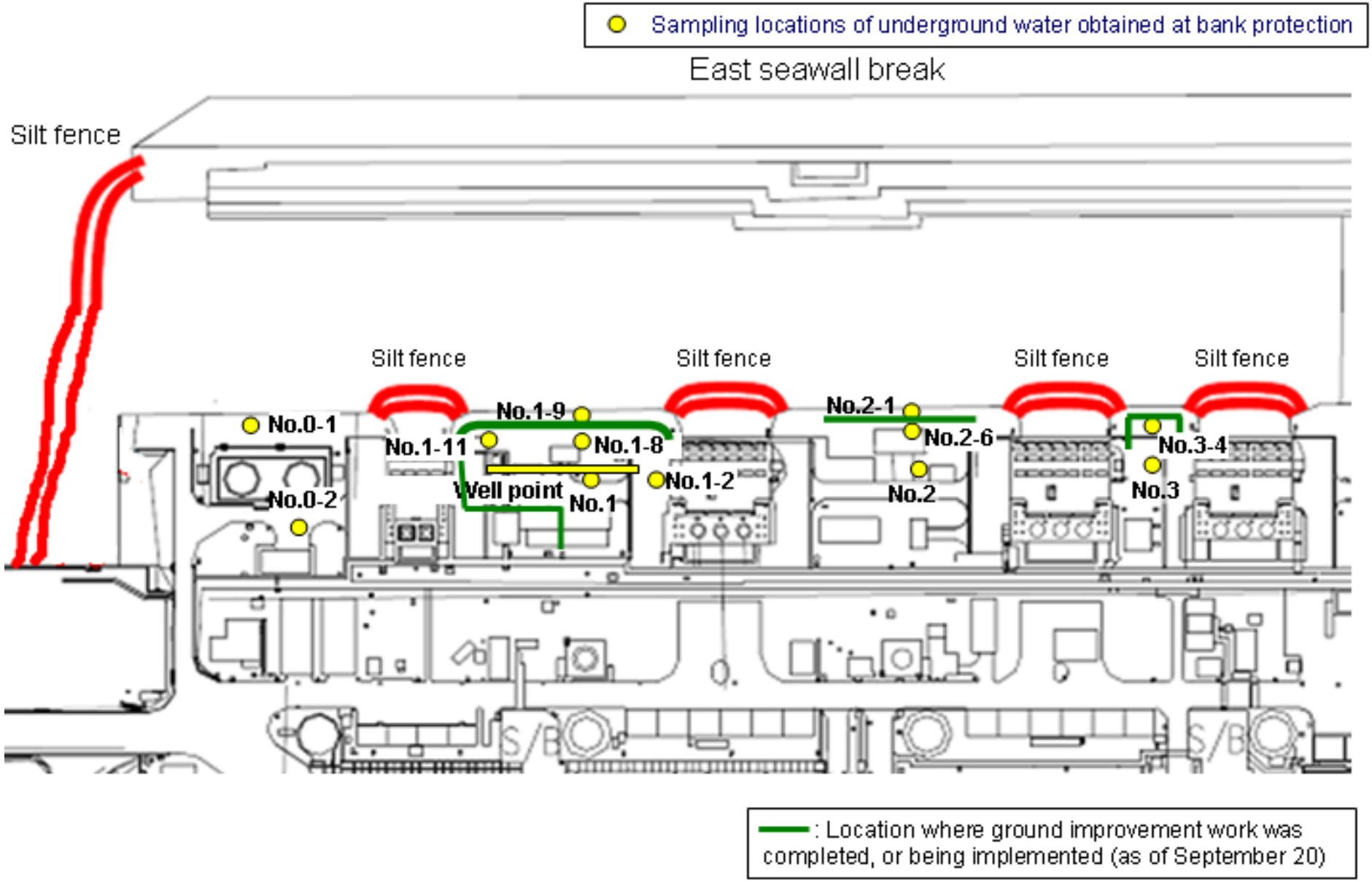
<Reference>
September 23, 2013
Tokyo Electric Power Company

Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection
(Sampling Locations of Underground Water Obtained at Bank Protection)



Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection (1/6)
Underground Water Obtained at Bank Protection

Unit: Bq/L (exclude chloride)

		Underground water observation hole No.0-1	Underground water observation hole No.0-2	Underground water observation hole No.1	Underground water observation hole No.1-2	Underground water observation hole No.1-8	Underground water observation hole No.1-9	Underground water observation hole No.1-11	Groundwater pumped up from the well point	Underground water observation hole No.2	Underground water observation hole No.2-1	Underground water observation hole No.3	Underground water observation hole No.3-4
Date of sampling		Sep 15, 2013	Sep 15, 2013	Sep 16, 2013	Sep 16, 2013	Sep 16, 2013	Sep 17, 2013	Sep 16, 2013	Sep 16, 2013				
Time of sampling		9:52 AM	10:32 AM	10:25 AM	10:54 AM	10:00 AM	6:30 AM	9:35 AM	9:45 AM				
Chloride (unit: ppm)		-	-	-	-	-	400	-	-				
Cs-134 (Approx. 2 years)		1.7	ND（0.42）	ND(0.57)	78	31	29	ND(0.40)	15				
Cs-137 (Approx.30 years)		4.4	0.93	ND(0.67)	180	67	69	ND(0.58)	32				
The other γ	Ru-106 (Approx. 370 days)	ND	ND	7.6	ND	ND	ND	ND	12				
	Mn-54 (Approx. 310 days)	ND	ND	ND	ND	0.76	ND	ND	ND				
All β		170	19	940	430,000	2,100	260	42	450,000				
H-3 (Approx. 12 years)		20,000	ND(120)	360,000	430,000	1900	570	72,000	290,000				
Sr-90（Approx. 29 years）		-	-	-	-	Under analysis	-	-	-				

* Data announced this time is provided in a thick-frame. The other data was announced on September 17 and 18.
* "ND" indicates that the measurement result is below the detection limit, and the detection limit of each nuclide is provided in parentheses.
* "-" indicates that the measurement was out of range.

Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection (2/6)
Underground Water Obtained at Bank Protection

Unit: Bq/L (exclude chloride)

		Underground water observation hole No.0-1	Underground water observation hole No.0-2	Underground water observation hole No.1	Underground water observation hole No.1-2	Underground water observation hole No.1-8	Underground water observation hole No.1-9	Underground water observation hole No.1-11	Groundwater pumped up from the well point	Underground water observation hole No.2	Underground water observation hole No.2-1	Underground water observation hole No.3	Underground water observation hole No.3-4
Date of sampling				Sep 19, 2013	Sep 19, 2013		Sep 19, 2013	Sep 19, 2013		Sep 18, 2013			Sep 18, 2013
Time of sampling				10:02 AM	10:26 AM		6:24 AM	9:35 AM		9:24 AM			10:16 AM
Chloride (unit: ppm)				-	-		390	-		-			-
Cs-134 (Approx. 2 years)				ND（0.43）	90		19	ND(0.48)		ND（0.37）			0.72
Cs-137 (Approx.30 years)				ND（0.57）	200		45	0.74		ND（0.44）			1.8
The other γ	Ru-106 (Approx. 370 days)			7.0	ND		ND	ND					
All β				770	350,000		240	57		260			ND(18)
H-3 (Approx. 12 years)				Under analysis	Under analysis		650	Under analysis		800			170
Sr-90（Approx. 29 years）				Under analysis	-		-	-		-			-

* Data announced this time is provided in a thick-frame. The other data was announced on September 19.
* "ND" indicates that the measurement result is below the detection limit, and the detection limit of each nuclide is provided in parentheses.
* "-" indicates that the measurement was out of range.

