

(News Release)
The Results of Radioactive Material Monitoring of the Surface Water Bodies
within Gunma Prefecture
(July-September 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 Gunma Prefecture during the period of July 17-September 30, 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

68 environmental reference points, etc. in the surface water bodies within Gunma Prefecture
(Rivers: 44 locations, Lakes and headwaters: 24 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: May-July 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 1,000Bq/kg or below at all locations. For lakes and headwaters, levels were around 1,500Bq/kg or below at most locations, and have generally remained constant or had a declining tendency.

(Rivers)

Cs-134 + Cs-137: ND-950Bq/kg (dried mud) (*ND-470Bq/kg (dried mud))

(Lakes and head waters)

Cs-134 + Cs-137: 110-3,500Bq/kg (dried mud) (*21-3,400Bq/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	62 (58)	2 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	64 (58)
Lakes and headwaters	9 (9)	7 (7)	5 (3)	1 (0)	0 (2)	0 (2)	2 (1)	24 (24)

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

(Rivers)

Cs-134 + Cs-137: 15-12,200Bq/kg (dry) (*27-14,500Bq/kg (dry))

Spatial dose: 0.03-0.34μSv/h

(Lakes and headwaters)

Cs-134 + Cs-137: 138-8,300Bq/kg (dry) (*136-1,950Bq/kg (dry))

