

Cover Sheet to Accompany C-EHMP

The purpose of this C-EHMP is to help plan to manage contamination at a site when encountered. This is an DOH HEER requirement to be able to conduct any construction & demolition activities (including grading, grubbing etc.) at a site with known or potential contamination.

Preparation and adherence to this plan will help prevent unforeseen delays in construction schedules during construction and/or demolition activities with known contamination and helps to avoid costly fines. The intent of this document is to assist expedient progress of the project.

Yes	No	
		Are concentrations of contaminants above the lowest unrestricted Tier 1 EAL and has the release been reported to the HDOH HEER Office?
		Are concentrations of contaminants above the construction worker EAL?
		Has the extent of contamination been fully delineated (both vertically and laterally)?
		If applicable, have sufficient soil vapor samples been collected in areas where a future building is present?

EAL= Environmental Action Level

Construction EHMP (C-EHMP)

For
Site
Located at
TMK #
Date

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1.0 Introduction

This Construction EHMP (C-EHMP) provides guidance to environmental consultants, owners, operator, tenants, construction/utility workers, who are proposing construction-related and ground-disturbing activities that change building configuration and property use (renovation/redevelopment) including, but not limited to demolition, grading, excavation, trenching, ventilation/air condition change, 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 general public safe from contact with contamination on site and prevent from leaving the site. Not adhering to this plan may have serious consequences including, but not limited to stopping construction and being liable for any damage or harm caused by onsite contamination.

These guidelines are specific to the construction phase of a project only and do not address the ongoing operations subsequent to construction. Prepare this plan as soon as possible and include flexibility and options for different scenarios of re-use and disposal. Early preparation of this plan is highly recommended to be able to include it into bid specs and keep costs reasonable. Once 100 % of the design is complete, update this plan with the actual construction methodology. This plan should include and address all phases of the construction project, including, but not limited to demolition,

2.0 Background

The C-EHMP applies to the property shown in Figure 1. The property is also identified by the following.

Address	
TMK #	
Latitude/Longitude	

2.1. Site Conditions

Distance to Nearest Surface Water Body	
Approximate Depth to Groundwater	
Property Above or Below UIC Line	
Current Property Use Type (Residential, Commercial, Zoning, etc.)	
Proposed/Future Property Use Type (Residential, Commercial, Zoning, etc.)	
Typical Soil Profile from Surface to Groundwater (Include Depth Range, Lithology)	

Utilities Serving Site (e.g., Sewer (specify- C&C, Cesspool, Septic, Other), Storm Drains, Electrical, Gas, Water)	
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C&C= City and County

2.2. Existing Environmental Conditions

Brief Summary of the site background and history of contaminant releases and/or environmental investigations. The level of detail provided should reflect the project complexity and context. Please contact the HEER Office if you have any questions regarding the necessary detail.

2.3. Chemicals of Potential Concern

The following contaminants have been detected above the most restrictive unrestricted Environmental Action Level (EAL) and may pose a hazard.

Please note that irrespective of the location and use of the site, all contaminants should be compared to the HDOH EALs for 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 if 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 has to be handled according to HDOH Solid and Hazardous Waste Rules and Regulations. Mishandling of waste may lead to fines. Add methane and other gases' lower explosive limits (LEL) and Occupational Safety and Health Administration (OSHA) permissible exposure levels (PEL) for short-term (acute) and chronic exposure limits, where EALs do not exist. Bold levels that exceed the construction worker EALs, PELs and/or LELs).

Soil

Compound	Concentration Range	EAL*/LEL/PEL

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

Groundwater

Compound	Concentration Range	EAL*/LEL/PEL

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

Soil Vapor

Compound	Concentration Range	EAL*/LEL/PEL

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

LEL= Lower Explosive Limits

PEL= Permissible Exposure Level

Areas with concentrations above these EALs are shown in Figure 1 and 2. Areas exceeding PELs and LELs are shown in Figures 3 and 4.

2.3.1 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 below the LEL?	
Will any elevator shafts or escalator pits, potentially extend into contaminated-groundwater?	

If COPCs are present in the soil, groundwater or soil vapor at concentrations above the **HDOH Tier 1 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 planned need to be assessed to determine whether they are compatible with the COPCs at the site-specific concentrations and/or if soil is planned to be exported from the site, the soil will be considered a waste.

For example, this includes making sure that the planned gasket material to be used for a storm drain that sits partially in petroleum-contaminated groundwater is resistant to degradation by petroleum, determining whether the planned piping material and sealant is resistant to chlorinated solvents if the pipe is sitting in solvent-contaminated groundwater, or ensuring that the materials used for certain utilities are intrinsically safe if there is the presence of flammable or explosive vapors in the subsurface.

The potential for preferential pathways that can conduct contamination such as utility corridors and gravel backfill should be evaluated and the need to line those with compatible material to prevent migration of contamination.

In addition to screening against the EAL, vapor concentrations should be screened against the lower explosive limit (LEL) and permissible exposure limits (PELs). EALs do not currently consider acute toxicity or asphyxiation hazards that are important for potential construction worker exposure). Mitigation measures and intrinsically safe material need to be present if the LEL is exceeded. 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.

3.0 Summary of Potential Environmental Hazards

Description of potential hazards posed by the contaminants to identified receptors (include at a minimum - construction workers, the general public, any current onsite workers).

Hazard Maps should be included for areas that pose a risk to construction workers, the general public, and areas where contaminants were detected at concentrations above the most conservative HDOH EALs. The hazard maps should be simple and easy for construction workers to follow. For details regarding hazard maps, please see Section 13.5.6 of the HEER Office Technical Guidance Manual. If you are unsure of the necessary amount of detail to provide, please contact the HEER Office for guidance.

4.0 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.

4.1. 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				
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 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 may need 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
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HDOH HEER Office	808-586- 4249	https://eha- cloud.doh.hawaii.gov/epermit/app/#/formversion/ed9ca916- 7863-459b-b5dd-e66f881381d5
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5.0 Requirements for Onsite Environmental Oversight

On-site monitoring is a key component of ensuring that the procedures documented in the 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). 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.

Monitoring events should 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 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 should be onsite whenever potentially contaminated soil or groundwater may be disturbed, when hazardous vapors are present, and/or during demolition activities of material involving potential lead-based paint and/or asbestos. 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:

- During activities conducted below the high-water mark of a waterbody;
- 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 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; and

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.
- Will be 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 BMPs.
- Provide advice in preparing for work activities in a manner that mitigates adverse environmental or health effects.
- Has 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.
- Will 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.
- Will 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.
- Will 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, PID screening, air monitoring, equipment calibration, manifests, truck receipts, truck counting spreadsheets etc.), photographs and incident reports.
- Will complete and submit environmental monitoring reports to the DOH HEER and will report any unanticipated adverse effects to the environment. Such reports should 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.

