

(News Release)  
The Results of Radioactive Material Monitoring of the Surface Water Bodies  
Within Ibaraki Prefecture  
(November 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 Ibaraki Prefecture during the period of November 1-28, 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

77 environmental reference points, etc. in the surface water bodies within Ibaraki Prefecture  
(Rivers: 53 locations, Lakes and headwaters: 19 locations, Coasts: 5 locations)

(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 (August 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))

Overall, the levels of the rivers and lakes/headwaters measured were around 1,000Bq/kg or below for most of the locations, and those of coasts were around 50Bq/kg or below at all locations. Levels were either declining or have remained constant at most of the locations.

(Rivers)

Cs-134+Cs-137: ND-3,900Bq/kg (dried mud) (\*ND-4,200Bq/kg (dried mud))

(Lakes and headwaters)

Cs-134+Cs-137: 45-3,600Bq/kg (dried mud) (\*ND-5,400Bq/kg (dried mud))

(Coasts)

Cs-134+Cs-137: ND-53Bq/kg (dried mud) (\*ND-42Bq/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	43 (37)	8 (11)	1 (1)	0 (2)	0 (1)	0 (0)	1 (1)	53 (53)
Lakes and headwaters	12 (10)	4 (6)	0 (1)	2 (0)	0 (0)	0 (1)	1 (1)	19 (19)
Coasts	5 (5)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	5 (5)

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

(Rivers)

Cs-134+Cs-137: ND-7,900Bq/kg (dry) (\*ND-9,700Bq/kg (dry))

Spatial dose: 0.05-0.26μSv/h

(Lakes and headwaters)

Cs-134+Cs-137: 24-3,800Bq/kg (dry) (\*20-4,600Bq/kg (dry))

Spatial dose: 0.05-0.19μSv/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.

