

HAWAII DEPARTMENT OF HEALTH (HDOH)
HAZARD EVALUATION AND EMERGENCY RESPONSE OFFICE (HEER OFFICE)

INTRODUCTION TO THE HEER OFFICE REPORT REVIEW WORKSHEET

The attached Review Worksheet will help guide the HEER Review Process. It indicates the overall reporting requirements for stakeholders, and provides a consistent worksheet for HDOH review and oversight. The intent of the worksheet is to ensure that reports properly address the key project elements, including:

- Identification of areas and sources of contamination.
- Characterization of the nature and extent of contamination.
- Identification of potential current and future migration routes.
- Identification of current and future land use determinations and integration into environmental hazard/risk evaluation.
- Completion of an acceptable “removal” or “remedial” action, performed to protect human health and the environment, and treatment of contamination to the extent feasible.
- Evaluation of environmental hazards caused by residual contamination remaining on the site.
- If applicable, inclusion of institutional controls required to maintain protectiveness of the cleanup.

The Site Cleanup Process Review Worksheet is an aid, to help stakeholders and HDOH reviewers identify critical information necessary to support adherence to the State Contingency Plan (SCP), the HEER Office Technical Guidance Manual (TGM), and help facilitate No Further Action determinations. This is intended to be a cross-reference aid to the elements included within the TGM.

Site complexities will dictate the level of detail required for each investigation and cleanup. Adequate supporting information consistent with HAR 11-451* and HRS 128D must be provided in order to receive site closure documentation from HDOH.

❖ **Note that all categories/elements of this worksheet may not apply to all sites or reports. Professional judgment should be used to determine the applicability of the worksheet categories/elements to a specific site.**

❖ **This worksheet is intended for use only as a review aid, not regulation.**

The Key Elements of the Review Worksheet are presented below.

REVIEW WORKSHEET CATEGORIES	Applicability
I. Introduction and Background	<input type="checkbox"/> Not Applicable - Explain*:
II. Environmental Setting	<input type="checkbox"/> Not Applicable - Explain*:
III. Planning and Approach	<input type="checkbox"/> Not Applicable - Explain*:
IV. Sampling Activities	<input type="checkbox"/> Not Applicable - Explain*:
V. Quality Assurance and Control	<input type="checkbox"/> Not Applicable - Explain*:
VI. Site Health and Safety	<input type="checkbox"/> Not Applicable - Explain*:
VII. Deviations from Proposed Cleanup Scope	<input type="checkbox"/> Not Applicable - Explain*:
VIII. Environmental Hazard Evaluation – Post-Sampling Investigation	<input type="checkbox"/> Not Applicable - Explain*:
IX. Conclusions and Recommendations – Post-Sampling Investigation	<input type="checkbox"/> Not Applicable - Explain*:
X. Evaluation, Selection, and Description of Cleanup Alternatives	<input type="checkbox"/> Not Applicable - Explain*:
XI. Public Participation and Public Notices	<input type="checkbox"/> Not Applicable - Explain*:
XII. Response (Removal or Remedial) Action Summary Report, Confirmation Sampling	<input type="checkbox"/> Not Applicable - Explain*:
XIII. Response (Removal or Remedial) Action Summary Report, Environmental Hazard Evaluation	<input type="checkbox"/> Not Applicable - Explain*:
XIV. Final Site Closure	<input type="checkbox"/> Not Applicable - Explain*:

* Chapter 11-451 of the HAR, titled the State Contingency Plan (SCP), describes two cleanup processes: 1) the remedial action process; and, 2) the removal action process. The SCP explains the criteria HDOH uses to determine which process is most appropriate for a specific site.

HAWAII DEPARTMENT OF HEALTH (HDOH)
HAZARD EVALUATION AND EMERGENCY RESPONSE OFFICE (HEER OFFICE)

HEER OFFICE REPORT REVIEW WORKSHEET

SUMMARY SHEET

Facility Name:
Facility Address:
Facility ID # (if applicable):
Release ID # (if applicable):
Hazardous Substance Information (ID, Quantity, etc):
Document Title:

SITE STATUS		EXPLANATION / DETAILS
<input type="checkbox"/>	Fast Track Cleanups (FTC)	
<input type="checkbox"/>	Voluntary Response Program (VRP)	
<input type="checkbox"/>	State Sites	
<input type="checkbox"/>	Emergency Response	
<input type="checkbox"/>	Removal Action	
<input type="checkbox"/>	Remedial Action	
<input type="checkbox"/>	Innocent Landowner	
<input type="checkbox"/>	Prospective Purchaser	
<input type="checkbox"/>	Other - Explain:	

REVIEWER COMMENTS	
SUMMARY COMMENTS: <i>(i.e. Report Adequate, Report Accepted with conditions, Revisions required, Missing Information / Elements, Additional Details required, etc.)</i>	
RECOMMENDED ADDITIONAL ACTIONS: <i>(i.e. Proceed to Next Action [and Identify], No Further Action, Resubmit Report incorporating required modifications or clarification; etc.)</i>	
REGULATORY / PROCESS STATUS:	
OTHER COMMENTS:	

Hawai'i Department Of Health Hazard Evaluation And Emergency Response Office HEER Office Report Review Worksheet

Facility Name:
Facility Address:
Facility ID # (if applicable):
Release ID # (if applicable):
Hazardous Substance (ID, Quantity, etc.):
Document Title:
Prepared By:
Date:
Project Manager:
FACILITY OWNERSHIP AND USE
Identify Facility Owner / Contact:
Identify the Facility Operator (if different than above):
Identify Responsible Party (if known / if applicable):
Identify Current Land Use:
Identify Anticipated Future Land Use:
Identify any Environmental Liens, Land Use Restrictions, or Institutional Controls (if applicable):

