## (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 12-December 25 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 locations)

- (2) Survey Method
  - Measurement of concentrations of radioactive materials (radioactive cesium (Cs-134 and Cs-137), etc.) 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 2012)
  - (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 both the rivers and lakes/headwaters measured were around 500Bq/kg or below,

and have generally remained constant or had a declining tendency.

(Rivers)

Cs-134+Cs-137: ND-500Bq/kg (dried mud) (\*ND-1,780Bq/kg (dried mud))

(Lakes and headwaters)

Cs-134+Cs-137: 25-2,500Bq/kg (dried mud) (\*11-4,100Bq/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	63 (91)	0 (2)	0 (2)	0 (0)	0 (0)	0 (0)	0 (0)	63 (95)
Lakes and headwaters	5 (6)	1 (6)	0(1)	0 (0)	1 (0)	0 (0)	(2)	7 (15)

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

(Rivers)

Cs-134+Cs-137: 48-9,600Bq/kg (dry) (\*25-32,000Bq/kg (dry))

Spatial dose: 0.07-0.82µSv/h

(Lakes and headwaters)

Cs-134+Cs-137: 69-3,600Bq/kg (dry) (\*94-4,700Bq/kg (dry))

Spatial dose:  $0.08-0.52\mu Sv/h$ 

(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

ORiv	er: Wa	ater Qu	ality .	Monitorin	g Results													
				Sar	mpling point							General items			Concentr	ation of radioactive material Bq/	/L	1
		***			n : .	14	Sampling date	Weather	Full depth m	Sampling depth	Transparency	Electrical conductivity	SS	Turbidity	Radioactive iodine	Radioactive cesiu	um	Remarks
No.		wat	er body		Point	Municipality				m	cm	mS/m	mS/m mg/L		I-131	Cs-134	Cs-137	Ì
1		N	I.		Ikuvobashishita	Nasushiobarashi City	2012/12/18	Rain	0.55	0.0	>100	15	<1	<0.1	<1	<1	<1	
2		a	ı	Nakagawa River	Komeibashi Bridge	Nasushiobarashi City/Nasumachi Town	2012/12/18	Sunny	0.30	0.0	>100	16	<1	0	<1	<1	<1	
3		k	1	Takaomatagawa River	Takaomatabashi Bridge		2012/12/18	Sunny	0.35	0.0	>100		<1	ű ő	<1	<1	<1	
4		a		Yukawa River	Yukawabashi Bridge	Nasumachi Town	2012/12/18	Sunny	0.30	0.0	>100		<1	0	<1	<1	<1	
5		g	1	Nakagawa River	Kamikuroiso	Nasushiobarashi City/Nasumachi Town	2012/12/18	Cloudy	0.15	0.0	>100	22	<1	0	<1	<1	<1	
6		a	3	Yosasagawa River	Yosasabashi Bridge	Nasumachi Town	2012/12/18	Sunny	0.40	0.0			<1	0	<1	<1	<1	
7		w		Kurokawa River	Shindenbashi Bridge		2012/12/19	Sunny	0.30	0.0			<1	1	<1	<1	<1	
8		9		Yosasagawa River	Kawadabashi Bridge	Otawarashi City/Nasumachi Town	2012/12/19	Sunny	0.45	0.0	94		4	3	<1	<1	<1	
9				Nakagawa River	Kurobane	4	2012/12/19	Sunny	0.20	0.0	90 >100			2	<1	<1	<1	
10		D		Matsubagawa River Sahigawa River	Tributary Udagawahashi Bridge	Otawarashi City	2012/12/19 2012/12/20	Sunny Sunny	0.45 0.25				<1	0	<1	<1	<1 <1	·
