

(News Release)

The Results of Radioactive Material Monitoring of the Surface Water Bodies
within Miyagi 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 Miyagi Prefecture during the period of October 3-December 20, 2012 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

76 environmental reference points, etc. in the surface water bodies within Miyagi Prefecture
(Rivers: 43 locations, Lakes: 21 locations, Coasts: 12 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

(* and ** denote the results of the previous surveys: *July-October 2012, **January-February 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 1,000Bq/kg or below at most of the locations (coasts: 500Bq/kg or below), and have generally remained constant or had a declining tendency.

(Rivers)

Cs-134 + Cs-137: ND-3,400Bq/kg (dried mud) (*ND-3,700Bq/kg (dried mud))

(Lakes and headwaters)

Cs-134 + Cs-137: 44-9,700Bq/kg (dried mud) (*ND-1,940Bq/kg (dried mud))

(Coasts)

Cs-134 + Cs-137: ND-1,530Bq/kg (dried mud) (**ND-830Bq/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	39 (42)	8 (8)	2 (0)	0 (0)	1 (1)	0 (0)	1 (1)	51 (52)
Lakes and headwaters	11 (10)	3 (4)	1 (3)	1 (4)	0 (0)	1 (0)	2 (0)	19 (21)
Coasts	17 (10)	0 (2)	1 (0)	1 (0)	0 (0)	0 (0)	0 (0)	19 (12)

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

(Rivers)

Cs-134 + Cs-137: 35-4,300Bq/kg (dry) (*ND-4,100Bq/kg (dry))

Spatial dose: 0.02-0.35µSv/h

(Lakes and headwaters)

Cs-134 + Cs-137: 47-4,100Bq/kg (dry) (*43-5,000Bq/kg (dry))