I. INTRODUCTION AND BACKGROUND	Yes	No
1. Purpose. <ul style="list-style-type: none"> ▪ Is purpose of the cleanup action clearly stated? ▪ Does document identify intended outcome of project? <p><i>TGM Section 3.2</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
2. Is the Stakeholder Electing to Participate in <u>Fast Track Cleanups (FTC)</u> or <u>Voluntary Response Program (VRP)</u>? <ul style="list-style-type: none"> ▪ If "Yes", go to #3. ▪ If "No", go to #4. <p><i>TGM Section 15, and Section 5.0.</i> <i>TGM Section 1.3.2.5.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
3. Eligibility. Does the site meet the eligibility requirements? <ul style="list-style-type: none"> ▪ For Fast Track Cleanups (FTC), applicable requirements are identified on <i>the FTC Site Scoping Form</i>, and during discussions with DOH for the <i>FTC Scoping Meeting</i> <i>TGM Section 15, and Section 5.0.</i> ▪ For Voluntary Response Program (VRP), applicable requirements are <i>the VRP Eligibility Criteria (HRS 128D-33)</i>, as identified on the <i>DOH VRP Application and Eligibility Checklist</i> <i>TGM Section 1.3.2.5</i> ▪ If "No", go to "Reviewer Comments and Suggestions", and identify details. 	<input type="checkbox"/>	<input type="checkbox"/>
4. Site Location. Does document include site name, street address, tax map key, acreage, and other appropriate physical descriptions? <i>TGM Section 18.4</i>	<input type="checkbox"/>	<input type="checkbox"/>
5. Adjacent Properties. Are the adjacent properties and vicinity adequately discussed (relevant to sensitive communities and possible off-site migration)? <i>TGM Section 3.2.1</i>	<input type="checkbox"/>	<input type="checkbox"/>

PRELIMINARY DRAFT (V2.2)

I. INTRODUCTION AND BACKGROUND (continued)		Yes	No
<p>6. Site History. Is the Site History adequately discussed ?</p> <p>Considerations Include:</p> <ul style="list-style-type: none"> ▪ Does site description include current and past owner and site operations? ▪ Are hazardous substances, waste storage, or disposal areas described? <p>Note:</p> <ul style="list-style-type: none"> ▪ Text should identify any known or suspected operations or practices, materials, product and waste handling, disposal practices, or any environmental concerns. ▪ Sources for site history may include: aerial photographs, Sanborn fire insurance maps, street directories, title information, newspaper archives, and area-wide descriptions of geology, soil types, topography, and groundwater conditions. <p><i>TGM Section 3.1.1</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>7. Regulatory History. Is the regulatory history, if any, adequately discussed?</p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>8. Previous Investigations. Are all previous environmental investigations discussed adequately?</p> <ul style="list-style-type: none"> ▪ Information to be included should address findings from previous Phase I or II investigations, history of releases, spills, stressed vegetation, interviews, etc. <p><i>TGM Section 3.1</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>9. Site Maps. Do the site maps show pertinent site features and adjacent property or vicinity features?</p> <p>Considerations Include:</p> <ul style="list-style-type: none"> ▪ Are all unique features described in text shown on the figures? ▪ For example, maps should include past storage areas, drainage swales, surface water, etc. <p><i>TGM Section 3.1 and Section 3.2</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>10. Summary. Is the introduction and background information presented adequate? If "No", provide comments and suggestions below.</p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>Reviewer Comments and Suggestions. (Provide detailed explanation for any line items where "No" was checked.)</p>			

PRELIMINARY DRAFT (V2.2)

II. ENVIRONMENTAL SETTING.

The level of detail required for project planning and approach is dictated by the complexity of each site. The information provided in this section is general in nature and should be considered, but is not necessarily required for each site.

	Yes	No
<p>1. Climate (when determined pertinent to submittal). Does document include relevant climate information such as rainfall and predominant wind direction?</p> <p><i>TGM Section 3.1.1 and Section 18.4.2</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>2. Topography. Does document present site topography and local drainage features? Again, only if necessary.</p> <p><i>TGM Section 3.1.1 and Section 18.4.2</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>3. Surface Water. Are on-site or nearby surface water features adequately discussed ?</p> <p>Considerations Include:</p> <ul style="list-style-type: none"> ▪ Is specific information presented for drainage paths ? ▪ Are the distances and descriptions of nearest surface waters and receiving waters for surface drainage identified (i.e. is the site identified as being < or > 150 meters from nearest surface water)? <p><i>TGM Sections 2.1, 2.4, 3.1.1 and 18.4.2</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>4. Geology. Are regional and site geology adequately presented?</p> <p>Considerations Include:</p> <ul style="list-style-type: none"> ▪ Are site-specific conditions such as soil types, stratigraphy, lithology, or any other important geologic factors considered? ▪ If site-specific data are available, are cross-sections necessary? <p><i>TGM Sections 2.4, 3.1.1 and 18.4.2</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>5. Hydrogeology. Are regional and site hydrogeology adequately presented ?</p> <p>Considerations Include:</p> <ul style="list-style-type: none"> ▪ Is depth to groundwater presented ? ▪ Are estimated gradient and direction of groundwater flow indicated ? ▪ Are the beneficial uses of groundwater in vicinity of the Subject Property discussed? ▪ Is classification of the groundwater, with regard to <u>current or potential use as drinking water</u>, documented? <p><i>TGM Sections 2.3, 2.4, 2.5, and 3.0</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Summary. Is the environmental setting information presented adequate? If "No", provide comments and suggestions below.</p>	<input type="checkbox"/>	<input type="checkbox"/>

Reviewer Comments and Suggestions (Provide detailed explanation for any line items where "No" was checked.)

III. PLANNING AND APPROACH

The level of detail required for project planning and approach is dictated by the complexity of each site. The information provided in this section is general in nature and should be considered, but is not necessarily required for each site.

