

<Reference>

# The Radioactive Material Concentration in the Ground- and Seawater on the East of the Turbine Building

October 4, 2013

Tokyo Electric Power Company



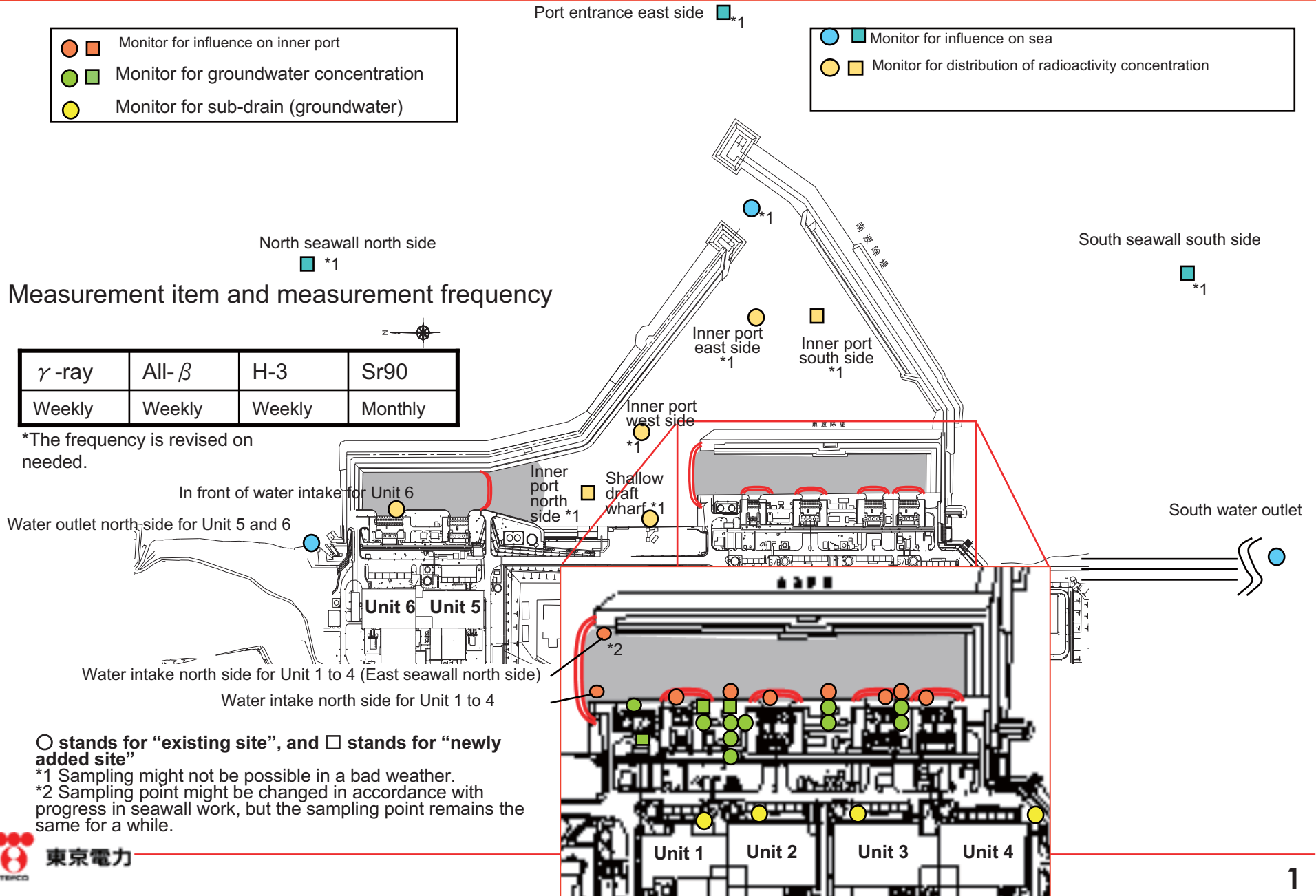
東京電力

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# Monitor plan (Sampling site)

- □ Monitor for influence on inner port
- ■ Monitor for groundwater concentration
- Monitor for sub-drain (groundwater)

- ■ Monitor for influence on sea
- ■ Monitor for distribution of radioactivity concentration



## Measurement item and measurement frequency

$\gamma$ -ray	All- $\beta$	H-3	Sr90
Weekly	Weekly	Weekly	Monthly

\*The frequency is revised on needed.