12		i.			Momuranakabashi Bridge	1	2012/12/20	Sunny	0.23	0.0	>100			0	<1	<1	<1	
13		1	Ľ.	Wolliulagawa Kivei	Yunohara		2012/12/20	Rain	0.20	0.0	>100			1	<1	<1	<1	
14		v	I.		Sekibabashi Bridge	Nasushiobarashi City	2012/12/17	Rain	0.60	0.0	>100		<1	i	<1	<1	<1	
15		e	1	Hokigawa River	Iwaibashi Bridge	Orman de Cita	2012/12/20	Sunny	0.90	0.0	>100	23	<1	0	<1	<1	<1	
16		r			Hokigawabashi Bridge	Otawarashi City	2012/12/20	Sunny	0.60	0.0	>100	21	<1	0	<1	<1	<1	
17				Nakagawa River	Shinnakabashi Bridge	Nakagawamachi Town	2012/12/20	Sunny	0.25	0.0	>100	21	<1	0	<1	<1	<1	
18		S	2	Mumogawa River	Koseibashi Bridge		2012/12/20	Sunny	0.65	0.0	>100	14	2	1	<1	<1	<1	
19		y		Arakawa River	Saikachibashi Bridge	Shioyamachi Town	2012/12/19	Sunny	0.70	0.0	>100	8	1	1	<1	<1	<1	
20		s			Renjobashi Bridge	Sakurashi City	2012/12/21	Sunny	0.30	0.0	>100		<1	1	<1	<1	<1	
21		t	τ	Uchikawa River	Tanakabashi Bridge Asahibashi Bridge	Yaitashi City Sakurashi City	2012/12/19 2012/12/21	Sunny	0.40 0.50	0.0	>100 >100	11	2		<1	<1	<1	·
22		e		Arakawa River	Mukadabashi Bridge		2012/12/21	Sunny	0.50	0.0	>100 50	21	- 1	1	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		<1	
23		m		Egawa River	Tributary	Nasukarasuyamashi City	2012/12/21	Sunny	0.20	0.0	>100		<1	1	<1	<1	<1	
25				Kinugawa River	Kawaji Daiichi Power Station, front		2012/12/11	Sunny	0.40	0.0	>100		<1	,	<1	<1	<1	
26		K		Yunishigawa River	Maesawabashi Bridge		2012/12/11	Sunny	1.00	0.0			<1	0	<1		<1	
27		i n u		Ojikagawa River	Tributary	1	2012/12/11	Sunny	0.50	0.0	>100	10	<1	0	<1	<1	<1	
28	_		I	Kinugawa River	Kosagoe	1	2012/12/11	Sunny	2.30	0.0			<1	0	<1	<1	<1	
	T				r Kosagoe er Tributary Nik	1	2012/10/15	Cloudy	1.50	0.0	>100		<1	0	<1	<1	<1	
29	0	g	l l	Itaanagawa River			2012/11/18	Sunny	1.20	0.0	>100		<1	0	<1	<1	<1	
	n	a	L.		-	Nikkoshi City	2012/12/12	Sunny	0.40	0.0	>100		<1	0	<1	<1 <1	<1	
30	e	w		Yukawa River			2012/12/4 2012/12/12	Cloudy	0.30 0.25	0.0			4	-0.1	<1	<1	<1	
22	g	a		Daiyagawa River Shidobuchigawa River	Shinkyo Bridge Sujichigaibashi Bridge	•	2012/12/12	Sunny Sunny	0.25	0.0	>100			<0.1	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		- N	
32	a			Silidoodelligawa Kivei	Sujicinganoasii Bridge	1	2012/10/15	Sunny	0.10	0.0	42		-1	3	<1	<1	<1	
33	w	R	I	Daiyagawa River	Kaishinbashi Bridge (Harigai)		2012/11/18	Sunny	0.20	0.0	>100		<1	0	<1	<1	<1	
	a						2012/12/12	Cloudy	0.35	0.0	>100	13	<1	0	<1	<1	<1	
		1					2012/10/15	Sunny	0.40	0.0	>100	12	<1	1	<1	<1	<1	
34		v	F	Kinugawa River	Sanuki	Shioyamachi Town	2012/11/18	Sunny	0.20	0.0	82		2	1	<1	<1	<1	
		e	L				2012/12/12	Sunny	0.20	0.0	>100		5	2	<1	<1	<1	
