<Reference>

Condition of Radioactive Density of the Groundwater and the Seawater at the East Side of Turbine Buildings

August 16, 2013

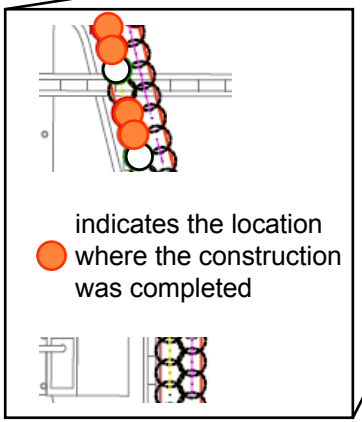
Tokyo Electric Power Company

TEPCO 東京電力

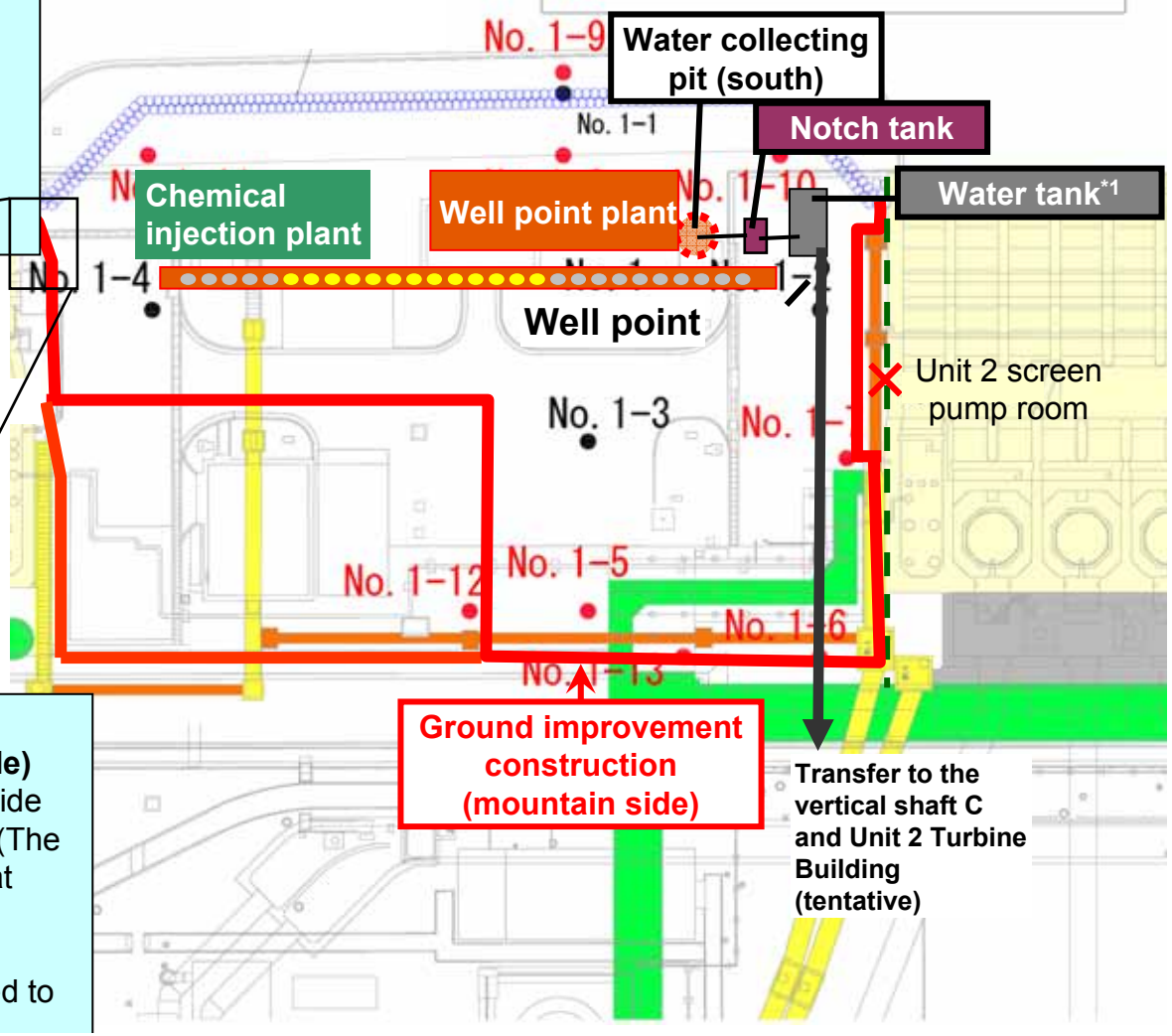
Status between Water Intake Channel of Unit 1 and 2 (Pumping up of Groundwater, Ground Improvement Construction on the Mountain Side)

■Construction status of the well points
(● indicates the location where the construction was completed)
13 points out of 28 points (as of the morning on August 16)

■Pumping up at the well point
11:35 AM on August 15: Pumping up from 1 point was started.
11:10 AM on August 16: Pumping up from 13 points were started.



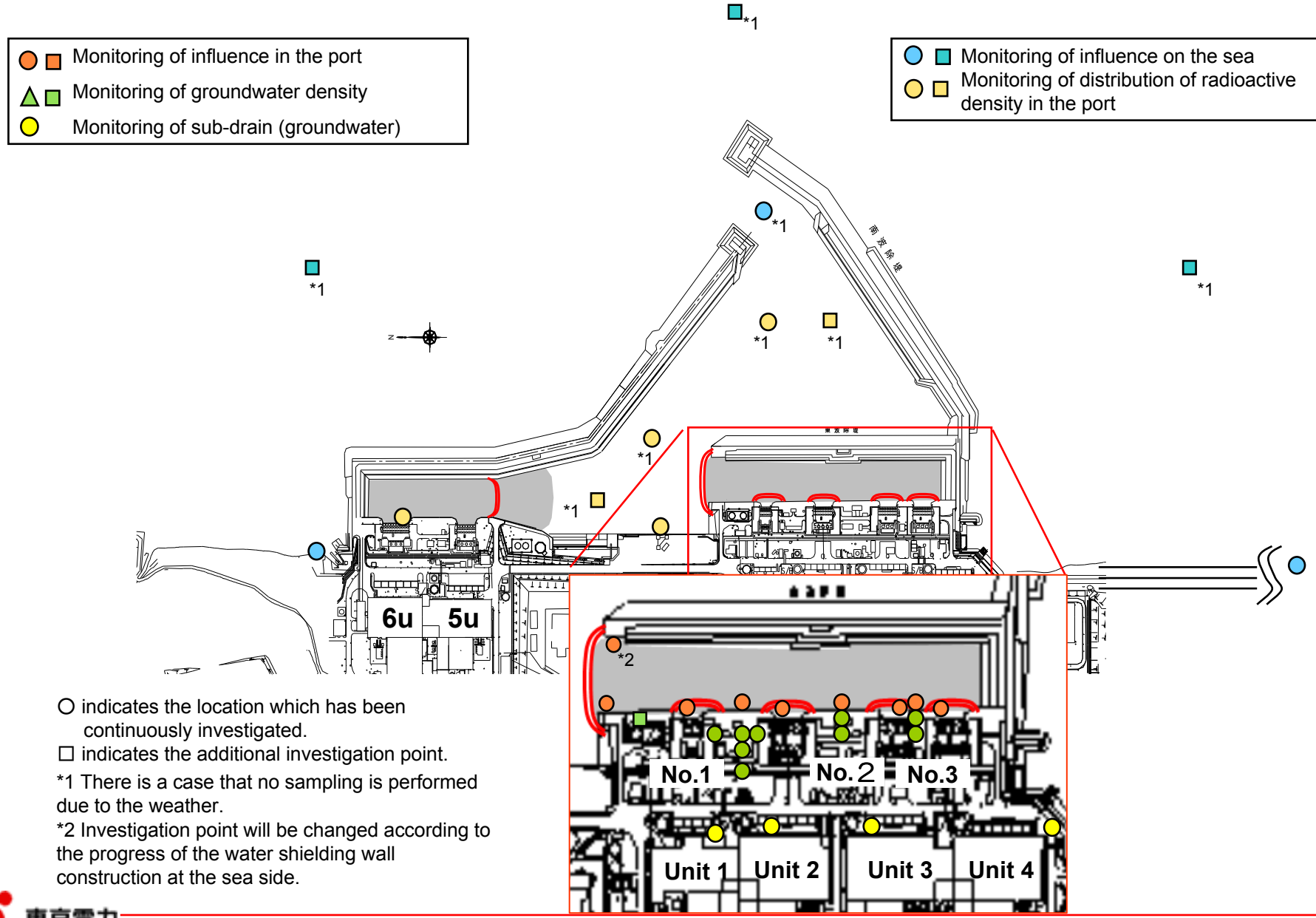
■Pumping up at the water collection pit (south)
Pumping up started at 2:10 PM on August 9.



