

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

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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 October 18-December 16, 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 and headwaters: 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 (July-October 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 500Bq/kg or below at all locations. For lakes and headwaters, they were 1,500Bq/kg or below at most locations, and have generally remained constant or had a declining tendency.

(Rivers)

Cs-134+Cs-137: ND-480Bq/kg (dried mud) (*ND-480Bq/kg (dried mud))

(Lakes and headwaters)

Cs-134+Cs-137: 122-2,560Bq/kg (dried mud) (*106-5,100Bq/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	56 (92)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	56 (92)
Lakes and headwaters	10 (5)	1 (0)	2 (2)	1 (0)	0 (0)	1 (0)	0 (1)	15 (8)

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

(Rivers)

Cs-134+Cs-137: ND-25,700Bq/kg (dry) (*17-20,300Bq/kg (dry))

Spatial dose: 0.06-0.61μSv/h

(Lakes and headwaters)

Cs-134+Cs-137: 118-8,400Bq/kg (dry) (*160-4,600Bq/kg (dry))

Spatial dose: 0.06-0.30μSv/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.

*Way to announce the results of monitoring:

Announcement of the Results of Radioactive Material Monitoring in the form of News Release will end with this news release. From now on, MOE will announce the results in the following website whenever new monitoring results are obtained. So please see the following website from now on:

<http://www.env.go.jp/jishin/rmp.html#monitoring> (MOE website, Radioactive Material Monitoring)

ORiver: Water Quality Monitoring Results

(Annex)

