

**NASA Environmental
Management Division**

Office of Strategic
Infrastructure

NASA Desk Guide

Environmental Due Diligence (EDD) for NASA Real Property Transactions

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ACRONYMS

| Acronym | Definition |
|----------------|--|
| AAI | All Appropriate Inquiries |
| ACBM | Asbestos-Containing Building Material |
| AST | Aboveground Storage Tank |
| ASTM | ASTM International, formerly known as American Society for Testing and Materials |
| BFPP | Bona Fide Prospective Purchaser |
| BFPT | Bona Fide Prospective Tenant |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CFR | Code of Federal Regulations |
| CREC | Controlled Recognized Environmental Condition |
| CWA | Clean Water Act |
| DOD | Department of Defense |
| EBS | Environmental Baseline Survey |
| ECOP | Environmental Condition of Property |
| EDD | Environmental Due Diligence |
| EMO | Environmental Management Office |
| ESA | Environmental Site Assessment |
| FRED | Facilities and Real Estate Division |
| FUDS | Formerly Used Defense Site |
| GSA | General Services Administration |
| HREC | Historical Recognized Environmental Condition |
| LBP | Lead-Based Paint |
| LUC | Land Use Controls |
| MOA | Memorandum of Agreement |
| MOU | Memorandum of Understanding |
| NEPA | National Environmental Policy Act of 1969 |
| NHPA | National Historic Preservation Act |
| OGC | Office of General Council |
| PCB | Polychlorinated Biphenyl |
| POC | Point of Contact |
| RAP | Remedial Action Plan |
| RCRA | Resource Conservation and Recovery Act |
| REC | Recognized Environmental Condition |
| RECO | Real Estate Contracting Officer |
| ROW | Right of Way |
| RPAO | Real Property Accountable Officer |
| RPMS | Real Property Management System |
| SAA | Space Act Agreement |
| SOW | Statement of Work |
| TSP | Transaction Screen Process |

| Acronym | Definition |
|----------------|---|
| TSQ | Transaction Screen Questionnaire |
| U.S.C. | United States Code |
| UST | Underground Storage Tank |
| USEPA | United States Environmental Protection Agency |

SECTION 1 – INTRODUCTION

1.1 Intended Users of this Desk Guide

Prior to a transfer of NASA real property, persons/entities involved in the transaction are required to perform an assessment to identify possible environmental risks or document existing environmental conditions. This assessment, better known as “Environmental Due Diligence” (EDD) aids in determining and identifying potential or existing environmental liabilities. This Desk Guide describes the EDD process that should be followed for all domestic NASA real property transactions. It is imperative that the EDD process be completed, with associated records retained on file, prior to executing a real property transaction.

This Desk Guide is intended to support the Facilities and Real Estate Division (FRED) Real Property Accountable Officer (RPAO) and Real Estate Contracting Officer (RECO), in meeting NASA EDD requirements. As further described in the Desk Guide, the Center Environmental Management Office (EMO) provides direct technical support to the responsible RPAO during completion of the EDD process. The EDD guidance described herein applies to the following domestic NASA real property transactions:

- Acquisition – In-Grant
- Acquisition - Transfer
- Disposition - Transfer
- Out-Grants

The level of EDD to properly investigate potential environmental concerns may vary depending on the transaction type and the intended NASA use (i.e., in-grant or out-grant); however, the process for determining the level remains the same for all transaction types. For example, acquisition of space in an existing office building would normally require a less intensive EDD inquiry than acquisition of a Department of Defense (DOD) Formerly Used Defense Site (FUDS). Each of these transaction types has the potential to involve a property that may have a documented history of environmental contamination, but it is far less likely that leasing office space would create a potential environmental liability than acquisition of a DOD FUDS property. This Desk Guide describes the various real property transaction types and NASA’s roles and responsibilities in the completion of the appropriate level of EDD which must be performed to properly characterize potential site contamination.

1.2 Objectives of Environmental Due Diligence (EDD) Process

The primary focus of any EDD assessment is to discover the potential for site contamination before undertaking a real property transaction. Under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 United States Code [U.S.C.] Sections 9601-9675) and many analogous state laws, owners/operators of real property generally are strictly liable for the costs to address onsite contamination, regardless of fault.

To limit NASA's potential environmental liability (when practicable), it is imperative that the EDD process (referenced in NPR 8800) be completed prior to the acquisition, lease, or disposal of real property. The EDD assessment will help NASA to understand whether there is known contamination at the property, and whether there is a risk of as-yet-undiscovered contamination at the property. This information should allow NASA to balance the potential future cleanup cost liability against the benefits of the property acquisition. (Note: completion of EDD may serve to also fulfill CERCLA's requirements for making All Appropriate Inquiries (AAI) which may allow for CERCLA safe harbor status under the U.S. Environmental Protection Agency's (USEPA's) Bona Fide Prospective Purchaser (BFPP)/Bona Fide Prospective Tenant (BFPT) policy. The RPAO should confer with Center Office of the General Council (OGC) if questions arise during the transaction regarding receipt of an USEPA issued BFPP/BFPT comfort letter.) The EDD process involves an investigation of known and potential site contamination at properties proposed for transfer (e.g., in-grant, out-grant, disposal under GSA authority). EDD for real property transactions may investigate:

- Known or potential soil, groundwater, surface water contamination at the property from current and historic uses.
- The potential for contamination to migrate to the property from offsite locations.
- The risk that hazardous soil vapors might intrude into onsite buildings from subsurface contamination (particularly when the risk arises from migrating contamination for which the purchaser/lessee may not be responsible).
- The presence of hazardous building materials, including but not limited to asbestos, lead-based paints (LBP), and polychlorinated biphenyls (PCBs), in onsite structures.
- Compliance with environmental requirements.
- Presence of wetlands, cultural resources, threatened and endangered species, and designated critical habitat.

Upon completion of the EDD process, NASA should have clearly identified the potential environmental contamination associated with the property.

Documentation demonstrating that contamination was or was not present prior to occupancy by a tenant or another entity is critical to establish an environmental baseline of the property which may be useful in evaluating changed site conditions during a tenant's lease term (or use permit in the case of a Federal agency occupancy). The environmental baseline will help resolve issues related to allocation of responsibility for environmental contamination and associated cleanup costs.

Indeed, courts have imposed liability on the owner of the property despite arguments that the owner had no responsibility or control over the disposal activity. Courts have also extended owner liability to include tenants that have control over the site.

SECTION 2 – NASA PROPERTY TRANSACTIONS

2.1 Overview of Real Property Transactions

Transaction Types

- **Acquisition:** Permanent and non-permanent transfer of rights in real property to NASA. Permanent transfer includes purchase, condemnation, or gift from a person or an external entity, and transfer from another federal agency. Record permanent acquisition as NASA-owned property in the Real Property Management System (RPMS). Non-permanent transfer includes lease, right of way (ROW), easement, permit, license, or another in-grant. Record non-permanent acquisition as in-grant, not as NASA-owned property.
 - **In-Grant:** Non-permanent transfer of real property rights to NASA by means of lease, right of way, easement, permit, license, or other agreement.
 - **Transfer:** NASA does not have direct authority to accept title to real property from another federal agency without authorization under public law (statute). Any transfer from another federal agency shall occur through the GSA. This occurs when the funding agency submits the real property as excess to GSA. Once the property is excessed to GSA, NASA can request to acquire the real property. FRED shall coordinate the transfer with GSA. Upon approval of the transfer, the assets will be recorded in RPMS based on the transfer documentation received from the transferring agency. Federal transfers shall be documented on NF1046 or DOD Form 1354.
- **Out-Grant:** Non-permanent transfer of NASA real property rights to others by means of lease (or any other form of acceptable legal instrument that recognizes NASA as the landlord and the lessee as the tenant); permit; easement; ROW; license; Space Act Agreement (SAA); and agreements such as memorandum of understanding (MOU), memorandum of agreement (MOA), and concessionaire agreement.
- **Disposition (Disposal):** Permanent removal of a real property asset from the responsibility of a federal entity through conveyance to another entity or destruction. Conveyance includes transfer of ownership or conversion to personal property, including transfer to another federal agency and transfer out of federal ownership. Destruction includes demolition, deconstruction, and natural or manmade events such as fire, earthquake, flood, or explosion.

NASA Organizations and Roles and Responsibilities

- **FRED:** Develop real property policy and guidance for Headquarters and Center real estate personal (i.e., RPAOs and RECOs) including completion of EDD for all real property transactions.
- **Center EMO:** Designate an EDD point of contact (POC).

- **Center RPAOs/RECOs:** Ensure EDD is completed for all real property transactions. This includes seeking support of the designated EDD POC to complete the EDD process. The RPAO/RECO will notify the EDD POC of all proposed real property transactions and start the EDD Review. The RPAO/RECO will ensure that the appropriate environmental survey/study is completed in a timely manner and is incorporated in the agreement and the transaction's administrative record.
- **EMO EDD POC:** Provide technical support to the Center RPAO/RECO to complete the EDD process. This includes completion of the EDD Review Form and if necessary, the Transaction Screening Questionnaire, or the Phase I Environmental Site Assessment (see Figure 3.1). The EDD POC shall review and determine the sufficiency of the final EDD document.

SECTION 3 – ENVIRONMENTAL DUE DILIGENCE (EDD) PROCESS OVERVIEW

3.1 Introduction

NASA uses the process depicted in **Figure 3-1** to evaluate the level of analysis required for real property actions (i.e., acquisitions (transfer of ownership to NASA, in-grants), GSA managed disposals, and out-grants). *Note: In the case of property disposals, the following additional steps may be required after the completion of the EDD process: Notify Congress of NASA’s intent to dispose the property, complete the GSA “Excess Real Property Due Diligence Checklist” (Appendix A), and submit completed checklist to GSA for approval.*

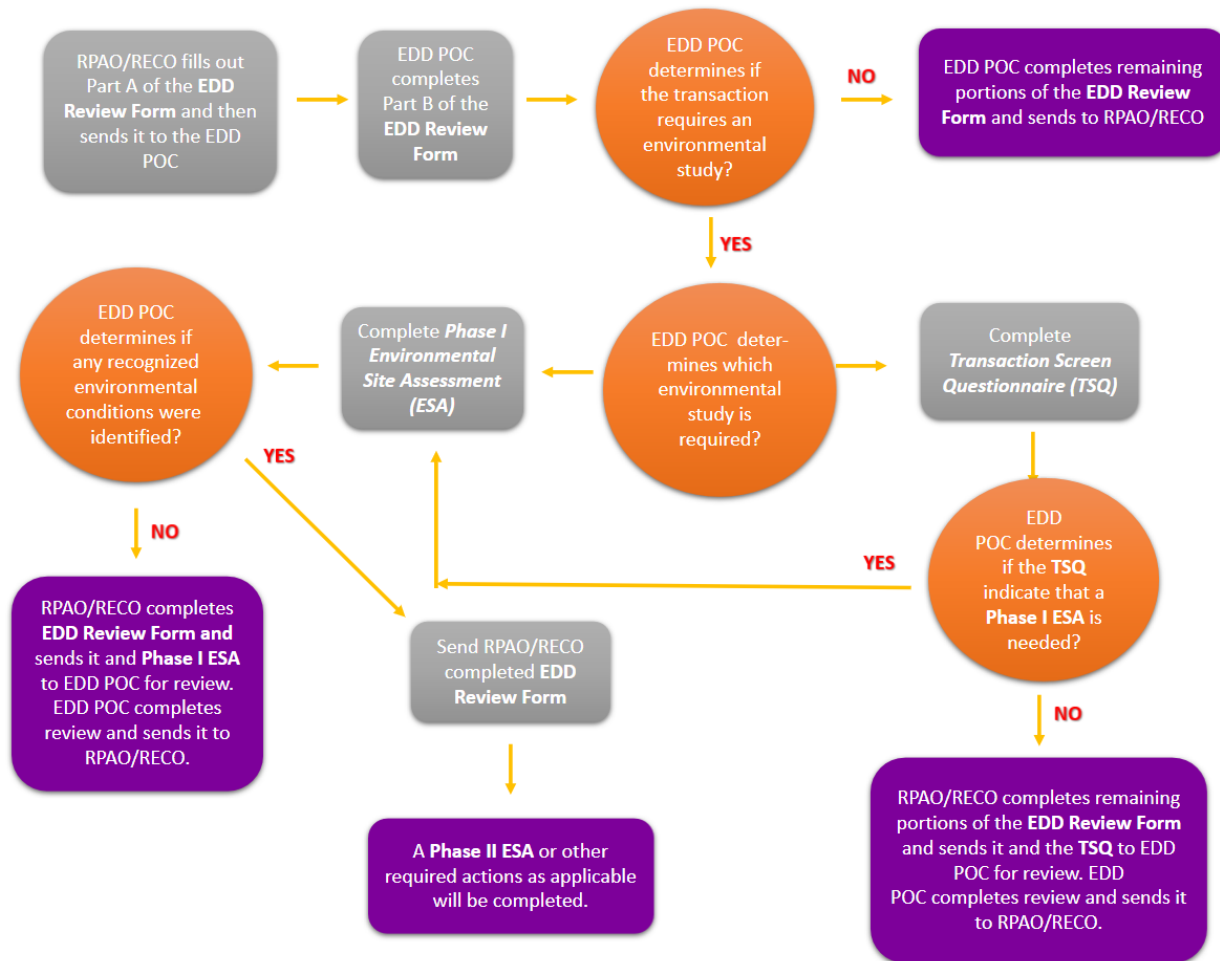


Figure 3-1. EDD Process Flowchart

Table 3-1 shows the EDD levels of analysis, including: 1) Pre-Screening, 2) Transaction Screen, 3) Phase I Environmental Site Assessment (ESA), and 4) Phase II and beyond (i.e., additional investigations, Phase III ESA). These levels of analysis are further described below.