6.0 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). 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. During

demolition, indicate how spread of potential hazardous material related to building material (e.g., lead-based paint, asbestos, PCB material in slabs) will be avoided. 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 how many and which activities will take place at the same time. If engineering controls such as vapor barriers or an active/passive vapor extraction system needs to be installed include the drawings for these controls here. If potential explosive vapors are present, include what intrinsically safe equipment will be used to avoid potential explosions during construction activities that may create sparks.

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 project may require additional BMPs.

If you have already prepared an Erosion and Sediment Control Plan, include it as Appendix D to this C-EHMP.

Planned Types of Excavations:

Excavation Type	Maximum Depth
Piles	65 ft
Caissons	
Potholing for Utility Locating	
Elevator Shafts	
Spread footing	
Utility Corridors	
Storm Drain	
Mass Excavation	
Grading	
Etc.	

7.0 Soil Management Plan

The purpose of this section is to ensure that contaminated soil is properly handled and managed. If the full extent of contaminated soil is unknown (e.g., if the contamination is not delineated), then all soil at the site must be treated as potentially contaminated. The management of potentially contaminated soil should be overseen by an onsite QEP.

7.1. Soil Management

Soil disturbed at the Site will be continuously monitored and documented by a QEP with at least five years' experience in environmental oversight associated with construction projects. If known or suspect contaminated soil is encountered during excavation, the appropriate response actions must be taken that conform with HDOH and EPA guidance, laws, and regulations. These guidelines include ensuring that workers have the appropriate PPE, that known or suspect contaminated soil is segregated from clean

soil, that newly encountered contamination is reported as a release, known contaminated or suspected contaminated soil be stored and covered with plastic sheeting, and that the contaminated soil is managed properly during and following excavation. Soil trucked offsite should be drained of fluids and the load should be covered with a dust screen during transport.

Include cut/fill maps and maps that identify areas proposed for soil disturbance as figures. These maps should be easy to read by construction workers.

7.1.1 General Field Screening

Contaminated soil *may* be identified in the field through visual and olfactory observations. Petroleum contaminated soil typically exhibits petroleum staining and/or a petroleum hydrocarbon odor. Free product may or may not be observed. Solvent contaminated soil typically exhibits a solvent or sweet smelling odor, and in some instances free phase product may be present. Petroleum contaminated soil may be also detected indirectly via a rotten egg odor stemming from anaerobic degradation of the product that produces hydrogen sulfide in oxygen starved zones. Suspect contaminated soil should be segregated from clean material. Soil with a strong petroleum or solvent odor and/or free phase product should be segregated separately from the moderately impacted soil, as soil that is considered grossly contaminated may not be reused and must be properly disposed of.

- Visually screen soils for staining, debris, soil waste, discoloration, or other evidence of contamination as the soils are removed from the excavation.
- Check for petroleum or other unusual chemical odors emanating from the soil.
- Collect soil screening samples in sealable inert bags and test the headspace within each bag for volatile organic compounds (VOCs) using a PID.
- Use the field observations, VOC measurements, and any other field screening tests, such as the glove and paper towel tests, to segregate the soil properly.

Some contaminants, including, but not limited to metals, dioxins, pesticides, and polychlorinated biphenyls, cannot be identified in the field through visual and olfactory observations. In some cases, previous sampling or historical research into previous industrial operations may have identified areas where these contaminants are likely present at concentrations above the most restrictive HDOH EALs that are targeted for excavation. Soils in these areas must be segregated and stockpiled separately from clean soil.

Please provide site-specific information and response actions. The guidelines listed above may be basic and are not intended to be comprehensive of all site conditions. Indicate the purpose of the screening (e.g., delineation, soil segregation) and how the screening will take place in detail (e.g., take the sample from the excavation site wall or cuttings, collect sample from the excavator bucket, collect sample from stockpile right after deposition). Include the frequency of screening (e.g., every 5 minutes, every 5 cy etc.). In general, if the site has previously not been completely assessed due to surface obstructions such as buildings etc., additional delineation and removal of the main mass

of contamination, followed by confirmation sample collection may be required (“opportunistic remediation”). The process on how this will be achieved should be discussed in detail for screening and confirmation sample collection.

7.1.2 Excavation and Stockpiling

Suspect contaminated soil must be stockpiled and segregated from clean soil. The following tasks must be performed with respect to managing contaminated soil.

- Contaminated soil will be segregated from uncontaminated soil.
- Water contained within excavated soils will be allowed to drain back into the excavation prior to stockpiling the soil.
- Stockpile contaminated soil in a 20-mil plastic-lined, bermed area. The stockpiles should be covered with plastic sheeting at the end of each day and during any major wind or rain events. The plastic sheeting should be secured with enough ballast so that it will not be dislodged by strong winds.
- Underlay the edges of the plastic sheeting with clean soil or other material.
- Ensure that the height of the berm will be sufficient to prevent storm water runoff or run-on from breaching it. The contaminated soil should be placed inside the bermed area on top of the plastic sheeting.
- Soil stockpiles shall be located away from storm drain inlets, surface waters, and storm water drainage pathways/channels.
- Stockpile soil that has a strong petroleum or solvent odor and/or free phase product separately from both clean and moderately impacted soil. This soil may not be reused and must be properly disposed of.
- Soil stockpiles must remain on-site and cannot be transported or stored off-site without prior authorization or characterization.

Please provide site-specific information and response actions. The guidelines listed above are basic and are not intended to be comprehensive of all site conditions.

7.2. Soil Reuse and Disposal

Prior to reuse of soil off-site or disposal at a licensed disposal facility, all soil must be sampled to ensure that it is appropriately characterized so the final disposition of the soil may be determined. Below are the planned location(s) for soil reuse or disposal. If other locations are later planned following approval of this plan, then the HEER Office must be notified and provide approval prior to any material being transported.

Please note the frequency that soil samples must be collected depends on the reuse or disposal location and the contaminants of concern 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.hawaiidoh.org/tgm.aspx>) and the Fill Material and Stockpile Guidance

(<http://eha-web.doh.hawaii.gov/eha-cma/Leaders/HEER/technical-guidance-and-fact->

sheets). 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).

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.

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

If the extent of contamination is known, attach a detailed location map showing where contaminated soil is anticipated to be re-used. State if the soil will be covered or placed under a building/asphalt/concrete etc.

Contaminants to Analyze	Analytical Method	Number of MI-Samples

Note to qualified environmental professional:

Prior to analyzing samples at the laboratory, check that the Method Detection Limits (MDLs) are below the most restrictive unrestricted EAL (unrestricted use, <150m from surface water, located above drinking water) for each contaminant of potential concern (COPC).

All soil samples should be collected in accordance with the HEER Office Technical Guidance Manual. This requires the collection of multi-increment soil samples to properly characterize the soil.

