Reference

# Nuclides Analysis Result of the Radioactive Materials in the Seawater < Coast, Fukushima Daiichi Nuclear Power Station >

(Data summarized on December 13)

Place of Sampling	North of Unit 5-6 Discharge Daiichi N (Approx. 30m North of Unit 8	IPS	Around South Discharge C Daiichi N (Appox. 1.3km South of Unit	NPS .	② Density Limit Specified by the Reactor Regulation (Bq/L) (The density limit in the water					
Time of Sampling	·	Dec 12, 2013 Dec 12, 2013 7:30 AM 6:19 AM								
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	①Density of Sample (Bq/L)	Scaling Factor (①/②)	section 6 of Appendix 2.)					
I-131 (Approx. 8 days)	ND	-	ND	-	40					
Cs-134 (Approx. 2 years)	ND	-	ND	-	60					
Cs-137 (Approx. 30 years)	ND	-	ND	-	90					

<sup>\*</sup> The density specified by the Reactor Regulation is converted from Bq/cm<sup>3</sup> to Bq/L.

I-131: Approx. 0.70Bq/L, Cs-134: Approx. 0.99Bq/L, Cs-137: Approx. 0.81Bq/L

As the detection limit may vary depending on the detectors and sample properties, there are cases where nuclides below the detection limit are detected.

<sup>\*</sup> Data of other nuclides is under evaluation.

<sup>\*</sup> In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

 $<sup>\</sup>ensuremath{^{*}}$  "ND" indicates that the measurement result is below the detection limit.

#### Nuclides Analysis Result of Radioactive Materials in the Seawater < Offshore of Miyagi prefecture 1/6>

(Data summarized on December 13)

Place of Sampling (Place No.)		Offsh	ore of Minamis	anriku (T-	MG0)	*1		Offsh	nore of Minamis	anriku (T-l	MG0)	*2	② Density Limit Specified by the Reactor Regulation
	Upper La	ayer	Middle La	ayer	Lower La	ayer	Upper La	ayer	Middle La	ayer	Lower La	ayer	(Bq/L) (The density limit in the
Time of Sampling		ep 6, 2013 Sep 6, 2013 Sep 6, 2013 Sep 19, 2013 Sep 19, 2013 Sep 19, 2013						water outside the surrounding monitored					
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	areas is provided in section 6 of Appendix 2.)
Cs-134 (Approx. 2 years)	ND	(Bq/L) (①/②) (Bq/L) (①/②)			ND	-	ND	-	ND	-	ND	-	60
Cs-137 (Approx. 30 years)	0.0016	0.00	0.0010	0.00	0.0025	0.00	0.0022	0.00	0.0019	0.00	0.0019	0.00	90

Place of Sampling (Place No.)		Offsh	ore of Minamis	anriku (T-l	MG0)	*1			Ishinomaki Bay	/ (T-MG1)		*1	② Density Limit Specified by the Reactor Regulation
	Upper La									(Bq/L) (The density limit in the			
Time of Sampling	Oct 4, 20 8:56 A	2013 Oct 4, 2013 Oct 4, 2013 Sep 6, 2013 Sep 6, 2013 Sep 6, 2013					013	water outside the surrounding monitored					
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	areas is provided in section 6 of Appendix 2.)
Cs-134 (Approx. 2 years)	ND	-	ND	-	ND	-	0.0018	0.00	ND	-	ND	-	60
Cs-137 (Approx. 30 years)	0.0020	0.00	0.0018	0.00	0.0017	0.00	0.0058	0.00	0.0022	0.00	0.0023	0.00	90

<sup>\*</sup> The density specified by the Reactor Regulation is converted from Bq/cm <sup>3</sup> to Bq/L.

Cs-134: Approx.0.0016Bq/L As the detection limit may vary depending on the detectors and sample properties, there are cases where nuclides below the detection limit are detected.

<sup>\*</sup> In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit.

<sup>\*</sup> Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted. (Since the announcement on June 15, 2012.)

