

(News Release)
The Results of Radioactive Material Monitoring of the Surface Water Bodies
within Tochigi Prefecture
(May-June Samples)

Friday, August 9, 2013
Water Environment Division,
Environment Management Bureau,
Ministry of the Environment
Direct line: 03-5521-8316
Switchboard: 03-3581-3351
Director: Masanobu Miyazaki (ext. 6610)
Deputy Director: Saori Nagasawa (ext. 6614)
Coordinator: Katsuhiko Sato (ext. 6628)

In accordance with the Comprehensive Radiation Monitoring Plan determined by the Monitoring Coordination Meeting, the Ministry of the Environment (MOE) is continuing to monitor radioactive materials in water environments (surface water bodies (rivers, lakes and headwaters, and coasts), etc.).

Samples taken from the surface water bodies of Tochigi Prefecture during the period of May 22-June 24, 2013 have been measured as part of MOE's efforts to monitor radioactive materials; the results have recently been compiled and are released here.

The monitoring results of radioactive materials in surface water bodies carried out to date can be found at the following web page: <http://www.env.go.jp/jishin/rmp.html#monitoring>

1. Survey Overview

(1) Survey Locations

64 environmental reference points, etc. in the surface water bodies within Tochigi Prefecture
(Rivers: 56 locations, Lakes: 8 location)

(2) Survey Method

- Measurement of concentrations of radioactive materials (radioactive cesium (Cs-134 and Cs-137)) in water and sediment
- Measurement of concentrations of radioactive materials and spatial dose-rate in soil in the surrounding environment of water and sediment sample collection points (river terraces, etc.)

2. Outline of Results (* denotes the results of the previous survey (February, 2013))

(1) Water Quality (Lower detection limit: 1Bq/L)

Cs-134+ Cs-137: Not detectable (ND) at any location (* ND at any location)

<Reference>

Specification and Standards for Food, Food Additives, etc. in accordance with the Food Sanitation Act (Drinking Water) (Ministry of Health, Labour and Welfare Public Notice No.130, March 15, 2012)

Radioactive cesium (total for Cs-134+Cs-137): 10Bq/kg

Target value for radioactive materials in tap water (management target for water supply facilities) (March 5, 2012; 0305 Notice No.1 from the Director of the Water Supply Division, Health Service Bureau, Ministry of Health, Labour and Welfare)

Radioactive cesium (total for Cs-134+Cs-137): 10Bq/kg

(2) Sediment (Lower detection limit: 10Bq/kg (dried mud))

For rivers, levels were around 500Bq/kg or below at most locations, and have generally remained

constant or had a declining tendency. For lakes and headwaters, levels were around 1,000Bq/kg or below at most locations, and have generally remained constant or had a declining tendency.

(Rivers)

Cs-134+Cs-137: ND-530Bq/kg (dried mud) (*ND-690Bq/kg (dried mud))

(Lakes and headwaters)

Cs-134+Cs-137: 177-2,530Bq/kg (dried mud) (*320-4,000Bq/kg (dried mud))

<Reference> Number of locations by radioactive cesium concentration (500Bq/kg)

Numbers in () denote results measured on the previous occasion.

	500 or below	501 -1,000	1,001 -1,500	1,501 -2,000	2,001 -2,500	2,501 -3,000	3,001 or more	Total
Rivers	68 (54)	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	69 (55)
Lakes and headwaters	5 (1)	1 (2)	1 (0)	0 (0)	0 (0)	1 (0)	0 (1)	8 (4)

(3) Surrounding Environment (Lower detection limit: 10Bq/kg (dry))

(Rivers)

Cs-134+Cs-137: 12-8,800Bq/kg (dry) (*38-13,300Bq/kg (dry))

Spatial dose: 0.01-0.66μSv/h

(Lakes and headwaters)

Cs-134+Cs-137: 191-6,800Bq/kg (dry) (*141-4,900Bq/kg (dry))

Spatial dose: 0.07-0.36μSv/h

(Annex for details)
(Map attached)

Future Plans

MOE intends to continue to measure radioactive materials in water, sediment, etc. in rivers, lakes, etc. since concentrations of radioactive materials seem to show fluctuations, depending on locations, due to minor differences in sampling points or properties of samples of each survey.