No.	Sampling point			Sampling date	Weather	Full depth (m)	General items					Radioactive material concentrations (Bq/L)		Remarks		
	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 System	Nakagawa River	Ikuyobashishita	Nasushiobarashi City	2013/11/19	Sunny	0.6	0.0	>100	16	<1	0	<1	<1		
2		Nakagawa River	Komeibashi Bridge	Nasushiobarashi City	2013/11/19	Sunny	0.5	0.0	>100	12	<1	0	<1	<1		
3		Takaomata River	Takaomatabashi Bridge	Nasumachi Town	2013/11/19	Sunny	0.2	0.0	>100	18	<1	1	<1	<1		
4		Yukawa River	Yukawabashi Bridge	Nasushiobarashi City/Nasumachi Town	2013/11/19	Sunny	0.4	0.0	>100	27	1	2	<1	<1		
5		Nakagawa River	Kamikuroiso	Nasushiobarashi City/Nasumachi Town	2013/11/19	Sunny	0.4	0.0	>100	16	<1	3	<1	<1		
6		Yosagawa River	Yosabashi Bridge	Nasumachi Town	2013/11/18	Sunny	0.4	0.0	>100	16	<1	2	<1	<1		
7		Kurokawa River	Shindenbashi Bridge	Nasumachi Town	2013/11/18	Sunny	0.6	0.0	>100	10	<1	1	<1	<1		
8		Yosagawa River	Kawabashi Bridge	Nasumachi Town	2013/11/19	Sunny	0.5	0.0	>100	40	<1	5	<1	<1		
9		Nakagawa River	Kurobane	Nasumachi Town	2013/11/18	Sunny	0.3	0.0	>100	15	<1	0	<1	<1		
10		Matsubagawa River	Tributary	Otarashi City	2013/11/18	Sunny	0.3	0.0	>100	9	<1	0	<1	<1		
11		Sabigawa River	Udagawabashi Bridge	Otarashi City	2013/11/20	Sunny	0.4	0.0	>100	14	<1	1	<1	<1		
12		Momuragawa River	Momuranakabashi Bridge	Otarashi City	2013/11/20	Sunny	0.6	0.0	>100	18	1	0	<1	<1		
13		Hokigawa River	Yunohara	Nasushiobarashi City	2013/11/20	Sunny	0.6	0.0	>100	21	1	0	<1	<1		
14		Hokigawa River	Sekibashi Bridge	Nasushiobarashi City	2013/11/20	Sunny	0.6	0.0	>100	21	<1	0	<1	<1		
15		Hokigawa River	Iwabashi Bridge	Otarashi City	2013/11/20	Sunny	0.5	0.0	>100	20	<1	0	<1	<1		
16		Hokigawa River	Hokigawabashi Bridge	Otarashi City	2013/11/18	Sunny	0.6	0.0	>100	17	2	1	<1	<1		
17		Nakagawa River	Shinnakabashi Bridge	Nakagawamachi Town	2013/11/22	Sunny	0.3	0.0	>100	16	<1	0	<1	<1		
18		Mumogawa River	Koseibashi Bridge	Nakagawamachi Town	2013/11/18	Sunny	0.4	0.0	>100	11	3	1	<1	<1		
19		Arakawa River	Saikachibashi Bridge	Shioyama City	2013/11/21	Sunny	0.7	0.0	>100	7	1	1	<1	<1		
20		Arakawa River	Renjobashi Bridge	Sakurashi City	2013/11/21	Sunny	0.2	0.0	>100	13	2	1	<1	<1		
21		Uchikawa River	Tanakabashi Bridge	Yaitashi City	2013/11/21	Sunny	0.3	0.0	>100	10	<1	1	<1	<1		
22		Uchikawa River	Asahibashi Bridge	Sakurashi City	2013/11/21	Sunny	0.5	0.0	>100	15	1	1	<1	<1		
23		Arakawa River	Mukadabashi Bridge	Nasukarasuyamashi City	2013/11/22	Sunny	0.6	0.0	>100	18	<1	1	<1	<1		
24		Egawa River	Tributary	Nasukarasuyamashi City	2013/11/22	Sunny	0.6	0.0	>100	17	<1	1	<1	<1		
25	Kinugawa River System	Kinugawa River	Kawaji Daiichi Power Station, front	Nikkoshi City	2013/11/12	Cloudy	0.4	0.0	67	6	3	3	<1	<1		
26		Yunishigawa River	Maesawabashi Bridge	Nikkoshi City	2013/11/12	Cloudy	0.4	0.0	>100	8	<1	0	<1	<1		
27		Ojikagawa River	Tributary	Nikkoshi City	2013/11/12	Cloudy	0.5	0.0	>100	7	<1	1	<1	<1		
28		Kinugawa River	Kosagoe	Nikkoshi City	2013/11/12	Cloudy	0.3	0.0	>100	8	1	1	<1	<1		