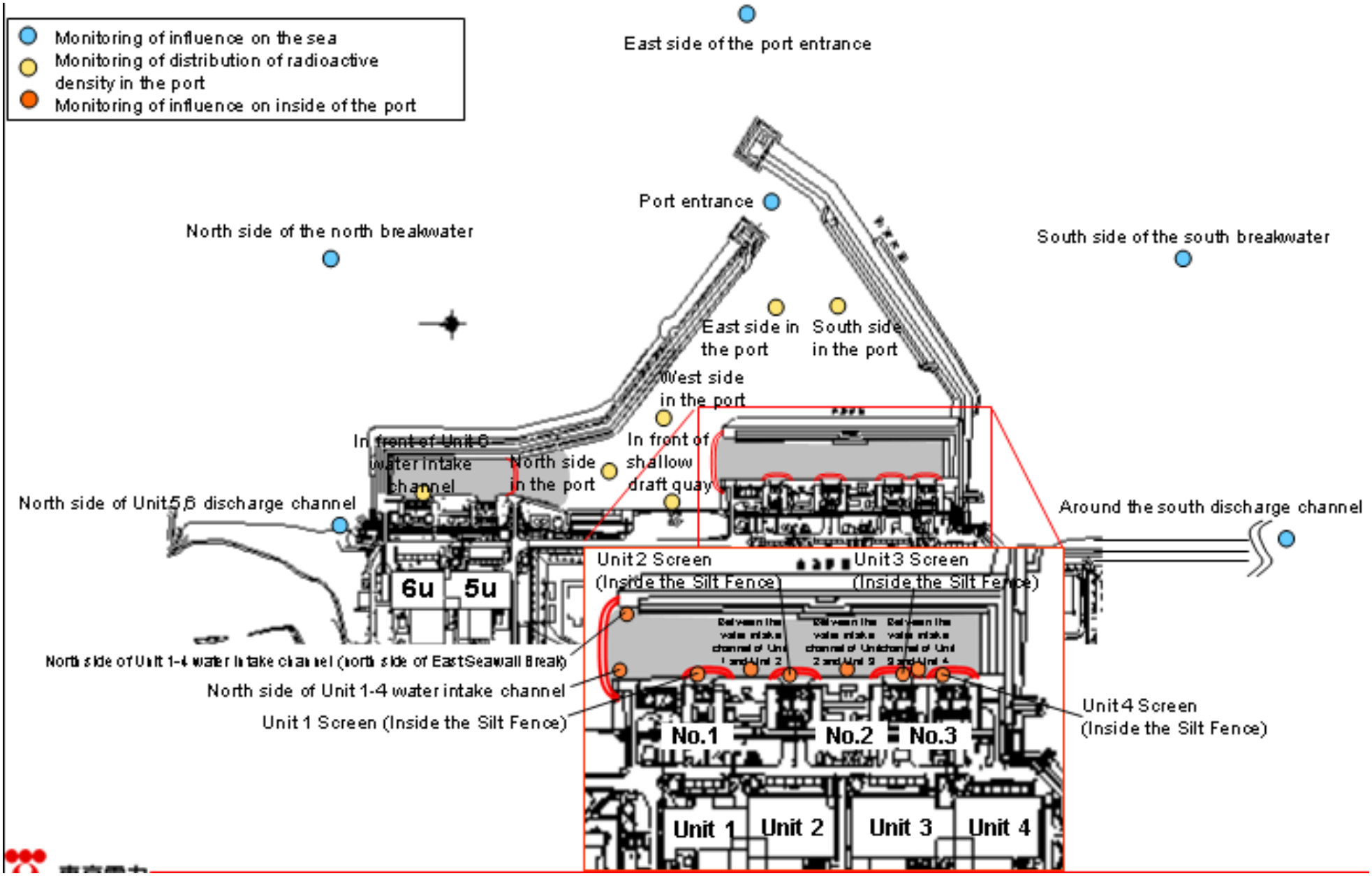
Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection (3/6)
Underground Water Obtained at Bank Protection

Unit: Bq/L (exclude chloride)