ORiver: Water Quality Monitoring Results

Sampling point				Sampling date	Weather	Full depth (m)	General items					Radioactive material concentrations (Bq/L)		Remarks	
No.	Water body		Point				Municipality	Sampling depth (m)	Transparency (cm)	Electrical conductivity (mS/m)	SS (mg/L)	Turbidity	Radioactive cesium		
													Cs-134		Cs-137
1	Nakagawa River		Ikujobashishita	Nasushiobarashi City	2013/5/31	Sunny	0.7	0.0	>100	16	3	0.8	<1	<1	
2			Komeibashi Bridge		2013/5/31	Sunny	0.5	0.0	>100	12	1	1.4	<1	<1	
3	Takaomatagawa River		Takaomatashi Bridge	Nasumachi Town	2013/5/31	Sunny	0.2	0.0	>100	16	3	1.5	<1	<1	
4	Yukawa River		Yukawabashi Bridge		2013/5/31	Sunny	0.3	0.0	83	29	6	2.7	<1	<1	
5	Nakagawa River		Kamikuroiso	Nasushiobarashi City/ Nasumachi Town	2013/5/31	Sunny	0.3	0.0	>100	19	4	1.5	<1	<1	
6			Yosasagawa River	Yosasabashi Bridge	Nasumachi Town	2013/6/10	Sunny	0.2	0.0	>100	19	1	1.2	<1	<1
7	Kurokawa River		Shindenbashi Bridge	Otawarashi City		2013/5/31	Sunny	0.5	0.0	>100	15	4	1.5	<1	<1
8	Yosasagawa River		Kawadabashi Bridge		2013/6/3	Sunny	0.4	0.0	72	11	4	2.8	<1	<1	
9	Nakagawa River		Kurobane	Otawarashi City	2013/5/30	Cloudy	0.2	0.0	64	13	12	4.8	<1	<1	
10			Matsubagawa River		Tributary	2013/6/10	Sunny	0.2	0.0	>100	17	2	1.9	<1	<1
11	Sabigawa River		Udagawabashi Bridge	Nasushiobarashi City	2013/5/30	Cloudy	0.5	0.0	>100	16	7	3.3	<1	<1	
12			Momuragawa River		Momuranakabashi Bridge	2013/6/17	Sunny	0.5	0.0	75	16	2	2.1	<1	<1
13	Hokigawa River		Yunohara	Nasushiobarashi City	2013/5/30	Cloudy	0.3	0.0	>100	12	5	2.7	<1	<1	
14			Sekibabashi Bridge		2013/6/17	Sunny	0.7	0.0	>100	11	2	1.9	<1	<1	
15	Hokigawa River		Iwaibashi Bridge	Otawarashi City	2013/5/29	Cloudy	0.5	0.0	>100	17	3	1.4	<1	<1	
16			Hokigawabashi Bridge		2013/6/18	Cloudy	0.5	0.0	80	17	3	2.0	<1	<1	
17	Nakagawa River		Shinnakabashi Bridge	Nakagawamachi Town	2013/5/30	Cloudy	0.6	0.0	>100	17	7	4.2	<1	<1	
18			Mumogawa River		Koseibashi Bridge	2013/6/19	Light rain	0.5	0.0	74	17	4	2.9	<1	<1
19	Arakawa River		Saikachibashi Bridge	Shioyamachi Town	2013/5/29	Cloudy	0.3	0.0	>100	14	3	2.0	<1	<1	
20			Renjobashi Bridge		Sakurashi City	2013/5/27	Cloudy	0.3	0.0	>100	14	4	1.6	<1	<1
21	Uchikawa River		Tanakabashi Bridge	Sakurashi City	2013/5/29	Cloudy	0.2	0.0	>100	16	2	1.2	<1	<1	
22			Asahibashi Bridge		2013/5/27	Cloudy	0.5	0.0	>100	18	4	2.4	<1	<1	
23	Arakawa River		Mukadabashi Bridge	Nasukarasuyamashi City	2013/5/27	Cloudy	0.8	0.0	>100	19	7	3.9	<1	<1	
24			Egawa River		Tributary	2013/6/19	Cloudy	0.4	0.0	90	16	5	3.0	<1	<1
25	Kinugawa River		Kawaji Daiichi Power Station, front	Nikkoshi City	2013/5/27	Sunny	0.4	0.0	17	19	33	13.0	<1	<1	
26			Yunishigawa River		Maesawabashi Bridge	2013/6/19	Cloudy	0.5	0.0	39	16	15	6.9	<1	<1
27	Kinugawa River		Ojikagawa River	Nikkoshi City	2013/6/4	Sunny	0.5	0.0	>100	8	<1	1.5	<1	<1	
28			Kosagoe		2013/6/3	Sunny	0.4	0.0	>100	9	<1	0.4	<1	<1	
29	Itaanagawa River		Tributary	Nikkoshi City	2013/6/4	Sunny	0.6	0.0	>100	8	<1	0.5	<1	<1	
30			Yukawa River		2013/6/4	Sunny	0.5	0.0	>100	8	1	1.3	<1	<1	
31	Daiyagawa River		Shinkyo Bridge	Nikkoshi City	2013/6/11	Sunny	0.2	0.0	>100	9	<1	0.6	<1	<1	
32			2013/6/24		Sunny	0.4	0.0	>100	7	1	2.0	<1	<1		