Spatial dose: 0.05-0.28μSv/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

(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			
												Cp-134	Cp-137		
1	Tonogawa River	Hirosebash Bridge	Minakamimachi Town	2013/8/28	Sunny	0.6	0.0	41	4	3	6	<1	<1		
		Tsukiyonobashi Bridge		2013/7/18	Sunny	0.3	0.0	>100	3	2	2	<1	<1		
2	Tonogawa River	Tsukiyonobashi Bridge	Minakamimachi Town	2013/8/28	Sunny	0.5	0.0	>100	6	7	8	<1	<1		
				2013/9/29	Sunny	0.5	0.0	39	7	6	8	<1	<1		
3	Akayagawa River	Kosodebashi Bridge		2013/8/28	Sunny	0.5	0.0	72	9	4	4	<1	<1		
				2013/7/18	Sunny	0.1	0.0	>100	6	2	1	<1	<1		
4	Sakuragawa River	In Oozu Yachi	Kawahamura Village	2013/8/16	Sunny	0.2	0.0	>100	7	1	1	<1	<1		
				2013/9/25	Cloudy	0.3	0.0	>100	6	<1	0	<1	<1		
5	Katashinagawa River	Kirinkobashi Bridge	Katashinamura Village	2013/8/13	Cloudy	0.2	0.0	>100	5	<1	0	<1	<1		
				2013/7/18	Sunny	0.3	0.0	>100	8	1	1	<1	<1		
6	Katashinagawa River	Tonemachitakutaya	Numata City	2013/8/16	Sunny	0.3	0.0	64	9	11	10	<1	<1		
				2013/9/25	Cloudy	0.8	0.0	>100	8	<1	1	<1	<1		
7	Katashinagawa River	Futabashi Bridge	Numata City	2013/7/18	Sunny	0.6	0.0	69	12	3	2	<1	<1		
				2013/8/16	Sunny	0.5	0.0	68	11	7	7	<1	<1		
8	Agatsumagawa River	Shintobashi Bridge	Naganoharamachi Town	2013/9/25	Cloudy	0.7	0.0	87	10	4	3	<1	<1		
				2013/8/20	Cloudy	0.3	0.0	51	23	20	9	<1	<1		
9	Shirasunogawa River	Shiratsunobashi Bridge	Nakanomomachi Town	2013/8/20	Cloudy	0.6	0.0	>100	15	<1	1	<1	<1		
				2013/7/19	Sunny	0.3	0.0	>100	31	<1	1	<1	<1		
10	Agatsumagawa River	Downstream of Azumabashi Bridge	Higashitagumamachi Town	2013/8/20	Sunny	0.4	0.0	>100	30	3	2	<1	<1		
				2013/9/26	Sunny	0.5	0.0	88	27	5	4	<1	<1		
11	Nakatagawa River	Tanodabashi Bridge	Takavamura Village	2013/8/20	Cloudy	0.4	0.0	>100	14	3	2	<1	<1		
				2013/7/19	Sunny	0.3	0.0	85	21	2	1	<1	<1		
12	Agatsumagawa River	Agatsumabashi Bridge	Shibukawashi City	2013/8/28	Sunny	0.7	0.0	>100	14	4	5	<1	<1		
				2013/9/29	Sunny	0.6	0.0	56	21	<1	7	<1	<1		
13	Tonogawa River	Taishobashi Bridge		2013/7/19	Sunny	0.7	0.0	>100	6	2	2	<1	<1		
				2013/8/28	Sunny	0.7	0.0	39	9	4	4	<1	<1		
14	Takazagawa River	Shimadawabashi Bridge	Shibukawashi City/Yoshikamachi Town	2013/9/29	Sunny	0.6	0.0	62	17	11	4	<1	<1		
				2013/8/27	Sunny	0.3	0.0	>100	16	8	2	<1	<1		
15	Tonogawa River	Giumabashi Bridge	Machibashi City	2013/8/22	Cloudy	0.3	0.0	42	11	16	8	<1	<1		
				2013/8/21	Cloudy	0.5	0.0	51	12	9	4	<1	<1		
16	Karasugawa River	Kamigondabashi Bridge	Takasaki City	2013/8/22	Sunny	0.2	0.0	>100	12	22	3	<1	<1		
				2013/8/22	Sunny	0.4	0.0	>100	13	3	2	<1	<1		
17	Karasugawa River	Nakasebashi Bridge	Amakashi City	2013/8/22	Cloudy	0.4	0.0	>100	19	7	3	<1	<1		
				2013/8/22	Sunny	0.4	0.0	40	44	7	4	<1	<1		
18	Usugawa River	Hanatabashi Bridge	Takasaki City	2013/8/22	Sunny	0.4	0.0	40	44	7	4	<1	<1		
				2013/8/23	Cloudy	0.3	0.0	>100	30	4	1	<1	<1		
19	Kaburagawa River	Tadikawabashi Bridge	Shimomomachi Town	2013/8/23	Cloudy	0.6	0.0	>100	30	4	1	<1	<1		
				2013/8/21	Cloudy	0.6	0.0	44	32	16	4	<1	<1		
20	Ogawa River	Kinazabashi Bridge	Karamachi Town	2013/8/23	Cloudy	0.2	0.0	>100	21	<1	1	<1	<1		