Yes

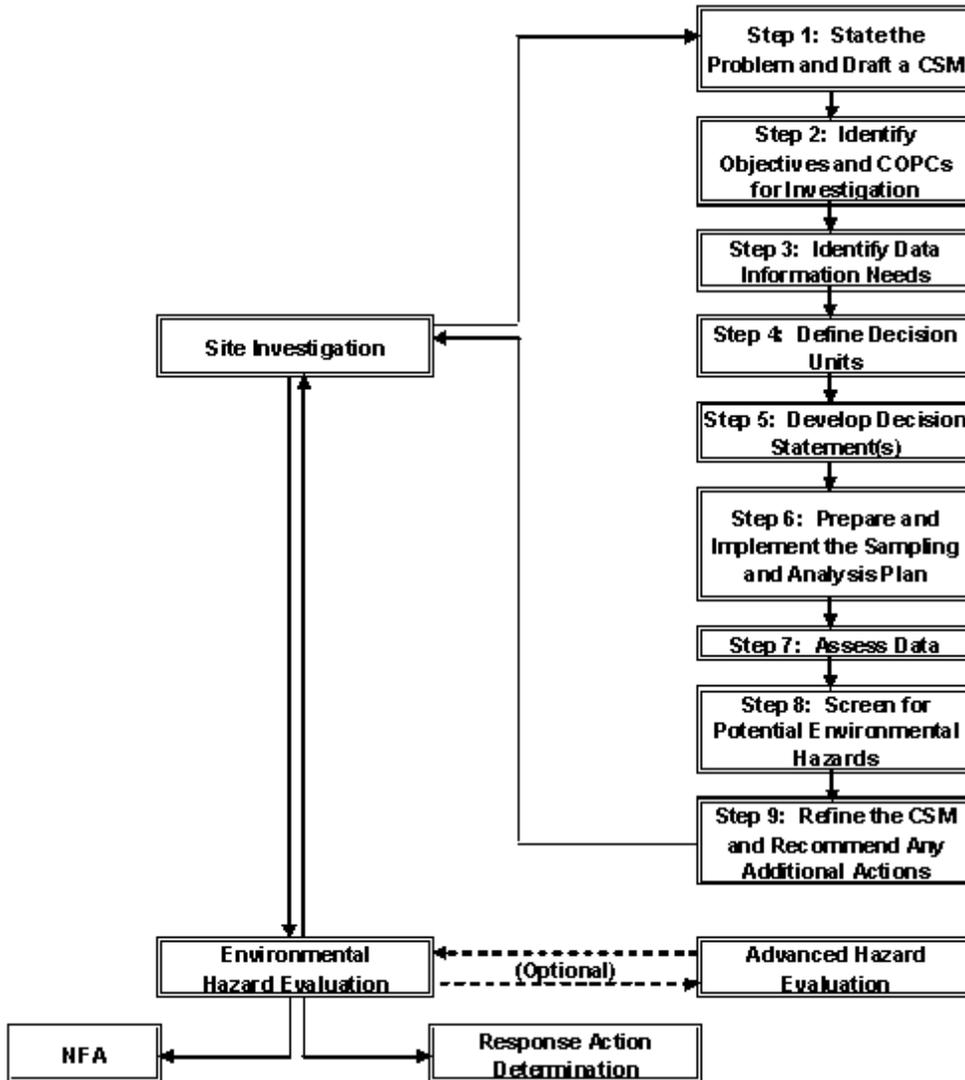
No

1. **State the Problem.** Does the document state the project purpose and presumed problem?

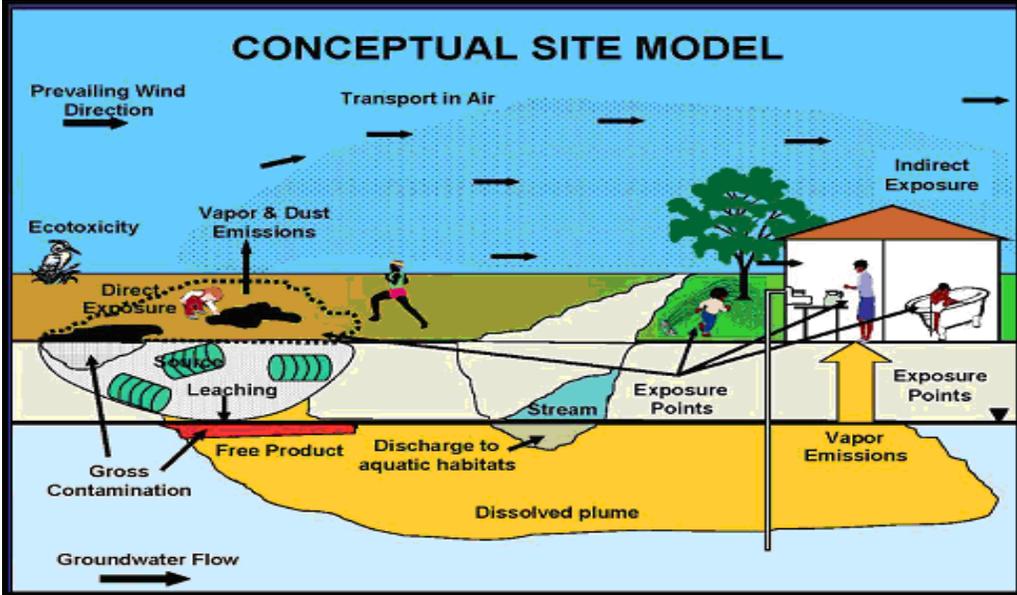
- The document should summarize past or ongoing activities at the site that could have led to environmental contamination and will require additional investigation.

TGM Section 3.0 outlines the site investigation design and implementation.

TGM Section 3.2.1 identifies the steps of the systematic planning approach for site investigations Step 1.



PRELIMINARY DRAFT (V2.2)

III. PLANNING AND APPROACH (continued)	Yes	No
<p>2. Conceptual Site Model. Is a conceptual site model presented?</p> <ul style="list-style-type: none"> The CSM is a comprehensive representation of the current understanding of site environmental conditions with respect to recognized or potential environmental hazards. The CSM should include potential contaminant sources, pathways, and receptors. The CSM includes a summary of the known or suspected extent and magnitude of soil and groundwater contamination. Site conditions such as land use, groundwater use, potential onsite and offsite receptors, exposure or isolation of contaminated soil, etc., are identified, as are specific environmental hazards that may be posed by the identified contamination. The CSM is continually updated as the site investigation proceeds and site conditions are better understood. CSMs may be presented in tabular form, or graphically. A contaminated site is initially screened against one of the four default CSMs when site data are compared to the Tier 1 EALs for that scenario. Preparation of a more site-specific CSM is not required in every case, but may be useful or even necessary for sites with extensive contamination and/or significant public interest. <p><i>TGM Section 3.3.3</i></p> <p align="center">Sample Conceptual Site Model (Graphic)</p> 	<input type="checkbox"/>	<input type="checkbox"/>
<p>3. Objectives. Does the document identify simple questions that will address the stated problem and issues identified in the CSM?</p> <ul style="list-style-type: none"> The questions should outline the basic concerns at the site. <p><i>TGM Section 3.1 Site Investigation Scoping.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>4. Chemicals of Potential Concern. Based on the site history and CSM, are the chemicals of potential concern adequately presented?</p> <p><i>TGM Section 9 provides supplemental guidance regarding the selection of COPCs for some specific types of sites.</i> <i>TGM Section 3.2.1 provides guidance on systematic planning approach for site investigations Step 2.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>5. Information and Data Needs. Does the document identify the information or data needs necessary to resolve the questions posed in the Objectives?</p> <ul style="list-style-type: none"> At a minimum, the information needs should specify the media to be investigated (soil, soil gas, groundwater, air, etc...), depth horizons of interest, and chemical evaluations necessary to resolve the objectives. The information and data needs should also include discussion of appropriate regulatory or hazard evaluation criteria, such as the EALs. <p><i>TGM Section 3.2.1 systematic planning of site investigation systematic planning approach Step 3.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>