Spatial dose: 0.04-0.31µSv/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

No.	Sampling point			Sampling date	Weather	Full depth m	General items					Concentration of radioactive material Bq/L			Remarks
	Water body	Point	Municipality				Sampling depth m	Transparency cm	Electrical conductivity mS/m	SS mg/L	Turbidity	Radioactive iodine I-131	Radioactive cesium Cs-134 Cs-137		
1	Shishorigawa River	Kizunabashi Bridge		2012/11/27	Snow	0.3	0.0	>100	15	<1	0	<1	<1	<1	
2				2012/11/27	Sunny	2.0	>100	4,750	4	<1	<1	<1			
3				2012/11/27	Snow	0.8	0.0	>100	24	<1	<1	<1			
4	Okawa River	Kanyamabashi Bridge	Kesennumashi City	2012/11/27	Snow	0.8	0.0	>100	2,780	2	<1	<1	<1		
5				2012/11/27	Snow	1.5	0.0	>100	5,270	10	<1	<1			
6	Omosegawa River	Ozakiabashi Bridge		2012/11/27	Snow	1.1	0.0	94	4,380	5	<1	<1	<1		
7				2012/11/29	Cloudy	0.2	0.0	>100	19	<1	<1	<1			
8	R K i t a k a m a g a w a R i v e r	Kiriyugawa River	Kiriharashi City	2012/11/29	Cloudy	0.2	0.0	>100	19	<1	<1	<1	<1		
9				2012/11/28	Cloudy	0.4	0.0	85	14	3	2	<1	<1		
10	H a s a m a g a w a R i v e r	Sanhasumagawa River	Tomeshi City	2012/11/28	Cloudy, then light rain	0.5	0.0	>100	15	3	3	<1	<1		
11				2012/11/26	Cloudy	0.2	0.0	>100	18	<1	2	<1	<1		
12		Nihasumagawa River	Kuriharashi City	2012/11/28	Cloudy	0.5	0.0	87	11	1	2	<1	<1		
13				2012/11/26	Rain	0.2	0.0	23	17	9	29	<1	<1		
14		E a i g a w a R i v e r	Yamayoshiabashi Bridge	Tomeshi City	2012/11/28	Sunny	0.7	0.0	28	20	9	16	<1	<1	
15					2012/11/29	Sunny	1.0	0.0	>100	17	<1	0	<1	<1	
16	Shimizuakomori Weir		Oaishiki City	2012/11/29	Cloudy	0.4	0.0	>100	20	2	2	<1	<1		
17				2012/11/29	Cloudy	2.0	0.0	95	21	2	2	<1	<1		
18	D e k i g a w a R i v e r	Misatomachi Town	2012/11/29	Cloudy	0.4	0.0	55	25	3	3	<1	<1			
19			2012/11/28	Cloudy	0.5	0.0	50	20	5	3	<1	<1			
20	K y u k i t a k a m a g a w a R i v e r	Okawabashi Bridge (Tanda)	Wakuyacho Town/Ishinomaki City	2012/11/28	Cloudy	0.2	0.0	40	16	11	<1	<1			
21				2012/11/28	Cloudy	0.2	0.0	48	54	200	92	<1	<1		
22	N a r u s e g a w a R i v e r	Onobashi Bridge (Ono)	Higashimatsushima City	2012/11/28	Cloudy	0.2	0.0	48	54	200	92	<1	<1		
23				2012/11/14	Cloudy	2.0	0.0	47	757	9	7	<1	<1		
24	S u n o s h i g a w a R i v e r	Nembatabashi Bridge	Tagajoshi City	2012/11/14	Cloudy	2.0	0.0	70	4	6	4	<1	<1		
25				2012/11/14	Cloudy	2.0	0.0	80	4	7	6	<1	<1		
26	T e i z a n - u n g a C a n a l (K y u s a n o s h i g a w a R i v e r)	Teizanbashi Bridge	Shiogama City/Shichigaharumachi Town/Tagajoshi City	2012/11/25	Sunny	0.4	0.0	>100	35	<1	<1	<1			
27				2012/11/25	Sunny	0.3	0.0	26	264	8	5	<1	<1		
28	N a n a k i t a g a w a R i v e r S y s t e m	Umedagawa River	Sendai City	2012/11/14	Cloudy	1.0	0.0	20	755	12	<1	<1			
29				2012/11/25	Sunny	0.3	0.0	68	3,530	3	3	<1	<1		
30	N a t o r i g a w a R i v e r	Yuriageobashi Bridge	Sendai City/Natorishi City	2012/11/27	Sunny	2.5	0.0	36	11	22	9	<1	<1		
31				2012/11/27	Sunny	0.2	0.0	>100	28	10	3	<1	<1		
32	N a t o r i g a w a R i v e r S y s t e m	Masadagawa River	Natorishi City	2012/11/27	Sunny	0.2	0.0	>100	10	2	2	<1	<1		
33				2012/11/27	Sunny	0.5	0.0	51	2	7	6	<1	<1		
34	A b u k u m a g a w a R i v e r	Hadenivabashi Bridge	Marumoriomachi Town	2012/10/3	Rain	0.3	0.0	19	18	14	5	<1	<1		
35				2012/10/31	Sunny	0.5	0.0	49	17	6	4	<1	<1		
36				2012/11/21	Cloudy	0.2	0.0	50	38	7	6	<1	<1		
37				2012/12/13	Sunny	0.4	0.0	>100	43	8	4	<1	<1		
38				2012/10/3	Rain	0.6	0.0	19	17	14	5	<1	<1		
39				2012/10/31	Sunny	1.0	0.0	72	18	6	4	<1	<1		
40	S h i r o i s h i g a w a R i v e r	Marumoriabashi Bridge		2012/11/21	Cloudy	0.5	0.0	35	27	10	7	<1	<1		
41				2012/12/13	Sunny	0.8	0.0	>100	40	4	3	<1	<1		
42				2012/10/30	Sunny	2.5	0.0	49	13	9	4	<1	<1		
43				2012/11/27	Sunny	1.0	0.0	85	10	6	2	<1	<1		
44				2012/11/15	Cloudy	0.5	0.0	>100	77	2	<1	<1			
45				2012/11/15	Cloudy	1.0	0.0	>100	3	<1	<1	<1			
46	S h i r o i s h i g a w a R i v e r	Zaomachi Town	Muratamachi Town/Ogawaromachi Town	2012/11/27	Sunny	0.2	0.0	86	21	3	3	<1	<1		
47				2012/11/27	Sunny	0.3	0.0	80	20	<1	1	<1	<1		
48				2012/11/27	Sunny	0.3	0.0	84	16	4	2	<1	<1		
49				2012/10/3	Cloudy	0.4	0.0	30	16	8	3	<1	<1		
50	A b u k u m a g a w a R i v e r	Abukumaobashi Bridge (Iwanuma)	Iwanumashi City/Wataricho Town	2012/10/30	Sunny	2.5	0.0	>100	19	3	2	<1	<1		
51				2012/11/21	Sunny	0.3	0.0	22	24	20	9	<1	<1		
52				2012/12/13	Sunny	0.6	0.0	>100	57	3	3	<1	<1		
53				2012/10/30	Sunny	0.7	0.0	>100	173	2	2	<1	<1		