■Progress status of the ground improvement construction (mountain side)
The ground improvement on the mountain side was started at the night time on August 13. (The work starts at 7:00 PM each day and ends at 7:00 AM next day.)
By the morning of August 16, the work was completed in 4 locations. (The work is planed to cover a total of 498 locations .)

* Tank receiving groundwater which is pumped up from the water collecting pit and the well tank will be installed.

Monitoring Plan (Sampling Locations)



○ indicates the location which has been continuously investigated.
□ indicates the additional investigation point.
*1 There is a case that no sampling is performed due to the weather.
*2 Investigation point will be changed according to the progress of the water shielding wall construction at the sea side.

Monitoring Plan (Analysis Item, Frequency)

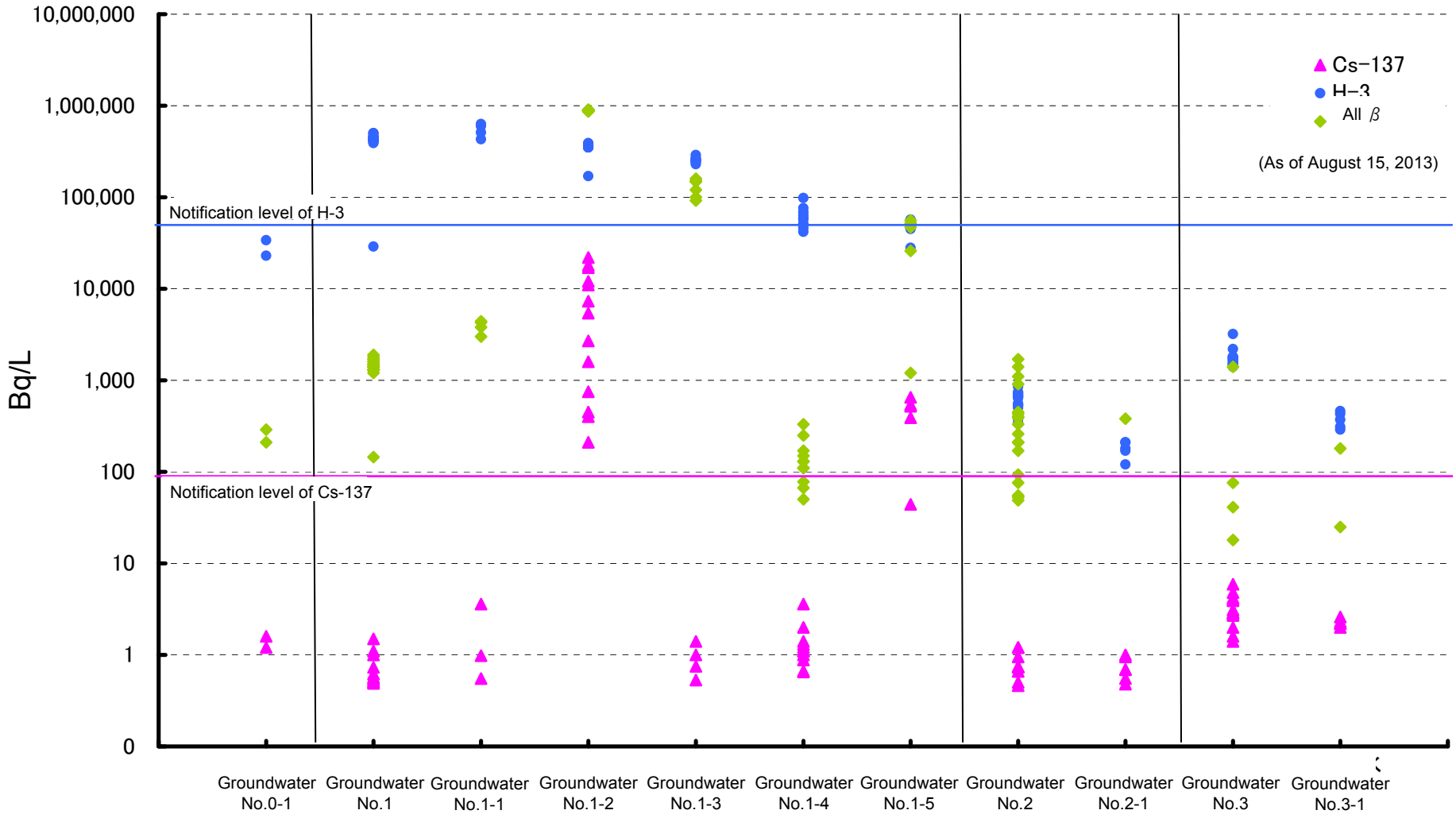
Area	Sampling location	Current analysis item and frequency				Contents of the change[*4]			
		γ ray	Tritium (3H)	All β	Sr-90	γ ray	H-3	All β	Sr-90
Around Unit 1-4 water intake channel	Between the water intake channel of Unit 1 and Unit 2 (surface layer)	-	-	-	-	1 time a week (3 times a week[*5])	1 time a week (3 times a week[*5])	1 time a week (3 times a week[*5])	1 time a month
	Between the water intake channel of Unit 1 and Unit 2 (lower layer)	-	-	-	-				
	Inside the silt fence of Unit 1	1 time a day	-	-	-	1 time a day	1 time a week	1 time a week	1 time a month
	Inside the silt fence of Unit 2								
	North side of Unit 1-4 water intake channel[*1]	1 time a day	1 time a month	1 time a week	2 times a month	1 time a day	1 time a week	1 time a week	1 time a month[*6]
	Outside the silt fence of Unit 1	1 time a day	-	-	-	1 time a day	-	-	-
	Outside the silt fence of Unit 2								
	Between the water intake channel of Unit 2 and Unit 3 (surface layer)	-	-	-	-	1 time a week	1 time a week	1 time a week	1 time a month
	Between the water intake channel of Unit 3 and Unit 4 (surface layer)					1 time a week	1 time a week	1 time a week	1 time a month
	Inside the silt fence of Unit 3	1 time a day	-	-	2 times a month	1 time a day	1 time a week	1 time a week	1 time a month[*6]
	Inside the silt fence of Unit 4								
	Outside the silt fence of Unit 3	1 time a day	-	-	-	1 time a day	-	-	-
	Outside the silt fence of Unit 4								
	South side of Unit 1-4 water intake channel								
In the port	In front of shallow draft quay	1 time a day	-	-	-	1 time a day	1 time a week	1 time a week	1 time a month
	In front of Unit 6 water intake channel	1 time a week	-	-	-	1 time a week	1 time a week	1 time a week	-
	West side in the port[*2]	-	-	-	-	1 time a week	1 time a week	1 time a week	-
	East side in the port[*2]								
	Port entrance[*2]	Non-regular[*3]	-	-	-	1 time a week	1 time a week	1 time a week	1 time a month
Around the north/south discharge channel	North side of Unit 5,6 discharge channel	1 time a day	1 time a month	1 time a month	1 time a month	1 time a day	1 time a week	1 time a week	1 time a month
	Around the south discharge channel	1 time a day	1 time a month	1 time a day	1 time a month	1 time a day	1 time a week	1 time a day	1 time a month
Land area (sea side of Unit 1-4 Turbine Building)	Underground reservoir No.1 (includes additional boring)	-	-	-	-	1 time a week (2 times a week[*5])	1 time a week (2 times a week[*5])	1 time a week (2 times a week[*5])	1 time a month
	Underground reservoir No.2 (includes additional boring)	-	-	-	-	1 time a week	1 time a week	1 time a week	Only for the first time
	Underground reservoir No.3 (includes additional boring)								
	Unit 1 sub-drain	3 times a week	2 times a year	2 times a year	2 times a year	3 times a week	2 times a year	2 times a year	2 times a year
	Unit 2 sub-drain	3 times a week	1 time a month	1 time a month	1 time a month	3 times a week	1 time a month	1 time a month	1 time a month
	Unit 3 sub-drain	3 times a week	2 times a year	2 times a year	2 times a year	3 times a week	2 times a year	2 times a year	2 times a year
	Unit 4 sub-drain								

←Measurement of tritium (3H) and all β will be performed "3 times a week" for a while due to the rising trend of tritium (3H).