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	Taga River System	Satonegawa River	Yamagoyabashi Bridge	Kitaibarakishi City	2013/11/14	Sunny	0.2	0.0	>100	12	2	1	<1	<1			
2		Murayamabashi Bridge			2013/11/14	Sunny	0.5	0.0	>100	18	<1	1	<1	<1			
3		Hanazonogawa River	Kurabeishi		2013/11/14	Sunny	0.4	0.0	>100	6	2	0	<1	<1			
4			Isonarebashi Bridge		2013/11/25	Cloudy	0.5	0.0	>100	22	3	2	<1	<1			
5		Okitagawa River	Sakaebashi Bridge		Takahagishi City	2013/11/14	Sunny	0.5	0.0	>100	6	<1	0	<1	<1		
6			Sakaibashi Bridge		Kitaibarakishi City	2013/11/25	Light rain	0.5	0.0	>100	15	1	1	<1	<1		
7			Hananukigawa River	Shinhananukibashi Bridge		Takahagishi City	2013/11/14	Sunny	0.4	0.0	>100	11	3	1	<1	<1	
8	Kujigawa River System	Kujigawa River	Yamagata	Hitachiomiya City	2013/11/15	Cloudy	0.5	0.0	>100	11	<1	1	<1	<1			
9			Sakakibashi Bridge		Hitachishi City/Tokaimura Village	2013/11/15	Cloudy	0.6	0.0	>100	13	2	1	<1	<1		
10	Nakagawa River System	Nakagawa River	Noguchi	Hitachiomiya City/Shirosatomachi Town	2013/11/21	Sunny	0.4	0.0	>100	22	3	1	<1	<1			
11			Shimokuni		Mitoshi City	2013/11/21	Sunny	0.7	0.0	>100	27	2	1	<1	<1		
12			Katsutabashi Bridge		Mitoshi City/Hitachinakashi City	2013/11/21	Sunny	4.8	0.0	>100	171	2	2	<1	<1		
13		Nakamarugawa River	Yanagisawabashi Bridge		Hitachinakashi City	2013/11/21	Sunny	1.7	0.0	66	226	4	3	<1	<1		
14		Hinumagawa River	Hinumamaekawa River	Nagaokabashi Bridge	Ibarakimachi Town	2013/11/28	Cloudy	0.6	0.0	94	28	2	2	<1	<1		
15			Hinumagawa River	Takahashi			2013/11/28	Cloudy	0.4	0.0	>100	29	1	1	<1	<1	
16			Kanseigawa River	Kanseibashi Bridge			2013/11/28	Cloudy	0.3	0.0	87	32	4	2	<1	<1	
17			Daiyagawa River	Oyabashi Bridge		Hokotashi City	2013/11/28	Cloudy	0.4	0.0	61	53	7	2	<1	<1	
18			Hinumagawa River	Hinumabashi Bridge		Mitoshi City/Oaraimachi Town	2013/11/28	Cloudy	0.5	0.0	39	1095	15	5	<1	<1	
19		Kitaura Lake	Hokotagawa River	Asahibashi Bridge	Hokotashi City	2013/11/5	Sunny	1.0	0.0	77	36	3	3	<1	<1		
20			Tomogawa River	Shintomogawabashi Bridge			2013/11/5	Sunny	0.5	0.0	63	26	19	5	<1	<1	
21			Taiyogawa River	Tazukabashi Bridge			2013/11/1	Sunny	0.2	0.0	54	23	17	6	<1	<1	
22			Takedagawa River	Uchijukuohashi Bridge			2013/11/5	Sunny	0.9	0.0	13	28	9	5	<1	<1	
23			Yamadagawa River	Nioroshihashi Bridge		Namegatashi City	2013/11/5	Sunny	0.3	0.0	15	28	35	14	<1	<1	
24			Kurakawa River	Kurakawabashi Bridge			2013/11/5	Sunny	0.5	0.0	43	26	4	8	<1	<1	
25			Gantsugawa River	JA Yokohashi			2013/11/5	Sunny	0.2	0.0	57	28	6	5	<1	<1	
26			Nagaregawa River	Suhoashi Bridge		Kashimashi City	2013/11/1	Sunny	0.1	0.0	>100	38	3	2	<1	<1	
27		Kasumigaura Lake	Sonobegawa River	Sonobeshinhashi Bridge	Omitamashi City	2013/11/10	Light rain	0.8	0.0	66	26	6	3	<1	<1		
28	Samogawa River		Tokorobashi Bridge			2013/11/10	Cloudy	1.2	0.0	73	41	2	2	<1	<1		
29	Koisegawa River		Heiwabashi Bridge		Ishikashi City	2013/11/10	Cloudy	0.6	0.0	62	20	8	3	<1	<1		
30	Kajinashigawa River		Kamishukubashi Bridge		Namegatashi City	2013/11/10	Cloudy	0.4	0.0	69	31	2	4	<1	<1		
31	Hishikigawa River		Hishikibashi Bridge			2013/11/17	Sunny	0.5	0.0	74	29	2	2	<1	<1		
32	Ichinosegawa River		Kawanakabashi Bridge		Kasumigaurashi City	2013/11/17	Sunny	1.4	0.0	5	26	62	50	<1	<1		
33	Sakaigawa River		Sakaibashi Bridge/National Route 354		Tsuchiurashi City	2013/11/8	Sunny	0.6	0.0	51	36	6	6	<1	<1		
34	Shinkawa River		Shintenbashi Bridge			2013/11/8	Sunny	2.4	0.0	33	33	9	7	<1	<1		
35	Sakuragawa River		Eiribashi Bridge			Tsuchiurashi City/Tsukubashi City	2013/11/8	Sunny	0.5	0.0	61	22	11	6	<1	<1	
36	Bizengawa River		Bizengawabashi Bridge		Tsuchiurashi City	2013/11/8	Sunny	0.7	0.0	47	33	6	3	<1	<1		
