

Prior to Preparing a C-EHMP Addendum, you must receive approval from the HEER Office. To receive approval, you must submit a completed C-EHMP Addendum Request Form to the HEER Office.

Please submit documents through the Hawaii Department of Health (DOH) Environmental Health Administration (EHA) Permit Application system at

<https://eha-cloud.doh.hawaii.gov/epermit/>

Please register and confirm registration through an email link prior to submitting if you are not already registered with e-permitting. Use the **Form Finder** to choose:

- **Report Submittal for HEER Office** (Assessment and Remediation Related Reports; NOT Written Release Notification Forms; NOT HEPCRA TIER II Forms)

This will ensure proper processing by clerical staff into related systems and provide you with an electronic time stamp verifying the receipt of your documents.

Cover Sheet to Accompany C-EHMP Addendum Template

CONSTRUCTION ENVIRONMENTAL HAZARD MANAGEMENT PLAN (C-EHMP) ADDENDUM TEMPLATE

This document is a **TEMPLATE** to help you to create a Construction Environmental Hazard Management Plan (C-EHMP) Addendum for your project at a site that currently has an HDOH-approved Site-Specific or Programmatic EHMP. The purpose of a C-EHMP Addendum is to provide the construction/project specific information that may not be detailed in the site-specific EHMP. The Hawaii Department of Health (HDOH) Hazard Evaluation and Emergency Response Office (HEER) may require that a project-specific C-EHMP be created for any project involving construction & demolition (C&D) activities (grading, grubbing, etc.) at a site where environmental contaminants are known or suspected to exist if the site-specific EHMP is no longer considered to be adequate. **Make sure you consult with the HDOH HEER Office Remedial Project Manager prior to completing this Addendum in lieu of preparing a separate C-EHMP.** The HEER Office will determine whether the preparation of a C-EHMP Addendum in lieu of a separate C-EHMP is appropriate or not.

If site conditions have changed since the existing EHMP was prepared, this addendum may need to include an updated Conceptual Site Model with a summary of potential environmental hazards. If there are any other sections that are no longer relevant or do not follow current rules, regulations, or guidance, those sections will need to be revised in the existing EHMP prior to submittal of the C-EHMP Addendum.

Preparation and adherence to the project-specific C-EHMP Addendum and associated HDOH-approved Site-Specific EHMP will help prevent unforeseen delays in construction schedules during C&D activities at sites with known contamination and helps to avoid costly fines. The intent of this Template document is to assist expedient progress of the project.

If you are planning work at a project site where environmental contaminant levels exceed HDOH Environmental Action Levels (EALs), you should have a C-EHMP Addendum and site-specific EHMP or a C-EHMP.

Use this C-EHMP Addendum Template to create your own project-specific C-EHMP Addendum. Review and complete ALL SECTIONS. Table 1 below is a checklist of environmental issues you should identify before beginning work. Methods for managing these issues should be detailed in your C-EHMP Addendum.

Portions of this C-EHMP Addendum Template document in **RED** font provide instructions for the creation of the project-specific C-EHMP Addendum or provide optional language to be used where appropriate in the project-specific C-EHMP Addendum. These **RED** font sections should be modified or deleted, as appropriate, from the resulting project-specific C-EHMP Addendum.

In order to prevent project delays, please submit your project-specific C-EHMP Addendum to the HEER Office for review and approval at least 90 days prior to the start of construction activities.

Table 1: Pre-Construction Evaluation of Environmental Issues at Your Site

Yes	No	
		Are concentrations of COPCs above the lowest unrestricted Tier 1 EAL ¹ ? ²
		Has the release been reported to the HDOH HEER Office? ²
		Are concentrations of COPCs above the construction worker EAL?
		Has the extent of contamination been fully delineated (both vertically and laterally)?
		Have sufficient soil vapor samples been collected in areas where a future building will be present?
		Is there an ongoing release at the site that must be mitigated prior to construction?
		Does contaminated media need to be removed or remediated prior to construction?
		Are COPC concentrations and contaminated media unknown but presumed or suspected to be present at the site at potentially hazardous levels based on historic site activities or other evidence? ¹
		Will demolition of structures be conducted at the site prior to redevelopment?
		If demolition will occur, has asbestos and lead-paint abatement been completed prior to demolition in accordance with all State and Federal regulations?

EAL= Environmental Action Level

COPC=Chemical of Potential Concern

¹If no contaminants are present or suspected to be present at the site at concentrations greater than the lowest unrestricted Tier 1 EAL then a C-EHMP is not required. The lowest Tier 1 EAL is defined as the EAL for unrestricted land use where groundwater is a potential drinking water resource and the nearest surface water body is less than 150 meters away.

²All releases must be reported to the HEER Office Emergency Preparedness and Response Section (EP&R) by calling (808) 586-4249 and following up with a written Release Notification

Following construction, contact the HEER Office to confirm that all contamination was managed in accordance with the approved C-EHMP Addendum and Site-Specific EHMP. At a minimum, please submit all appropriate manifests, tracking logs, and photos. If contaminated media will be left on-site following the completion of construction, then the Site-Specific EHE-EHMP may need to be updated following redevelopment to incorporate changes to the site. EHEs and EHMPs must be submitted to the HDOH for review and approval following the completion of construction activities detailed in this C-EHMP Addendum.