←Measurement of γ ray, tritium (3H) and all β will be performed "2 times a week" for a while at the underground reservoir No.2 due to the rising trend of all β.

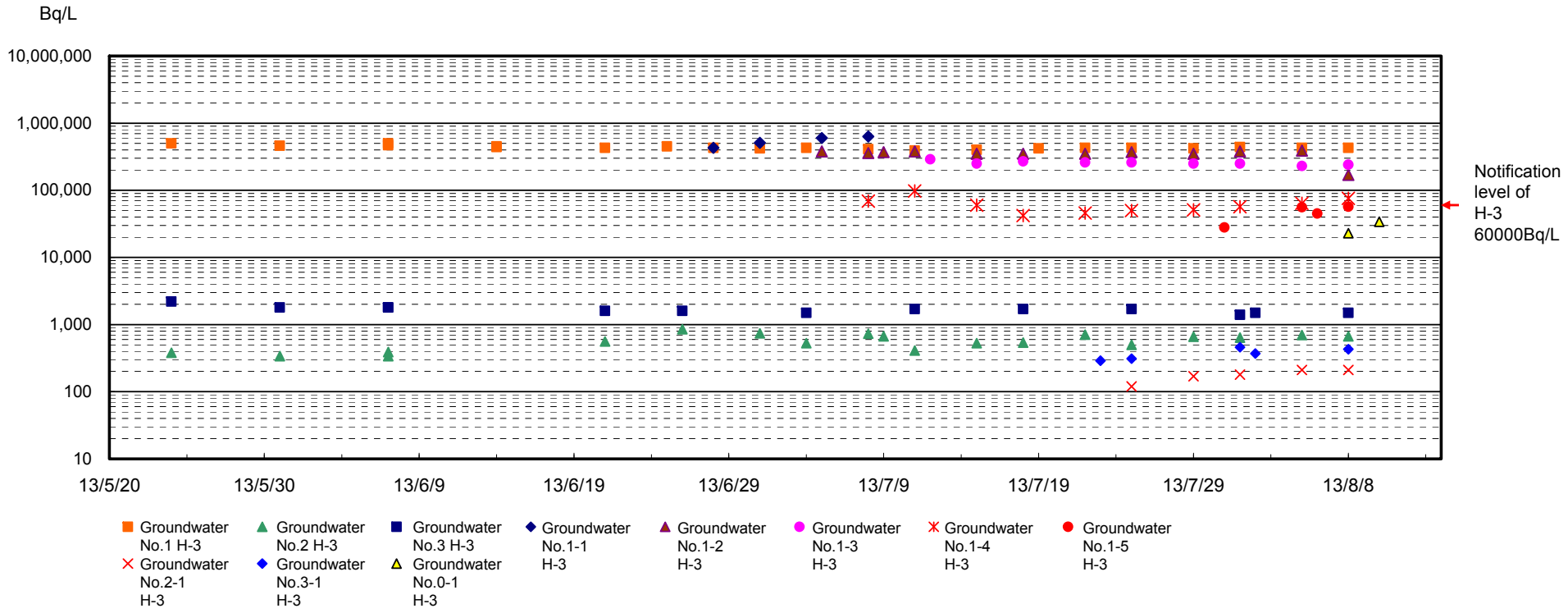
*1 Sampling point will be changed according to the progress of the water shielding wall construction at the sea side.
*2 There is a case that we cannot sample due to the weather.
*3 Sampling and measurement will be performed in case vessel enters the water intake channel.
*4 Measurement of γ ray, 3H and all β will be performed in order to monitor leakage to the sea. Measurement of strontium will be performed in order to compare with the notification level and to evaluate the exposure dose.
*5 Monitoring will be enhanced until ground improvement at the bank protection between the water intake channel of Unit 1 and Unit 2 will be finished.
*6 All β will be substituted for the monitoring of strontium taking analysis capacity into consideration.

Density Distribution of the Groundwater (Comparison by the Sampling Point)



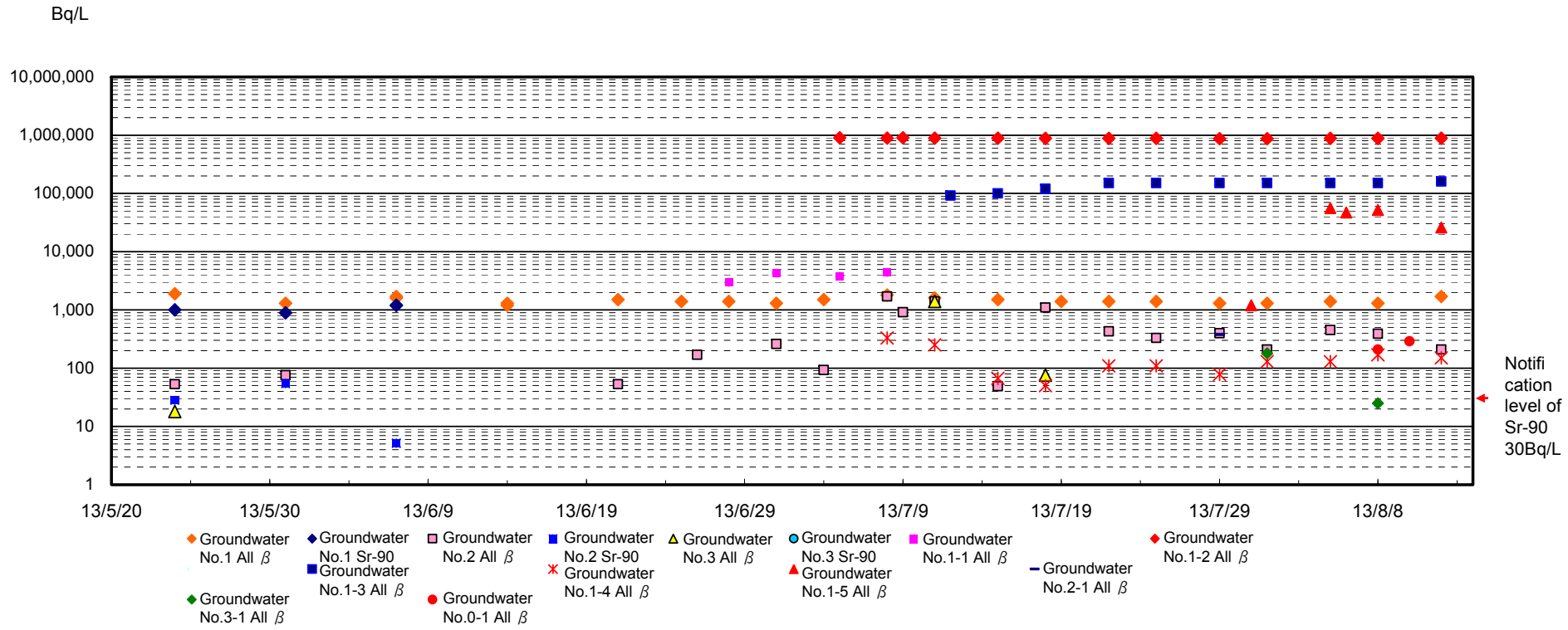
Density Transition of Tritium in the Groundwater