PRELIMINARY DRAFT (V2.2)

III. PLANNING AND APPROACH (continued)		Yes	No
<p>6. Decision Units. Have exposure area and/or spill area Decision Units (DUs) been properly designated?</p> <ul style="list-style-type: none"> ▪ A decision unit is a well-defined area of a site where a decision is to be made regarding the extent and magnitude of contaminants identified within the unit, as well as the potential environmental hazards posed by the contaminants. Decision units should consider the intended use of the site, primary hazards or receptors, coverage of spill areas, lateral boundaries, and depths of possible sources. <p><i>TGM Section 3.2.1 Step 4 Defines Decision Units, site investigation systematic planning approach. Section 3.4 discusses Decision Units in detail.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>7. Decision Statements. Does the document identify clear decision statements necessary to address the site objectives?</p> <ul style="list-style-type: none"> ▪ Decision statements integrate the information and data needs and decision units in order to answer the problem statement. ▪ Decision statements are phrased in the form of “If...then” and “if not... then”. For example, a decision statement might read, “If chemical concentrations at Decision Unit 01 are all below residential and ecological EALs, then no environmental hazard exists for the area. If chemical concentrations at Decision Unit 01 are not below residential and ecological EALs, further evaluation, including Tier 2 risk assessment or cleanup actions will be evaluated.” <p><i>TGM Section 3.2.1 Step 5 Develop Decision Statement, site investigation systematic planning approach.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>8. Summary. Is the planning and approach information presented adequate? If “No”, provide comments and suggestions below.</p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>Comments and Suggestions (Provide detailed explanation for any line items where “No” was checked.)</p>			

PRELIMINARY DRAFT (V2.2)

IV. SAMPLING ACTIVITIES		Yes	No
The level of detail required for sampling activities is dictated by the complexity of each site. The information provided in this section is general in nature and should be considered, but is not necessarily required for each site.			
1. Site Assessment Plan. Does the document adequately describe sampling objectives, rationale for the location and number of samples collected, and data quality objectives? <ul style="list-style-type: none"> ▪ Some sites will require sampling only for certain media (e.g., soil) while more complex sites may require more comprehensive investigation. Does the site assessment adequately address the knowledge of site conditions, conceptual site model, and project objectives? HDOH and Stakeholder should exercise their best professional judgment as to which parts of the TGM are appropriate for fulfilling the data and investigation needs for the site. Specific items to be considered include: <ul style="list-style-type: none"> • Appropriate decisions, data needs, data quality objectives • Aligning sampling strategy with investigation data needs • Deviation of methods, equipment, or procedures from those presented in the TGM • Use and justification of technologies or methods not covered in the TGM • Need to modify investigation strategy or methods based on encountered field conditions <i>TGM Section 3.2.1 Step 6 of the systematic planning approach is Develop and Implement the Sampling and Analysis Plan.</i>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Use of Multi-Increment/Decision Units. Does the sampling methodology incorporate the identification of decision units and collection of multi-increment samples (MIS)? <ul style="list-style-type: none"> ▪ HDOH strongly encourages the use of decision unit and MIS strategies to investigate contaminated soil. <i>TGM Section 4 and Section 3.2.1 Step 4 provide a detailed discussion of MIS approaches.</i>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Sampling Methods. Does the document adequately discuss sampling methods conducted, including reference to standard operating procedures? <ul style="list-style-type: none"> ▪ Sampling methods may be included in an appendix and should describe soil sampling methods, well installation procedures, well development and purging procedures, and how groundwater samples were collected. Any other sampling methods used at the site should also be included. <i>TGM Section 5 discusses soil and sediment sampling tools and techniques.</i> <i>TGM Section 6 discusses groundwater and surface water sampling.</i>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Field Log Information. Does the document record the general activity conducted, the details of that activity, and general information in the field log book, including: <ul style="list-style-type: none"> ▪ Date, time, and weather conditions. ▪ Name(s) of field personnel or sampler. ▪ Field measures (where appropriate). ▪ General comments (e.g., staining, stressed vegetation, etc.). ▪ Deviations from plan caused by encountered conditions in the field. <i>TGM Section 5.3.1</i>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Decontamination. Does the document identify proper procedures to ensure the decontamination and elimination of cross contamination of all soil, sediment, or groundwater sampling devices? <i>TGM Section 5.7 discusses the preferred decontamination protocols for soil/sediment sampling.</i>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Analytical Methods. <ul style="list-style-type: none"> ▪ Are analytical methods selected based on potential contaminants of concern? ▪ If sampling for the first time under unknown conditions, is there a preference for a larger suite of chemical analyses? ▪ Do all sample analyses follow standard U.S. Environmental Protection Agency or equivalent methods? <i>TGM Section 11.5, Table 11-A (soil) and 11-B (water) list definitive analytical methods for potential contaminants of concern along with details on sample handling.</i>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Investigation Derived Waste. Does the report describe adequately the amount and type of wastes generated? Considerations Include: <ul style="list-style-type: none"> ▪ If any wastes were generated, were they adequately characterized as hazardous or non-hazardous? ▪ If waste is designated for off-site disposal, does the document include final signed waste manifests? ▪ If waste is not designated for off-site disposal, is it contained as such to not pose additional or potential hazards to on- or off-site conditions? <i>TGM Section 5.8 describes proper handling of IDW for soil cuttings, decontamination fluid, PPE, hazardous soil or water.</i>	<input type="checkbox"/>	<input type="checkbox"/>	
8. Summary. Is the sampling activities information presented adequate? If "No", provide comments and suggestions below.	<input type="checkbox"/>	<input type="checkbox"/>	
Comments and Suggestions (Provide detailed explanation for any line items where "No" was checked.)			

