

FY2014 Miyagi Prefecture Survey Results

[Survey Results]

(1) Water

Rivers

Radioactive cesium (Cs-134, Cs-137): Not detectable at any location

Lakes and reservoirs

Radioactive cesium (Cs-134, Cs-137): Not detectable at any location

Coastal areas

Radioactive cesium (Cs-134, Cs-137): Not detectable at any location

(2) Sediments

Rivers

Cs-134: ND - 420 Bq/kg (dry)

Cs-137: 0.92 - 1,200Bq/kg (dry)

Lakes and reservoirs

Cs-134: ND - 520 Bq/kg (dry)

Cs-137: 9.1 - 1,700 Bq/kg (dry)

Coastal areas

Cs-134: ND - 270 Bq/kg (dry)

Cs-137: 1.4 - 820 Bq/kg (dry)

(3) Surrounding Environment

(a) Soil

Rivers

Cs-134: ND - 1,200 Bq/kg (dry)

Cs-137: ND - 3,100Bq/kg (dry)

Lakes and reservoirs

Cs-134: 18 - 1,200 Bq/kg (dry)

Cs-137: 65 - 3,300 Bq/kg (dry)

(b) Ambient dose rate

Rivers

0.04 - 0.40 μ Sv/h

Lakes and reservoirs

0.04 - 0.31 μ Sv/h

Miyagi Lakes and Reservoirs (Water) 1/3

Miyagi Lakes and Reservoirs (Water) 2/3

No.	Water area	Location			Sampling Date	Weather	Air temperature (°C)	Water depth (m)	Water							Activity concentration(Bq/L)		Remarks				
									Water (°C)	Sampling depth (m)	Color	Odor	Secchi disk depth (m)	Electrical conductivity (mS/m)	SS (mg/L)	Turbidity (FNU)	Cs-134	Cs-137				
									General items							Radioactive cesium						
L a k e a n d R e s e r v o i r s	51 52 53	Urushizawa Dam Naruse River System Miyatoko Dam	Kami Town Taiwa Town	Dam site Dam site Dam site	2014/6/2	Sunny	24.0	40.0	17.2	0.5	Dark grayish green	None	6.1	4.3	2	1.5	<0.54 ± 0.10	<0.49 ± 0.097				
					2014/8/28	Sunny	22.0	33.2	8.4	39.0	-	None		4.4	5	1.6	<0.67 ± 0.13	<0.45 ± 0.13				
					2014/10/27	Cloudy	12.0	18.5	20.9	0.5	Grayish yellowish green	None	1.8	4.8	3	2.6	<0.54 ± 0.12	<0.52 ± 0.11				
					2014/12/12	Cloudy	1.0	28.5	6.9	32.2	-	None		5.7	8	1.9	<0.54 ± 0.11	<0.63 ± 0.12				
					2014/5/30	Sunny	29.0	28.0	12.3	0.5	Grayish yellow green	None		4.7	5	4.8	<0.62 ± 0.13	<0.58 ± 0.11				
					2014/8/26	Light rain	20.0	25.8	9.0	24.8	-	None		10.3	31	9.4	<0.64 ± 0.15	<0.56 ± 0.12				
					2014/10/3	Sunny	22.5	27.4	20.5	0.5	Grayish yellow green	None		8.0	3	1.9	<0.56 ± 0.15	<0.65 ± 0.12				
					2014/12/16	Light snow	-1.0	27.2	8.0	26.4	-	None		10.8	38	28	<0.56 ± 0.11	<0.59 ± 0.14				
					2014/5/30	Sunny	30.0	1.0	4.9	0.5	Grayish yellow green	None		8.0	5	5.3	<0.59 ± 0.13	<0.59 ± 0.12				
					2014/10/3	Sunny	23.0	0.9	5.2	26.2	-	None		1.0	8.2	9	7.4	<0.43 ± 0.10	<0.55 ± 0.12			
R e s e r v o i r s	54	Sunaishi River System Nanakita River System	Sonoseki Dam Nanakita Dam	Rifu Town Dam site	2014/6/4	Sunny	27.0	9.4	23.5	0.5	Dark grayish yellow green	None		2.8	16.5	2	1.3	<0.50 ± 0.098	<0.55 ± 0.083			
					2014/8/26	Cloudy	23.0	9.0	9.4	8.4	-	None		21.5	10	6.2	<0.45 ± 0.075	<0.52 ± 0.14				
					2014/10/3	Sunny	23.5	4.6	26.0	0.5	Dark grayish yellowish green	None		18.0	2	3.2	<0.63 ± 0.16	<0.62 ± 0.13				