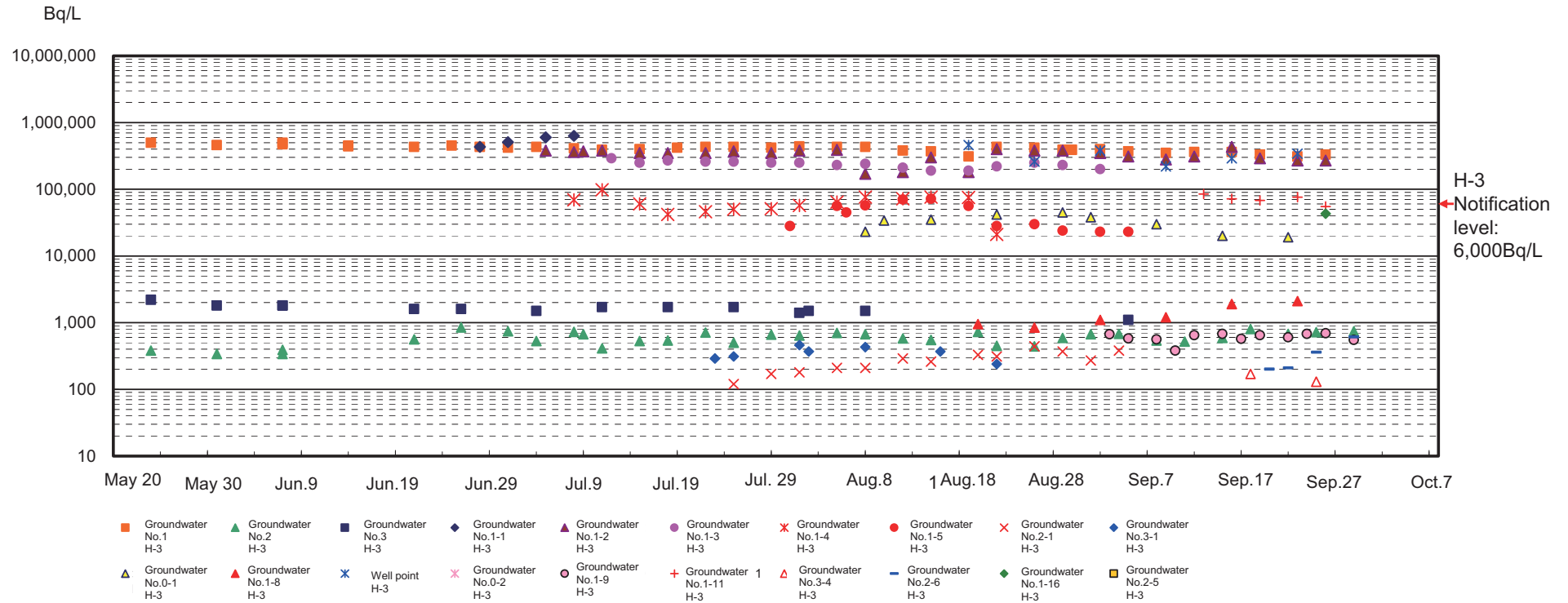
○ stands for "existing site", and □ stands for "newly added site"

\*1 Sampling might not be possible in a bad weather.

\*2 Sampling point might be changed in accordance with progress in seawall work, but the sampling point remains the same for a while.