				2013/8/15	Sunny	0.2	0.0	>100	21	<1	0	<1	<1		
21	Niumokigawa River	Ozawabashi Bridge	Niumokimura Village	2013/8/15	Sunny	0.2	0.0	>100	21	<1	0	<1	<1		
				2013/8/20	Cloudy	0.3	0.0	21	3	1	3	<1	<1		
22	Soneyagawa River	Yakushibashi Bridge	Shimomura Village	2013/8/20	Cloudy	0.2	0.0	>100	21	3	1	<1	<1		
				2013/8/21	Cloudy	0.2	0.0	55	21	12	4	<1	<1		
23	Inogawa River	Kamakurabashi Bridge	Takasaki City	2013/8/21	Cloudy	0.2	0.0	55	21	12	4	<1	<1		
				2013/8/26	Sunny	0.3	0.0	41	37	9	3	<1	<1		
24	Karasugawa River	Iwakurabashi Bridge	Takasaki City/Tamuramachi Town	2013/8/26	Sunny	0.4	0.0	40	7	5	7	<1	<1		
				2013/8/20	Cloudy	0.5	0.0	86	18	10	3	<1	<1		
25	Tonogawa River	Bandobashi Bridge	Homyoshi City	2013/8/20	Cloudy	0.5	0.0	16	10	3	3	<1	<1		
				2013/8/21	Cloudy	0.5	0.0	61	16	10	3	<1	<1		
26	Momonokigawa River	Utsubashi Bridge	Machibashi City	2013/8/21	Cloudy	0.5	0.0	61	16	10	3	<1	<1		
				2013/8/21	Cloudy	0.2	0.0	>100	26	5	3	<1	<1		
27	Aratagawa River	Okuharabashi Bridge		2013/8/21	Cloudy	0.2	0.0	>100	26	5	3	<1	<1		
				2013/8/26	Sunny	0.6	0.0	31	28	8	8	<1	<1		
28	Kasakawa River	Hozumibashi Bridge	Iseaki City	2013/8/26	Sunny	0.6	0.0	31	28	8	8	<1	<1		
				2013/8/26	Sunny	0.5	0.0	48	23	9	4	<1	<1		
29	Hirosegawa River	Nakajimabashi Bridge	Iseaki City	2013/8/26	Sunny	0.6	0.0	31	28	8	8	<1	<1		
				2013/8/21	Cloudy	0.5	0.0	71	18	5	3	<1	<1		
30	Hayakawa River	Havakawabashi Bridge		2013/8/21	Cloudy	0.5	0.0	71	18	5	3	<1	<1		
				2013/8/26	Sunny	0.3	0.0	>100	30	13	4	<1	<1		
31	Masujimabashi Bridge		Otashi City	2013/7/17	Sunny	0.3	0.0	>100	12	2	2	<1	<1		
				2013/7/17	Sunny	0.3	0.0	>100	12	2	2	<1	<1		
32	Tonogawa River	Toneozeki Weir	Chiyodamachi Town/Gyodashi City	2013/7/17	Light rain	1.2	0.0	51	19	15	9	<1	<1		
				2013/8/26	Sunny	0.4	0.0	36	19	16	13	<1	<1		
33	Tonogawa River			2013/9/30	Sunny	0.4	0.0	27	34	10	6	<1	<1		
				2013/7/17	Cloudy	0.3	0.0	>100	8	5	1	<1	<1		
34	Kogiragawa River	Kayabashi Bridge	Kiryushi City	2013/8/7	Sunny	0.6	0.0	>100	7	2	1	<1	<1		
				2013/9/24	Sunny	0.6	0.0	>100	7	0	0	<1	<1		
35	Tonogawa River	Takatsudo		2013/8/8	Sunny	0.8	0.0	>100	11	3	2	<1	<1		
				2013/7/17	Cloudy	0.5	0.0	>100	12	2	2	<1	<1		
36	Watarasegawa River	Intake for Akarawayouji water channel		2013/8/8	Sunny	1.0	0.0	96	11	2	3	<1	<1		
				2013/9/30	Sunny	0.6	0.0	40	10	4	5	<1	<1		
37	Tonogawa River	Ejiribashi Bridge	Ouramachi Town	2013/8/5	Cloudy	0.4	0.0	82	22	4	2	<1	<1		
				2013/8/8	Sunny	0.5	0.0	>100	7	1	1	<1	<1		
38	Kiryugawa River	Kamomibashi Bridge	Kiryushi City	2013/8/8	Sunny	0.5	0.0	>100	7	1	1	<1	<1		
				2013/8/8	Sunny	0.6	0.0	>100	9	2	3	<1	<1		
39	Sakabashi Bridge		Kiryushi City/Ashikagashi City	2013/8/8	Sunny	0.6	0.0	>100	9	2	3	<1	<1		
				2013/8/5	Cloudy	1.1	0.0	27	29	16	5	<1	<1		
40	Fureudagawa River	Jonuma Lake		2013/8/5	Cloudy	1.1	0.0	27	29	16	5	<1	<1		
				2013/8/5	Cloudy	1.1	0.0	27	29	16	5	<1	<1		
41	Yatagawa River	Togodabashi Bridge	Miwamachi Town/Nakamachi Town	2013/8/5	Cloudy	1.8	0.0	77	38	4	3	<1	<1		
				2013/8/5	Cloudy	1.8	0.0	77	38	4	3	<1	<1		