1) Pre-Screening: Parts A and B of the EDD Review Form are used to initially evaluate available property information to determine the likelihood of contamination. Part C is used to document other relevant information about the property. The EDD Review Form is a NASA form (NF 1920) used by the Center RPAO/RECO which provides known property information to the Center EDD POC. Subsequent discussions between these parties are used for data gathering purposes. The EDD Review Form will be used to determine what additional analyses are required. *See **Section 4** for more information related to Pre-Screening.*

2) Transaction Screen: A Transaction Screen is appropriate when Pre-Screening cannot determine that the environmental condition of the property is suitable for transfer (see Part B of the EDD Review Form [**Appendix E**]). Examples of properties where Transaction Screens may be appropriate include undeveloped land located away from industrial development or commercial properties (e.g., office building) without any environmental concerns present (e.g., underground storage tanks [USTs] or storage of hazardous materials). Requirements for completing a Transaction Screen are included in ASTM International (ASTM) Standard, E1528, *Standard Practice for Limited EDD: Transaction Screen Process (TSP)*. *Note: ASTM International was formerly known as the American Society for Testing and Materials.*

The Transaction Screen is completed by asking questions contained within a Transaction Screen Questionnaire (TSQ) (**Appendix B**) of owners and occupants of the property; observing site conditions at the property with direction provided by the TSQ; and, to the extent reasonably ascertainable, conducting limited research regarding certain government records and certain standard historical sources. The questions asked of owners are the same questions as those asked of occupants. Upon completing the TSQ, if the likelihood of contamination cannot be determined or if there are potential environmental concerns at the property, then a Phase I ESA would be required. *Note: The TSP does not satisfy CERCLA's AAI requirements; consequently, purchasers/tenants who complete Transaction Screens do not qualify for Landowner Liability Protections based on the TSQ (e.g., bona fide prospective purchaser/tenant safe harbor) under CERCLA. In situations where a purchaser/tenant desires to receive such a safe harbor letter, a Phase I ESA may be required. See **Section 4** for more information related to Transaction Screens and the TSQ.*

3) Phase I ESA: If the EDD Review Form, TSQ, or other evidence indicates there is a potential for contamination being present onsite (e.g., current or historical industrial activities, presence of petroleum storage tanks, former use as a hazardous materials storage or disposal area), a Phase I ESA should be performed.

The intent of a Phase I ESA investigation is to assess if current or historical property uses have impacted the soil or groundwater beneath the property and could pose a threat to the environment and/or human health. The results of the investigation are included in a report that summarizes environmental concerns, known as recognized environmental conditions (RECs). *Note: The USEPA establishes policy on and enforces the requirements for AAI and CERCLA liability. The industry standard for conducting and reporting EDD is ASTM E1527, which was designed by ASTM specifically to meet AAI requirements.*

NASA implements ASTM E1527-21 (or most current version) when completing Phase I ESAs to meet all applicable EDD requirements. Phase I ESAs are discussed in more detail in Section 4.

4) Phase II ESA: If the Phase I ESA identifies RECs in connection with the subject property, an investigation may be performed under the Phase II ESA process. During this phase, samples will be taken of soil and/or groundwater at the site and analyzed to determine the nature and extent of the contamination. This level of analysis will use the most current edition of ASTM E1903.

If the Phase II investigation indicates that hazardous substances or petroleum products are present above regulatory levels or in concentrations that could affect human health or the environment, additional investigative and cleanup actions can be undertaken at the discretion of NASA. See **Section 5** for more information related to Phase II ESAs.

If the EDD Review Form indicates significant known contamination, the EDD POC can choose to skip the TSQ and Phase I analysis and proceed with the Phase II ESA.

Note: NASA will exercise independent judgment regarding performing any investigations under the Phase II or subsequent processes. NASA may also decide to halt the property transfer during the EDD process if the Phase I ESA shows a potential for onsite contamination (i.e., RECs) or for any other reason.

Table 3-1 summarizes the levels of analysis.

Table 3-1. Levels of Analysis

| Level of Analysis | Action | Consideration Factors | Process Driver |
|---|---|--|-----------------|
| Pre-Screening (Discussed in Section 4) | <ul style="list-style-type: none"> Complete EDD Review Form Determine if Transaction Screen or ESA will be completed | <ul style="list-style-type: none"> Likelihood of contamination based on current/historical uses Likelihood that human intrusion could result in hazardous substances or petroleum products being present | EDD Review Form |
| Transaction Screen Questionnaire (TSQ) (Discussed in Section 4) | <ul style="list-style-type: none"> Identify whether environmental concerns are present at the property Determine if property transfer can proceed or if Phase I ESA is required | <ul style="list-style-type: none"> Presence or absence of potential environmental concerns | ASTM E1528 |

| Level of Analysis | Action | Consideration Factors | Process Driver |
|---|---|--|--|
| Phase I ESA (Discussed in Section 4) | <ul style="list-style-type: none"> • Identify whether RECs are present at the property • Determine if property transfer can proceed or if Phase II ESA is required | <ul style="list-style-type: none"> • Presence or absence of known or suspected RECs on the property | ASTM E1527 |
| Phase II and Beyond (Discussed in Appendix H) | <ul style="list-style-type: none"> • Conduct intrusive soil and/or groundwater investigation to confirm presence of contamination • Determine extent of additional site characterization and/or cleanup | <ul style="list-style-type: none"> • Magnitude of contamination (e.g., contaminant concentrations and vertical and lateral extent of contamination) • Cost of cleanup • Future land use | ASTM E1903, and USEPA and state guidance (as applicable) |

3.2 Environmental Due Diligence (EDD) Assessments Used Previously or by other Federal Agencies

GSA directs non-DOD federal agencies to use the Phase I ESA. Additionally, NASA uses the Phase I ESA or TSQ to meet all applicable EDD requirements. NASA no longer uses the Environmental Condition of Property (ECOP) or Environmental Baseline Survey (EBS). *Note: EBSs are used by the DOD and prepared under a separate ASTM standard. GSA has advised that non-DOD agencies use ESAs.*

3.3 EDD Received from the In-Grant Landowner

The landowner will provide NASA with EDD documentation before the lease is executed. The RPAO/RECO, EDD POC, and Office of the General Counsel will determine if the EDD documentation received from the landowner is sufficient. If NASA determines that the documentation is not adequate, NASA will prepare additional documentation using the EDD process flow chart (Figure 3-1) as a guide. NASA will ensure appropriate EDD documentation is completed prior to the end of its lease term or as otherwise specified in the lease.

3.4 EDD Required from the Out-Grant Tenant

Before and after an out-grant property transaction, NASA will conduct EDD per the flow chart in Figure 3-1. The purpose of conducting EDD before and after is to establish an environmental site condition baseline and specify the probable source of any new contaminant releases into the environment. NASA prepares and pays for pre-occupancy

ESA (prior to lease execution) and Tenant prepares and pays for ESA prior to vacating the property (lease expiration or termination).

SECTION 4 – LEVELS OF ANALYSIS

This section summarizes requirements associated with the levels of analysis discussed in **Section 3**.

4.1 Overview of Pre-Screening Process

Purpose and Limitations: NASA uses the EDD Review Form to document known property information and to determine what additional analyses are required. The primary determination factor that would be evaluated during the Pre-Screening process would be property use, as environmental concerns are closely tied to current and historical uses. Properties used for heavy industrial operations would be expected to pose higher environmental concerns when compared to sites that have remained undeveloped throughout their history. Additionally, environmental concerns may not only be associated with the target property, but also with adjoining or nearby contaminated properties with a potential to pose a migration of hazardous constituents onto the target property.

The current and historical property uses would be evaluated using first-hand knowledge of the property, prior environmental documents, or other available records, such as historical aerial photographs. The simplified steps of the Pre-Screening process are shown in **Table 4-1**.

Table 4-1. Simplified Steps of the Pre-Screening Process

| | | |
|---|---|---|
| 1) Will the transaction require an environmental study? | If Yes , proceed to TSQ or Phase I ESA . | If No , send EDD REVIEW to RPAO/RECO . |
| 2) Were any recognized environmental conditions identified? | If Yes , proceed to Phase II ESA or other required action . | If No , send EDD REVIEW to EDD POC for approval and then to RPAO/RECO . |

Who May Conduct a Pre-Screen? Pre-Screening is completed in conjunction with the Center RPAO/RECO and the Center EDD POC.

4.2 Overview of the Transaction Screen Process (TSP)

Purpose and Limitations: Transaction Screens, documented in ASTM E1528, are a screening tool for those who wish to conduct limited EDD and are usually recommended for low-risk property types with available historical information. A Transaction Screen requires a limited scope of work, which includes a site visit, review of environmental databases, and review of limited historical sources.

A key part of the TSP consists of asking questions contained within the TSQ (included as **Appendix B**) of owners and occupants of the property; observing site conditions at the

property with direction provided by the TSQ; and, to the extent reasonably ascertainable, conducting limited research regarding certain government records and certain standard historical sources. The questions asked of owners are the same questions as those asked of occupants. Historical use must be determined back to 1940 or as far back as records are available. The earliest known development of a property is determined by using at least one of the following sources: Sanborn maps, city directories, or aerial photographs. As previously stated, the TSP does not satisfy AAI requirements; consequently, users who complete Transaction Screens do not qualify for Landowner Liability Protections under CERCLA.

To complete the TSP, NASA uses the TSQ (included as **Appendix C**).

Who May Conduct and Approve a Transaction Screen?

At NASA, the TSQ, is completed by the Center RPAO/RECO, with technical assistance provided by the Center EDD POC. The Center RPAO/RECO completes questions 1 – 21 of the TSQ survey in Appendix B by visually observing the property. Then, he or she should answer all questions to the best of his or her knowledge based on these observations. The Center RPAO/RECO completes the remaining part of the survey with a review of all relevant, available NASA records of the property, including the official real property file as well as relevant files and records maintained at the installation and with area personnel.

Decision Based on Results of Transaction Screen: At NASA, the Center EDD POC reviews the TSQ after it has been completed by the Center RPAO/RECO to determine, based on the information and answers supplied, if additional action or investigation is required before the transaction is executed. The Center EDD POC advises the RPAO/RECO if a Phase I or Phase II ESA should be prepared to assess if any recognized potential environmental concerns are present on the property.

4.3 Overview of Phase I Environmental Site Assessments (ESAs)

Purpose and Limitations: The purpose of a Phase I ESA is to identify RECs at a subject property, defined in E1527 as “the presence or likely presence of any hazardous substances or petroleum products in, on or at a property (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.” De minimis conditions are not categorized as RECs. *Note: De minimis conditions are defined in ASTM E1527 as a “condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.”*

A Phase I ESA does not represent an exhaustive environmental investigation of the site. Nevertheless, since 2005, the USEPA has accepted the procedures set forth in ASTM E1527 as constituting AAI for the purposes of satisfying one of the threshold requirements for establishing one or more of CERCLA’s Landowner Liability Protections.

Who May Conduct a Phase I ESA? A Phase I ESA must be completed by an environmental professional as defined in 40 Code of Federal Regulations (CFR) §312.10(b),

A person who does not qualify as an environmental professional under the foregoing definition may assist in the conduct of AAI if such person is under the supervision or responsible charge of a person meeting the definition of an environmental professional provided above when conducting such activities.

At NASA, the Phase I ESA is completed by a qualified environmental consultant. It is important that the consultant's firm understands and has applied the ASTM standards described above. The firm should also have individuals who meet the definition of "environmental professionals" and who have the necessary experience and background to perform Phase I ESAs.

Use of a Consultant: When soliciting a contractor to perform EDD, the statement of work (SOW) should include the environmental considerations specified in ASTM-1527, as well as additional non-scope considerations. The list of additional non-scope considerations evaluated in a NASA Phase I ESA is in **Appendix C** of this guide. The Center RPAO/RECO should work with the Center EDD POC to determine the appropriate additional non-scope considerations to be added to the SOW. This will depend on the type of real property transaction (e.g., on or off-Center, in the United States or abroad), and site-specific information (e.g., does the site include facilities, is there available environmental information or data on the site).