PRELIMINARY DRAFT (V2.2)

V. QUALITY ASSURANCE AND CONTROL		Yes	No
<p>1. Approach. Does the document provide procedures to help ensure that site characterization data are adequately representative and accurate to define site impacts and evaluate potential environmental hazards?</p> <p><i>TGM Section 3.7 outlines the development of Quality Assurance Project Plans in the planning phase prior to sampling.</i> <i>TGM Section 10 outlines data quality assurance and quality control procedures for the field and laboratory.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>2. Field Equipment Calibration. Has field equipment calibration been properly documented in a field logbook or calibration sheet?</p> <p><i>TGM Section 10.5 Field Equipment and Laboratory Instrument Calibration.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>3. Field QA/QC. Were adequate QA/QC samples collected in the field?</p> <ul style="list-style-type: none"> ▪ QA/QC samples include field replicates, and may also include trip blanks, field equipment rinsate blanks, or field source blanks. <p><i>TGM Section 10.6 Field QA/QC describes field procedures for ensuring quality data is obtained with documentation of field activities.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>4. Laboratory QA/QC. Is there an accurate measurement of the precision and accuracy of the laboratory results? Are samples results derived within laboratory reporting limits?</p> <p><i>TGM Section 10.7 Lab QA/QC describes lab procedures for ensuring quality data is obtained with laboratory analysis.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>5. Chain of Custody. Are the following considerations addressed:</p> <ul style="list-style-type: none"> ▪ Does each sample have a unique identification? ▪ Does the sample identification indicate the project site, date sampled, and sampler? ▪ Are replicates labeled in a manner that does not allow the analytical lab to identify them as replicates of the primary sample(s)? ▪ Does the chain of custody clearly track the sample possession and change of responsibilities for sample integrity? ▪ Are adequate signatures provided to ensure responsibilities for maintaining sample integrity? <p><i>TGM Section 10.6.4 Field QA/QC describes COC implementation.</i> <i>TGM Section 11.3 describes sample control and chain of custody procedures.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>6. Corrective Action. Whenever any QC parameters are outside of the control limits, does the report identify the potential origin of the problem and initiate any appropriate corrective action. Is the potential for corrective action addressed in the document?</p> <p><i>TGM Section 10.8 outlines corrective actions in data quality assurance and quality control.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>7. Data Quality Assessment. Does the document provide a summary of the data quality assessment? Does the document provide confirmation that the data is usable based on a review of the data quality objectives and assessment?</p> <p><i>TGM Section 3.8 discusses the data quality assessment process.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>8. Summary. Are the quality assurance protocols conducted considered adequate for the stated data quality objectives? If "No", provide comments and suggestions below.</p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>Comments and Suggestions (Provide detailed explanation for any line items where "No" was checked.)</p>			

PRELIMINARY DRAFT (V2.2)

VI. SITE HEALTH AND SAFETY		Yes	No
1.	Has stakeholder provided documentation or assurances that a health and safety plan was present and adhered to for all field activities? <ul style="list-style-type: none">▪ HDOH does not comment on or approve site health and safety plans, but does require that one be in place for all field activities.▪ Specific requirements are presented in 29 Code of Federal Regulations (CFR) Section 1910.120. <p><i>TGM Section 3.6.3 outlines health and safety plans as a part of sampling and analysis plans.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
Comments and Suggestions (Provide detailed explanation for any line items where "No" was checked.)			

PRELIMINARY DRAFT (V2.2)

VII. DEVIATIONS FROM PROPOSED CLEANUP SCOPE		Yes	No
<p>1. Have cleanup activities performed to date been consistent with any previous cleanup scoping documents provided to HDOH or scoping discussions with HDOH ?</p> <ul style="list-style-type: none"> ▪ Note: At FTC sites, project scoping typically will have been discussed in meetings rather than presented in formal written documents <p><i>TGM Section 11.5 Approved Analytical Methods directs the documentation of deviations from EPA-approved methods in the SAP.</i></p> <p><i>TGM Section 5.3.1 Field Log Books describes field documentation of deviations during soil investigations.</i></p> <p><i>TGM Section 7.10 describes documentation of deviations during soil vapor or indoor air sampling.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>2. Has the stakeholder provided justification for any deviations to the intended investigation or cleanup?</p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>3. If "YES" to Item 1, have significant changes occurred which might have important impacts regarding the findings or recommendations?</p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>4. Summary. Is the deviation information presented adequate? If "No", provide comments and suggestions below.</p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>Comments and Suggestions (Provide detailed explanation for any line items where "No" was checked.)</p>			

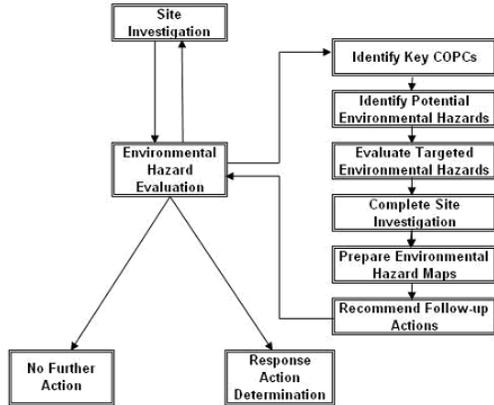
PRELIMINARY DRAFT (V2.2)

VIII. ENVIRONMENTAL HAZARD EVALUATION – POST SAMPLING INVESTIGATION

Yes **No**

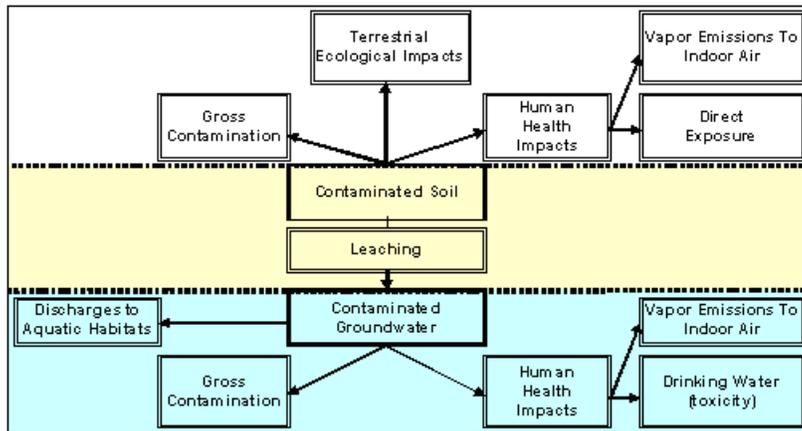
1. Is an Environmental Hazard Evaluation Provided?