* Collection 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			Radioactive material concentrations (Bq/kg (dried mud))			Remarks				
	Water body	Point	Municipality				Mud sampling depth (cm)	Mud content %	Property	Radioactive cesium							
										Cs-134	Cs-137	Total					
1	Tonegawa River	Hirosehashi Bridge	Minakamimachi Town	2013/8/28	Sunny	0.6	5	43	Silt	64	130	194					
2		Tsukiyonobashi Bridge		2013/7/18	Sunny	0.3	1	82	Gravel/sand	20	27	47					
3		Akayagawa River		Kotodebashi Bridge	2013/8/28	Sunny	0.5	5	74	Sand/gravel	37	78	115				
					2013/9/29	Sunny	0.5	5	83	Gravel/sand	12	28	40				
					2013/8/28	Sunny	0.5	5	74	Sand/gravel	20	40	60				
4		Sakuragawa River		In Oouza Yachi	Kawabamura Village	2013/7/18	Sunny	0.1	1	73	Gravel/sand	83	180	263			
2013/8/16						Sunny	0.2	6	79	Gravel/sand	82	140	222				
2013/9/25						Cloudy	0.3	5	76	Gravel/sand	38	88	126				
5		Katashinagawa River		Kirimokibashi Bridge	Katashinamura Village	2013/8/13	Cloudy	0.2	4	81	Gravel/sand	<10	17	17			
6						Tonemachitakatoya	Numatahshi City	2013/7/18	Sunny	0.3	1	78	Gravel/sand	<10	<10	-	
2013/8/16	Sunny		0.3					5	80	Gravel/sand	<10	<10	-				
2013/9/25	Cloudy	0.8	5	83	Gravel/sand			<10	<10	-							
7	Futabashi Bridge	Nagano	Nagano	2013/7/18	Sunny	0.6	3	75	Gravel/sand	28	67	95					
2013/8/16				Sunny	0.5	5	82	Gravel/sand	29	45	74						
2013/9/25				Cloudy	0.7	5	64	Gravel/sand	38	54	92						
8	Tonegawa River	Agatsumagawa River	Shutobashi Bridge	Naganoharamachi Town	2013/8/20	Cloudy	0.3	5	78	Sand/gravel	<10	<10	-				
9		Shirasunagawa River	Shuifutabashi Bridge	Nakanomomachi Town	2013/8/20	Cloudy	0.6	5	73	Gravel/sand	<10	<10	12				
10		Agatsumagawa River	Downtown of Anabashi Bridge	Higashigatsumamachi Town	2013/7/19	Sunny	0.3	1	73	Gravel/sand	<10	<10	-				
2013/8/20					Sunny	0.4	5	80	Gravel/sand	<10	12	12					
2013/9/26					Sunny	0.5	5	76	Gravel/sand	<10	<10	-					
11		Nakunagawa River	Tomodabashi Bridge	Takayamamura Village	2013/8/20	Cloudy	0.4	5	67	Gravel/sand	28	65	93				
12					Agatsumagawa River	Agatsumabashi Bridge	Shibukawashi City	2013/7/19	Sunny	0.3	1	84	Silt/sand	68	87	155	
2013/8/28								Sunny	0.7	5	75	Sand/gravel	20	51	71		
2013/9/29		Sunny	0.6	3				64	Sand	16	40	56					
13		Tonegawa River	Taishobashi Bridge	Shibukawashi City	2013/7/19	Sunny	0.7	1	78	Gravel/sand	17	48	65				
2013/8/28	Sunny				0.7	5	69	Sand/gravel	87	100	187						
2013/9/29	Sunny				0.6	3	76	Sand/gravel	<10	16	16						
14	Tonegawa River	Takizawagawa River	Shimokawabashi Bridge	Shibukawashi City/Yoshiokamachi Town	2013/8/27	Sunny	0.3	5	79	Gravel/sand	13	35	48				
15		Gumabashi Bridge	Maebashi City	Tamatsumamachi Town	2013/8/22	Cloudy	0.3	5	71	Silt/sand	40	100	140				
16					2013/8/21	Cloudy	0.5	5	76	Sand/gravel	16	40	56				
17	Karasuzawa River	Nagagigawa River	Kamigondabashi Bridge	Takasakishi City	2013/8/22	Sunny	0.2	5	71	Gravel/sand	46	130	176				
18		Karasuzawa River	Karasuzawabashi Bridge	Takatsumamachi Town	2013/8/22	Sunny	0.4	5	78	Gravel/sand	12	18	30				
19					2013/8/22	Cloudy	0.4	5	80	Gravel/sand	17	40	57				
20		Usugawa River	Haratatabashi Bridge	Takatsumamachi Town	2013/8/22	Sunny	0.4	6	75	Gravel/sand	19	49	68				
21					2013/8/23	Cloudy	0.3	5	81	Gravel/sand	<10	13	13				
22		Kaburagawa River	Yakushibashi Bridge	Shimotsunomachi Town	2013/8/21	Cloudy	0.6	5	62	Silt/gravel	14	35	49				
23					Ogawa River	Kanzanbashi Bridge	Kanramachi Town	2013/8/23	Cloudy	0.2	5	81	Gravel/sand	<10	16	16	
24								2013/8/15	Sunny	0.2	5	80	Gravel/sand	<10	21	21	
25		Nanmokogawa River	Yakushibashi Bridge	Shimotsunomachi Town	2013/8/20	Cloudy	0.2	5	70	Sand/gravel	18	49	67				
26					Inogawa River	Kamakurabashi Bridge	Takatsumamachi Town	2013/8/21	Cloudy	0.2	5	74	Sand/gravel	<10	19	19	
27	2013/8/26							Sunny	0.3	5	20	Silt	290	660	950		
28	Tonegawa River	Bandoobashi Bridge	Honjoshi City	2013/8/26	Sunny	0.4	3	49	Sand/silt	67	170	237					
29		Akagihatahata River	In Shimotsunomachi Town	Maebashi City	2013/8/20	Cloudy	0.6	5	73	Sand/silt	<10	17	17				
30					2013/8/21	Cloudy	0.5	5	72	Sand	<10	16	16				
31		Aratagawa River	Okubabashi Bridge	Takatsumamachi Town	2013/8/21	Cloudy	0.2	6	79	Sand/gravel	<10	<10	-				
32					2013/8/26	Sunny	0.6	5	31	Silt	96	190	286				
33		Hiroogawa River	Nakayabashi Bridge	Hosakishi City	2013/8/26	Sunny	0.5	5	76	Sand/silt	26	57	83				
34					Hayakawa River	Hayakawabashi Bridge	Otashi City	2013/8/21	Cloudy	0.5	5	77	Gravel/sand	28	54	82	
35								2013/8/26	Sunny	0.3	5	73	Sand/silt	49	120	169	
36		Tonegawa River	Tonozoki Weir	Chiyodamachi Town/Gyodashi City	2013/7/17	Light rain	1.2	1	81	Gravel/sand	16	34	50				
2013/8/26					Sunny	0.4	5	64	Sand/silt	36	59	95					
2013/9/30	Sunny				0.4	5	41	Silt/sand	130	270	400						
37	Koguragawa River	Kayanobashi Bridge	Kiryushi City	2013/7/17	Cloudy	0.3	2	75	Gravel/sand	47	110	157					
2013/8/7				Sunny	0.8	10	76	Sand/gravel	25	78	103						
2013/9/24				Sunny	0.6	5	73	Gravel/sand	14	34	48						
38	Wataragawa River	Takatsumado	Kiryushi City	2013/8/8	Sunny	0.8	10	71	Sand	17	44	61					
2013/7/17				Cloudy	0.5	5	78	Gravel/sand	33	57	90						
2013/9/30				Sunny	1.0	10	78	Sand/gravel	24	54	78						
39	Fataragawa River	Ejirabashi Bridge	Otsuramachi Town	2013/8/8	Sunny	0.6	4	75	Sand/gravel	21	41	62					
2013/9/5				Cloudy	0.4	49	49	Silt/sand	120	240	360						
2013/9/30				Sunny	0.6	10	78	Sand/gravel	39	71	110						
40	Kiryushi River	Kamomabashi Bridge	Kiryushi City	2013/8/8	Sunny	0.5	10	76	Sand/gravel	21	41	62					
41				2013/8/8	Sunny	0.6	10	76	Sand/gravel	21	41	62					
42	Kiryushi River	Sakabashi Bridge	Kiryushi City/Ashikagashi City	2013/8/8	Sunny	1.1	10	294	Silt	160	350	510					
43				2013/8/5	Cloudy	1.1	10	72	Sand/gravel	17	35	52					
44	Yatagawa River	Tonodabashi Bridge	Matsunomachi Town/Ikumamachi Town	2013/8/5	Cloudy	1.8	10	72	Sand/gravel	17	35	52					

