

**Date:** 2012 May 2

**Memo To:** Files

**Re: Property Survey:** Port Granby Waste Management Facility

**Type:** Gamma Radiation Survey

**Date of Survey:** 2012 April 12, 13 and 17

**From:** Susanne Williams

At the request of the Port Hope Area Initiative Management Office a Computer Assisted Radiological Survey (CARS) was completed over the property.

### Methodology

The CARS system consisted of a Ludlum 2221 survey meter carried in a backpack coupled with a Ludlum 44-10 gamma scintillator strapped to a stick and held near ground surface. Distance of the scintillator from ground surface was generally 3 to 6 inches, but in some cases higher depending on terrain surface and obstructions (vegetation, rocks, debris, uneven terrain). The survey meter and scintillator were connected to a Trimble GeoXT Pocket PC to enable acquisition of geo-referenced gamma radiation measurements. The GeoXT was carried in one hand while walking approximately 1 m/sec. Gamma measurements and corresponding position readings were logged every second.

Readings were collected on-site within the fenced area, as well as outside the fenced perimeter, on the lakeshore and adjacent farm fields.

### Results

The results of the survey are presented in Figure 1.

A total of 28,284 CARS data points were collected. Gamma readings recorded in the CARS survey ranged from 3.6 to >811  $\mu\text{R}/\text{h}$ .

The maximum reading obtainable with the instrument configuration was 811  $\mu\text{R}/\text{h}$ .

The highest readings were noted in the central plateau area of the site. Slightly elevated gamma radiation fields to the east and west of the site, outside of the fence lines are likely influence from adjacent on-site sources. An exception to this is the driveway leading from the east gate to Lakeshore Road, where the pattern of gamma radiation levels is suggestive of material deposited along the driveway. Slightly elevated readings along the shoreline may be influence from adjacent on-site material, or migration of material down the south slope. Further investigation would be required to determine the cause of these slightly elevated readings.

**Figure 1: Gamma Radiation Survey**  
Near Contact Level  
**Port Granby Site and Adjacent Areas**  
April 12,13 and 17, 2012



**Legend**

- 3-7  $\mu\text{R/h}$
- 8-10  $\mu\text{R/h}$
- 11-15  $\mu\text{R/h}$
- 16-25  $\mu\text{R/h}$
- 26-100  $\mu\text{R/h}$
- 101-500  $\mu\text{R/h}$
- >500  $\mu\text{R/h}$



**Projection: UTM Zone 17**

**Datum: NAD 83**

**Instrument: Ludlum 2221 sn 178135**

**Detector: Ludlum 44-10 sn PR 187436**