					2014/12/17	Light snow	1.0	8.5	11.2	8.0	-	None		2.1	23.3	9	7.8	<0.54 ± 0.12	<0.51 ± 0.088			
					2014/4/26	Sunny	22.0	5.1	20.2	0.5	Grayish yellow green	None		0.9	18.6	8	8.7	<0.61 ± 0.11	<0.71 ± 0.18			
	55		Nanakita River System		2014/9/4	Cloudy	14.0	1.3	19.9	3.6	-	None		18.2	7	8.8	<0.47 ± 0.096	<0.62 ± 0.12				
					2014/10/16	Light rain	14.0	1.3	4.0	0.5	Dark grayish yellow green	None		0.9	16.1	3	21	<0.56 ± 0.11	<0.59 ± 0.12			
					2014/12/16	Light snow	0.0	3.8	14.6	0.0	Light grayish yellow	None		>1.3	16.5	3	2.2	<0.59 ± 0.15	<0.47 ± 0.11			
					2014/6/4	Sunny	24.5	0.3	20.5	0.5	Grayish yellow green	None		0.2	8.3	2	2.0	<0.56 ± 0.12	<0.59 ± 0.12			
					2014/9/4	Cloudy	23.2	0.3	23.0	0.0	Colorless transparent	None		>0.3	6.6	2	2.1	<0.48 ± 0.13	<0.59 ± 0.12			
56	Marutazawatameike Pond	Sendai City	Pond exit	Dam site	2014/5/26	Sunny	22.0	5.1	27.1	0.0	Light grayish yellow	Paint		0.2	23.6	19	11	<0.56 ± 0.13	<0.62 ± 0.13	Connected only from the surface layer due to shallow		
					2014/10/7	Sunny	21.0	0.2	23.2	0.0	Light grayish yellow	None		>0.2	19.6	16	7.1	<0.66 ± 0.13	<0.70 ± 0.14	Connected only from the surface layer due to shallow		
					2014/12/17	Light snow	0.0	0.3	20.1	0.0	Greenish yellowish pale gray	None		>0.2	15.9	8	6.6	<0.66 ± 0.12	<0.62 ± 0.13	Connected only from the surface layer due to shallow		
					2014/5/26	Sunny	17.0	37.5	17.8	36.5	Light grayish dark gray	None		>0.3	29.6	20	7.9	<0.69 ± 0.13	<0.56 ± 0.12	Connected only from the surface layer due to shallow		
					2014/9/4	Cloudy	23.0	25.0	21.3	0.5	Light grayish blue green	None		1.5	7.8	3	2.2	<0.63 ± 0.14	<0.51 ± 0.10	Connected only from the surface layer due to shallow		
					2014/10/16	Cloudy	14.0	22.7	14.9	0.5	Grayish greenish yellow	None		1.6	7.6	10	6.8	<0.63 ± 0.15	<0.57 ± 0.13	Connected only from the surface layer due to shallow		
					2014/12/16	Light snow	0.0	21.8	14.7	21.7	-	None		1.1	7.3	7	5.0	<0.56 ± 0.13	<0.55 ± 0.12	Connected only from the surface layer due to shallow		
					2014/5/26	Cloudy	23.0	0.2	19.5	0.5	Bluish greenish dark gray	Paint		3.3	4.5	1	0.7	<0.56 ± 0.15	<0.76 ± 0.17	Connected only from the surface layer due to shallow		
					2014/9/4	Cloudy	23.0	0.2	17.8	24.0	-	None		4.7	1	0.8	<0.65 ± 0.14	<0.51 ± 0.068	Connected only from the surface layer due to shallow			
					2014/10/16	Cloudy	14.0	22.7	14.7	21.7	-	None		7.2	7	4.3	<0.56 ± 0.12	<0.59 ± 0.10	Connected only from the surface layer due to shallow			
57	Natori River System	Okura Dam	Dam site	Dam site	2014/12/16	Light snow	0.0	3.7	3.6	0.5	Grayish greenish yellow	None		1.1	7.5	4	3.1	<0.55 ± 0.10	<0.62 ± 0.12	Connected only from the surface layer due to shallow		
					2014/12/16	Light snow	0.0	21.8	3.7	20.8	-	None		7.1	6	3.1	<0.55 ± 0.12	<0.85 ± 0.19	Connected only from the surface layer due to shallow			