7.2.1 Stockpile Sampling for Re-Use

If soil reuse offsite is desired, concentrations of COCs must be below the most restrictive unrestricted EAL (unrestricted use, <150m from surface water, located above drinking water) **and** soil stockpiles must be sampled according to the HEER Office’s Fill Reuse and Stockpile Guidance using multi-increment (MI) sampling for **unrestricted**

use if soil will be used for unrestricted use. If soil concentrations are below the most restrictive unrestricted EAL, but the sampling frequency of stockpiles was based on commercial/industrial reuse, the soil can only be reused at commercial/industrial sites.

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, such as the one in Appendix B, signed by the generating and receiving party must be submitted to the HEER Office prior to any reuse.

Total Volume of Soil Proposed for Export (cy):	
------------------------------------------------	--

Stockpile sampling accordingly requires the following parameters:

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

7.2.2 Stockpile Sampling for Disposal at a Disposal Facility

If soil will be disposed of at a waste disposal facility the MI sampling requirements are as follows:

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

The soil will be disposed of at the following permitted site:

- Name of Disposal Facility

If in-situ soil sampling is planned to pre-characterize the soil prior to excavation, then please provide the following information:

- 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?

7.2.3 Record Keeping

A log of all soil that leaves the Site and its final disposition must be maintained (Example in **Appendix C**). All waste manifests, truckload counts at source and receiving site, weigh tickets, and soil profiles must be included in the report documenting the environmental oversight conducted during construction that must be submitted to the HEER Office on a weekly or monthly basis, unless waved in writing by the HEER Office project manager. For all soil disposed of at a disposal facility a manifests with all required signatures must be submitted.

8.0 Groundwater Management Plan

This groundwater management plan is intended to ensure that contaminated groundwater encountered during construction is properly managed. Some contaminants may be noticeable through visual and olfactory observations (e.g., petroleum, chlorinated solvents); however, some contaminants are not identifiable through field observations (e.g., non-volatiles, metals etc.). Planning dewatering and groundwater management proactively - ahead of construction is essential.

8.1. Groundwater Management

If contaminated groundwater is encountered during excavation activities, appropriate response actions must be taken. This includes proactive planning to ensure that workers have the appropriate level of PPE and that free product, sheen, and groundwater are managed properly if dewatering is conducted. The following tasks associated with managing groundwater include the following:

- If groundwater is encountered, a QEP shall provide field oversight to direct appropriate dewatering if conducted, manage disposal of groundwater if necessary, and provide health and safety guidance related to potential exposure of workers to contaminants.
- Workers should have the appropriate level of PPE.
- If free product is encountered it must be recovered to the extent practicable, which is further discussed in Section 9.0.

- If contaminated groundwater is discovered at a previously unknown source or location, the HDOH HEER Office must be immediately notified of its discovery.

Please provide site-specific information and response actions. The guidelines listed above are basic and are not intended to be comprehensive of all site conditions. Remedial actions, including, but not limited to addition of oxygen release compounds (as appropriate for the contaminant), aeration, and recovery of absorbents should be conducted when possible and described here.

8.1.1 Dewatering

Contaminated groundwater may be dewatered from one excavation into another as long as the following conditions are met:

- The excavations are within at least 200 feet of each other.
- The receiving excavation is wider than it is deep, is less than 10 feet in depth, and does not meet the definition of an underground injection control well.
- The groundwater within both excavations is contaminated. Contaminated groundwater cannot be discharged into a clean excavation.
- Any free product present in the excavation has been removed. Under no circumstances can free product be transferred from one excavation to another.
- The receiving excavation is greater than 150 meters from a surface water body, storm drain inlet, or sensitive environment (e.g. bird sanctuary, endangered species, beach, park).

Contaminated groundwater may also be dewatered into tanks or other temporary storage containers. Prior to re-infiltrating, the water temporarily stored in tanks or storage containers must be sampled and analyzed for the appropriate COPCs to determine the appropriate disposal or discharge options. If COPC concentrations are above EALs, water stored in tanks should be remediated prior to infiltration. The discharge of the water must be in compliance with the City and County of Honolulu, HDOH, and the United States Environmental Protection Agency regulations and applicable permits. If it is desired that the water contained within the tanks or storage containers be re-infiltrated into a nearby excavation, the HEER Office and HDOH Solid and Hazardous Waste Branch (SHWB) must be consulted to determine whether this is an appropriate option.

Please provide site-specific information and response actions. The guidelines listed above are basic and are not intended to be comprehensive of all site conditions. For example, include how mounding of groundwater will be avoided that could spread groundwater contamination during onsite infiltration and cause potential vapor intrusion or other hazards offsite; what is done to avoid terrestrial eco receptors such as birds to use infiltration ponds, how mosquito breeding in ponds is avoided, how sediment at the bottom of the ponds is removed, sampled and disposed of; what is done to characterize water to be re-infiltrated onsite or prior to disposal; what will be done to neutralize high pH caused by infiltration of water with concrete fines. What is done to remediate onsite

groundwater that is contaminated? Remedial actions, including, but not limited to addition of oxygen release compounds (as appropriate for the contaminant), aeration, and recovery of absorbents should be conducted when possible and described here.

8.2. Groundwater Disposal

Groundwater generated must be treated and disposed of if re-infiltration within 200 feet of the area of generation is impracticable or if COPC concentrations are above appropriate site-specific EALs. 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.

Contaminants 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	

9.0 Free Product Management Plan

The purpose of the free product management plan is to ensure proper handling and management of free product that may be encountered. Free product is generally encountered floating on the groundwater or at the capillary fringe, and typically presents as either free-flowing, black or brown, viscous product; a thin layer of black or brown product; a discontinuous layer of product (e.g., spots or globules); or a petroleum hydrocarbon sheen. In tidally influenced areas, most free product is produced during low tide conditions under if groundwater is unconfined and during high tide conditions when the groundwater is confined.

Planning free product management proactively in areas with high potential of release ahead of construction is essential.

Free product should be expected to be encountered near gas stations, fuel terminals, refineries, near Harbors, airports, and pipelines.

9.1. Free Product Management

If free product is encountered during construction activities, the appropriate response actions must be taken. The anticipated response actions are summarized below.

- Assess flammability, explosivity and asphyxiation hazards by using a 4- gas monitor. Measure LEL, carbon monoxide, carbon dioxide, and hydrogen sulfide in the work zone.
- A QEP should provide environmental oversight whenever free product is encountered. They should also provide health and safety guidance related to the potential exposure of the free product to the onsite workers.
- The free product should be recovered to extent practicable. This may involve the use of absorbent pads/booms, oil-water separators, and/or vacuum trucks to skim free product off the water table.
- All oil-absorbent pads/booms, PPE, and other disposable equipment containing free product must be appropriately disposed of.
- If dewatering is necessary and free product is floating on the water in the onsite infiltration pit(s), the product will be recovered to the extent practicable, and any absorbent material such as absorbent pads must be disposed of properly. Please note, that free product may not be moved from one excavation to another and engineering measures should be taken to prevent the transfer of free product during dewatering (e.g., placing the intake of the pump at a level below the free product layer – deeper than the planned deepest part of excavation/sump, etc.).
- If free product produces vapors that could adversely affect air quality, then the Vapor Management Plan (Section 11) should be followed. Please note, this may require that PPE be upgraded.