Elements of a Phase I ESA: As discussed earlier, the focus of the Phase I ESA is to identify what ASTM E1527 defines as RECs or the potential for contamination at the site being evaluated. Some of the areas of investigation in a Phase I ESA include:

- A thorough review of historical records of the property, including historical aerial photographs; fire insurance maps (i.e., maps, usually older, of most of the United States showing what properties contained in the past, such as buildings, fuel tanks); and historical topographic mapping.
- A thorough review of readily available federal, state, and tribal environmental records of the property, such as for spills, releases to the environment, fuel tank registrations, hazardous material manifests, and environmental records.
- Interviews with current and past property occupants might be obtainable, as well as others who might be able to provide insight into past or present uses of the property.
- A thorough site inspection, including all building interiors as well as all exterior property and grounds, to identify elements posing an environmental concern.

Typical environmental considerations evaluated in an ASTM Phase I ESA include the following:

- Hazardous Materials and Petroleum Products
- Hazardous and Petroleum Wastes

- Aboveground Storage Tanks (ASTs)
- Underground Storage Tanks (USTs)
- Unidentified Substance Containers
- Stressed Vegetation
- Solid Waste
- Presence of Wells
- Method of Heating and/or Cooling
- Wastewater
- Stormwater and Wastewater Management
- Surface Impoundments or Holding Ponds
- Drains and Sumps
- Stained, Discolored, or Disturbed Surfaces
- PCBs
- Vapor Migration

A sample table of contents, listing ASTM-required elements in a Phase I ESA is presented as **Appendix D**.

In addition to RECs, the Phase I ESA may also identify conditions defined under the ASTM standards to be historical recognized environmental conditions (HRECs) or controlled recognized environmental conditions (CRECs). ASTM defines a HREC as:

[A] past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (e.g., property use restrictions, activity and use limitations, institutional controls, or engineering controls).

In other words, an HREC is a release that has been addressed in accordance with applicable requirements to allow the property to be used for any purpose.

A CREC is defined as a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (e.g., as evidenced by the issuance of a no further action letter or equivalent or meeting risk-based criteria established by a regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (e.g., property use restrictions, activity and use limitations, institutional controls, or engineering controls). What distinguishes a CREC from a REC and a HREC is that a CREC's release has been addressed to meet regulatory standards but its contaminants have been allowed to remain in place subject to a use limitation. For example, a regulator may grant regulatory closure even when elevated contaminants remain in soil or groundwater, provided that the property owner only uses the site for

industrial purposes. Such a situation would be identified as a CREC under the ASTM standard.

In practice, environmental professionals often differ on what conditions constitute a REC, HREC, or CREC. For pure due diligence purposes, whether a condition is classified as a REC of any type typically will not matter because there is no legal significance to such terms; however, potential purchasers often will give greater scrutiny to conditions identified as RECs in Phase I ESAs, as such conditions, by definition, have not been addressed to the satisfaction of the relevant governmental entities. Therefore, when working with environmental professionals preparing Phase I ESAs, care should be given to ensure that any RECs identified in the report clearly fall within the ASTM definition and that, where RECs are identified, the environmental consultant provides sufficient detail to understand the issue in context.

4.4 Additional Elements in a NASA Phase I Environmental Site Assessment (ESA)

In addition to assessing risks arising from contamination and identifying RECs, EDD may also involve assessment of environmental risks associated with other considerations. Although these considerations generally fall outside the scope of a typical ASTM E1527 Phase I ESA (non-scope considerations), they comprise part of a NASA Phase I ESA. Completion of a Phase I ESA does not satisfy Agency requirements to comply with other statutory obligations (e.g., National Environmental Policy Act [NEPA], National Historic Preservation Act [NHPA], Endangered Species Act, etc.). Including these considerations in a Phase I ESA provides NASA with a more complete picture of environmental conditions at the property, as well as with knowledge of potentially sensitive receptors (e.g., endangered species, cultural resources, wetlands) that may be affected by the proposed transaction. These additional considerations include the following:

- Cultural and Historic Resources
- Threatened and Endangered Species
- Wetlands
- Asbestos-Containing Building Materials (ACBM)
- LBP
- Lead in Drinking Water
- Mold/Water Intrusion
- Radon
- Electric and Magnetic Fields
- Urea Formaldehyde
- Regulatory Compliance

Additional information related to these considerations is presented in **Appendix G**.

How Long Is a Phase I ESA Valid? ASTM E1527 states that a Phase I ESA completed less than 180 days prior to the date of acquisition of the subject property is presumed to be valid. Between 180 days and one year, the Phase I ESA needs a comprehensive update to be valid. This includes updating interviews with owners, operators, and occupants; searches for recorded environmental cleanup liens; reviews of federal, tribal, state, and local government records; visual inspections of the property and of adjoining properties; and the declaration by the environmental professional responsible for the assessment or update. Beyond one year, the Phase I ESA is no longer presumed to be valid and must be entirely recompleted.

Decision Based on Results of Phase I ESA: If no RECs are found, EDD ends with the Phase I ESA, and the real property transaction may proceed. Should any RECs be identified, the next step is to investigate the RECs by conducting a Phase II ESA. This assessment involves the limited testing of soil and/or groundwater in the areas of concern to determine if contamination is present and posing an environmental health risk. If the contamination tested falls within acceptable state requirements, no further due diligence is required. Should the contamination tested be above state-acceptable levels, the next steps in the due diligence process comprise adequately characterizing the contamination and potentially removing any hazardous materials and/or remediating the site.

Appendix A: GSA Excess Real Property Due Diligence Checklist



EXCESS REAL PROPERTY DUE DILIGENCE CHECKLIST

For Federal Landholding Agency Customers

Version: June 2019

To assist in reporting real property excess for disposal in accordance with the Federal Management Regulations - 41 CFR 102-75.115 et seq.

The U.S. General Services Administration (GSA) requires the information in this Due Diligence Checklist with every Report of Excess.

This checklist has been developed to address the specific requirements that should be included in a title report identified at 41 CFR 102-75.125 and should accompany the following forms:

- [Standard Form \(SF\) 118, Report of Excess Real Property;](#)
- [SF118A, Buildings Structures, Utilities, and Miscellaneous Facilities, Schedule A;](#)
- [SF118B, Land, Schedule B; and](#)
- [SF118C, Related Personal Property, Schedule C.](#)

Forms and GSA's Report of Excess Portal are available at <http://propertydisposal.gsa.gov/FAA>. The Report of Excess Portal allows you to complete and submit a Report of Excess, including the due diligence checklist and required forms, electronically.

Instructions

- Check applicable items and provide the required documentation. Attach the completed checklist to the SF 118, Report of Excess Real Property, and submit to the appropriate GSA office identified at the end of this checklist.
- Should there be an appraisal report available (any age), please furnish a copy with the report of excess.
- The FMR requires that the report on title be prepared and signed by a qualified employee of the reporting agency; this would be a realty specialist, working in conjunction with an attorney or agency counsel.

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EXCESS REAL PROPERTY DUE DILIGENCE CHECKLIST

1. Checklist Preparation:

GSA recommends the input of specific subject matter experts in the preparation of this due diligence checklist. Please check which specialist(s) participated in the completion of this checklist. This due diligence checklist was prepared in consultation with the following subject matter experts from the reporting landholding agency:

- Property Manager/Facility Manager
- Historic Preservation Officer
- Environmental Specialist
- Legal Counsel
- Other:

2. The Property is Locally Known As:

County of State of ZIP

Real Property Unique Identifier (if known):

Other data reporting identifier (FRPP, FAST Act, etc.), if known:

The legal description for the excess area is as follows:

Provide metes and bounds, township and range, or block and lot description as applicable below or on separate page. Attach a legible drawing/assessor's map with the excess area outlined. If the property is described by metes and bounds, the courses and distances should be shown on the drawing. This drawing should also show the location of any out granted areas (e.g., roadway easements).

Provide copies of available maps/plats depicting buildings, improvements, utility lines, sidewalks, etc.

Personal Property

Is there Personal Property located on/in the property that requires disposal separate and apart from disposal of the excess real property? Yes No

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If yes, has the reporting landholding agency's Personal Property coordinator taken inventory of the property to be disposed of? Yes No

3. How Government Acquired Title:

Title was acquired by deed. Provide a copy of the recorded document and any other title documentation acquired at time of acquisition by Government.

Title was acquired by condemnation. Provide a copy of the recorded Declaration of Taking and any pertinent title documentation acquired at the time of taking.

Property was set-aside for public purposes. Provide a copy of the Executive Order, legislation or other pertinent act.

Land was withdrawn from the public domain (see 43 C.F.R 2374.) Provide a copy of reporting landholding agency's Intent to Relinquish, the Bureau of Land Management's (BLM) Revocation of Withdrawal, and BLM's letter that the land is not suitable for return to the public domain and should be reported as excess. Include BLM determination whether the minerals will also be reported excess and if any other Federal agency or other party claims any jurisdiction (use) over the withdrawn land.

Property was acquired by Federal transfer. Attach a letter of transfer; document transferring custody and accountability and original acquisition documents.

Other. If the property was acquired by other than the above (including leasehold or license), provide an explanation and pertinent documentation.

Describe here or name attachment:

4. Exceptions to Title Acquired: *(applies to excess area only)*

There are none. There are exceptions to title acquired.

State all exceptions, reservations, conditions, and restrictions and attach legible copies of all such easements, permits, licenses, and encumbrances. The areas should be reflected on the drawing. Include any documentation addressing clouds on title, legal opinions, reversionary clauses, and reservations of minerals or water rights.

Describe here or name attachment:

5. Actions That Occurred After Acquisition by the Government That Have or May Have Affected Title:

There were no actions occurring after acquisition of title by the Government that affect

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right, title or interest in the excess property.

The following actions occurred which may have affected the Government's title interest in the property. List all easements, permits, licenses or other encumbrances granted and provide copies of the documents. Show applicable areas on drawing. If applicable, identify on a map, areas where surrounding land development and/or land use has encroached or appears to have encroached upon the Government's use or ownership of the property interest being excessed.

Provide copies of any existing easements, leases, permits or licenses to other parties, which are being reported with the property.

Provide any easements or reservations the reporting agency is creating or retaining (if not recorded) over the excess area - including legal descriptions, if applicable – for rights such as continued access and/or utilities; land use controls for environmental protections and land use restrictions, etc.

Describe here or name attachment:

6. Jurisdiction:

Civil and criminal jurisdiction over the excess area is:

Exclusive Proprietary Partial Concurrent

Contact your agency legal counsel or the local GSA real property utilization and disposal office for assistance, if needed.

7. Screening of Property:

This property has been screened against the known needs of the reporting landholding agency (Departmental level) and has been determined excess.

For Department of Defense properties only:

This property has been screened against the known needs of the Department of Defense.

The provisions of 10 U.S.C. 2662 (Title 10) have been met.

The reported property is not subject to the provisions of 10 U.S.C. 2662 (Title 10).

8. Protection and Maintenance (P&M):

Attach a breakdown of the planned or current P&M costs of grounds maintenance, fire

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protection, and security for the excess property during disposal.

9. Continued Federal Occupancy:

Continued occupancy of the property is required by the reporting landholding agency after the date the property is reported excess.

Yes / No

If Yes, in the event that GSA determines that the property will be assigned for conveyance under the McKinney-Vento Homeless Assistance Act, will the property be vacant within 24 months?

Yes / No

NOTE: Certification of capacity to vacate within 24 months of the Report of Excess is required if GSA determines that a McKinney-Vento Homeless Assistance Act conveyance will occur. Properties that clear the McKinney-Vento process may remain occupied by the reporting landholding agency for longer than 24 months, subject to a lease agreement effective on the date of conveyance by the Government.

If Yes, the reporting landholding agency is required to provide the lease terms necessary to secure such continued federal occupancy included with any Report of Excess. Are these terms of lease available?

Yes / No

10. Homeless Suitability:

NOTE: GSA will prepare and submit, as applicable, a checklist to HUD as a part of the disposal process, pursuant to statutory requirements. Please complete the information below to indicate if the reporting landholding agency previously submitted a checklist to HUD under the reporting landholding agency's protocol. This is not a requirement to submit the Report of Excess to GSA.

A homeless checklist has been sent to the Department of Housing and Urban Development (HUD) for suitability determination.

Yes / No

If yes, please indicate whether the property was determined:

suitable / **unsuitable** for homeless use.
A copy of HUD's determination is attached.

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11. Proximity to Airport Runway or Military Airfield Clear Zone:

- The property is located within an airport runway clear zone or military airfield clear zone. Provide the name of the airport or military airfield and location(s).
- The property is not located within an airport runway clear zone or military airfield clear zone.
- Unknown

12. Public Body Interest:

- There has been interest from public bodies in acquiring all or a portion of the excess property. List public body interest:
- There has not been interest from public bodies in acquiring all or a portion of the excess property.

Please also include information regarding Congressional and/or other community interests in the disposal or future reuse of property.

13. Cost Savings:

Cost savings includes the elimination or reduction of owned and otherwise managed annual operating and maintenance costs, which consists of the following: recurring maintenance and repair costs; utilities (includes plant operation and purchase of energy); cleaning and/or janitorial costs (includes pest control, refuse collection, and disposal to include recycling operations); roads/grounds expenses (includes grounds maintenance, landscaping, and snow and ice removal from roads, piers, and airfields).

