ARIZONA DEPARTMENT OF TRANSPORTATION

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Hazardous Material Team Preliminary Initial Site Assessment Procedures

Arizona Department of Transportation
Environmental Planning
Hazardous Material Team

This document outlines the process steps that the Hazardous Material Team takes, that are necessary to address the Hazardous Material concerns during the Environmental Clearance (CE, EA, EIS) development process.

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THE PRELIMINARY INITIAL SITE ASSESSMENT (PISA)

1.0 **Introduction**

The Primary mission of the Arizona Department of Transportation is to plan, build, and operate a complex statewide transportation system. In completion of this mission, ADOT must be prepared to effectively manage hazardous material issues that arise in connection with these responsibilities.

Hazardous Material is a generic term for all wastes and contaminated material that may be encountered during ADOT projects. Hazardous Material is generally defined under the federal Resource and Recovery Act (RCRA), but can include unregulated hazardous waste, such as those containing petroleum hydrocarbons, asbestos, lead based paint, or others that could present a health and safety issue to project personnel or the general public.

The Environmental Planning, Hazardous Material team, is responsible for the assessment and reporting of known or suspected Hazardous Material, as it relates to ADOT properties of interest to be acquired for Right of Way purposes, currently owned by the agency, or the future disposal of no longer need portions of previously acquired properties.

The primary assessment tool for the discovery and assessment of potentially impacted areas of interest is the Preliminary Initial Site Assessment (PISA).

2.0 Hazardous Material Assessments

2.1 Purpose:

ADOT projects that entail property acquisition, excavation of subsurface soils, or other construction related activities must have an assessment performed to determine the potential liabilities, health and safety concerns, and other consequences related to the presence of Hazardous Material impacts. Failure to perform an adequate assessment could result in unnecessary risks to construction personnel, project delays, budget overruns, remediation costs, and damage to the department's credibility.

2.2 Overview

The assessment process described in this section defines the most basic of the major industry accepted practices: Initial Site Assessment (ADOT PISA), EPA: Environmental Site Assessment (ESA Phase I), Detailed Environmental Site Assessment (ESA Phase II), and Environmental Site Assessment Phase III.

The goal of the department's process is to efficiently assess the presence or absence of environmental contamination, and if present, to provide sufficient information regarding the nature and extent of the material and to aid the design team in minimizing the construction and liability impacts of that contamination.

2.3 Relationship to the Project Development Process

Hazardous Material assessments are a small part of the overall project development process used by ADOT ranging from small surface overlay projects to construction of major new transportation corridors.

Hazardous Material concerns can impact storm water feature placement, geo-tech excavation, ROW acquisition, and even alignment considerations.

The assessments should be timed to provide a level of information needed at each corresponding project design stage. Designers can use the assessment information to evaluate possible design modifications which would reduce liability and health & safety concerns by addressing the presence of Hazardous Material or minimizing the disturbance of it, in or around the project area of impact.

3.0 Preliminary Initial Site Assessment (PISA)

ADOT uses the preliminary initial site assessment (PISA) to evaluate property that may be affected by contamination. The PISA process follows similar research guidelines as an Initial Site Assessment (ISA) (ASTM1527-13 Phase I). The purpose of a PISA is to gather as much information about the possible presence of contamination within the proposed project limits. The project limits would include the existing or proposed right of way, including that stretching from surrounding or adjacent properties. The PISA is a non-intrusive assessment; (the information can be gathered without actually collecting soil samples to help determine the likelihood of encountering hazardous material contamination on the project). Information gathered from a preliminary initial site assessment could also be considered in alternative analysis and selection.

3.1The components of the PISA include:

- reviewing project design and right-of-way requirements
- reviewing existing and previous land use
- reviewing regulatory agency databases and files
- performing project site visits or field surveys
- determining the need for further investigation, considerations and/or coordination.

Professional judgment should be used to determine the appropriate level of investigation for each component of a PISA. The appropriate level of investigation for a PISA will depend upon the project's design and right-of-way requirements.

The PISA should be performed as early as possible in project development, preferably prior to schematic development. Because the duties are similar, the PISA can be incorporated into the site visit, field surveys and land use research required for other environmental studies in the NEPA process. If design and right-of-way requirements change, the entire PISA or some individual components may require re-evaluation to determine whether the findings are still valid. Any new information or changes to the project requirements should be examined to determine if further assessment, research or investigation for hazardous materials is needed. To be cost effective, components of the assessment and investigations may be performed in phases as the design requirements are finalized during project development.

Similar to the ASTM 1528-14 Transaction Screen questionnaire, a checklist or worksheet can be completed to document the findings of the PISA.