Sampling point				Sampling date	Weather	Full depth (m)	General items					Radioactive material concentrations (Bq/L)		Remarks	
No.	Water body		Point				Municipality	Sampling depth (m)	Transparency (cm)	Electrical conductivity (mS/m)	SS (mg/L)	Turbidity	Radioactive cesium		
													Cs-134		Cs-137
32	T o n e g a w a R i v e r S y s t e m	K i n u g a w a R i v e r S y s t e m	Shidobuchigawa River	Sujichigaibashi Bridge	Nikkoshi City	2013/6/4	Sunny	0.3	0.0	>100	12	2	1.2	<1	<1
33			Daiyagawa River	Kaishinbashi Bridge (Harigai)		2013/6/11	Sunny	0.4	0.0	>100	16	<1	0.7	<1	<1
34			Kinugawa River	Sanuki	Shioyamachi Town	2013/6/24	Sunny	0.3	0.0	>100	12	4	1.3	<1	<1
35			Nishikinugawa River	Nishikinugawabashi Bridge		2013/6/11	Cloudy	0.5	0.0	80	11	1	1.3	<1	<1
36			Kinugawa River	Kinugawabashi Bridge (Hoshakuji Temple)	Utsunomiyashi City	2013/6/24	Sunny	0.5	0.0	71	11	4	2.1	<1	<1
37			Kinugawa River	Daidoizumbashi Bridge		2013/5/27	Cloudy	1.0	0.0	49	11	22	5.3	<1	<1
38			Egawa River	Tributary	Shimotsukeshi City	2013/5/27	Sunny	0.7	0.0	>100	12	1	1.3	<1	<1
39			Akaborigawa River	Nikko City Hall, front		2013/5/23	Sunny	0.5	0.0	>100	19	3	1.2	<1	<1
40			Tagawa River	Kiwadajima	Utsunomiyashi City	2013/5/23	Sunny	0.7	0.0	32	21	15	10.0	<1	<1
41			Tagawa River	Ozobashi Bridge		2013/6/20	Cloudy	1.1	0.0	41	20	16	7.4	<1	<1
42			Kamagawa River	Tsukushibashi Bridge	Kaminokawamachi Town	2013/6/7	Cloudy	0.3	0.0	>100	11	6	0.7	<1	<1
43			Tagawa River	Mejibashi Bridge		2013/6/12	Cloudy	0.4	0.0	70	15	8	2.3	<1	<1
44			Kurokawa River	Kaijimbashi Bridge	Kanumashi City	2013/5/28	Cloudy	0.4	0.0	>100	14	6	1.9	<1	<1
45			Kurokawa River	Onaribashi Bridge		2013/6/20	Cloudy	0.4	0.0	>100	14	4	1.9	<1	<1
46	Oashigawa River	Akaishibashi Bridge	Oyamashi City	2013/5/24	Sunny	0.1	0.0	>100	31	7	1.9	<1	<1		
47	Koyabugawa River	Koyabubashi Bridge		2013/5/23	Sunny	0.2	0.0	>100	23	7	2.7	<1	<1		
48	Omoigawa River	Tamotsubashi Bridge	Oyamashi City	2013/5/22	Sunny	0.5	0.0	32	25	28	7.0	<1	<1		
49	Omoigawa River	Otomeohashi Bridge		2013/5/24	Sunny	0.1	0.0	>100	12	2	1.5	<1	<1		
50	Omoigawa River	Otomeohashi Bridge	Oyamashi City	2013/5/24	Sunny	0.2	0.0	>100	25	8	3.1	<1	<1		
51	Omoigawa River	Otomeohashi Bridge		2013/5/24	Sunny	0.2	0.0	>100	17	7	2.5	<1	<1		
52	Uzumagawa River	Uzumabashi Bridge	Tochigishi City	2013/6/24	Sunny	0.5	0.0	30	9	61	17.0	<1	<1		
53	Uzumagawa River	Uzumabashi Bridge		2013/5/23	Sunny	0.4	0.0	63	25	9	3.7	<1	<1		
54	Uzumagawa River	Uzumabashi Bridge	Tochigishi City	2013/6/6	Cloudy	0.1	0.0	>100	25	6	2.9	<1	<1		
55	Uzumagawa River	Uzumabashi Bridge		2013/5/23	Cloudy	0.8	0.0	61	27	13	4.9	<1	<1		
56	Uzumagawa River	Uzumabashi Bridge	Tochigishi City	2013/6/6	Cloudy	0.6	0.0	31	27	15	9.0	<1	<1		
57	Watarasegawa River	Watarasegawa River intake weir at Sori Power Station		Nikkoshi City	2013/5/28	Sunny	0.3	0.0	>100	19	<1	0.3	<1	<1	
58	Watarasegawa River	Watarasegawa River intake weir at Sori Power Station	2013/6/5		Sunny	0.4	0.0	>100	23	<1	0.3	<1	<1		
59	Watarasegawa River	Hajikabashi Bridge	Ashikagashi City	2013/5/22	Cloudy	0.6	0.0	>100	16	6	2.3	<1	<1		
60	Watarasegawa River	Nakabashi Bridge		2013/5/22	Sunny	0.5	0.0	>100	15	2	1.4	<1	<1		
61	Watarasegawa River	Wataraseohashi Bridge	Tatebayashishi City	2013/5/22	Sunny	0.6	0.0	24	23	16	7.4	<1	<1		
62	Watarasegawa River	Wataraseohashi Bridge		2013/5/22	Sunny	0.5	0.0	29	31	9	6.8	<1	<1		
63	Shinkaibashi Bridge	Shinkaibashi Bridge	Tochigishi City	2013/5/22	Sunny	0.5	0.0	29	31	9	6.8	<1	<1		
64	Shinkaibashi Bridge	Shinkaibashi Bridge		2013/6/20	Cloudy	0.4	0.0	34	28	16	9.0	<1	<1		

* Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

ORiver: Sediment Monitoring Results

No.	Sampling point			Sampling date	Weather	Full depth (m)	General items			Concentration of radioactive material [Bq/kg (dried mud)]			Remarks	
	Water body	Point	Municipality				Mud sampling depth (cm)	Mud content %	Property	Radioactive cesium				
										Cs-134	Cs-137	Total		
1	Nakagawa River	Ikuyobashishita	Nasushiobarashi City	2013/5/31	Sunny	0.7	3	81.4	Gravel/sand	<10	13	13		
2				2013/5/31	Sunny	0.5	3	79.4	Sand/gravel	19	32	51		
3		Takaomatabashi River	Takaomatabashi Bridge	Nasumachi Town	2013/5/31	Sunny	0.2	4	80.3	Sand/gravel	43	90	133	
4		Yukawa River	Yukawabashi Bridge		2013/5/31	Sunny	0.3	5	78.9	Gravel/sand	25	70	95	
5		Nakagawa River	Kamikuroiso	Nasushiobarashi City/ Nasumachi Town	2013/5/31	Sunny	0.3	4	83.0	Sand/gravel	31	60	91	
6					2013/6/10	Sunny	0.2	3	83.0	Gravel/sand	19	30	49	
7		Yosasagawa River	Yosasabashi Bridge	Nasumachi Town	2013/5/31	Sunny	0.5	3	76.9	Sand/gravel	23	55	78	
8		Kurokawa River	Shindenbashi Bridge		2013/6/3	Sunny	0.4	4	81.9	Sand/gravel	30	74	104	
9		Yosasagawa River	Kawadabashi Bridge		2013/5/30	Cloudy	0.2	5	77.0	Sand	41	62	103	
10					2013/6/10	Sunny	0.2	5	78.5	Sand/gravel	36	73	109	
11		Nakagawa River	Kurobane	Otawarashi City	2013/5/30	Cloudy	0.5	5	83.2	Gravel/sand	23	36	59	
12		2013/6/17	Sunny		0.5	8	84.9	Gravel/sand	18	43	61			
13		Matsubagawa River	Tributary		2013/5/30	Cloudy	0.3	5	83.7	Gravel/sand	23	45	68	
14					2013/6/17	Sunny	0.7	8	84.6	Gravel/sand	13	23	36	
15		Sabigawa River	Udagawabashi Bridge		2013/5/29	Cloudy	0.2	3	77.8	Sand	54	100	154	
16		Momuragawa River	Momuranakabashi Bridge		2013/5/29	Cloudy	0.4	3	80.7	Gravel/sand	40	97	137	
17		Hogigawa River	Yunohara	Nasushiobarashi City	2013/6/3	Sunny	0.3	3	75.1	Sand/gravel	23	49	72	
18			Sekibabashi Bridge		2013/6/3	Sunny	0.4	5	78.4	Gravel/sand	38	73	111	
19		Hogigawa River	Iwaibashi Bridge	Otawarashi City	2013/5/29	Cloudy	0.5	4	81.2	Gravel/sand	20	35	55	
20			Hogigawabashi Bridge		2013/5/30	Cloudy	0.6	6	82.9	Gravel/sand	<10	17	17	
21		Nakagawa River	Shinnakabashi Bridge	Nakagawamachi Town	2013/6/18	Cloudy	0.5	8	84.5	Gravel/sand	<10	21	21	
22					2013/5/30	Cloudy	0.6	5	93.2	Gravel/sand	10	23	33	
23		Mumogawa River	Koseibashi Bridge		2013/6/19	Light rain	0.5	8	85.3	Gravel/sand	<10	19	19	
24					2013/5/29	Cloudy	0.7	3	79.2	Sand/gravel	12	19	31	
25	Arakawa River	Saikachibashi Bridge	Shioyamachi Town	2013/5/29	Cloudy	0.3	5	80.4	Gravel/sand	51	140	191		
26		Renjobashi Bridge	Sakurashi City	2013/5/27	Cloudy	0.3	3	71.0	Sand/gravel	22	41	63		
27	Uchikawa River	Tanakabashi Bridge	Yaitashi City	2013/5/29	Cloudy	0.2	4	79.4	Gravel/sand	29	56	85		
28		Asahibashi Bridge	Sakurashi City	2013/5/27	Cloudy	0.5	3	82.4	Gravel/sand	34	60	94		
29	Arakawa River	Mukadabashi Bridge	Nasukarasuyamashi City	2013/5/27	Cloudy	0.8	3	71.2	Sand/silt	28	56	84		
30				2013/6/19	Cloudy	0.4	5	79.9	Gravel/sand	12	15	27		
31	Egawa River	Tributary		2013/5/27	Sunny	0.4	5	81.7	Gravel/sand	17	28	45		
32				2013/6/19	Cloudy	0.5	5	83.3	Gravel/sand	<10	18	18		
33				2013/6/4	Sunny	0.5	5	82.3	Gravel/sand	13	25	38		
34	Kinugawa River	Kawaji Daiichi Power Station, front	Nikkoshi City	2013/6/3	Sunny	0.4	3	81.6	Sand/gravel	<10	13	13		
35				2013/6/4	Sunny	0.6	4	95.0	Gravel/sand	<10	14	14		
36	Yunishigawa River	Maesawabashi Bridge		2013/6/4	Sunny	0.5	3	86.4	Gravel/sand	11	24	35		
37	Ojikagawa River	Tributary		2013/6/11	Sunny	0.2	5	82.4	Gravel/sand	24	51	75		
38				2013/6/24	Sunny	0.4	5	82.4	Gravel/sand	28	53	81		
39	Yukawa River			2013/6/5	Sunny	0.2	5	77.9	Gravel/sand	<10	<10	-		
40	Daiyagawa River	Shinkyō Bridge		2013/6/4	Sunny	0.3	3	74.6	Sand/gravel	25	50	75		