37	Hanamurogawa River		Shinwabashi Bridge			2013/11/8	Sunny	0.3	0.0	54	28	4	4	<1	<1		
38	Seimeigawa River		Katsuhashi Bridge		Amimachi Town	2013/11/13	Sunny	0.5	0.0	58	29	4	3	<1	<1		
39	Onogawa River		Okuharaohashi Bridge		Ryugasakishi City/Ushikushi City	2013/11/13	Sunny	0.6	0.0	76	34	1	2	<1	<1		
40	Shintonegawa River		Shintonebashi Bridge		Inashikishi City	2013/11/1	Sunny	1.1	0.0	38	21	12	9	<1	<1		
41	Hitachitogawa River		Yorokoshigawa River	Horinouchibashi Bridge	Itakoshi City	2013/11/1	Sunny	0.6	0.0	53	32	11	6	<1	<1		
42		Maekawa River	Ayamebashi Bridge			2013/11/1	Sunny	2.5	0.0	35	28	13	8	<1	<1		
43	Kinugawa River	Kinugawa River	Kawashimabashi Bridge	Chikuseishi City	2013/11/12	Sunny	0.3	0.0	91	15	5	1	<1	<1			
44			Takishitabashi Bridge		Moriyashi City	2013/11/13	Sunny	0.4	0.0	80	20	1	1	<1	<1		
45	Kokaigawa River	Tagawa River	Tagawabashi Bridge	Chikuseishi City	2013/11/12	Sunny	0.3	0.0	>100	25	1	0	<1	<1			
46		Kokogawa River	Kurokobashi Bridge		2013/11/12	Sunny	0.4	0.0	64	24	5	4	<1	<1			
47			Fumimakibashi Bridge		Torideshi City	2013/11/11	Cloudy	1.6	0.0	58	23	6	3	<1	<1		
48		Yatagawa River	Maruyamabashi Bridge		Tsukubashi City	2013/11/11	Cloudy	1.1	0.0	84	26	2	2	<1	<1		
49		Nishiyatagawa River	Sakaimatsuhashi Bridge			2013/11/11	Cloudy	0.4	0.0	89	33	3	3	<1	<1		
50		Inarigawa River	Ogukibashi Bridge			2013/11/11	Cloudy	0.4	0.0	86	24	2	2	<1	<1		
51	Tonegawa River	Tonegawa River	Kuribashi Bridge	Kogashi City	2013/11/12	Sunny	0.3	0.0	61	20	3	3	<1	<1			
52			Fukawa		Tonemachi Town	2013/11/13	Sunny	0.9	0.0	>100	21	2	2	<1	<1		
53			Sawara		Inashikishi City	2013/11/1	Sunny	0.2	0.0	62	25	5	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	Taga River System	Satonegawa River	Yamagoyabashi Bridge	Kitaibarakishi City	2013/11/14	Sunny	0.2	6	82	Sand/gravel	15	37	52			
2			Murayamabashi Bridge		2013/11/14	Sunny	0.5	8	78	Sand	47	140	187			
3		Hanazonogawa River	Kurabeishi		2013/11/14	Sunny	0.4	5	76	Sand/gravel	26	65	91			
4			Isonarebashi Bridge		2013/11/25	Cloudy	0.5	5	80	Sand/gravel	18	29	47			
5			Sakaebashi Bridge		2013/11/14	Sunny	0.5	6	81	Sand/gravel	12	18	30			
6		Okitagawa River	Sakaibashi Bridge		Takahagishi City	2013/11/25	Light rain	0.5	5	79	Sand	28	70	98		
7			Hananukigawa River		Shinhanukibashi Bridge	Takahagishi City	2013/11/14	Sunny	0.4	5	78	Sand/gravel	47	93	140	
8	Kujigawa River System	Kujigawa River	Yamagata	Hitachiomiya City	2013/11/15	Cloudy	0.5	6	76	Sand/silt	13	32	45			
9			Sakakibashi Bridge	Hitachishi City/Tokaimura Village	2013/11/15	Cloudy	0.6	6	62	Sand/silt	25	67	92			
10	Nakagawa River System	Nakagawa River	Noguchi	Hitachiomiya City/Shirosatomachi Town	2013/11/21	Sunny	0.4	6	81	Gravel/sand	<10	18	18			
11			Shimokuni	Mitoshi City	2013/11/21	Sunny	0.7	7	65	Sand/silt	18	58	76			
12			Katsutabashi Bridge	Mitoshi City/Hitachinakashi City	2013/11/21	Sunny	4.8	5	87	Gravel/sand	<10	13	13			
13		Hinumagawa River	Nakamarugawa River	Yanagisawabashi Bridge	Hitachinakashi City	2013/11/21	Sunny	1.7	5	53	Silt/sand	220	480	700		
14			Hinumamaekawa River	Nagoakabashi Bridge	2013/11/28	Cloudy	0.6	7	72	Sand	66	160	226			
15			Hinumagawa River	Takahashi	Ibarakimachi Town	2013/11/28	Cloudy	0.4	5	79	Sand/gravel	<10	16	16		
16			Kanseigawa River	Kanseibashi Bridge	2013/11/28	Cloudy	0.3	6	82	Gravel/sand	26	53	79			
17			Daiyagawa River	Oyabashi Bridge	Hokotashi City	2013/11/28	Cloudy	0.4	5	73	Sand/gravel	64	140	204		
18			Hinumagawa River	Hinumabashi Bridge	Mitoshi City/Oaraimachi Town	2013/11/28	Cloudy	0.5	5	82	Sand/gravel	120	280	400		