* Collection 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	Property	Left bank				Right bank				Remarks	
	Water body	Point	Municipality				Radioactive material concentrations (Bq/kg (dry))			Air dose (μSv/h)	Property	Radioactive material concentrations (Bq/kg (dry))				Air dose (μSv/h)
							Radioactive cesium					Radioactive cesium				
							Cs-134	Cs-137	Total			Cs-134	Cs-137	Total		
1	Tonegawa River	Hiroehashi Bridge	Minakamimachi Town	2013/8/28	Sunny	Loamy	1,100	2,500	3,600	0.21	Loamy	490	1,600	1,490	0.21	
2		Tsukiyonobashi Bridge		2013/7/18	Sunny	Loamy	140	310	450	0.10	Loamy	500	1,000	1,500	0.09	
3	Akayagawa River	Kosodehoshi Bridge	Kawabamura Village	2013/8/28	Sunny	Loamy	170	340	510	0.12	Loamy	430	1,600	1,430	0.11	
4		In Oouza Yachi		2013/9/29	Sunny	Loamy	230	540	770	0.13	Loamy	630	1,400	2,030	0.10	
5	Sakuragawa River	In Oouza Yachi	Kawabamura Village	2013/8/28	Sunny	Loamy	31	71	102	0.09	Loamy	89	210	299	0.09	
6		Kirinochubashi Bridge		2013/7/18	Sunny	Loamy	1,500	3,100	4,600	0.27	Loamy	2,300	5,000	7,300	0.20	
7	Katashingawa River	Kirinochubashi Bridge	Katashinamura Village	2013/8/25	Cloudy	Loamy	900	1,900	2,800	0.29	Loamy	760	1,700	2,460	0.27	
8		Futabashi Bridge		2013/8/16	Sunny	Sandy	3,400	8,000	11,400	0.23	Loamy	2,800	6,000	8,800	0.25	
9	Agatsumagawa River	Shimobashi Bridge	Naganoharamachi Town	2013/8/13	Cloudy	Loamy	490	900	1,390	0.09	Loamy	240	520	760	0.10	
10		Shinobashi Bridge		2013/7/18	Sunny	Sandy	39	74	113	0.08	Sandy	49	98	147	0.10	
11	Nakutagawa River	Fonobashi Bridge	Takayamura Village	2013/8/16	Sunny	Sandy	29	65	94	0.10	Loamy	51	82	133	0.11	
12		Agatsumabashi Bridge		2013/9/25	Cloudy	Sandy	-10	16	6	0.09	Sandy	-10	29	29	0.10	
13	Tonegawa River	Futabashi Bridge	Shibukawashi City	2013/7/18	Sunny	Loamy	790	1,800	2,590	0.08	Loamy	230	460	690	0.08	
14		Agatsumabashi Bridge		2013/8/16	Sunny	Loamy	380	840	1,220	0.09	Loamy	190	420	610	0.08	
15	Tonegawa River	Futabashi Bridge	Shibukawashi City	2013/9/25	Cloudy	Loamy	560	1,200	1,760	0.09	Loamy	400	870	1,270	0.10	
16		Shinobashi Bridge		2013/8/20	Cloudy	Loamy	490	700	1,190	0.08	Loamy	310	610	920	0.07	
17	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/8/20	Cloudy	Loamy	150	224	374	0.08	Loamy	290	390	580	0.07	
18		Agatsumabashi Bridge		2013/7/19	Sunny	Loamy	120	163	283	0.07	Loamy	650	1,400	2,050	0.08	
19	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/8/20	Sunny	Sandy	15	40	55	0.05	Loamy	390	840	1,230	0.08	
20		Agatsumabashi Bridge		2013/8/26	Sunny	Sandy	-10	13	3	0.05	Loamy	410	930	1,340	0.08	
21	Tonegawa River	Futabashi Bridge	Takayamura Village	2013/8/20	Cloudy	Loamy	67	160	227	0.08	Loamy	150	330	480	0.06	
22		Agatsumabashi Bridge		2013/7/19	Sunny	Loamy	580	1,200	1,780	0.09	Loamy	720	1,600	2,320	0.08	
23	Tonegawa River	Futabashi Bridge	Shibukawashi City	2013/8/28	Sunny	Loamy	310	770	1,080	0.08	Loamy	480	1,000	1,480	0.04	
24		Agatsumabashi Bridge		2013/9/29	Sunny	Loamy	340	730	1,070	0.08	Loamy	490	1,000	1,490	0.08	
25	Tonegawa River	Futabashi Bridge	Shibukawashi City	2013/7/19	Sunny	Loamy	440	970	1,410	0.06	Loamy	580	1,200	1,780	0.07	
26		Agatsumabashi Bridge		2013/8/28	Sunny	Loamy	180	380	560	0.07	Loamy	1,200	2,600	3,800	0.08	
27	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/9/29	Sunny	Loamy	240	570	810	0.05	Loamy	890	1,800	2,690	0.07	
28		Agatsumabashi Bridge		2013/8/22	Cloudy	Loamy	20	45	65	0.05	Loamy	100	230	330	0.04	
29	Tonegawa River	Futabashi Bridge	Shibukawashi City	2013/8/21	Cloudy	Loamy	45	100	145	0.06	Loamy	43	97	139	0.06	
30		Agatsumabashi Bridge		2013/8/22	Sunny	Loamy	210	470	680	0.07	Loamy	260	596	856	0.14	