<sup>\*</sup> Analyzed by: \*1 THE GENERAL ENVIRONMENTAL TECHNOS Co., LTD., \*2 Japan Chemical Analysis Center

#### Nuclides Analysis Result of Radioactive Materials in the Seawater < Offshore of Miyagi prefecture 2/6>

(Data summarized on December 13)

Place of Sampling (Place No.)			Ishinomaki Bay	/ (T-MG1)		*2			Ishinomaki Bay	/ (T-MG1)		*1	② Density Limit Specified by the Reactor Regulation
	Upper La	ayer	Middle La	ayer	Lower La	ayer	Upper La	ayer	Middle La	ayer	Lower La	ayer	(Bq/L) (The density limit in the
Time of Sampling		Sep 18, 2013         Sep 18, 2013         Sep 18, 2013         Oct 4, 2013         Oct 4, 2013         Oct 4, 2013           10:18 AM         10:14 AM         10:11 AM         10:20 AM         10:16 AM         10:12 AM							water outside the surrounding monitored				
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	areas is provided in section 6 of Appendix 2.)
Cs-134 (Approx. 2 years)	0.0044				0.0029	0.00	0.0034	0.00	0.0017	0.00	0.0044	0.00	60
Cs-137 (Approx. 30 years)	0.0075	0.00	0.015	0.00	0.0083	0.00	0.0069	0.00	0.0066	0.00	0.011	0.00	90

Diagraph Complian						*1						*2	② Density Limit
Place of Sampling (Place No.)		Offsh	ore of Kinkasaı	n East (T-l	MG2)			Offsh	ore of Kinkasar	n East (T-l	MG2)		Specified by the Reactor Regulation (Bq/L)
	Upper La	ayer	Middle La	ayer	Lower La	ayer	Upper La	ayer	Middle La	ayer	Lower La	ayer	(The density limit in the
Time of Sampling		ep 6, 2013 Sep 6, 2013 Sep 6, 2013 Sep 18, 2013 Sep 18, 2013 Sep 18, 2013 7:51 AM 8:15 AM 7:55 AM 7:38 AM 8:01 AM 7:44 AM					water outside the surrounding monitored areas is provided in						
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	section 6 of Appendix 2.)
Cs-134 (Approx. 2 years)	ND	-	ND	-	ND	-	ND	-	ND	1	ND	-	60
Cs-137 (Approx. 30 years)	0.0028	0.00	0.0013	0.00	0.0018	0.00	0.0037	0.00	0.0023	0.00	0.0020	0.00	90

<sup>\*</sup> The density specified by the Reactor Regulation is converted from Bq/cm <sup>3</sup> to Bq/L.

Cs-134: Approx.0.0019Bq/L As the detection limit may vary depending on the detectors and sample properties, there are cases where nuclides below the detection limit are detected.

<sup>\*</sup> In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit.

<sup>\*</sup> Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted. (Since the announcement on June 15, 2012.)

<sup>\*</sup> Analyzed by: \*1 THE GENERAL ENVIRONMENTAL TECHNOS Co., LTD., \*2 Japan Chemical Analysis Center

#### Nuclides Analysis Result of Radioactive Materials in the Seawater < Offshore of Miyagi prefecture 3/6>

(Data summarized on December 13)

Place of Sampling (Place No.)		Offsh	ore of Kinkasar	n East (T-	MG2)	*1		Offsho	ore of Kinkasan	South (T-	MG3)	*1	② Density Limit Specified by the Reactor Regulation
	Upper La	ayer	Middle La	ayer	Lower La	ayer	Upper La	ayer	Middle La	ayer	Lower La	ayer	(Bq/L) (The density limit in the
Time of Sampling	· · · · · · · · · · · · · · · · · · ·	Oct 4, 2013 Oct 4, 2013 Sep 6, 2013 Sep 6, 2013 Sep 6, 2013						water outside the surrounding monitored					
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	areas is provided in section 6 of Appendix 2.)
Cs-134 (Approx. 2 years)	ND				ND	-	ND	-	ND	-	ND	-	60
Cs-137 (Approx. 30 years)	0.0026	0.00	0.0022	0.00	0.0018	0.00	0.0016	0.00	0.0017	0.00	0.0019	0.00	90