	Underground water observation hole No.0-1	Underground water observation hole No.0-2	Underground water observation hole No.1	Underground water observation hole No.1-2	Underground water observation hole No.1-8	Underground water observation hole No.1-9	Underground water observation hole No.1-11	Groundwater pumped up from the well point	Underground water observation hole No.2	Underground water observation hole No.2-1	Underground water observation hole No.2-6	Underground water observation hole No.3	Underground water observation hole No.3-4
Date of sampling	Sep 22, 2013	Sep 22, 2013				Sep 22, 2013			Sep 22, 2013		Sep 22, 2013		
Time of sampling	10:25 AM	11:15 AM				6:22 AM			9:34 AM		10:51 AM		
Chloride (unit: ppm)	-	-				380			-		-		
Cs-134 (Approx. 2 years)	2.1	ND(0.45)				17			ND(0.48)		0.42		
Cs-137 (Approx.30 years)	4.6	ND(0.55)				40			0.67		0.57		
The other γ													
The other γ													
The other γ													
All β	120	37				230			380		ND(17)		
H-3 (Approx. 12 years)	Under analysis	Under analysis				Under analysis			Under analysis		Under analysis		
Sr-90（Approx. 29 years）	-	-				-			-		-		

* "ND" indicates that the measurement result is below the detection limit, and the detection limit of each nuclide is provided in parentheses.
* "-" indicates that the measurement was out of range.

Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection
(Sampling Locations of Seawater)



Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection (4/6)
Seawater

Unit: Bq/L

	1F, North side of Unit 5,6 discharge channel	1F, In front of Unit 6 water intake channel	1F, In front of shallow draft quay	1F, North side of Unit 1-4 water intake channel	1F, North side of Unit 1-4 water intake channel (north side of East Seawall Break)	1F, Unit 1 Screen (Inside the Silt Fence)	1F, Between the water intake channel of Unit 1 and Unit 2 (surface layer)	1F, Between the water intake channel of Unit 1 and Unit 2 (lower layer)	1F, Unit 2 Screen (Inside the Silt Fence)	1F, Between the water intake channel of Unit 2 and Unit 3	1F, Unit 3 Screen (Inside the Silt Fence)	Density Limit Specified by the Reactor Regulation *	WHO Guidelines for drinking-water quality
Date of Sampling	Sep 16, 2013	Sep 16, 2013	Sep 16, 2013	Sep 17, 2013	Sep 16, 2013	Sep 16, 2013	Sep 17, 2013	Sep 17, 2013	Sep 16, 2013	Sep 16, 2013	Sep 16, 2013		
Time of sampling	5:55 AM	5:40 AM	5:51 AM	6:16 AM	6:25 AM	6:00 AM	6:35 AM	6:35 AM	6:04 AM	6:07 AM	6:10 AM		
Cs-134(Approx. 2 years)	ND(1.3)	ND(2.4)	ND(2.5)	23	6.9	21	21	12	26	14	190	60	10
Cs-137(Approx.30 years)	2.3	ND(2.7)	3.7	46	16	44	42	29	48	31	440	90	10
All β	ND(15)	ND(19)	24	250	130	230	220	170	350	76	600		
H-3 (Approx. 12 years)	2.7	18.0	ND(110)	1,000	130	510	720	520	1300	140	ND(110)	60,000	10,000
Sr-90（Approx. 29 years）	- *1	- *2	- *1	-	- *1	- *1	-	-	- *1	- *1	- *1	30	

Unit: Bq/L

	1F, Between the water intake channel of Unit 3 and Unit 4	1F, Unit 4 Screen (Inside the Silt Fence)	1F, Around the south discharge channel	1F, Port entrance	1F, East side in the port	1F, West side in the port	1F, North side in the port	1F, South side in the port	North side of the north breakwater	East side of the port entrance	South side of the south breakwater	Density Limit Specified by the Reactor Regulation *	WHO Guidelines for drinking-water quality
Date of Sampling	Sep 16, 2013	Sep 16, 2013	Sep 16, 2013										
Time of sampling	6:15 AM	6:13 AM	5:20 AM										
Cs-134(Approx. 2 years)	28	62	ND(1.3)									60	10
Cs-137(Approx.30 years)	50	140	ND(1.8)									90	10
All β	130	200	ND(19)										
H-3 (Approx. 12 years)	200	160	ND(1.5)									60,000	10,000
Sr-90（Approx. 29 years）	- *1	- *1	- *1									30	

* 1 We have announced that the data was "under analysis" on September 18, but the data is scheduled to be sampled and analyzed on September 23.