As of August 15, 2013



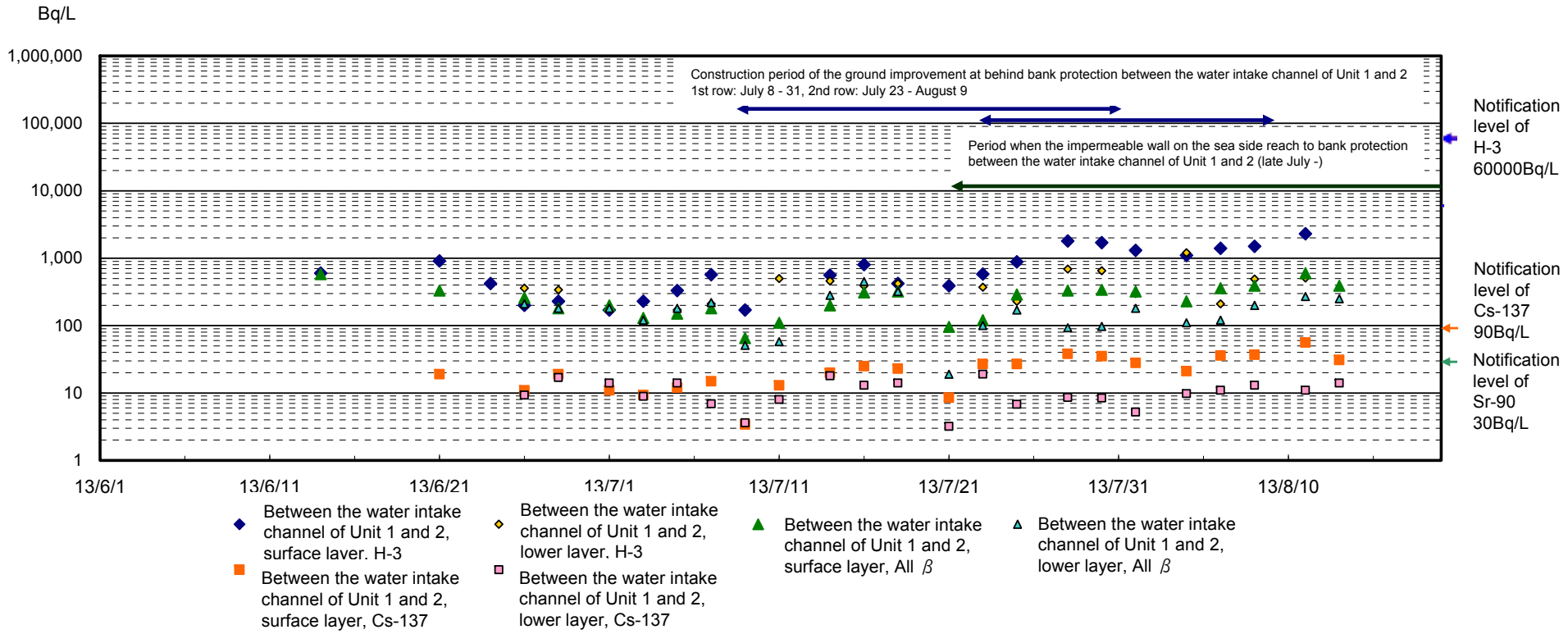
Density Transition of All β and Strontium in the Groundwater

As of August 15, 2013



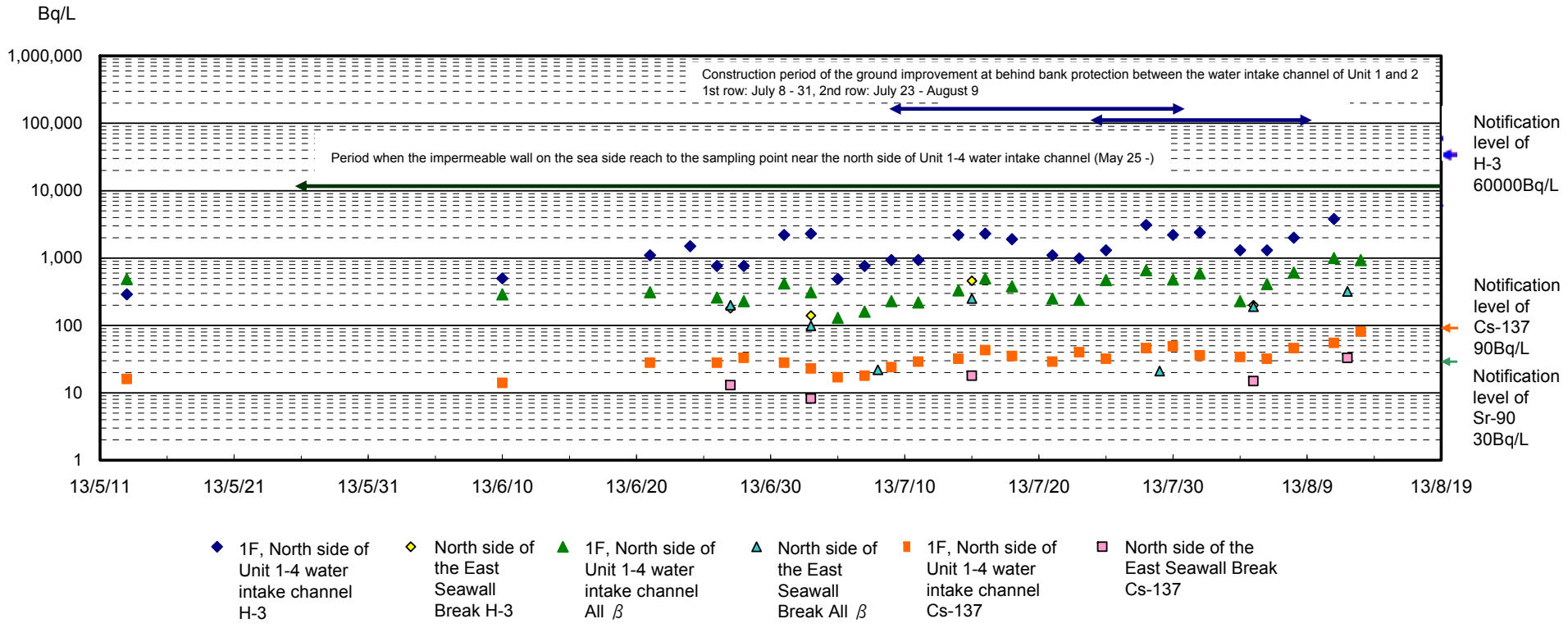
Density Transition in the Seawater Obtained at Water Intake Channel between Unit 1 and Unit 2

As of August 15, 2013



Density Transition in the Seawater Obtained at Unit 1-4 Water Intake Channel and the North Side of the East Seawall Break

As of August 15, 2013



Groundwater observation hole No.0-1 (Bq/L)

Sampling date	2013/8/8	2013/8/8 (Remeasurement)	2013/8/10
Sampling time	2:15 PM	2:15 PM	9:35 AM
Cs-134	0.61		0.66
Cs-137	1.6		1.2
Ru-106	ND		ND
Mn-54	ND		ND
Co-60	ND		ND
Sb-125	ND		ND
All β	210		290
H-3	23,000	23,000	34,000
Sr-90	Under measuremen		—

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

Groundwater observation hole No.1 (Bq/L)

Sampling date	2012/12/8*2	2013/5/24	2013/5/31	2013/6/7 ①	2013/6/7 ②	2013/6/14 ①	2013/6/14 ②	2013/6/21	2013/6/25	2013/6/28	2013/7/1
Sampling time	11:00 AM	4:19 PM	3:01 PM	3:45 PM	3:45 PM	2:29 PM	2:29 PM	9:01 AM	1:39 PM	5:50 PM	3:05 PM
Cs-134	ND (0.59)	ND (0.45)	0.53	ND (0.42)	ND (0.40)	ND (0.37)	ND (0.37)	ND (0.36)	ND (0.39)	ND (0.40)	1.1
Cs-137	ND (0.72)	ND (0.45)	0.57	ND (0.53)	0.49	ND (0.43)	0.51	0.53	ND (0.49)	ND (0.43)	1.5
Ru-106	ND	26	19	19	21	18	19	16	20	16	ND
Mn-54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
All β	150	1,900	1,300	1,700	1,600	1,200	1,300	1,500	1,400	1,400	1,300
H-3	29,000	500,000	460,000	500,000	470,000	450,000	440,000	430,000	450,000	430,000	420,000
Sr-90	8.6	1,000	890	1,200	1,200	Under measuremen	Under measuremen	Under measuremen	—	—	—

*1 "ND" indicates that the measurement result is below the detection limit, and the detection limit of each nuclide is provided in parentheses.
*2 As of γ nuclide measurement, the amount is lower than true value since the high BG is in use.

