## New York State Department of Health Environmental Radiation Program

### **Environmental Radiation Surveillance Site Readings**

### **Minimum Detectable Level**

This document shows the minimum detectable level of different isotopes/analytes. This is the lowest level at which a result can be reliably distinguished from background. Typical minimum detectable levels for various radionuclides and sample types are provided in table 1. Samples reports as "<" are considered negative for the radionuclide being analyzed. The "<" level depends on several factors, such as sample quantity, sample counting time, instrument counting efficiency and instrument background.

Table 1: Minimum Detectable Level\*

#### Air

Isotope/Analyte	$x 10^{-3} pCi/m^3$
Gross Beta	3.0
I-125	4.0
I-131(isotopic scan)	8.0
I-131 (Beta/Gamma coincidence)	0.4

#### **Fallout**

Isotope/Analyte	pCi/m <sup>2</sup> /day
H-3	140.0 pCi/L
Be-7	150.0
Sr-89	0.6
Sr-90	0.5
Zr/Nb-95	20.0
Ru-106	80.0
Cs-137	20.0

#### Water and Milk

Isotope/Analyte	pCi/L
Gross Alpha	0.8
Gross Beta	2.0
H-3	140.0
K-40	200.0
Co-60	7.0
Zn-65	30.0
Sr-89	0.6
Sr-90	0.5
Zr/Nb-95	10.0
Ru-106	20.0

# New York State Department of Health Environmental Radiation Program

## Environmental Radiation Surveillance Site Readings

Sb-125	14.0
I-125	0.1
I-129	0.3
I-131 (isotopic scan)	9.0
I-131 (Beta/Gamma coincidence)	0.04
Cs-134	6.0
Cs-137	6.0
Ba-140	17.0
Ra-226	0.04
Ra-228	0.9
Rn-222	9.0
Th-232 (Pb-212)	5.0
U-234	0.03
U-235,	236 0.01
U-238	0.01
Pu-238	0.02
Pu-239,	240 0.01

<sup>\*</sup>Average values only. Actual values may vary with sample size, count time and background interference(s).