Estimated annual operating costs \$
If available, describe the major components of that estimate:

NOTE: *The reporting landholding agency may refer to its previous year's Federal Real Property Profile (FRPP) submission.*

14. Cost Avoidance:

Cost avoidance includes the elimination of future expected costs for capital investment repair needs, which is the amount necessary to ensure that a constructed asset is restored to a condition substantially equivalent to the originally intended and designed capacity, efficiency, or capability. Capital repair needs are larger expenditures in property operations that address major repairs or replacements; i.e. elevator, HVAC, electrical, structural/roof, plumbing, and fire and life safety.

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Estimate your deferred cost: \$
If available, describe the major components of that estimate:

NOTE: The reporting landholding agency may refer to its previous year's FRPP submission. If the subject property is unimproved, "N/A" may be stated as appropriate.

15. Assessor's Parcel Number or Property Tax Account Number(s):

Yes, the local jurisdiction has assigned a tax number for the property. The tax number for the property is: # _____

If Yes, provide the local jurisdiction's assessed value for the subject property: \$ _____

No, the local jurisdiction has not assigned a tax number for the property.

Unknown

16. National Park or Indian Reservation:

The property is not located within the boundaries of a National Park or Indian Reservation.

The property is within a National Park. Known as:

The property is located within the boundaries of a Federally-recognized Indian Reservation. The name of the reservation is:

Provide evidence of tribe's Federal recognition and map of the Reservation boundaries.

17. National Forest or Wildlife Refuge:

The property is not within or adjacent to the boundaries of a National Forest or Wildlife Refuge.

The property is within or adjacent to the boundaries of a National Forest or Wildlife Refuge known as:

Provide copies of maps and laws establishing National Parks or Wildlife Refuges for excess properties located within or adjacent to boundaries of such designated areas.

18. NEPA Compliance:

Yes, the reporting landholding agency has complied with the National Environmental Policy Act (NEPA).

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No, If not currently in compliance, indicate when the reporting landholding agency will be in compliance:

NOTE: *The NEPA Federal action for the reporting agency is the reporting of the property excess to GSA and not the disposal of the property.*

19. Historic, Archeological and Cultural Resources:

Historic, Archeological and Cultural Resources located on the Subject Property:

The property and related personal property or fixtures has no known historic, architectural, archeological or cultural significance and is not listed, eligible for listing, or in proximity to any property that is listed on the National Register of Historic Places.

This would include sacred or cultural items identified pursuant to the American Graves Protection and Repatriation Act (25 U.S.C. 3003(d)) and Executive Order 13007 Indian Sacred Sites.

No effort by the public to have this property listed has come to the attention of the reporting landholding agency.

This property and related personal property or fixtures has historic, architectural, archeological or cultural significance and is listed, eligible for listing, or in proximity to a property listed on the National Register of Historic Places.

If the property is historic or has historic fixtures or related personal property, etc., provide specifics. If applicable, provide copies of the nomination form, eligibility determination, archeological surveys, any memorandum of agreement, listing in the Federal Register, and correspondence from the Advisory Council on Historic Preservation, the State Historic Preservation Officer, historic societies or tribal representatives. Provide any information available regarding any effort by the public to have the property so listed.

Describe here or list attachment(s)

Fine Arts located on the Subject Property:

The property being reported excess does not contain historic and/ or non-historic fine arts (e.g., murals, paintings, sculptures, and decorative architectural features)

The property being reported excess does contain historic and/ or non-historic fine arts (e.g., murals, paintings, sculptures, and decorative architectural features)

NOTE: *If the property contains fine arts, please provide a complete listing of the artwork and its location.*

Describe here or list attachment(s):

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Historic, Archeological and Cultural Resources within Proximity of the Subject Property:

The property is located within, or adjacent to, a designated Historic District listed on the National Register of Historic Places:

- No
- Unknown
- Yes. If yes, please describe.

The property is located within proximity of other significant archaeological, cultural or historic resource(s):

- No
- Unknown
- Yes. If yes, please describe.

NOTE: Section 110 of the National Historic Preservation Act requires Federal landholding agencies to preserve and document historic and cultural resources. This includes the responsibility for determining whether resources are eligible for the National Register of Historic Places. When property is reported excess to GSA, Section 106 Consultation for the disposal undertaking is the responsibility of GSA and not the reporting landholding agency.

GSA recommends the participation of the reporting landholding agency's designated preservation expert when completing all questions above on historic, archaeological and cultural resources.

20. Endangered Species and Biological Resources:

This property contains Federal or State endangered, threatened or candidate species and/or Federally-designated or candidate critical habitat.

- Federal State No Unknown

Provide information, studies, assessments, which characterize any known endangered species (plants and/or animals), which reside (and/or migrate) on the property. Indicate results of (if) any consultations with the US Fish and Wildlife Service (FWS). List FWS personnel contacted.

Describe here or list attachment(s):

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21. Floodplains:

- This property is not located in an identified floodplain and is not subject to flood hazards or flooding. This statement is based on a search of reporting landholding agency records and/or consultation with the Federal Emergency Management Agency (FEMA).
- This property is located in a floodway.
- This property is located in a 100-year floodplain.
- This property is located in a 500-year floodplain.

Provide detailed information about any known flood hazards and a list of citations for all flood-related restrictions on land use under Federal, state, and local regulations as required in Executive Order 11988.

22. Wetlands and Vernal Pools:

Wetlands:

This property is located in an identified wetland. This statement is based on a search of reporting landholding agency records and/or consultation with the Army Corps of Engineers and/or the National Wetland Inventory.

- Yes No Unknown

Provide detailed information about any known wetlands, including any existing delineations and a listing of citations to relevant requirements under applicable Federal, state, or local regulations.

Vernal Pools:

Vernal Pools are "naturally occurring, temporary to semi-permanent pools occurring in shallow depressions in forested landscapes. Vernal pools provide the primary breeding habitat for wood frogs, blue-spotted and spotted salamanders, and fairy shrimp and provide habitat for other wildlife including several endangered and threatened species." Source: University of Maine: *Of Pools and Peoples* (<http://www.vernalpools.me/>)

There are vernal pools known to exist on the property.

- Yes No Unknown

Provide available information about any known vernal pools on the property.

23. Wild and Scenic River:

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The property is located adjacent to a Wild and Scenic River.

Yes No Unknown

If the property is located adjacent to a Wild and Scenic River, provide documentation placing the river in the Wild and Scenic River category.

24. Coastal Zone Management:

The property is in a coastal zone or affected by a coastal zone management plan.

Yes No Unknown

Include all available information.

25. Coastal Barriers Resource Act (CBRA):

The property or a portion of the property is located in an Otherwise Protected Area or within the Coastal Barriers Resource System as defined by the U.S. Fish and Wildlife Service <https://fws.gov/CBRA/>

Yes No Unknown

If yes, include all available information.

26. Hazardous Substance Activity Certification:

Hazardous Substance Activity includes: (1) the known release of hazardous substances in quantities equal to or greater than the reportable quantity found in 40 CFR 302.4; (2) the disposal of a hazardous substance at the subject facility; or (3) the storage for one year or more of a hazardous substance in quantities of 1000 kilograms or more, or the reportable quantity found in 40 CFR 302.4, whichever is greater. Hazardous substance activity includes storage in quantities greater than or equal to one kilogram if the substances are listed under 40 CFR 261.30 as acutely hazardous substances.

Must check either statement (A) or (B) below:

- A. The reporting agency has determined, based upon a complete search of agency files, that there is no evidence to indicate that hazardous substance activity took place on the property during or prior to federal ownership. Therefore, all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken prior to the report of excess.
- B. Hazardous substance activity occurred on the property. Based upon a

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complete search of agency files, the attached documents provide the following information:

1. the type and quantity in kilograms and pounds;
2. the dates that such storage, release or disposal took place;
(and the following information if applicable)
3. the Chemical Abstracts Services Registry Number (CASRN);
4. the regulatory synonym; and
5. the RCRA hazardous waste number (40 CFR 261.30).

If (B) was checked above, you must check either (C) or (D) below:

C. All remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken prior to the report of excess. Provide copies of all reports on the cleanup.⁷ **(Please note: this requirement is met if EPA has concurred in writing that an installed remedial design is “operating properly and successfully.” Please provide a copy of EPA’s concurrence.)**

If (C) will be satisfied through the use of a land use control (either an engineering control or an institutional control), please describe:

(C) above can be checked if GSA’s inclusion of a specific institutional control in the conveyance documents will satisfy the reporting landholding agency’s assertion that all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken. Please attach any proposed language for inclusion in the conveyance documents. Please also attach copies of concurrence, if any, from the applicable regulatory agency on the use of a land use control as part or all of the remedy.

D. Remedial action has not yet been taken or completed, but remediation will be completed by _____ (date). Remedial action has not been completed because _____ . Attach additional pages if necessary to describe why remedial action has not yet occurred.

National Priorities List:

The property or a portion thereof is / is not proposed for or listed on the National Priorities List of Superfund sites.

Please provide copies of all environmental reports, correspondence with regulators and other documents related to the environmental condition of the property. If the reporting

⁷ Please note that reporting landholding agencies are obligated to return to the site and complete any additional remedial action found to be necessary by the applicable regulatory authority with regard to hazardous substance activity that took place on the property prior to the transfer.

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landholding agency conducts environmental investigations as part of the excessing process, GSA requests use of the ASTM standards for Phase I and Phase II environmental site assessments. If applicable, advise if the property is contemplated for conveyance with the Section 120(h)(3)(C) Early Transfer provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which allows for deferral of the covenant until after transfer.

27. Vapor Intrusion:

Vapor intrusion refers to the migration of hazardous vapors from a subsurface vapor source, such as contaminated soil or groundwater, into a structure. Volatile chemicals may include but are not limited to:

- chlorinated solvents such as perchlorethylene (PCE), trichloroethylene (TCE), vinyl chloride (VC), trichloroethane (TCA) and carbon tetrachloride;
- non-chlorinated substances such as benzene, toluene, ethylbenzene and xylene (BTEX), all four of which are frequently found as part of a number of petroleum products;
- semi-volatile organic compounds (SVOCs), such as anthracene, pyrene and naphthalene;
- inorganic substances, such as elemental mercury, radon, and hydrogen sulfide;
- petroleum products such as oil, gasoline, diesel fuel; and
- certain pesticides.

For the complete list, see EPA's website at <https://www.epa.gov/vaporintrusion>.

Volatile contaminants are present in the soil or groundwater.

Yes No Unknown

If there is an already known vapor intrusion issue, please describe any vapor intrusion hazards, any mitigation measures, or cleanup taken to date.

28. Pesticides:

Pesticides (including herbicides, fungicides, and rodenticides) have been applied in the management of the property.

No

Unknown

Yes, they have been applied properly, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA -- 7 U.S.C. Sec. 136, et seq.), its implementing regulations, and the instructions provided with such substances.

Yes, they have been applied. However, it is known that there has been misapplication of the pesticides, including a spill or a leak. Improper application of pesticides that qualified as a release of hazardous substances is further documented with

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the *Hazardous Substances Activity Certification*, part 26 (above) of this checklist.

NOTE: While different pesticides are in fact classified as hazardous substances, pesticides that are properly applied in accordance with the FIFRA, its implementing regulations and the instructions provided with such substances, do not constitute a release under CERCLA. In requesting this information about pesticides, GSA does not expect the reporting landholding agency to complete any additional environmental studies. GSA simply requests whatever information may be in the real property files regarding the past application of pesticides on the property.

29. RCRA Permits and Landfills:

The excess property has or has not had any current or past RCRA permits associated with it for the treatment, storage, or disposal of hazardous waste. *If this first box is checked, describe the type of RCRA-regulated hazardous waste for which the permit was issued and the role of the excess property as a hazardous waste generator or transporter. Also, advise GSA if any current RCRA hazardous waste permits must be maintained after the excess property is transferred or conveyed.*

The excess property is or is not the site of an ongoing or past RCRA corrective action project or an ongoing RCRA facility assessment, facility investigation, or corrective measures study. *If the excess property is the site of an ongoing or past RCRA corrective action or a related assessment, investigation or study, provide information to GSA on the current status of these efforts and any long-term monitoring responsibilities or land use controls associated with them.*

The excess property has or does not have any operating or closed landfills that are subject to a RCRA permit. *If there are any RCRA-permitted landfills on the property, provide information to GSA on any ongoing landfill maintenance or monitoring requirements or land use controls associated with these sites.*

NOTE: RCRA-based permits and cleanup actions for hazardous waste and landfills are administered under a different regulatory scheme than remedial actions performed under CERCLA. In some cases, entities acquiring excess or surplus federal property may be required to assume the landholding agency's obligations under an existing RCRA permit. In other cases, regulators may require the landholding agency to retain maintenance responsibility for a landfill site after the site is transferred to a new owner. Landholding agencies should be prepared to discuss these issues with GSA.

30. Underground Storage Tanks:

An **underground storage tank (UST)** is defined by the U.S. Environmental Protection Agency (EPA) as: "...a tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground." Federal UST regulations apply only to underground tanks and piping storing either petroleum or certain hazardous substances.

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There are not and have not been any USTs located on the property.