Sampling date	2013/7/4	2013/7/8	2013/7/11	2013/7/15	2013/7/19	2013/7/22	2013/7/25	2013/7/29	2013/8/1	2013/8/5	2013/8/8
Sampling time	11:50 AM	1:30 PM	12:51 PM	1:00 PM	8:02 AM	1:21 PM	1:15 PM	11:50 AM	11:55 AM	12:23 PM	11:29 AM
Cs-134	ND (0.64)	ND (0.50)	ND (0.61)	ND (0.43)	ND (0.48)	ND (0.42)	ND (0.42)	ND (0.46)	ND (0.44)	ND (0.52)	0.52
Cs-137	ND (0.47)	ND (0.47)	1.0	ND (0.49)	0.73	ND (0.45)	ND (0.55)	ND (0.51)	0.55	0.62	1.1
Ru-106	24	16	15	18	17	ND	12	17	14	17	15
Mn-54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	0.50	ND	ND	ND	ND	ND	ND
Sb-125	ND	ND	1.7	ND	ND	ND	ND	ND	ND	ND	ND
All β	1,500	1,800	1,600	1,500	1,400	1,400	1,400	1,300	1,300	1,400	1,300
H-3	430,000	410,000	390,000	400,000	420,000	430,000	430,000	420,000	440,000	430,000	430,000
Sr-90	—	—	—	—	—	—	Under measuremen	—	—	—	—

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

Sampling date	2013/8/12
Sampling time	10:46 AM
Cs-134	ND (0.42)
Cs-137	0.50
Ru-106	12
Mn-54	ND
Co-60	ND
Sb-125	ND
All β	1,700
H-3	Under measuremen
Sr-90	—

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

Groundwater observation hole No.1-1 (Bq/L)

Sampling date	2013/6/28	2013/7/1	2013/7/5	2013/7/8
Sampling time	4:40 PM	4:05 PM	11:00 AM	2:35 PM
Cs-134	ND (0.41)	ND (0.44)	ND (0.42)	1.9
Cs-137	ND (0.51)	0.98	0.55	3.6
Ru-106	—	7.8	7.7	7.9
Mn-54	0.52	0.92	1.0	0.78
Co-60	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND
All β	3,000	4,300	3,800	4,400
H-3	430,000	510,000	600,000	630,000
Sr-90	Under measuremen	—	—	—

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

Groundwater observation hole No.1-2 (Bq/L)

Sampling date	2013/7/5	2013/7/8	2013/7/8 (Filtration)	2013/7/9	2013/7/9 (Filtration)	2013/7/9 (Residue)	2013/7/11	2013/7/11 (Filtration)	2013/7/15	2013/7/15 (Filtration)
Sampling time	12:10 PM	2:00 PM	2:00 PM	1:00 PM	1:00 PM	1:00 PM	1:25 PM	1:25 PM	1:23 PM	1:23 PM
Cs-134	99	9,000	94	11,000	130	10,000	8,200	98	5,900	ND (21)
Cs-137	210	18,000	190	22,000	270	20,000	17,000	150	12,000	ND (21)
Ru-106	95	ND		ND			ND		ND	
Mn-54	62	25		ND			ND		ND	
Co-60	1.2	3.1		ND			ND		ND	
Sb-125	35	ND		ND			ND		250	
All β	900,000	890,000	920,000	900,000	890,000		890,000		890,000	
H-3	380,000	360,000		370,000			380,000		350,000	
Sr-90	Under measuremen	—		—			—		—	

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

Sampling date	2013/7/18	2013/7/18 (Filtration)	2013/7/22	2013/7/22 (Filtration)	2013/7/25	2013/7/25 (Filtration)	2013/7/29	2013/7/29 (Filtration)	2013/8/1	2013/8/1 (Filtration)
Sampling time	1:23 PM	1:23 PM	1:47 PM	1:47 PM	2:00 PM	2:00 PM	12:10 PM	12:10 PM	12:25 PM	12:25 PM
Cs-134	5,400	ND (25)	3,500	50	2,600	ND (22)	1,300	ND (18)	760	ND (26)
Cs-137	11,000	ND (25)	7,300	71	5,400	25	2,700	ND (21)	1,600	45
Ru-106	ND		ND		ND		ND		ND	
Mn-54	ND		ND		ND		ND		ND	
Co-60	ND		ND		ND		ND		ND	
Sb-125	ND		ND		ND		180		110	
All β	880,000		880,000		880,000		870,000		870,000	
H-3	350,000		350,000		370,000		350,000		380,000	
Sr-90	—		—		—		—		—	

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

Sampling date	2013/8/5	2013/8/5 (Filtration)	2013/8/8	2013/8/8 (Filtration)	2013/8/12	2013/8/12 (Filtration)
Sampling time	12:46 PM	12:46 PM	1:38 PM	1:38 PM	12:27 PM	12:27 PM
Cs-134	350	ND (18)	200	19	180	ND (20)
Cs-137	750	ND (22)	400	29	400	ND (23)
Ru-106	ND		ND		ND	
Mn-54	ND		ND		ND	
Co-60	ND		ND		ND	
Sb-125	110		170		130	
All β	880,000		880,000		890,000	
H-3	390,000		170,000		Under measuremen	
Sr-90	—		Under measuremen		—	

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

Groundwater observation hole No.1-3 (Bq/L)

Sampling date	2013/7/12	2013/7/15	2013/7/18	2013/7/22	2013/7/25	2013/7/29	2013/8/1	2013/8/5	2013/8/8	2013/8/12
Sampling time	12:20 PM	1:20 PM	12:36 PM	12:33 PM	12:45 PM	11:26 AM	11:20 AM	11:18 AM	12:18 PM	11:20 AM
Cs-134	ND (0.66)	ND (0.46)	ND (0.39)	ND (0.46)	ND (0.44)	ND (0.44)	ND (0.50)	ND (0.61)	ND (0.55)	ND (0.55)
Cs-137	1.4	ND (0.54)	0.53	ND (0.58)	ND (0.62)	ND (0.47)	0.75	ND (0.60)	1.0	ND (0.67)
Ru-106	16	14	15	17	11	16	15	11	17	12
Mn-54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sb-125	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
All β	92,000	100,000	120,000	150,000	150,000	150,000	150,000	150,000	150,000	160,000
H-3	290,000	250,000	270,000	260,000	260,000	250,000	250,000	230,000	240,000	Under measuremen
Sr-90	Under measuremen	—	—	—	—	—	—	—	Under measuremen	—

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

Groundwater observation hole No.1-4 (Bq/L)

Sampling date	2013/7/8	2013/7/11	2013/7/15	2013/7/18	2013/7/22	2013/7/25	2013/7/29	2013/8/1	2013/8/5	2013/8/8	2013/8/12
Sampling time	3:30 PM	12:25 PM	11:55 AM	12:03 PM	12:18 PM	12:00 PM	10:51 AM	10:43 AM	10:40 AM	11:00 AM	10:21 AM
Cs-134	1.5	0.91	ND (0.41)	0.67	ND (0.43)	0.49	0.48	0.50	ND (0.46)	0.55	ND (0.41)
Cs-137	3.6	2.0	0.67	1.0	1.1	0.88	1.1	1.4	0.65	1.2	1.3
Ru-106	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.1	ND
Mn-54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
All β	330	250	67	50	110	110	78	130	130	170	150
H-3	69,000	98,000	60,000	42,000	46,000	50,000	51,000	57,000	64,000	76,000	Under measuremen
Sr-90	Under measuremen	—	—	—	—	—	—	—	—	Under measuremen	—

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

Groundwater observation hole No.1-5 (Bq/L)

Sampling date	2013/7/31	2013/8/5	2013/8/6	2013/8/8	2013/8/12
Sampling time	1:05 PM	11:55 AM	10:38 AM	1:05 PM	12:00 PM
Cs-134	21	310	260	250	190
Cs-137	44	650	540	520	390
Ru-106	ND	ND	ND	ND	ND
Mn-54	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND
Sb-125	ND	ND	6.7	12	8.9
All β	1,200	56,000	47,000	52,000	26,000
H-3	28,000	56,000	45,000	57,000	Under measuremen
Sr-90	Under measuremen	—	—	—	—

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

Groundwater observation hole No.2 (Bq/L)

Sampling date	2012/12/8*2	2013/5/24	2013/5/31	2013/6/7 ①	2013/6/7 ②	2013/6/21	2013/6/26	2013/7/1	2013/7/4	2013/7/8	2013/7/9
Sampling time	11:00 AM	4:12 PM	3:16 PM	4:05 PM	4:05 PM	5:44 PM	2:30 PM	4:55 PM	1:05 PM	1:00 PM	12:25 PM
Cs-134	ND (0.61)	ND (0.37)	ND (0.41)	0.47	ND (0.37)	ND (0.32)	ND (0.40)	0.48	ND (0.39)	ND (0.49)	0.50
Cs-137	ND (0.81)	ND (0.41)	0.95	0.73	ND (0.48)	ND (0.37)	ND (0.48)	0.66	ND (0.46)	0.74	0.74
Ru-106	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mn-54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
All β	55	53	76	ND (18)	ND (18)	53	170	260	93	1,700	910
H-3	410	380	340	390	340	560	850	740	530	730	670
Sr-90	8.2	28	54	5.2	5.1	Under measuremen	—	—	—	—	—

*1 "ND" indicates that the measurement result is below the detection limit, and the detection limit of each nuclide is provided in parentheses.
*2 As of γ nuclide measurement, the amount is lower than true value since the high BG is in use.

