

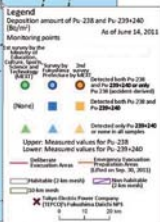
## Plutonium and Strontium (Eastern Part of Fukushima Prefecture, Wider Areas)

Deposition Amount of Pu-238 and Pu-239+240 (as of June 14, 2011)

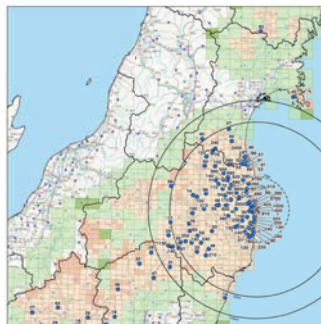


**Half-life:**  
**Pu-238=87.7 years**  
**Pu-239=24,000 years**  
**Pu-240=6,564 years**

Bq/m<sup>2</sup>: becquerels per square meter



Deposition Amount of Sr-90 (as of Jan. 13, 2012)



**Half-life:**  
**Sr-90=28.8 years**



Left: Released by MEXT on Aug. 21, 2012 (partially corrected on July 1, 2013)  
 Right: Released by MEXT on Sep. 12, 2012 (partially corrected on Sep. 19, 2012 and July 1, 2013)

In the soil surveys conducted by the national government in June 2011 and January 2012, soil samples were collected within the 100-km zone of Tokyo Electric Power Company (TEPCO)'s Fukushima Daiichi NPS and in the western part of Fukushima Prefecture outside this zone.

The amounts of deposited Pu-238 and Pu-239+240 detected in the surveys were found to be within their ranges in past measurements conducted from FY1999 to FY2009, before the accident, covering the whole nation. It means that the amounts were within the fluctuations due to past nuclear bomb tests in the atmosphere, except for the amount of Pu-238 detected in a sample collected at one location (p.184 of Vol. 1, "Effects of Nuclear Test Fallout (Japan)").

In the current surveys, the amount of Pu-238 detected in a sample collected at one location exceeded the maximum deposition amount before the accident, and was around 1.4 times the maximum level before the accident. In order to determine whether the detected plutonium has derived from the TEPCO's Fukushima Daiichi NPS Accident, a comparison was made between the ratios between Pu-238 and Pu-239+240 detected in the current surveys and the ratios between deposited Pu-238 and Pu-239+240 measured nationwide for 11 years from FY1999 to FY2009. Locations where the detected Pu-238 and Pu-239+240 are highly likely to be accident-derived are marked with ○ on the map.

Sr-90 was also detected in the current surveys, but measured values for all samples were within the fluctuations due to past nuclear tests in the atmosphere in comparison with the readings of the nationwide measurements conducted from FY1999 to FY2009 before the accident at TEPCO's Fukushima Daiichi NPS. It was also confirmed that the deposition amounts of detected Sr-90 were around one-thousandth of those of Cs-137 at many of the monitoring points in the current surveys. Only occasionally, the deposition amounts of Sr-90 showed some fluctuations, being around one-tenth of those of Cs-137.

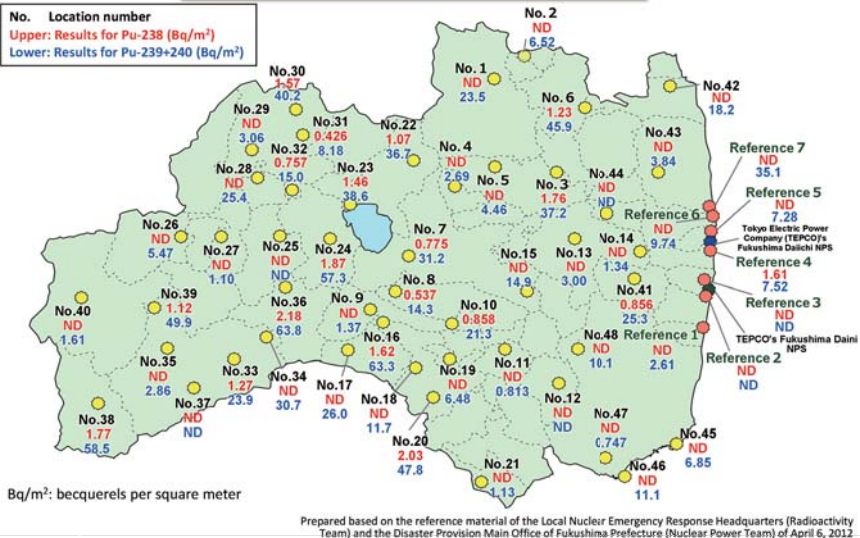
Included in this reference material on March 31, 2013

Updated on March 31, 2021

# Plutonium (Fukushima Prefecture)

## Analysis Results for Pu-238 and Pu-239+240 (Soil)

No. Location number  
Upper: Results for Pu-238 (Bq/m<sup>2</sup>)  
Lower: Results for Pu-239+240 (Bq/m<sup>2</sup>)



Based on the Plan for the Radiation Monitoring of Soil in Fukushima Prefecture, nuclide analysis for Pu-238 and Pu-239+240 was conducted for soil samples collected in Fukushima Prefecture from August 10 to October 13, 2011.

Deposition amounts of plutonium detected within the prefecture in the current monitoring were all within the ranges in past monitoring in the prefecture for ten years before the Tokyo Electric Power Company (TEPCO)'s Fukushima Daiichi NPS Accident. At one location (Ottozawa, Okuma Town; Reference 4) out of seven reference monitoring points around TEPCO's Fukushima Daiichi NPS, the result fell outside the range of values before the accident, suggesting the influence of the accident at TEPCO's Fukushima Daiichi NPS.

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