29		Itanagawa River	Tributary	Nikkoshi City	2013/11/12	Sunny	0.4	0.0	>100	7	1	1	<1	<1		
30		Yukawa River	Tributary	Nikkoshi City	2013/11/13	Cloudy	1.0	0.0	>100	18	2	1	<1	<1		
31		Daiyagawa River	Shinkyo Bridge	Nikkoshi City	2013/11/13	Sunny	0.3	0.0	>100	11	<1	0	<1	<1		
32		Shidobuchigawa River	Sujichigabashi Bridge	Nikkoshi City	2013/11/13	Sunny	0.5	0.0	>100	10	<1	1	<1	<1		
33		Daiyagawa River	Kaishinbashi Bridge (Harigai)	Nikkoshi City	2013/11/13	Cloudy	0.3	0.0	>100	11	<1	1	<1	<1		
34		Kinugawa River	Sanuki	Shioyama City	2013/11/13	Cloudy	0.4	0.0	>100	12	<1	1	<1	<1		
35		Nishikinugawa River	Nishikinugawabashi Bridge	Utsunomiya City	2013/11/14	Sunny	1.1	0.0	>100	11	2	1	<1	<1		
36		Kinugawa River	Kinugawabashi Bridge (Hoshakuji Temple)	Utsunomiya City	2013/11/14	Sunny	0.4	0.0	>100	12	1	1	<1	<1		
37		Kinugawa River	Daidoizumibashi Bridge	Mookashi City	2013/11/15	Cloudy	0.3	0.0	>100	15	1	1	<1	<1		
38		Egawa River	Tributary	Shimotsukeshi City	2013/11/15	Cloudy	0.3	0.0	>100	23	3	2	<1	<1		
39		Akaborigawa River	Nikko City Hall, front	Nikkoshi City	2013/11/13	Sunny	0.2	0.0	>100	11	<1	0	<1	<1		
40		Akaborigawa River	Kiwadajima	Nikkoshi City	2013/11/12	Sunny	0.5	0.0	>100	15	1	1	<1	<1		
41		Tagawa River	Ozobashi Bridge	Utsunomiya City	2013/11/14	Sunny	0.3	0.0	>100	16	1	1	<1	<1		
42		Kamagawa River	Tsukushibashi Bridge	Utsunomiya City	2013/11/14	Sunny	0.3	0.0	>100	23	4	1	<1	<1		
43		Tagawa River	Meijibashi Bridge	Kaminokawamachi Town	2013/11/14	Sunny	0.3	0.0	>100	23	1	1	<1	<1		
44		Tagawa River	Yanabashi Bridge	Oyamashi City	2013/11/15	Cloudy	1.0	0.0	>100	26	3	1	<1	<1		
45		Watarasegawa River	Kurokawa River	Kaijimbashi Bridge	Kanumashi City	2013/11/11	Cloudy	0.4	0.0	>100	8	<1	0	<1	<1	
46			Kurokawa River	Onaribashi Bridge	Mibumashi Town	2013/11/11	Sunny	0.5	0.0	>100	15	<1	1	<1	<1	
47			Oashigawa River	Akaishibashi Bridge	Kanumashi City	2013/11/11	Sunny	0.3	0.0	>100	7	<1	0	<1	<1	
48			Koyabugawa River	Koyabubashi Bridge	Kanumashi City	2013/11/11	Cloudy	0.3	0.0	>100	14	<1	1	<1	<1	
49	Omoigawa River		Tamotsubashi Bridge	Tochigishi City	2013/11/11	Cloudy	0.4	0.0	>100	10	<1	1	<1	<1		
50	Omoigawa River		Otomeohashi Bridge	Oyamashi City	2013/11/11	Sunny	0.5	0.0	>100	16	4	1	<1	<1		
51	Uzumagawa River	Uzumagawa River	Tochigishi City	2013/11/5	Sunny	0.8	0.0	>100	22	5	1	<1	<1			
52	Watarasegawa River	Watarasegawa River	Watarasegawa River intake weir at Sori Power Station	Nikkoshi City	2013/11/8	Sunny	0.7	0.0	>100	9	<1	0	<1	<1		
53		Watarasegawa River	Hajikabashi Bridge	Ashikagashi City	2013/11/7	Cloudy	0.4	0.0	>100	12	<1	1	<1	<1		
54		Watarasegawa River	Nakabashi Bridge	Ashikagashi City	2013/11/6	Sunny	0.6	0.0	>100	13	1	1	<1	<1		
55		Watarasegawa River	Wataraseohashi Bridge	Tatebayashishi City	2013/11/6	Sunny	0.8	0.0	>100	16	2	1	<1	<1		
56		Watarasegawa River	Shinkaibashi Bridge	Tochigishi City	2013/11/5	Sunny	0.6	0.0	60	20	10	3	<1	<1		

• Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.
 • Radioactive materials concentrations contain some measurement errors but are not noted here.