35		r	1	Nishikinugawa River	Nishikinugawabashi Bridge	Utsunomiyashi City	2012/12/13	Sunny	0.40	0.0	>100	14	1	1	<1	<1	<1	·
36	R		F	Kinugawa River	Kinugawabashi Bridge (Hoshakuji Temple)  Daidoizumibashi Bridge	Utsanomiyashi City/Takanezawamachi Town Mookashi City	2012/12/13 2012/12/10	Sunny	0.40 0.90	0.0	>100 >100		2		<1	<1	<1	·
3/	i	S	-	Egawa River	Tributary	Mookasni City Shimotsukeshi City	2012/12/10	Sunny	0.40	0.0	>100		<1	- 1	<1 <1	<1	<1	
30	v	y	-		Nikko City Hall, front		2012/12/10	Sunny	0.40	0.0			1	1	<1	<1	<1	
40		s	1	Akaborigawa River	Kiwadajima	Nikkoshi City	2012/12/13	Sunny	0.50	0.0		17	<1	i	<1	<1	<1	
41	r	t	Ī	Tagawa River	Ozobashi Bridge	Utsunomiyashi City	2012/12/13	Sunny	0.25	0.0	>100		2	1	<1	<1	<1	
42	.	e		Kamagawa River	Tsukushibashi Bridge	осык/ппуази спу	2012/12/13	Sunny	0.20	0.0	>100		3	1	<1	<1	<1	
43		m		Tagawa River	Meijibashi Bridge	Kaminokawamachi Town	2012/12/14	Sunny	0.20	0.0	>100		1	1	<1	<1	<1	
44	<u> </u>				Yanabashi Bridge	Oyamashi City	2012/12/10	Sunny	0.60	0.0	>100		1	1	<1	<1	<1	<b></b>
45		W	I	Kurokawa River	Kaijimabashi Bridge	Kanumashi City	2012/12/4	Rain	0.60	0.0	>100	10	4	1	<1	<1	<1	H
46	a	a a	<u>.</u>	Ozaki zama Bira	Onaribashi Bridge Akaishibashi Bridge	Mibumachi Town	2012/12/4 2012/12/4	Sunny Cloudy	0.25 0.40	0.0	70 >100	21	3	3	<1	<1	<1	
47	S	t Omoigas		Oashigawa River Koyabugawa River	Akaishibashi Bridge Kovabubashi Bridge	Kanumashi City	2012/12/4	Cloudy Rain	0.40	0.0			<1 2	1	<i< td=""><td>&lt;1</td><td><i< td=""><td></td></i<></td></i<>	<1	<i< td=""><td></td></i<>	
49	у	a	_		Tamotsubashi Bridge	Tochigishi City	2012/12/4	Sunny	0.50	0.0			3	2	<1	<1	<1	
50	s	r		Omoigawa River	Otomeohashi Bridge	Ovamashi City	2012/12/3	Cloudy	0.40		>100		2	2	<1		<1	
51	t R	a Uzumaga	wa River I	Uzumagawa River	Uzumabashi Bridge	Tochigishi City	2012/12/3	Cloudy	0.35	0.0	93	27	5	2	<1	<1	<1	
52	e i	s			Watarasegawa River intake weir at Sori Power Station	Nikkoshi City	2012/10/12	Sunny	0.30	0.0	>100	12	<1	0	<1	<1	<1	
32	m v	/ e	I				2012/12/6	Sunny	0.20	0.0	>100	9	<1	0	<1	<1	<1	
53	e		segawa	Watarasegawa River	Hajikabashi Bridge	Ashikagashi City/Otashi City	2012/12/25	Sunny	0.30	0.0	>100	15	1	1	<1	<1	<1	
54	r	a Ri	ver		Nakabashi Bridge	Ashikagashi City	2012/12/25	Sunny	0.50	0.0	>100		<1	1	<1	<1	<1	
55		w			Wataraseohashi Bridge	Tatebayashishi City	2012/12/25	Sunny	0.50	0.0	>100		<1	1	<1	<1	<1	
36	Camplin -	points for rive	o ara lict-	d from north to	Shinkaibashi Bridge h, and for different points along the river, from	Tochigishi City	2012/12/25	Sunny	0.20	0.0	>100	27	15	4	<1		<1	
	Jampinig	points for five	s are liste	a nominorui to sout	ii, and for different points along the river, from	rupstream to downstream.												