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

ORiver: Sediment Monitoring Results

Sampling point				Sampling date	Weather	Full depth m	General items			Concentration of radioactive material Bq/kg (dried mud)				Remarks									
No.	Water body	Point	Municipality				Mud sampling depth cm	Mud content %	Property	Radioactive iodine I-131	Cs-134	Radioactive cesium Cs-137			Total								
1	Shioborigawa River	Kizanbashi Bridge		2012/11/27	Snow	0.3	2	88	Gravel	<30	41	87	128										
2		Namitabashi Bridge			2012/11/27	Sunny	2.0	5	51	Silt	<30	140	230	370									
3		Tateyamaobashi Bridge		Kesennumashi City	2012/11/27	Snow	0.8	3	85	Sand	<30	44	77	121									
4	Okawa River	Kamiyabashi Bridge		2012/11/27	Snow	0.8	6	74	Sand/silt	<30	91	180	271										
5		Okawa River Estuary			2012/11/27	Snow	1.5	4	91	Sand	<30	<10	<10	-									
6	Omogegawa River	Ozakibashi Bridge		2012/11/27	Snow	1.1	8	63	Sand/silt	<30	190	320	510										
7		Arimagawa River		Unanabashi Bridge	Kuriharashi City	2012/11/29	Cloudy	0.2	2	92	Sand/gravel	<30	150	270	420								
8	R K i t a k a m a g a w a R i v e r	Kiryugawa River		2012/11/29	Cloudy	0.2	5	90	Sand	<30	120	220	340										
9		Tomobashi Bridge (Tome)		Tomeshi City	2012/11/28	Cloudy	0.4	4	53	Clay/mud	<30	69	130	199									
10	e a r k a s m y i s g e w m a	Sanhasamagawa River		2012/11/28	Cloudy, then light rain	0.5	6	78	Mud	<30	<10	24	24										
11		Nihasamagawa River		Kuriharashi City	2012/11/28	Cloudy	0.2	5	90	Sand	<30	50	81	131									
12		Hasamagawa River		Kanayama Dam, inflow area		2012/11/28	Cloudy	0.5	3	85	Gravel/sand	<30	<10	<10	-								
13		Wakayamagi				2012/11/26	Rain	0.2	6	84	Gravel/sand	<30	36	68	104								
14		Yamayoshihashi Bridge		Tomeshi City		2012/11/28	Sunny	0.7	8	58	Silt	<30	190	340	530								
15		Todorakibashi Bridge (Todoroki)				2012/11/28	Sunny	1.0	3	84	Sand/silt	<30	32	57	89								
16	Eaigawa River	Eaigawa River		2012/11/29	Cloudy	0.4	2	94	Gravel/sand	<30	<10	18	18										
17		In Furukawa District, Osakishi City		Shinborisaihon, entrance		2012/11/29	Cloudy	2.0	2	75	Sand	<30	270	440	710								
18		Dekigawa River		Kogotabashi Bridge	Misatomachi Town	2012/11/29	Cloudy	0.4	3	87	Sand	<30	65	130	195								
19	Eaigawa River	Okawabashi Bridge (Tandai)	Wakuyacho Town/Ishinomakishi City	2012/11/28	Cloudy	0.5	2	91	Gravel/sand	<30	13	24	37										
20		Kyukitakumigawa River	Kadonowaki	Ishinomakishi City	2012/11/28	Cloudy	0.2	3	91	Sand/clay	<30	<10	<10	-									
21	Narusegawa River	Onobashi Bridge (Ono)	Higashimatsushimashi City	2012/11/28	Cloudy	0.2	3	76	Sand	<30	24	41	65										
22	Sunobishigawa River	Tagajozeki Weir	Tagajoshi City	2012/11/14	Cloudy	2.0	3	57	Silt	<30	240	410	650										
23		Nenbutsubashi Bridge		2012/11/14	Cloudy	2.0	5	52	Silt	<30	360	600	960										