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 System	Nakagawa River	Ikuyobashishita	Nasushiobarashi City	2013/11/19	Sunny	0.6	4	78	Gravel/sand	<10	14	14		
2		Komeibashi Bridge	Nasushiobarashi City	2013/11/19	Sunny	0.5	4	80	Gravel/sand	11	27	38			
3		Takaomtagawa River	Takaomatabashi Bridge	Nasumachi Town	2013/11/19	Sunny	0.2	3	76	Gravel/sand	18	61	79		
4		Yukawa River	Yukawabashi Bridge	Nasushiobarashi City/Nasumachi Town	2013/11/19	Sunny	0.4	4	75	Gravel/sand	17	33	50		
5		Nakagawa River	Kamikuroiso	Nasumachi Town	2013/11/18	Sunny	0.4	3	70	Sand/silt	24	61	85		
6		Yosagawa River	Yosabashi Bridge	Nasumachi Town	2013/11/18	Sunny	0.6	5	81	Sand/gravel	21	59	80		
7		Kurokawa River	Shindenbashi Bridge		2013/11/19	Sunny	0.5	5	97	Gravel/sand	16	34	50		
8		Yosagawa River	Kawadabashi Bridge		2013/11/18	Sunny	0.3	3	84	Gravel/sand	10	23	33		
9		Nakagawa River	Kurobane		2013/11/18	Sunny	0.3	4	73	Sand/gravel	44	88	132		
10		Matsubagawa River	Tributary	Otarawashi City	2013/11/20	Sunny	0.4	4	71	Sand/silt	110	250	360		
11		Sabigawa River	Udagawabashi Bridge		2013/11/20	Sunny	0.6	4	78	Gravel/sand	27	80	107		
12		Momuragawa River	Momuranakabashi Bridge		2013/11/20	Sunny	0.6	5	75	Sand/gravel	10	32	42		
13		Hokigawa River	Yunohara	Nasushiobarashi City	2013/11/20	Sunny	0.6	5	77	Gravel/sand	20	47	67		
14		Hokigawa River	Sekibabashi Bridge		2013/11/20	Sunny	0.5	4	71	Sand	13	38	51		
15		Hokigawa River	Iwaibashi Bridge	Otarawashi City	2013/11/18	Sunny	0.6	4	72	Sand	<10	26	26		
16		Hokigawa River	Hokigawabashi Bridge		2013/11/22	Sunny	0.3	3	77	Sand	31	63	94		
17		Nakagawa River	Shinnakabashi Bridge	Nakagawamachi Town	2013/11/18	Sunny	0.4	4	80	Sand/gravel	<10	14	14		
18		Mumogawa River	Koseibashi Bridge		2013/11/21	Sunny	0.7	4	80	Sand/gravel	57	160	217		
19		Arakawa River	Saikachibashi Bridge	Shiyoumachi Town	2013/11/21	Sunny	0.2	4	80	Sand/gravel	<10	12	12		
20		Arakawa River	Renjobashi Bridge	Sakurashi City	2013/11/21	Sunny	0.3	4	78	Gravel/sand	30	73	103		
21		Uchikawa River	Tanakabashi Bridge	Yaitashi City	2013/11/21	Sunny	0.5	5	79	Sand	20	52	72		
22		Uchikawa River	Asahibashi Bridge	Sakurashi City	2013/11/22	Sunny	0.6	4	77	Sand	<10	19	19		
23		Arakawa River	Mukadabashi Bridge	Nasukarasuyamashi City	2013/11/22	Sunny	0.6	5	81	Sand/silt	130	350	480		
24		Egawa River	Tributary		2013/11/12	Cloudy	0.4	3	84	Sand/gravel	21	50	71		
25	Tonegawa River System	Kinugawa River	Kawaji Daiichi Power Station, front	Nikkoshi City	2013/11/12	Cloudy	0.4	4	84	Gravel/sand	<10	<10	-		
26		Yunishigawa River	Maesawabashi Bridge		2013/11/12	Cloudy	0.5	3	90	Gravel/sand	<10	17	17		
27		Ojikagawa River	Tributary		2013/11/12	Cloudy	0.3	3	81	Gravel/sand	15	32	47		
28		Kinugawa River	Kosagoe		2013/11/12	Sunny	0.4	3	74	Sand/gravel	23	50	73		
29		Itaanagawa River	Tributary		2013/11/13	Cloudy	1.0	3	80	Gravel/sand	<10	11	11		
30		Yukawa River			2013/11/13	Sunny	0.3	5	78	Gravel/sand	12	21	33		
31		Daiyagawa River	Shinkyō Bridge		2013/11/13	Sunny	0.5	3	91	Gravel/sand	36	87	123		
32		Shidobuchigawa River	Sujichigaibashi Bridge		2013/11/13	Cloudy	0.3	3	83	Sand/gravel	<10	18	18		
33		Daiyagawa River	Kaishinbashi Bridge (Harigai)		2013/11/13	Cloudy	0.4	5	59	Sand/silt	84	190	274		
34		Kinugawa River	Sanuki	Shiyoumachi Town	2013/11/14	Sunny	1.1	4	84	Gravel/sand	11	20	31		
35		Nishikinugawa River	Nishikinugawabashi Bridge	Utsunomiyashi City	2013/11/14	Sunny	0.4	3	83	Sand/gravel	<10	<10	-		
36		Kinugawa River	Kinugawabashi Bridge (Hoshakujī Temple)		2013/11/15	Cloudy	0.3	5	80	Sand/gravel	<10	11	11		
37		Kinugawa River	Daidoizumbashi Bridge	Mookashi City	2013/11/15	Cloudy	0.3	5	77	Sand/gravel	21	49	70		
38		Egawa River	Tributary	Shimotsukeshi City	2013/11/13	Sunny	0.2	3	78	Sand/gravel	110	260	370		
39		Akaborigawa River	Nikko City Hall, front	Nikkoshi City	2013/11/12	Sunny	0.5	4	72	Sand/gravel	15	46	61		
40		Tagawa River	Kiwadajima		2013/11/14	Sunny	0.3	4	82	Sand/gravel	<10	17	17		
41		Tagawa River	Ozobashi Bridge	Utsunomiyashi City	2013/11/14	Sunny	0.3	3	84	Gravel/sand	18	32	50		
42		Kamagawa River	Tsukushibashi Bridge		2013/11/14	Sunny	0.3	2	86	Gravel/sand	23	53	76		
43		Tagawa River	Meijibashi Bridge	Kaminokawamachi Town	2013/11/15	Cloudy	1.0	4	78	Gravel/sand	28	76	104		
44		Tagawa River	Yanabashi Bridge	Oyamashi City	2013/11/11	Cloudy	0.4	3	79	Gravel/sand	<10	15	15		
45		Watarasegawa River	Kurokawa River	Kajimabashi Bridge	Kanumashi City	2013/11/11	Sunny	0.5	4	89	Gravel/sand	<10	<10	-	
46			Oashigawa River	Akaishibashi Bridge	Kanumashi City	2013/11/11	Sunny	0.3	3	89	Gravel/sand	<10	<10	-	
47			Oashigawa River	Oashigawa River		2013/11/11	Cloudy	0.4	4	82	Gravel/sand	15	34	49	
48			Koyabugawa River	Koyabubashi Bridge		2013/11/11	Cloudy	0.4	4	84	Gravel/sand	<10	<10	-	
49	Omoigawa River		Tamotsubashi Bridge	Tochigishi City	2013/11/11	Sunny	0.5	3	89	Gravel/sand	<10	<10	-		
50	Omoigawa River		Otomeohashi Bridge	Oyamashi City	2013/11/5	Sunny	0.8	4	84	Gravel/sand	<10	26	26		
51	Uzumagawa River	Uzumagawa River	Uzumabashi Bridge	Tochigishi City	2013/11/8	Sunny	0.7	5	82	Sand/gravel	<10	15	15		
52	Watarasegawa River	Watarasegawa River	Watarasegawa River intake weir at Sori Power Station	Nikkoshi City	2013/11/7	Cloudy	0.4	3	77	Sand/gravel	<10	16	16		
53		Watarasegawa River	Hajikabashi Bridge	Ashikagashi City	2013/11/6	Sunny	0.6	3	76	Sand	<10	<10	-		
54		Watarasegawa River	Nakabashi Bridge		2013/11/6	Sunny	0.8	5	90	Gravel/sand	<10	<10	-		
55		Watarasegawa River	Wataraseohashi Bridge	Tatebayashishi City	2013/11/5	Sunny	0.6	4	79	Sand/gravel	<10	19	19		
56	Watarasegawa River	Shinkaibashi Bridge	Tochigishi City	2013/11/5	Sunny	0.6	4	79	Sand/gravel	<10	19	19			

• Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.
 • Radioactive materials concentrations contain some measurement errors but are not noted here.

ORiver: Surrounding Environment Monitoring Results

No.	Sampling point			Sampling date	Weather	Left bank					Right bank					Remarks		
	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 System	Nakagawa River	Ikuyobashishita	Nasushiobarashi City	2013/11/19	Sunny	-	-	-	-	Loamy	440	1,000	1,440	0.14	(Left bank) Unable to collect samples due to private property		
2		Nakagawa River	Komeibashi Bridge	Nasushiobarashi City	2013/11/19	Sunny	Loamy	1,200	2,800	4,000	0.21	Sandy	190	420	610	0.22		
3		Takaomatagawa River	Takaomatabashi Bridge	Nasumachi Town	2013/11/19	Sunny	Loamy	1,100	2,500	3,600	0.21	Loamy	1,700	3,700	5,400	0.25		
4		Yukawa River	Yukawabashi Bridge	Nasushiobarashi City/Nasumachi Town	2013/11/19	Sunny	Loamy	2,200	5,000	7,200	0.27	Loamy	1,300	3,000	4,300	0.19		
5		Nakagawa River	Kamikuroiso	Nasushiobarashi City/Nasumachi Town	2013/11/19	Sunny	Loamy	470	1,100	1,570	0.25	Loamy	2,100	4,800	6,900	0.26		
6		Yosagawa River	Yosabashi Bridge	Nasumachi Town	2013/11/18	Sunny	Loamy	7,700	18,000	25,700	0.44	Loamy	1,600	3,600	5,200	0.26		
7		Kurokawa River	Shindenbashi Bridge	Nasumachi Town	2013/11/18	Sunny	Loamy	1,400	3,300	4,700	0.37	Loamy	980	2,400	3,380	0.31		
8		Yosagawa River	Kawadabashi Bridge	Nasumachi Town	2013/11/19	Sunny	Loamy	1,100	2,500	3,600	0.25	Loamy	820	2,000	2,820	0.34		
9		Nakagawa River	Kurobane	Nasumachi Town	2013/11/18	Sunny	Loamy	430	1,000	1,430	0.15	Loamy	290	690	980	0.11		
10		Matsubagawa River	Tributary	Otawarashi City	2013/11/18	Sunny	Loamy	320	680	1,000	0.14	Loamy	540	1,300	1,840	0.15		
11		Sabigawa River	Udagawabashi Bridge	Otawarashi City	2013/11/20	Sunny	Loamy	450	1,100	1,550	0.11	Loamy	240	550	790	0.09		
12		Momuragawa River	Momuranakabashi Bridge	Otawarashi City	2013/11/20	Sunny	Loamy	610	1,600	2,210	0.17	Loamy	240	610	850	0.12		
13		Hokigawa River	Yunohara	Nasushiobarashi City	2013/11/20	Sunny	Loamy	700	1,600	2,300	0.19	Loamy	860	2,000	2,860	0.13		
14		Hokigawa River	Sekibashi Bridge	Nasushiobarashi City	2013/11/20	Sunny	Loamy	1,500	3,400	4,900	0.48	Loamy	1,900	4,600	6,500	0.61		
15		Hokigawa River	Iwabashi Bridge	Otawarashi City	2013/11/20	Sunny	Loamy	820	1,900	2,720	0.11	Loamy	530	1,200	1,730	0.11		
16		Hokigawa River	Hokigawabashi Bridge	Otawarashi City	2013/11/18	Sunny	Loamy	900	2,200	3,100	0.11	Loamy	31	73	104	0.10		
17		Nakagawa River	Shinnakabashi Bridge	Nakagawamachi Town	2013/11/22	Sunny	Loamy	48	110	158	0.08	Loamy	53	110	163	0.09		
18		Mumogawa River	Koseibashi Bridge	Nakagawamachi Town	2013/11/18	Sunny	Loamy	110	270	380	0.08	Loamy	53	140	193	0.09		
19		Arakawa River	Saikachibashi Bridge	Shiyoumachi Town	2013/11/21	Sunny	Loamy	160	420	580	0.15	Loamy	310	700	1,010	0.14		
20		Arakawa River	Renjobashi Bridge	Sakurashi City	2013/11/21	Sunny	Loamy	170	410	580	0.10	Loamy	130	300	430	0.09		
21		Uchikawa River	Tanakabashi Bridge	Yaitashi City	2013/11/21	Sunny	Loamy	350	790	1,140	0.13	Loamy	170	400	570	0.11		
22		Uchikawa River	Asahibashi Bridge	Sakurashi City	2013/11/21	Sunny	Loamy	81	160	241	0.09	Loamy	140	420	560	0.09		
23		Arakawa River	Mukadabashi Bridge	Nasukarasuyamashi City	2013/11/22	Sunny	Loamy	47	100	147	0.08	Sandy	94	210	304	0.09		
24		Egawa River	Tributary	Nasukarasuyamashi City	2013/11/22	Sunny	Loamy	130	330	460	0.08	Loamy	87	230	317	0.07		
25	Kinugawa River System	Kinugawa River	Kawaji Daiichi Power Station, front	Nikkoshi City	2013/11/12	Cloudy	Loamy	480	1,100	1,580	0.18	Loamy	1,100	2,600	3,700	0.16		
26		Yunishigawa River	Maesawabashi Bridge	Nikkoshi City	2013/11/12	Cloudy	Sandy	120	290	410	0.09	Loamy	33	97	130	0.07		
