improvement shall, in such event, by required to unload all materials at the points designated on the plans and transport the same over the routes thereupon designated.

HISTORY: GC § 1178-33; 121 v 455 (476); Bureau of Code Revision, 10-1-53; 135 v H 200. Eff 9-28-73.
APPENDIX J

BUSTR Re-use Action Levels for Petroleum Contaminated Soil
(D) Re-use of excavated soil.

(1) If excavated soil sampled and analyzed pursuant to the paragraphs (C) of this rule does not exceed re-use action levels for any chemical(s) of concern, then the owner or operator may use the soil for any lawful purpose. This paragraph shall not be interpreted as authorizing use of such soil for purposes prohibited or otherwise restricted by any applicable federal, state, or local laws and regulations.

-Table 1 Re-Use Action Levels-

<table>
<thead>
<tr>
<th>CHEMICAL OF CONCERN</th>
<th>ACTION LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>0.015</td>
</tr>
<tr>
<td>Toluene</td>
<td>4.910</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>4.550</td>
</tr>
<tr>
<td>Total Xylenes</td>
<td>15.700</td>
</tr>
<tr>
<td>Methyl Tertiary Butyl Ether (MTBE)</td>
<td>0.047</td>
</tr>
<tr>
<td>Benzo(a)Anthracene</td>
<td>2.200</td>
</tr>
<tr>
<td>Benzo(b)Fluoranthene</td>
<td>5.530</td>
</tr>
<tr>
<td>Benzo(k)Fluoranthane</td>
<td>1.970</td>
</tr>
<tr>
<td>Benzo(a)Pyrene</td>
<td>1.100</td>
</tr>
<tr>
<td>Chrysene</td>
<td>1.270</td>
</tr>
<tr>
<td>Dibenz(a,h)Anthracene</td>
<td>0.940</td>
</tr>
<tr>
<td>Indeno(1,2,3-cd)Pyrene</td>
<td>0.150</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>3.980</td>
</tr>
<tr>
<td>TPH (C6-C12)</td>
<td>1000</td>
</tr>
<tr>
<td>TPH (C10-C20)</td>
<td>2000</td>
</tr>
<tr>
<td>TPH (C20-C34)</td>
<td>5000</td>
</tr>
</tbody>
</table>

All chemical concentrations expressed in milligrams per kilogram (mg/kg)

(2) If excavated soil sampled in accordance with paragraph (C) of this rule does not exceed the applicable action levels listed in rule 1301:7-9-13 of the Administrative Code, then the excavated soil may be deposited in the original excavation without further treatment. Following placement in the excavation, the soil shall be covered with a minimum of one foot of clean fill.

(3) Following approval from the fire marshal, excavated soil that exceeds the applicable action levels listed in rule 1301:7-9-13 of the Administrative Code may be deposited in the original excavation for the purpose of remediation pursuant to the corrective action requirements of rule 1301:7-9-13 of the Administrative Code. If the excavated soil was deposited in the original excavation in accordance with paragraph (D)(4), and samples analyzed pursuant to rule 1301:7-9-12(I) of the Administrative Code are below action levels developed in rule 1301:7-9-12(I)(3) of the Administrative Code, then the owner or operator may prepare and submit a PCS Treatment Plan in accordance with paragraph (I) of this rule.

(4) When soil samples have been collected, but the analytical results have not been received, the excavated soil may be deposited in the original excavation if the excavation is lined with a synthetic liner having a minimum thickness of ten mil.
(5) Soil at a UST site that exceeds the site-specific action levels calculated pursuant to rule 1301:7-9-13 of the Administrative Code but are not excavated may be remediated in place in accordance with the corrective action requirements of rule 1301:7-9-13 of the Administrative Code.