Please provide site-specific information and response actions. The guidelines listed above are basic and are not intended to be comprehensive of all site conditions.

10.0 Storm Water Management Plan

Proactive actions should be taken to prevent storm water from coming into contact with contaminated groundwater and soil. The actions listed below can be taken to minimize the potential for contaminating storm water.

- Place contaminated soil on plastic sheeting in a lined, bermed area to prevent storm water from contacting contaminated soil.
- Open excavations should be backfilled as soon as practicable to prevent storm water and direct precipitation from entering the excavation. When possible, open excavations should be bermed to prevent storm water from entering the excavation.
- In the event of heavy rain, ensure that all stockpiles of contaminated soil are covered with plastic sheeting and substantially secured.

- Regularly monitor the weather throughout the day for signs of approaching storms and/or heavy rains.

Please provide site-specific information and response actions. The guidelines listed above are basic and are not intended to be comprehensive of all site conditions. If the storm water management actions are covered in the NPDES form C Permit- the form can be attached to this plan.

11.0 Vapor Management Plan

The purpose of the Vapor Management Plan is to identify VOC vapors and toxic gases that could adversely affect air quality during construction. Included are procedures to detect and mitigate potential fire and explosion hazards posed by explosive vapors. Below are the Contaminants of Potential Concern associated with potential vapors that may be encountered at the Site.

- TPH-g/d
- Benzene
- Toluene
- Methane
- Hydrogen Sulfide
- Modify contaminants as appropriate...

The principal hazards posed by volatilized COPCs are **direct exposure through inhalation, asphyxiation, flammability, and explosivity**. If volatile COPCs are found during construction activities, the concentrations of these vapors must be controlled in accordance with HDOH and U.S. Environmental Protection Agency (EPA) regulations and guidelines, and Occupational Safety and Health Administration (OSHA) rules and regulations. The purpose of the response actions is to ensure workers and the general public are not exposed to hazardous volatilized COPC concentrations. The anticipated response tasks associated with vapor management are below:

- A QEP must provide field oversight if COPC vapors are detected at concentrations above EALs, LELs and/or PELs. The QEP should provide health and safety guidance related to potential exposure of workers to the vapors.
- Air monitoring will be conducted during excavation associated with future construction activities. Air monitoring will also occur when workers are required to enter excavations. The monitoring will include both workspace and perimeter measurements of COPC vapors.
- If warranted by air monitoring results, onsite workers will be notified to upgrade PPE to include respiratory protection.
- Air monitoring will be conducted using **X (e.g., PID, 4 gas meter)**.
- Air monitoring associated with confined-space entry will be described in the site-specific HASP for construction.

Please provide site-specific information and response actions. The guidelines listed above are basic and are not intended to be comprehensive of all site conditions. This included providing details regarding when air monitoring will be initiated, the frequency that air monitoring samples will be collected, at what concentration(s) are response actions triggered (e.g., upgrading PPE, stopping work, initiating vapor suppression, increased monitoring), etc. If a vapor barrier is required as part of the remedy, include specs of the vapor barrier to show that the vapor barrier material is compatible with the contamination present at the site and describe how the vapor barrier will be tested for effectiveness onsite (e.g. smoke test).

11.1. Engineering and Administrative Controls

Methods to prevent vapor exposure may be needed during construction activities. The controls can include the use of plastic sheeting on soil stockpiles, the use of vapor suppressants, and additional ventilation.

Please provide details regarding any engineering methods and administrative controls to be used to manage and control vapors, should they be necessary.

12.0 Spill or Release Response

Releases, should they occur, will be reported in accordance with HRS 128D and HAR 11-451. In addition to contractor releases, a release may include pre-existing contamination encountered during construction activities. If new contamination is discovered that is different from any known previously reported releases, the release must be reported as described in the abovementioned regulations.

12.1. Release Response

If a release occurs, the following actions should be taken:

- Determine the identity of what was spilled, the source of the spill, the volume of the spill, the severity of the spill, and if immediate emergency response actions are necessary.
- Stop work if contaminant releases are extremely large and cannot be contained. If an imminent threat to human health or the environment exists, or if human or environmental receptors are impacted (e.g., human receptors falling ill or suffering sudden illness), notify the Honolulu Fire Department by calling 911.
- If the spill is of a volatile, flammable, or combustible liquid or vapor, possible ignition sources should be eliminated, and workers will be directed to remain upwind. In addition, monitor for explosive vapors using an LEL meter.
- Stop work if an unusually large release or contaminated area is encountered unexpectedly or if there is any release of chemicals or hazards not covered by the plan.
- Stop work and take immediate emergency response actions if a worker or member of the general public is injured.

- Eliminate the source of the spill to the extent practicable (e.g., shutting off a valve, righting an overturned container), if it is safe to do so.
- Protect sensitive ecological receptors threatened by the spill.

Please provide site-specific information and response actions. The guidelines listed above are basic and are not intended to be comprehensive of all site conditions. Provide onsite notification procedures.

12.2. Release Reporting

In the event of a release of a hazardous substance that causes imminent threat to human health or the environment, the first call should be to 9-1-1.

All releases must be reported to the HEER Office (808-586-4249 or 808-247-2191 after work hours) and the Local Emergency Planning Committee (LEPC) at **insert appropriate phone number**. Both agencies must be contacted by telephone or in person immediately following a release. Note, there is no penalty for reporting a release unnecessarily, but there are large penalties for not reporting a release.

If petroleum is observed on surface water, then notify the U.S. Coast Guard (USCG) through the National Response Center (NRC) at (800) 424-8802. Please note, petroleum observed on groundwater is not reportable to the NRC. For oil and hazardous substance spills that threaten or occur in navigable waters, the USCG is the lead agency

Please provide site-specific information and release reporting actions. The guidelines listed above are basic and are not intended to be comprehensive of all site conditions.

13.0 Worker Protection

A site-specific Health and Safety Plan will be prepared for the site in accordance with the appropriate Occupational Health and Safety Act regulations and Hawaii Department of Labor and Industrial Relations Occupational Safety and Health (HIOSH) requirements. These regulations and requirements may include but are not limited to the use of the appropriate level of PPE and appropriate personal hygiene steps associated with the identified COPCs as the site.

Please provide site-specific information. The information provided above is basic and is not intended to be comprehensive of all site conditions.