There are or have been USTs located on the property. Include a completed EPA Form 7530-1 (Notification of UST) or a form containing this information to include: the number of USTs; their location; capacity; whether the USTs are in use; past and/or current substances stored; date upgraded (if applicable); date out of service (if applicable). Attach any correspondence with regulatory agencies pertaining to USTs as well as any additional studies related to USTs and any UST closure reports.

The USTs **have** / **have not** been maintained and are currently in compliance, or will be as of the date of transfer with EPA UST provisions codified at 40 CFR Part 280 and other applicable laws.

NOTE: *As of December 22, 1998, all USTs must be removed, closed or upgraded to applicable standards for the following: spill protection, overfill protection, and corrosion protection. Information on USTs is available from the EPA at <http://www.epa.gov/OUST>.*

31. Small Arms Firing Ranges and Munitions Training Areas:

Small Arms Firing Ranges

The property does not contain either an indoor small arms firing range or an outdoor small arms firing range.

The property contains an indoor small arms firing range and/or an outdoor small arms firing range.

If the property contains a small arms firing range, please describe on a separate page the location of the range and describe the range's current activity level (i.e., how often it is used). Please provide the firing range management plan, if available. Please also describe any closure or cleanup activities previously executed or planned, and please include any applicable correspondence with the appropriate regulatory agency or agencies. List any restrictions on use.

Munitions Training Areas

The property was not used for munitions training or any other activity in which ordnance or explosives were used.

The property was used for munitions training or another activity in which ordnance or explosives were used.

If the property was used for munitions training or another activity in which ordnance or explosives were used, please identify on a separate page any known or suspected Munitions and Explosives of Concern (MEC) on the property. Please explain the extent of decontamination accomplished or plans for decontamination or further decontamination. Please include any applicable correspondence with the appropriate regulatory agency or agencies. List any restrictions on use.

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32. Asbestos:

The below statements shall be made based on information that is reasonably available or ascertainable from agency files, personnel, and other inquiry.

- The property has no known asbestos-containing material (ACM).
- The property has asbestos-containing materials.

If there is ACM, provide description, type, location and condition of ACM incorporated in the construction, repair or alteration of any improvements on the property and a description of any asbestos control methods taken. In the event a cost/time estimate to remove the ACM is available, include this information. Provide this information on a separate page.

33. Polychlorinated Biphenyls (PCBs):

Prior to completing this section, review regulations issued by EPA under 40 CFR 761.

- There are no known PCBs on or associated with the excess property.
- There are known PCBs on the property. An inventory and description of protective action taken is attached. The reporting landholding agency certifies that it is, and will continue to be, up to the time of disposal, in compliance with 40 CFR 761.

34. Lead Based Paint (LBP):

Any building constructed or rehabilitated prior to 1978 is assumed to contain LBP.

- The improvements have been constructed after 1978 and are assumed free from LBP.
- The improvements were constructed prior to 1978 but have not been tested for LBP.
 - The improvement(s) were constructed before 1960
 - The improvement(s) were constructed between 1960 and 1978

Complete only for pre-1978 structures:

- Testing indicated that LBP exists in some or all of the improvements.*
- Remedial action has been taken for removal of LBP.*

Does target housing exist on the property?

- Yes
- No

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If yes, have a risk assessment and paint inspection been completed?

Yes No

Have lead-based paint hazards been abated?

Yes No

NOTE: *The landholding agency is responsible for completing a lead-based paint risk assessment and paint inspection for residential structures (target housing) constructed prior to 1978. The landholding agency is also responsible for abating lead-based paint hazards in pre-1960 residential structures, though this requirement may be passed on to the purchaser. If abatement is completed, please provide method of testing, description of remediation and any certification received upon completion of work on a separate page and copies of all studies. If the risk assessment and paint inspection have not been completed, please provide proposed schedule for completion. Additional information on lead-based paint is available from HUD at <http://www.hud.gov/offices/lead/index.cfm>*

Describe here or list attachment(s)

35. Mold:

Indoor mold hazards are known to exist within a building or buildings on the property being reported excess.

No

Unknown

Yes, there is a known mold hazard or hazards within a building or buildings on the property. If yes, please describe any mold hazards found and any mold abatement measures that have been taken to date.

NOTE: *In requesting this information about mold, GSA does not expect the reporting landholding agency to complete any additional environmental studies. GSA simply requests whatever information may be in the real property files or otherwise available about the presence of mold or any mold hazards.*

36. Radon:

Radon hazards are known to exist within a building or buildings on the property being reported excess.

No

Unknown

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Yes, it is known that a radon hazard (i.e., at or above 4 pCi/L) exists within a building or buildings on the property. If yes, please describe any radon hazards found and any radon mitigation or abatement measures taken to date.

NOTE: *In requesting this information about radon, GSA does not expect the reporting landholding agency to complete any additional environmental studies. Landholding agencies were required to test their buildings for radon in 1989 pursuant to §2669 of the Indoor Radon Abatement Act of 1988 (15 USC §2661, et seq.) and therefore may have information related to radon in their possession. GSA simply requests whatever information may be in the real property files regarding any previously-identified radon hazards.*

37. Additional Environmental Information:

Provide additional pertinent environmental information/documentation such as but not limited to conservation easements, habitat conservation agreements, NPDES/SPDES discharge permits, storm water permits, water rights, air quality permits, LEED certifications, and/or eligible renewable energy credits.

38. Other Pertinent Information:

39. Checklist Preparer/Agency Point of Contact:

By: _____ **Date:**
(Signature)

Name: _____ **Telephone:**
(Typed)

Title:

Agency:

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Exhibits

LEGAL DESCRIPTION AND OTHER RELATED PROPERTY INFORMATION

ENVIRONMENTAL INFORMATION, REPORTS AND REGULATORY CORRESPONDENCE

HISTORIC AND CULTURAL RESOURCES DOCUMENTATION AND REGULATORY
CORRESPONDENCE

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REGIONAL REAL PROPERTY UTILIZATION AND DISPOSAL OFFICES

Atlanta, GA (404) 331-5133

Ms. Angela Risch, Director
Real Property Utilization and Disposal Division (4PZ)
General Services Administration
77 Forsyth Street, Suite 130
Atlanta, GA 30303

For Alabama, Delaware, Florida, Georgia, Kentucky, Maryland, Mississippi, North Carolina, Pennsylvania, South Carolina, Tennessee, Virginia and West Virginia

Boston, MA (617) 565-5700

Mr. John Kelly, Director
Real Property Utilization and Disposal Division (1PZ)
General Services Administration
10 Causeway Street, Room 925
Boston, MA 02222

For Connecticut, Illinois, Indiana, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Ohio, Puerto Rico, Rhode Island, Vermont, Wisconsin and U. S. Virgin Islands

Fort Worth, TX (817) 978-2331

Mr. Melvin Freeman, Director
Real Property Utilization and Disposal Division (7PZ)
819 Taylor Street, Room 11A30
Ft. Worth, TX 76102

For Arkansas, Colorado, Iowa, Kansas, Louisiana, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah and Wyoming

National Capital Region (202) 205-2127

Mr. Timothy Sheckler, Director
Real Property Utilization and Disposal Division (WPZ)
National Capital Region
301 7th. Street, SW. Room 7709
Washington, DC. 20407

For Washington D.C. Metropolitan area including Northern Virginia and Maryland Suburbs

San Francisco, CA (888) GSA-LAND

Mr. David Haase, Director
Real Property Utilization and Disposal Division (9PZ)
50 United Nations Plaza, Room 4345
San Francisco, CA 94102-3434

For Alaska, Arizona, California, Guam, Hawaii, Idaho, Nevada, Oregon and Washington

Revised June 2019

Appendix B: Transaction Screen Questionnaire

Transaction Screen Questionnaire

Proposed Action or Project:

Site Size:

Proposed Building Size:

Address: (No., Street, City, State, ZIP + 4)

Answer the Questions Below to the Best of Your Knowledge.

| Owner/Occupant Inquiry and Site Visit Observation | | Response | | |
|---|---|----------|----|-----|
| | | Yes | No | Unk |
| 1a. | Is the property used for industrial purposes? Specify: _____ | | | |
| 1b. | Is any adjoining property used for industrial purposes? Specify: _____ | | | |
| 2a. | Did you observe evidence or do you have any prior knowledge that the property has been used for industrial purposes in the past? Specify: _____ | | | |
| 2b. | Did you observe evidence or do you have any prior knowledge that any adjoining property has been used for industrial purposes in the past? Specify: _____ | | | |
| 3a. | Is the property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, or landfill or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)? Specify: _____ | | | |
| 3b. | Is any adjoining property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, or landfill or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)? Specify: _____ | | | |
| 4a. | Did you observe evidence or do you have any prior knowledge that the property has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, or landfill or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)? Specify: _____ | | | |
| 4b. | Did you observe any evidence or do you have any prior knowledge that any adjoining property has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, or landfill or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)? Specify: _____ | | | |
| 5a. | Are any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of greater than 5 gallons in volume or 50 gallons in the aggregate currently stored on or used at the property or at the facility? | | | |
| 5b. | Did you observe evidence or do you have any prior knowledge that any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of greater than 5 gallons in volume or 50 gallons in the aggregate have previously been stored on or used at the property or at the facility? | | | |

| Owner/Occupant Inquiry and Site Visit Observation | | Response | | |
|---|--|----------|----|-----|
| | | Yes | No | Unk |
| 6a. | Are any industrial drums (typically 55 gallons) or sacks of chemicals currently located on the property or at the facility? | | | |
| 6b. | Did you observe evidence or do you have any prior knowledge that any industrial drums (typically 55 gallons) or sacks of chemicals currently located on the property or at the facility? | | | |
| 7a. | Did you observe evidence or do you have any prior knowledge that fill dirt that originated from a contaminated site has been brought onto the property? | | | |
| 7b. | Did you observe evidence or do you have any prior knowledge that fill dirt that is of an unknown origin has been brought onto the property? | | | |
| 8a. | Are any pits, ponds, or lagoons in connection with waste treatment or waste disposal currently located on the property? | | | |
| 8b. | Did you observe evidence or do you have any prior knowledge that any pits, ponds, or lagoons in connection with waste treatment or waste disposal have previously been located on the property? | | | |
| 9a. | Is any stained soil currently on the property? | | | |
| 9b. | Did you observe evidence or do you have any prior knowledge that any stained soil has previously been on the property? | | | |
| 10a. | Are any registered or unregistered storage tanks (aboveground or underground) currently located on the property? | | | |
| 10b. | Did you observe evidence or do you have any prior knowledge that any registered or unregistered storage tanks (aboveground or underground) have previously been located on the property? | | | |
| 11a. | Are any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground currently located on the property or adjacent to any structure located on the property? | | | |
| 11b. | Did you observe evidence or do you have any prior knowledge that any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground have previously been located on the property or adjacent to any structure located on the property? | | | |
| 12a. | Are any flooring, drains, or walls that are stained by substances other than water or are emitting foul odors currently located within the facility? | | | |
| 12b. | Did you observe evidence or do you have any prior knowledge that any flooring, drains, or walls that are stained by substances other than water or are emitting foul odors have previously been located within the facility? | | | |
| 13a. | If the property is served by a private well or nonpublic water system, is there evidence or do you have prior knowledge that contaminants have been identified in the well or system that exceed guidelines applicable to the water system? | | | |
| 13b. | If the property is served by a private well or nonpublic water system, is there evidence or do you have prior knowledge that the well has been designated as contaminated by any government environmental or health agency? | | | |
| 14. | Does the owner or occupant of the property have any knowledge of environmental liens or government notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property? | | | |
| 15a. | Has the owner or occupant of the property been informed of the past existence of hazardous substances or petroleum products with respect to the property or any facility located on the property? | | | |
| 15b. | Has the owner or occupant of the property been informed of the current existence of hazardous substances or petroleum products with respect to the property or any facility located on the property? | | | |

| Owner/Occupant Inquiry and Site Visit Observation | | Response | | |
|---|---|----------|----|-----|
| | | Yes | No | Unk |
| 15c. | Has the owner or occupant of the property been informed of the past existence of environmental violations with respect to the property or any facility located on the property? | | | |
| 15d. | Has the owner or occupant of the property been informed of the current existence of environmental violations with respect to the property or any facility located on the property? | | | |
| 16. | Does the owner or occupant of the property have any knowledge of any environmental site assessment of the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property? | | | |
| 17. | Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum product involving the property? | | | |
| 18. | Does the property discharge wastewater on or adjacent to the property, other than stormwater into a stormwater drain? | | | |
| 19. | Did you observe evidence, or do you have any prior knowledge that any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials have been dumped above grade, buried, and/or burned on the property? | | | |
| 20. | Do any records exist indicating the presence of polychlorinated biphenyls (PCBs) for a transformer, capacitor, or any hydraulic equipment? | | | |
| 21. | Does the owner or occupant have any knowledge of any asbestos-containing materials or presumed asbestos-containing materials on any facility located on the property? | | | |
| Government Records and Historical Sources Inquiry | | Response | | |
| | | Yes | No | |
| 22. | Do any of the following federal government record systems list the property or any property within the circumference of these areas: | | | |
| | a. National Priorities List (NPL) – within 1.0 mile (1.6 km)? | | | |
| | b. Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) List – within 0.5 mile (0.8 km)? | | | |
| | c. Resource Conservation and Recovery Act (RCRA) Corrective Action Sites (CORRACTS) Facilities – within 1.0 mile (1.6 km)? | | | |
| | d. RCRA Treatment, Storage, and Disposal (TSD) Facilities – within 0.5 mile (0.8 km)? | | | |
| 23. | Do any of the following state record systems list the property or any property within the circumference of these areas: | | | |
| | a. List that is the state equivalent to the NPL maintained by state environmental agency of hazardous waste sites identified for investigation or remediation – within approximately 1.0 mile (1.6 km)? | | | |
| | b. List that is the state equivalent to CERCLIS maintained by state environmental agency of sites identified for investigation or remediation – within approximately 0.5 mile (0.8 km)? | | | |
| | c. Leaking Underground Storage Tank (LUST) List – within 0.5 mile (0.8 km)? | | | |
| | d. Solid Waste/Landfill Facilities – within 0.5 mile (0.8 km)? | | | |

| Government Records and Historical Sources Inquiry | | | | Response | | |
|---|---|--|-----|----------|-----|-----|
| 24. | Based on a review of fire insurance maps or consultation with the local fire department serving the property, are any buildings or other improvements on the property or on adjoining property, identified as having been used for any industrial use or uses, likely to lead to contamination of the property? | | | Yes | No | N/A |
| | | | | | | |
| 25a. | Does the database indicate the average radon level for the subject property county/ ZIP Code? If so, record level: _____ pCi/l. | | | Yes | No | N/A |
| | | | | | | |
| 25b. | Has radon testing been conducted on the subject property? | | Yes | No | N/A | Unk |
| | | | | | | |
| 25c. | In what USEPA radon zone is the subject property located? <i>(Check one)</i> | | | 1 | 2 | 3 |
| | | | | | | |