# Transition of tritium concentration in groundwater

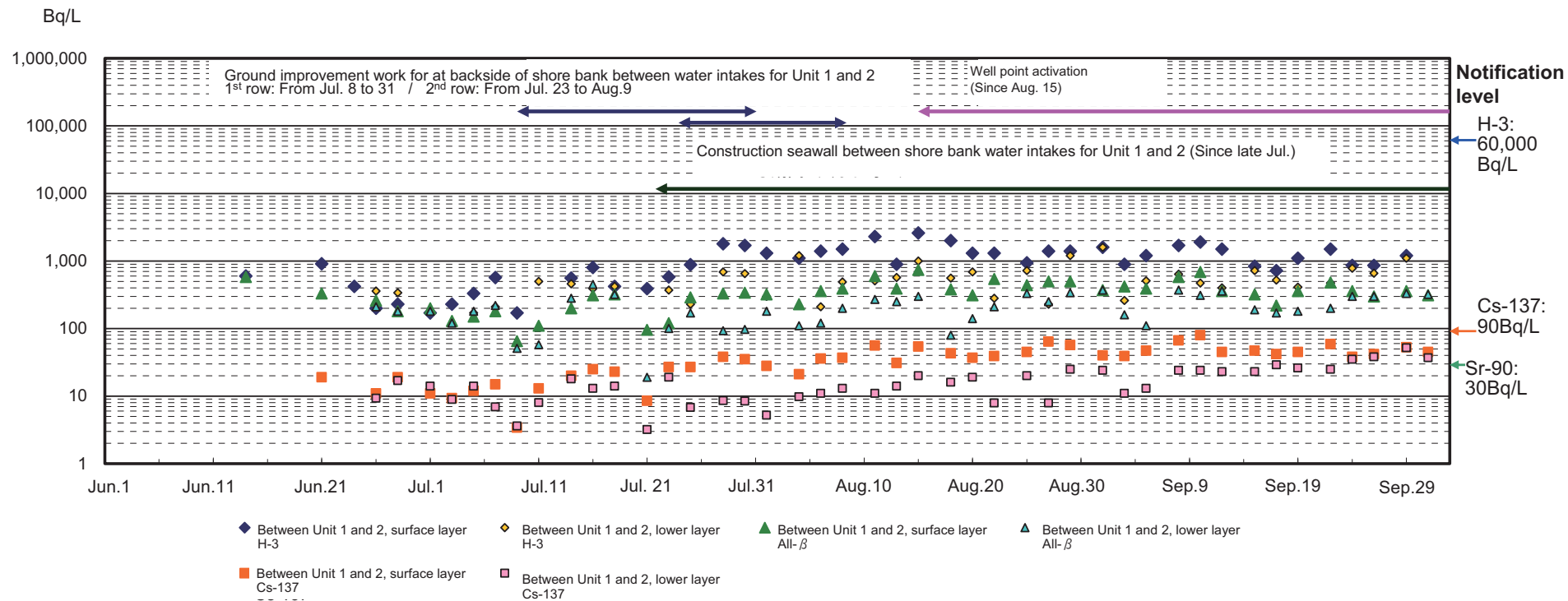
As of October 3, 2013





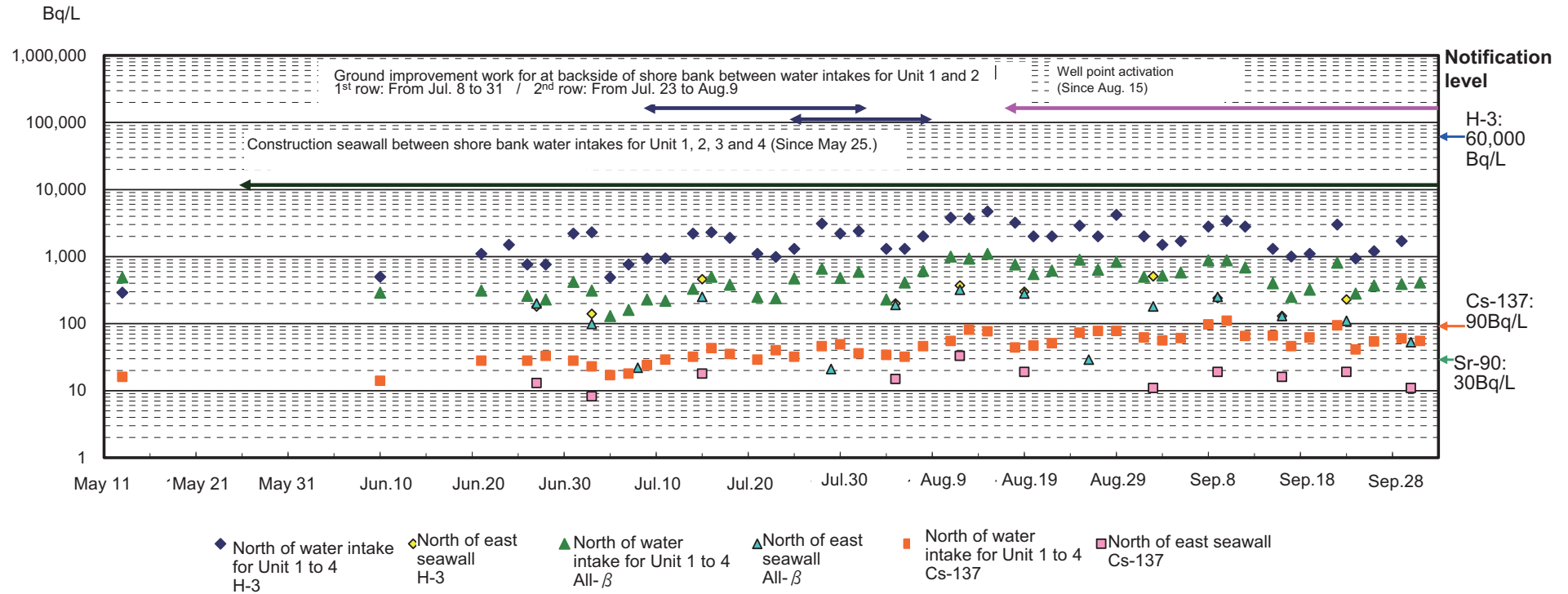
# Transition of seawater concentration between the water intake for Unit 1 and 2