(6) The fire marshal may approve the re-use of excavated soil in lieu of or in conjunction with the treatment requirements of this rule on a case-by-case basis where such re-use will provide a benefit to the citizens of Ohio and not cause harm to human health or the environment. The owner or operator may make a request in writing to the fire marshal describing the proposed reuse. Should the fire marshal approve the request, the fire marshal may approve such terms or conditions, including treatment of the excavated soil prior to re-use, that the fire marshal deems necessary to assure that the proposed re-use will not harm human health or the environment.
APPENDIX K

Revised Guidance Regarding the Management of Investigation-Derived Waste
TO: District Deputy Directors
   Attn: All DECs
   All Environmental Personnel
FROM: Timothy M. Hill, Administrator, Office of Environmental Services
SUBJECT: ODOT Drill Spoils Storage Facility

DATE: January 11, 1999

In 1990, this office in consultation with Ohio EPA established a procedure to accept, manage, and properly dispose of drill spoils generated by the Environmental Site Assessment (ESA) process.

Over time, the number of drums with drill spoils received has declined to the point that only one drum was accepted at our Drill Spoil Storage Facility in the past 14 months. Therefore, in November, 1998 this office conducted a survey of the District Task Order consultants concerning the reduction of drums. The survey revealed the reduction is mainly due to the use of Geoprobe and other direct push sampling methods that produce little or no drilling wastes. The survey also indicated that consultants were regularly arranging for disposal of drums with drill spoils.

Considering this information, CES has determined that this procedure is no longer necessary. Thus, we will no longer be accepting drill spoils. Effective January 15, 1999, the responsibility for properly managing and disposing of drill spoils shall be entirely that of the environmental consultant who performed the ESA. These expenditures are reimbursable and must be included in the cost proposal. The consultant must then provide a copy of the waste manifests for the ODOT's records which are to be maintained in the District.

If you have any questions or concerns, please contact Juliet Denniss, Environmental Specialist, at (614) 466-7942.

TMH:jdd

c: File
   Reading file
   L. Flower (Office of Contracts)
APPENDIX L

References/Supplemental Reading
REFERENCES/SUPPLEMENTAL READING


Comprehensive Environmental Response, Compensation and Liability Act, Public Law #96-510

29 Code of Federal Regulations 1910.120, Occupational Safety and Health Administration, Hazardous Operations and Emergency Response

Ohio Asbestos Emission Control Rules, Ohio Revised Code 3745-20

Ohio Department of Transportation, Construction and Material Specifications

Ohio Department of Transportation, Construction Manual of Procedures

Ohio Department of Transportation, Highway Plan Reading Manual

Ohio Department of Transportation, Location and Design Manual

Ohio Department of Transportation, Right-of-way Plan Manual
Ohio Environmental Protection Agency, Beneficial Use of Non-Toxic Bottom Ash, Fly Ash, and Spent Foundry Sand and Other Wastes, Policy No. 0400.007


Ohio Environmental Protection Agency, Ohio’s New Scrap Tire Law, March 3, 1996, Ohio Administrative Code 3745-27

Ohio Environmental Protection Agency, Guideline for Preparing QAPP, Document Number DERR-00-RR-008


Ohio Environmental Protection Agency, Railroad Tie Management, Document Number: DSIWM 0037

State of Ohio Technical Guidelines for Sealing Unused Wells, State Coordinating Committee on Groundwater, 1996 (Available from Ohio Department of Natural Resources, Division of Water)

State of Ohio Technical Guidelines for Well Construction and Groundwater Protection, State Coordinating Committee on Groundwater, 1999 (Available from Ohio Department of Natural Resources)