14.0 Recordkeeping and Reporting Requirements

Detailed records of all environmental activities conducted during construction should be kept. These records may include air monitoring results, stockpile sampling, soil segregation, soil and/or groundwater sampling methodologies and results, dewatering

activities, free product recovery, vapor suppression, soil disposal or re-use, and any other environmental activities conducted in association with construction activities.

In addition to maintaining these records, within 30 days of the completion of ground disturbing activities a report summarizing the environmental activities conducted during construction is to be submitted to HDOH for review and comment. The report should also include copies of all disposal receipts, truck logs, and laboratory analytical results, as well as a map illustrating the approximate GPS location(s) where any contaminated soil was encountered and/or reused onsite.

15.0 References

Figures

Appendix A

Construction projects can cause dirt and other waste to flow into our streams and ocean.



Construction projects expose soil.

When it rains, or if water is used on site, dirt can run off the site with the water into storm drains.



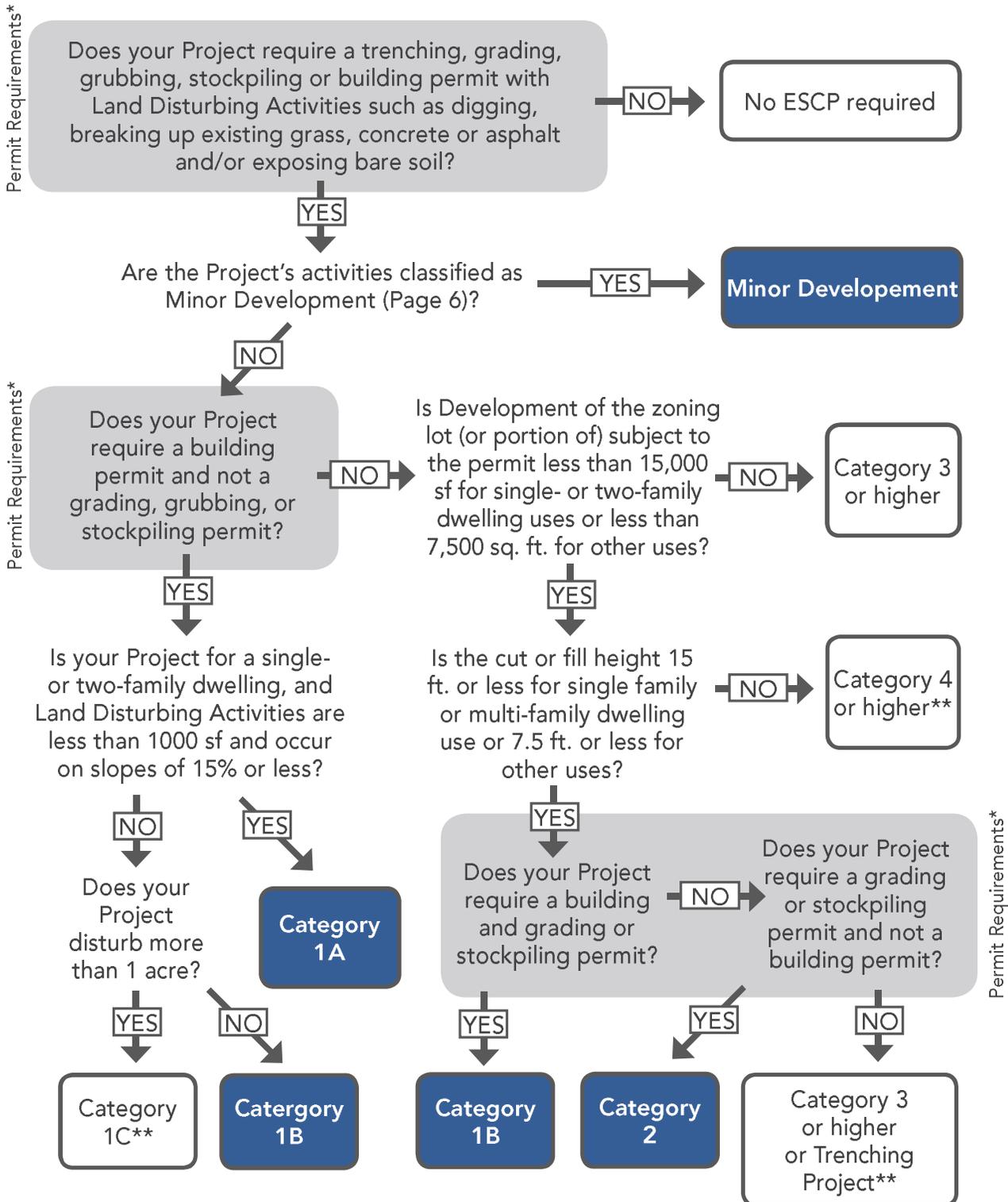
Dirt and other wastes travel down stream.



Dirt and waste flow into the ocean.

Use the protective actions/Best Management Practices (BMPs) for water quality described in this booklet to protect our streams and ocean.

IDENTIFYING YOUR PROJECT CATEGORY



Notes

- * If a project requires a trenching permit in addition to other permits, then the higher project category (1A, 1B, 1C, 2-5) applies, unless it is classified as Minor Development.
- ** Requirements for Categories 1C, 3 or higher and Trenching Projects are not covered in this booklet.

MINOR DEVELOPMENT PROJECT REQUIREMENTS

1. Fill out a Minor Development Certification form and have it signed by the owner or their Authorized Agent. Low-risk Minor Development Projects that have minimal Disturbed Area (e.g. for equipment and material staging, trenching for single lateral) do not require Minor Development Certification.
2. Minor Development Projects are excluded from ESCP requirements. However, Minor Development Projects must include BMP notes with the approved construction plans (City and County of Honolulu Administrative Rules §20-3-14(i)(3)).

Erosion Sediment Control Notes for Minor Development Projects:

- (i) Use Best Management Practices (BMPs) to prevent and reduce the discharge of pollutants from the project site onto off-site streets, storm drains, streams and the ocean. Potential pollutants include but are not limited to soil, oil products, paint, solvents, construction demolition waste, trash, portable toilets, AC materials, concrete and any other liquid, paving or washout material that could be detrimental if released to the environment.
- (ii) Any exposed soil from this activity must be permanently or temporarily stabilized immediately using vegetation, gravel, pavers, rolled erosion control products, or an equivalent method unless active work is scheduled within 14 days.
- (iii) All construction waste and washout water must be properly contained and disposed of.
- (iv) Sediment tracked off-site must be swept or vacuumed daily.
- (v) Dust from the project site shall not be transported or discharged to off-site areas. The work must be in conformance with air pollution control standards contained in the Hawai'i Administrative Rules: Title 11 Chapter 60.1, "Air Pollution Control".

Refer to the BMPs section in this booklet for more information on BMPs.

Note: Per §20-3-14(i)(2), the Director of the Department of Planning and Permitting may require Owners of Minor Development projects to develop and implement an ESCP by recategorizing the project if the Director determines that an ESCP is necessary.