* 2 We have announced that the data was "under analysis" on September 18, but the analysis will not be performed in front of Unit 6 water intake channel.

* Data announced this time is provided in a thick-frame. The other data was announced on September 18.

* "ND" indicates that the measurement result is below the detection limit, and the detection limit of each nuclide is provided in parentheses.

* "-" indicates that the measurement was out of range.

* Density Limit Specified by the Rule for the Installation, Operation, etc. of Commercial Nuclear Power Reactors (the density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2 [the amount is converted from Bq/cm^3 to Bq/L]).

Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection (5/6)
Seawater

Unit: Bq/L

	1F, North side of Unit 5,6 discharge channel	1F, In front of Unit 6 water intake channel	1F, In front of shallow draft quay	1F, North side of Unit 1-4 water intake channel	1F, North side of Unit 1-4 water intake channel (north side of East Seawall Break)	1F, Unit 1 Screen (Inside the Silt Fence)	1F, Between the water intake channel of Unit 1 and Unit 2 (surface layer)	1F, Between the water intake channel of Unit 1 and Unit 2 (lower layer)	1F, Unit 2 Screen (Inside the Silt Fence)	1F, Between the water intake channel of Unit 2 and Unit 3	1F, Unit 3 Screen (Inside the Silt Fence)	Density Limit Specified by the Reactor Regulation *	WHO Guidelines for drinking-water quality
Date of Sampling				Sep 19, 2013			Sep 19, 2013	Sep 19, 2013					
Time of sampling				6:06 AM			6:14 AM	6:14 AM					
Cs-134(Approx. 2 years)				28			22	7.9				60	10
Cs-137(Approx.30 years)				62			45	26				90	10
All β				320			360	180					
H-3 (Approx. 12 years)				1,100			1,100	410				60,000	10,000
Sr-90（Approx. 29 years）				-			-	-				30	

Unit: Bq/L

	1F, Between the water intake channel of Unit 3 and Unit 4	1F, Unit 4 Screen (Inside the Silt Fence)	1F, Around the south discharge channel	1F, Port entrance	1F, East side in the port	1F, West side in the port	1F, North side in the port	1F, South side in the port	North side of the north breakwater	East side of the port entrance	South side of the south breakwater	Density Limit Specified by the Reactor Regulation *	WHO Guidelines for drinking-water quality
Date of Sampling									Sep 18, 2013	Sep 18, 2013	Sep 18, 2013		
Time of sampling									9:00 AM	8:44 AM	8:52 AM		
Cs-134(Approx. 2 years)									ND(0.67)	ND(0.45)	ND(0.68)	60	10
Cs-137(Approx.30 years)									ND(0.52)	ND(0.68)	ND(0.82)	90	10
All β									ND(16)	ND(16)	ND(16)		
H-3 (Approx. 12 years)									Under analysis	Under analysis	Under analysis	60,000	10,000
Sr-90（Approx. 29 years）									-	-	-	30	

* "ND" indicates that the measurement result is below the detection limit, and the detection limit of each nuclide is provided in parentheses.

* "-" indicates that the measurement was out of range.

* Density Limit Specified by the Rule for the Installation, Operation, etc. of Commercial Nuclear Power Reactors (the density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2 [the amount is converted from Bq/cm^3 to Bq/L]).

Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection (6/6)
Seawater

Unit: Bq/L

	1F, North side of Unit 5,6 discharge channel	1F, In front of Unit 6 water intake channel	1F, In front of shallow draft quay	1F, North side of Unit 1-4 water intake channel	1F, North side of Unit 1-4 water intake channel (north side of East Seawall Break)	1F, Unit 1 Screen (Inside the Silt Fence)	1F, Between the water intake channel of Unit 1 and Unit 2 (surface layer)	1F, Between the water intake channel of Unit 1 and Unit 2 (lower layer)	1F, Unit 2 Screen (Inside the Silt Fence)	1F, Between the water intake channel of Unit 2 and Unit 3	1F, Unit 3 Screen (Inside the Silt Fence)	Density Limit Specified by the Reactor Regulation *	WHO Guidelines for drinking-water quality
Date of Sampling				Sep 22, 2013			Sep 22, 2013	Sep 22, 2013					
Time of sampling				6:09 AM			6:18 AM	6:18 AM					
Cs-134(Approx. 2 years)				46			28	11				60	10
Cs-137(Approx.30 years)				94			59	25				90	10
All β				810			480	200					
H-3 (Approx. 12 years)				Under analysis			Under analysis	Under analysis				60,000	10,000
Sr-90（Approx. 29 years）				Under analysis			Under analysis	Under analysis				30	

Unit: Bq/L

	1F, Between the water intake channel of Unit 3 and Unit 4	1F, Unit 4 Screen (Inside the Silt Fence)	1F, Around the south discharge channel	1F, Port entrance	1F, East side in the port	1F, West side in the port	1F, North side in the port	1F, South side in the port	North side of the north breakwater	East side of the port entrance	South side of the south breakwater	Density Limit Specified by the Reactor Regulation *	WHO Guidelines for drinking-water quality
Date of Sampling													
Time of sampling													
Cs-134(Approx. 2 years)												60	10
Cs-137(Approx.30 years)												90	10
All β													
H-3 (Approx. 12 years)												60,000	10,000
Sr-90（Approx. 29 years）												30	

* "ND" indicates that the measurement result is below the detection limit, and the detection limit of each nuclide is provided in parentheses.

* "-" indicates that the measurement was out of range.

* Density Limit Specified by the Rule for the Installation, Operation, etc. of Commercial Nuclear Power Reactors (the density limit in the water outside the surrounding monitored areas is provided in section 6 of Appendix 2 [the amount is converted from B

<Reference> The Highest Dose Until the Previous Measurement (Groundwater Obtained at Bank Protection)