As of October 3, 2013

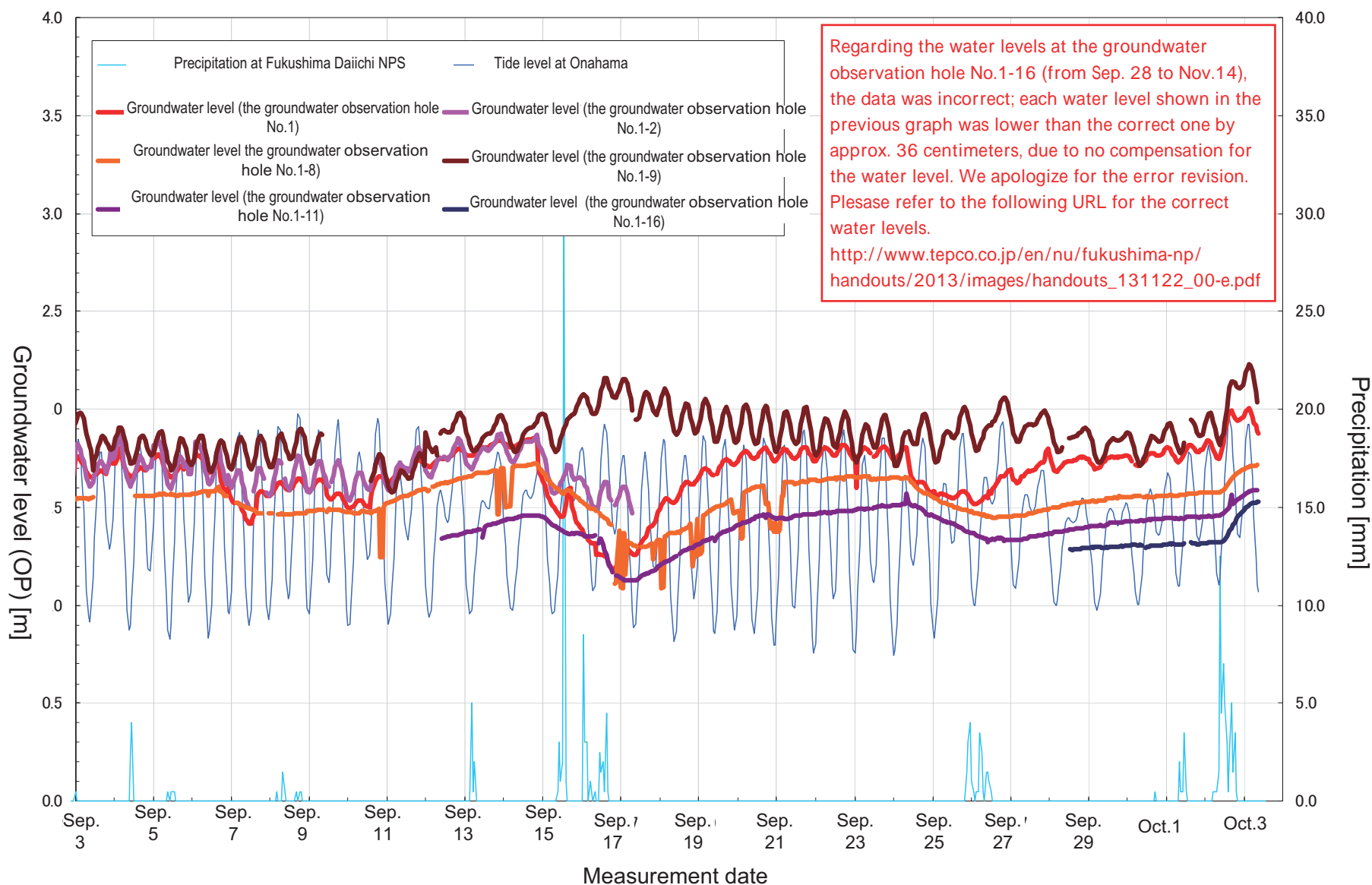


# Transition of seawater concentration on the north of water intake for Unit 1 to 4, and east seawall

As of October 3, 2013

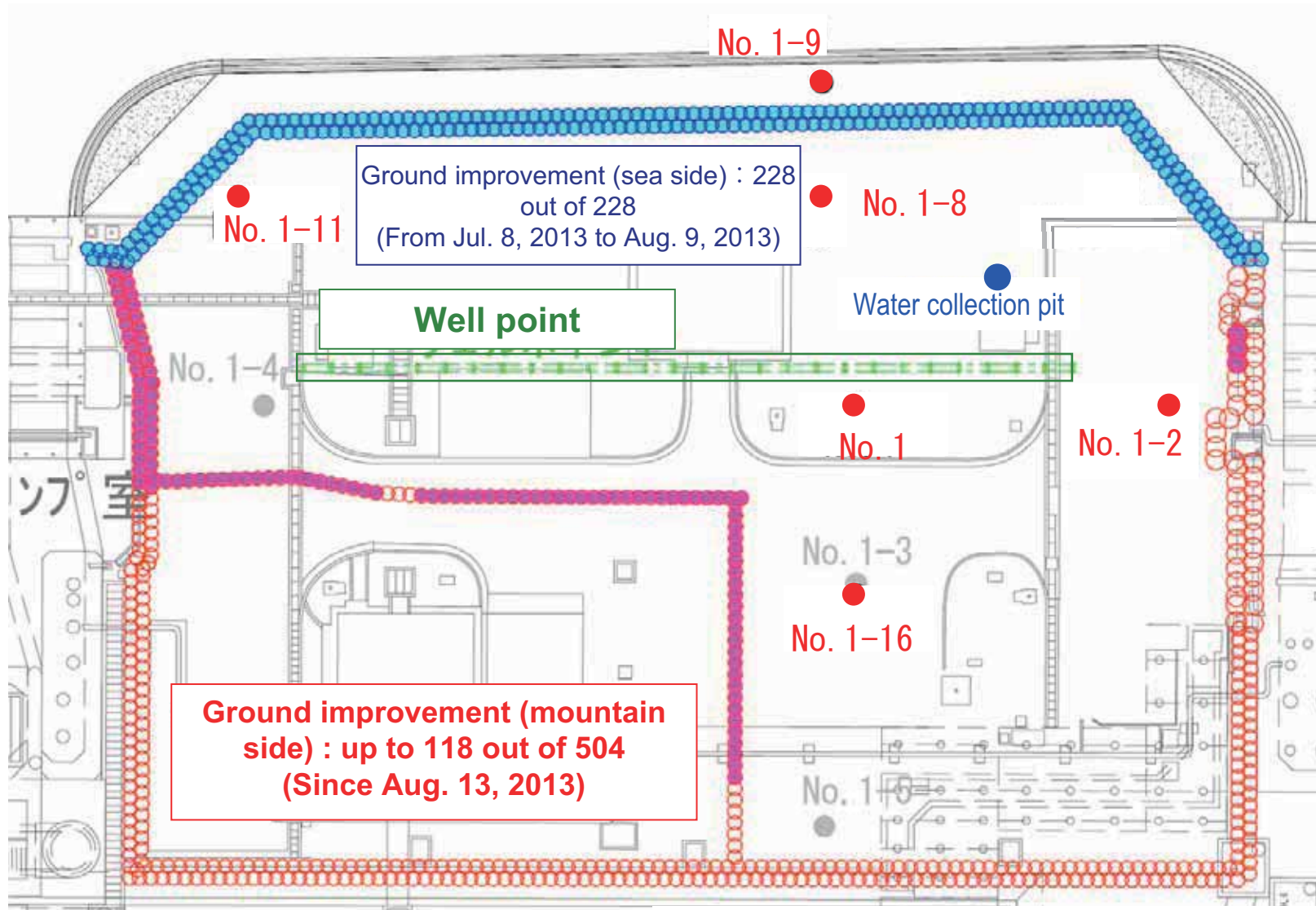


# Movement in groundwater level (Between Unit 1 and 2: From