Unk – Unknown

| General Information <i>(The person preparing the Transaction Screen Questionnaire must complete and sign the following.)</i> | |
|---|--|
| Completed by Name: | Title: |
| Firm: | Telephone Number: <i>(Include area code)</i> |
| Address: <i>(No., Street, City, State, ZIP +4)</i> | |
| Date: | Preparer's Relationship to NASA: <i>(For example, employee, agent, consultant)</i> |
| Name of Owner/Occupant Who Provided the Information: | |
| Address: <i>(No., Street, City, State, ZIP +4)</i> | |
| Telephone Number: <i>(Include area code)</i> | Date: |
| Name of Owner/Occupant Who Provided the Information: | |
| Address: <i>(No., Street, City, State, ZIP +4)</i> | |
| Telephone Number: <i>(Include area code)</i> | Date: |
| Copies of the Completed Transaction Screen Questionnaire Have Been Filed at: | |
| Copies of the Completed Transaction Screen Questionnaire Have Been Mailed or Delivered to: | |

| | |
|--|------|
| Preparer represents that, to the best of the preparer's knowledge, the above statements and facts are true and correct, and to the best of the preparer's actual knowledge, no material facts have been suppressed or misstated. | |
| Signature | Date |
| Signature | Date |
| Signature | Date |
| Acknowledgement: This questionnaire was modified from ASTM Designation: E 1528-96, <i>Standard Practice for Environmental Site Assessments: Transaction Screening Process</i> . | |
| Note: This standard is current through ASTM 1528-22. Centers should contact the Environmental Management Division regarding changes to the standard when an EDD document is prepared. | |

**Appendix C:
Additional Non-Scope Considerations Evaluated
in a NASA Phase I Environmental Site
Assessment (ESA)**

ADDITIONAL NON-SCOPE CONSIDERTIONS EVALUATED IN A NASA PHASE I ENVIRONMENTAL SITE ASSESSMENT (ESA)

Although the following considerations generally fall outside the scope of a typical ASTM E1527 Phase I ESA, they comprise part of a NASA Phase I ESA. Including these considerations in the Phase I ESA provides NASA with a more complete picture of environmental conditions at the property, as well as with knowledge of potentially sensitive receptors (e.g., endangered species, cultural resources, wetlands) that may be affected by the proposed transaction.

Cultural Resources: Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, and any other physical evidence of human activity considered relevant to a culture or community for scientific, traditional, religious, or other reasons. They include archaeological resources (both prehistoric and historic), historic architectural resources listed in the National Register of Historic Places, and Native American sacred sites and traditional cultural properties. An evaluation of the potential presence of cultural resources should be conducted as early as possible in the project planning stages, as the presence of these resources on a project site may prevent the project from moving forward.

Threatened and Endangered Species: The federal Endangered Species Act (ESA) prohibits anyone from harassing, capturing, or killing any protected species (16 U.S.C. Section 1531 et seq.). To date, more than 1,100 species have been designated as endangered or threatened worldwide. However, more than 3,600 have been identified as candidates for endangered or threatened status and are awaiting official action. If a proposed development will disturb or destroy habitat of a protected species, such a development may be a violation of the ESA, subjecting the developer to potential fines, penalties, and injunctions.

As such, the potential for projects to impact protected species, particularly if the project is sited on undeveloped land, or if it may impact wetlands or water bodies, needs to be assessed. Typically, this involves hiring an environmental consultant to assess the project site for protected species habitat. As with cultural resources, protected species assessments should be conducted as early as possible in the project planning stages to prevent any adverse impacts.

Wetlands: There are stringent laws regulating construction that potential impacts wetlands. Wetlands subject to federal control are often referred to as jurisdictional wetlands because they are subject to the regulatory jurisdiction of federal law. Jurisdictional wetlands are regulated under Section 404 of the Clean Water Act of 1972 (CWA) because they are important for the protection of aquatic species and waterfowl, water purification, and flood control (33 U.S.C. Sections 1251-1387). The U.S. Environmental Protection Agency (USEPA) and the U.S. Army Corps of Engineers, the two federal agencies with the authority to regulate wetlands, identify wetlands as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.”

Prior to purchasing a property for development, the prospective purchaser should conduct a wetlands survey for several reasons. A determination that jurisdictional wetlands are located on the undeveloped property that is the subject of the transaction may profoundly affect the value of the property if the location of the wetlands would present significant hurdles to site development. Such a finding can result in significant delays and extra costs to the developer because the

permitting process can be complicated and open to interpretation regarding the potential impact of the development activities and the potential mitigation measures that are necessary. Moreover, heightened public scrutiny with respect to the protection of wetlands increases the possibility that various interests could use the wetlands regulatory scheme to block or delay development. In addition, developers should determine whether wetlands are present because the destruction of wetlands can result in substantial administrative, civil, and criminal penalties under Section 404 of the CWA (33 U.S.C. Sections 1311(a), 1344). Because the CWA is a strict liability statute, no intent to destroy wetlands needs to be proven to establish a civil violation.

Asbestos-Containing Building Materials (ACBMs): The presence of asbestos in commercial buildings may generate both legal and business concerns for purchasers, developers, and other investors in commercial real estate. Building owners also can potentially face tort liability for personal injuries caused by exposure to asbestos. Moreover, failure to comply with regulations designed (1) to protect employees in the workplace from exposure to airborne asbestos fibers (29 CFR §1910.1001), including those requiring building owners to inform employees about the presence and location of ACBM, and (2) to prevent the release of asbestos fibers into the environment during renovation or demolition, can result in substantial fines or penalties.

No purchase of existing structures may be executed until an asbestos survey has been completed by NASA unless the purchase is being undertaken in relation to a purchase option on leased space for which an adequate survey has already been completed. No leased space previously unoccupied may be occupied by NASA personnel until an asbestos survey has been completed. However, a prior comprehensive asbestos survey provided by the lessor is acceptable. Purchase agreements or leases may be executed for buildings built after 1990 that have been certified by the architect-engineer or an accredited asbestos inspector, the construction contractor, or the owner or lessor in writing as not containing ACBM.

The building owner or lessor should be asked to disclose any information or reports on ACBMs or presumed ACBMs in a building that NASA will purchase or lease. The federal Occupational Safety & Health Administration (OSHA) and some states require the owner or lessor to disclose this information, if known. If a report is available, a copy must be onsite. If an asbestos report is not available from the building owner or lessor, NASA must conduct an asbestos survey and, if ACBMs are present, develop an operation and maintenance plan as part of the due diligence process. This includes any temporary space occupied for more than 90 days or occasion/emergency space used more than once.

In buildings that were built prior to 1990, certain building materials should be considered ACBM until an asbestos survey has been completed. ACBMs include all thermal system insulation, sprayed- or troweled-on materials, and vinyl and asphalt flooring and roofing materials. Other materials commonly known to contain asbestos, such as ceiling tiles, which may also be a concern if significantly disturbed, should be treated as ACBM until an asbestos survey confirms otherwise.

All sprayed-on or troweled-on ACBMs must be removed following discovery regardless of their condition and exposure assessment. These materials are considered friable ACBMs because they have a high potential for release when disturbed. Such materials that have been previously encapsulated or enclosed, however, may be managed in place provided they are in good condition. In those buildings that are identified as having ACBMs, the operation and

maintenance plan that is developed must meet the requirements of all applicable federal and state environmental laws and regulations established by OSHA before the building is occupied. For further information see the Environmental Management Policy website for related NASA asbestos directives.

Lead-Based Paint (LBP): LBP generally is recognized as a significant health risk to young children and pregnant women as ingestion can cause permanent damage to the brain and nervous system leading to behavior and learning problems, lower intelligence, hearing problems in children, and an increased risk of miscarriage and birth defects for pregnant women. Although the use of LBP has been banned in the United States since 1978, many residential and commercial structures, particularly those built before 1950, potentially contain LBP.

NASA policy is to not initiate any activities that may expose employees to unacceptable levels of LBP. The building owner or lessor should be asked to disclose any information or reports on LBP in a building that NASA will purchase or lease. Testing should be based on the age of the building as well as the condition and location of paint within the facility (e.g., a door or window that shows significant wear might be tested). NASA considers paint with any trace of lead to be LBP (see MI EL-810-1999-1). *Note that some state laws require the owner or lessor to disclose the fact that LBP is present.*

Lead in Drinking Water: Lead can enter drinking water when plumbing materials that contain lead corrode, especially where the water has high acidity or low mineral content that corrodes pipes and fixtures. The most common sources of lead in drinking water are lead pipes, faucets, and fixtures. In homes with lead pipes that connect the home to the water main, also known as lead services lines, these pipes are typically the most significant source of lead in the water. Lead pipes are more likely to be found in older cities and homes built before 1986. Among homes without lead service lines, the most common problem is with brass or chrome-plated brass faucets and plumbing with lead solder.

The Safe Drinking Water Act requires the USEPA to determine the level of contaminants in drinking water at which no adverse health effects are likely to occur with an adequate margin of safety. These non-enforceable health goals, based solely on possible health risks, are called maximum contaminant level goals (MCLGs). The USEPA has set the MCLG for lead in drinking water at zero because lead is a toxic metal that can be harmful to human health even at low exposure levels. Lead is persistent, and it can bioaccumulate in the body over time. Young children, infants, and fetuses are particularly vulnerable to lead because the physical and behavioral effects of lead occur at lower exposure levels in children than in adults.

Radon: Radon is a colorless, odorless gas that comes from the natural radioactive breakdown of uranium in the ground. Radon can infiltrate indoor air through the soil under the building or the water used in the building. According to the USEPA, inhalation of radon can increase an individual's risk for developing lung cancer.

It is NASA policy that the owner of the property under consideration should be asked to provide radon measurements that have been collected from existing offices on the subject property. For underdeveloped properties or properties for which no radon measurements have been collected, radon information should be included in the TSP and Phase I ESAs. Department of Health radon statistics maintained by the USEPA can be ordered as part of environmental database reports.

The database reports provide information on average and peak radon levels found in residences and business tested in the same county or ZIP Code of the property. The database reports should also indicate the USEPA radon zone within which the property is located (Zone 1, 2, or 3). Contact Center EDD POC for related NASA radon documents and guidance.

Mold/Water Intrusion: Mold is a substance that is naturally occurring, so it is always present in the environment. Outdoors, molds are an integral part of natural processes breaking down leaves, wood, and plant debris; however, indoors, mold spores grow by digesting whatever organic substance they land on, including wallpaper, insulation, drywall, and roofs. According to the USEPA, exposure to mold can potentially be a health risk ranging from mild and temporary allergic reactions to more severe illnesses such as lung infections.

Conducting due diligence concerning the presence of mold is often done in conjunction with an overall assessment of the physical condition of the property. The focus of an initial mold assessment is on the potential for water intrusion, which means that the consultant is often assessing the condition of the roofs; windows; hot water heaters; heating, ventilation, and air conditioning systems; plumbing; and other features in a building where water can saturate building materials and lead to mold growth.

Currently, no regulatory or remediation standards regarding mold concentration exist. Mold issues and inquiries should first be addressed by NASA Maintenance and brought to the attention of Safety, if necessary. Mold issues should be considered when evaluating new or alternate space if water damage or staining is evident on ceiling tiles, walls, or carpet. This is especially important if repair or alterations will be part of the real property action.