#### ORiver: Sediment Monitoring Results

CICIV	ci. Scui	ment Monitorin	Sampling	ooint		I		Full depth		General items		С	oncentration of radioactiv	e material Bq/kg (dried mud)		
No.		Water body		Point	Municipality	Sampling date	Weather	m m	Mud sampling depth cm	Mud content	Property	Radioactive iodine I-131	Cs-134	Radioactive cesium Cs-137	Total	Remarks
1			Nakagawa River	Ikuyobashishita	Nasushiobarashi City	2012/12/18	Rain	0.55	2	91	Gravel/sand	<30	<10	19	19	
2			-	Komeibashi Bridge	Nasushiobarashi City/Nasumachi Town	2012/12/18	Sunny	0.30	2	92		<30	14	29	43	
3		N	Takaomatagawa River	Takaomatabashi Bridge	Nasumachi Town	2012/12/18	Sunny	0.35	2	78		<30	81	140	221	
4		.,	Yukawa River	Yukawabashi Bridge		2012/12/18	Sunny	0.30	2	87		<30	20	34	54	
		a .	Nakagawa River	Kamikuroiso	Nasushiobarashi City/Nasumachi Town	2012/12/18	Cloudy	0.15	1	91		<30	20	39	59	
- 6		K	Yosasagawa River	Yosasabashi Bridge Shindenbashi Bridge	Nasumachi Town	2012/12/18	Sunny	0.40	2	81		<30	29	62	91 194	
/		a	Kurokawa River Yosasagawa River	Shindenbashi Bridge Kawadabashi Bridge	Otawarashi City/Nasumachi Town	2012/12/19	Sunny	0.30	2	85 85		<30	54	130	209	
8		g	Nakagawa River	Kurobane	Otawarasni City/Nasumacni Town	2012/12/19	Sunny	0.43	2	81		<30	18	130	53	
10		S a	Matsubagawa River	Tributary	•	2012/12/19	Sunny	0.45	3	91		<30	30	52	82	
11		y w	Sabigawa River	Udagawabashi Bridge	Otawarashi City	2012/12/20	Sunny	0.45	1	81		<30	84	150	234	
12		s a	Momuragawa River	Momuranakabashi Bridge	•	2012/12/20	Sunny	0.50	2	93		<30	43		120	
13			monungawa Kirci	Yunohara	V 121 1200	2012/12/17	Rain	0.20	3	81		<30	20		58	
14			n:	Sekibabashi Bridge	Nasushiobarashi City	2012/12/17	Rain	0.60	2	83		<30	26	56	82	
15		-	Hokigawa River	Iwaibashi Bridge	0. 1.00	2012/12/20	Sunny	0.90	3	83		<30	21	41	62	
16		m		Hokigawabashi Bridge	Otawarashi City	2012/12/20	Sunny	0.60	3	82		<30	19	33	52	
17		R	Nakagawa River	Shinnakabashi Bridge	Nakagawamachi Town	2012/12/20	Sunny	0.25	1	93	Gravel/sand	<30	21	35	56	
18		i	Mumogawa River	Koseibashi Bridge	nakagawamacni 10wn	2012/12/20	Sunny	0.65	3	85		<30	17	26	43	
19		v	Arakawa River	Saikachibashi Bridge	Shioyamachi Town	2012/12/19	Sunny	0.70	2	93	Gravel	<30	38	64	102	
20		e	Arakawa Kivei	Renjobashi Bridge	Sakurashi City	2012/12/21	Sunny	0.30	3	94	Gravel	<30	<10	15	15	
21		r	Uchikawa River	Tanakabashi Bridge	Yaitashi City	2012/12/19	Sunny	0.40	2	91	Gravel/sand	<30	40	82	122	
22				Asahibashi Bridge	Sakurashi City	2012/12/21	Sunny	0.50	2	91		<30	35	66	101	
23			Arakawa River	Mukadabashi Bridge	Nasukarasuyamashi City	2012/12/21	Sunny	0.50	5	79		<30	25	50	75	
24			Egawa River	Tributary	Nusukanasayanasan Cay	2012/12/21	Sunny	0.20	1	85		<30	23	43	66	
25		K	Kinugawa River	Kawaji Daiichi Power Station, front		2012/12/11	Sunny	0.40	2	94	Sand/pebbe	<30	<10	19	19	
26			Yunishigawa River	Maesawabashi Bridge		2012/12/11	Sunny	1.00						-	-	Unable to collect samples due to snow on the ground
27			Ojikagawa River	Tributary		2012/12/11	Sunny	0.50	3	95	Gravel/sand	<30	<10	16	16	
28	T	n	Kinugawa River	Kosagoe		2012/12/11	Sunny	2.30						-		Unable to collect samples due to snow on the ground
		u				2012/10/15	Cloudy	1.50	7	90		<30	36	55	91	
