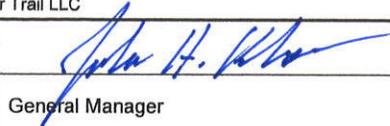
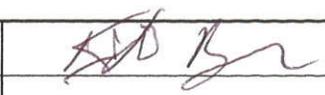


Approved by:		
	General Manager	Radiation Safety Officer

**STANDARD OPERATING PROCEDURE**  
**15.OPS.17**  
**VOLUMETRIC AND MATERIAL SAMPLING**

**1.0 OBJECTIVE**

To provide instruction in techniques for collecting volumetric or material samples from radioactive materials.

**2.0 SCOPE**

This standard operating procedure (SOP) establishes the requirements for performance, documentation, and review of radiological sampling activities for bulk samples. The collection of samples is used to quantify radioactivity that may be present to comply with Clean Harbors Deer Trail (CHDT) waste acceptance criteria.

**3.0 POLICY**

Random confirmation sampling will be performed on incoming wastes to comply with CHDT waste acceptance criteria. CHDT personnel will take appropriate precautions to maintain exposures to radioactive materials 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 Personal Protective Equipment**

Latex or nitrile gloves shall be worn (and changed when contaminated or torn) when taking samples where radiological contamination is present or suspected. A pair of cotton gloves may be worn under the latex or nitrile gloves. Additional personal protective equipment (PPE) may be required based on the specific requirements of the sampling location (e.g., within the cell, treatment building, etc).

Soil samples and PPE used during sample collection are potentially contaminated materials and should be handled and disposed of as such. The potential contamination may be associated with radiological, chemical, and/or biological contaminants dependent on the source location.

**5.2 Sampling Equipment**

Sampling equipment used shall be sufficient to collect a representative sample from the materials under investigation. Dedicated or disposable sampling equipment should be used to minimize decontamination requirements. Absorbent wipes or cloths should be available to clean spills and minimize cross contamination concerns.

Typical sampling materials include scoops and telescoping poles, but specialized sampling equipment like drum samplers may also be used. Prior to the initiation of a long-term waste stream that will require multiple random confirmation samples, the sampling requirements should be reviewed, and sufficient sample containers for the duration of the project should be obtained.

Following sample collection, the jar or container should be placed into a clean 1 gallon Ziploc bag to contain any potential contamination present on the outside of the container.

### **5.3 Sample Identification**

The sample should be labeled with the CHDT sequential sample number, load number (if applicable), drum number, and profile number. The sample collection date and time should also be printed legibly on the sample label.

### **5.4 Sample Volume**

Typically the minimum sample volume for radiological analyses is 500 milliliters, but additional sample is almost always appropriate. The sample should be representative of the load or shipment being sampled.

### **5.5 Sample Screening**

Samples will be screened using the Exploranium gamma spectroscopy unit to obtain a gamma spectrum for comparison with shipments and other samples, per SOP 15.OPS.03, *Operation of Portable Gamma Spectroscopy Unit*. In addition, the sample should be screened with hand-held instrumentation and/or be subject to smear samples to determine if contamination is present on the outside surfaces of the sample containers.

## **6.0 STANDARDS AND CRITERIA**

None.

## **7.0 REFERENCES**

None.