- The Environmental Hazard Evaluation (EHE) is the link between site investigation activities and response actions carried out to address hazards posed by the presence of contaminated soil and groundwater.



Preparation of a conceptual site model that summarizes current site conditions is an important part of the EHE process. An example of the elements of an EHE is presented below.

TGM Section 3.10 describes the Environmental Hazard Evaluation.
TGM Section 3.2.1. Step 8 systematic planning approach, screen for potential environmental hazards.
TGM Section 13.0 provides an overview of an approach to Environmental Hazard Evaluation.



2. Tier 1 Environmental Action Levels (EALs). Does the document include an evaluation of environmental hazard consistent with Section 13.0 of the TGM?

- Considerations Include:
- Is site data compared adequately to the HDOH Tier 1 Environmental Action Levels (EAL)? Are the appropriate target environmental hazards (by media) identified?
 - Are the appropriate EAL screening tables selected based on the stated data quality objectives?
 - Does the document reference the date of the EALs to ensure the most up-to-date tables were used?

TGM Section 13.2 describes Tier 1 Environmental Action Levels.

3. Comparison of Data to EALs. Are Concentrations of Chemicals of Potential Concern below applicable Tier 1 EALs ?

TGM Section 13.2 describes Tier 1 Environmental Action Levels.

4. Level of Detail. Is the level of detail presented in the EHE commensurate with site complexity, site conceptual model, and data quality objectives?

TGM Section 13.3 provides a comprehensive list of information to be included in an EHE and describes steps to environmental hazard evaluation.
TGM Section 13.4 describes the preparation of environmental hazard evaluation reports.

PRELIMINARY DRAFT (V2.2)

VIII. ENVIRONMENTAL HAZARD EVALUATION – POST SAMPLING INVESTIGATION (continued)		Yes	No
<p>5. EHE Elements Considered. Were the following key items considered in assessing the overall adequacy of the EHE:</p> <ul style="list-style-type: none"> ▪ Of the initial list of chemicals of potential concern, which could pose potential environmental hazards under either current or future, uncontrolled site conditions? ▪ What are the specific environmental hazards posed by the targeted chemicals of potential concern? ▪ Are additional site data needed to better define the extent and magnitude of contamination or the specific environmental hazards identified? ▪ Is an advanced evaluation of a specific environmental hazard warranted? ▪ What is the distribution of potential environmental hazards across the site? ▪ Are future site uses identified? ▪ Are additional actions recommended for the site based on the results of the EHE? <p><i>TGM Section 13.3 provides a comprehensive list of information to be included in an EHE and describes steps to environmental hazard evaluation.</i> <i>TGM Section 13.4 describes the preparation of environmental hazard evaluation reports.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>6. Current of Potential Environmental Hazards Identified. Are the following considerations addressed:</p> <ul style="list-style-type: none"> ▪ If the presence of a potential environmental hazard is confirmed, is the specific hazard posed by the contamination identified and the scope of follow-up actions necessary to address the hazard identified? ▪ Are environmental hazard maps provided? <p><i>TGM Section 13.1 identifies target environmental hazards</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>7. Summary. Is the environmental hazard evaluation information presented adequate? If “No”, provide comments and suggestions below.</p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>Comments and Suggestions (Provide detailed explanation for any line items where “No” was checked.)</p>			

PRELIMINARY DRAFT (V2.2)

IX. CONCLUSIONS AND RECOMMENDATIONS – POST SAMPLING INVESTIGATION		Yes	No
1.	Has the site been adequately characterized to meet project objectives and project scope? <i>TGM Section 19.0 describes site closures for restricted-use and unrestricted-use sites.</i>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Have the environmental hazards been adequately evaluated and identified? <i>TGM Section 19.5 Environmental Hazard Evaluation for site closure.</i>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Are the conclusions and recommendations adequately documented and justified? <i>TGM Section 19.1 describes site closure scoping.</i>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Are the proposed recommendations consistent with the cleanup scope provided? <i>TGM Section 19.1 describes site closure scoping.</i> <i>TGM Section 16.1.1 describes remedial investigation scoping.</i>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Summary. Are the conclusions and recommendations presented adequate and justifiable? If “No”, provide comments and suggestions below.	<input type="checkbox"/>	<input type="checkbox"/>
Comments and Suggestions (Provide detailed explanation for any line items where “No” was checked.)			

PRELIMINARY DRAFT (V2.2)

X. EVALUATION, SELECTION, AND DESCRIPTION OF CLEANUP ALTERNATIVES		Yes	No
1.	Were a sufficient range of on- and off-site alternatives considered? Note: A range may not be necessary. <i>TGM Section 16.1.1 describes preliminary identification of likely and/or presumptive cleanup alternatives.</i> <i>TGM Section 16.2 describes setting remedial action objectives and conducting remedial alternatives analysis.</i>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Does the selected alternative show a preference for in descending order: (1) reuse or recycling, (2) destruction or detoxification, (3) separation, concentration, or volume reduction, (4) immobilization of hazardous substances, (5) on-site or off-site disposal, isolation, or containment, or (6) institutional controls or long-term monitoring? <i>TGM Section 16.2.2.1</i>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Can the selected alternative meet the data quality objectives identified in the site assessment process? <i>TGM Section 16.2 describes setting remedial action objectives and conducting remedial alternatives analysis.</i> <i>TGM Section 16.3 describes selection of a cleanup remedy for the remedial action.</i>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Does the selected remedy eliminate or mitigate all the environmental hazards identified in the EHE? <i>TGM Section 16.4 describes implementing the cleanup remedy selected.</i>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Does the selected remedy comply with all applicable laws and regulations as related to the cleanup, permitting, storage, transport, disposal, or construction activities? <i>TGM Section 16.4 describes implementing the cleanup remedy selected.</i>	<input type="checkbox"/>	<input type="checkbox"/>
6.	Does the selected remedy minimize potential adverse impacts to the community and environment during implementation? <i>TGM Section 16.4 describes implementing the cleanup remedy selected.</i>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Does the description of remedy adequately present site conditions, short- and long-term impacts to the community during and after implementation? <i>TGM Section 16.4.3 describes operations and maintenance documentation.</i> <i>TGM Section 16.5.1 describes confirming attainment of remedial objectives.</i>	<input type="checkbox"/>	<input type="checkbox"/>
8.	Summary. Is the evaluation and selection of remedial alternatives information presented adequate? If "No", provide comments and suggestions below.	<input type="checkbox"/>	<input type="checkbox"/>
Comments and Suggestions (Provide detailed explanation for any line items where "No" was checked.)			