29	0	g	Itaanagawa River	Tributary	N21 11 02	2012/11/18	Sunny	1.20	4	90		<30	33	58	91	
	n	a			Nikkoshi City	2012/12/12	Sunny	0.40	3	89		<30	35	51	86	
30	e	w	Yukawa River	Tributary		2012/12/4	Cloudy	0.30	5	71		<30	43	71	114	
31	g	a	Daiyagawa River Shidobuchigawa River	Shinkyo Bridge Suiichigaibashi Bridge		2012/12/12	Sunny	0.25 0.25	3	87		<30	20	34	54 203	
32	a		Shidobuchigawa River	Sujichigaibashi Bridge		2012/12/12		0.25	2	91	Dana	<30	/3	130	203	
33	w	_	Daiyagawa River	Kaishinbashi Bridge (Harigai)		2012/10/15	Sunny	0.10	5			<30	<10	15	15	
33	a	R	Daiyugana Kirci	Cathiniousii Driage (Tiargai)	ŀ	2012/11/18	Cloudy	0.25		84		<30	21	26	57	
_	-	i				2012/10/15	Sunny	0.40	6			<30	<10	18	18	
3.4		v	Kinugawa River	Sanuki	Shioyamachi Town	2012/11/18	Sunny	0.20	5	93		<30	<10	12	12	
		e			,	2012/11/10	Sunny	0.20	3	79		<30	25	49	74	
35		r	Nishikinugawa River	Nishikinugawabashi Bridge	Utsunomiyashi City	2012/12/13	Sunny	0.40	3	91		<30	17	28	45	
36				Kinugawabashi Bridge (Hoshakuji Temple)	Utsunomiyashi City/Takanezawamachi Town	2012/12/13	Sunny	0.40	3	85		<30	<10	20	20	
37	R		Kinugawa River	Daidoizumibashi Bridge	Mookashi City	2012/12/10	Sunny	0.90	3	80		<30	16	26	42	
38	i	S	Egawa River	Tributary	Shimotsukeshi City	2012/12/10	Sunny	0.40	3	61	Sand	<30	16	33	49	
39	v	y	Akaborigawa River	Nikko City Hall, front	Nikkoshi City	2012/12/13	Sunny	0.35	3	82		<30	180	320	500	
40	e	s	A MARIO A INGO	Kiwadajima	runnomi City	2012/12/12	Sunny	0.50	3	91		<30	15	25	40	
41	r	t	Tagawa River	Ozobashi Bridge	Utsunomiyashi City	2012/12/13	Sunny	0.25	2	91		<30	51	91	142	
42		e	Kamagawa River	Tsukushibashi Bridge		2012/12/13	Sunny	0.20	2	87		<30	23	45	68	
43		m	Tagawa River	Meijibashi Bridge	Kaminokawamachi Town	2012/12/14	Sunny	0.20	2	94		<30	<10		18	
44					Oyamashi City	2012/12/10	Sunny	0.60	3	88		<30	25	48	73	
45	W	/	Kurokawa River	Kaijimabashi Bridge	Kanumashi City	2012/12/4	Rain	0.60	2	90		<30	10	20	30	
46	a a				Mibumachi Town	2012/12/4	Sunny	0.25	3	93		<30	<10	15	15	
47	S t	Omoigawa River	Oashigawa River	Akaishibashi Bridge	Kanumashi City	2012/12/4	Cloudy	0.40	2	91		<30	<10	11	- 11	
48	y a		Koyabugawa River	Koyabubashi Bridge	Tochigishi City	2012/12/4 2012/12/4	Rain	0.35	2	92		<30 <30	20	36	56 10	
49	s r	. [	Omoigawa River					0.50	3	82		<30	<10	10	46	
50	f R	Uzumagawa River	Uzumagawa River	Otomeohashi Bridge Uzumabashi Bridge	Oyamashi City Tochigishi City	2012/12/3	Cloudy	0.40	5	82 90		<30	20	30	46 52	
51	e i a	Ozumagawa rover	Ozumagawa reiver			2012/10/12	Sunny	0.35	3	90		<30	20	32	52	
52	v	1	1	Watarasegawa River intake weir at Sori Power Station	Nikkoshi City	2012/10/12	Sunny	0.30	3	91		<30	21	32	34	
62	m 'e	1	L	Hajikabashi Bridge	Ashikagashi City/Otashi City	2012/12/25	Sunny	0.20	2	99		<30	13	21	36	
53	e 8	Watarasegawa River	Watarasegawa River	Nakabashi Bridge	Ashikagashi City Otashi City	2012/12/25	Sunny	0.50	2	92		<30	<10	10	12	
55	r a		1	Wataraseohashi Bridge	Tatebayashishi City	2012/12/25	Sunny	0.50	4			<30	110		310	
56	w	1		Shinkaibashi Bridge	Tochigishi City	2012/12/25	Sunny	0.20	2	90		<30	15	25	40	
	. Camalia a mai			nts along the river, from upstream to downstream.				0.20						20	40	