Sampling date	2013/7/11	2013/7/15	2013/7/18	2013/7/22	2013/7/25	2013/7/29	2013/8/1	2013/8/5	2013/8/8	2013/8/12
Sampling time	11:30 AM	10:50 AM	11:22 AM	11:37 AM	11:04 AM	11:30 AM	12:05 PM	11:18 AM	11:36 AM	11:10 AM
Cs-134	ND (0.47)	ND (0.37)	ND (0.36)	ND (0.44)	ND (0.39)	ND (0.40)	ND (0.35)	ND (0.42)	ND (0.39)	ND (0.38)
Cs-137	1.2	ND (0.44)	0.50	ND (0.53)	0.46	ND (0.47)	1.2	ND (0.53)	ND (0.49)	ND (0.48)
Ru-106	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mn-54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
All β	1,400	49	1,100	430	330	400	210	450	390	210
H-3	410	530	540	710	500	660	640	700	670	Under measuremen
Sr-90	—	—	—	—	—	—	—	—		

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

Groundwater observation hole No.2-1 (Bq/L)

Sampling date	2013/7/25	2013/7/29	2013/8/1	2013/8/5	2013/8/8	2013/8/12
Sampling time	11:28 AM	10:53 AM	11:19 AM	10:40 AM	11:05 AM	10:34 AM
Cs-134	ND (0.42)	ND (0.43)	0.44	ND (0.44)	ND (0.40)	ND (0.43)
Cs-137	0.69	1.0	0.95	0.55	0.69	0.48
Ru-106	ND	ND	ND	ND	ND	ND
Mn-54	ND	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND	ND	ND
All β	ND (17)	380	ND (17)	ND (22)	ND (18)	ND (19)
H-3	120	170	180	210	210	Under measuremen
Sr-90	Under measuremen	—	—	—	—	—

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

Groundwater observation hole No.3 (Bq/L)

Sampling date	2012/12/12 [2]	2013/5/24	2013/5/31	2013/6/7 ①	2013/6/7 ②	2013/6/21	2013/6/26	2013/7/4	2013/7/11	2013/7/18	2013/7/25
Sampling time	11:00 AM	4:52 PM	3:32 PM	3:58 PM	3:58 PM	5:01 PM	3:50 PM	2:00 PM	10:55 AM	10:45 AM	1:30 PM
Cs-134	ND (0.60)	0.87	1.6	0.9	0.5	1.7	0.96	1.5	1.9	1.2	3.5
Cs-137	ND (0.79)	1.4	2.7	2.0	1.6	2.9	2.9	2.8	4.8	3.1	3.9
Ru-106	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mn-54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
All β	41	18	ND (17)	ND (18)	ND (18)	ND (17)	ND (21)	ND (18)	1,400	76	ND (17)
H-3	3,200	2,200	1,800	1,800	1,800	1,600	1,600	1,500	1,700	1,700	1,700
Sr-90	8.3	ND (1.0)	0.25	ND (0.24)	ND (0.27)	Under measuremen	—	—	—	—	—

*1 "ND" indicates that the measurement result is below the detection limit, and the detection limit of each nuclide is provided in parentheses.
*2 As of γ nuclide measurement, the amount is lower than true value since the high BG is in use.

Sampling date	2013/8/1	2013/8/2	2013/8/8
Sampling time	12:59 PM	2:25 PM	2:19 PM
Cs-134	1.8	2.4	2.2
Cs-137	4.2	4.0	5.9
Ru-106	ND	ND	ND
Mn-54	ND	ND	ND
Co-60	ND	ND	ND
Sb-125	ND	ND	ND
All β	ND (17)	ND (18)	ND (18)
H-3	1,400	1,500	1,500
Sr-90	—	—	—

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

Groundwater observation hole No.3-1 (Bq/L)

Sampling date	2013/7/23	2013/7/25	2013/8/1	2013/8/2	2013/8/8
Sampling time	11:10 AM	3:15 PM	1:38 PM	3:45 PM	3:04 PM
Cs-134	1.1	1.2	1.1	1.0	1.2
Cs-137	2.2	2.2	2.6	2.3	2.0
Ru-106	ND	ND	ND	ND	ND
Mn-54	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND	ND
All β	ND (19)	ND (18)	180	ND (18)	25
H-3	290	310	460	370	430
Sr-90	Under measuremen	—	—	—	—

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

North side of Unit 5,6 discharge channel (Bq/L)

Sampling date	2013/6/21	2013/6/26	2013/7/3	2013/7/8	2013/7/15	2013/7/22	2013/7/29	2013/8/5	2013/8/12
Sampling time	7:25 AM	11:25 AM	6:55 AM	6:15 AM	6:05 AM	5:50 AM	5:55 AM	6:55 AM	6:30 AM
Cs-134	1.8	ND (1.9)	ND (1.2)	1.4	ND (1.2)	ND (1.3)	ND (0.92)	ND (1.4)	ND (0.93)
Cs-137	2.1	3.3	1.2	2.5	1.5	2.5	ND (1.4)	ND (1.5)	1.4
All β	—	ND (22)	ND (17)	ND (19)	ND (22)	ND (23)	ND (19)	ND (22)	ND (19)
H-3	—	8.6	4.9	3.7	5.5	ND (3.2)	ND (2.9)	3.7	Under measuremen
Sr-90	—	5.8	—	—	—	Under measuremen	—	—	—

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

In front of Unit 6 water intake channel, seawater (Bq/L)

Sampling date	2013/6/25	2013/7/2	2013/7/8	2013/7/15	2013/7/22	2013/7/29	2013/8/5	2013/8/12
Sampling time	7:15 AM	6:25 AM	6:30 AM	6:15 AM	5:50 AM	6:15 AM	6:10 AM	6:20 AM
Cs-134	ND (3.3)	ND (1.7)	ND (2.2)	ND (1.6)	ND (1.4)	ND (2.4)	ND (2.0)	ND (2.4)
Cs-137	ND (2.1)	2.6	ND (1.9)	3.1	ND (1.3)	ND (2.3)	ND (2.7)	ND (2.5)
All β	ND (18)	20	ND (17)	ND (22)	ND (21)	ND (19)	ND (22)	ND (19)
H-3	6.0	8.2	ND (3.1)	11	ND (3.2)	ND (2.9)	4.1	Under measuremen
Sr-90	–	–	–	–	–	–	–	–

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

In front of shallow draft quay, seawater (Bq/L)

Sampling date	2013/6/26	2013/7/3	2013/7/8	2013/7/15	2013/7/22	2013/7/29	2013/8/5	2013/8/12
Sampling time	6:06 AM	6:03 AM	5:31 AM	5:30 AM	5:25 AM	5:34 AM	6:00 AM	6:10 AM
Cs-134	ND (1.8)	1.9	ND (1.8)	ND (2.3)	ND (1.9)	ND (1.7)	5.3	3.5
Cs-137	2.3	5.6	5.1	5.7	ND (2.2)	2.2	8.6	7.9
All β	ND (18)	40	19	35	ND (21)	ND (19)	31	25
H-3	340	ND (120)	ND (120)	ND (120)	ND (120)	ND (120)	ND (130)	Under measuremen
Sr-90	7.4	–	–	–	Under measuremen	–	–	–

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

North side of Unit 1-4 water intake channel, seawater (Bq/L)

Sampling date	2013/1/14	2013/2/11	2013.3.11	2013/4/15	2013/5/13	2013/6/10	2013/6/21	2013/6/24	2013/6/26	2013/6/28	2013/7/1
Sampling time	7:00 AM	6:32 AM	6:27 AM	6:12 AM	5:59 AM	6:01 AM	6:18 AM	5:50 PM	6:13 AM	6:27 AM	6:26 AM
Cs-134	3.5	3.7	31	ND (2.5)	9.2	7.3	12	–	18	15	13
Cs-137	5.7	10	56	6.0	16	14	28	–	28	33	28
All β	170	260	230	140	490	290	310	–	260	230	420
H-3	110	170	120	110	290	500	1,100	1,500	760	760	2,200
Sr-90	–	–	–	–	–	–	Under measuremen	–	–	–	–