Sep. 3 to Oct. 3)



\*Automatic measurement through a water level indication

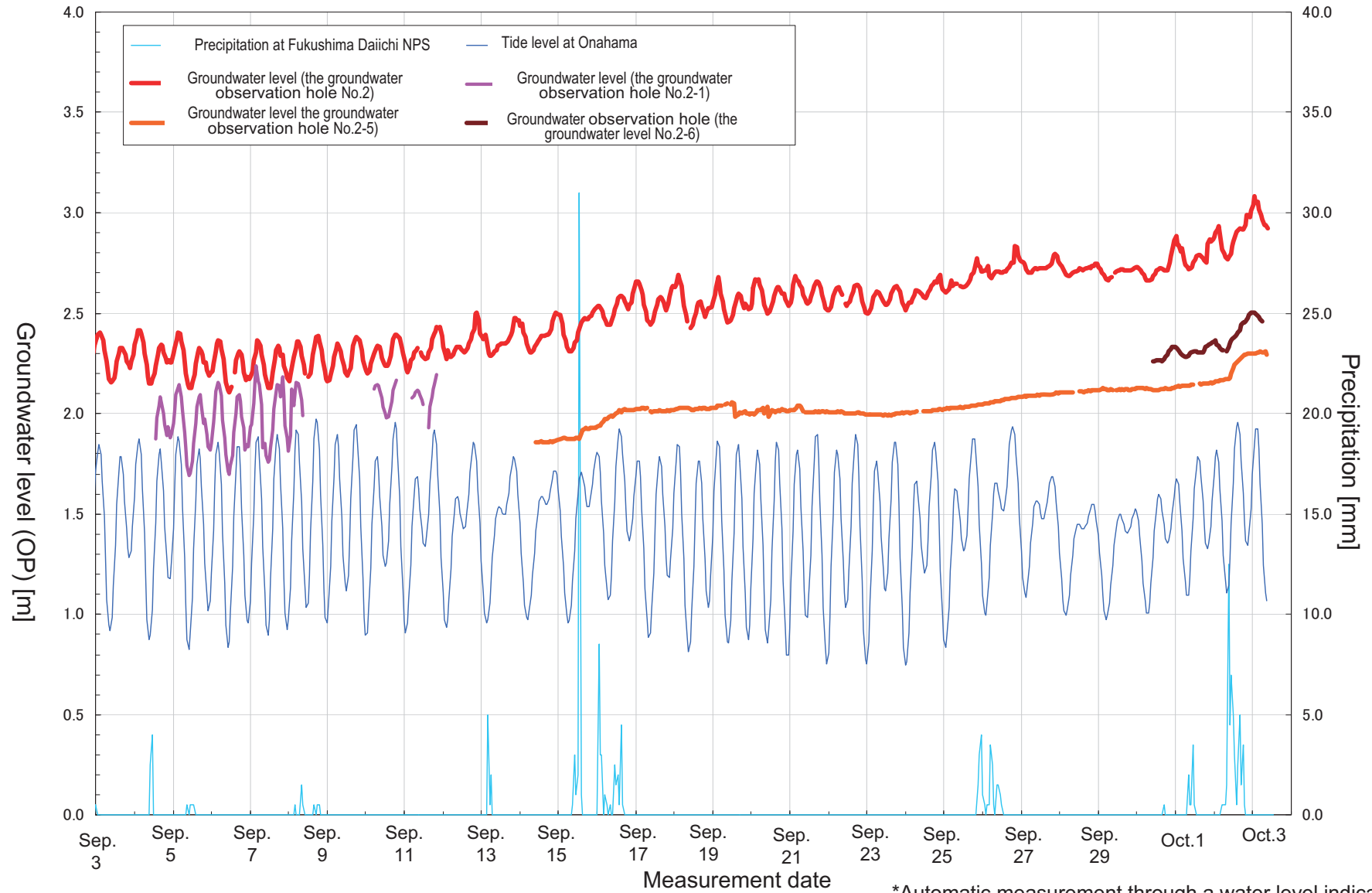
## Progress in the ground improvement work between Unit 1 and 2 (As of in the morning on October 2)



\* The work area is subject to change due to the on-site situation.