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

ORiver: Surrounding Environment (River Terrace) Monitoring Results

O TELYOR	ourrounding L	,	ver remace) withintoring	resums					Lef	bank					Righ	t bank				
		31	ampling point		Sampling date	Weather			Concentration of radioac	tive material Bq/kg (dry)		Air dose			Concentration of radioac	tive material Bq/kg (dry)		Air dose	Remarks	
No.	Water b	ody	Point	Municipality			Property	Radioactive iodine	Cs-134	Radioactive cesium Cs-137	Total	μSv/h	Property	Radioactive iodine	Cs-134	Radioactive cesium Cs-137	Total	μSv/h		
1			Ikuyobashishita	Nasushiobarashi City	2012/12/18	Rain		1-131	CS-134	CS-13/	10tai	0.17	Loamy	1-131	CS-134 260	CS-137 460	720	0.16	Soil not exposed	
2		Nakagawa River	Komeibashi Bridge	Nasushiobarashi City/Nasumachi Town	2012/12/18	Sunny	Loamy	<30	3 400	6 200	9 600	0.28	Sandy	<30	720	1 300	2 020	0.25		
3	N	Takaomatagawa River	Takaomatabashi Bridge	Nasumachi Town	2012/12/18	Sunny	Loamy	<30	1,700		4,700	0.29	Loamy	<30		2,000	3,100	0.28		
4	a	Yukawa River	Yukawabashi Bridge		2012/12/18	Sunny	Loamy	<30	590		1,690	0.33	Loamy	<30		2,300	3,500	0.33		
5	k	Nakagawa River Yosasagawa River	Kamikuroiso Yosasabashi Bridge	Nasushiobarashi City/Nasumachi Town	2012/12/18	Cloudy Sunny	Loamy	<30	1,600		4,400 2.310	0.31	Loamy	<30	310 610	520 1.100	830 1.710	0.24		
7	a	Kurokawa River	Shindenbashi Bridge	Nasumachi Town	2012/12/19	Sunny	Loamy	<30	2.700		7.500	0.52	Loamy	<30		3,300	5.100	0.39		
- 8	g	Yosasagawa River		Otawarashi City/Nasumachi Town	2012/12/19	Sunny	Loamy	<30	1,400		3,900	0.38	Loamy	<30		1,400	2,250	0.47		
9	S a	Nakagawa River	Kurobane	1	2012/12/19	Sunny	Loamy	<30	570		1,570	0.19	Loamy	<30		430 520	660	0.15		
10	y W	Matsubagawa River Sahisawa River	Tributary Udagawabashi Bridge	Otawarashi City	2012/12/19	Sunny	Loamy	<30	350 310		940	0.17	Loamy	<30	300 240	520 450	820 600	0.17 0.15		
12	s a	Momuragawa River	Momuranakabashi Bridge	†	2012/12/20	Sunny	Loamy	<30	470		1,320	0.13	Loamy	<30	260	440	700	0.17		
13	t		Yunohara	Nasushiobarashi City	2012/12/17	Rain	Loamy	<30	1,100		3,100	0.20							Unable to collect samples due to construction	
14	e	Hokigawa River	Sekibabashi Bridge	- подписыван сту	2012/12/17	Rain	Loamy	<30	140		420	0.79	Loamy	<30	1,900	3,300	5,200	0.82		
15	m		Iwaibashi Bridge Hokigawabashi Bridge	Otawarashi City	2012/12/20 2012/12/20	Sunny	Loamy	<30	200		570 420	0.13 0.11	Loamy	<30	530	900 260	1,430	0.14		
17	R	Nakagawa River	Shinnakabashi Bridge	11.00	2012/12/20	Sunny	Loamy	<30	150		420	0.11	Loamy	<30		160	247	0.12		
18	1	Mumogawa River	Koseibashi Bridge	Nakagawamachi Town	2012/12/20	Sunny	Loamy	<30	120	210	330	0.10	Loamy	<30	190	340	530	0.11		
19	v	Arakawa River	Saikachibashi Bridge	Shioyamachi Town	2012/12/19	Sunny	Loamy	<30	230		670	0.17	Loamy	<30	630	1,100	1,730	0.17		
20	e		Renjobashi Bridge	Sakurashi City	2012/12/21 2012/12/19	Sunny	Loamy/skeletal	<30	150 410		420 1.120	0.11	Loamy	<30 <30		440 820	670 1 280	0.11		
22	г	Uchikawa River	Tanakabashi Bridge Asahibashi Bridge	Yaitashi City Sakurashi City	2012/12/19	Sunny	Loamy Loamy	<30	170		470	0.13	Loamy	<30		430	1,280	0.13		
23		Arakawa River	Mukadabashi Bridge	Nasukarasuyamashi City	2012/12/21	Sunny	Loamy/sandy	<30	33	59	92	0.09	Loamy	<30	110	200	310	0.09		
24		Egawa River	Tributary	ivasukarasuyamasiii City	2012/12/21	Sunny	Loamy/sandy	<30	150		420	0.09	Loamy/sandy	<30	100	180	280	0.08		
25	K	Kinugawa River	Kawaji Daiichi Power Station, front Maesawabashi Bridge	4	2012/12/11	Sunny	Loamy Loamy/sandy	<30	450		1,300	0.18 0.10	Loamy	<30	340	570 1.200	910 1.910	0.17 0.10		
20	i	Yunishigawa River Ojikagawa River	Tributary	+	2012/12/11	Sunny	Loamy/sandy	- 50	- 43	. "	120	0.10	Loamy	<30 <30	610	1,200	1,910		Unable to collect samples due to snow on the ground	
28	n	Kinugawa River	Kosagoe	†	2012/12/11	Sunny	Loamy	<47	3,500	6,000	9,500	0.25	Loamy	<30	640		1,740	0.23		
T	и			Ī	2012/10/15	Cloudy	Loamy	<30	2,300		6,200	0.36	Loamy	<30	600	990	1,590	0.26		