19			Kitaura Lake	Hokotagawa River	Asahibashi Bridge	2013/11/5	Sunny	1.0	10	80	Sand/gravel	20	48	68		
20	Tomogawa River	Shintomogawabashi Bridge		Hokotashi City	2013/11/5	Sunny	0.5	8	49	Silt/sand	94	220	314			
21	Taiyogawa River	Tazakabashi Bridge		2013/11/1	Sunny	0.2	5	74	Sand/gravel	36	100	136				
22	Takedagawa River	Uchijukuohashi Bridge		2013/11/5	Sunny	0.9	8	59	Silt/sand	81	210	291				
23	Yamadagawa River	Nioroshihashi Bridge		2013/11/5	Sunny	0.3	8	79	Sand/gravel/silt	40	97	137				
24		Kurakawa River		Kurakawabashi Bridge	Namegatashi City	2013/11/5	Sunny	0.5	8	80	Sand/gravel/clay	33	72	105		
25		Gantsugawa River		JA Yokohashi	2013/11/5	Sunny	0.2	3	82	Sand/gravel	44	120	164			
26		Nagaregawa River		Suhoibashi Bridge	Kashimashi City	2013/11/1	Sunny	0.1	3	80	Sand	66	170	236		
27	Tonegawa River System	Kasumigaura River		Sonobegawa River	Sonobeshinbashi Bridge	Omitamashi City	2013/11/10	Light rain	0.8	5	62	Sand/silt	73	150	223	
28				Sannogawa River	Tokorobashi Bridge	2013/11/10	Cloudy	1.2	5	82	Sand	220	510	730		
29			Koishigawa River	Heiwabashi Bridge	Ishikashi City	2013/11/10	Cloudy	0.6	8	78	Sand/gravel	34	82	116		
30			Kajinashigawa River	Kamishukubashi Bridge	Namegatashi City	2013/11/10	Cloudy	0.4	5	81	Sand	27	70	97		
31			Hishikigawa River	Hishikibashi Bridge	Kasumigaurashi City	2013/11/17	Sunny	0.5	5	74	Sand	160	380	540		
32			Ichinosegawa River	Kawanakabashi Bridge	2013/11/17	Sunny	1.4	6	24	Silt/sand	220	660	880			
33			Sakaigawa River	Sakaibashi Bridge/National Route 354	Tsuchiurashi City	2013/11/8	Sunny	0.6	8	84	Sand/gravel	86	210	296		
34			Shinkawa River	Shintenbashi Bridge	2013/11/8	Sunny	2.4	10	23	Silt	1,200	2,700	3,900			
35			Sakuragawa River	Eiribashi Bridge	Tsuchiurashi City/Tsukubashi City	2013/11/8	Sunny	0.5	6	69	Silt/sand	12	27	39		
36			Bizengawa River	Bizengawabashi Bridge	Tsuchiurashi City	2013/11/8	Sunny	0.7	9	75	Sand	430	930	1,360		
37		Hanamurogawa River	Shinwabashi Bridge	2013/11/8	Sunny	0.3	5	72	Sand	220	570	790				
38		Seimeigawa River	Katsuhashi Bridge	Amimachi Town	2013/11/13	Sunny	0.5	5	79	Sand/silt	290	650	940			
39		Onogawa River	Okuharaobashi Bridge	Ryugasakishi City/Ushikushi City	2013/11/13	Sunny	0.6	8	78	Sand/silt	130	290	420			
40		Shintonegawa River	Shintonebashi Bridge	Inashikishi City	2013/11/1	Sunny	1.1	7	52	Silt/sand	130	290	420			
41		Hitachitonegawa River	Yorokoshigawa River	Horinouchibashi Bridge	Itakoshi City	2013/11/1	Sunny	0.6	5	23	Silt	40	77	117		
42			Mackawa River	Ayamebashi Bridge	2013/11/1	Sunny	2.5	9	48	Silt/sand	70	130	200			
43		Kinugawa River	Kinugawa River	Kawashimabashi Bridge	Chikuseishi City	2013/11/12	Sunny	0.3	5	76	Sand	<10	<10	-		
44				Takishitabashi Bridge	Moriyashi City	2013/11/13	Sunny	0.4	8	72	Sand/silt	34	79	113		
45			Tagawa River	Tagawabashi Bridge	Chikuseishi City	2013/11/12	Sunny	0.3	5	80	Sand/gravel	<10	26	26		
46		Kokaigawa River	Kurokobashi Bridge	2013/11/12	Sunny	0.4	5	52	Silt/sand	56	130	186				
47	Fumimakibashi Bridge			Torideshi City	2013/11/11	Cloudy	1.6	8	78	Sand	24	51	75			
48	Yatagawa River		Maruyamabashi Bridge	2013/11/11	Cloudy	1.1	8	51	Silt/sand	180	440	620				
49	Nishiyatagawa River		Sakaimatsubashi Bridge	Tsukubashi City	2013/11/11	Cloudy	0.4	5	57	Silt/sand	120	300	420			
50	Inarigawa River		Ogukibashi Bridge	2013/11/11	Cloudy	0.4	8	76	Sand	220	500	720				
51	Tonegawa River		Tonegawa River	Kurihashi Bridge	Kogashi City	2013/11/12	Sunny	0.3	5	80	Sand	<10	23	23		
52		Fukawa		Tonemachi Town	2013/11/13	Sunny	0.9	7	52	Silt/sand	52	150	202			
53		Sawara		Inashikishi City	2013/11/1	Sunny	0.2	8	84	Gravel/sand	30	85	115			