If during construction, the Building Inspector determines the project is not a Minor Development Project, the contractor will be directed to stop work and obtain an approved ESCP prior to proceeding. A \$500 (double) ESCP review fee will be charged for starting work without an approved ESCP. Additional fines are enforceable for falsifying the building permit application.

PERMANENT STABILIZATION

Permanent Stabilization takes place after construction work has been completed and must be in place prior to closing the building permit.

Permanent Stabilization means:

- Exposed Disturbed Areas are stabilized with ground covering such as vegetation, gravel, or pavers. If grass or vegetation is used, it must cover at least 90% of the disturbed soils or be temporarily stabilized while it is growing;
- Rain gutters, downspouts, and channelized flows are installed and functioning as designed;
- All paved surfaces are clean;
- Temporary measures or BMPs, such as silt fences and biosocks, have been properly removed once permanent measures are in place; and
- Storm drain inlet filters have been removed after all cleanup activities are completed.

BMP REMOVAL

The property owner and contractor should determine and clearly communicate who will be responsible for the proper removal of BMPs. Temporary BMPs should be removed after the City has conducted a final site inspection and agrees that the site is sufficiently stabilized.

STORM DRAIN INLET / CATCH BASIN PROTECTION

1. Remove BMP once project site is sufficiently stabilized.
2. Sweep the area around the storm drain inlet or catch basin where sediment or other debris may have accumulated.
3. Remove and dispose of sediment or debris that has accumulated on the BMP.

NOTE: When there is a threat of major rains during construction, storm drain inlet BMPs must be temporarily removed to prevent flooding. Temporary removal of BMPs must also follow proper procedures.

BMP REMOVAL

SILT FENCES

1. Allow vegetation at the site to become established. Remove AFTER vegetation is 90% established, not before.
2. Remove any remaining soil trapped behind the silt fence.
3. Remove filter fabric and stakes.
4. Backfill, grade and compact the area.
5. Plant more vegetation on any newly bare soil where the silt fence was removed.

BIO SOCKS, SAND & GRAVEL BAGS

1. Remove BMP after construction is completed and the site is permanently stabilized.
2. Lift BMP from the area.
3. Sweep up any dirt left behind.
4. Dispose of mulch-filled socks by emptying contents in a vegetated area, such as a garden, where soil will be trapped—NOT on sloped areas!

If the biosock was not designed for reuse, place fabric material in the trash. Biosocks designed for reuse should be rinsed in an area where the sediments will be recaptured to prevent these from entering the storm drain.



Lift the BMP from the area.



Sweep up the dirt left behind.

SLOPE MANAGEMENT/ TEMPORARY STABILIZATION

Slopes that are 15% or more are considered steep and require special attention. As much as possible, do not disturb steep slopes if a rain event is anticipated or until work is scheduled to begin. If steep slopes are exposed and work will be suspended 7 days or more, temporary protective action/BMP is required.

VEGETATION

- Plant vegetation to hold soil in place. May require watering.



- Use jute or coconut fiber mats to hold soil while seeds or plants are becoming established.

USE BIOSOCKS OR SILT FENCES

Biosocks or silt fences are a back-up system when plants and seeds are getting started. Use them at the bottom of slopes and project edges until plants cover at least 70% of area.

Biosock



Silt Fences



SLOPE MANAGEMENT/ TEMPORARY STABILIZATION

COVER SLOPE WITH MATTING

Bare slopes and ground can be covered with silt fabric, coconut fiber or jute netting to prevent dirt from washing away.



- Silt fabric can be used to cover slopes and bare ground.
- Covering soil can also help keep the site clean.



- Make sure matting is secured at top and bottom of slope by stapling, crimping in, trenching in or weighting with sand bags.



- Plastic or fabric are good options for exposed vertical faces.

SLOPE MANAGEMENT/ TEMPORARY STABILIZATION

HYDRAULIC MULCH OR HYDROSEED



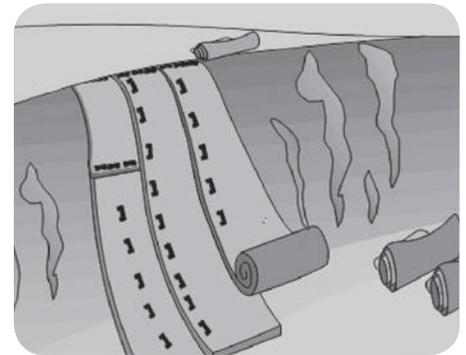
Hydraulic mulching is the spraying of fibers on bare soil.
Hydroseeding is the spraying of seeds and fiber on bare soil.



- Often used on large construction sites.
- Use biosocks or silt fences at bottom of slope until plants cover at least 70% of area.

GEOTEXTILES AND MATS

Geotextiles and mats are laid against slopes to hold soil and allow water to pass through.



- Geotextiles and mats are suitable for short steep slopes.
- Generally used on large project sites.

UPSLOPE WATER DIVERTED

Offsite water can flow onto the construction site and increase soil erosion on the site. Biosocks and silt fences at the top of slopes can minimize rain water flowing onto the site.

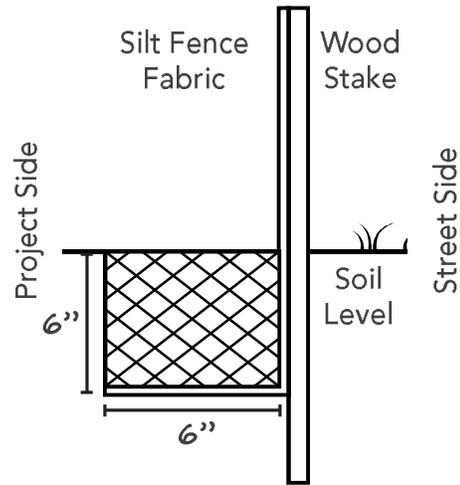
GRUBBED VEGETATION REMOVAL

Don't leave grubbed material and vegetation on slopes where it can wash down into streams or the storm drain system. Remove it and protect slopes with materials that won't wash away.

PERIMETER CONTROLS

SILT FENCE

Silt fences are fabric barriers that keep soil inside the fence.



Silt Fence trenched to anchor material on project side of fence

- Good for areas where access isn't needed.
- Secure silt fence to supports at regular intervals.

- Trench silt fence at bottom.
- Position top of barrier well above soil level.



- Barrier too low to be effective.
- Check for damage regularly.



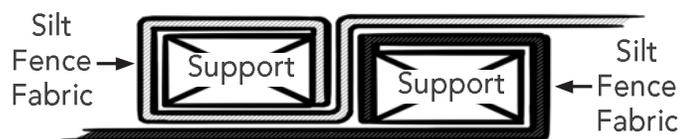
- Okay to allow hydrant access, but need to trench in silt fence and use biosock along sidewalk edge.