31	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/8/22	Sunny	Loamy	650	950	1,600	0.08	Loamy	950	1,410	2,360	0.09	
32		Agatsumabashi Bridge		2013/8/22	Cloudy	Loamy	280	560	840	0.12	Loamy	430	850	1,280	0.08	
33	Tonegawa River	Futabashi Bridge	Shibukawashi City	2013/8/22	Sunny	Loamy	230	500	730	0.06	Loamy	270	570	840	0.06	
34		Agatsumabashi Bridge		2013/8/23	Cloudy	Loamy	720	390	1,110	0.10	Sandy	210	42	63	0.08	
35	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/8/23	Cloudy	Loamy	36	91	127	0.03	Loamy	70	140	210	0.04	
36		Agatsumabashi Bridge		2013/8/23	Cloudy	Loamy	86	180	266	0.06	Loamy	73	160	233	0.06	
37	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/8/23	Cloudy	Loamy	45	130	175	0.07	Loamy	92	200	292	0.09	
38		Agatsumabashi Bridge		2013/8/15	Sunny	Sandy	750	1,600	2,350	0.08	Sandy	500	990	1,490	0.09	
39	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/8/20	Cloudy	Loamy	73	160	233	0.05	Loamy	120	270	390	0.05	
40		Agatsumabashi Bridge		2013/8/26	Sunny	Loamy	54	150	204	0.05	Loamy	41	110	151	0.05	
41	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/8/26	Sunny	Loamy	37	100	137	0.05	Loamy	28	84	112	0.05	
42		Agatsumabashi Bridge		2013/8/20	Cloudy	Loamy	120	173	293	0.05	Loamy	140	210	350	0.05	
43	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/8/21	Cloudy	Loamy	54	99	153	0.05	Loamy	56	136	192	0.06	
44		Agatsumabashi Bridge		2013/8/21	Cloudy	Loamy	37	91	128	0.04	Loamy	49	92	141	0.04	
45	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/8/26	Sunny	Loamy	82	122	204	0.05	Loamy	38	128	166	0.05	
46		Agatsumabashi Bridge		2013/8/26	Sunny	Loamy	86	180	266	0.06	Loamy	73	160	233	0.06	
47	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/8/21	Cloudy	Loamy	130	320	450	0.06	Loamy	190	380	570	0.06	
48		Agatsumabashi Bridge		2013/8/26	Sunny	Loamy	150	330	480	0.05	Loamy	72	150	222	0.07	
49	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/7/17	Light rain	Loamy	220	520	740	0.07	Loamy	97	210	307	0.07	
50		Agatsumabashi Bridge		2013/8/26	Sunny	Loamy	89	170	259	0.07	Loamy	160	360	520	0.10	
51	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/9/30	Sunny	Loamy	310	440	750	0.07	Loamy	200	470	670	0.12	
52		Agatsumabashi Bridge		2013/7/17	Cloudy	Loamy	620	1,300	1,920	0.16	Loamy	3,900	8,300	12,200	0.34	
53	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/8/20	Sunny	Loamy	120	173	293	0.15	Loamy	2,100	4,400	6,500	0.25	
54		Agatsumabashi Bridge		2013/9/24	Sunny	Loamy	590	1,200	1,790	0.15	Loamy	820	2,010	2,830	0.14	
55	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/8/8	Sunny	Loamy	59	199	258	0.08	Loamy	70	160	230	0.08	
56		Agatsumabashi Bridge		2013/7/17	Cloudy	Loamy	310	400	710	0.09	Loamy	120	240	360	0.08	
57	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/8/8	Sunny	Loamy	520	520	1,040	0.06	Loamy	43	126	169	0.08	
58		Agatsumabashi Bridge		2013/9/30	Sunny	Loamy	95	260	355	0.08	Loamy	150	290	440	0.08	
59	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/8/5	Cloudy	Loamy	210	460	670	0.06	Loamy	71	170	241	0.06	
60		Agatsumabashi Bridge		2013/8/8	Sunny	Loamy	100	210	310	0.07	Loamy	110	250	360	0.08	
61	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/8/8	Sunny	Loamy	120	120	240	0.07	Loamy	110	110	220	0.07	
62		Agatsumabashi Bridge		2013/8/5	Cloudy	Loamy	360	500	860	0.06	Loamy	500	370	870	0.07	
63	Tonegawa River	Shinobashi Bridge	Shibukawashi City	2013/8/5	Cloudy	Loamy	180	350	530	0.08	Loamy	120	240	360	0.07	
64		Agatsumabashi Bridge		2013/8/5	Cloudy	Loamy	350	520	870	0.08	Loamy	120	240	360	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.