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

Sampling date	2013/7/3	2013/7/5	2013/7/7	2013/7/9	2013/7/11	2013/7/14	2013/7/16	2013/7/18	2013/7/21	2013/7/23	2013/7/25
Sampling time	6:08 AM	6:17 AM	6:11 AM	6:09 AM	6:46 AM	6:11 AM	6:08 AM	6:06 AM	5:51 AM	6:23 AM	6:11 AM
Cs-134	13	6.3	8.0	11	12	14	19	14	16	18	18
Cs-137	23	17	18	24	29	32	43	35	29	40	32
All β	310	130	160	230	220	330	500	380	250	240	470
H-3	2,300	490	760	930	940	2,200	2,300	1,900	1,100	990	1,300
Sr-90	–	–	–	–	–	–	–	–	–	Under measuremen	–

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

Sampling date	2013/7/28	2013/7/30	2013/8/1	2013/8/4	2013/8/6	2013/8/8	2013/8/11	2013/8/13
Sampling time	6:13 AM	6:04 AM	6:23 AM	6:13 AM	6:05 AM	6:02 AM	6:04 AM	6:11 AM
Cs-134	24	21	19	14	13	17	27	34
Cs-137	46	49	36	34	32	46	55	81
All β	660	480	590	230	410	610	1,000	930
H-3	3,100	2,200	2,400	1,300	1,300	2,000	3,800	Under measuremen
Sr-90	–	–	–	–	–	–	–	–

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

North side of Unit 1-4 water intake channel (north side of the east seawall break), seawater (Bq/L)

Sampling date	2013/6/27	2013/7/3	2013/7/8	2013/7/15	2013/7/22	2013/7/29	2013/8/5	2013/8/12
Sampling time	9:50 AM	6:50 AM	6:17 AM	6:12 AM	6:14 AM	6:15 AM	6:42 AM	6:58 AM
Cs-134	6.1	3.3	ND (1.4)	7.7	ND (1.8)	ND (2.5)	7.9	16
Cs-137	13	8.2	ND (1.7)	18	ND (1.8)	ND (1.9)	15	33
All β	200	99	22	250	ND (21)	21	190	320
H-3	180	140	ND (120)	460	ND (120)	ND (120)	200	Under measuremen
Sr-90	Under measuremen	—	—	—	Under measuremen	—	—	—

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

Unit 1 screen (inside the silt fence), seawater (Bq/L)

Sampling date	2013/6/21	2013/6/26	2013/7/3	2013/7/8	2013/7/15	2013/7/22	2013/7/29	2013/8/5	2013/8/12
Sampling time	6:23 AM	6:18 AM	6:13 AM	5:45 AM	5:43 AM	5:38 AM	5:44 AM	6:10 AM	6:20 AM
Cs-134	6.9	8.9	5.4	3.4	17	4.8	16	12	24
Cs-137	15	20	13	12	37	8.4	34	28	51
All β	160	170	140	89	320	79	330	260	700
H-3	480	530	420	180	1,300	320	1,500	1,200	Under measuremen
Sr-90	Under measuremen	—	-	-	-	Under measuremen	—	—	—

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

Between the water intake channel of Unit 1 and Unit 2, seawater (Surface layer) (Bq/L)

Sampling date	2013/6/14	2013/6/21	2013/6/24	2013/6/26 Surface layer	2013/6/28 Surface layer	2013/7/1 Surface layer	2013/7/3 Surface layer	2013/7/5 Surface layer	2013/7/7 Surface layer	2013/7/9 Surface layer	2013/7/11 Surface layer
Sampling time	1:20 PM	11:00 AM	6:00 PM	4:55 PM	11:34 AM	6:04 AM	6:15 AM	6:25 AM	6:22 AM	6:18 AM	6:58 AM
Cs-134	—	9.4	—	6.2	8.5	4.9	5.3	5.6	6.8	ND (2.1)	5.6
Cs-137	—	19	—	11	19	11	9.3	12	15	3.4	13
All β	—	330	—	260	180	200	130	150	180	65	110
H-3	600	910	420	200	230	170	230	330	570	170	ND (120)
Sr-90	—	Under measurement	—	—	—	—	—	—	—	—	—

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

Sampling date	2013/7/14 Surface layer	2013/7/16 Surface layer	2013/7/18 Surface layer	2013/7/21 Surface layer	2013/7/23 Surface layer	2013/7/25 Surface layer	2013/7/28 Surface layer	2013/7/30 Surface layer	2013/8/1 Surface layer	2013/8/4 Surface layer	2013/8/6 Surface layer
Sampling time	6:20 AM	6:16 AM	6:14 AM	5:59 AM	6:33 AM	6:26 AM	6:22 AM	6:13 AM	6:34 AM	6:25 AM	6:13 AM
Cs-134	7.9	11	9.5	3.3	15	14	15	17	13	11	19
Cs-137	20	25	23	8.5	27	27	38	35	28	21	36
All β	200	310	320	96	120	290	330	340	320	230	360
H-3	560	800	420	390	580	880	1,800	1,700	1,300	1,100	Under measuremen
Sr-90	—	—	—	—	Under measuremen	—	—	—	—	—	—

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

Sampling date	2013/8/8 Surface layer	2013/8/11 Surface layer	2013/8/13 Surface layer
Sampling time	6:08 AM	6:15 AM	6:19 AM
Cs-134	18	27	15
Cs-137	37	56	31
All β	390	600	390
H-3	1,500	2,300	Under measuremen
Sr-90	—	—	—

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

Between the water intake channel of Unit 1 and Unit 2, seawater (Lower layer) (Bq/L)

Sampling date	2013/6/26 Lower layer	2013/6/28 Lower layer	2013/7/1 Lower layer	2013/7/3 Lower layer	2013/7/5 Lower layer	2013/7/7 Lower layer	2013/7/9 Lower layer	2013/7/11 Lower layer	2013/7/14 Lower layer	2013/7/16 Lower layer	2013/7/18 Lower layer
Sampling time	4:55 PM	11:36 AM	6:04 AM	6:15 AM	6:25 AM	6:22 AM	6:18 AM	6:58 AM	6:20 AM	6:16 AM	6:14 AM
Cs-134	6.2	7.5	5.7	3.0	6.8	4.9	2.0	2.6	9.6	7.5	7.0
Cs-137	9.3	17	14	8.9	14	6.9	3.6	8.0	18	13	14
All β	210	180	180	120	180	220	51	58	180	450	320
H-3	360	340	ND (120)	ND (120)	170	210	ND (120)	500	460	390	420
Sr-90	Under measuremen	—	—	—	—	—	—	—	—	—	—

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

Sampling date	2013/7/21 Lower layer	2013/7/23 Lower layer	2013/7/25 Lower layer	2013/7/28 Lower layer	2013/7/30 Lower layer	2013/7/31 Lower layer	2013/8/4 Lower layer	2013/8/6 Lower layer	2013/8/8 Lower layer	2013/8/11 Lower layer	2013/8/13 Lower layer
Sampling time	5:59 AM	6:33 AM	6:26 AM	6:22 AM	6:13 AM	6:34 AM	6:25 AM	6:13 AM	6:08 AM	6:15 AM	6:19 AM
Cs-134	ND (1.6)	9.9	4.3	2.3	2.5	4.0	5.8	4.2	6.0	5.7	6.1
Cs-137	3.2	19	6.8	8.6	8.4	5.2	9.8	11	13	11	14
All β	19	100	170	93	97	180	110	120	200	270	250
H-3	ND (120)	370	230	690	650	300	1,200	210	490	510	Under measuremen
Sr-90	—	Under measurement	—	—	—	—	—	—	—	—	—

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

Unit 2 screen (inside the silt fence), seawater (Bq/L)

Sampling date	2013/6/21	2013/6/26	2013/7/3	2013/7/8	2013/7/15	2013/7/22	2013/7/29	2013/8/5	2013/8/12
Sampling time	6:29 AM	6:24 AM	6:27 AM	5:51 AM	5:48 AM	5:45 AM	5:50 AM	6:15 AM	6:31 AM
Cs-134	7.1	11	16	ND (1.8)	14	ND (1.9)	6.8	11	20
Cs-137	14	23	34	5.1	27	ND (1.9)	18	24	42
All β	230	260	220	26	250	ND (21)	140	240	370
H-3	290	320	250	ND (120)	440	ND (120)	370	500	Under measuremen
Sr-90	Under measuremen	—	-	-	-	Under measuremen	—	—	—

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

Between the water intake channel of Unit 2 and Unit 3, seawater (Bq/L)