- Need to overlap to avoid gaps where water and dirt will get through.
- Wrap fabric around supports and overlap with adjacent supports to avoid gaps.

SILT SCREEN

Silt screens are low profile, reusable, fabric fences that screen out sediments and allow water to pass through.



PERIMETER CONTROLS

BIO SOCKS

Biosocks are tubes of fabric filled with compost, fiber or other organic materials. They are good for high slopes, stock piles, and landscaping installation, and for areas with foot traffic because they are easy to step over. Compost filter socks must be a minimum of 8 inches in diameter.



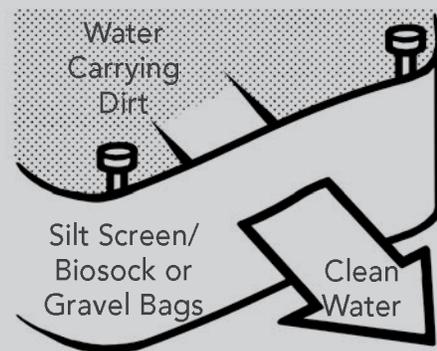
- Overlap biosocks by a least 6 inches so water cannot find its way out.
- Keep in place until all vegetation is grown in.
- Wrap the ends of the biosocks (and silt fences) toward the water flow to trap and keep water with dirt from going offsite and into the storm drain.
- May need stakes to secure biosocks during heavy rains.

SAND & GRAVEL BAGS



- Sand or gravel bags can be used instead of biosocks.
- Sand or gravel bags can also be used to secure silt fabric.

HOW THEY WORK



STORM DRAIN INLET PROTECTION

Protect storm drain inlets, especially ones within 50 feet of your project site.

Prior to storm events, remove storm drain inlet protection to prevent flooding; reinstall afterwards.

STORM DRAINS AT THE CURB



- Extend biosock well beyond edge of storm drain so water cannot sneak by.



- Secure the ends of this type of protective action.



- Secure and maintain storm drain protective actions to prevent failure.
- Check frequently for effectiveness.

STORM GRATING INLETS



- Secure silt fabric under grate.



- Secure silt fabric around the grate.

BMP AND SITE MAINTENANCE

Category 1A and 1B projects require inspections to be performed at specified intervals as prescribed in the City’s rules. Failure to perform required inspections could be subject to fines and penalties. Category 1A and 1B Projects require the following minimum number of inspections to be performed by the designated Erosion and Sediment Control Plan (ESCP) Coordinator:

- **Pre-Construction Inspection:** This inspection shall be performed prior to start of work on project to verify that all protective actions described in your ESCP are properly installed and in good working order.
- **During Construction Inspections:** Inspections shall be done once every 30 days. For projects that will be completed in less than 30 days, an inspection shall be done at the halfway point of the project.
- **Post-Construction Inspection:** This inspection shall be done at the conclusion of the project to confirm that all disturbed areas have been stabilized and all temporary protective actions (e.g. silt fence inlet protection, etc.) have been removed. Inspection report submittal and permanent stabilization are required to close the building permit.

Use Appendix C of the Rules Relating to Water Quality for inspection reports. An example is provided on the Inspections section of the booklet.

DURING MAINTENANCE

- During the inspections, check that protective actions/BMPs are correctly installed.
 - Silt fences are tucked in and properly overlapped.
 - Biosocks are J-hooked toward water flow and/or overlapped by at least 6 inches.
 - Stockpiles are covered and secured.
- If an installed BMP is not functioning properly, additional BMPs may need to be installed.
- If a BMP has been damaged, repair or replace it.
- Re-install and secure silt fences or other items that have fallen down.



DUST CONTROL

SPRINKLING WATER

- Water can be used to keep dirt from blowing offsite.
- Amount matters: use enough water to keep soil in place – and not so much that it causes dirt and water to run offsite or stick to vehicle tires. The general rule is no ponding or flow.
- Apply water regularly.



VERTICAL DUST BARRIERS



- Vertical dust barriers keep dirt from leaving sites and protect adjacent land uses from dust and debris. Note: A dust fence cannot be used as a silt fence.
- Use vertical dust barriers where there are high winds and on sites with steep slopes.

MULCH

Mulch (wood or gravel), at least 1 inch deep, can also be used to control dust onsite.

CONCRETE WASTE MANAGEMENT



- A kiddie pool can be used to mix concrete. Cover wash water at the end of the day or before rain. Uncover while working onsite to allow it to evaporate. Remove wash water and dispose offsite.



- Put liners under concrete containers to catch splatter and overflows.
- Solutions can be creative and sized for the amount of wash water.



- Wash hands, boots and tools over wash out containment or over a large bucket and dispose of appropriately offsite.
- Tools and supplies can also be washed offsite.



- Do not mix or wash down concrete on the sidewalk or street
- Washing concrete, paint and other wash water down the storm drain is a violation and subject to fines.
- Do not allow slurry to be directly dumped on the ground.

STOCKPILE MANAGEMENT

Prevent stockpile materials from going into the storm drain. Cover stockpiles that won't be used within a week.



- Store materials on property.
- Store away from drainage inlets.
- If possible store stockpiles away from property edges.
- Avoid covering utilities such as water valves, clean outs, electrical boxes, etc.



- Covers can be burlap, silt fabric/dust screen or plastic.
- Secure covers to protect from rain and high winds.



- Place stockpiles away from storm drain inlets and driveways which slope to street and storm drain inlets.
- Don't allow stockpiles to spill onto the street. The spilled material is a pollution problem and a safety hazard.

VEHICLE TRACKING CONTROL

Vehicles leaving the site can carry or track dirt onto streets which can then be washed away into storm drains.

DESIGNATED VEHICLE AREAS

- Restrict vehicle traffic to properly designated areas instead of allowing vehicles across the site.
- Use existing paved areas or gravel for vehicle drive path where possible.

TIRE WASH AREA

- Wash tires over onsite gravel area to remove dirt before exiting.



GRAVEL AND FABRIC AT SITE ENTRANCE

Gravel helps shake dirt off vehicle wheels and traps it in the spaces between the gravel pieces.



- Use gravel at site entrance to remove dirt from vehicle tires prior to exiting the project site.
- Use 8-12 inches of No. 2 (or No. 2 & 4) gravel at site entrance/exit.
- Place silt fabric under gravel to filter water.
- Turn the gravel periodically so that the smaller sediments go down and free up space for other dirt to come off vehicle wheels.

SWEEP UP DIRT ON STREET



- Using BMPs will keep most but not all dirt from the street. Sweeping is also needed.
- Never wash dirt into the street or storm drain inlets.

MATERIALS DELIVERY, STORAGE AND USE MANAGEMENT

Proper material storage prevents product spills from going onto the soil and running off with rain water.