Place of Sampling (Place No.)		Offsho	ore of Kinkasan	South (T-	-MG3)	*2		Offsho	ore of Kinkasan	South (T-	-MG3)	*1	② Density Limit Specified by the Reactor Regulation
	Upper La	ayer	Middle La	ayer	Lower La	ayer	Upper La	ayer	Middle La	ayer	Lower La	ayer	(Bq/L) (The density limit in the
Time of Sampling	Sep 18, 2 8:42 A		8 Sep 18, 2013 Sep 18, 2013 Oct 4, 2013 Oct 4, 2013 Oct 4, 2013 9:02 AM 8:47 AM 8:49 AM 9:02 AM 8:51 AM					water outside the surrounding monitored					
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	areas is provided in section 6 of Appendix 2.)
Cs-134 (Approx. 2 years)	ND	-	ND	(Bq/L) (①/②)		-	ND	-	ND	-	ND	-	60
Cs-137 (Approx. 30 years)	0.0028	0.00	0.0023	0.00	0.0019	0.00	0.0021	0.00	0.0018	0.00	0.0018	0.00	90

<sup>\*</sup> The density specified by the Reactor Regulation is converted from Bq/cm <sup>3</sup> to Bq/L.

Cs-134: Approx.0.0018Bq/L As the detection limit may vary depending on the detectors and sample properties, there are cases where nuclides below the detection limit are detected.

<sup>\*</sup> In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit.

<sup>\*</sup> Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted. (Since the announcement on June 15, 2012.)

<sup>\*</sup> Analyzed by: \*1 THE GENERAL ENVIRONMENTAL TECHNOS Co., LTD., \*2 Japan Chemical Analysis Center

#### Nuclides Analysis Result of Radioactive Materials in the Seawater < Offshore of Miyagi prefecture 4/6>

(Data summarized on December 13)

Place of Sampling (Place No.)		Offsh	ore of Shichiga	hama (T-l	MG4)	*1		Offsh	nore of Shichiga	ıhama (T-I	MG4)	*2	② Density Limit Specified by the Reactor Regulation
	Upper La	ayer	Middle La	ayer	Lower La	ayer	Upper La	ayer	Middle La	ayer	Lower La	ayer	(Bq/L) (The density limit in the
Time of Sampling		Sep 6, 2013         Sep 6, 2013         Sep 6, 2013         Sep 18, 2013 <td></td> <td>water outside the surrounding monitored</td>						water outside the surrounding monitored					
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	areas is provided in section 6 of Appendix 2.)
Cs-134 (Approx. 2 years)	ND				ND	-	ND	-	0.0024	0.00	0.0027	0.00	60
Cs-137 (Approx. 30 years)	0.0045	0.00	0.0048	0.00	0.0037	0.00	0.0063	0.00	0.0055	0.00	0.0071	0.00	90

Place of Sampling (Place No.)		Offsh	ore of Shichiga	ıhama (T-I	MG4)	*1		Centra	al Area of Send	lai Bay (T-	MG5)	*1	② Density Limit Specified by the Reactor Regulation
	Upper La	Upper Layer         Middle Layer         Lower Layer         Upper Layer           Oct 4, 2013         Oct 4, 2013         Sep 6, 2013							Middle La	ayer	Lower La	ayer	(Bq/L) (The density limit in the
Time of Sampling	Oct 4, 20 9:43 A		Oct 4, 2013					water outside the surrounding monitored					
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	areas is provided in section 6 of Appendix 2.)
Cs-134 (Approx. 2 years)	0.0025	0.00	0.0029	0.00	0.0044	0.00	ND	-	ND	-	ND	-	60
Cs-137 (Approx. 30 years)	0.0081	0.00	0.0076	0.00	0.013	0.00	0.0025	0.00	0.0021	0.00	0.0028	0.00	90

<sup>\*</sup> The density specified by the Reactor Regulation is converted from Bq/cm <sup>3</sup> to Bq/L.