4.0 Project Requirements

Information about the general, approximate, or anticipated project design and right-of-way requirements should help when evaluating the chances of encountering hazardous material contamination. Design and right-of-way requirements may also be used to determine the appropriate level of inquiry for the PISA. The information can also be used to identify areas requiring additional research or consideration during the subsequent stages of project development. Priority can be assigned to the area(s) most likely to encounter hazardous material contamination.

Even though specific details may not be available during the early stages of project development, the following design and right-of-way requirements and information related to the limits of the entire project should be obtained and reviewed, if applicable:

- existing or proposed location of geotechnical borings or soil cores and associated drilling logs
- proposed location and depth of borings, columns, piers or drilled shafts
- locations and depths of excavations, such as vertical alignment or profile changes, cuts, trenches and/or storm sewers
- anticipated de-watering requirements and depth to groundwater level
- displacement, structure removal or structure modification requirements
- locations of proposed right-of-way acquisition and easement requirements
- locations and types of known encroachments
- locations, depths and types of proposed utility and pipeline adjustments
- timeframes and contracting decisions for any proposed utility adjustments (prior to construction, during construction)
- documentation and/or findings of any related environmental assessments, testing or studies previously performed

Generally, when additional right-of-way acquisition, easements, displacement, structure removal, structure modification, underground utility adjustments, pipeline adjustments, column, pier, drilled shafts and excavation are not required, the project should have a low potential for encountering hazardous material contamination during construction.

Although shallow, contaminated soil may require special considerations during typical grading practices, excavations are more likely to adversely impact the environment and human health and possibly delay construction. The following are examples of project requirements at the highest risk of encountering hazardous material contamination during construction:

- significant excavation or cuts greater than 1.5 feet (18 inches)
- vertical alignment changes
- underpasses
- trenching
- tunneling
- storm sewers
- pipeline and underground utility installation or adjustments
- confined spaces

- de-watering

Projects requiring excavation with confined spaces and/or limited means of entry may require investigation to identify any special considerations necessary to ensure worker health and safety during construction. It is especially important to determine the potential for encountering contamination on projects that require de-watering. Drainage or de-watering of contaminated groundwater can adversely impact human health and the environment, as well as off-site corrective action activities that may be underway, if not handled properly. Preliminary project requirements for de-watering should be determined as early as possible. If the project requires de-watering, then further research or investigation may be necessary to confirm whether the groundwater is contaminated.

Projects requiring the displacement of either commercial or industrial businesses, such as retail service stations with underground storage tanks, have a high potential for hazardous materials.

Projects requiring building or structure removal/modification may require asbestos or lead-based paint inspection surveys (sampling and analysis) to determine proper abatement, waste disposal and contractor safety considerations according to applicable regulations.

Existing and Previous Land Use Information: Review of existing and previous land use information helps to identify earlier uses or occupancies likely to have led to hazardous material contamination. The review of land use information should address not only potential sites within the proposed project limits (including sites within both the existing and proposed rights of way); they should also assess the potential for contamination migrating from adjacent or surrounding properties.

Concerns may exist from land uses that previously existed on the property. Incorporating ASTM standards, property uses should generally be identified from the present back to the first developed use or 1940, whichever is earlier. The year of 1940 reflects the increased levels of industrial development, chemical manufacturing and waste generation that occurred prior to and following World War II. Sources of contamination can exist from operations prior to 1940; therefore, research prior to 1940 may be necessary to reach a higher confidence level if the project requires significant excavation, de-watering or right-of-way acquisition.

In general, projects within or adjacent to undeveloped, agricultural cultivated fields, ranch, pasture and residential areas have a low potential for hazardous material contamination. Existing rights of way could have possible concerns not identified during earlier acquisition or corridor preservation. Many older roadway intersections may have abandoned gasoline stations and unregistered underground storage tanks. Previous land use of some existing rights of way may have also included previous chemical storage, manufacturing or industrial properties. A few examples of land uses that typically generate, treat, store or dispose of hazardous waste, hazardous substances, hazardous materials, petroleum products or solid waste include:

- automotive or engine salvage, repair and maintenance facilities
- manufacturing, industrial or processing facilities such as creosote plants, coal tar gas plants and electroplating facilities
- oil depots and refineries
- aboveground and underground petroleum storage tank facilities

- service industries such as oil and gas equipment service, dry-cleaning, laundry, photographic processing, printing and analytical laboratory operations
- rail or switching yards
- landfills, disposal and recycling facilities
- oil and gas exploration facilities such as wells, separation tanks and circulation pits
- military bases.