Project-Specific Construction EHMP Addendum for an Existing Site-Specific or Programmatic EHMP

For

{Project Name}

{Site Name}

Located at

{Site Address]

{Site TMK #}

{Date}

Signatures

This document is not finalized until it is signed. A signed copy will be present on-site at all times.

I certify that as property owner, I am responsible for ensuring all parties who work or reside at my site are aware of the contamination at my property, and the associated hazards, and that the information in this document is true and accurate to the best of my knowledge. I am responsible for ensuring compliance with all land use controls as well as advance notifications to the Hawaii Department of Health (HDOH) of anticipated land use changes or groundbreaking activity at my property.

Property Owner or Representative of Property Owner

I certify that I am a qualified environmental professional, capable of ensuring compliance with the requirements of this Construction Environmental Hazard Management Plan (C-EHMP) Addendum and Site-Specific EHMP. It is my duty on this project to understand the requirements of this document and be on site during ground-breaking activities. I will communicate hazards, management protocols, and other EHMP requirements to construction professionals at the site. I will document such activities, and communicate with HDOH, as needed.

Qualified Environmental Professional

As Construction Manager, I am responsible for understanding the requirements of this C-EHMP Addendum and Site-Specific EHMP, effectively communicating the requirements and hazards to my crews and subcontractors and providing the required training and personal protective equipment to site workers. I will work with the Qualified Environmental Professional to ensure compliance with this C-EHMP Addendum and Site-Specific EHMP during work at this property.

Construction Manager

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Info Regarding Figures and Attachments

Please include Figures using the following labels and nomenclature:

{modifications to this nomenclature are acceptable, however, please be sure all elements are included, i.e., site location, known contaminants, construction plans, hazard maps, and engineering controls} If these figures are present in the Site-Specific EHMP, then they are not needed to be repeated in the C-EHMP Addendum.

Figure 1 should be the Site Location map (if multiple maps are submitted to show the site location, please use the nomenclature **Figure 1a**, **Figure 1b**, **Figure 1c**, etc., e.g., **Figure 1a** may be a GoogleEarth image or Topo Map with an arrow pointing to the site, **Figure 1b** may then be a close-up of the block with the site property outlined and adjoining businesses labeled, **Figure 1c** may focus on a portion of the site where utility trenching is planned, etc.)

Figure 2 should depict known or suspected contamination at the site (multiple maps should use the nomenclature **Figure 2a**, **Figure 2b**, etc.). Figures may include

delineated plumes, areas of soil contamination, they may also indicate where soil DUs were designated, depth of contamination, the locations of wells, etc. and/or may depict the locations of historic structures from Sanborn or other historic maps. Where sample data is known for the site, COPCs at concentrations that exceed the Tier 1 EAL should be listed on the map(s), including concentrations or concentrations ranges. Multiple Figures may be appropriate to avoid the drawings becoming too busy, e.g., **Figure 2a** may depict historic structures, **Figure 2b** may depict the extent of soil contaminants, **Figure 2c** may depict water well locations and concentrations, etc.

Figure 3 should be an easy to interpret Hazard Map (multiple maps should use the nomenclature **Figure 3a**, **Figure 3b**, etc.). Hazard Maps are described in Section 13.5.6 of the TGM. Separate Figures for hazards associated with different phases of construction may be appropriate, but as best as possible the number of Hazard Maps should be limited so that the contractor can easily see where all known and suspected hazards associated with COPCs at the site are located.

Figure 4 should show the proposed construction activity, including proposed demolition, excavation, trenching, etc. (multiple maps should use the nomenclature **Figure 4a**, **Figure 4b**, etc.). Depending on the complexity of the project, numerous drawings may be included. Drawings should identify where construction may encounter COPC-impacted media. A full set of blueprints is not required (or necessarily helpful), the drawing submitted should allow for the reviewer to get a general overview of what the construction project will be, and where COPC-impacted media may be encountered, but does not need to include a lot of specific construction details. – The exception to this is where the construction plans will include the installation of a vapor extraction system and/or vapor barrier (or other Engineering Controls) to address long-term mitigation of known or suspected volatile COPCs. In this case, drawings should be detailed enough to demonstrate that the Engineering Control(s) will be adequate to meet the long-term management requirements for the contaminated media.

Figure 5 should depict short-term engineering controls, re-infiltration pits, and contaminated media storage locations specific to the C-EHMP Addendum (again, multiple maps should use the nomenclature **Figure 5a**, **Figure 5b**, etc.). The Figure(s) should also include Exclusion Areas and Decontamination Areas (if these are specific to certain activities, e.g., during excavation of utility trenches an Exclusion Zone is necessary, but not during other activities, then different maps for different stages of construction may be appropriate). Clearly, during the course of construction these locations may move or change, but prior to the start of construction all parties involved should have a general idea of where things such as soil stockpiles, frac tanks, waste drums, and stormwater diversion berms will be placed. This will help ensure that there is room for all the necessary engineering controls and waste management at the site and help avoid delays during construction. If changes occur during construction activities, updated figures should be provided to the HEER Office.

