



# SUBSURFACE SOIL SURVEYS

LOW LEVEL RADIOACTIVE OBJECTS AT FORMER DEPARTMENT OF DEFENSE FACILITY

Suspected Canine Garden Rototiller “Dozer” Denies All Allegations of Subsurface Digging

## Radionuclide of Concern: Ra-226

## Conceptual Site Model: Low Level Radioactive Objects (LLROs)

## Origins of LLROs: buried as trash in disposal pits in 1950s

- ❖ Radium foils thought to be used for calibration of survey instruments
  - ❑ 1 REM contact (average) 12 to 15 mRem at 30 cm, milli curie range
  - ❑ 75 recovered
- ❖ Deck markers, metal fragments, disintegrated objects, microCurie range
  - ❑ 1200 + recovered

In 1960s and 1970s soil from disposal pits containing LLROs was then scraped up and transported throughout the facility to be used as land fill for base housing. Former base housing now used as low-income housing.

## Unique Challenges

### Facility has two areas of concern:

#### **Former Disposal Pits**

- ❖ Facility adjacent to large body of water:

Excavations 16 to 18 feet Below Ground Surface, flooded with water: LLROs still being found: is there a point where you cease further excavations? Does anyone have experience in anything similar they can share?

#### **Housing Areas**

- ❖ Soil containing LLROs was used as land fill:

What radiological instrumentation is appropriate to detect 1 microCurie sources at least 1 foot below ground surface ?

Are there any technical papers which discuss capabilities of the RSI (RS-700) system?