No.	Sampling point			Sampling date	Weather	Full depth (m)	General items			Concentration of radioactive material [Bq/kg (dried mud)]			Remarks		
	Water body	Point	Municipality				Mud sampling depth (cm)	Mud content %	Property	Radioactive cesium					
										Cs-134	Cs-137	Total			
32	T o n e g a w a R i v e r S y s t e m	K i n u g a w a R i v e r S y s t e m	Shidobuchigawa River	Sujichigaibashi Bridge	Nikkoshi City	2013/6/4	Sunny	0.3	4	83.8	Gravel/sand	72	140	212	
33			Daiyagawa River	Kaishinbashi Bridge (Harigai)	Nikkoshi City	2013/6/11	Sunny	0.4	4	78.5	Sand/gravel	<10	16	16	
34			Kinugawa River	Sanuki	Shioyamachi Town	2013/6/24	Sunny	0.3	4	78.5	Gravel/sand	<10	15	15	
						2013/6/11	Cloudy	0.5	6	53.3	Silt/sand	150	320	470	
35			Nishikinugawa River	Nishikinugawabashi Bridge	Utsunomiya City	2013/5/27	Cloudy	1.0	3	84.4	Gravel/sand	17	39	56	
36			Kinugawa River	Kinugawabashi Bridge (Hoshakuji Temple)	Mookashi City	2013/5/27	Sunny	0.7	1	75.2	Sand/gravel	<10	31	31	
37						Daidoizumbashi Bridge	Mookashi City	2013/5/23	Sunny	0.5	5	79.4	Sand/gravel	<10	<10
38			Egawa River	Tributary	Shimotsukeshi City	2013/5/23	Sunny	0.7	5	83.7	Sand/gravel	13	28	41	
						2013/6/20	Cloudy	1.1	6	82.9	Gravel/sand	12	18	30	
39			Akaborigawa River	Nikko City Hall, front	Nikkoshi City	2013/6/7	Cloudy	0.3	3	78.7	Sand/gravel	90	220	310	
40						Kiwadajima	Nikkoshi City	2013/6/12	Cloudy	0.4	5	69.7	Sand/gravel	67	120
41			Tagawa River	Ozobashi Bridge	Utsunomiya City	2013/5/28	Cloudy	0.4	3	80.8	Sand/gravel	17	47	64	
						2013/6/20	Cloudy	0.4	7	85.1	Gravel/sand	10	13	23	
42			Kamagawa River	Tsukushibashi Bridge	Utsunomiya City	2013/5/24	Sunny	0.1	5	77.0	Gravel/sand	46	87	133	
43			Tagawa River	Mejibashi Bridge	Kaminokawamachi Town	2013/5/23	Sunny	0.2	5	79.8	Gravel/sand	13	19	32	
44			Yanabashi Bridge	Oyamashi City	Oyamashi City	2013/5/22	Sunny	0.5	10	81.0	Gravel/sand	23	43	66	
45	Kurokawa River	Kajimabashi Bridge				Kanumashi City	2013/5/24	Sunny	0.1	5	81.9	Gravel/sand	<10	19	19
46	Oashigawa River	Akashibashi Bridge	Kanumashi City	2013/5/24	Sunny	0.2	3	78.7	Gravel/sand	<10	13	13			
47				Koyabugawa River	Koyabubashi Bridge	Kanumashi City	2013/5/24	Sunny	0.5	3	82.3	Gravel/sand	<10	<10	-
48	Omoigawa River	Tamotsubashi Bridge	Tochigishi City	2013/5/24	Sunny	0.2	8	80.5	Gravel/sand	13	33	46			
49				Omoigawa River	Otomeohashi Bridge	Oyamashi City	2013/6/24	Sunny	0.5	5	85.1	Sand/gravel	<10	<10	-
50	Uzumagawa River	Uzumagawa River	Tochigishi City	2013/5/23	Sunny	0.4	5	72.9	Sand/silt	18	44	62			
				2013/6/6	Cloudy	0.1	5	85.2	Gravel/sand	<10	13	13			
51	Uzumagawa River	Uzumagawa River	Tochigishi City	2013/5/23	Cloudy	0.8	5	55.0	Silt	72	120	192			
				2013/6/6	Cloudy	0.6	6	23.1	Silt	150	380	530			
52	Watarasegawa River	Watarasegawa River intake weir at Sori Power Station	Nikkoshi City	2013/5/28	Sunny	0.3	10	80.6	Sand/gravel	<10	18	18			
				2013/6/5	Sunny	0.4	3	84.0	Sand/gravel	<10	19	19			
53	Watarasegawa River	Hajikabashi Bridge	Ashikagashi City	2013/5/22	Cloudy	0.6	5	84.0	Sand/gravel	21	38	59			
54				Nakabashi Bridge	Ashikagashi City	2013/5/22	Sunny	0.5	10	84.5	Gravel/sand	<10	<10	-	
55				Wataraseohashi Bridge	Tatebayashishi City	2013/5/22	Sunny	0.6	10	80.8	Sand/gravel	<10	21	21	
56				Shinkaibashi Bridge	Tochigishi City	2013/5/22	Sunny	0.5	10	81.7	Sand/gravel	12	17	29	
				2013/6/20	Cloudy	0.4	5	78.8	Sand/gravel	12	22	34			

* Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

ORiver: Surrounding Environment Monitoring Results

Sampling point				Sampling date	Weather	Left bank				Right bank				Remarks					
No.	Water body	Point	Municipality			Property	Concentration of radioactive material [Bq/kg (dry)]				Property	Concentration of radioactive material [Bq/kg (dry)]							
							Radioactive cesium			Air dose (μ Sv/h)		Radioactive cesium			Air dose (μ Sv/h)				
							Cs-134	Cs-137	Total			Cs-134	Cs-137			Total			
1	Nakagawa River	Nakagawa River	Ikyobashishita	Nasushiobarashi City	2013/5/31	Sunny	-	-	-	-	Loamy	290	660	950	0.12	(Left bank) Soil not exposed			
2		Komeibashi Bridge	Nasushiobarashi City	2013/5/31	Sunny	Loamy	1,900	3,900	5,800	0.25	Loamy	420	840	1,260	0.20				
3		Takaomatagawa River	Takaomatashi Bridge	Nasumachi Town	2013/5/31	Sunny	Loamy	400	810	1,210	0.28	Loamy	1,400	2,800	4,200	0.24			
4		Yukawa River	Yukawabashi Bridge	Nasumachi Town	2013/5/31	Sunny	Loamy	500	1,100	1,600	0.35	Loamy	760	1,600	2,360	0.28			
5		Nakagawa River	Kamikuroiso	Nasushiobarashi City/ Nasumachi Town	2013/5/31	Sunny	Loamy	870	1,700	2,570	0.28	Loamy	1,500	3,000	4,500	0.27			
					2013/6/10	Sunny	Loamy	580	1,100	1,680	0.26	Loamy	2,800	5,700	8,500	0.27			
6		Yosagawa River	Yosabashi Bridge	Nasumachi Town	2013/5/31	Sunny	Loamy	2,000	4,000	6,000	0.31	Loamy	1,800	3,600	5,400	0.26			
7		Kurokawa River	Shindenbashi Bridge	Nasumachi Town	2013/6/3	Sunny	Loamy	370	830	1,200	0.39	Loamy	2,100	4,100	6,200	0.34			
8		Yosagawa River	Kawadabashi Bridge	Otawarashi City	2013/5/30	Cloudy	Loamy	850	1,700	2,550	0.24	Loamy	1,500	2,900	4,400	0.34			
					2013/6/10	Sunny	Loamy	580	1,200	1,780	0.22	Loamy	1,100	2,400	3,500	0.26			
					2013/5/30	Cloudy	Loamy	410	810	1,220	0.16	Loamy	160	310	470	0.10			
9		Nakagawa River	Kurobane		Otawarashi City	2013/6/17	Sunny	Loamy	550	1,100	1,650	0.18	Loamy	330	690	1,020	0.11		
					2013/5/30	Cloudy	Loamy	190	410	600	0.11	Loamy	260	550	810	0.16			
10		Matsubagawa River	Tributary		Otawarashi City	2013/6/17	Sunny	Loamy	420	880	1,300	0.13	Loamy	370	760	1,130	0.14		
11		Sabigawa River	Udagawabashi Bridge		Otawarashi City	2013/5/29	Cloudy	Loamy	280	570	850	0.13	Loamy	250	530	780	0.09		
12		Momuragawa River	Momuranakabashi Bridge		Otawarashi City	2013/5/29	Cloudy	Loamy	220	430	650	0.18	Loamy	230	490	720	0.13		
13						2013/6/3	Sunny	Loamy	1,000	1,900	2,900	0.21	Loamy	610	1,200	1,810	0.15		
14						2013/6/3	Sunny	Loamy	2,900	5,900	8,800	0.66	Loamy	1,300	2,700	4,000	0.60		
15						2013/5/29	Cloudy	Loamy	330	640	970	0.14	Loamy	310	630	940	0.13		
16						2013/5/30	Cloudy	Loamy	150	300	450	0.09	Loamy	120	260	380	0.09		
					2013/6/18	Cloudy	Loamy	1,100	2,200	3,300	0.11	Loamy	85	200	285	0.10			
17					2013/5/30	Cloudy	Loamy	51	120	171	0.09	Loamy	33	62	95	0.10			
					2013/6/19	Light rain	Loamy	120	280	400	0.08	Loamy	130	290	420	0.11			
18					2013/5/29	Cloudy	Loamy	54	100	154	0.10	Loamy	58	130	188	0.10			
				2013/6/18	Cloudy	Loamy	100	230	330	0.09	Loamy	110	240	350	0.11				
19				2013/5/29	Cloudy	Loamy	240	480	720	0.15	Loamy	110	250	360	0.15				
20				2013/5/27	Cloudy	Loamy	210	460	670	0.09	Loamy	140	260	400	0.09				
21				2013/5/29	Cloudy	Loamy	50	120	170	0.11	Loamy	340	670	1,010	0.13				
22				2013/5/27	Cloudy	Loamy	170	320	490	0.09	Loamy	190	360	550	0.08				
23				2013/5/27	Cloudy	Loamy	72	150	222	0.08	Sandy	130	290	420	0.09				
				2013/6/19	Cloudy	Loamy	130	270	400	0.09	Loamy	180	340	520	0.08				
24				2013/5/27	Sunny	Loamy	110	220	330	0.08	Loamy	49	120	169	0.08				
				2013/6/19	Cloudy	Loamy	180	370	550	0.08	Loamy	97	210	307	0.08				
25	R i v e r S g y a s w t a e m	R i v e r S g y a s w t a e m	Kinugawa River	Kawaji Daichi Power Station, front	2013/6/4	Sunny	Loamy	460	900	1,360	0.01	Loamy	490	1,000	1,490	0.18			
26					Yunishigawa River	Maesawabashi Bridge	2013/6/3	Sunny	Loamy	42	96	138	0.09	Loamy	24	52	76	0.06	
27					Ojikagawa River	Tributary	2013/6/4	Sunny	Sandy	35	67	102	0.12	Sandy	580	1,200	1,780	0.21	
28					Kinugawa River	Kosagoe	2013/6/4	Sunny	Loamy	610	1,200	1,810	0.20	Loamy	830	1,800	2,630	0.17	
							2013/6/11	Sunny	Loamy	940	1,900	2,840	0.25	Loamy	1,000	2,100	3,100	0.22	
29					Itaanagawa River	Tributary	2013/6/24	Sunny	Loamy	800	1,600	2,400	0.28	Loamy	980	2,000	2,980	0.23	
30					Yukawa River		2013/6/5	Sunny	Loamy	65	130	195	0.09	-	-	-	-	(Right bank) Unable to collect samples due to private property	
31					Daiyagawa River	Shinkyō Bridge	2013/6/4	Sunny	Loamy	470	840	1,310	0.15	Loamy	840	1,800	2,640	0.12	