Attachments:

The following attachments should be included with the C-EHMP Addendum:

Construction Material Documents – for materials that will be in contact with contaminated media, documentation that the material is safe to use, and will remain functional, in the presence of the identified contamination should be included as an attachment to the C-EHMP Addendum

Site-Specific Health and Safety Plan (HASP) – A site-specific HASP must be prepared for the project that identifies worker protections from COPC hazards. A copy of the HASP should be submitted along with the C-EHMP Addendum to the HEER Office for our records. Although the HEER Office does not review and approve HASPs, we will be checking to ensure that the HASP includes details about site-specific COPCs and worker training requirements.

Sampling and Analysis Plan – If details on how soil and groundwater will be sampled during the construction activity are included in a separate SAP, then a copy of that SAP should be attached to the C-EHMP Addendum. Alternatively, sampling procedures may be described within the C-EHMP Addendum itself.

Erosion and Sediment Control Plan

Soil Acceptance Agreement

Permits – attach any permits specific to the handling and disposal of contaminated media for this construction project, e.g. Dewatering Permits, NPDES Permits, Special Management Area Permits, etc. must be attached to the C-EHMP Addendum.

1.0 Introduction

This Project-Specific Construction Environmental Hazard Management Plan (C-EHMP) Addendum provides construction-specific guidance and details in conjunction with the existing Site-Specific EHMP to environmental consultants, owners, operator, tenants, and construction/utility workers, who are proposing construction-related and ground-disturbing activities that change building configuration and property use at sites with known or presumed contamination (renovation/redevelopment). Examples of such activities include, but are not limited to demolition, grading, excavation, trenching, or drilling at sites with identified or potential contamination. These guidelines should be used by all who may be hired to assist any of the activities described above to keep workers, site users, the environment, and the general public safe from contact with contamination on site and prevent COPCs from leaving the site without proper management. Not adhering to these plans may have serious consequences including, but not limited to stopping construction and being liable for any damage or harm caused by onsite contamination.

Additional Details Regarding the Usability of the C-EHMP Addendum

These guidelines are specific to the demolition and/or construction phase(s) of the specific project and do not address the ongoing operations subsequent to construction. Future projects at the site will require a separate C-EHMP Addendum if contaminated media will be impacted. Prepare this Addendum as soon as possible and include flexibility and options for different scenarios of re-use and disposal. Early preparation of this Addendum is highly recommended to be able to include it and the Site-Specific EHMP into bid specs and keep costs reasonable. Once 100% of the design is complete, update this Addendum with the actual construction methodology. This Addendum should include and address all phases of the construction project, including, but not limited to demolition, utility excavation, geotechnical boring, footing installation, grading, landscaping, soil import and/or export, and slab installation. In general, the C-EHMP Addendum is no longer required once ground-disturbing activities are completed, unless above-ground soil vapor management is required.

If contaminated media will be left on-site following the completion of construction, then the Site-Specific EHMP may need to be updated following redevelopment to incorporate changes to the site. EHEs and EHMPs must be submitted to the HDOH for review and approval following the completion of construction activities detailed in this C-EHMP.

1.1 Chemicals of Potential Concern

The following chemicals of potential concern (COPCs) have been detected above the most restrictive unrestricted EAL and may pose a hazard.

Why Is This Information Important?

*Please note that irrespective of the location and use of the site, all COPCs should be compared to the most conservative Tier 1 HDOH EALs (unrestricted use where groundwater is a potential drinking water resource and the nearest surface body is less than 150 meters). The purpose for this is to identify whether the soil or groundwater may pose a hazard if it is transported off site. Soil exceeding this EAL and leaving the site is considered a waste and must be handled according to HDOH Solid and Hazardous Waste Rules and Regulations (Hawaii Revised Statutes (HRS 342H), Hawaii Administrative Rules [HAR] 11-58). Mishandling of waste may lead to fines. For methane and other gases where EALs do not exist, use the individual gases' lower explosive limits (LEL) and Occupational Safety and Health Administration (OSHA) permissible exposure levels (PEL) for short-term (acute) and chronic exposure limits to assess the potential hazard to construction workers and other site users. Use **BOLD** font to highlight levels that exceed the construction worker EALs, PELs and/or LELs).*

Media: Soil

COPC	Concentration Range	EAL*

* EAL for Unrestricted Use; < 150m from surface water; above drinking water

Media: Groundwater

COPC	Concentration Range	EAL*

* EAL for Unrestricted Use; < 150m from surface water; above drinking water

Media: Soil Vapor

COPC	Concentration Range	EAL*/LEL/PEL

* EAL for Unrestricted Use; < 150m from surface water; above drinking water

LEL= Lower Explosive Limits

PEL= Permissible Exposure Level

COPC=Chemical of Potential Concern

Areas with concentrations exceeding the EALs and areas where vapor concentrations may exceed the PELs and LELs are depicted on **Figure 2** and **Figure 3**.