\* 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

Sampling point				Sampling date	Weather	Left bank				Right bank				Remarks			
No.	Water body	Point	Municipality			Property	Concentration of radioactive material [Bq/kg (dry)]			Air dose (μSv/h)	Property	Concentration of radioactive material [Bq/kg (dry)]			Air dose (μSv/h)		
							Cs-134	Cs-137	Total			Cs-134	Cs-137			Total	
1	Taga River System	Satonogawa River	Yamagoyabashi Bridge	Kitabarakishi City	2013/11/14	Sunny	Loamy	2,400	5,500	7,900	0.26	Loamy	940	2,200	3,140	0.25	
2		Murayamabashi Bridge	2013/11/14		Sunny	Loamy	840	2,000	2,840	0.12	Loamy	1,800	4,200	6,000	0.12		
3		Hanazonogawa River	Kurabeishi		2013/11/14	Sunny	Loamy	420	1,100	1,520	0.13	Loamy	190	430	620	0.12	
4		Isonarebashi Bridge	2013/11/25		Cloudy	Loamy	580	1,400	1,980	0.10	Loamy	530	1,200	1,730	0.19		
5		Okitagawa River	Sakaebashi Bridge		Takahagishi City	2013/11/14	Sunny	Sandy	42	110	152	0.08	Loamy	210	530	740	0.07
6		Sakaibashi Bridge	Kitabarakishi City		2013/11/25	Light rain	Loamy	340	760	1,100	0.14	Loamy	390	920	1,310	0.17	
7		Hananukigawa River	Shinhananukibashi Bridge		Takahagishi City	2013/11/14	Sunny	Loamy	340	790	1,130	0.14	Loamy	660	1,500	2,160	0.14
8	Kujigawa River System	Kujigawa River	Yamagata	Hitachiomiyashi City	2013/11/15	Cloudy	Sandy	68	130	198	0.07	Sandy	15	32	47	0.09	
9			Sakakibashi Bridge	Hitachishi City/Tokaimura Village	2013/11/15	Cloudy	Loamy	120	300	420	0.06	Loamy	160	360	520	0.10	
10	Nakagawa River	Nakagawa River	Noguchi	Hitachiomiyashi City/Shimosatomachi Town	2013/11/21	Sunny	Loamy	210	510	720	0.09	Loamy	14	41	55	0.08	
11			Shimokuni	Mitoshi City	2013/11/21	Sunny	Loamy	64	150	214	0.09	Loamy	220	530	750	0.08	
12			Katsutabashi Bridge	Mitoshi City/Hitachinakashi City	2013/11/21	Sunny	Loamy	93	190	283	0.08	Loamy	130	320	450	0.10	
13			Nakamarugawa River	Yanagisawabashi Bridge	Hitachinakashi City	2013/11/21	Sunny	Loamy	310	780	1,090	0.10	Loamy	57	120	177	0.09
14			Himuramaekawa River	Nagaokabashi Bridge	2013/11/28	Cloudy	Loamy	48	90	138	0.08	Loamy	220	480	700	0.10	
15	Hinumagawa River	Hinumagawa River	Takahashi	Ibarakimachi Town	2013/11/28	Cloudy	Loamy	23	53	76	0.09	Loamy	170	410	580	0.06	
16			Kanseibashi Bridge	2013/11/28	Cloudy	Loamy	130	280	410	0.08	Loamy	280	670	950	0.09		
17			Daragawa River	Oyabashi Bridge	Hitotashi City	2013/11/28	Cloudy	-	-	-	0.07	-	-	-	-	-	Soil not exposed
18			Hinumagawa River	Hinumabashi Bridge	Mitoshi City/Ouraimachi Town	2013/11/28	Cloudy	Loamy	260	590	850	0.20	Loamy	400	1,100	1,500	0.13
19	Kitaura Lake	Kitaura Lake	Hokotagawa River	Asahibashi Bridge	2013/11/15	Sunny	-	-	-	0.07	-	-	-	-	-	Soil not exposed	
20			Tomogawa River	Shintomogawabashi Bridge	Hokotashi City	2013/11/15	Sunny	Loamy	220	500	720	0.09	Loamy	150	320	470	0.11
21			Tayogawa River	Tazukabashi Bridge	2013/11/11	Sunny	Loamy	330	750	1,080	0.07	Loamy	120	300	420	0.09	
22			Takedagawa River	Uchijukuhashi Bridge	2013/11/15	Sunny	Loamy	190	420	610	0.10	Loamy	200	480	680	0.11	
23			Yamadagawa River	Niroshibashi Bridge	2013/11/15	Sunny	Loamy	44	110	154	0.08	Loamy	530	1,100	1,630	0.09	
24			Kurakawa River	Kurakawabashi Bridge	Namegatah City	2013/11/15	Sunny	Loamy	440	980	1,420	0.10	Loamy	590	1,300	1,890	0.10
25			Gantsugawa River	JA Yokohashi	2013/11/15	Sunny	Sandy	270	650	920	0.10	Sandy	470	1,200	1,670	0.11	