Visual evidence of previous land use may be difficult to identify from only site visits and field surveys. The readily available sources of land use information listed below should be reviewed for all projects:

- United States Geological Survey (USGS) 7.5 minute topographic maps: Sources of topographic maps include, USGS and online at www.topozone.com.
- Past and present aerial photographs: Sources of aerial photographs include, municipal/county planning offices, soil conservation field offices, and Council of Governments web sites.
- United States Department of Agriculture (USDA) Soil Conservation Surveys:
- Right-of-way maps and files: Sources include district right-of-way sections.
- ADOT Temporary Use of Right-of-Way Agreements: Sources of temporary use agreements include district maintenance sections.
- Affected property owner notifications from the ADOT district office, area office or maintenance sections, and/or district environmental coordinator.

Abbreviations and Acronyms

ACM	Asbestos Containing Material
AUL	Activity Use Limitations (DUER)
ACIDS	Arizona CERCLIS Information Data System
CERCLA	Comprehensive Environmental Response, Compensation, & Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation & Liability Information System
CESQG	Conditionally Exempt Small Quantity Generator
CORRACTS	Facilities subject to Corrective Action under RCRA
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning & Community Right to Know Act (SARA)
ERNS	Emergency Response Notification System
FID	Flame Ionization Detector
GPR	Ground Penetration Radar
HAZMAT	Any substance outside its proper safe container in sufficient amount to threaten Life, the environment, or property
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waster Operation and Emergency Response
IDLH	Immediate Danger to Life and Health
LQG	Large Quantity Generator
LUST	Leaking Underground Storage Tank
MSDS	Material Safety Data Sheet (Replaced by SDS)
NPL	National Priority List
NESHAP	National Emission Standards for Hazardous Air Pollutants
PCB	Polychlorinated Biphenyls
PID	Photoionization Detector
PPE	Personal Protection Equipment
RACM	Regulated Asbestos Containing Material
RCRA	Resource Conversation & Recovery Act
SARA	Superfund Amendments & Reauthorization Act of 1986
SDS	Safety Data Sheet
SPCC	Spill Prevention and Control & Countermeasures (Plan)
SPL	Superfund Program (ADEQ)
SQL	Small Quantity Generator
SWF	Solid Waste Facilities (Arizona)
TSCA	Toxic Substance Control Act
TSD	Treatment, Storage, or Disposal Facility (Hazardous Waste)
UST	Underground Storage Tank
40 CFR	US EPA
29 CFR	OSHA

The Environmental Radius Report (Database Search) - a portion of the PISA

The following sites are some of those that can be used to conduct records searches for the completion of a PISA for an ADOT project.

NETR: https://netronline.com/

ADEQ EMAPS: https://azdeq.gov/emaps

ADEQ MEGASEARCH: http://megasearch.azdeq.gov

EPA NEPASSIST: www.epa.gov/nepa/nepassist

ADWR: http://gisweb2.azwater.gov/WellReg

EPA - ECHO: https://echo.epa.gov/

EDR: http://edrnet.com/

ALL LANDS: http://www.allands.com/request.aspx

FEMA: http://msc.fema.gov

ADEQ DATABASES:

- UST: http://legacy.azdeq.gov/databases/ustsearch.html
- HMIL: http://legacy.azdeq.gov/databases/hwssearch.html
- LUST: http://legacy.azdeq.gov/databases/lustsearch.html
- DUER: http://legacy.azdeq.gov/databases/deursearch.html
- DRYWELL: http://legacy.azdeq.gov/databases/drywellsearch.html

GEOLOGY: http://data.azgs.az.gov/geologic-map-of-arizona/

The Preliminary Initial Site Assessment - PISA Completing the standard form

The PISA is a document used to conduct a risk assessment of various types of properties that may be used for roadway construction and maintenance projects.

When an ADOT project is proposed, as part of the Environmental Clearance Process, a PISA will be completed for each project, and will include the following information:

Project Number: RBA-600-2-607 **TRACS Number**: 051 MA 007 H2431 02R

Section I: Site Location Information:

ADOT Parcel Number: Can be located in Right of Way File Room

County Assessor Parcel Number: Can be located on line or from Right of Way Files (All assessors have web pages)

Route & Milepost or Address: From Project Data Sheet or various on line sites

Section - Township - Range: From County GIS, ADEQ, State Land, BLM, web sites

Latitude and Longitude: From County GIS, ADEQ, State Land, web sites, hand held GPS during site visit

Site Characteristics: Historic Land Use:

Can be located on-line at sites like County GIS, Google Earth Pro, Right of Way files. This data should be determined back to Native if possible. This means prior to any development of the project area. It may vary across longer projects.