1.1.1 Chemicals of Potential Concern and Construction Materials

Question	Yes	No
Are storm drains (including interceptors) or will storm drains be present at the site?		
Will any portion of a storm drain (including interceptors) be present at an elevation that is potentially in contaminated groundwater?		
Will any portion of a utility corridor be present at an elevation that is potentially in contaminated groundwater?		
Will a portion of any other utility or subsurface structure (other than foundations) extend potentially into contaminated groundwater?		
Are any potentially flammable or explosive COPCs present at the site (e.g., methane, total petroleum hydrocarbons as gasoline, etc.)?		
Will any electrical lines/utility corridors be subsurface?		
Are any COPCs in vapors present at or above 10 % of the LEL?		
Will any elevator shafts or escalator pits, potentially extend into contaminated groundwater?		

Why Is This Information Important?

If COPCs are present in the soil, groundwater or soil vapor at concentrations above the HDOH EAL for unrestricted land use where groundwater is a potential drinking water

resource and the nearest surface water body is less than 150 meters and you answered “yes” to any question, then the construction materials that will be used need to be assessed to determine whether they are compatible with the COPCs at the site-specific concentrations.

Below are a few examples:

- If a planned gasket material to be used for a storm drain will sit partially in petroleum-contaminated groundwater, then you must ensure that the planned material is resistant to degradation by petroleum.
- If a pipe will extend through a plume of chlorinated solvent-contaminated groundwater, then you must determine whether the planned piping material and sealant is resistant to chlorinated solvents.
- If soil vapors are present at concentrations that exceed 10% of the LEL, then you must ensure that the materials used for certain utilities are intrinsically safe if there is the presence of flammable or explosive vapors in the subsurface.

Identifying the need for special materials in areas where contamination is present prior to development is essential to preventing project slowdowns that may occur during construction. Soil vapor contamination, including COPCs which do not have EALs but where the LEL or PEL may be exceeded, can present unique problems during and after construction. Identifying these potential problems ahead of time, and planning for how to address them, can help keep your construction project on schedule.

Please conduct an evaluation of whether the construction materials planned for use are compatible with the COPCs present at the site. The evaluation should state how it was determined that the materials are appropriate for use under the site conditions, and for those materials that are determined not to be appropriate for use, an alternative material should be proposed for substitution.

Construction Materials Assessment

Construction Material in Contact with Contaminated Media	COPC, Concentration and Media	Proposed Material to be used	Material Safe with COPC	
			Yes*	No
(ex. Sewer pipe)	(ex. TCE, 50 ppm in groundwater)	(ex. 8" PVC piping)		

* Documentation that material is safe to use, and will remain functional, in the presence of the identified contamination should be included as an attachment to the C-EHMP.
COPC=Chemical of Potential Concern

Why Is This Information Important?

Regarding construction materials and design plans where soil vapor COPC concentrations exceed 10% of the LEL or where the vapor intrusion EAL is exceeded, designs may need to be revised to include a vapor extraction system, vapor barriers, vapor monitoring, or other engineering controls to protect future users. Materials used must also be assessed for their reactivity to identified potentially flammable/explosive soil vapor COPCs.

If a vapor barrier or soil vapor extraction system is required as part of the remedy, include specs of the extraction system and/or vapor barrier to show that the system will be adequate for conditions at the site and that the vapor barrier material is compatible with the contamination present at the site and describe how the extraction equipment and vapor barrier will be tested for effectiveness onsite (e.g. smoke test). These details will also need to be included in the EHE/EHMP updated for the site following construction to manage contamination left on site in the long term. Additional long-term air monitoring of the extraction system may also be required. If separate submittals of long-term vapor management Engineering Controls have been submitted, then they need only be briefly referenced here.

The following soil vapor concerns should be assessed during construction planning and in preparation of the C-EHMP Addendum Engineering and Administrative Controls:

Preferential Pathways

The potential for preferential pathways that can conduct contamination (generally in the form of groundwater or soil vapor) such as utility corridors and gravel backfill should be evaluated to assess whether there is a need to line those areas with compatible material to prevent migration of contamination.

Vapor Intrusion/Indoor Air Contamination

*Where soil vapor COPC concentrations exceed HDOH Tier 1 EALs, design plans may need to include Engineering or Administrative Controls to mitigate potential soil vapor intrusion that could create an indoor air contamination concern. Examples of Administrative Controls include, but are not limited to, limiting the use of ground floor spaces, requiring use of HVAC systems to create positive pressure in interior spaces, and/or conducting annual cap maintenance inspections of the ground floor slab condition. Engineering controls could include, but are not limited to, soil vapor monitoring, active or passive soil vapor extraction systems, and/or installation of a soil vapor barrier. A description of engineering controls that will be incorporated into this construction for long-term management of soil vapor must be included in this section and depicted on **Figure 4**. Documentation of the materials and equipment to be used must be included as an attachment or submitted separately for review and approval by the HEER Office.*

2.0 Notification Requirements

The effective environmental management of any project requires a coordinated effort from all individuals involved. The following sections outline the need to identify the responsibilities of key personnel involved in project construction.

2.1 Key Project Personnel

The project owner (owner/developer) is expected to maintain a list of project contacts throughout the construction phase of the project.

The key project personnel are as follows. An updated key project personnel list needs to be maintained throughout the project and submitted to HDOH in writing whenever a change in key project personnel occurs.