Miyagi Lakes and Reservoirs (Sediment) 2/2

No.	Location			Sampling Date	Weather	Air temperature (°C)	Water depth (m)	Sediment														Remarks			
								General items							Grain size distribution(%)							Activity concentration [Bq/kg(dry)]			
	Sediment temperature (°C)		Sample length (cm)		Color		Odor	Coarse gravel	Medium gravel	Fine gravel	Coarse sand	Medium sand	Fine sand	Silt	Clay	Sediment content (%)	Density (g/cm³)	Property	Cs-134	Cs-137	Total				
Lake Amanuma	Lake exit	Sendai City	2014/6/4	Sunny	26.0	0.3	24.6	5	Faint hydrogen sulfide	None	0.0	0.5	12.6	33.3	43.3	7.0	0.1	3.2	79.2	2.659	Sand/gravel	320 ± 12	870 ± 21	1,190	
			2014/8/26	Light rain	23.0	0.4	22.5	5	Faint hydrogen sulfide	Faint	0.0	0.0	7.8	23.2	46.4	14.2	0.6	7.9	75.0	2.632	Sand/silt	420 ± 15	1,300 ± 27	1,720	
			2014/10/7	Sunny	19.0	0.4	18.2	5	Faint hydrogen sulfide	Faint	0.0	0.0	6.3	18.9	47.9	21.7	2.7	2.5	79.8	2.648	Sand/silt	380 ± 11	1,200 ± 20	1,580	
	Natori River System		2014/12/17	Cloudy	0.0	0.4	3.0	5	Faint hydrogen sulfide	Faint	0.0	0.0	15.3	31.3	44.1	7.7	0.1	1.6	79.8	2.644	Sand/silt	220 ± 8.9	830 ± 17	1,050	
			2014/6/3	Sunny	23.0	23.6	13.9	5	Grayish olive	Faint	0.0	0.0	0.1	0.2	0.3	0.8	0.1	39.1	59.6	2.503	Silt	120 ± 16	310 ± 26	430	
			2014/8/25	Sunny	30.0	25.5	20.2	5	Grayish olive	Faint	0.0	0.0	0.0	0.0	0.2	0.2	37.3	62.2	25.6	2.506	Silt	160 ± 20	370 ± 30	530	
			2014/10/15	Sunny	18.0	26.9	14.0	5	Grayish olive	Faint	0.0	0.0	0.0	0.1	0.2	0.2	34.8	64.7	25.2	2.501	Silt	91 ± 14	340 ± 24	431	
Abukuma River System	Kawagoro Dam	Natori City	2014/12/10	Sunny	6.0	30.3	7.0	5	Grayish olive	Faint	0.0	0.0	0.0	0.0	0.1	0.0	33.8	66.0	21.6	2.487	Silt	95 ± 21	300 ± 30	395	
			2014/6/4	Sunny	27.0	0.5	23.8	3	Dark brown	Faint	0.0	0.0	24.6	21.8	22.9	14.0	10.0	6.7	60.2	2.617	Sand/gravel	79 ± 8.0	250 ± 14	329	
			2014/10/7	Sunny	17.0	0.4	20.0	5	Dark brown	Faint	0.0	0.0	2.2	2.6	9.7	33.5	32.1	20.8	76.3	2.354	Sand/gravel	20 ± 2.7	59 ± 4.6	70	