Unit: Bq/L

		Groundwater observation hole No.0-1	Groundwater observation hole No.0-2	Groundwater observation hole No.1	Groundwater observation hole No.1-1	Groundwater observation hole No.1-2	Groundwater observation hole No.1-3	Groundwater observation hole No.1-4	Groundwater observation hole No.1-5	Groundwater observation hole No.1-8	Groundwater observation hole No.1-9	Groundwater observation hole No.1-11	Groundwater pumped up from the well point (notch tank)
Cs-134 (Approx. 2 years)		1.7 〔9/15〕	ND	13 〔8/29〕	1.9 〔7/8〕	11,000 〔7/9〕	10 〔9/2〕	1.5 〔7/8〕	310 〔8/5〕	31 〔9/16〕	170 〔9/3〕	ND	15 〔9/16〕
Cs-137 (Approx.30 years)		4.4 〔9/15〕	0.93 〔9/15〕	31 〔8/29〕	3.6 〔7/8〕	22,000 〔7/9〕	24 〔9/2〕	3.6 〔7/8〕	650 〔8/5〕	67 〔9/16〕	380 〔9/3〕	0.48 〔9/13〕	32 〔9/16〕
The other γ	Ru-106 (Approx. 370 days)	ND	ND	26 〔5/24〕	7.9 〔7/8〕	160 〔8/15〕	17 〔7/22〕〔8/8〕	3.1 〔8/8〕	ND	ND	ND	ND	25 〔9/2〕
	Mn-54 (Approx. 310 days)	ND	ND	ND	1.0 〔7/5〕	62 〔7/5〕	ND	ND	ND	0.76 〔9/16〕	ND	ND	ND
	Co-60 (Approx. 5 years)	ND	ND	0.50 〔7/19〕	ND	3.1 〔7/8〕	ND	ND	ND	ND	ND	ND	ND
	Sb-125 (Approx. 3 years)	ND	ND	1.7 〔7/11〕	ND	250 〔7/15〕	1.4 〔7/12〕〔8/26〕	ND	12 〔8/8〕	ND	ND	ND	ND
All β		300 〔8/22〕	〔1/19〕 〔9/15〕	1,900 〔5/24〕	4,400 〔7/8〕	900,000 〔7/5〕〔7/9〕	160,000 〔8/12〕〔8/15〕	380 〔8/19〕	56,000 〔8/5〕	1,200 〔8/26〕	600 〔9/8〕	43 〔9/13〕	360,000 〔9/2〕
H-3 (Approx. 12 years)		45,000 〔8/29〕	ND	500,000 〔5/24〕〔6/7〕	630,000 〔7/8〕	400,000 〔8/22〕	290,000 〔7/12〕	98,000 〔7/11〕	72,000 〔8/15〕	1200 〔9/9〕	680 〔9/15〕	85000 〔9/13〕	460,000 〔8/19〕
Sr-90(Approx. 29 years)		Under analysis	Under analysis	1,200 〔6/7〕	Under analysis	Under analysis	Under analysis	Under analysis	Under analysis	Under analysis	Under analysis	Under analysis	-

Unit: Bq/L

		Groundwater observation hole No.2	Groundwater observation hole No.2-1	Groundwater observation hole No.2-6	Groundwater observation hole No.3	Groundwater observation hole No.3-1	Groundwater observation hole No.3-4
Cs-134 (Approx. 2 years)		0.50 〔7/9〕	0.66 〔9/1〕	ND	3.5 〔7/25〕	1.2 〔7/25〕〔8/8〕	0.52 〔9/12〕
Cs-137 (Approx.30 years)		1.2 〔7/11〕〔8/1〕	1.1 〔8/29〕〔9/1〕	ND	5.9 〔8/8〕	2.6 〔8/1〕	1.3 〔9/12〕
The other γ	Ru-106 (Approx. 370 days)	ND	ND	ND	ND	ND	ND
	Mn-54 (Approx. 310 days)	ND	ND	ND	ND	ND	ND
	Co-60 (Approx. 5 years)	ND	ND	ND	ND	ND	ND
	Sb-125 (Approx. 3 years)	ND	ND	ND	1.1 〔9/5〕	ND	ND
All β		1,700 〔7/8〕	380 〔7/29〕	ND	1,400 〔7/11〕	180 〔8/1〕	ND
H-3 (Approx. 12 years)		850 〔6/26〕	440 〔8/26〕	200 〔9/20〕	3,200 〔2012/12/12〕	460 〔8/1〕	ND
Sr-90(Approx. 29 years)		54 〔5/31〕	Under analysis	Under analysis	8.3 〔2012/12/12〕	Under analysis	Under analysis

* "ND" indicates that the measurement result is below the detection limit.
* Date of sampling is provided in parentheses.

<Reference> The Highest Dose Until the Previous Measurement* (Seawater)