Role	Company	Name	Phone #	e-mail
Construction Project Manager				
Construction Foreman				
Onsite Qualified Environmental Professional				
Qualified Environmental Professional (Project Manager)				
Owner				
Operator				
Developer				
NPDES Permit contact				
DPP Building Permit contact				
HDOH HEER Office Project Manager				
Landfill Disposal Contact				

Role	Company	Name	Phone #	e-mail
Waste Transporter Contact				
Contact Export Site (if exporting soil)				
Contact Import Site (if importing soil)				

In addition, if site conditions or planned building configurations change following submittal and acceptance of this C-EHMP Addendum by the HDOH HEER Office, then the following agencies must be notified at least 90 days prior to conducting ground disturbing activities or as soon as the change has been identified. Please note that if HDOH is notified of a change in site conditions or planned building configuration less than 90 days prior to ground disturbing activities, there could be delays in construction if additional assessment work needs to be conducted. The initial notification of construction activities and any changes can be submitted through the HDOH e-permitting portal using the website link below.

Agency	Phone	Link/Website
HDOH HEER Office	808-586-4249	https://eha-cloud.doh.hawaii.gov/epermit/app/#/formversion/ed9ca916-7863-459b-b5dd-e66f881381d5

3.0 Requirements for Onsite Environmental Oversight

On-site monitoring is a key component of ensuring that the procedures documented in this C-EHMP are implemented properly and function as intended (e.g. appropriate installation and location of erosion and sediment control measures, cleanliness of equipment, suitability of secondary containment for fuel storage, screening of potential contaminated material, and stockpile segregation, etc.). A qualified environmental professional (QEP) will be retained as the environmental monitor to provide guidance on implementing the recommended measures and to develop additional mitigation measures if the need arises. The onsite QEP will have at least 5 years of experience providing environmental oversight for construction projects and must have completed HAZWOPER 40-hour training with current 8-hour refresher.

Monitoring events will be conducted at an appropriate frequency based on specific work tasks/procedures and the potential for adverse impacts to occur. An appropriate schedule (frequency and duration of site visits) will be established between the QEP and all involved regulatory agencies regarding when the QEP is onsite. In general, the QEP will

be familiar with the day-to-day conduct of project activities and be on-site during activities with the potential to impact human health or the environment, when contaminated media will be disturbed, when mitigation measures are implemented, or as determined in discussion with the regulatory agencies. Monitoring should be conducted with greater frequency during periods of inclement weather (e.g., heavy precipitation, strong winds) and during critical components/tasks of the project, such as working in contaminated groundwater. The QEP will be onsite whenever potentially contaminated soil or groundwater may be disturbed and when hazardous vapors may be present. If demolition activities include abatement of lead-based paint or asbestos, abatement activities must be completed in accordance with all State and Federal laws and regulation prior to demolition. This is necessary to ensure the protection of construction workers, the general public, and the environment. Key monitoring stages may include, but are not necessarily limited to:

Delete the stages that don't apply and add additional project-specific monitoring stages, as necessary.

- *During activities conducted below the high-water mark of a waterbody*
- *During pre-construction geotechnical and/or environmental sampling*
- *During soil exposing (e.g., concrete/asphalt removal) and soil movement activities (e.g., demolition, grading, excavation, pile or caisson installation, utility corridor installation, soil stockpiling, soil disposal etc.)*
- *During dewatering activities*
- *Prior to and after heavy rain/storm events*
- *During engineering control installation and testing*
- *During installation of erosion and sediment control measures*

The primary responsibility of the QEP is to ensure that the environmental and human health protection measures are implemented and are adhered to and that any movement, transport, and disposal of contaminated material (onsite and to an offsite location) is properly documented.

Typical responsibilities of the QEP include those identified below; *however, specific items are expected to be refined and/or expanded as per the needs of the project:*

- Direct the segregation of contaminated soil.
- Communicate the requirements of the C-EHMP to project members during pre-job and tailgate meetings.
- Remain onsite as per the schedule established between parties prior to project start. The QEP will remain on-call during non-critical work periods to respond to emerging environmental issues.
- Review the contractor's work procedures to ensure functionality and compliance with the C-EHMP and applicable regulations, standards and best management practices (BMP).
- Provide advice in preparing for work activities in a manner that mitigates adverse environmental or health effects.

- Exercise the authority to modify and/or halt any construction activity at any time if deemed necessary for the protection of human health and the environment.
- Advise project members if project activities have caused or are likely to cause an environmental incident and make recommendations for corrective action.
- Monitor compliance with the C-EHMP and relevant permit conditions.
- Liaise directly with project members and provide technical advice for the purpose of resolving situations that may impact human health and the environment as they arise.
- Maintain complete records of activities related to the implementation of the C-EHMP. This should include any measurements taken (e.g. pH, turbidity, temperature, conductivity, photoionization detector [PID] screening, air monitoring, equipment calibration, manifests, truck receipts, truck counting spreadsheets etc.), photographs and incident reports.
- Complete and submit environmental monitoring reports to the HDOH HEER and report any unanticipated adverse effects to the environment. Such reports must include the nature of the effect, its cause, mitigation and/or remediation implemented, and whether a work stoppage was ordered, as well photographs, analyses, and measurements, if applicable.
- Report unanticipated encounters with contamination at the site in accordance with HRS 128D. Reportable releases include contamination not already identified at the site, as well as tanks, drums, and/or abandoned pipelines that are not identified in advance and are encountered during excavation.

