

Result of Plutonium measurement in the soil in Fukushima Daiichi Nuclear Power Plant

1. Result of the measurement

(Unit: Bq/kg·dry soil)

Sampling spot	Date of sampling	Pu-238	Pu-239, Pu-240
Site field (west-northwest approx. 500m)	March 25 th	$(1.4 \pm 0.31) \times 10^{-1}$	$(8.7 \pm 2.3) \times 10^{-2}$
Forest of wild birds (west approx. 500m)	March 25 th	N.D.	N.D.
Adjacent to industrial waste disposal facility (south-southwest approx. 500m)	March 25 th	$(6.6 \pm 2.0) \times 10^{-2}$	N.D.
Front of administration Building of Unit 5/6 (north approx. 1,000m)	March 25 th	N.D.	N.D.
Site Field (west-northwest approx. 500m)	March 28 th	$(2.6 \pm 0.22) \times 10^{-1}$	$(1.2 \pm 0.14) \times 10^{-1}$
Forest of wild birds (west approx. 500m)	March 28 th	N.D.	N.D.
Adjacent to industrial waste disposal facility (south-southwest approx. 500m)	March 28 th	$(5.1 \pm 0.83) \times 10^{-2}$	$(2.6 \pm 0.58) \times 10^{-2}$
ordinary domestic soil		N.D. $\sim 1.5 \times 10^{-1}$	N.D. $\sim 1.5 \times 10^{-1}$

: MEXT environmental radiation database; 1978-2008

2. Analysis

Density of detected Pu-238, Pu-239 and Pu-240 are within the same level of the fallout observed in Japan after the atmospheric nuclear test in the past. Activity ratio of Pu-238 detected in site field on March 25th and 29th and also detected in adjacent to industrial waste disposal facility against Pu-239 and Pu-240 are 1.6, 2.2 and 2.0 respectively. They exceed activity ratio of 0.026 which resulted from the atmospheric nuclear test in the past, thus those Pus are considered to come from the recent incident.

Moreover, Pu-238, Pu-239 and Pu-240 are also detected from samples collected from site field on March 21st. However, there are no substantial difference.