26			Nagaragawa River	Subobashi Bridge	Kashimashi City	2013/11/11	Sunny	-	-	-	0.06	-	-	-	-	-	Soil not exposed
27			Sonobegawa River	Sonobeshinbashi Bridge	2013/11/10	Light rain	Loamy	210	490	700	0.09	Loamy	310	690	1,000	0.15	
28			Sannogawa River	Tokorobashi Bridge	Omitamashi City	2013/11/10	Cloudy	Loamy	580	1,300	1,880	0.12	Loamy	410	1,000	1,410	0.12
29	Kasumigaura Lake	Kasumigaura Lake	Kotsegawa River	Heiwabashi Bridge	Ishikashi City	2013/11/10	Cloudy	Loamy	360	870	1,230	0.10	Loamy	470	1,100	1,570	0.10
30			Kajinashigawa River	Kaminshukubashi Bridge	Namegatah City	2013/11/10	Cloudy	Loamy	250	590	840	0.10	Loamy	150	380	530	0.08
31			Hishikigawa River	Hishikibashi Bridge	2013/11/17	Sunny	Loamy	130	330	460	0.14	Loamy	170	400	570	0.12	
32			Ichinosegawa River	Kawanakabashi Bridge	Kasumigaurashi City	2013/11/17	Sunny	Loamy	230	570	800	0.09	Loamy	170	420	590	0.09
33			Sakagawa River	Sakaibashi Bridge/National Route 354	2013/11/18	Sunny	Loamy	570	1,300	1,870	0.12	Loamy	130	310	440	0.09	
34			Shinkawa River	Shintenbashi Bridge	Tsuchiurashi City	2013/11/18	Sunny	Loamy	660	1,500	2,160	0.10	Loamy	310	700	1,010	0.10
35			Sakuragawa River	Eiribashi Bridge	Tsuchiurashi City/Tsukubashi City	2013/11/18	Sunny	Loamy	79	180	259	0.07	Loamy	130	310	440	0.10
36			Bizengawa River	Bizengawabashi Bridge	2013/11/18	Sunny	Loamy	410	990	1,400	0.13	Loamy	310	750	1,060	0.12	
37			Hanamuraogawa River	Shinwabashi Bridge	2013/11/18	Sunny	Loamy	630	1,500	2,130	0.16	Loamy	940	2,200	3,140	0.15	
38			Seimeigawa River	Katsubashi Bridge	Amimachi Town	2013/11/13	Sunny	Sandy	420	1,000	1,420	0.13	Sandy	430	1,000	1,430	0.17
39	Onogawa River	Okuharaobashi Bridge	Ryugasakishi City/Ushikushi City	2013/11/13	Sunny	Loamy	280	770	1,050	0.12	Loamy	310	810	1,120	0.09		
40	Shintonegawa River	Shintonebashi Bridge	Inashikishi City	2013/11/11	Sunny	Loamy	110	260	370	0.09	Loamy	280	610	890	0.10		
41	Hitachitonegawa River	Hitachitonegawa River	Yorokoshigawa River	Horinouchibashi Bridge	2013/11/11	Sunny	Loamy	130	260	390	0.09	Loamy	140	320	460	0.08	
42			Maekawa River	Ayamebashi Bridge	Itakoshi City	2013/11/11	Sunny	Loamy	61	170	231	0.07	Sandy	42	96	138	0.06
43	Kinugawa River	Kinugawa River	Kawashimabashi Bridge	Chikusetsu City	2013/11/12	Sunny	Loamy	54	110	164	0.08	Sandy	52	130	182	0.07	
44			Takishitabashi Bridge	Moriyashi City	2013/11/12	Sunny	Loamy	390	910	1,300	0.15	Loamy	770	1,800	2,570	0.15	
45			Tagawa River	Tagawabashi Bridge	2013/11/12	Sunny	Loamy	64	130	194	0.06	Loamy	12	28	40	0.08	
46	Kokaigawa River	Kokaigawa River	Kurokobashi Bridge	Chikusetsu City	2013/11/12	Sunny	Sandy	67	130	197	0.09	Loamy	75	200	275	0.08	
47			Fumimakibashi Bridge	Torideshi City	2013/11/11	Cloudy	Loamy	400	960	1,360	0.13	Loamy	320	740	1,060	0.11	
48			Maruyamabashi Bridge	2013/11/11	Cloudy	Loamy	520	1,200	1,720	0.13	Loamy	680	1,700	2,380	0.12		
49			Sakaimatsuhashi Bridge	Tsukubashi City	2013/11/11	Cloudy	Sandy	42	91	133	0.05	Sandy	100	270	370	0.10	
50			Ogukibashi Bridge	2013/11/11	Cloudy	Loamy	720	1,700	2,420	0.12	Loamy	440	1,100	1,540	0.17		
51	Tonegawa River	Tonegawa River	Kurihashi Bridge	Kogashi City	2013/11/12	Sunny	Sandy	<10	<10	-	0.06	Loamy	98	260	358	0.09	
52			Fukawa	Tonemachi Town	2013/11/13	Sunny	Loamy	240	530	770	0.14	Loamy	55	160	215	0.08	
53			Sawara	Inashikishi City	2013/11/11	Sunny	Loamy	46	110	156	0.07	Loamy	55	110	165	0.06	