24	Teizan-unga Canal (Kiyusanooshigawa River)	Teizanbashi Bridge	Shiogamashi City/Shichigaharamachi Town/Tagajoshi City	2012/11/14	Cloudy	2.0	5	67	Silt	<30	140	240	380										
25	Nanakitagawa River	Nanakitabashi Bridge		2012/11/25	Sunny	0.4	3	90	Sand	<30	25	46	71										
26		Fukudaobashi Bridge		Sendaisi City	2012/11/25	Sunny	0.3	5	86	Sand	<30	<10	17	17									
27	Nanakitagawa River	Fukudaobashi Bridge		2012/11/14	Cloudy	1.0	3	77	Silt	<30	110	190	300										
28	River System	Nanakitagawa River		2012/11/25	Sunny	0.3	3	87	Sand	<30	17	25	42										
29	Natorigawa River	Yuragobashi Bridge	Sendaisi City/Natorishi City	2012/11/27	Sunny	2.5	-	-	-	-	-	-	-	Unable to collect samples due to strong wind and increased water level									
30	Natorigawa River System	Yakubashi Bridge		2012/11/27	Sunny	0.2	3	69	Sand	<30	25	48	73										
31		Hasadagawa River		Natorishi City	2012/11/27	Sunny	0.2	3	87	Sand	<30	81	140	221									
32	A b u k u m a g a w a R i v e r	Bishanobashi Bridge		2012/11/27	Sunny	0.5	5	55	Silt	<30	720	1300	2020										
33		Hadeniwabashi Bridge		Marumorimachi Town	2012/10/3	Rain	0.3	10	87	Sand	<30	190	330	520									
34					Marumoribashi Bridge		2012/10/31	Sunny	0.5	3	86	Sand	<30	120	230	350							
35									2012/11/21	Cloudy	0.2	3	89	Sand	<30	130	220	350					
36											2012/12/13	Sunny	0.4	3	89	Sand	<30	130	220	350			
37													2012/10/3	Rain	0.6	6	72	Sand/mud	<30	1,300	2,100	3,400	
38															2012/10/31	Sunny	1.0	3	95	Sand	<30	36	54
39															2012/11/21	Cloudy	0.5	3	78	Sand	<30	500	860
40															2012/12/13	Sunny	0.8	3	82	Sand	<30	250	460
41							Eiribashi Bridge	Kakudashi City							2012/10/30	Sunny	2.5	7	95	Sand	<30	29	52
42	Shiroshigawa River								2012/11/27	Sunny					1.0	6	82	Sand	<30	70	120	190	
37							Saikawa River	Shiroshishi City	2012/11/15	Cloudy	0.5	3			88	Sand	<30	100	170	270			
38							Matsukawa River	Zaomachi Town	2012/11/15	Cloudy	1.0	19	81	Sand	<30	19	35	54					
39		Arakawa River		Niragabashi Bridge			Muratamachi Town/Ogawaramachi Town	2012/11/27	Sunny	0.2	8	90	Sand	<30	11	21	32						
40		Shirahatabashi Bridge		Shibatamachi Town		2012/11/27	Sunny	0.3	6	90	Sand	<30	11	20	31								
41		Shiroshigawa River		Tsukinokobashi Bridge	Kakudashi City/Shibatamachi Town	2012/10/30	Sunny	0.5	3	92	Sand/gravel	<30	22	41	63								
42		Abukumagawa River		Abukumaobashi Bridge (Iwanuma)	Iwanumashi City/Wataricho Town	2012/10/3	Cloudy	0.4	2	84	Sand	<30	280	450	730								
43									2012/10/30	Sunny	2.5	2	86	Sand	<30	110	190	300					
44										2012/11/21	Sunny	0.3	3	69	Sand	<30	520	890	1,410				
45													2012/12/13	Sunny	0.6	3	85	Sand	<30	83	160	243	
46													2012/10/30	Sunny	0.7	4	89	Sand	<30	36	55	91	