* Collection 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	Tonegawa River Water Body	Okutoneko Lake (Yagisawa Dam)	Center	Minakamimachi Town	Surface layer	2013/8/2	Cloudy	75.5	0.5	2.6	2	<1	2	<1	<1	
					Lower layer				74.5			2	2	3	<1	<1
		Naramatako Lake (Naramata Dam)	Center	Minakamimachi Town	Surface layer	2013/8/2	Sunny	63.5	0.5	2.8	3	2	2	<1	<1	<1
					Lower layer				62.5			5	56	26	<1	<1
		Dogenko Lake (Sudagai Dam)	Center	Katashinamura Village	Surface layer	2013/8/5	Cloudy	42.4	0.5	1.1	3	5	6	<1	<1	<1
					Lower layer				41.4			3	2	2	<1	<1
		Marunuma Lake (Marunuma Dam)	Center	Minakamimachi Town	Surface layer	2013/7/31	Sunny	42.0	0.5	5.0	6	<1	1	<1	<1	<1
					Lower layer				41.0			10	2	2	<1	<1
		Fujiwarako Lake (Fujiwara Dam)	Center	Numatashi City	Surface layer	2013/8/5	Cloudy	48.3	0.5	0.8	3	8	10	<1	<1	<1
Lower layer							47.3			4	2	2	<1	<1		
Tanbarako Lake (Tanbara Dam)	Center	Minakamimachi Town	Surface layer	2013/8/6	Cloudy	40.7	0.5	8.5	4	<1	1	<1	<1	<1		
			Lower layer				39.7			3	3	2	<1	<1		
Akayako Lake (Aimata Dam)	Center	Numatashi City	Surface layer	2013/8/6	Sunny	30.9	0.5	2.7	9	2	2	<1	<1	<1		
			Lower layer				29.9			6	4	4	<1	<1		
Sonoharako Lake (Sonohara Dam)	Center	Maebashishi City	Surface layer	2013/8/1	Cloudy	28.3	0.5	2.6	8	8	5	<1	<1	<1		
			Lower layer				27.3			9	7	4	<1	<1		
Akagionuma Lake	Center	Nakanojomachi Town	Surface layer	2013/7/31	Sunny	16.8	0.5	4.8	4	<1	1	<1	<1	<1		
			Lower layer				15.8			6	5	4	<1	<1		
10	Agatsumagawa River Water Body	Okushimako Lake (Shimagawa Dam)	Center	Tsumagoimura Village	Surface layer	2013/8/7	Sunny	29.0	0.5	5.0	9	2	1	<1	<1	
					Lower layer				28.0			17	<1	1	<1	<1
11	Agatsumagawa River Water Body	Shimako Lake (Nakanajo Dam)	Center	Tsumagoimura Village	Surface layer	2013/8/7	Sunny	8.1	0.5	2.7	12	2	2	<1	<1	
					Lower layer				7.1			14	2	1	<1	<1
12	Agatsumagawa River Water Body	Tashiroko Lake (Kazawa Dam)	Center	Tsumagoimura Village	Surface layer	2013/8/9	Sunny	4.6	0.5	2.7	7	1	3	<1	<1	
					Lower layer				3.6			7	2	2	<1	<1
13	Karasugawa River Water Body	Harunako Lake	Center	Takasakishi City	Surface layer	2013/8/13	Cloudy	13.9	0.5	3.7	9	<1	1	<1	<1	
					Lower layer				12.9			9	2	4	<1	<1
14	Karasugawa River Water Body	Kirizumiko Lake (Kirizumi Dam)	Center	Annakashi City	Surface layer	2013/8/12	Sunny	9.1	0.5	2.1	12	2	3	<1	<1	
					Lower layer				8.1			13	7	5	<1	<1
15	Karasugawa River Water Body	Usuiko Lake (Sakamoto Dam)	Center	Shimonitamachi Town	Surface layer	2013/8/12	Sunny	13.2	0.5	4.0	11	<1	1	<1	<1	
					Lower layer				12.2			14	4	5	<1	<1
16	Karasugawa River Water Body	Arafuneko Lake (Dodairagawa Dam)	Center	Tomiokashi City	Surface layer	2013/8/14	Sunny	24.9	0.5	2.6	38	1	2	<1	<1	
					Lower layer				23.9			46	3	5	<1	<1
17	Karasugawa River Water Body	Oshioke Lake (Oshio Dam)	Center	Fujokashi City	Surface layer	2013/8/14	Sunny	10.9	0.5	2.6	20	2	2	<1	<1	
					Lower layer				9.9			19	3	2	<1	<1
18	Karasugawa River Water Body	Kannako Lake (Shimokubo Dam)	Center	Kannamachi Town	Surface layer	2013/8/27	Sunny	45.3	0.5	0.3	22	20	15	<1	<1	
					Lower layer				44.3			19	74	66	<1	<1
19	Karasugawa River Water Body	Hebikamiko Lake (Shiozawa Dam)	Center	Midorishi City	Surface layer	2013/8/15	Sunny	7.7	0.5	2.3	17	2	3	<1	<1	
					Lower layer				6.7			20	3	6	<1	<1
20	Watarasegawa River Water Body	Kusakiko Lake (Kusaki Dam)	Center	Kiryushi City	Surface layer	2013/7/30	Sunny	25.8	0.5	1.7	12	2	5	<1	<1	
					Lower layer				24.8			12	2	8	<1	<1
21	Watarasegawa River Water Body	Umedako Lake (Kiryugawa Dam)	Center	Kiryushi City	Surface layer	2013/7/30	Sunny	28.2	0.5	2.1	7	1	2	<1	<1	
					Lower layer				27.2			10	<1	3	<1	<1
22	Nakatsugawa River Water Body	Nozoriko Lake (Nozori Dam)	Center	Nakanojomachi Town	Surface layer	2013/8/8	Cloudy	19.6	0.5	6.6	3	<1	1	<1	<1	
					Lower layer				18.6			3	1	1	<1	<1
23	Watarasegawa River Water Body	Jonuma Lake	Center	Tatebayashishi City	Surface layer	2013/8/19	Sunny	1.8	0.5	0.5	29	40	17	<1	<1	
					Lower layer				0.8			29	46	14	<1	<1
24	Watarasegawa River Water Body	Tataranuma Lake	Center	Tatebayashishi City	Surface layer	2013/8/19	Sunny	6.0	0.5	2.2	23	6	6	<1	<1	
					Lower layer				5.0			23	11	4	<1	<1