Sampling point				Sampling date	Weather	Left bank						Right bank				Remarks	
No.	Water body		Point			Municipality	Property	Concentration of radioactive material [Bq/kg (dry)]				Property	Concentration of radioactive material [Bq/kg (dry)]				
								Radioactive cesium			Air dose (μ Sv/h)		Radioactive cesium				Air dose (μ Sv/h)
								Cs-134	Cs-137	Total			Cs-134	Cs-137	Total		
32	Shidobuchigawa River		Sujichigabashi Bridge	Nikkoshi City	2013/6/4	Sunny	Loamy	860	1,700	2,560	0.17	Loamy	2,400	4,700	7,100	0.17	
33	Daiyagawa River		Kaishinbashi Bridge (Harigai)		2013/6/11	Sunny	Loamy	1,100	2,100	3,200	0.19	Sandy	22	50	72	0.09	
					2013/6/24	Sunny	Loamy	520	1,100	1,620	0.17	Sandy	12	25	37	0.09	
34	Kinugawa River		Sanuki	Shioyamachi Town	2013/6/11	Cloudy	Loamy	470	1,000	1,470	0.16	Loamy	950	2,000	2,950	0.11	
					2013/6/24	Sunny	Loamy	570	1,300	1,870	0.15	Loamy	1,700	3,500	5,200	0.19	
35	Nishikinugawa River		Nishikinugawabashi Bridge	Utsunomiya City	2013/5/27	Cloudy	Loamy	88	180	268	0.08	Loamy	63	120	183	0.08	
36	Kinugawa River		<small>Kinugawabashi Bridge (Hoshakoji Temple)</small>		2013/5/27	Sunny	Loamy	26	61	87	0.08	Loamy	44	110	154	0.09	
37			Daidoizumibashi Bridge	Mookashi City	2013/5/23	Sunny	Loamy	41	83	124	0.08	Loamy	<10	12	12	0.07	
38	Egawa River		Tributary	Shimotsukeshi City	2013/5/23	Sunny	Loamy	120	210	330	0.09	Loamy	72	150	222	0.07	
					2013/6/20	Cloudy	Loamy	600	1,300	1,900	0.07	Loamy	220	410	630	0.09	
39	Akaborigawa River		Nikko City Hall, front	Nikkoshi City	2013/6/7	Cloudy	-	-	-	-	-	Loamy	750	1,600	2,350	0.10	(Left bank) Soil not exposed
40			Kiwadajima		2013/6/12	Cloudy	Loamy	490	1,000	1,490	0.11	Loamy	280	570	850	0.12	
41	Tagawa River		Ozobashi Bridge	Utsunomiya City	2013/5/28	Cloudy	Loamy	89	200	289	0.08	Loamy	200	400	600	0.10	
					2013/6/20	Cloudy	Loamy	120	270	390	0.07	Loamy	490	940	1,430	0.09	
42	Kamagawa River		Tsukushibashi Bridge	Kaminokawamachi Town	2013/5/24	Sunny	Loamy	160	320	480	0.08	Loamy	470	920	1,390	0.08	
43	Tagawa River		Meijibashi Bridge		2013/5/23	Sunny	Sandy	89	160	249	0.07	Loamy	120	220	340	0.07	
44			Yanabashi Bridge	Oyamashi City	2013/5/22	Sunny	Loamy	51	77	128	0.06	Loamy	26	71	97	0.06	
45	Kurokawa River		Kajimabashi Bridge	Kanumashi City	2013/5/24	Sunny	Loamy	85	190	275	0.05	Loamy	84	170	254	0.06	
46			Onaribashi Bridge	Mibumachi Town	2013/5/24	Sunny	Loamy	130	220	350	0.07	Loamy	240	520	760	0.09	
47	Oashigawa River		Akaishibashi Bridge	Kanumashi City	2013/5/24	Sunny	Loamy	130	250	380	0.07	Sandy	240	510	750	0.08	
48	Koyabugawa River		Koyabubashi Bridge		2013/5/24	Sunny	Loamy	120	280	400	0.07	Loamy	120	230	350	0.08	
49	Omoigawa River		Tamotsubashi Bridge	Tochigishi City	2013/6/24	Sunny	Loamy	160	350	510	0.08	Loamy	150	310	460	0.08	
			Otomeohashi Bridge	Oyamashi City	2013/5/23	Sunny	Loamy	93	180	273	0.10	Loamy	120	200	320	0.07	
50					2013/6/6	Cloudy	Loamy	240	450	690	0.11	Loamy	150	340	490	0.09	
51	Uzumagawa River		Uzumabashi Bridge	Tochigishi City	2013/5/23	Cloudy	Loamy	59	110	169	0.10	Loamy	60	110	170	0.08	
					2013/6/6	Cloudy	Loamy	150	290	440	0.09	Loamy	120	250	370	0.07	
52	Watarasegawa River		Watarasegawa River intake weir at Sori Power Station	Nikkoshi City	2013/5/28	Sunny	Sandy	24	59	83	0.16	Sandy	35	69	104	0.20	
					2013/6/5	Sunny	Loamy	82	180	262	0.21	Sandy	32	53	85	0.20	
53			Hajikabashi Bridge	Ashikagashi City	2013/5/22	Cloudy	Loamy	58	120	178	0.07	Loamy	97	180	277	0.07	
54			Nakabashi Bridge		2013/5/22	Sunny	Loamy	76	170	246	0.07	Loamy	47	86	133	0.07	
55			Wataraseohashi Bridge	Tatebayashishi City	2013/5/22	Sunny	Loamy	120	200	320	0.07	Loamy	220	460	680	0.08	
56			Shinkaibashi Bridge	Tochigishi City	2013/5/22	Sunny	Loamy	89	150	239	0.07	Loamy	81	170	251	0.07	
					2013/6/20	Cloudy	Loamy	81	180	261	0.09	Loamy	210	420	630	0.08	