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

OCoast: Water Quality Monitoring Results

No.	Sampling point		Sampling date	Weather	Full depth	General items				Concentration of radioactive material Bq/L			Remarks						
	Water body	Surface layer				Lower layer	Sampling depth m	Secchi disk depth m	Salinity ‰	SS mg/L	Turbidity	Radioactive iodine I-131		Radioactive cesium Cs-134	Radioactive cesium Cs-137				
Kitakami gawa	Kesennumawan Bay (B)	Offshore of Hachigasaki	Surface layer	2012/12/14	Cloudy	16.3	0.5	6.0	37	4	1	<-1	<-1	<-1					
			Lower layer				15.3		38	4	1	<-1	<-1	<-1					
2	Kesennumawan Bay (C)	Offshore of Oshimukita	Surface layer	2012/12/14	Cloudy	41.0	0.5	8.0	37	3	1	<-1	<-1	<-1					
			Lower layer				40.0		38	4	2	<-1	<-1	<-1					
3	Offshore of Tsuyagawa River Estuary		Surface layer	2012/12/15	Rain	11.8	0.5	4.0	36	4	1	<-1	<-1	<-1					
			Lower layer				10.8		38	5	1	<-1	<-1	<-1					
4	All other neighboring sea areas	Oppawan Bay (Jyusanhama Beach)	Surface layer	2012/12/18	Cloudy	19.5	0.5	4.7	32	5	2	<-1	<-1	<-1					
			Lower layer				18.5		38	6	3	<-1	<-1	<-1					
5	Neighboring sea area of Ishinomaki (C)	Mangokaura Lake, M-6 (center)	Surface layer	2012/12/14	Sunny	3.5	0.5	3.5	37	5	2	<-1	<-1	<-1					
			Lower layer				2.5		37	11	5	<-1	<-1	<-1					
6	Neighboring sea area of Ishinomaki (B-3)	Offshore of Kitakami-gawa River Estuary	Surface layer	2012/11/9	Cloudy	7.7	0.5	0.5	20	17	16	<-1	<-1	<-1					
			Lower layer				6.7		35	31	24	<-1	<-1	<-1					
			Surface layer				2012/12/17		Sunny	7.8	0.5	1.3	25	9		6	<-1	<-1	<-1
			Lower layer				6.8				36		5	2		<-1	<-1	<-1	
7	Neighboring sea area of Ishinomaki (C)	Offshore of Naruse	Surface layer	2012/11/9	Cloudy	14.6	0.5	2.5	30	5	3	<-1	<-1	<-1					
			Lower layer				13.6		35	5	3	<-1	<-1	<-1					
			Surface layer				2012/12/17		Sunny	14.5	0.5	2.8	29	10		6	<-1	<-1	<-1
			Lower layer				13.5				37		9	4		<-1	<-1	<-1	
8	Matsushima Bay (B)	Nishihama Beach	Surface layer	2012/11/14	Sunny	12.4	0.5	3.0	31	7	3	<-1	<-1	<-1					
			Lower layer				11.4		31	52	27	<-1	<-1	<-1					
			Surface layer				2012/12/19		Cloudy	12.6	0.5	1.9	37	10		4	<-1	<-1	<-1
			Lower layer				11.6				37		11	5		<-1	<-1	<-1	
9	Neighboring sea area of Sendai Port (A)	Naiko Inner Port, 4-Nai	Surface layer	2012/11/2	Cloudy	19.5	0.5	4.2	33	6	2	<-1	<-1	<-1					
			Lower layer				18.5		33	26	15	<-1	<-1	<-1					
			Surface layer				2012/12/19		Cloudy	18.5	0.5	2.5	36	6		2	<-1	<-1	<-1
			Lower layer				17.5				37		9	4		<-1	<-1	<-1	
10	Neighboring sea area of Sendai Port (B)	Gamo-3	Surface layer	2012/11/14	Sunny	11.5	0.5	2.0	30	4	2	<-1	<-1	<-1					
			Lower layer				10.5		32	4	2	<-1	<-1	<-1					
			Surface layer				2012/12/19		Cloudy	15.5	0.5	1.5	37	11		5	<-1	<-1	<-1
			Lower layer				14.5				38		11	7		<-1	<-1	<-1	
11	All other neighboring sea areas	Ito-5	Surface layer	2012/11/15	Sunny	4.7	0.5	5.0	29	6	3	<-1	<-1	<-1					
			Lower layer				3.7		32	5	3	<-1	<-1	<-1					
			Surface layer				2012/12/20		Sunny	4.8	0.5	1.7	37	10		4	<-1	<-1	<-1
			Lower layer				3.8				37		10	5		<-1	<-1	<-1	
12	Offshore of Abukumagawa River Estuary		Surface layer	2012/11/15	Sunny	9.5	0.5	5.0	12	4	2	<-1	<-1	<-1					
			Lower layer				8.5		32	5	2	<-1	<-1	<-1					
			Surface layer				2012/12/20		Sunny	9.3	0.5	1.9	29	6		2	<-1	<-1	<-1
			Lower layer				8.3				38		9	2		<-1	<-1	<-1	

