

As part of the FY2011 Emergency Surveys to Monitor Radioactive Material in Water conducted by the Ministry of the Environment, data obtained from water, sediment, and the surrounding environment (soil and vegetation) using a germanium semiconductor detector were analyzed in order to identify natural nuclides and radionuclides stemming from the accident, other than radioactive iodine (I-131) and radioactive cesium (Cs-134, Cs-137).

Analysis of 1,755 water specimens, 1,559 sediment specimens, and specimens from the surrounding environment (1,686 soil specimens and 1,032 vegetation specimens) detected artificial nuclides other than I-131, Cs-134, and Cs-137 in the specimens listed in Table 4.1.

In terms of natural nuclides, in water, potassium-40 (10% of all specimens) was detected; in sediment, lead-212 (41%), lead-214 (16%), thallium-208 (14%), and potassium-40 (79%) were detected; in soil, lead-212 (29%) and potassium-40 (88%) were detected; and in vegetation, beryllium-7 (10%), potassium-40 (70%), etc. were detected.

Table 4.1 List of Artificial Nuclides Other Than I-131, Cs-134, and Cs-137 Detected

Water Quality

Record Id	Survey	Prefecture	Lake/ River/ Sea	Water body 4	Location	Sampling Date	Nuclide	Radioactivity Level (Bq/L)	±Error (Bq/L)	Detection Limit (Bq/L)
Not Applicable										

Sediment

Record Id	Survey	Prefecture	Lake/ River/ Sea	Water body 4	Location	Sampling Date	Nuclide	Radioactivity Level (Bq/L)	±Error (Bq/L)	Detection Limit (Bq/L)
FL006110	1st	Fukushima	Lake	Takanokura Dam Reservoir	-	2011/9/16	Ag-110m	4.60E+01	1.10E+01	3.10E+01
FL006210	2nd	Fukushima	Lake	Takanokura Dam Reservoir	-	2011/11/28	Ag-110m	6.20E+01	1.40E+01	3.90E+01
FL008110	1st	Fukushima	Lake	Ogaki Dam	-	2011/9/26	Ag-110m	6.50E+01	1.20E+01	3.40E+01
FL008410	4th	Fukushima	Lake	Ogaki Dam	-	2012/3/4	Ag-110m	1.70E+02	2.80E+01	8.10E+01

Soil

Record Id	Survey	Prefecture	Lake/ River/ Sea	Water body 4	Location	Sampling Date	Nuclide	Radioactivity Level (Bq/L)	±Error (Bq/L)	Detection Limit (Bq/L)
FL008210	2nd	Fukushima	Lake	Ogaki Dam	—	2011/11/21	Ag-110m	3.70E+02	4.10E+01	1.10E+02
FR009310	3rd	Fukushima	River	Niidagawa River	Komiya	2012/1/18	Ag-110m	1.20E+02	2.10E+01	6.00E+01
FR012110	1st	Fukushima	River	Otagawa River	Ishiwatadobashi Bridge	2011/9/16	Ag-110m	4.40E+01	1.10E+01	3.20E+01
FR019110	1st	Fukushima	River	Ukedogawa River	Muroharabashi Bridge	2011/9/26	Ag-110m	2.60E+02	2.40E+01	6.10E+01
FR019210	2nd	Fukushima	River	Ukedogawa River	Muroharabashi Bridge	2011/11/21	Ag-110m	2.80E+02	2.70E+01	7.20E+01
FR022210	2nd	Fukushima	River	Maedagawa River	National Route 6, west	2011/11/21	Ag-110m	1.80E+02	2.00E+01	5.00E+01
FR054110	1st	Fukushima	River	Matsukawa River	Before the confluence with Abukumagawa River	2011/9/17	Ag-110m	1.50E+02	3.10E+01	9.00E+01

Plant

Record Id	Survey	Prefecture	Lake/ River/ Sea	Water body 4	Location	Sampling Date	Nuclide	Radioactivity Level (Bq/L)	±Error (Bq/L)	Detection Limit (Bq/L)
Not Applicable										