Complete the Table below. Insert additional activities specific to the site as necessary. List types of monitoring equipment that will be used by the QEP (e.g., PID meter, air samplers, truck tickets/manifests, water sampling jars, etc.) Please provide additional details as necessary in the space below the table. If a QEP will not be present for one of the activities listed, you must provide a justification in the additional details section.

Table of Project Activities when QEP Must be Present

Activity	Planned at Site?		QEP Will Be Present?		Monitoring Equipment to be Used by QEP
	Yes	No	Yes	No	
Environmental Sampling					
Geotechnical Sampling					
Silt Fence Installation					
Demolition					
Grading					
Excavation					
Pile Installation					
UST Removal					
Dewatering					
Utility Trenching					
Soil Stockpiling					
Soil Export/Import					

Activity	Planned at Site?		QEP Will Be Present?		Monitoring Equipment to be Used by QEP
	Yes	No	Yes	No	
Vapor Barrier Installation					
Vapor Extraction					
Confined Space Work					
Work Below High-Water Mark					
Engineering Control Installation and Testing					
Pipeline Tapping					
Installation of Erosion/Sediment Controls					
Prior to/During Rainstorm Events					
Other:					
Other:					
Other:					

4.0 Construction Activities

*Please provide site-specific information about what type of construction activities will be conducted in detail and provide construction plans or drawings on where these activities take place (e.g., if piles are to be installed, describe how the piles will be installed and how soil and groundwater/slurry mixture from the locations of the piles will be extracted, sampled, and handled to avoid contaminating surrounding areas; provide maps of where single piles are to be placed; do the same for other types of excavations as listed below). Construction drawings should be labeled as **Figure 4** (for multiple figures, use the nomenclature “Figure 4a, 4b, etc. for all Construction Activity Plans).*

Describe if storm drains or other potential preferential pathways will be re-routed, checked for integrity, and/or sealed. Indicate if elevator shafts or other potential vapor pathways (e.g. sewer lines) are planned and include a map with the planned location.

*If engineering controls such as vapor barriers or an active/passive vapor extraction system needs to be installed include a general sketch of these controls in **Figure 4** and separately submit a detailed Remedial Design Plan, if required. If potential explosive vapors may be present, include what intrinsically safe equipment will be used to avoid potential explosions during construction activities that may create sparks.*

*Indicate if dewatering is anticipated and if onsite infiltration or frac tanks will be used and show in a map where these will be located. Indicate what basic BMPs will be installed and maintained at the site and include a drawing of the BMPs. Examples of BMPs for small construction projects are included in **Appendix A**. Larger projects may require additional BMPs.*

*Frac tanks, storage drums, soil stockpiles, silt fencing, and other temporary engineering controls and BMPs (e.g., exclusion zones, decontamination areas, stockpile containment areas, etc.) should be diagramed on **Figure 5** (for multiple figures, use the nomenclature “Figure 5a, 5b, etc. for all Engineering Controls and BMPs). These features may also be indicated on **Figure 4** where appropriate. If, during construction, the locations of engineering controls are changed or moved, revised diagrams should be submitted to the HDOH as soon as possible.*

If you have already prepared an Erosion and Sediment Control Plan, attach it to this C-EHMP Addendum.

Planned Types of Excavations:

Excavation Type	Maximum Depth
<i>Piles</i>	<i>(65 ft) Example</i>
<i>Caissons</i>	
<i>Potholing for Utility Locating</i>	
<i>Elevator Shafts</i>	
<i>Spread footing</i>	
<i>Utility Corridors</i>	
<i>Storm Drain</i>	
<i>Mass Excavation</i>	
<i>Grading</i>	
<i>Etc.</i>	

4.1. Soil Reuse and Disposal

If soil (contaminated or otherwise) will not be removed from the site for off-site reuse or disposal, then state so here and delete the remainder of this section. If construction plans change, such that soil will be imported or exported from the site, then this C-EHMP Addendum must be revised and re-submitted to the HEER Office for review and approval at least 90 days prior to importing or exporting soil from the site, or as soon as the change has been identified.

Why Is This Information Important?

Please note the frequency that soil samples must be collected depends on the reuse or disposal location and the COPCs associated with the site.

Soil stockpile sampling should be conducted using multi-increment (MI) sampling in accordance with the HEER Technical Guidance Manual

(<http://www.hawaiiidoh.org/tgm.aspx>) and the Fill Material and Stockpile Guidance (<https://health.hawaii.gov/heer/files/2019/12/Clean-Fill-Guidance-HDOH-Oct-2017-1.pdf>). See also the HDOH Solid and Hazardous Waste Branch (SHWB) policy and Q&A regarding MI sampling and use of the HEER Office TGM

https://health.hawaii.gov/shwb/files/2019/01/20190131_SHWB-TGM-Memo-Draft-complete.pdf.

Use this section to describe exactly how soil samples will be collected, handled, and analyzed. If a separate Sampling and Analysis Plan has already been prepared, then it may be referenced here and included as an attachment.