*Sampling points are listed from north to south.

OCoast: Sediment Monitoring Results

No.	Sampling point		Sampling date	Weather	Full depth	General items			Concentration of radioactive material Bq/kg (dried mud)				Remarks	
	Water body	Surface layer				Lower layer	Mud sampling depth cm	Mud content %	Property	Radioactive iodine I-131	Radioactive cesium Cs-134	Radioactive cesium Cs-137		Total
1	Kesennumawan Bay (B)	Offshore of Hachigasaki	2012/12/14	Cloudy	16.3	3	73	Silt	<30	23	31	54		
2	Kesennumawan Bay (C)	Offshore of Oshimukita	2012/12/14	Cloudy	41.0	5	47	Silt	<30	17	27	44		
3	Offshore of Tsuyagawa River Estuary		2012/12/15	Rain	11.8	3	89	Sand	<30	<10	<10	-		
4	All other neighboring sea areas	Oppawan Bay (Jyusanhama Beach)	2012/12/18	Cloudy	19.5	14	62	Silt	<30	76	140	216		
5	Neighboring sea area of Ishinomaki (C)	Mangokaura Lake, M-6 (center)	Surface layer	2012/12/14	Sunny	3.5	10	59	Sludge	<30	38	71	109	
			Lower layer											
6	Neighboring sea area of Ishinomaki (B-3)	Offshore of Kitakami-gawa River Estuary	Surface layer	2012/12/17	Sunny	7.8	5	55	Sludge	<30	49	87	136	
			Lower layer											
7	Neighboring sea area of Ishinomaki (C)	Offshore of Naruse	Surface layer	2012/11/14	Sunny	12.4	5	42	Silt	<30	160	250	410	
			Lower layer											
9	Neighboring sea area of Sendai Port (A)	Naiko Inner Port, 4-Nai	Surface layer	2012/11/2	Cloudy	19.5	5	39	Sludge	<30	560	970	1,530	
			Lower layer											
10	Neighboring sea area of Sendai Port (B)	Gamo-3	Surface layer	2012/11/14	Sunny	11.5	3	92	Sand	<30	<10	<10	-	
			Lower layer											
11	All other neighboring sea areas	Ito-5	Surface layer	2012/11/15	Sunny	4.7	3	90	Sand	<30	<10	<10	-	
			Lower layer											
12	Offshore of Abukumagawa River Estuary		Surface layer	2012/11/15	Sunny	9.5	3	88	Sand	<30	55	87	142	
			Lower layer											

*Sampling points are listed from north to south.

