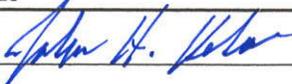
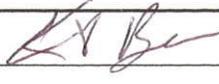


Approved by:		
	General Manager	Radiation Safety Officer

STANDARD OPERATING PROCEDURE

15.OPS.18

DECONTAMINATION OF SURFACES AND EQUIPMENT

1.0 OBJECTIVE

To provide instruction in techniques for removing radioactive contamination from surfaces or equipment following routine use and spills.

2.0 SCOPE

This standard operating procedure (SOP) applies to decontamination of surfaces and equipment following routine use and spills and is intended to be used in conjunction with other CHDT and Clean Harbors procedures.

3.0 POLICY

Decontamination of surfaces and equipment is required to prevent the spread of radioactive contamination, and to maintain worker and public exposures as low as reasonably achievable (ALARA).

4.0 RESPONSIBILITIES

Responsibilities of the CHDT Radiation Safety Officer (RSO), management, and staff are defined in the CHDT Radiation Protection Plan (SOP 15.RPP.01).

5.0 PROCEDURE

5.1 Decontamination Following Spills

Decontamination following spills should be supported and verified by radiological surveys conducted per SOP 15.OPS.14, *Spill Surveys*.

5.1.1 Liquid Spills

A liquid spill must be addressed immediately to stop the flow of liquid. Towels, absorbent material (such as Speedi-Dry), or dams should be used to contain the liquid. Using appropriate personal protective equipment (PPE), mop and dry the liquid, placing the spent material into an appropriate container. If necessary, the liquid may be vacuumed using equipment appropriate to do so.

If the spilled liquid has penetrated into soils or other surface, additional removals may be required to remediate the area. Specific requirements for more involved decontamination or remediation efforts will be developed on a case-by-case basis by the CHDT RSO.

5.1.2 Solid Spills

Depending on the size of the spill, material may be cleaned using manual means (e.g., shovels, brushes, brooms, etc.) or mechanically (e.g., vacuums or heavy equipment). If the solid material is fine and may become airborne, dust suppression techniques should be used. Small spills of solid material may be cleaned using masselin cloths, or duct tape or other sticky material. Collected decon materials should be placed into appropriate containers for subsequent transport and disposal.

5.2 Heavy Equipment Decontamination

Heavy equipment includes backhoe, trucks, and front loader. The following steps should be followed when decontaminating this equipment:

- a. Set up a decontamination pad that is large enough to fully contain the equipment to be cleaned. Use one or more layers of heavy plastic sheeting to cover the ground surface. The washdown area at the CHDT disposal cell is suitable for this purpose.
- b. If feasible, set up a "clean" area upwind of the decontamination area to receive cleaned equipment for air drying. At a minimum, clean plastic sheeting should be used to cover the ground on which decontaminated equipment is to be placed.
- c. With rig in place, spray areas (rear of rig or backhoe) exposed to contaminated soils using steam or high-pressure sprayer. Be sure to spray down all surfaces including the rear area of the undercarriage.
- d. If soapy water was used for the washdown step, rinse the equipment with potable water.
- e. Remove equipment from the decontamination pad and allow to air dry.
- f. After equipment is dry, perform appropriate frisking and/or smear sampling for radioactive contamination, per SOP 15.OPS.13, *Equipment and Vehicle Release Surveys*. If contamination limits are met, equipment may be released.
- g. Record equipment type, date, time, method of decontamination, and frisk/smear sampling results on the appropriate form or logbook.

5.3 Sampling Equipment Decontamination

Sampling equipment includes split spoons, spatulas, compositing bowls and other utensils that directly contact samples. The following steps should be followed when decontaminating this equipment:

- a. Set up a decontamination line on plastic sheeting. The decontamination line should progress from dirty to clean and end with an area for drying decontaminated equipment. At a minimum, clean plastic sheeting must be used to cover the ground, tables, or other surfaces on which decontaminated equipment is to be placed.
- b. Wash the item thoroughly in a 5-gallon bucket of soapy water. Use a stiff-bristle brush to dislodge any clinging dirt. Disassemble any items that might trap contaminants internally before washing. Do not reassemble until decontamination is complete.

- c. Rinse the item in potable water. Rinse water should be replaced as needed, generally when cloudy.
- d. To ensure that the sampling equipment has been successfully decontaminated, one equipment rinsate sample per matrix will be collected for every 20 environmental samples collected. The equipment rinsate samples will be analyzed for the same parameters as the other field samples collected during the field event.
- e. After drying, wrap the cleaned item in aluminum foil, shiny side out, for storage.
- f. Record the decontamination protocol, equipment, or description together with the date and time of decontamination in the appropriate logbook.
- g. After decontamination activities are completed, collect all contaminated waters, used solvents and acids, plastic sheeting, and disposable gloves, boots, and clothing. Place contaminated items in properly labeled drums for disposal. Liquids and solids must be drummed separately.
- h. Document container number, size, contents, start date, close date, and location.

6.0 STANDARDS AND CRITERIA

Specific criteria for radiological surveys that support decontamination activities are listed in SOPs 15.OPS.13, *Equipment and Vehicle Release Surveys*, and 15.OPS.14, *Spill Surveys*.

7.0 REFERENCES

Additional discussion of decontamination techniques beyond the scope of this SOP may be found in the following reference:

U.S DOE 1994. *Decommissioning Handbook*. DOE/EM-0142P. U.S. Department of Energy, Office of Environmental Restoration. April.