In order to streamline potential work and prevent delays that may occur if the plans for final disposition of the generated soil change, use this section to plan flexibility into disposal and reuse of soil, e.g., if onsite reuse in commercial/industrial setting is planned, prepare a sampling contingency plan for sampling for unrestricted use with different stockpile size and sampling frequency, so that should the site switch to an export site, another sampling strategy for offsite reuse can be implemented without any delay in onsite activities. If this is not done in advance, the change in plans will require a C-EHMP Addendum and another review by HDOH. Therefore, if you are not including contingency soil management options in this plan, include the text, "The current construction plans do not anticipate contingencies for alternate soil reuse; therefore, if plans, then this C-EHMP Addendum will be revised and re-submitted to the HEER Office for review and approval at least 90 days prior to moving soil off-site."

If reuse locations are not known at the start of the project, clearly state so. Prior to transporting any soil off-site to a reuse location, HDOH must be provided a copy of the soil agreement for review and approval to ensure that the sampling methodology and analytical results meet the requirements for reuse at the location.

Soil may be re-used off-site at the below location(s) if it meets the appropriate requirements and HDOH approves this C-EHMP, or it may be disposed of at a licensed disposal facility listed below. If soil is re-used, the soil agreement is attached in Appendix B.

Off-site Disposal/Re-Use Table

	Re-Use Location	Disposal Location
Name of Re-use or Disposal Location		
Address of Re-use or Disposal Location		
Land Use (Site Zoning)		

This information will be communicated to the soil hauler and it will be ensured that the hauler only dispose of soil at locations approved in this plan. The Qualified Environmental Professional (QEP) will monitor and review hauling manifests and

disposal records to ensure adherence to the plan. Disposal of soil at a location not previously approved could result in fines.

4.1.1 On-site Reuse of Known or Suspect Contaminated Soil

In general, contaminated soil may be reused on-site in accordance with the Site-Specific or Programmatic EHMP. Contaminated or suspect-contaminated soil will be replaced in the same area and at a similar depth as where the soil was originally excavated. The QEP will ensure that contaminated soil is not spread to uncontaminated areas of the site without prior approval from HDOH. *If the extent of contamination is known, attach a detailed location map (include with Figure 2) showing where contaminated soil is anticipated to be reused. State if the soil will be covered or placed under a building/asphalt/concrete etc.*

4.1.2 Soil Sampling for Reuse

*Soil excavated from the Site may be reused off-site. If soil is to be reused offsite, concentrations of COCs must be below the most conservative unrestricted EAL (unrestricted use, <150m from surface water, located above drinking water) **and** soil stockpiles must be sampled using multi-increment (MI) sampling methodology). If unrestricted **use is desired, sampling frequency must be completed** according to the HEER Office's Guidance for Stockpile Characterization and Evaluation of Imported and Exported Fill Material (HDOH 2017) for **unrestricted use**. If soil concentrations are below the most conservative unrestricted EAL, but the sampling frequency of stockpiles was based on commercial/industrial reuse, the soil can only be reused at commercial/industrial sites. To reuse soil with concentrations at or above the most conservative unrestricted EAL, HDOH must be consulted and additional requirements may be placed on both the generator and the receiving facility.*

Soil excavated may be reused off-site at an appropriate site. If soil is to be reused offsite, the HEER Office needs to be contacted and soil reuse discussed. If the HEER Office agrees on the reuse, a soil agreement signed by the generating and receiving party must be submitted to the HEER Office prior to any reuse. *An example is included in Appendix B.*

Total Volume of Soil Proposed for Export (cy):	
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Stockpile sampling accordingly requires the following parameters: *{These parameters will be based on the types of chemicals at your sites and how you hope to use the stockpiled soil. Reference the Guidance for Stockpile Characterization and Evaluation of Imported and Exported Fill Material (HDOH 2017) to determine the appropriate sampling frequencies and volumes. Please include how the stockpiles will be sampled (e.g., potholes or trenches excavated within each pile to ensure adequate characterization of the pile), sample containers, and any preservatives that will be used.}*

Chemicals to Analyze	Analytical Method

	Unrestricted Use	Commercial/Industrial Use
Stockpile Volume (cy) per sample		
# of increments per MI sample		

cy cubic yard
MI multi increment

If in-situ soil sampling is planned to pre-characterize the soil prior to excavation, then please provide the following information in a separate Sampling and Analysis Plan submitted to and approved by HDOH prior to conducting the sampling.:

- *Number of decision units*
- *Size of decision units*
- *Map illustrating decision units*
- *Number of increments for each decision unit*
- *Number of bore holes for each decision unit or test pits, or other*
- *Estimated volume of soil that represented by each decision unit & MI sample.*
- *Free product or odor present?*

4.1.3 Stockpile Sampling for Disposal at a Disposal Facility

If soil will be disposed of at an appropriate permitted waste disposal facility the MI sampling requirements are as follows: *(Please include how the stockpiles will be sampled (e.g., potholes or trenches excavated within the pile to ensure adequate characterization of the pile), sample containers, and any preservatives that will be used.)*