\* Samples for surrounding environment (soil) were generally collected from 5 points in 3m square on the lake shore, 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.

\* Radioactive materials concentrations contain some measurement errors but are not noted here.

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		Sampling depth (m)				Secchi disk depth (m)	Electrical conductivity (mS/m)	SS (mg/L)	Turbidity	Radioactive cesium		
											Cs-134	Cs-137	
1	Hiroura	Surface layer	2013/11/20	Sunny	2.8	0.5	0.9	567	8	9	<1	<1	
		Lower layer				1.8		540	8	9	<1	<1	
2	Hinuma Lake	Surface layer	2013/11/20	Sunny	3.3	0.5	1.0	513	6	8	<1	<1	
		Lower layer				2.3		647	7	8	<1	<1	
3	Oyazawa	Surface layer	2013/11/20	Sunny	2.3	0.5	1.1	648	8	8	<1	<1	
		Lower layer				1.3		804	10	8	<1	<1	
4	Offshore of Tamatsukuri	Surface layer	2013/11/6	Sunny	6.7	0.5	0.9	24	10	11	<1	<1	
		Lower layer				5.7		26	10	10	<1	<1	
5	Offshore of Kakeuma	Surface layer	2013/11/6	Sunny	2.0	0.5	0.6	22	15	13	<1	<1	
		Lower layer				1.0		22	17	10	<1	<1	
6	Center of the lake	Surface layer	2013/11/6	Sunny	6.2	0.5	0.8	29	7	9	<1	<1	
		Lower layer				5.2		29	9	10	<1	<1	
7	Offshore of Aso	Surface layer	2013/11/6	Sunny	2.3	0.5	0.8	30	10	10	<1	<1	
		Lower layer				1.3		31	10	10	<1	<1	
8	Offshore of Kamaya	Surface layer	2013/11/6	Sunny	6.8	0.5	0.9	27	8	8	<1	<1	
		Lower layer				5.8		27	13	9	<1	<1	
9	Jingubashi Bridge	Surface layer	2013/11/6	Sunny	2.3	0.5	0.6	29	18	15	<1	<1	
		Lower layer				1.3		30	18	15	<1	<1	
10	Sotonasakaura Lake	Surface layer	2013/11/6	Sunny	2.5	0.5	0.8	31	12	11	<1	<1	
		Lower layer				1.5		31	12	11	<1	<1	
11	Ikisu	Surface layer	2013/11/6	Sunny	5.0	0.5	0.9	32	8	9	<1	<1	
		Lower layer				4.0		31	8	8	<1	<1	
12	Center of Ushikumuma Lake	Surface layer	2013/11/25	Cloudy	1.8	0.5	1.0	34	12	7	<1	<1	
		Lower layer				0.8		25	12	8	<1	<1	
13	Mizunuma Dam	Surface layer	2013/11/27	Cloudy	17.1	0.5	1.8	6	2	2	<1	<1	
		Lower layer				16.1		6	6	2	<1	<1	
14	Koyama Dam	Surface layer	2013/11/27	Cloudy	20.4	0.5	1.8	8	2	3	<1	<1	
		Lower layer				19.4		11	3	5	<1	<1	
15	Hanauki Dam	Surface layer	2013/11/26	Sunny	28.3	0.5	2.8	7	4	2	<1	<1	
		Lower layer				27.3		6	4	2	<1	<1	
16	Iyuo Dam	Surface layer	2013/11/26	Sunny	29.8	0.5	1.8	12	2	2	<1	<1	
		Lower layer				28.8		17	6	5	<1	<1	
17	Ryujiin Dam	Surface layer	2013/11/15	Cloudy	23.2	0.5	2.4	8	3	2	<1	<1	
		Lower layer				22.2		16	9	10	<1	<1	
18	Fujigawa Dam	Surface layer	2013/11/18	Sunny	12.6	0.5	2.0	15	2	2	<1	<1	
		Lower layer				11.6		16	3	2	<1	<1	
19	Iida Dam	Surface layer	2013/11/18	Sunny	17.4	0.5	3.8	18	1	1	<1	<1	
		Lower layer				16.4		10	33	18	<1	<1	

- Sampling points are listed from north to south.
- Radioactive materials concentrations contain some measurement errors but are not noted here.