	Shichikasyuku Dam		2014/5/28	Sunny	23.0	0.4	20.3	3	Dim yellowish brown	Faint	0.0	0.0	10.2	17.2	34.3	20.7	8.5	9.2	65.0	2.562	Sand/silt	69 ± 6.5	190 ± 10	250	
			2014/10/1	Sunny	21.5	0.7	20.0	5	Faint hydrogen sulfide	Faint	0.0	0.1	22.1	31.3	32.0	9.0	2.4	3.1	76.2	2.603	Sand/gravel	27 ± 4.3	94 ± 7.2	121	
			2014/5/28	Sunny	24.0	1.0	17.5	3	Brown	None	0.0	0.0	30.2	27.1	19.2	8.6	7.0	7.9	72.1	2.610	Gravel/sand	160 ± 8.2	470 ± 14	630	
			2014/8/29	Cloudy	22.0	1.0	20.7	3	Olive brown	Faint	0.0	0.0	7.4	23.3	30.2	22.4	6.4	10.3	55.4	2.570	Sand/silt	110 ± 10	320 ± 16	430	
Lake Bagyunuma	Lake exit	Shiroishi City	2014/10/1	Sunny	18.0	0.8	16.8	3	Dim yellowish brown	None	1.7	1.1	8.4	14.8	26.4	15.6	12.6	19.3	69.6	2.703	Silt/sand	76 ± 6.9	230 ± 12	306	
			2014/12/19	Sunny	2.0	0.3	5.5	3	Faint hydrogen sulfide	None	0.0	0.0	0.0	0.1	5.0	34.9	44.7	15.3	26.5	2.372	Silt	82 ± 13	270 ± 21	352	
			2014/6/3	Sunny	27.5	33.1	10.9	5	Grayish olive	Faint	0.0	0.0	0.0	0.0	0.1	0.4	22.8	76.7	28.7	2.571	Silt	450 ± 30	1,300 ± 52	1,750	
	Shichikasyuku Dam		2014/8/29	Sunny	24.0	29.1	11.0	5	Dim brown Olive gray	Faint	0.0	0.0	0.0	0.0	0.1	0.5	28.5	70.9	30.8	2.554	Silt	520 ± 33	1,700 ± 57	2,220	
			2014/10/30	Sunny	18.0	26.2	11.0	5	Dim brown Olive gray	Faint	0.0	0.0	0.0	0.0	0.0	0.4	25.4	74.2	28.9	2.569	Silt	460 ± 31	1,500 ± 56	1,960	
			2014/12/10	Sunny	7.0	28.3	8.0	5	Dim brown Olive gray	Faint	0.0	0.0	0.0	0.0	0.0	0.0	26.5	73.5	30.6	2.575	Silt	400 ± 27	1,300 ± 50	1,700	
			2014/5/28	Sunny	29.0	1.0	26.0	3	Faint hydrogen sulfide	Dark	0.0	0.0	29.6	30.3	24.1	8.3	1.5	6.3	84.6	2.676	Gravel/sand	50 ± 4.8	110 ± 7.2	160	
Lake Bagyunuma	Lake exit	Shiroishi City	2014/9/4	Cloudy	21.6	0.6	23.5	5	Blackish brown	Faint	0.0	0.3	9.5	8.7	11.9	8.9	24.1	33.1	35.2	2.338	Silt/sand	130 ± 15	430 ± 27	560	
			2014/10/1	Sunny	20.0	0.2	22.8	3	Dark brown	Faint	0.0	0.0	2.6	3.5	8.5	11.8	31.1	42.6	30.3	2.253	Silt/sand	190 ± 17	640 ± 29	830	
			2014/12/19	Sunny	3.0	1.2	1.0	3	Blackish brown	None	0.0	0.2	2.6	32.3	28.4	26.8	6.0	0.4	3.6	79.8	2.701	Sand/gravel	55 ± 4.7	160 ± 7.5	215