PRELIMINARY DRAFT (V2.2)

XI. PUBLIC PARTICIPATION AND PUBLIC NOTICES		Yes	No
1.	Are Public Participation and Notice Required ? If this is an FTC Site (<i>TGM Section 15</i>), Public Participation and Notice are not required, "No" will be typically be checked, unless Public Participation required by HEER Office. <ul style="list-style-type: none"> ▪ If "No" checked, discuss rationale in "Comments and Suggestions", below. 	<input type="checkbox"/>	<input type="checkbox"/>
2.	If Public Participation and Notice are required (<i>as determined by TGM 14.2.5 for Removal Actions, or TGM Section 16.3.2 for Remedial Actions and VRP Actions</i>), have all appropriate steps of the public notice process been followed ? <ul style="list-style-type: none"> ▪ Elements of the Public Participation process may include: Fact Sheet Preparation; Comments Received on Fact Sheet; Sufficient interest for a public meeting; Sufficient Public Comment Period [at least 30 days]; Public Notice Properly Posted in Newspaper; HEER project manager sent notice to interested parties. 	<input type="checkbox"/>	<input type="checkbox"/>
3.	Summary. Has the Public Participation Process been followed appropriately ? If "No", provide comments and suggestions below.	<input type="checkbox"/>	<input type="checkbox"/>
Comments and Suggestions (Provide detailed explanation for any line items where "No" was checked.)			

PRELIMINARY DRAFT (V2.2)

XII. RESPONSE (REMOVAL OR REMEDIAL) ACTION SUMMARY REPORT, CONFIRMATION SAMPLING		
<i>The level of detail required for confirmation sampling activities and removal or remedial action report are dictated by the complexity of each site. The information provided in this section is general in nature and should be considered, but is not necessarily required for each site.</i>		
	Yes	No
<p>1. Confirmation Sampling. Does the document adequately describe sampling objectives, rationale for the location and number of samples collected, and data quality objectives?</p> <ul style="list-style-type: none"> ▪ Some sites will require sampling only for certain media (e.g., soil) while more complex sites may require more comprehensive investigation. ▪ The confirmation sampling should adequately address the knowledge of site conditions, conceptual site model, and environmental hazards identified in the site assessment. <p><i>TGM Section 14.1 describes removal actions for emergency response and confirmation sampling efforts for that task.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>2. Use of Multi-Increment/Decision Units. Does the confirmation sampling methodology incorporate the identification of decision units and collection of multi-incremental samples (MIS)?</p> <p><i>TGM Section 4 and Section 3.2.1</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>3. Sampling Methods. Does the document adequately discuss sampling methods conducted, including references to standard operating procedures ?</p> <ul style="list-style-type: none"> ▪ Sampling methods may be included in an appendix and should describe soil sampling methods, well installation procedures, well development and purging procedures, and how groundwater samples were collected. ▪ Any other sampling methods used at the site should also be included. <p><i>TGM Section 5 discusses soil and sediment sampling tools and techniques.</i> <i>TGM Section 6 discusses groundwater and surface water sampling tools and techniques.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>4. Field Log Information. Does the document record the general activity conducted, the details of that activity, and general information in the field log book, including:</p> <ul style="list-style-type: none"> • Date, time, and weather conditions • Name(s) of field personnel or sampler • Field measures (where appropriate) • General comments (e.g., staining, stressed vegetation, etc.) • Deviations from plan caused by encountered conditions in the field <p><i>TGM Section 5.3.1</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>5. Decontamination. Does the document identify proper procedures to ensure the decontamination and elimination of cross contamination of all soil, sediment, or groundwater sampling devices?</p> <p><i>TGM Section 5.7 discusses preferred decontamination protocols for soil / sediment sampling.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>6. Analytical Methods. Are analytical methods selected based on contaminants of concern? Do all sample analyses follow standard U.S. Environmental Protection Agency or equivalent methods?</p> <p><i>TGM Section 11.5 and Table 11-A (soil) and 11-B (water) list definitive analytical methods for contaminants of concern along with details on sample handling.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>7. Field QA/QC. Were adequate QA/QC samples collected in the field QA/QC samples include field replicates, and may also include trip blanks, field equipment rinsate blanks, or field source blanks?</p> <p><i>TGM Section 10.6 Field QA/QC describes field procedures for ensuring quality data is obtained with documentation of field activities.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>8. Laboratory QA/QC. Is there an accurate measurement of the precision and accuracy of the laboratory results? Are samples results derived within laboratory reporting limits?</p> <p><i>TGM Section 10.7 Lab QA/QC describes lab procedures for ensuring quality data is obtained with laboratory analysis.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>9. Chain of Custody. Does each sample have a unique identification? Does the sample identification indicate the project site, date sampled, and sampler? Are replicates labeled in a manner that does not allow the analytical lab to identify them as replicates of the primary sample(s)? Does the chain of custody clearly track the sample possession and change of responsibilities for sample integrity? Are adequate signatures provided to ensure responsibilities for maintaining sample integrity?</p> <p><i>TGM Section 10.6.4 Field QA/QC describes COC implementation.</i> <i>TGM Section 11.3 describes sample control and chain of custody procedures.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>10. Corrective Action. Whenever any QC parameters are outside of the control limits, does the report identify the potential origin of the problem and initiate any appropriate corrective action. Is the potential for corrective action addressed in the document?</p> <p><i>TGM Section 10.8 outlines corrective actions in data quality assurance and quality control.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>11. Data Quality Assessment. Does the document provide a summary of the data quality assessment? Does the document provide confirmation that the data is usable based on a review of the data quality objectives and assessment?</p> <p><i>TGM Section 3.8 discusses the data quality assessment process.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>