29 0	g	Itaanagawa River	Tributary	Nikkoshi City	2012/11/18	Sunny	Loamy	<30	880 1.100		2,380 3,000	0.31 0.38	Loamy	<30		1,200 1,100	1,860 1,720	0.28		
30 n	a	Yukawa River	Tributary	Nikkosni City	2012/12/12	Cloudy	Loamy Loamy	<30	1,100	1,900	3,000	0.38	Loamy	<30	620	1,100	1,/20	0.28	Unable to collect soil	
31	w	Daiyagawa River	Shinkyo Bridge	†	2012/12/12	Sunny	Loamy	<30	180	310	490	0.17	Loamy	<30	490	940	1,430	0.14		
32 B	a	Shidobuchigawa River	Sujichigaibashi Bridge	1	2012/12/12	Sunny	Loamy	<30	340		960	0.21	Loamy	<36		4,600	7,200	0.20		
22 W		Daiyagawa River	Kaishinbashi Bridge (Harigai)		2012/10/15	Sunny	Loamy	<30	1,100		2,900 3,600	0.26 0.28	Loamy	<30	1,100	1,900 2.100	3,000	0.28		
33 n	R	Daiyagawa Kivei	Kaisiiiioasiii Driuge (Tairgai)		2012/11/18	Cloudy	Loamy	<30	1,300		3,600 4.600	0.28	Loamy	<30		2,100	3,300 2,470	0.26		
	1				2012/10/15	Sunny	Loamy	<30	480		1,300	0.20	Loamy	<30		1,500	2,410	0.24		
34	v	Kinugawa River	Sanuki	Shioyamachi Town	2012/11/18	Sunny	Loamy	<30	680		1,880	0.22	Loamy	<30	750	1,300	2,050	0.24		
26		Middian Nino	Ni ak Britannan ka aki Pada ka	Vienneniuski Circ	2012/12/12	Sunny	Loamy	<30	260		710 440	0.20	Loamy	<30 <30		540 160	850 253	0.23 0.10		
36		Nishikinugawa River	Nishikinugawabashi Bridge Kinugawabashi Bridge (Hoshakuji Temple)	Utsunomiyashi City Utsunomiyashi City/Takanezawamachi Town	2012/12/13	Sunny	Loamy Sandy	30	81		221	0.09	Loamy	<30		300	233 470	0.10		
37 R		Kinugawa River	Daidoizumibashi Bridge	Mookashi City	2012/12/10	Sunny	Loamy	<30	90		260	0.10	Loamy/sandy	<30		130	200	0.11		
38 i	S	Egawa River	Tributary	Shimotsukeshi City	2012/12/10	Sunny	Loamy	<30	160	270	430	0.11	Loamy	<30	120	210	330	0.10		
39 v	y	Akaborigawa River	Nikko City Hall, front Kiwadajima	Nikkoshi City	2012/12/13	Sunny			- 130	- 240		- 0.10	Loamy	<30	520 380	960 620	1,480	0.13	Unable to collect soil	
40 e	s .	Taeawa River	Ozobashi Bridge		2012/12/12	Sunny	Loamy	<30	130		370 420	0.10	Loamy	<30 <30		620 390	1,000	0.15		
42 r	ė	Kamagawa River	Tsukushibashi Bridge	Utsunomiyashi City	2012/12/13	Sunny	Loamy	<30	50	89	139	0.09	Loamy	<30		250	390	0.09		
43	m	Tagawa River	Meijibashi Bridge	Kaminokawamachi Town	2012/12/14	Sunny	Loamy/skeletal	<30	170	320	490	0.08	Loamy	<30	130	250	380	0.09		
44			Yanabashi Bridge	Oyamashi City	2012/12/10	Sunny	Loamy	<30	68	110	178	0.08	Loamy	<30	45	74	119	0.07		
45	w	Kurokawa River	Kaijimabashi Bridge Onaribashi Bridge	Kanumashi City Mibumachi Town	2012/12/4 2012/12/4	Rain	Loamy	<30 <30	76	140 240	216 370	0.10 0.08	Loamy	<30 <30	150	290	440 390	0.10		
47	a a Omninom Pi	Oashigawa River	Akaishibashi Bridge	Kanumashi City	2012/12/4	Cloudy	Loamy	<30	150		400	0.10	Loamy/sandy	30	160	260	420	0.10		
48 S	t Omoigawa River	Koyabugawa River	Koyabubashi Bridge	-	2012/12/4	Rain	Loamy	<30	120		320	0.10	Loamy	<30	120	200	320	0.11		
49 y	a l	Omoigawa River	Tamotsubashi Bridge	Tochigishi City	2012/12/4	Sunny	Loamy	<30	52	94	146	0.09	Loamy	<30	190	340	530	0.10		
50 5	R a Ummanana Pina	r Uzumagawa River	Otomeohashi Bridge Uzumabashi Bridge	Oyamashi City Tochigishi City	2012/12/3 2012/12/3	Cloudy	Loamy	<30 <30	320 200		910 530	0.14 0.11	Loamy	<30 <30		160	251 540	0.10		
62 e	i s	A CAMINISTANG KIYO			2012/12/3	Sunny	Sandy	<30	170	290	460	0.23	Sandy	<30	210	37	59	0.10		
52 m	v e	1	Watarasegawa River intake weir at Sori Power Station	Nikkoshi City	2012/12/6	Sunny	Sandy	<30	45	82	127	0.24	Sandy	<30	18	30	48	0.18		
53	e g Watarasegawa Riv	er Watarasegawa River	Hajikabashi Bridge	Ashikagashi City/Otashi City	2012/12/25	Sunny	Loamy	<30	89		259	0.08	Loamy	<30		230	340	0.08		
54	r a	1	Nakabashi Bridge Wataraseobashi Bridge	Ashikagashi City Tatebayashishi City	2012/12/25	Sunny	Loamy Loamy/skeletal	<30	83		243 560	0.08	Loamy	<30 <30		94	154 235	0.08		
56	w	1		Talebayashishi City Tochigishi City	2012/12/25	Sunny	Loamy/skeletal Loamy	<30	200		245	0.08	Loamy	<30		150	235	0.09		
			um Ding		2012 122	Danny	LAMINY	~30	. 63	100	243	3.09	E-A-MILLY	~30	. 100	200	440	0.10		