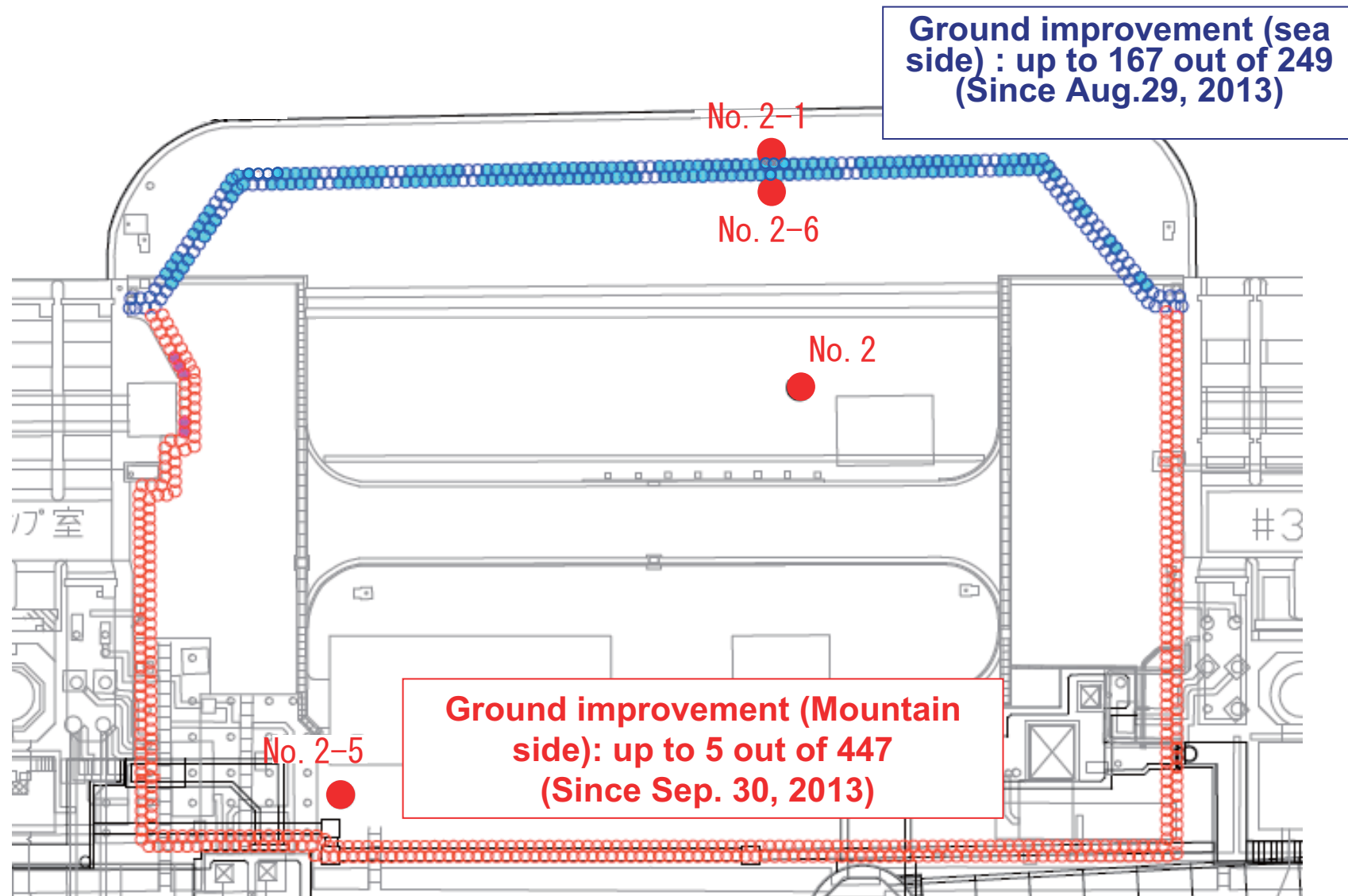


# Movement in groundwater level (Between Unit 2 and 3: From Sep. 3 to Oct. 3)

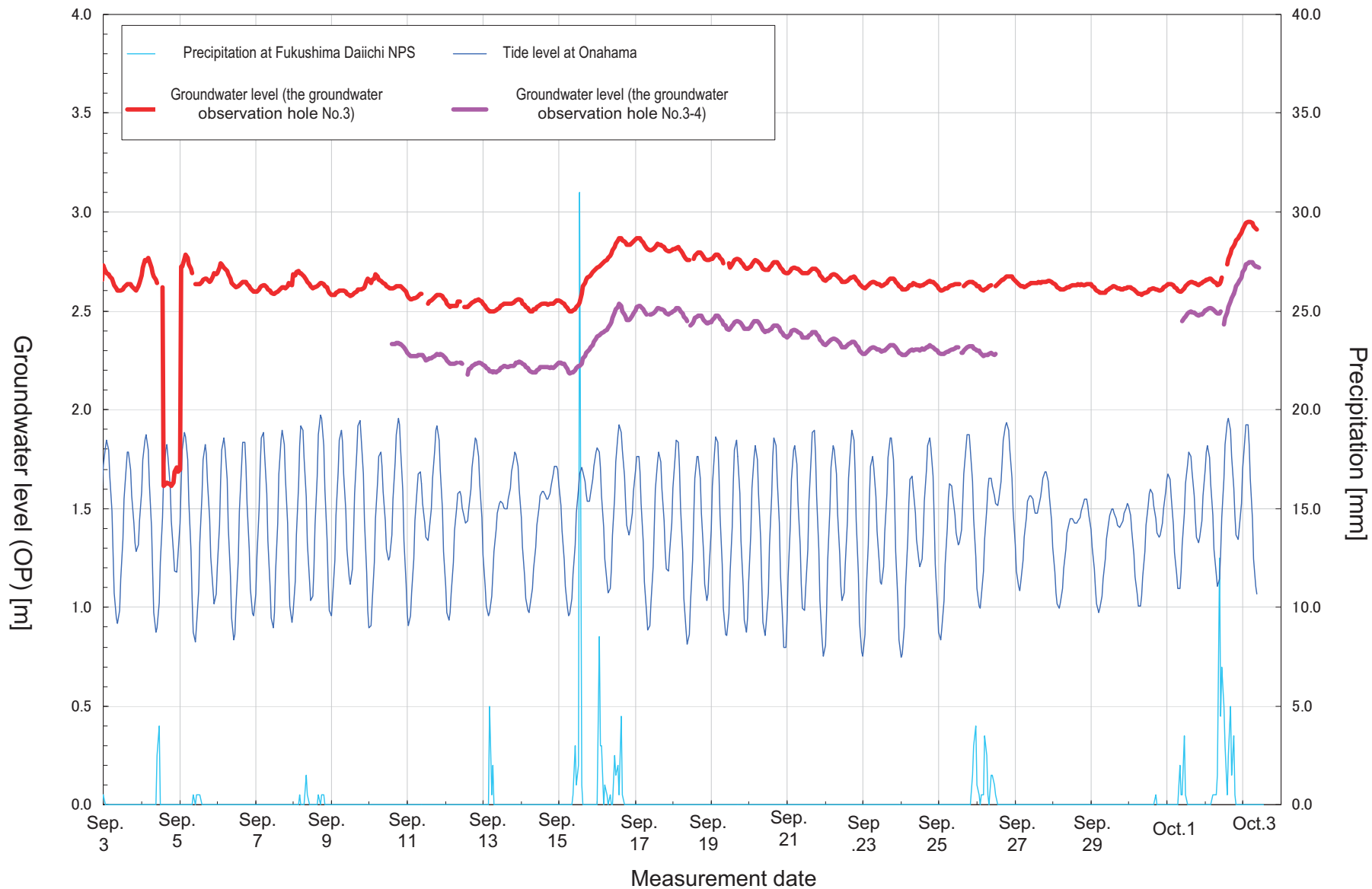


\*Automatic measurement through a water level indication