Superfund Amendment and Reauthorization Act, Public Law #99-499

United States Environmental Protection Agency, 40 Code of Federal Regulations

## ACRONYMS/DEFINITIONS

<table>
<thead>
<tr>
<th>AAI</th>
<th>All Appropriate Inquiry</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACM</td>
<td>Asbestos-containing material. Any material or product that contains more than 1% asbestos.</td>
</tr>
<tr>
<td>ARARs</td>
<td>Applicable or Relevant and Appropriate Requirements set forth by federal or state authorities.</td>
</tr>
<tr>
<td>AST</td>
<td>Above-ground Storage Tank.</td>
</tr>
<tr>
<td>BUSTR</td>
<td>Bureau of Underground Storage Tank Regulations.</td>
</tr>
<tr>
<td>CE</td>
<td>Categorical Exclusion.</td>
</tr>
<tr>
<td>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation and Liability Act of 1980. This act establishes liability that forces cleanup costs of contaminated sites to responsible parties.</td>
</tr>
<tr>
<td>CERCLIS</td>
<td>Comprehensive Environmental Response, Compensation and Liability Information System. The CERCLIS List is a compilation of known or suspected uncontrolled or abandoned hazardous waste sites. These sites have either been investigated or are currently under investigation by the EPA for the release or threatened release of hazardous substances. Once a site is placed in CERCLIS, it may be subjected to several levels of review and evaluation and ultimately placed on the National Priorities List.</td>
</tr>
<tr>
<td>CMS</td>
<td>Ohio Department of Transportation's Construction and Material Specifications</td>
</tr>
</tbody>
</table>

**Construction Lines**  Shown on a plan view that outline the lateral extent of the Limits work.
Corridor

a. For projects containing two or more corridors: an area approximately 600 meters (2,000 feet) wide within the project study area.
b. For single corridor projects an area approximately 160 meters (500 feet) wide within the project study area.

Cross-Section

A view produced by a vertical plane cutting through the roadway at right angles to the centerline showing the transverse profile of existing and proposed roadway elevation.

Cut

A term used to describe an excavation or the removal of earth.

DEC

District Environmental Coordinator.

EA

Environmental Assessment.

Easement

A right acquired by one party to use lands belonging to another party for a specified purpose.

EIS

Environmental Impact Statement.

ESA Screening

Environmental Site Assessment Screening. Typically the first step of environmental site assessment activities in determining the presence of hazardous substances within a project study area. This involves developing a list of suspect properties that warrant Phase I Environmental Site Assessment.

FHWA

Federal Highway Administration of the Department of Transportation. The office within the Department of Transportation in the U.S. Government which reviews, recommends, and approves the details concerning Federal participation on the State highway system.

Fill

The use of material to equalize or to raise topography to a certain elevation.

Feasible Alternatives

Alternative alignments within a corridor which are studied to select the preferred alternative.
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FONSI</td>
<td>Finding of No Significant Impact.</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographical Information Systems.</td>
</tr>
<tr>
<td>Ground Truth</td>
<td>Field verification of sites located within the project study area and identified on regulatory databases. This activity is generally conducted as part of the ESA Literature Search.</td>
</tr>
<tr>
<td>Hazardous</td>
<td>See 40 CFR Part 300, Sec. 300.5. Note that this is the general Substance definition under CERCLA.</td>
</tr>
<tr>
<td>Hazardous</td>
<td>See 40 CFR Part 261.3. Note that this is the formal definition Waste under RCRA.</td>
</tr>
<tr>
<td>HSWA</td>
<td>Hazardous and Solid Waste Amendments.</td>
</tr>
<tr>
<td>MOP</td>
<td>Ohio Department of Transportation's Construction Inspection Manual of Procedures</td>
</tr>
<tr>
<td>MSL</td>
<td>Ohio Master Sites List. This list tracks and prioritizes sites where hazardous wastes have been found or where there are any known, suspected, or likely release of such wastes from a facility.</td>
</tr>
<tr>
<td>MW</td>
<td>Monitoring Wells.</td>
</tr>
<tr>
<td>NEPA</td>
<td>National Environmental Policy Act. This act requires environmental impact considerations to be included in transportation project planning along with technical and economic concerns.</td>
</tr>
<tr>
<td>NPL</td>
<td>National Priorities List. The NPL, also known as the Superfund List, is an EPA listing of uncontrolled or abandoned hazardous waste sites.</td>
</tr>
<tr>
<td>NRCS</td>
<td>Natural Resources Conservation Service.</td>
</tr>
<tr>
<td>OAC</td>
<td>Ohio Administrative Code.</td>
</tr>
<tr>
<td>ODNR</td>
<td>Ohio Department of Natural Resources.</td>
</tr>
</tbody>
</table>
OES  Office of Environmental Services (within ODOT).

OEPA  Ohio Environmental Protection Agency.

OSHA  Occupational Safety and Health Administration.