Cs-134: Approx.0.0018Bq/L As the detection limit may vary depending on the detectors and sample properties, there are cases where nuclides below the detection limit are detected.

<sup>\*</sup> In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit.

<sup>\*</sup> Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted. (Since the announcement on June 15, 2012.)

<sup>\*</sup> Analyzed by: \*1 THE GENERAL ENVIRONMENTAL TECHNOS Co., LTD., \*2 Japan Chemical Analysis Center

#### Nuclides Analysis Result of Radioactive Materials in the Seawater < Offshore of Miyagi prefecture 5/6>

(Data summarized on December 13)

Place of Sampling (Place No.)		Centra	al Area of Send	lai Bay (T-	-MG5)	*2		Centra	al Area of Send	lai Bay (T-	MG5)	*1	② Density Limit Specified by the Reactor Regulation
	Upper La	ayer	Middle La	ayer	Lower La	ayer	Upper La	ayer	Middle La	ayer	Lower La	ayer	(Bq/L) (The density limit in the
Time of Sampling	' '	Sep 18, 2013         Sep 18, 2013         Sep 18, 2013         Oct 4, 2013         Oct 4, 2013         Oct 4, 2013           8:48 AM         8:50 AM         8:45 AM         8:42 AM         8:55 AM         8:46 AM						water outside the surrounding monitored					
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	areas is provided in section 6 of Appendix 2.)
Cs-134 (Approx. 2 years)	0.0046	q/L) (①/②) (Bq/L) (①/②)			ND	-	ND	-	0.0018	0.00	0.0022	0.00	60
Cs-137 (Approx. 30 years)	0.0092	0.00	0.0032	0.00	0.0029	0.00	0.0038	0.00	0.0044	0.00	0.0067	0.00	90

Place of Sampling (Place No.)		Offsh	ore of Abukuma	a River (T-	MG6)	*1		Offsho	ore of Abukuma	a River (T-	MG6)	*2	② Density Limit Specified by the Reactor Regulation
	Upper La	ayer	Middle La	ayer	Lower La	ayer	Upper La	ayer	Middle La	ayer	Lower La	ayer	(Bq/L) (The density limit in the
Time of Sampling	Sep 6, 2 10:46 A	2013 Sep 6, 2013 Sep 6, 2013 Sep 18, 2013 Sep 18, 2013 Sep 18, 2013					water outside the surrounding monitored						
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	areas is provided in section 6 of Appendix 2.)
Cs-134 (Approx. 2 years)	0.0020	0.00	ND	-	ND	-	(Bq/L)         (①/②)         (Bq/L)         (①/②)           0.013         0.00         0.0024         0.00		0.00	0.010	0.00	60	
Cs-137 (Approx. 30 years)	0.0030	0.00	0.0031	0.00	0.0029	0.00	0.025	0.00	0.0076	0.00	0.024	0.00	90

<sup>\*</sup> The density specified by the Reactor Regulation is converted from Bq/cm <sup>3</sup> to Bq/L.

Cs-134: Approx.0.0018Bq/L As the detection limit may vary depending on the detectors and sample properties, there are cases where nuclides below the detection limit are detected.

<sup>\*</sup> In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit.

<sup>\*</sup> Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted. (Since the announcement on June 15, 2012.)