Natural - Undisturbed by development

Agriculture - all types of farming, ranching, orchards, etc

Residential - typical housing dwellings

Commercial - large and small commercial activities

Industrial - could include machine shop - heavy manufacturing

Vehicle Maintenance - Automotive garages - service stations -government maintenance sites

Chemical Storage - light industry - landscaping industry

Underground Storage Tank (UST) System - Service Station - Farm land - Auto Dealership

Septic/Sewer System - County information sites (local or Web) - Right of Way Appraisal

Water Well or Dry Well - ADWR web site - ADEQ web site,- appraisal

Pesticide-Herbicide - Agricultural sites - Landscaping industry

Other: Spell out from information gathered

Site Characteristics: Current Land Use:

Can be located from sites as listed above for Historic Land Use, and from Site Visit, Video Log Review, interview with land manager. All of the same list of characteristics are included.

See attached PISA form.

Section II: Site Surface Conditions

Dimensions: Length and Width of project

Area: Sq Feet or Sq Meters or Acres

Topography: Flat, Hilly, Rolling Hills, Mountainous, etc. Can be determined from site visit, ADOT video log, Google Earth Street view, etc.

Geology: Can be determined from various Geology books, USGS web site, State Land web site,
http://data.azgs.az.gov/geologic-map-of-arizona/

Vegetation: Current-from site visit, current aerial photos. Native-from
https://koordinates.com/layer/1139-native-vegetation-of-arizona-1993/

Structures: From site visit, current aerial photos, ADOT photo log, Google Street view.

Utilities: From site visit. ADOT and other street view sites.

Section III: **Results of above data analysis**

No concerns of project: Based on all previous data, are there no REC's that require further investigation.
Concerns on Project: Complete Section IV if there are REC's noted on the project that require further investigation,

Section IV: **Based on results of Section III**

Observed: What was seen on project (REC) that would require additional assessment or investigation.
Suspected: Based on site visit, literature review, is additional assessment or investigation recommended.
Unusual Conditions: Were there issues with the site that were not readily identified by the site visit, data review, concerns by other team members that would require additional assessment or review. Concerns on adjacent sites

Section V: **Recommendation**

High Priority Phase I: Does all previous analysis require a more in-depth analysis that would be provided by the completion of a Phase I, to ASTM 1527-13 standard.
Medium Priority Phase I: Does all previous analysis provide the author with uncertainty of data conclusions but feels that a Phase I may or may not be needed to provide conclusive data.
Low Priority Phase I: Author feels some concern that additional information is needed by the completion of a Phase I, Environmental Site Assessment.
No additional survey required: Author feels that data collected and analyzed is sufficient to provide clearance for Hazardous Material for the project.

Section VI: **Comments**

Any additional comments that the author determines may be beneficial for final clearance or clarification of the document.

Section VII: The Hazardous Materials Records Check- a portion of the PISA documentation

Completing the Hazardous Material Records Check:

- Project No.: From PDS, project scoping document, NEPA planner (must match PISA form)
- TRACS No.: Retrieve data from same source as project number
- Project Name: Retrieve data from same source as project number
- Project Description: A narrative describing the overall project. Data can come from PDS, or other documents, such as Project Assessment, Scoping Document

Section I: Site Location Information

Project location: The legal description of the project area to include;

- Route & Milepost
- Address
- Section
- Township
- Range
- Latitude
- Longitude

Section II: Records Review

Describe all of the various databases that were accessed:

- EDR
- All Lands
- NETR
- ECHO
- EPA NEPAssist
- ADEQ eMap
- ADEQ Megasearch
- Others

Section III: Site Reconnaissance

Describe the results of Site Visit conducted for the completion of the PISA

- Date: When was the site visit conducted
- Who: list person(s) + qualifications if necessary who did the site visit
- Physical location: describe setting of location. (Near SR 202 within a predominately commercial and industrial area)

On site description: There are four dwelling units and one former service station in project area. What did you observe, who did you talk to, etc. Tell the story of the site.

Section IV: Comments and Recommendations

Describe the results of all the records that were reviewed for the completion of the documents.

- There were no environmental conditions of concern noted on the project.
- The potential to encounter Hazardous Material on the project is: LOW - MEDIUM - HIGH, etc.

Attachments:

Attachment A:	Preliminary Initial Site Assessment (PISA) form
Attachment B:	Hazardous Material Records Check Sample
Attachment C:	Environmental Radius Report
Attachment D:	Field Review form
Attachment E:	ASTM 1527-13 (Standard Practice – Site Assessment)
Attachment F:	ASTM 1528-14 (Limited Due Diligence – Transaction Screen)
Attachment G:	Photographic Log