## Progress in the ground improvement work between Unit 2 and 3 (As of in the morning on October 2)



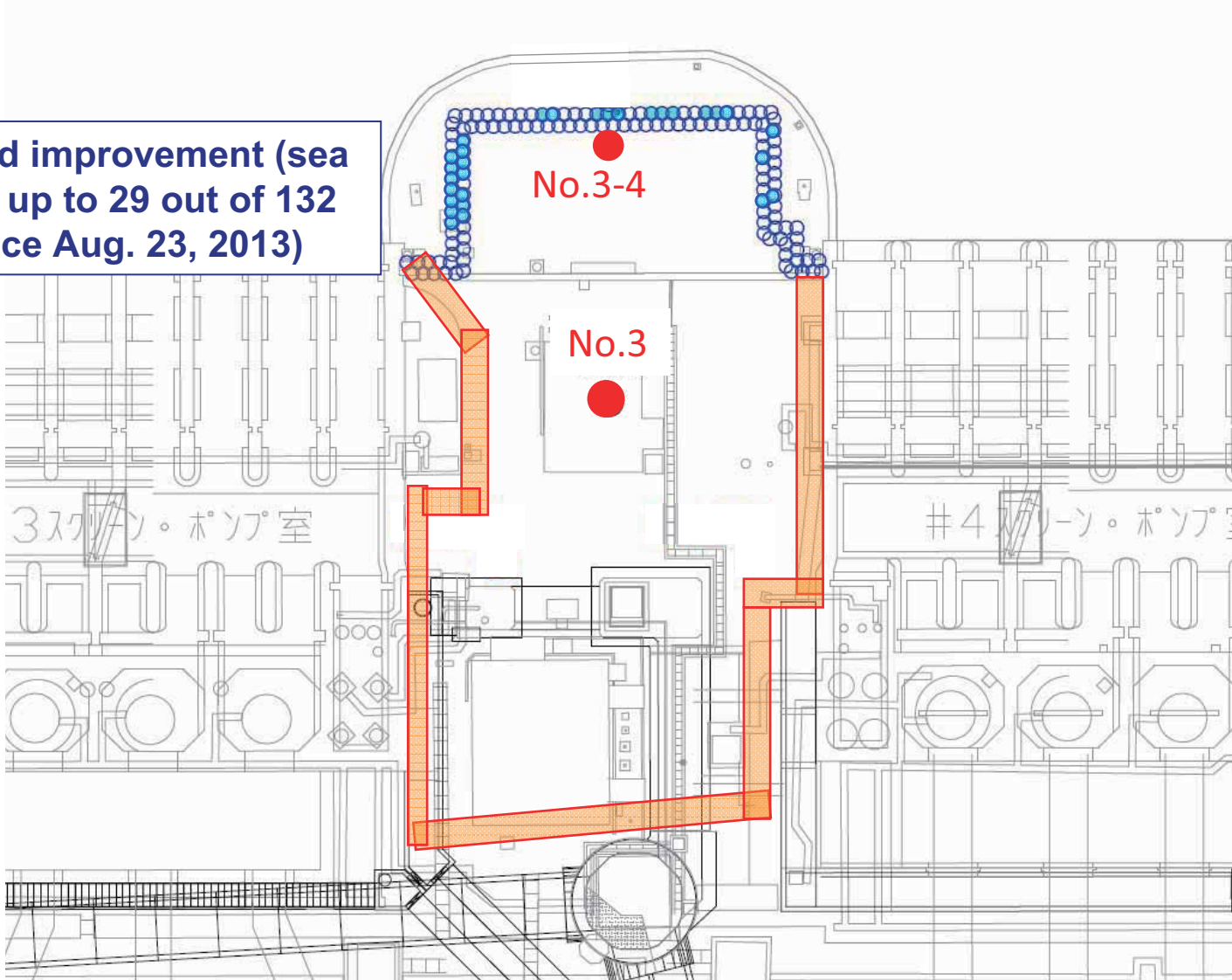
# Movement in groundwater level (Between Unit 3 and 4: From Sep. 3 to Oct. 3)