- Minimize the storage of hazardous materials onsite.
- Do not store materials near the storm drain system or stream areas.
- Store materials in a designated area and install secondary containment.
- Keep materials covered or under roofed area.
- A wooden box can be made onsite and lined with plastic; it should have a roof or be covered with plastic so it doesn't fill with water.



Note: Careful storage can keep material containers from rusting and maintains product quality.

SPILL PREVENTION AND CONTROL

- A spill kit should be kept near or with vehicles.
- Workers should know where the spill kit is and how to use it.
- Kitty litter can be used for spills. After use, it should be swept up and disposed of properly.

SOLID WASTE MANAGEMENT

KEEP SITE CLEAN

- Pick up site daily, and don't let trash blow around.
- Provide designated waste collection areas for solid waste, construction and demolition waste.

MANAGE TRASH BINS

- Schedule regular trash collection; don't allow trash bins to overflow.
- Bins/dumpsters should be put on the property, if possible. If bin is to be stored on street, a street usage permit (<http://bit.ly/2kLeEu9>) is needed.
- Cover trash to prevent water from mixing with trash and then flowing into the storm drain system.
- Don't use leaking bins; fix or replace.

PORTABLE TOILETS

Securing portable toilets prevents possible spills into the storm drain system.



- Straps and CMU blocks, stakes, or sandbags can be used to secure the portable toilets. (Double tank portable toilets are heavier and more secure than single tank.)
- Place portable toilets away from storm drains.
- Schedule regular servicing to prevent overflow and spills.

LIQUID WASTE MANAGEMENT

- Contain oil, petroleum, lubricants, paint solvents, and glue in bucket with lid or portable tank and dispose of offsite.
- For latex paint clean up, a 5-gallon bucket with lid and water can be used. The wash water can be taken offsite for disposal via a sanitary sewer.
- Drywall taping and mud should be contained in a box (wood box lined with plastic) and then, once hardened, can be dumped in the trash. Do not put drywall mud down the drains as it can harden and clog pipes.
- Refer also to Hazardous Waste Management BMPs.

VEHICLE AND EQUIPMENT CLEANING, FUELING, AND MAINTENANCE



- Use pans or plastic under equipment to catch oil and gas leaks.
- Use biosocks around equipment parked on the street.
- Wipe down vehicles instead of washing onsite.
- Prevent oil from going into the storm drain.
- Discharging oil into a storm drain is a violation and subject to fines.

HAZARDOUS WASTE MANAGEMENT

Prevent hazardous waste from entering storm water through proper material use and waste disposal.

- For latex paints: Dry out and then dispose in trash can or dumpster. Replace lid before disposal or storage.
- For oil-based paints: Use an oil change kit or other absorbent and bag before placing in trash.
- Dispose of empty pesticide, hazardous waste or paint containers in the trash.
- Refer to your Safety Data Sheet (SDS) for more information on proper handling and disposal.
- For more information go to www.opala.org

CONTAMINATED SOIL MANAGEMENT

If there is possible contaminated soil, cover the stockpile with plastic sheeting or tarps and install a berm around it to prevent runoff. Haul soil offsite and dispose of properly.

If soil is contaminated and hazardous, work with the State Department of Health Solid and Hazardous Waste Branch to develop options for treatment and/or disposal.

SITE DIAGRAM

You will need to include the following items on your site diagram:

Property Boundary

Draw your property boundary (see box below).

Existing Buildings

Draw the outline of existing buildings (see box below).

Storm Drains

Note storm drains within 50 feet of the project site. This can be shown using an arrow and note distance from project site.

Need help finding nearby storm drains? Go to: honolulugis.org to find catch basins and grate/drain inlets.

Limits of Work

Draw a “cloud” (see legend) around the planned work area.

Water Flow

Use wavy arrows to show the direction of water flow. Water flows down hill/slope.

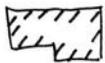
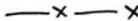
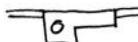
Protective Actions/BMPs

Mark the protective actions (also known as Best Management Practices or BMPs) to be used on the diagram. These should address the type and size of the project to keep dirt and other waste from leaving the site.

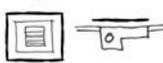
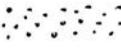
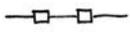
This legend provides symbols to use on the Site Diagram. The legend can be attached to the Site Diagram or labels used on the map.

Site Diagram Legend

Site Conditions

-  Property Boundary
-  Existing Building(s)
-  Fence
-  Limits of Work
-  Storm Drain Catch Basin/Inlet
-  Storm Drain Flat Inlet
-  Direction of Water Flow

Protective Actions (or BMPs)

-  Silt Fence
-  Biosock
-  Sand/Gravel Bags
-  Catch Basins/Drain Protection
-  Vegetation
-  Matting or Plastic Cover
-  Hydraulic Mulch/ Hydroseeding
-  Dust Fence
-  Gravel
-  Stabilized Construction Entrance/Exit

NEED MORE INFO ON PROPERTY BOUNDARY & EXISTING BUILDINGS?

Go to Honolulu RealProperty website (www.qpublic.net/hi/honolulu) and search by address.

- For Property Boundary Info:
Click on GIS Parcel Map. The property outline appears on an aerial map. Use the measuring tool at the top of page (click on beginning and end of a line).
- For Existing Building Info:
Click on Show Building Sketch for building shape and dimensions.

Appendix B

SOILS ACCEPTANCE AGREEMENT

This Agreement is made this _____ day of _____, 20__ by and between _____, ("Recipient"), and _____ ("Sender").

WHEREAS, Sender desires to place _____ ("Materials") from _____ on Recipient's Property.

NOW THEREFORE, in consideration of the mutual covenants, agreements, and conditions contained herein, Recipient and Sender agree as follows:

1. Recipient warrants and covenants that it owns, is lawfully seized and has title to real property located in the _____, State of Hawaii, hereinafter referred to as the "Property", and more particularly described as:

2. Recipient hereby gives and grants to Sender, permission to use the Property for disposal of Materials including _____, subject to the Materials being free of any contamination above HDOH Tier 1 EALs (unrestricted use) tested in accordance with the HEER Office Technical Guidance Manual (TGM). Recipient warrants that import fill material for the Property will only be provided by the Sender.

3. All Materials deposited by Sender on the Property shall become the property of Recipient upon delivery of the Materials to the Property except that any material that is not accepted by the Recipient will be immediately removed and returned to the Contractor. Any rejection or objection to accepting the Material based upon contamination above HDOH Tier 1 EALs (unrestricted use) will be made prior to a load coming from the Sender. Any other rejection or objection to acceptance due to other material deficiencies with the import fill material will be made immediately such that it can be reloaded into the same truck that delivered the material.

4. This Agreement shall remain in effect for a period of _____ from the date hereof.

5. Each party represents that it has the good and lawful right to enter into this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date first above written.

Recipient:

Sender:

By: _____

By: _____

Appendix C