27		Ojikagawa River	Tributary	Nikkoshi City	2013/11/12	Cloudy	Sandy	34	85	119	0.12	Sandy	250	620	870	0.19		
28		Kinugawa River	Kosagoe	Nikkoshi City	2013/11/12	Cloudy	Loamy	1,000	2,300	3,300	0.19	Loamy	630	1,500	2,130	0.12		
29		Itanagawa River	Tributary	Nikkoshi City	2013/11/12	Sunny	Loamy	610	1,500	2,110	0.24	Loamy	560	1,400	1,960	0.20		
30		Yukawa River	Tributary	Nikkoshi City	2013/11/13	Cloudy	Loamy	17	44	61	0.08	-	-	-	-	-	(Right bank) Unable to collect samples due to private property	
31		Daiyagawa River	Shinkyu Bridge	Nikkoshi City	2013/11/13	Sunny	Loamy	610	1,500	2,110	0.14	Loamy	500	1,200	1,700	0.11		
32		Shadobuchigawa River	Sujichigabashi Bridge	Nikkoshi City	2013/11/13	Sunny	Loamy	810	1,800	2,610	0.19	Loamy	1,000	2,500	3,500	0.18		
33		Daiyagawa River	Kaishinbashi Bridge (Harigai)	Nikkoshi City	2013/11/13	Cloudy	Loamy	780	1,800	2,580	0.17	Sandy	<10	23	23	0.08		
34		Kinugawa River	Sanuki	Shiyoumachi Town	2013/11/13	Cloudy	Loamy	200	420	620	0.13	Loamy	570	1,300	1,870	0.18		
35		Nishikinugawa River	Nishikinugawabashi Bridge	Utsunomiyashi City	2013/11/14	Sunny	Loamy	77	200	277	0.08	Loamy	82	220	302	0.07		
36		Kinugawa River	Kinugawabashi Bridge (Hoshakuji Temple)	Utsunomiyashi City	2013/11/14	Sunny	Sandy	52	120	172	0.08	Loamy	170	420	590	0.10		
37		Kinugawa River	Daidoizumbashi Bridge	Mookashi City	2013/11/15	Cloudy	Loamy	130	290	420	0.08	Sandy	<10	<10	-	0.07		
38		Egawa River	Tributary	Shimotsukeshi City	2013/11/15	Cloudy	Loamy	58	130	188	0.08	Loamy	67	140	207	0.08		
39		Akaborigawa River	Nikko City Hall, front	Nikkoshi City	2013/11/13	Sunny	-	-	-	-	-	Loamy	530	1,100	1,630	0.12	(Left bank) Unable to collect samples due to private property	
40		Akaborigawa River	Kiwadajima	Nikkoshi City	2013/11/12	Sunny	Loamy	210	460	670	0.10	Loamy	330	670	1,000	0.09		
41		Tagawa River	Ozobashi Bridge	Utsunomiyashi City	2013/11/14	Sunny	Loamy	260	640	900	0.07	Loamy	1,300	3,000	4,300	0.07		
42		Kamagawa River	Tsukushibashi Bridge	Utsunomiyashi City	2013/11/14	Sunny	Loamy	90	220	310	0.08	Loamy	320	730	1,050	0.07		
43		Tagawa River	Meijibashi Bridge	Kaminokawamachi Town	2013/11/14	Sunny	Loamy	110	240	350	0.06	Loamy	130	300	430	0.08		
44		Tagawa River	Yanabashi Bridge	Oyamashi City	2013/11/15	Cloudy	Loamy	33	94	127	0.06	Loamy	34	93	127	0.06		
45		Watarasegawa River	Kurokawa River	Kaijimbashi Bridge	Kanumashi City	2013/11/11	Cloudy	Loamy	88	190	278	0.08	Loamy	100	210	310	0.08	
46			Kurokawa River	Onaribashi Bridge	Mibumachi Town	2013/11/11	Sunny	Loamy	210	430	640	0.07	Loamy	13	32	45	0.07	
47			Oashigawa River	Akaishibashi Bridge	Kanumashi City	2013/11/11	Sunny	Loamy	110	260	370	0.10	Loamy	180	370	550	0.10	
48			Koyabugawa River	Koyabubashi Bridge	Kanumashi City	2013/11/11	Cloudy	Loamy	220	520	740	0.06	Loamy	150	310	460	0.10	
49	Omoigawa River		Tamotsubashi Bridge	Tochigishi City	2013/11/11	Cloudy	Loamy	82	200	282	0.07	Loamy	160	380	540	0.08		
50	Omoigawa River		Otoeohashi Bridge	Oyamashi City	2013/11/11	Sunny	Loamy	130	310	440	0.11	Loamy	160	410	570	0.07		
51	Uzumagawa River		Uzumagawa River	Tochigishi City	2013/11/5	Sunny	Loamy	67	190	257	0.07	Loamy	77	180	257	0.07		
52	Watarasegawa River		Watarasegawa River	Watarasegawa River intake weir at Sori Power Station	Nikkoshi City	2013/11/8	Sunny	Loamy	400	980	1,380	0.19	Sandy	13	33	46	0.16	
53			Watarasegawa River	Hajikabashi Bridge	Ashikagashi City	2013/11/7	Cloudy	Loamy	120	310	430	0.06	Loamy	340	830	1,170	0.08	
54			Watarasegawa River	Nakabashi Bridge	Ashikagashi City	2013/11/6	Sunny	Loamy	190	430	620	0.06	Loamy	58	120	178	0.07	
55			Watarasegawa River	Wataraseohashi Bridge	Tatebayashishi City	2013/11/6	Sunny	Loamy	130	270	400	0.09	Loamy	200	490	690	0.08	
56	Watarasegawa River		Shinkaibashi Bridge	Tochigishi City	2013/11/5	Sunny	Loamy	48	120	168	0.07	Loamy	110	260	370	0.08		