PRELIMINARY DRAFT (V2.2)

XII. RESPONSE (REMOVAL OR REMEDIAL) ACTION SUMMARY REPORT, CONFIRMATION SAMPLING (continued)		Yes	No
<p>12. Health and Safety. Has stakeholder provided documentation or assurances that a health and safety plan was present and adhered to for all field activities?</p> <p>HDOH does not comment on or approve site health and safety plans, but does require that one be in place for all field activities. Specific requirements are presented in 29 Code of Federal Regulations (CFR) Section 1910.120.</p> <p><i>TGM Section 3.6.3 outlines health and safety plans as a part of sampling and analysis plans.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>13. Deviations. Was the work inconsistent with any previous scoping discussions with HDOH? Has stakeholder provided justification for any deviations to the intended cleanup? Have significant changes occurred which might have important impacts regarding the findings or recommendations?</p> <p><i>TGM Section 11.5 Approved Analytical Methods directs the documentation of deviations from EPA-approved methods in the SAP.</i></p> <p><i>TGM Section 5.3.1 Field Log Books describes field documentation of deviations during soil investigations.</i></p> <p><i>TGM Section 7.10 describes documentation of deviations during soil vapor or indoor air sampling.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>14. Summary. Is the removal summary report information presented adequate? If "No", provide comments and suggestions below.</p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>Comments and Suggestions (Provide detailed explanation for any line items where "No" was checked.)</p>			

PRELIMINARY DRAFT (V2.2)

XIII. RESPONSE (REMOVAL OR REMEDIAL) ACTION SUMMARY REPORT, ENVIRONMENTAL HAZARD EVALUATION		Yes	No
<p>1. Tier 1 Environmental Action Levels (EALs). Does the document include an evaluation of environmental hazards consistent with <i>TGM Section 13</i> based on post cleanup conditions?</p> <p>Considerations Include:</p> <ul style="list-style-type: none"> ▪ Is confirmation sampling data compared adequately to the HDOH Tier 1 Environmental Action Levels (EALs)? ▪ Are the appropriate target environmental hazards (by media) identified? ▪ Are the appropriate EAL screening tables selected based on the stated data quality objectives? ▪ Does the document reference the date of the EALs to ensure the most up-to-date tables were used? <p><i>TGM Section 13.</i> <i>HEER EHE Guidance Document presents EHE details and EAL Tables: "Screening for Environmental Hazards at Sites with Contaminated Soil and Groundwater" [comprised of: Cover Memo(Summer 2008); Volume 1: Users Guide (March 2009); and, Volume 2: Appendices 1-11 (March 2009).</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>2. Comparison of Data to EALs. Are the Concentrations of Chemicals of Potential Concern below applicable Tier 1 EALs?</p> <p><i>TGM Section 13.2 describes Tier 1 Environmental Action Levels.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>3. Level of Detail. Is the level of detail presented in the EHE commensurate with site complexity, site conceptual model, data quality objectives, and cleanup actions completed?</p> <p><i>TGM Section 13.3 provides a comprehensive list of information to be included in an EHE and describes steps to environmental hazard evaluation.</i> <i>TGM Section 13.4 describes the preparation of environmental hazard evaluation reports.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>4. EHE Elements Considered. Were the following key items considered when assessing the overall adequacy of the post cleanup EHE:</p> <ul style="list-style-type: none"> ▪ Of the original list of chemicals and hazards of concern, were all environmental hazards controlled by cleanup activities? ▪ Are additional site data needed to finalize the environmental hazards identified? ▪ What is the final distribution of potential environmental hazards across the site? ▪ Are controls necessary to manage any hazards remaining on site? ▪ If documented environmental hazard remains onsite, is there a hazard management plan? ▪ Have environmental hazard maps been provided to document remaining hazards and assist in long-term management of remaining contamination at the site? ▪ Are future site uses compatible with current site conditions? <p><i>TGM Section 13.4 provides a comprehensive list of information to be included in an EHE.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>5. Summary. Do the confirmation sampling results and current site conditions eliminate or mitigate the environmental hazards previously identified? If "No", provide comments and suggestions below.</p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>Comments and Suggestions</p>			

PRELIMINARY DRAFT (V2.2)

XIV. FINAL SITE CLOSURE		Yes	No
1.	Has the site been adequately characterized and remediated to meet data quality objectives and project scope? <i>TGM Section 19 describes procedures for Site Closures.</i>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Have all environmental hazards been adequately evaluated and removed or mitigated? <i>TGM Section 19.5 describes environmental hazard evaluation in relation to site closure. TGM Section 19.6 describes the environmental hazard management.</i>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Are the conclusions and recommendations adequately documented and justified?	<input type="checkbox"/>	<input type="checkbox"/>
4.	Are the final cleanup and recommendations for site closure consistent with the original cleanup scope as presented in : <ul style="list-style-type: none"> ▪ the FTC application and agreement [if participating in FTC]; or, ▪ the Removal Action Work Plan, and/or Removal Action Report (RAR) [if applicable]; or, ▪ the Response Action Memorandum [RAM] and Remedial Action Work Plan [if applicable]? <i>TGM Section 15.4 includes discussion of FTC application and agreement. TGM Section 18.5.4 describes the Removal Action Work Plan. TGM Section 14.2.4 describes the Removal Action Report (RAR). TGM Section 16.3 describes the preparation of Response Action Memorandum (RAM). TGM Section 2.4.5 describes the Response Action process.</i>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Summary. Are the conclusions and recommendations presented adequate and justifiable, such that site closure can be completed (in the form of a 'No Action" letter, "No Further Action" letter, or "No Further Action with Restrictions" Letter) ? If not, provide comments and suggestion below. <i>TGM Section 19.3 describes closures with use restrictions. TGM Section 19.4 describes the "No Further Action" remediation letter.</i>	<input type="checkbox"/>	<input type="checkbox"/>
Comments and Suggestions (Provide detailed explanation for any line items where "No" was checked.)			