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						General items			Concentration of radioactive material [Bq/kg (dried mud)]		Soil						
							Mud sampling depth (cm)	Mud content %	Property	Radioactive cesium			Property	Concentration of radioactive material [Bq/kg (dry)]				Air dose (μSv/h)
										Cs-134	Cs-137	Total		Radioactive cesium				
			Cs-134	Cs-137	Total	Cs-134	Cs-137	Total										
1	Hinuma Lake	Hiroura	2013/11/20	Sunny	2.8	7	43	Silt	45	110	155	Loamy	190	450	640	0.15		
2		Miyamae	2013/11/20	Sunny	3.3	8	25	Silt	13	36	49	Loamy	<10	24	24	0.07		
3	Oyazawa	Oyazawa	2013/11/20	Sunny	2.3	8	31	Silt	170	320	490	-	-	-	-	-	Mud sampling points not determined	
4		Offshore of Tamatsukuri	2013/11/6	Sunny	6.7	10	16	Silt	240	530	770	Sandy	41	75	116	0.08		
5	Kasumigaura Lake	Offshore of Kakeuma	2013/11/6	Sunny	2.0	5	77	Sand	58	150	208	Sandy	45	93	138	0.10	Mud sampling points not determined	
6		Center	2013/11/6	Sunny	6.2	10	15	Silt	150	340	490	-	-	-	-			
7	Offshore of Aso	Offshore of Aso	2013/11/6	Sunny	2.3	10	76	Sand/silt	44	120	164	Sandy	44	97	141	0.10		
8		Offshore of Kamaya	2013/11/6	Sunny	6.8	10	14	Silt	110	360	470	Loamy	290	690	980	0.08		
9	Jingubashi Bridge	Jingubashi Bridge	2013/11/6	Sunny	2.3	6	64	Sand/silt	39	100	139	Loamy	14	39	53	0.05		
10		Sotonasakaura Lake	2013/11/6	Sunny	2.5	3	75	Sand/silt	25	66	91	Loamy	59	160	219	0.06		
11	Ikisu	Ikisu	2013/11/6	Sunny	3	74	Sand	31	77	108	Loamy	100	230	330	0.06			
12		Center of Ushikumuma Lake	2013/11/25	Cloudy	1.8	8	24	Silt	320	660	980	Loamy	110	260	370		0.06	
13	Mizunuma Dam	Mizunuma Dam	2013/11/27	Cloudy	17.1	8	20	Silt	1,100	2,500	3,600	Loamy	270	640	910	0.15		
14		Koyama Dam	2013/11/27	Cloudy	20.4	8	28	Silt	270	620	890	Sandy	260	610	870	0.14		
15	Hanauki Dam	Hanauki Dam	2013/11/26	Sunny	28.3	8	18	Silt	600	1,400	2,000	Sandy	460	1,100	1,560	0.19		
16		Iyuo Dam	2013/11/26	Sunny	29.8	8	23	Silt	450	1,300	1,750	Clay-loamy	1,100	2,700	3,800	0.14		
17	Ryujiin Dam	Ryujiin Dam	2013/11/15	Cloudy	23.2	9	21	Silt	220	540	760	Loamy	170	420	590	0.09		
18		Fujigawa Dam	2013/11/18	Sunny	12.6	9	33	Silt	120	330	450	Loamy	220	540	760	0.12		
19	Iida Dam	Iida Dam	2013/11/18	Sunny	17.4	9	25	Silt	130	32	45	Loamy	440	1,000	1,440	0.10		

- 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.
- Radioactive materials concentrations contain some measurement errors but are not noted here.

## ○Coast: Water Quality Monitoring Results

Sampling point		Sampling date	Weather	Full depth (m)	General items					Radioactive material concentrations (Bq/L)		Remarks
No.	Water body				Sampling depth (m)	Secchi disk depth (m)	Salinity (‰)	SS (mg/L)	Turbidity	Radioactive cesium		
										Cs-134	Cs-137	
1	Offshore of Satonegawa River Estuary	2013/11/19	Sunny	13.5	0.5	1.7	31	5	3	<1	<1	
					12.5		30	6	3	<1	<1	
2	Offshore of Okitagawa River Estuary	2013/11/19	Sunny	12.5	0.5	3.5	30	1	2	<1	<1	
					11.5		31	2	3	<1	<1	
3	Offshore of Momiyagawa River/Kujigawa River Estuaries	2013/11/19	Cloudy	10.5	0.5	3.0	29	2	2	<1	<1	
					9.5		31	1	1	<1	<1	
4	Neighboring water body of Ken-o Offshore of Nakagawa River	2013/11/19	Sunny	6.2	0.5	1.5	8	3	2	<1	<1	
					5.2		28	12	6	<1	<1	
5	Offshore of Tonegawa River Estuary	2013/11/22	Sunny	8.9	0.5	2.5	29	4	2	<1	<1	
					7.9		29	6	2	<1	<1	

• Sampling points are listed from north to south.

• Radioactive materials concentrations contain some measurement errors but are not noted here.

## ○Coast: Sediment Monitoring Results

No.	Water body	Sampling date	Weather	Full depth (m)	General items		Concentration of radioactive material [Bq/kg (dried mud)]			Remarks
					Mud content %	Property	Radioactive cesium			
							Cs-134	Cs-137	Total	
1	Offshore of Satonegawa River Estuary	2013/11/19	Sunny	13.5	70	Sand	13	40	53	
2	Offshore of Okitagawa River Estuary	2013/11/19	Sunny	12.5	81	Sand	<10	<10	-	
3	Offshore of Momiyagawa River/Kujigawa River Estuaries	2013/11/19	Cloudy	10.5	78	Sand	<10	<10	-	
4	Neighboring water body of Ken-o Offshore of Nakagawa River	2013/11/19	Sunny	6.2	82	Sand	<10	<10	-	
5	Offshore of Tonegawa River Estuary	2013/11/22	Sunny	8.9	78	Sand	<10	<10	-	

• Sampling points are listed from north to south.

• Radioactive materials concentrations contain some measurement errors but are not noted here.