Unit: Bq/L

	1F, North side of Unit 5,6 discharge channel	1F, In front of Unit 6 water intake channel	1F, In front of shallow draft quay	1F, North side of Unit 1-4 water intake channel	1F, North side of Unit 1-4 water intake channel (north side of East Seawall Break)	1F, Unit 1 Screen (Inside the Silt Fence)	1F, Between the water intake channel of Unit 1 and Unit 2 (surface layer)	1F, Between the water intake channel of Unit 1 and Unit 2 (lower layer)	1F, Unit 2 Screen (Inside the Silt Fence)	1F, Between the water intake channel of Unit 2 and Unit 3 (surface layer)	1F, Between the water intake channel of Unit 2 and Unit 3 (lower layer)	1F, Unit 3 Screen (Inside the Silt Fence)
Cs-134(Approx. 2 years)	1.8 〔6/21〕	2.4 〔8/19〕	5.3 〔8/5〕	54 〔9/10〕	16 〔8/12〕	24 〔8/12〕〔8/19〕	39 〔9/10〕	13 〔8/29〕	26 /19〕〔9/1	21 〔8/12〕	3.5 〔8/20〕	350 〔7/15〕
Cs-137(Approx.30 years)	3.3 〔6/26〕	4.7 〔8/19〕	8.6 〔8/5〕	110 〔9/10〕	33 〔8/12〕	51 〔8/12〕	80 〔9/10〕	29 〔9/17〕	52 〔8/19〕	38 〔9/9〕	9.8 〔8/20〕	770 〔7/15〕
All β	ND	46 〔8/19〕	40 〔7/3〕	1,100 〔8/15〕	320 〔8/12〕	700 〔8/12〕	740 〔8/15〕	450 〔7/16〕	520 〔9/9〕	450 〔9/9〕	85 〔8/20〕	1,000 〔7/15〕
H-3 (Approx. 12 years)	8.6 〔6/26〕	24 〔8/19〕	340 〔6/26〕	4,700 〔8/15〕	460 〔7/15〕	2,500 〔8/12〕	2,600 〔8/15〕	1,600 〔9/1〕	1,500 〔9/9〕	720 〔8/12〕	-	410 〔9/2〕
Sr-90（Approx. 29 years）	5.8 〔6/26〕	-	7.4 〔6/26〕	Under analysis	Under analysis	Under analysis	Under analysis	Under analysis	Under analysis	Under analysis	-	Under analysis

Unit: Bq/L

	1F, Between the water intake channel of Unit 3 and Unit 4 (surface layer)	1F, Between the water intake channel of Unit 3 and Unit 4 (lower layer)	1F, Unit 4 Screen (Inside the Silt Fence)	1F, Around the south discharge channel	1F, Port entrance	1F, East side in the port	1F, West side in the port	1F, North side in the port	1F, South side in the port	North side of the north breakwater	East side of the port entrance	South side of the south breakwater
Cs-134(Approx. 2 years)	22 〔8/12〕	4.8 〔8/20〕	62 〔9/16〕	ND	1.6 〔8/19〕	2.9 〔8/19〕	2.6 〔8/19〕	1.5 〔9/18〕	2.1 〔8/19〕	ND	ND	ND
Cs-137(Approx.30 years)	45 〔8/12〕	7.7 〔8/20〕	140 〔9/16〕	3.0 〔7/15〕	4.7 〔8/19〕	6.6 〔8/19〕	6.5 〔8/19〕	4.7 〔8/19〕	4.6 〔8/19〕	ND	ND	ND
All β	390 〔8/12〕	57 〔8/20〕	310 〔8/12〕	ND	69 〔8/19〕	74 〔8/19〕	60 〔7/4〕	69 〔8/19〕	79 〔8/19〕	ND	ND	ND
H-3 (Approx. 12 years)	650 〔8/12〕	-	400 〔8/12〕	ND	68 〔8/19〕	67 〔8/19〕	59 〔8/19〕	52 〔8/19〕	60 〔8/19〕	4.7 〔8/14〕	ND	ND
Sr-90（Approx. 29 years）	Under analysis	-	Under analysis	0.36 〔6/26〕	3.5 〔6/20〕	Under analysis	Under analysis	-	-	-	-	-

* The highest result announced in "Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection" or the other handouts is provided.
  As for "1F, North side of Unit 1-4 water intake channel", the data is obtained since January 14, 2013. For the other locations, the data is obtained since June 14.
* "ND" indicates that the measurement result is below the detection limit.
* Date of sampling is provided in parentheses.
* "-" indicates that the measurement was out of range.