Miyagi Lakes and Reservoirs (Surrounding Environment) 1/2

Miyagi Lakes and Reservoirs (Surrounding Environment) 2/2

	Location				Sampling Date	Weather	Air temperature (°C)	Surrounding Environment(Soil,Air dose)							Remarks				
								Soil			General items								
	No.	Water area	Location					Color	Odor	Property	Activity concentration [Bq/kg(dry)]			Air Dose (μSv/h)					
											Cs-134	Radioactive cesium	Cs-137	Total					
Lakes and Rivers	54	Sunaoshi River System	Sonoseki Dam	Dam site	Rifu Town		2014/6/4 2014/8/26 2014/10/3 2014/12/17	27.0 23.0 23.5 1.0	Dim yellowish Dim yellowish Dim yellowish Dim yellowish	faint earth faint earth faint earth faint earth	Loamy	46 ± 7.5 71 ± 11 48 ± 7.8 23 ± 5.1	160 ± 13 270 ± 19 190 ± 14 65 ± 8.2	206 341 238 88	0.07 0.06 0.07 0.07				
							2014/5/26 2014/9/4 2014/10/16 2014/12/16	22.0 23.2 14.0 0.0	Blackish brown Blackish brown Dark brown -	Loamy	33 ± 7.8 27 ± 7.8 39 ± 10 -	82 ± 12 100 ± 14 170 ± 16 -	115 127 209 -	0.05 0.05 0.05 -	Unable to collect samples due to snow on the ground				
							2014/6/4 2014/9/4 2014/10/7 2014/12/17	24.5 23.0 21.0 0.0	Dim yellowish Blackish brown Dark brown Dark brown	faint earth faint earth faint earth Faint grass	140 ± 11 130 ± 15 74 ± 7.9 51 ± 6.6	340 ± 18 460 ± 28 220 ± 13 140 ± 11	480 590 294 191	0.05 0.05 0.05 0.07					
							2014/5/26 2014/9/4 2014/10/16 2014/12/16	17.0 23.0 14.0 0.0	Blackish brown Blackish brown Blackish brown -	Faint grass Faint grass Loamy	73 ± 10 64 ± 12 72 ± 12 -	180 ± 16 220 ± 19 210 ± 18 -	253 284 282 -	0.04 0.04 0.04 -	Unable to collect samples due to snow on the ground				
	56	Marutazawameike Pond		Pond exit	Sendai City		2014/6/4 2014/9/4 2014/10/7 2014/12/17	26.0 23.0 19.0 0.0	Dim yellowish Blackish brown Dim yellowish Dim yellowish	faint earth faint earth Faint grass Faint grass	80 ± 8.0 39 ± 7.2 91 ± 8.6 45 ± 6.1	210 ± 12 170 ± 14 260 ± 15 140 ± 10	290 209 351 185	0.07 0.07 0.08 0.08					
		57	Natori River System	Okura Dam			2014/6/4 2014/9/4 2014/10/16 2014/12/16	26.0 23.0 14.0 0.0	Dim yellowish Blackish brown Blackish brown -	faint earth faint earth Faint grass -	80 ± 8.0 64 ± 12 72 ± 12 -	210 ± 12 220 ± 19 210 ± 18 -	290 284 282 -	0.07 0.04 0.04 -	Unable to collect samples due to snow on the ground				
							2014/6/4 2014/8/26 2014/10/7 2014/12/17	26.0 23.0 19.0 0.0	Dim yellowish Light rain Dim yellowish Dim yellowish	faint earth Faint grass Faint grass Faint grass	80 ± 8.0 39 ± 7.2 91 ± 8.6 45 ± 6.1	210 ± 12 170 ± 14 260 ± 15 140 ± 10	290 209 351 185	0.07 0.07 0.08 0.08					