Chemicals to Analyze	Analytical Method

	Disposal Facility Requirements
Stockpile Volume (cy) per sample	
# of increments per MI sample	

cy cubic yard
MI multi increment

If in-situ soil sampling is planned to pre-characterize the soil prior to excavation, then please provide the following information in a separate Sampling and Analysis Plan submitted to and approved by HDOH prior to conducting the sampling.:

- *Number of decision units*
- *Size of decision units*
- *Map illustrating decision units*
- *Number of increments for each decision unit*
- *Number of bore holes for each decision unit or test pits, or other*
- *Estimated volume of soil that represented by each decision unit & MI sample.*
- *Free product or odor present?*

4.1.4 Record Keeping

A log of all soil that leaves the Site and its final disposition will be maintained by the QEP (Example in **Appendix C**). All waste manifests, truckload counts at source and receiving site, weigh tickets, and soil profiles will be included in a final report documenting the environmental oversight conducted during construction. The report will be submitted to the HEER Office at the conclusion of the project. In addition, whenever soil is exported from the site, summary reports of the disposal records, including copies of documents, will be submitted to the HEER Office on a weekly or monthly basis, unless waived in writing by the HEER Office project manager. For all soil disposed of at a disposal facility a manifest with all required signatures will be submitted.

If soil will be imported to the site, then the QEP must collect and maintain similar records and provide them to the HEER Office for review and approval. Documentation that the import material is clean must be provided by the soil generator and a soil agreement must be signed between the generator and the site owner. If contaminated soil will be brought onto the site and used for fill, then the QEP must document where the contaminated soil will be used, the volume of soil, and COPC concentrations. This information must be incorporated into an EHE/EHMP for the site following the completion of the project and the contaminated soil must be managed for as long as it remains present at the site.

4.2. Groundwater

Estimated Depth to Groundwater at Site:			
Proposed Maximum Excavation Depth:			
Estimated Direction of Groundwater Flow:			
Will Contaminated Groundwater be Encountered During this Project?	Yes	No	Unknown

Will Groundwater from this Site be Dewatered into the Sanitary Sewer System?			
Will Groundwater from this Site be Dewatered into the Storm Sewer System?			
Does the Contractor have a Dewatering Permit Issued by the County and/or HDOH Clean Water Branch?			
Is Free Product Known or Suspected to be Present at the Site?			
Is Groundwater Known or Suspected to be Contaminated?			
Will Groundwater be Dewatered into a Container (e.g., frac tank) Prior to Re-infiltration or Disposal?			
If Dewatering is Anticipated, are Approximate Locations of Dewatering Pits or Frac Tanks Included on a Figure in this Addendum?			

If groundwater is temporarily stored in a frac tank or other container prior to re-infiltration, then sampling and treatment may be required in accordance with HDOH Solid and Hazardous Waste Branch requirements. HDOH Solid and Hazardous Waste Branch (SHWB) must be consulted prior to completing this Addendum if there is the plan or potential for groundwater to be temporarily stored in frac tank or container prior to re-infiltration. If they require additional sampling or treatment, please describe these requirements in this section. If you checked with HDOH SHWB and they do not have any requirements, clearly state so in this document.

If plans change, this C-EHMP Addendum will be revised and re-submitted to the HEER Office for review and approval at least 90 days prior to conducting groundwater disturbing activities or as soon as the change has been identified.

Even if groundwater is not known or suspected to be contaminated, dewatering into a sanitary sewer or storm sewer may still require a permit from the County (sanitary sewer) and/or HDOH Clean Water Branch (storm sewer). A copy of the Dewatering Permit and effluent sampling requirements is included as an attachment to this C-EHMP Addendum. The QEP must ensure compliance with all requirements of this permit.” {If there is no Dewatering Permit, simply state that current construction plans do not include dewatering into the sanitary or storm sewer.}

If plans change or new information indicates that groundwater at the site may be contaminated, this C-EHMP Addendum will be revised and re-submitted to the HEER Office for review and approval at least 90 days prior to conducting groundwater disturbing activities or as soon as the change has been identified.

4.2.1 Disposal of Groundwater

- *If groundwater will not be disposed of during this project, please state the following and delete the rest of this Section:*

“The current construction plans do not anticipate disposal of any groundwater off- site. If plans change or new information indicates that off-site groundwater disposal will occur, then this C-EHMP will be revised and re-submitted to the HEER Office for review and approval at least 90 days prior to conducting groundwater disturbing activities or as soon as the change has been identified.”

Should disposal become necessary, the groundwater should be stored onsite in the appropriate containers, characterized (e.g., using generator knowledge, field screening, and/or laboratory analysis) to determine the disposal options, and disposed of properly at an HDOH permitted disposal facility.

The QEP will be responsible for overseeing the containerization of the water and for collecting water samples. Water samples will be analyzed for the following COPCs prior to disposal.

Chemicals to Analyze	Analytical Method

A copy of the signed waste manifests must be maintained and included in the report submitted to the HEER Office following completion of the ground disturbing activities.

Disposal Facility Name	
Facility Address	
Transporter Name	
Transporter Address	

FIGURES

EXAMPLE: Appendix A – BMPS

EXAMPLE: Appendix B – Soil Acceptance Agreement

EXAMPLE: Appendix C – Soil Tracking Log