Sampling date	2013/6/26	2013/7/3	2013/7/8	2013/7/15	2013/7/22	2013/7/29	2013/8/5	2013/8/12
Sampling time	6:51 AM	6:30 AM	5:56 AM	5:53 AM	5:49 AM	5:54 AM	6:19 AM	6:37 AM
Cs-134	8.8	6.0	4.6	9.3	ND (1.7)	8.4	15	21
Cs-137	18	14	15	18	ND (1.8)	23	34	37
All β	220	140	40	250	ND (21)	160	210	410
H-3	350	ND (120)	ND (120)	460	ND (120)	660	320	Under measuremen
Sr-90	Under measuremen	—	—	—	Under measuremen	—	—	—

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

Unit 3 screen (inside the silt fence), seawater (Bq/L)

Sampling date	2013/6/21	2013/6/26	2013/7/3	2013/7/8	2013/7/15	2013/7/16	2013/7/22	2013/7/29	2013/8/5	2013/8/12
Sampling time	6:33 AM	6:30 AM	6:36 AM	6:01 AM	5:59 AM	6:32 AM	11:13 AM	5:57 AM	6:25 AM	6:41 AM
Cs-134	64	59	32	8.3	350	190	31	7.6	69	39
Cs-137	110	120	68	16	770	380	63	19	140	82
All β	270	310	230	72	1,000	610	120	96	290	340
H-3	220	190	ND (120)	ND (120)	ND (120)	-	ND (120)	200	240	Under measuremen
Sr-90	Under measuremen	—	-	-	-	-	Under measuremen	—	—	—

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

Between the water intake channel of Unit 3 and Unit 4, seawater (Bq/L)

Sampling date	2013/6/26	2013/7/3	2013/7/8	2013/7/15	2013/7/22	2013/7/29	2013/8/5	2013/8/12
Sampling time	6:47 AM	6:38 AM	6:06 AM	6:00 AM	6:02 AM	6:02 AM	6:29 AM	6:48 AM
Cs-134	9.9	7.3	2.6	12	ND (2.0)	11	12	22
Cs-137	23	16	7.0	26	ND (2.0)	22	28	45
All β	230	130	18	260	ND (21)	120	210	390
H-3	250	ND (120)	ND (120)	430	ND (120)	280	280	Under measuremen
Sr-90	Under measuremen	—	—	—	Under measuremen	—	—	—

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

Unit 4 screen (inside the silt fence), seawater (Bq/L)

Sampling date	2013/6/21	2013/6/26	2013/7/3	2013/7/8	2013/7/15	2013/7/22	2013/7/29	2013/8/5	2013/8/12
Sampling time	6:37 AM	6:35 AM	6:42 AM	6:04 AM	6:02 AM	11:16 AM	6:00 AM	6:28 AM	6:44 AM
Cs-134	31	34	17	46	43	12	30	27	30
Cs-137	70	65	36	93	89	26	64	58	62
All β	250	220	160	130	300	49	200	210	310
H-3	ND (210)	260	ND (120)	ND (120)	180	ND (120)	260	210	Under measuremen
Sr-90	Under measuremen	—	-	-	—	Under measuremen	—	—	—

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

Around the south discharge channel (Bq/L)

Sampling date	2013/6/21	2013/6/26	2013/7/3	2013/7/8	2013/7/15	2013/7/22	2013/7/29	2013/8/5	2013/8/12
Sampling time	7:15 AM	11:15 AM	5:10 AM	5:15 AM	10:45 AM	5:15 AM	5:15 AM	5:20 AM	5:40 AM
Cs-134	ND (1.0)	ND (1.1)	ND (1.2)	ND (0.93)	ND (1.2)	ND (1.2)	ND (1.0)	ND (1.3)	ND (1.2)
Cs-137	2.0	ND (1.3)	ND (1.2)	ND (1.1)	3.0	ND (1.4)	ND (1.3)	ND (1.6)	ND (1.4)
All β	ND (19)	ND (22)	ND (18)	ND (18)	ND (21)	ND (20)	ND (21)	ND (18)	ND (19)
H-3	—	ND (2.9)	ND (3.0)	ND (3.1)	ND (2.9)	ND (3.2)	ND (2.9)	ND (3.1)	Under measuremen
Sr-90	—	0.36	—	—	—	Under measuremen	—	—	—

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

Port entrance, seawater (Bq/L)

Sampling date	2013/6/20	2013/6/26	2013/7/4	2013/7/9	2013/7/17	2013/7/22	2013/7/31	2013/8/5	2013/8/12
Sampling time	1:18 PM	2:19 PM	3:19 PM	10:29 AM	12:20 PM	11:32 AM	7:38 AM	11:54 AM	9:14 AM
Cs-134	ND (1.3)	ND (1.9)	ND (1.7)	ND (2.0)	ND (2.2)	ND (1.9)	ND (2.1)	ND (1.9)	ND (1.4)
Cs-137	ND (1.2)	3.7	ND (2.0)	ND (2.6)	ND (2.0)	ND (2.0)	ND (1.9)	ND (2.4)	ND (1.5)
All β	15	31	ND (22)	ND (19)	ND (20)	ND (18)	ND (20)	ND (20)	ND (21)
H-3	5.0	29	ND (3.6)	4.2	4.8	ND (3.0)	ND (3.1)	3.8	Under measuremen
Sr-90	3.5	—	—	—	—	Under measuremen	—	—	—

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

East side in the port, seawater (Bq/L)

Sampling date	2013/6/26	2013/7/4	2013/7/9	2013/7/17	2013/7/22	2013/7/31	2013/8/5	2013/8/12
Sampling time	2:22 PM	10:32 AM	10:34 AM	2:40 PM	11:41 AM	7:43 AM	11:58 AM	9:20 AM
Cs-134	ND (2.4)	ND (2.3)	ND (2.0)	ND (1.7)	ND (2.3)	ND (1.6)	ND (1.4)	ND (1.8)
Cs-137	ND (2.4)	3.3	ND (2.4)	ND (2.5)	ND (2.1)	ND (2.4)	ND (2.0)	ND (1.9)
All β	33	40	ND (19)	ND (20)	ND (18)	ND (20)	ND (20)	ND (18)
H-3	14	44	ND (2.9)	7.0	ND (3.0)	ND (3.1)	ND (3.1)	Under measuremen
Sr-90	Under measuremen	—	—	—	—	—	—	—

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

West side in the port, seawater (Bq/L)

Sampling date	2013/6/26	2013/7/4	2013/7/9	2013/7/17	2013/7/22	2013/7/31	2013/8/5	2013/8/12
Sampling time	2:25 PM	10:37 AM	10:38 AM	2:47 PM	11:50 AM	7:48 AM	12:02 PM	9:02 AM
Cs-134	ND (2.5)	ND (2.2)	ND (2.0)	ND (2.2)	ND (2.2)	ND (1.5)	ND (1.8)	ND (2.0)
Cs-137	3.3	ND (2.6)	ND (1.9)	2.4	ND (2.2)	ND (2.4)	ND (1.9)	ND (2.3)
All β	43	60	ND (19)	ND (20)	ND (18)	ND (20)	ND (20)	ND (18)
H-3	26	37	4.7	20	ND (3.0)	6.3	4.2	Under measuremen
Sr-90	Under measuremen	—	—	—	—	—	—	—

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

North side in the port, seawater (Bq/L)

Sampling date	2013/8/12
Sampling time	9:31 AM
Cs-134	ND (1.8)
Cs-137	ND (2.1)
All β	ND (21)
H-3	Under measuremen
Sr-90	—

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

South side in the port, seawater (Bq/L)

Sampling date	2013/8/12
Sampling time	9:24 AM
Cs-134	ND (2.0)
Cs-137	ND (2.3)
All β	ND (18)
H-3	Under measuremen
Sr-90	—

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

North side of the north breakwater (Bq/L)

Sampling date	2013/8/14
Sampling time	8:17 AM
Cs-134	ND (1.5)
Cs-137	ND (1.4)
All β	ND (18)
H-3	Under measuremen
Sr-90	—

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

East side of the port entrance (Bq/L)

Sampling date	2013/8/14
Sampling time	8:21 AM
Cs-134	ND (1.1)
Cs-137	ND (1.1)
All β	ND (18)
H-3	Under measuremen
Sr-90	—

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

South side of the south breakwater (Bq/L)

Sampling date	2013/8/14
Sampling time	8:09 AM
Cs-134	ND (1.5)
Cs-137	ND (1.1)
All β	ND (18)
H-3	Under measuremen
Sr-90	—

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