Electric and Magnetic Fields (EMFs): EMFs are invisible forces created whenever electricity is generated, transmitted, or used. Electric power is transmitted on high-voltage transmission lines (usually on metal towers that carry power from electrical generation facilities to substations in and around urban areas) and on distribution lines (usually on wooden poles that bring power from substations to businesses and homes). Electric power systems in the United States operate at 60 Hertz (Hz); currently, no federal health standards exist for systems that operate at 60 Hz. The only health-based thresholds currently in place in the United States were established by the American Conference of Governmental Industrial Hygienists from data involving occupational exposures.

Some states (Florida, Minnesota, Montana, New Jersey, New York, and Oregon) have adopted standards and guidelines for transmission-line-generated magnetic fields at the edge of a transmission right of way (ROW). The guidelines establish recommended EMF levels at the edge of the ROW.

Properties considered for a NASA facility may be located near distribution or high-voltage transmission lines. If a property is located within 250 feet of a transmission line, EMF information should be requested from the utility supplier as part of the EDD process. This may entail considering site-specific measurements adjacent to the property, which some utilities will provide as a no-cost service. All EMF data collected for a selected site needs to be included in the environmental (e.g., EDD, National Environmental Policy Act [NEPA]) documents. A NASA facility that includes day care services should not be located within 250 feet of a transmission line.

Urea Formaldehyde: No space may be leased or purchased that is known to contain urea formaldehyde foam insulation. To determine the presence of urea formaldehyde insulation, check original building design specifications or repair and alteration specifications. Alternatively, if these are not available, investigative testing should be conducted.

Regulatory Compliance: When conducting EDD in a real property transaction, it may also be necessary to assess the property occupant's compliance with environmental laws and environmental permitting requirements. This is particularly true in transactions involving properties that are occupied by manufacturers and other businesses that handle large quantities of hazardous materials (and it will always be true in transactions where the purchaser is acquiring both the real property and the business operations), as failure to comply could result in contamination, a lack of authority to operate, and increasingly negative publicity. Since compliance evaluations are beyond the scope of a typical ASTM E1527 Phase I ESA, when conducting EDD on property where environmentally sensitive operations take place NASA would request their consultant conduct some form of a compliance review or audit as part of the consultant's evaluation. Topics generally covered by a limited compliance review include:

- An assessment of a target's or site's environmental management system
- Permitting status
- Emissions to air, including control measures
- Water and wastewater supply
- Use and management
- Hazardous materials and waste management
- Noise concerns

Appendix D:
Sample Table of Contents for ASTM E1527
Phase I Environmental Site Assessment (ESA)

SAMPLE TABLE OF CONTENTS FOR ASTM E1527 PHASE I ESA

Note: This appendix contains additional considerations, which are defined as non-scope items under ASTM E1527 but would be included by NASA as part of EDD efforts.

1. EXECUTIVE SUMMARY

Introduction
Purpose of Phase I ESA
Description of Subject Property
Description Phase I ESA Process
Findings
Conclusions
Recommendations

2. INTRODUCTION

Purpose of the Phase I ESA
Methodology and Limiting Conditions
Location and Legal Description of Property

3. USER PROVIDED INFORMATION (*User Questionnaire in Appendix F*)

Environmental Liens
Activity Use Limitations
Specialized Knowledge
Environmental Issues and Valuation of Purchase Price
Commonly Known or Reasonably Ascertainable Information
Obviousness of Contamination

4. RECORDS REVIEW

Environmental Database Review (standard federal/state/tribal databases)
Historical Use of the Subject Property and Adjoining Properties (review of standard records)
Topographic Maps (physical setting source)
Aerial Photographs
City Directory Abstracts
Fire Insurance Maps
Building Department Records
Property Tax Files
Recorded Land Title Records
Additional Environmental Records

5. SITE RECONNAISSANCE

Property and Surrounding Area Characteristics
General Site Setting
Interior and Exterior Observations
Current Use and Condition of Subject Property
Use and Characteristics of Adjoining Properties
Site Visit Observations
Hazardous Materials and Petroleum Products

Hazardous and Petroleum Wastes
Environmental Restoration Sites
Aboveground Storage Tanks
Underground Storage Tanks
Unidentified Substance Containers
Stressed Vegetation
Pesticides
Solid Waste
Wells
Heating/Cooling
Wastewater Treatment, Collection, and Discharge
Stormwater Management
Surface Impoundments or Holding Ponds
Drains and Sumps
Stained, Discolored, or Disturbed Surfaces
Polychlorinated Biphenyls (PCBs)
Vapor Migration
Other Environmentally Suspect Conditions
Additional Considerations (Non-Scope Issues)
Cultural and Historic Resources
Threatened and Endangered Species
Wetlands
Asbestos-Containing Building Materials
Lead-Based Paint
Lead in Drinking Water
Mold/Water Intrusion
Radon
Electric and Magnetic Fields
Urea Formaldehyde
Regulatory Compliance

6. INTERVIEWS

Interviews with Past and Present Owners and Occupants
Interviews with Federal, State, and Local Officials

7. EVALUATION

Findings
Conclusions
Recommendations
Deviations
Data Gaps
Signature and Certification of Environmental Professional


APPENDICES


Appendix A Acronyms, Abbreviations, and Terms
Appendix B Maps and Figures (e.g., Topographic Maps, Fire Insurance Maps, Wetland Maps)

| | |
|------------|---------------------------------------|
| Appendix C | Aerial Photographs |
| Appendix D | Site Visit Photographs |
| Appendix E | References |
| Appendix F | Environmental Database Inquiry Report |
| Appendix G | Additional Information |

**Appendix E:
Environmental Due Diligence (EDD) Review
Form (NF 1920)**

Environmental Due Diligence (EDD) Review Form

| | | | | | |
|---|--|--|-------------------------------|---|------------------|
|  | | National Aeronautics and Space Administration | | <h2>Environmental Due Diligence (EDD) Review</h2> | |
| Part A - Background Information | | | | | |
| 1. Center | | | | | |
| 2. Parcel/Site Location and Description | | | | | |
| 3. Proposed Real Estate Action Description | | | | | |
| 4. Site Summary Information | | | | | |
| 5. Parcel/Site Uses | | | 6. Prior Uses | | |
| 7. Current Uses | | 8. Future Uses | 9. Use of Adjacent Properties | | 10. Previous EDD |
| 11. Signature | | | | 12. Signature Date | |
| Part B - Environmental History | | | | | |
| 1a. Existing Regulated Contamination? | | 1b. Existing Regulated Contamination Comments | | | |
| No <input type="button" value="v"/> | | | | | |
| 2a. Hazardous Materials Use? | | 2b. Hazardous Materials Use Comments | | | |
| No <input type="button" value="v"/> | | | | | |
| 3a. Hazardous Materials Storage? | | 3b. Hazardous Materials Storage Comments | | | |
| No <input type="button" value="v"/> | | | | | |
| 4a. Treatment, Storage, Disposal of Hazardous Waste? | | 4b. Treatment, Storage, Disposal of Hazardous Waste Comments | | | |
| No <input type="button" value="v"/> | | | | | |
| 5a. Underground Storage Tanks? | | 5b. Underground Storage Tanks Comments | | | |
| No <input type="button" value="v"/> | | | | | |
| 6a. Aboveground Storage Tanks? | | 6b. Aboveground Storage Tanks Comments | | | |
| No <input type="button" value="v"/> | | | | | |
| 7a. Presence of Polychlorinated Biphenyls? | | 7b. Presence of Polychlorinated BiphenylsComments | | | |
| No <input type="button" value="v"/> | | | | | |
| 8a. Solid Bio-Hazardous Waste? | | 8b. Solid Bio-Hazardous Waste Comments | | | |
| No <input type="button" value="v"/> | | | | | |
| 9a. Presence of PFAS? | | 9b. Presence of PFAS Comments | | | |
| No <input type="button" value="v"/> | | | | | |
| 10a. Previous CERCLA or RCRA Action? | | 10b. Previous CERCLA or RCRA Action Comments | | | |
| No <input type="button" value="v"/> | | | | | |
| 11a. Land Use Controls? | | 11b. Land Use Controls Comments | | | |
| No <input type="button" value="v"/> | | | | | |

| | | | |
|---|--|---|--|
|  National Aeronautics and Space Administration | | <h2>Environmental Due Diligence (EDD) Review</h2> | |
| 12a. Does the real property transaction involve the leasing of office space where hazardous substances have not or will not be used or stored? No <input type="checkbox"/> | | 12b. Comments | |
| Part C - Determination | | | |
| No Further Action Required <i>(include rationale)</i> | | | |
| No Further Action <i>(Signature Required)</i> <small>Signature</small> | | No Further Action Signature Date | |
| Transaction Screening Questionnaire (TSQ) <i>(Signature Required)</i> <small>Signature</small> | | TSQ Signature Date | |
| Phase I Environmental Site Assessment (ESA) <i>(Signature Required)</i> <small>Signature</small> | | Phase I ESA Signature Date | |
| Phase II ESA <i>(Signature Required)</i> <small>Signature</small> | | Phase II ESA Signature Date | |
| Phase III ESA <i>(Signature Required)</i> <small>Signature</small> | | Phase III ESA Signature Date | |
| Other Documentation Completed <i>(Signature Required)</i> <small>Signature</small> | | Other Documentation Signature Date | |
| Part D - Other Information | | | |
| 1a. Asbestos in Existing Structure? <input type="checkbox"/> | | 1b. Asbestos in Existing Structure Comments | |
| 2a. Lead Based Paint in Existing Structure? <input type="checkbox"/> | | 2b. Lead Based Paint in Existing Structure Comments | |
| 3a. Radon? <input type="checkbox"/> | | 3b. Radon Comments | |
| 4a. Radiological Materials? <input type="checkbox"/> | | 4b. Radiological Materials Comments | |
| 5a. Munitions and Explosive Concerns? <input type="checkbox"/> | | 5b. Munitions and Explosive Concerns Comments | |
| 6a. Threatened or Endangered Species? <input type="checkbox"/> | | 6b. Threatened or Endangered Species Comments | |
| 7a. Natural or Cultural Resources? <input type="checkbox"/> | | 7b. Natural or Cultural Resources Comments | |
| 8. Additional Information | | | |
| Final Completion Date | | | |
| EDD has not revealed any evidence of hazardous substances, petroleum products, or recognized environmental conditions in connection with this real property. | | | |
| 1. Signature <small>Signature</small> | | 2. Date | |

Environmental Due Diligence (EDD) Review Instructions

Part A – Background Information

The Real Property Accountability Officer (RPAO) or Real Estate Contracting Officer (RECO) shall enter sufficient background information so the environmental due diligence (EDD) point of contact (POC) from the Center Environmental Management Office can determine (along with Part B) the type of EDD documentation required (if any). Either the RPAO or RECO will sign the bottom of this section.

Part B – Environmental History

The EDD POC shall mark each item yes, no, or unknown and provide any relevant comments. The information in this section will be used to determine which type of EDD documentation is necessary.

Part C – Determination

The EDD POC shall insert their digital signature into the signature block (s) that correspond to the completed and acceptable EDD documentation. This may include more than one signature block. The EDD POC will sign the bottom of this section.

Part D – Other Information

The EDD POC shall mark each item yes, no, or unknown and provide any relevant comments. This is supplemental information that the Real Estate office may need to include in the official record for the real estate transaction but is not necessarily used for the EDD documentation determination.

Final Completion Date

The statement that corresponds to the EDD determination for this real estate action will be automatically populated by the responses in Part B, blocks 1-11. The EDD POC will also insert their digital signature into the signature block demonstration that the EDD process is complete. Once the form has been completed it will be sent back to the RPAO/RECO that initiated this process by completing Part A of this form. Either the Environmental Manager or the EDD POC will sign this section.

Appendix F: Sample Scope of Work for Environmental Survey/Study

Statement of Work

[Project Title]

[DATE]

1.0 BACKGROUND

National Aeronautics Space Administration's (NASA's) [NASA Center] has granted a [XX]-year lease to [name of tenant] for the use of [name of leased area]. This lease includes [specified lease area].

2.0 PURPOSE

The purpose of this Task Order (TO) is to prepare an environmental due diligence (EDD) document for the area that will be leased to [name of tenant].

3.0 PROJECT OBJECTIVES

Task 1 – Prepare the Appropriate EDD Document

Contractor shall prepare a [Transaction Screen Questionnaire or Phase I Environmental Site Assessment] using the corresponding ASTM standard. The EDD document may utilize existing environmental data, reports and other information as needed. With the data already available, further sampling should not be required.

4.0 DELIVERIES AND SCHEDULE

Task – EDD Document

1. Contractor shall submit [number] hard copies and one electronic copy of the Draft EDD Document]by [date].
2. Contract may schedule a meeting with NASA to discuss comments on the draft document.
3. Contractor shall address NASA comments and submit [number] hard copies and one electronic copy of the Final EDD Document two weeks after NASA has submitted comments on draft document.