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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
								General items			Radioactive material concentrations (Bq/kg (dried mud))		Property	Soil				
No.	Point		Municipality	Mud sampling depth (cm)	Mud content %	Property	Radioactive cesium			Property	Radioactive material concentrations (Bq/kg (dry))			Air dose (μSv/h)				
							Cs-134	Cs-137	Total		Cs-134	Cs-137			Total			
1	Tonegawa River Water Body	Okutoneko Lake (Yagisawa Dam)	Center	2013/8/2	Cloudy	75.5	8	40	Silt	400	830	1,230	Loamy	48	90	138	0.17	
2		Naramatako Lake (Naramata Dam)	Center	2013/8/2	Sunny	63.5	8	33	Silt	360	740	1,100	Sandy	80	150	230	0.22	
3		Dogenko Lake (Sudagai Dam)	Center	2013/8/5	Cloudy	42.4	8	37	Silt	190	470	660	Loamy	400	840	1,240	0.22	
4		Marunuma Lake (Marunuma Dam)	Center	2013/7/31	Sunny	42.0	10	23	Silt	31	120	151	Loamy	49	110	159	0.11	
5		Fujiwarako Lake (Fujiwara Dam)	Center	2013/8/5	Cloudy	48.3	10	36	Silt	330	830	1,160	Loamy	580	1,400	1,980	0.07	
6		Tanbarako Lake (Tanbara Dam)	Center	2013/8/6	Cloudy	40.7	7	29	Silt	100	290	390	Loamy	1,000	2,200	3,200	0.17	
7		Akayako Lake (Aimata Dam)	Center	2013/8/6	Sunny	30.9	10	41	Silt	1,100	2,400	3,500	Loamy	310	710	1,020	0.11	
8		Sonoharako Lake (Sonohara Dam)	Center	2013/8/1	Cloudy	28.3	10	41	Silt	130	310	440	Loamy	270	580	850	0.12	
9		Akagionuma Lake	Center	2013/7/31	Sunny	16.8	9	17	Silt	560	1,300	1,860	Loamy	270	680	950	0.10	
10	Agatsumagawa River Water Body	Okushimako Lake (Shimagawa Dam)	Center	2013/8/7	Sunny	29.0	8	38	Silt	200	430	630	Loamy	2,600	5,700	8,300	0.16	
11		Shimako Lake (Nakanojo Dam)	Center	2013/8/7	Sunny	8.1	9	46	Silt/sand	400	790	1,190	Loamy	230	500	730	0.09	
12		Tashiroko Lake (Kazawa Dam)	Center	2013/8/9	Sunny	4.6	9	30	Silt	39	71	110	Loamy	270	630	900	0.09	
13	Karasugawa River Water Body	Harunako Lake	Center	2013/8/13	Cloudy	13.9	9	9	Silt	140	320	460	Loamy	920	2,000	2,920	0.28	
14		Kirizumiko Lake (Kirizumi Dam)	Center	2013/8/12	Sunny	9.1	10	42	Silt	100	210	310	Loamy	520	1,100	1,620	0.11	
15		Utsuiko Lake (Sakamoto Dam)	Center	2013/8/12	Sunny	13.2	8	29	Silt	1,000	2,400	3,400	Loamy	280	570	850	0.10	
16		Arafuneko Lake (Dodairagawa Dam)	Center	2013/8/14	Sunny	24.9	7	33	Silt	190	440	630	Loamy	190	410	600	0.10	
17		Oshio Lake (Oshio Dam)	Center	2013/8/14	Sunny	10.9	10	30	Silt	190	470	660	Loamy	130	320	450	0.09	
18		Kannako Lake (Shimokubo Dam)	Center	2013/8/27	Sunny	45.3	10	35	Silt	110	210	320	Loamy	62	140	202	0.06	
19		Hebikamiko Lake (Shiozawa Dam)	Center	2013/8/15	Sunny	7.7	7	40	Silt	230	490	720	Loamy	96	220	316	0.06	
20	Watarasegawa River Water Body	Kusakiko Lake (Kusaki Dam)	Center	2013/7/30	Sunny	25.8	10	45	Silt	300	710	1,010	Loamy	380	810	1,190	0.14	
21	Umedako Lake (Kiryugawa Dam)	Center	2013/7/30	Sunny	28.2	10	27	Silt	63	140	203	Loamy	220	420	640	0.08		
22	Nakatsugawa River Water Body	Nozoriko Lake (Nozori Dam)	Center	2013/8/8	Cloudy	19.6	8	30	Silt	170	490	660	Loamy	130	290	420	0.06	
23	Watarasegawa River Water Body	Jonuma Lake	Center	2013/8/19	Sunny	1.8	7	20	Silt	71	230	301	Loamy	86	150	236	0.05	
24	Tataranuma Lake	Center	2013/8/19	Sunny	6.0	9	18	Silt	280	670	950	Loamy	99	240	339	0.06		

• Samples for surrounding environment (lake shore) 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.

• Collection points are listed from North to South.

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

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