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OLake and Headwater: Water Quality Monitoring Results

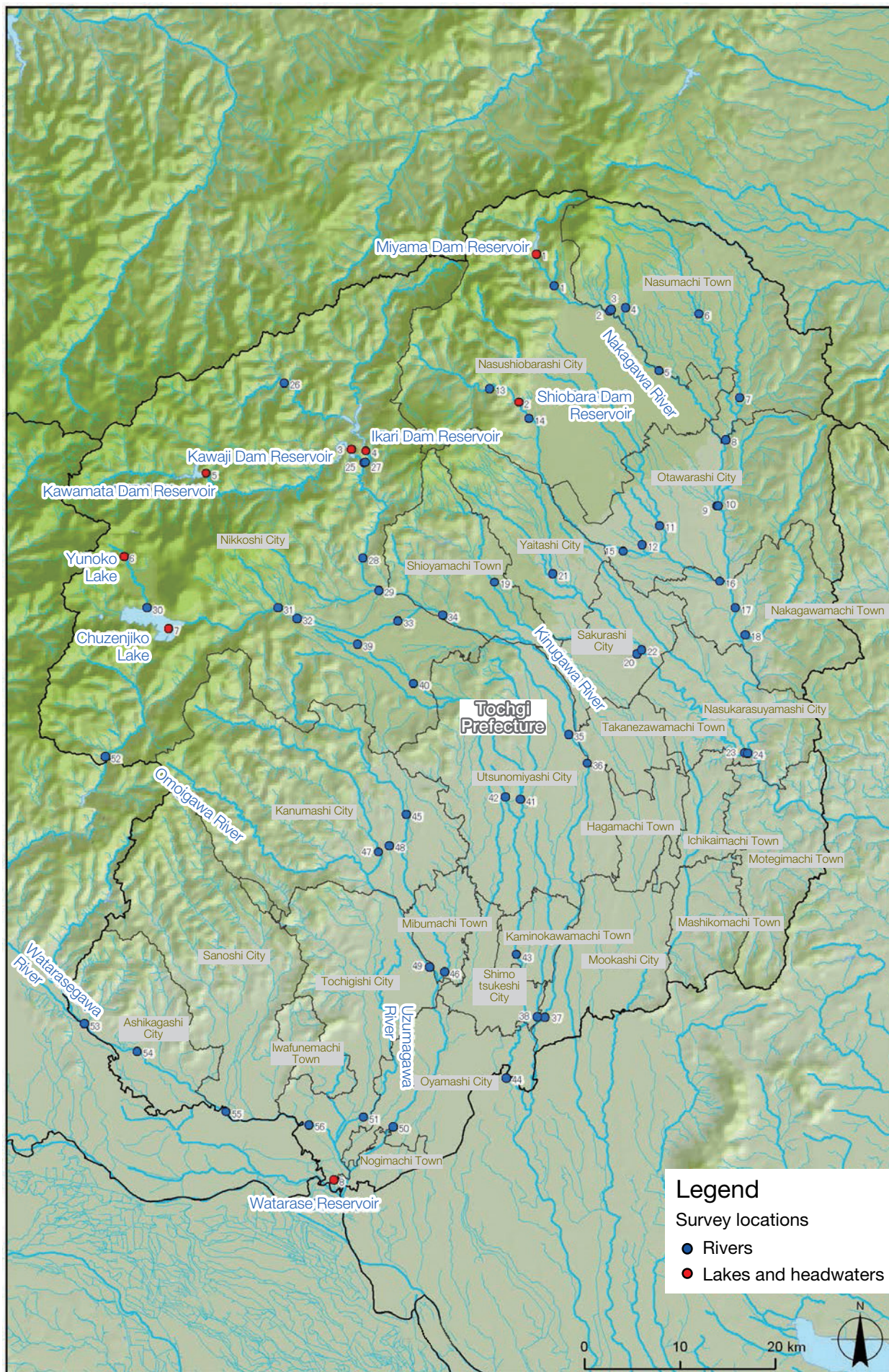
Sampling point					Sampling date	Weather	Full depth (m)	General items					Radioactive material concentrations (Bq/L)		Remarks				
No.	Point			Municipality				Sampling depth (m)	Secchi disk depth (m)	Electrical conductivity (mS/m)	SS (mg/L)	Turbidity	Radioactive cesium						
													Cs-134	Cs-137					
1	R i v e r k a S g y a s w t a e m	Miyama Dam Reservoir	Center of the lake	Nasushiobarashi City	Surface layer	2013/10/23	Cloudy	32.9	0.5	2.9	8	2	2	<1	<1				
					Lower layer														
					Surface layer	2013/12/16	Cloudy	-	-	-	-	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground
					Lower layer														
2		Shiobara Dam Reservoir	Center of the lake		Surface layer	2013/10/29	Sunny	28.7	0.5	1.5	10	3	4	<1	<1				
					Lower layer														
					Surface layer	2013/12/11	Cloudy	28.5	0.5	2.6	14	2	2	<1	<1				
					Lower layer														
3		Kawaji Dam Reservoir	Center of the lake		Surface layer	2013/10/30	Sunny	83.2	0.5	0.6	8	13	26	<1	<1				
					Lower layer														
					Surface layer	2013/12/10	Cloudy	86.4	0.5	1.1	8	2	2	<1	<1				
					Lower layer														
4		Ikari Dam Reservoir	Center of the lake		Surface layer	2013/10/30	Sunny	61.1	0.5	1.9	6	2	3	<1	<1				
					Lower layer														
					Surface layer	2013/12/10	Cloudy	59.7	0.5	3	6	2	5	<1	<1				
					Lower layer														
5		Kawamata Dam Reservoir	Center of the lake	Nikkoshi City	Surface layer	2013/10/18	Sunny	80.5	0.5	1.5	9	2	4	<1	<1				
					Lower layer														
					Surface layer	2013/12/12	Cloudy	77.5	0.5	2.4	10	2	3	<1	<1				
					Lower layer														
6		Yunoko Lake	Center of the lake		Surface layer	2013/10/18	Cloudy	11.9	0.5	3.5	15	<1	2	<1	<1				
					Lower layer														
					Surface layer	2013/12/9	Cloudy	11.7	0.5	4.1	15	<1	1	<1	<1				
					Lower layer														
7		Chuzenjiko Lake	Center of the lake		Surface layer	2013/10/21	Sunny	169.9	0.5	11.4	11	<1	1	<1	<1				
					Lower layer														
					Surface layer	2013/12/9	Sunny	167.3	0.5	15.2	11	<1	0	<1	<1				
					Lower layer														
8	Watarasegawa River System	Watarase Reservoir	Center of the lake	Tochigishi City	Surface layer	2013/10/22	Cloudy	6.1	0.5	1.1	18	7	9	<1	<1				
					Lower layer														
					Surface layer	2013/12/12	Sunny	5.6	0.5	0.9	19	11	6	<1	<1				
					Lower layer														