Period of Performance: Notice to proceed – [date]

Appendix G: Glossary

| Term | Definition |
|--|---|
| Acquisition | Permanent and non-permanent transfer of rights in real property to NASA. Permanent transfer includes purchase, condemnation, gift, and transfer from another federal agency. Record permanent acquisition as NASA-owned property in the Real Property Management System (RPMS). Non-permanent transfer includes lease, right of way, easement, permit, license, or another in-grant. Record non-permanent acquisition as in-grant, not as NASA-owned property. |
| All Appropriate Inquiries (AAI) | Process of evaluating a property's environmental conditions and assessing potential liability for any contamination. |
| Controlled Recognized Environmental Condition (CREC) | A recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (e.g., as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (e.g., property use restrictions, activity and use limitations, institutional controls, or engineering controls). |
| De Minimis Condition | Environmental condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. |
| Disposition (Disposal) | Permanent removal of a real property asset from the responsibility of a federal entity through conveyance to another entity or destruction. Conveyance includes transfer of ownership or conversion to personal property. Destruction includes demolition, deconstruction, and natural or manmade events such as fire, earthquake, flood, or explosion. |
| Environmental Professional | A person who possesses sufficient specific education, training, and experience necessary to exercise professional judgment to develop opinions and conclusions regarding conditions indicative of releases or threatened releases. See Section 4 for detailed qualifications of an environmental professional. |
| Historical Recognized Environmental Condition (HREC) | A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (e.g., property use restrictions, activity and use limitations, institutional controls, or engineering controls). |
| In-Grant | Non-permanent transfer of real property rights to NASA by means of lease, easement, permit, license, or other agreement. |
| In-Lease | A type of in-grant in which NASA is the lessee/tenant and has the exclusive right to the property owned by the lessor/landlord for a specified period. |
| Lease | A type of in-grant or out-grant where the owner of the property (the “lessor”) grants to a lessee by written agreement the right to exclusive possession of the property by the lessee for a defined period of time. The lease may contain provisions or conditions restricting the use of the property to ensure conformity with NASA mission. |
| Out-Grant | Non-permanent transfer of rights to NASA real property to others by means of lease (or any other form of acceptable legal instrument that recognizes NASA as the landlord and the lessee as the tenant); permit; easement; right of way; license; Space Act Agreement (SAA); and agreements such as memorandum of |

| Term | Definition |
|--|---|
| | understanding (MOU), memorandum of agreement (MOA), and concessionaire agreement. |
| Out-Lease | A type of out-grant in which NASA is the lessor/landlord and grants exclusive right to the lessee/tenant for the use of real property for a specified period. |
| Real Property | Land, buildings, structures, other structures and facilities, and leasehold improvements. Real property also includes installed collateral equipment (i.e., building-type equipment), as defined in NASA Procedural Requirement (NPR) 9250.1. |
| Recognized Environmental Condition (REC) | The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. |

Appendix H: Phase II & Beyond

PHASE II & BEYOND

H.1 Introduction

As discussed in previous sections, the purpose of a Phase I ESA is to determine if there are any RECs on a subject property. If any RECs are identified, additional actions would then be implemented related to characterizing and cleaning up onsite contamination. This usually comprises the following steps:

1. RECs identified through Phase I ESA.
2. Contamination discovered/confirmed through Phase II ESA.
3. Initial notification to the appropriate federal and/or state regulatory agency regarding onsite contamination.
4. Contamination characterization through Phase III ESA.
5. Implementation of remedial action plan (RAP).
6. Preparation of closure report to state agency.
7. State agency issues no further action letter.

These steps are further discussed below.

H.2 Phase II Environmental Site Assessments (ESAs)

The objective of the Phase II ESA is to confirm the presence and initially characterize the substances of concern at the site. The most frequent substances tested for are related to petroleum hydrocarbons, heavy metals, pesticides, and solvents. Initial characterization of the contamination (i.e., degree, nature, estimated extent, and media affected) and site conditions (i.e., geological, ecological, hydrogeological, and hydrological) are necessary to identify the need for more specific Phase III investigations. It also may be decided that no further action is required or that immediate action is needed. If contamination is confirmed at the property, the appropriate federal and/or state regulatory agency is notified of the presence of this contamination.

H.3 Phase III Environmental Site Assessments (ESAs)

A Phase III detailed investigation would be necessary if the Phase II results indicate that significant contamination exists that will require remediation. A Phase III investigation specifically addresses outstanding issues with a view to obtaining enough information to formulate a RAP. The objectives of a Phase III investigation are:

- To target and delineate the boundaries of identified contamination;
- To define, in greater detail, site conditions to identify all contaminant pathways, particularly with respect to possible risk assessment;
- To provide contaminant and other information necessary to finalize environmental quality remediation criteria or risk assessment; and
- To provide all other information required to develop a RAP, provide input to specifications, and submit appropriate federal and/or state agency documents.

H.4 Remedial Action Plan (RAP)

Once the remediation criteria have been determined for the site, a RAP is prepared detailing the methodology for achieving these criteria as well as the proposed remedial action. The RAP must:

- Identify contaminants of concern and the media affected.
- Identify the proposed cleanup criteria and method(s) by which they have been derived.
- Identify, quantify, and characterize the materials to be treated/removed.
- Summarize remedial options evaluated and the method used to select the preferred remedial strategy.
- Describe the selected cleanup method and its technical feasibility.
- Detail an implementation plan, including a schedule.
- Identify the fate of residual contaminants.
- Identify remedial verification and long-term monitoring plans.

For some sites, it may not be practical to meet the established standards. In these cases, it may be possible, with state agency concurrence, to:

- Develop **site-specific numerical standards** by adjusting the generic standards to fit site-specific conditions.
- Use the natural **background concentrations** of contaminants as the goal to meet when cleaning up sites, such as where soil has naturally high concentrations of heavy metal.
- Use a **risk assessment** to determine the actual hazards the contamination creates and what actions can be taken to reduce those hazards to acceptable levels when the existing models cannot sufficiently address the complexity of the site.

The final action in this step is to submit the RAP to the relevant state regulatory agency for approval. Once approved, the responsible party shall proceed with implementation of the RAP. This will also involve submitting monitoring reports to the state agency on a pre-determined schedule. Any deviations from the RAP must be coordinated with the state agency.

H.5 Site Closure

When the responsible party is satisfied that all the requirements of the RAP have been met, a closure report is provided to the state regulatory agency. Upon receipt and acceptance of the closure report, the state agency will conclude the management process by issuing a letter advising that no further remedial action is required.

H.6 Residual Contamination

Most states allow some residual contamination to remain after a cleanup of contaminated soil or groundwater. Residual contamination means that some contamination may have remained above state standards after an environmental cleanup was completed and approved. To protect public

health, the state agency will often implement Land Use Controls (LUCs) on a property where there is some residual contamination.

LUCs are used when it has been determined that it is safe to leave specific types of contamination at a property if defined restrictions are followed. The LUCs are specified in the CERCLA decision document that identifies the remedy for environmental contamination that best fits the site condition. The regulatory agencies and the property owner agree to one or more LUCs that allow ongoing use of the property within the limits defined in the decision document. Common LUC provisions include establishing that a remedial system (e.g., monitoring wells) would not be disturbed, limiting onsite soil disturbance or groundwater use, restricting the use of the property to commercial/industrial, and disallowing sensitive uses where there is a potential for human exposure.

LUCs “run with the property,” meaning a LUC and its provisions are binding on all current and future property owners and users. These controls may be codified in a property deed as activity and use limitations. LUCs are subject to inspections and reporting to ensure ongoing compliance. LUCs remain in effect until formally removed or modified by the regulatory agency. The regulatory agency will review applications and information supporting a LUC termination or variance. For example, if a new owner completes additional cleanup to remove or otherwise remediate contamination, the owner could go through the process requesting termination of the LUCs.

H.7 EDD Considerations for Contaminated Property

A contaminated property is defined as one with existing concentrations of chemicals of concern that exceed a regulatory limit or standard. These regulatory limits may be based on numeric standards that apply to all sites under the regulatory program in a particular state. More recently, states are setting generic or site-specific limits based on the risk to human health and the environment that might be posed by a chemical of concern. The level of risk varies depending on the intended use of the property.

If the current levels of contamination are below regulated action levels, then real property is not considered contaminated. This protects NASA from the enormous expense the owner of contaminated property must assume to clean up the site and protects NASA from paying damages to private individuals who successfully bring toxic tort claims against the property owner. *Note: No NASA policy currently exists in regard to acquiring contaminated property.*

While no policy exists, NASA should be aware that the main risk in taking the title to contaminated property is that liability could be imposed under CERCLA, Resource Conservation and Recovery Act (RCRA), and other environmental statutes. Therefore, technical consultation with qualified consulting firm is critical when characterizing the site because traces of hazardous waste or substances may indicate a larger problem.

However, due to practical, political, and operational requirements, NASA often must consider the possibility of purchasing or leasing property that is or has been contaminated. The USEPA and many states have active programs to encourage reuse and redevelopment of these sites, with incentives or liability waivers given to the new property owners. An example of such a property is a brownfield.

Brownfields: Brownfields are typically underutilized properties that are located in urban areas and were formerly used for industrial purposes that have contaminated the site. This contamination may be above or below regulatory action levels. Redevelopment of brownfields may also be avoided due to perceived contamination. Brownfields usually fall within that larger category of sites for which regulatory agencies require the remediation (removal and/or cleanup) of soil or groundwater if the contamination is above regulatory levels.

H.8 NASA Environmental Compliance and Restoration (ECR) Program

The purpose of NASA's ECR Program is to clean up chemicals released to the environment from past activities. Cleanups are prioritized to ensure that the highest priority liabilities are addressed first to protect human health and the environment and preserve natural resources for future missions. Funding is managed through the ECR Program within Construction and Environmental Compliance and Restoration Appropriations. ECR projects include both restoration projects and environmental management investment projects. Environmental restoration supports NASA's mission in a variety of ways:

- Ensuring the public and employees are not exposed to chemicals released from past activities.
- Restoring impacted natural resources for current and future missions.
- Preserving NASA's reputation as a "good neighbor" so that NASA activities will continue to enjoy strong public support.
- Reducing the NASA's unfunded environmental liability so that future funding may go toward mission requirements.
- Addressing changing regulatory requirements and advances in scientific information to ensure chemical risk management decisions remain based on sound science and support mission activities.
- Working with stakeholders, such as environmental groups, tribes, state and local government agencies, and industry, to identify common goals concerning cleanup of hazardous substances and restoration of natural resources.
- Maintaining effective communication with policy and regulatory authorities.
- Advancing partnerships and environmental stewardship.
- Ensuring environmental statutory and regulatory compliance.

NASA may have completed remedial actions on a property considered for disposal. The EMO can advise the RPAO and RECO regarding the status of the property.

Appendix I: Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Disposal of Federal Real Property

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Disposal of Federal Real Property

CERCLA Section 120(h) imposes several requirements on certain transfers of federal real property “owned by the United States” to non-federal entities. With regards to the Federal Real Property Disposal Process, CERCLA requires the federal government to:

- Give notice of hazardous substance activity to the lessee. NASA must assert that either (a) there is no evidence of hazardous substance activity or (b) there is evidence of hazardous substance activity that occurred on the property. If (b), NASA has a “due diligence” obligation to provide detailed, accurate information on all “reportable quantities” of hazardous substances stored, released, or disposed of on the property.
- Include a covenant in the deed that “all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of such transfer.” The term “all remedial action necessary to protect human health and the environment” is not defined in CERCLA. However, it is reasonable to interpret these words to include “removal actions” and thus all forms of “response action” taken to address potential releases of hazardous substances into the environment. *Note: The federal government may defer the covenant with a state’s concurrence.*
- Include a deed covenant that the United States will return and perform any additional response action that may be required in the future.
- Retain a perpetual right of access necessary to do such additional response actions.

These requirements only apply to fee conveyances of real property out of federal ownership. They do not apply to interagency federal real property transfers or to leases, licenses, or easements granted for the use of federal land.

The USEPA has also promulgated guidance on USEPA’s concurrence in the identification of uncontaminated parcels under CERCLA Section 120(h). The USEPA has stated that there may be instances in which it would be appropriate to concur with the military service that certain parcels can be identified as uncontaminated under CERCLA Section 120 (h)(4) even if some limited quantity of hazardous substances or petroleum products have been released or disposed of on the parcel. If the information available indicates that release or disposal was associated with activities that would not be expected to pose a threat to human health or the environment, such parcels should be eligible for expeditious reuse and redevelopment. Examples of categories of parcels where USEPA would generally concur are uncontaminated include housing, stained pavements, and the presence of pesticides (in the absence of evidence indicating a threat to human health or the environment).

Additional information on the USEPA’s guidance may be found at:

<https://www.epa.gov/fedfac/guidance-epa-concurrence-identification-uncontaminated-parcels-under-cercla-section-120-h4>. *Note: In the case of property disposals, after the EDD process is completed, NASA would then notify Congress of the intent to dispose the property,*

*complete a General Services Administration (GSA) checklist (included as **Appendix A: Excess Real Property Due Diligence Checklist**), and submit the checklist to GSA for approval.*