							2014/6/3 2014/8/25 2014/10/15 2014/12/10	23.0 30.0 18.0 6.0	Brown Blackish brown Blackish brown Blackish brown	Faint grass faint earth faint earth faint earth	100 ± 10 92 ± 12 66 ± 9.1 89 ± 9.9	300 ± 17 280 ± 20 230 ± 16 300 ± 18	400 372 296 389	0.07 0.05 0.05 0.06					
Reservoirs	59	Natori River System	Kamafusa Dam	Dam site	Kawasaki Town		2014/6/4 2014/8/25	Sunny Sunny	Brown Blackish brown	Faint grass faint earth	Loamy	100 ± 10 92 ± 12	300 ± 17 280 ± 20	400 372	0.07 0.05				
							2014/10/15 2014/12/10	Sunny Sunny	18.0 6.0	Blackish brown Blackish brown	faint earth faint earth	66 ± 9.1 89 ± 9.9	230 ± 16 300 ± 18	296 389	0.05 0.06				
	60		Taramizumi Dam	Dam site	Natori City		2014/6/4 2014/10/7	Sunny Sunny	27.0 17.0	Brown Dark brown	Faint grass Faint grass	150 ± 11 160 ± 12	380 ± 18 460 ± 20	530 620	0.09 0.08				
							2014/5/28 2014/10/1	Sunny Sunny	23.0 21.5	Blackish brown Blackish brown	Faint grass Faint grass	99 ± 11 210 ± 16	270 ± 18 790 ± 31	369 1,000	0.08 0.08				
	61		Murata Dam	Dam site	Murata Town		2014/5/28 2014/10/1	Sunny Sunny	23.0 21.5	Blackish brown Blackish brown	Faint grass Faint grass	610 ± 23 210 ± 16	1,800 ± 40 790 ± 31	2,410 1,000	0.08 0.08				
							2014/5/28 2014/8/29	Sunny Cloudy	24.0 22.0	Dim yellowish Dim yellowish	faint earth Faint grass	55 ± 8.4 390 ± 18	200 ± 15 1,300 ± 34	255 1,690	0.09 0.09				
							2014/10/1	Sunny	18.0	Dim yellowish	Faint grass	160 ± 11	510 ± 20	670	0.17	- Unable to collect samples due to snow on the ground			
							2014/12/19	Sunny	2.0	-	-	-	-	-	-	-			
Others	62	Abukuma River System	Kawarago Dam	Dam site	Shiroishi City		2014/6/3 2014/8/29 2014/10/29 2014/12/10	Sunny Sunny Sunny Sunny	27.5 24.0 18.0 7.0	Brown Blackish brown Dim yellowish Dark brown	faint earth Faint grass Faint grass Faint grass	450 ± 19 230 ± 16 55 ± 8.4 160 ± 11	1,100 ± 31 660 ± 27 2,100 ± 46 510 ± 20	1,550 890 2,870 670	0.21 0.19 0.26 0.17				
							2014/6/3 2014/8/29 2014/10/30 2014/12/10	Sunny Sunny Sunny Sunny	27.5 24.0 18.0 7.0	Dim yellowish Dim yellowish Dim yellowish Dark brown	Faint grass Faint grass Faint grass Faint grass	230 ± 16 520 ± 27 1,800 ± 51 160 ± 11	660 ± 27 1,800 ± 51 2,320 510 ± 20	2,320 4,500 0.16 0.17	0.16 0.31 0.26 0.17				
							2014/5/28 2014/9/4 2014/10/1 2014/12/19	Sunny Cloudy Sunny Sunny	29.0 21.6 20.0 3.0	Dark brown Blackish brown Dim yellowish -	Medium grass Faint earth Faint grass -	770 ± 27 1,000 ± 35 1,200 ± 29 -	2,100 ± 46 3,300 ± 64 3,300 ± 51 -	2,870 4,300 4,500 -	0.26 0.26 0.31 -	Unable to collect samples due to snow on the ground			
							2014/12/19	Sunny	-	-	-	-	-	-	-	Unable to collect samples due to snow on the ground			



Figure 3.5.3 Survey Locations (Miyagi Prefecture)