• Sampling points are listed from north to south.
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OLake 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	Concentration of radioactive material [Bq/kg (dry)]				
								Mud sampling depth (cm)	Mud content %	Property	Cs-134	Cs-137	Total		Cs-134	Cs-137		Total	Air dose (μSv/h)
1	Nakagawa River System	Miyama Dam Reservoir	Center of the lake	Nasushiobarashi City	2013/10/23	Cloudy	32.9	5	30	Silt	180	430	610	Loamy	460	1,100	1,560	0.12	
					2013/12/16	Cloudy	-	-	-	-	-	-	Loamy	83	180	263	0.09		
					2013/10/29	Sunny	28.7	8	34	Silt	270	750	1,020	Loamy	1,100	2,400	3,500	0.29	
					2013/12/11	Cloudy	28.5	8	34	Silt	300	740	1,040	Clay-loamy	730	1,800	2,530	0.30	
3		Kawaji Dam Reservoir	Center of the lake		2013/10/30	Sunny	83.2	7	42	Silt	140	320	460	Sandy	2,500	5,900	8,400	0.19	
					2013/12/10	Cloudy	86.4	7	41	Silt	110	300	410	Loamy	340	750	1,090	0.18	
					2013/10/30	Sunny	61.1	7	33	Silt	580	1,400	1,980	Loamy	720	1,600	2,320	0.19	
					2013/12/10	Cloudy	59.7	5	27	Silt	760	1,800	2,560	Loamy	300	690	990	0.18	
4		Ikari Dam Reservoir	Center of the lake		2013/10/18	Sunny	80.5	5	35	Silt	91	230	321	Loamy	170	380	550	0.07	
					2013/12/12	Cloudy	77.5	4	33	Silt	110	260	370	Loamy	34	84	118	0.08	
					2013/10/18	Cloudy	11.9	5	15	Silt	140	300	440	Loamy	72	150	222	0.10	
					2013/12/9	Cloudy	11.7	8	14	Silt	110	210	320	Sandy	59	160	219	0.08	
5	Kinugawa River System	Kawamata Dam Reservoir	Center of the lake	Nikkoshi City	2013/10/21	Sunny	169.9	5	16	Silt	40	82	122	Sandy	210	500	710	0.12	
					2013/12/9	Sunny	167.3	8	14	Silt	68	100	168	Loamy	290	670	960	0.12	
					2013/10/22	Cloudy	6.1	8	42	Silt	44	120	164	Loamy	290	620	910	0.06	
					2013/12/12	Sunny	5.6	5	44	Sand/silt	120	340	460	Loamy	65	160	225	0.08	
6		Yunoko Lake	Center of the lake		2013/10/18	Cloudy	11.9	5	15	Silt	140	300	440	Loamy	72	150	222	0.10	
					2013/12/9	Cloudy	11.7	8	14	Silt	110	210	320	Sandy	59	160	219	0.08	
					2013/10/21	Sunny	169.9	5	16	Silt	40	82	122	Sandy	210	500	710	0.12	
					2013/12/9	Sunny	167.3	8	14	Silt	68	100	168	Loamy	290	670	960	0.12	
7		Chuzenjiko Lake	Center of the lake		2013/10/21	Sunny	169.9	5	16	Silt	40	82	122	Sandy	210	500	710	0.12	
					2013/12/9	Sunny	167.3	8	14	Silt	68	100	168	Loamy	290	670	960	0.12	
					2013/10/22	Cloudy	6.1	8	42	Silt	44	120	164	Loamy	290	620	910	0.06	
					2013/12/12	Sunny	5.6	5	44	Sand/silt	120	340	460	Loamy	65	160	225	0.08	
8	Watarasegawa River System	Watarase Reservoir	Center of the lake	Tochigishi City	2013/10/22	Cloudy	6.1	8	42	Silt	44	120	164	Loamy	290	620	910	0.06	
					2013/12/12	Sunny	5.6	5	44	Sand/silt	120	340	460	Loamy	65	160	225	0.08	

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Legend

- Survey locations
- Rivers
- Lakes and headwaters