* Samples for surrounding environment (soil) were generally collected from 5 points in 3m square in the river terrace, etc., and mixed. Depending on the site situation, factors, such as the area of sampling may be much smaller, may cause figures to vary significantly.

* Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

* Air dose was measured with a survey meter, TCS-172B of Hitachi-Aloka Medical, Ltd.

○Lake and Headwater: Water Quality Monitoring Results

Sampling point					Sampling date	Weather	Full depth (m)	General items					Radioactive material concentrations (Bq/L)		Remarks	
No.	Point							Sampling depth (m)	Secchi disk depth (m)	Electrical conductivity (mS/m)	SS (mg/L)	Turbidity	Radioactive cesium			
													Cs-134	Cs-137		
1	Nakagawa River System	Miyama Dam Reservoir	Center	Nasushiobarashi City	Surface layer	2013/6/10	Cloudy	28.1	0.5	5.1	9	1	0.9	<1	<1	
					Lower layer											
2		Shiobara Dam Reservoir	Center		Surface layer	2013/6/18	Light rain	19.4	0.5	3.3	21	1	2.6	<1	<1	
					Lower layer											
3	K i n u s e g a w a R i v e r	Kawaji Dam Reservoir	Center		Surface layer	2013/6/11	Cloudy	68.3	0.5	3.2	8	<1	1.6	<1	<1	
					Lower layer											
4		Ikari Dam Reservoir	Center		Surface layer	2013/6/13	Cloudy	55.1	0.5	6.3	6	<1	0.6	<1	<1	
					Lower layer											
5		Kawamata Dam Reservoir	Center	Nikkoshi City	Surface layer	2013/6/14	Cloudy	48.2	0.5	4.5	10	1	2.7	<1	<1	
					Lower layer											
6		Yunoko Lake	Center		Surface layer	2013/6/14	Cloudy	11.7	0.5	2.1	17	4	3.0	<1	<1	
					Lower layer											
7		Chuzenjiko Lake	Center		Surface layer	2013/6/7	Cloudy	165.0	0.5	6.9	11	<1	0.9	<1	<1	
					Lower layer											
8	Watarasegawa River System	Watarase Reservoir	Center	Tochigishi City	Surface layer	2013/6/6	Cloudy	3.7	0.5	0.5	20	21	16.0	<1	<1	
					Lower layer											

* Sampling points are listed from north to south.

○Lake and Headwater: Sediment and Surrounding Environment (Lake Shore) Monitoring Results

Sampling point					Sampling date	Weather	Full depth (m)	Sediment					Surrounding environment (lake shore)					Remarks		
No.	Point							Municipality	General items			Concentration of radioactive material [Bq/kg (dried mud)]			Property	Soil				
									Mud sampling depth (cm)	Mud content (%)	Property	Cs-134	Cs-137	Total		Concentration of radioactive material [Bq/kg (dry)]			Air dose (μSv/h)	
1	Nakagawa River System	Miyama Dam Reservoir	Center	Nasushiobarashi City	2013/6/10	Cloudy	1900/1/28	10	32	Silt/sand	74	210	284	Loamy	380	780	1,160	0.14		
2		Shiobara Dam Reservoir	Center	Nasushiobarashi City	2013/6/18	Light rain	1900/1/19	10	37	Silt	390	770	1,160	Loamy	880	1,800	2,680	0.36		
3	Kinugawa River System	Kawaji Dam Reservoir	Center	Nikkoshi City	2013/6/11	Cloudy	1900/3/8	10	34	Silt	270	580	850	Loamy	2,200	4,600	6,800	0.22		
4		Ikari Dam Reservoir	Center	Nikkoshi City	2013/6/13	Cloudy	1900/2/24	10	35	Silt	830	1,700	2,530	Loamy	780	1,700	2,480	0.24		
5		Kawamata Dam Reservoir	Center	Nikkoshi City	2013/6/14	Cloudy	1900/2/17	10	34	Silt	110	220	330	Loamy	51	140	191	0.08		
6		Yunoko Lake	Center	Nikkoshi City	2013/6/14	Cloudy	1900/1/11	10	19	Silt	56	230	286	Loamy	94	190	284	0.08		
7		Chuzenjiko Lake	Center	Nikkoshi City	2013/6/7	Cloudy	1900/6/13	10	17	Silt	120	300	420	Loamy	290	650	940	0.12		
8	Watarasegawa River System	Watarase Reservoir	Center	Tochigishi City	2013/6/6	Cloudy	1900/1/3	10	44	Silt	67	110	177	Loamy	110	230	340	0.07		

* Samples for surrounding environment (soil) were generally collected from 5 points in 3m square in the river terrace, etc., and mixed. Depending on the site situation, factors, such as the area of sampling may be much smaller, may cause figures to vary significantly.

* Sampling points are listed from north to south.

* Air dose was measured with a survey meter, TCS-172B of Hitachi-Aloka Medical, Ltd.