<sup>\*</sup>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.

Air dose was measured with a survey meter, TCS-171 or TCS-172 of Hitachi-Aloka Medical, Ltd.
 Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

OLake and Headwater: Water Quality Monitoring Results

		Sampling point		Sampling date	Weather	Full depth			General items			Concentrati	on of radioactive m		Remarks
No.		Point		Sampling date	weather	m	Sampling depth m	Secchi disk depth m	Electrical conductivity mS/m	SS mg/L	Turbidity	Radioactive iodine I-131	Radioac Cs-134	ctive cesium Cs-137	RCHMIKS
1	Nakagawa River	Miyama Dam Reservoir	Center Surface layer Lower layer	2012/12/6	Cloudy	-	-	-		-	-	-	-	-	Unable to collect samples due to strong wind causing boat to stay
2	System	Shiobara Dam Reservoir	Center Surface layer Lower layer	2012/12/6	Sunny	30.1	0.5 29.1	3.4	20 20	<1	1	<1	<	1 <	
3	K	Kawaji Dam Reservoir	Center Surface layer Lower layer	2012/12/5	Sunny	71.4	0.5 70.4	1.5	8 8	<1 11	3 28	<1	<	1 <	
4	S R I y : n	Ikari Dam Reservoir	Center Surface layer Lower layer	2012/12/5	Sunny	54	0.5 53.0	2.4	9	<1	1	<1	<	1 <	
5	s u t g	Kawamata Dam Reservoir	Center Surface layer Lower layer	2012/12/7	Sunny	78.4	0.5 77.4	4.6	12	<1	1 8	<1	<	1 <	
6	e a	Yunoko Lake	Center Surface layer Lower layer	2012/12/4	Rain	12.1	0.5	2.6	19	3	3	<1	<	1 <	
7	m w	Chuzenjiko Lake	Center Surface layer Lower layer	2012/12/4	Cloudy	172	0.5 171.0	7.3	12	4	0	<1	<	1 <	
8	Watarasegawa River	Watarase Reservoir	Center Surface layer Lower layer	2012/11/29	Cloudy	6.6	0.5 5.6	0.5	19 20	17 240	10 110	<1 <1	< <	1 <	

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

					1					Sediment						Surrounding enviro	onment (lake shore)				
	Sampling point			Sampling date	Weather	Full depth		General items			entration of radioactive	material Bq/kg (dried	mud)		Soil				Remarks		
				Sampling date Weather	m	General nems			concentration of fundamente material. Daying (uncul mater)					Con	centration of radioac	tive material Bq/kg (di	ry)	Air dose	Remarks		
No.	No. Point						Mud sampling depth cm	Property		Radioactive iodine I-131	Cs-134	Radioactive cesium Cs-137	Total	Property	Radioactive iodine I-131	Cs-134	Radioactive cesium Cs-137	Total	μSv/h		
1	Nakagawa River	Miyama Dam Reservoir	Center	2012/12/6	Cloudy	-	-	-	-	-	-	-	-	Loamy	<30	520	900	1,420	0.1	5 Unable to collect mud due to strong wind causing boat to stay	
2	System	Shiobara Dam Reservoir	Center	2012/12/6	Sunny	30.1	5	44	Silt	<30	360	630	990	Loamy	<30	1,300	2,300	3,600	0.5	2	
3		Kawaji Dam Reservoir	Center	2012/12/5	Sunny	71.4	15	57	Silt	<30	<10	25	25	Skeletal	<30	570	990	1,560	0.2	2	
4	Kinugawa River	Ikari Dam Reservoir	Center	2012/12/5	Sunny	54	15	50	Silt	<30	900	1,600	2,500	Loamy	<30	480	860	1,340	0.2	4	
5	System	Kawamata Dam Reservoir	Center	2012/12/7	Sunny	78.4	10	50	Silt	<30	45	95	140	Loamy	<30	26	43	69	0.0	8	
6		Yunoko Lake	Center	2012/12/4	Rain	12.1	15	25	Silt	<30	150	240	390	Loamy	<30	260	470	730	0.1	1	
7	7 Chuzenjiko Lake Cent		Center	2012/12/4	Cloudy	172	15	23	Silt	<30	30	85	115	Loamy/skeletal	<30	410	730	1,140	0.1	5	
8	Watarasegawa River	Watarase Reservoir	Center	2012/11/29	Cloudy	6.6	5	52	Silt	<30	77	120	197	Skeletal	<30	130	220	350	0.0	9	