OVA  Organic Vapor Analyzer.

Parcel  Piece of land or real estate owned by an individual or entity and bounded by property lines.

PCBs  Polychlorinated Byphenols. A class of chlorinated chemicals which were used in the electrical field as coolants and lubricants in transformers and capacitors.

PCS  Petroleum Contaminated Soils.

PDP  Project Development Process.

PRP  Potentially Responsible Party.

Phase I ESA  Phase I Environmental Site Assessment. Typically the second step of environmental site assessment activities in determining the presence of hazardous substances within a project study area. This involves gathering parcel-specific information to determine if Phase II Environmental Site Assessment is required.

Phase II ESA  Phase II Environmental Site Assessment. Typically the third step of environmental site assessment activities in determining the presence of hazardous substances within a project study area. This involves sampling and testing of soils and/or groundwater within the proposed and/or existing right-of-way.

PID  1.) Project Identification Number. The primary number used to identify an ODOT project. 2.) Photo Ionization Detector used in field screening for sample selection.
Plan View  The view produced by showing the highway from directly above looking down.

Plans  The construction contract drawings which show the location, character, and dimensions of the prescribed work, including layouts, profiles, cross-sections, and other details.

Preferred Alternative  A selection of one of the feasible alternatives to further develop and most likely to build.

Profile  The side view of the proposed pavement surface and shows all the proposed elevations along that Project Study Area between the logical termini which is determined on the basis of project purpose and need and scoped accordingly.

Project  The specific section of the highway together with all appurtenances and work to be performed thereon under the Contract.

QA/QC  Quality Assurance/Quality Control.

RCRA  Resource Conservation and Recovery Act of 1976. This Act was established to regulate the on-going manufacture, storage, use, treatment, transportation, and disposal of hazardous substances/wastes under programs administered by USEPA and State environmental agencies.

RCRIS  Resource Conservation and Recovery Information System. The RCRIS list identifies sites which use, generate or store materials which have been classified as hazardous.

ROW  Right-of-Way. A general term denoting land, property, or interest therein acquired for or devoted to transportation purposes.

SARA  Superfund Amendment and Re-authorization Act of 1986. This act was established to provide defenses to CERCLA.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site</td>
<td>Piece of land or real estate comprised of more than one (1) parcel and owned by a single individual or entity.</td>
</tr>
<tr>
<td>Solid Waste</td>
<td>See 40 CFR Part 261.2</td>
</tr>
<tr>
<td>SFMO</td>
<td>State Fire Marshal’s Office.</td>
</tr>
<tr>
<td>SSHSP</td>
<td>Site-Specific Health and Safety Plan (29 CFR 1910.120).</td>
</tr>
<tr>
<td>Stationing</td>
<td>The location of a point on a measured line using 100 foot increments as a base of reference.</td>
</tr>
<tr>
<td>SW</td>
<td>Solid Waste</td>
</tr>
<tr>
<td>SWF</td>
<td>Ohio Solid Waste Facility List. This list contains summary information pertaining to all permitted solid waste landfills operating within the State of Ohio.</td>
</tr>
<tr>
<td>TCLP</td>
<td>Toxic Characteristic Leaching Procedure (See 40 CFR 261, Appendix 11 – Method 1311).</td>
</tr>
<tr>
<td>TPH</td>
<td>Total Petroleum Hydrocarbons.</td>
</tr>
<tr>
<td>TSD</td>
<td>Transportation, Storage, and Disposal Facility.</td>
</tr>
<tr>
<td>TSCA</td>
<td>Toxic Substance Control Act.</td>
</tr>
<tr>
<td>USEPA</td>
<td>United Stated Environmental Protection Agency.</td>
</tr>
<tr>
<td>USGS</td>
<td>United States Geological Survey.</td>
</tr>
<tr>
<td>UST</td>
<td>Underground Storage Tank.</td>
</tr>
<tr>
<td>VAP</td>
<td>Voluntary Action Plan.</td>
</tr>
<tr>
<td>VOC</td>
<td>Volatile Organic Compound</td>
</tr>
</tbody>
</table>