7 Soil Management Plan

The purpose of this section is to ensure that lead-contaminated soil is properly handled and managed. The management of potentially contaminated soil will be overseen by an onsite QEP.

7.1 Soil Management

Soil disturbance is anticipated to be minimal and primarily restricted to vegetation clearing and establishing site access. Soil will be left on-site and not removed.

If excavation is needed at the Site it will be continuously monitored and documented by a QEP. Where known or suspected contaminated soil is encountered during excavation, the appropriate response actions will be taken that conform with HDOH and Environmental Protection Agency (EPA) guidance, laws, and regulations. This includes proactive planning to ensure that workers have the appropriate level of PPE, and that contaminated soil is managed properly when excavated. Tasks associated with properly managing contaminated soil include the following:

- Contaminated soil is assumed to exist within the ROW, therefore a QEP will provide field oversight to ensure:
    - that known or suspected contaminated soil is segregated from clean soil if clean fill is needed for repairs to the bridge.
    - that known or suspected contaminated soil is properly stored and covered with plastic sheeting or otherwise segregated if excavation is needed.
    - that the contaminated soil is managed properly during and following excavation,
    - and that health and safety guidance related to the potential exposure of workers to COCs is provided.
- Workers who may come into contact with contaminated soil will wear the appropriate level of PPE.
- Workers who may come into contact with contaminated soil will have required training (at a minimum, 40-hour HAZWOPER certification and current 8-hour annual refresher training).
- Workers who may be exposed to lead-contaminated soil shall be trained in accordance with the State of Hawaii Department of Labor and Industrial Relations, Occupational Safety and Health (HIOSH) Lead Construction Standard (Hawaii Administrative Rules (HAR) 12-148.1).
- If newly encountered soil contamination is discovered at a previously unknown source or location, the HDOH HEER Office will be immediately notified of its discovery by reporting it as a new release.

7.1.1 Field Identification of Contaminated Soil

Lead cannot be identified in the field through visual and olfactory observations; therefore, the contaminated soil will be managed in a manner protective of site workers, the public, and the environment. Areas of known or suspected contaminated soil are depicted in Figure 2. Additional testing when needed will be performed (e.g., air monitoring, waste disposal, and potentially confirmation sampling).

During the excavation of known contaminated soil, the QEP will perform the following activities:

- Monitor the location of excavation activities to ensure that soil depicted on hazard maps is properly managed as contaminated, even when there is no field evidence of contamination.

- Visually screen soils for staining, debris, soil waste, discoloration, or other evidence of contamination as the soils are removed from the excavation.

7.1.2 Dust and Erosion Control

Dust and erosion controls at the Site will be continuously monitored and documented by a QEP. Prior to excavation activities, the Contractor and the QEP will evaluate and establish erosion control and dust control measures. The erosion control and dust control measures will prevent impacted soils from migrating away from the excavation area. Typically, BMPs are employed to control erosion and prevent the spread of contamination via runoff or wind. Erosion control is particularly important as the slope at the site is steep and prone to erosion already (See photo).

Slope on DU9

Dust control measures will ensure compliance with ambient air quality standards established in the Hawaii Administrative Rules (HAR) 11-59 and will comply with air pollution control requirements specified in HAR 11-60.1. During excavation and handling of impacted soil, the following dust control measures will be implemented to minimize dust generation:

- Dust/silt fences: BMPs associated with erosion control measures will include the installation of silt fencing in the vicinity of the excavation and along the site perimeter. Dust barriers will be used where extensive excavation is anticipated.

- Equipment decontamination: BMPs to control the transport of contaminated soil from the site and within the site will be used to limit the tracking of soil away from the excavation area. Decontamination areas will be set up adjacent to excavation areas where contaminated media will be disturbed, adjacent to stockpile areas, and where vehicles and equipment leave the site. Decontamination protocols are described in Section 14.0.
- Wetting/misting: BMPs associated with dust control measures will include the use of water to be sprayed on the soil during excavation activities. During excavation, water will be sprayed on the surface of the soil to prevent dust from being generated. However, the amount of water used for dust control will be minimized so as to not create run-off away from the excavation.

7.1.3 Excavation

Contaminated soil will be kept on-site and cannot be transported or stored off-site as the soil may be classified as hazardous waste based on TCLP.

The site is inaccessible to heavy equipment. Any project activities involving excavation would have to be performed using hand tools. It is possible that some of the areas near the concrete piers would need to be exposed to allow surveyors to collect new elevation data. This soil covering the piers was previously disturbed during the construction of the bridge and has reaccumulated base of the piers in some areas. If this activity is required to be performed it is estimated that less than two to four 5-gallon buckets of soil would be excavated from the corners of the footings to complete the survey of the footings. This soil would then be replaced back in its original location after the survey.

There are no plans to excavate depths where groundwater might be encountered. Therefore, dewatering is not anticipated. Any stormwater that accumulates will be allowed to re-infiltrate.

7.2 Soil Reuse

Soil that is disturbed will remain on-site per the recommendations of RAA. It will be reused and managed in place. All soil on site is considered to be lead-impacted soil in excess of the HDOH Tier 1 EALs for unrestricted land use and at or in excess of construction/trench worker EALs for lead. Off-site disposal is not planned for soil on-site. If vegetation is removed from the site, soil should be knocked free from the roots and the green waste removed. Generally, trimmed green waste is left on-site to compost. Additional sampling is not anticipated as all soil will remain on-site and handled as lead impacted.

7.2.1 Record Keeping

If soil is imported to the site, then the QEP will collect and maintain tracking logs, invoices, and volume records and provide them to the HEER Office for review and

approval. Documentation that the imported material is clean will be provided by the soil generator and a soil agreement will be signed between the generator and the site owner.