<sup>\*</sup> Analyzed by: \*1 THE GENERAL ENVIRONMENTAL TECHNOS Co., LTD., \*2 Japan Chemical Analysis Center

#### Nuclides Analysis Result of Radioactive Materials in the Seawater < Offshore of Miyagi prefecture 6/6>

(Data summarized on December 13)

Place of Sampling (Place No.)		Offsh	ore of Abukuma	a River (T-	MG6)								② Density Limit Specified by the Reactor Regulation (Bq/L)
	Upper La	ayer	Middle La	ayer	Lower La	ayer	Upper La	ayer	Middle La	ayer	Lower La	ayer	(The density limit in the
Time of Sampling	Oct 4, 20 10:36 A		,	Middle Layer Lower Layer Upper Layer Middle Layer Lower Layer  Oct 4, 2013 Oct 4, 2013 10:41 AM 10:30 AM					water outside the surrounding monitored areas is provided in				
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	section 6 of Appendix 2.)
Cs-134 (Approx. 2 years)	ND	-	ND	-	0.0020	0.00							60
Cs-137 (Approx. 30 years)	0.0047	0.00	0.0046	0.00	0.0038	0.00							90

Place of Sampling (Place No.)											② Density Limit Specified by the Reactor Regulation		
	Upper Layer		Middle Layer		Lower Layer		Upper Layer		Middle Layer		Lower Layer		(Bq/L)
Time of Sampling													(The density limit in the water outside the surrounding monitored
Detected Nuclides (Half-life)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	①Density of Sample (Bq/L)	Scaling Factor (1)/2)	areas is provided in section 6 of Appendix 2.)								
Cs-134 (Approx. 2 years)													60
Cs-137 (Approx. 30 years)													90

<sup>\*</sup> The density specified by the Reactor Regulation is converted from Bq/cm³ to Bq/L.

Cs-134: Approx.0.0017Bq/L As the detection limit may vary depending on the detectors and sample properties, there are cases where nuclides below the detection limit are detected.

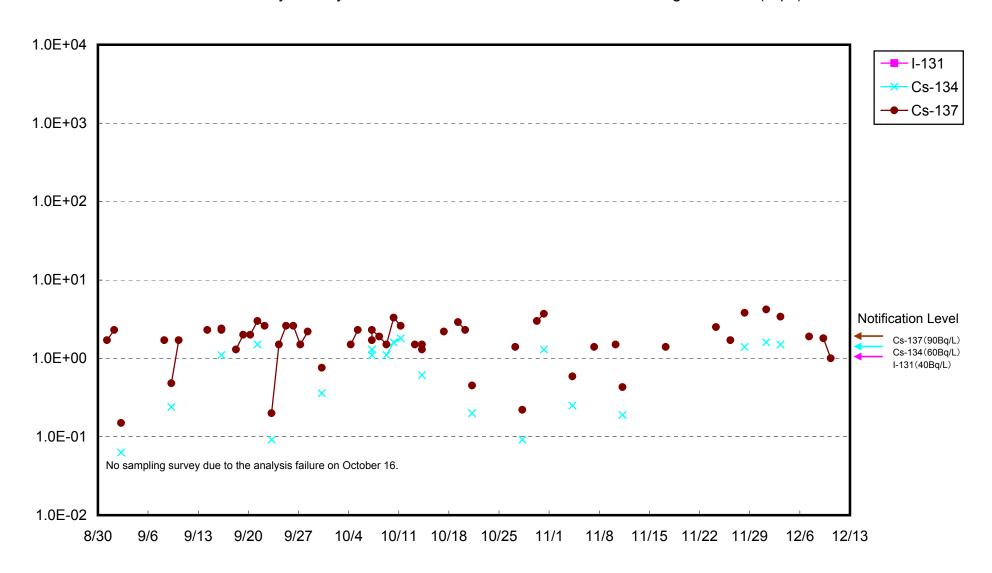
<sup>\*</sup> In the case of more than 2 nuclides, the sum of scaling factors to density limits is compared to 1.

<sup>\* &</sup>quot;ND" indicates that the measurement result is below the detection limit.

<sup>\*</sup> Analysis results by detail analysis (Phosphomolybdic acid ammonium adsorption sampling method) are noted. (Since the announcement on June 15, 2012.)

<sup>\*</sup> Analyzed by: THE GENERAL ENVIRONMENTAL TECHNOS Co., LTD.

### Radioactivity Density of the Seawater at 1F Units 5-6 North Discharge Channel (Bq/L)



## Radioactivity Density of the Seawater at 1F South Discharge Channel (Bq/L)