\*Automatic measurement through a water level indication

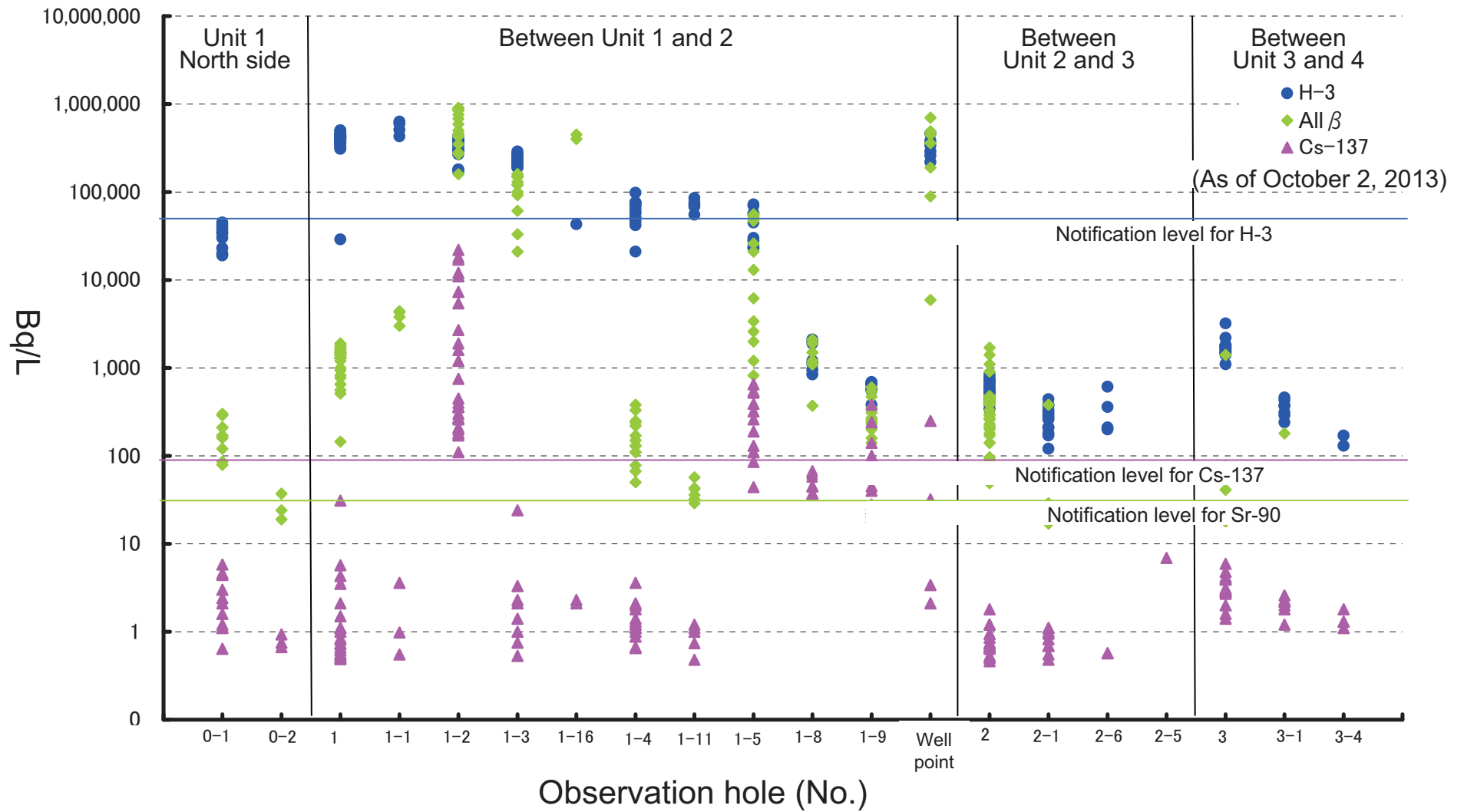
# Progress in the ground improvement work between Unit 3 and 4 (As of in the morning on October 2)

Ground improvement (sea side): up to 29 out of 132 (Since Aug. 23, 2013)



\* The work area is subject to change due to the on-site situation.

# Groundwater concentration distribution (At-site comparison)



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

Sampling date	2013/8/8	2013/8/8 Remeasurement	2013/8/10	2013/8/15	2013/8/22	2013/8/29	2013/9/1	2013/9/8	2013/9/15	2013/9/22	2013/9/29
Sampling time	2:15 PM	2:15 PM	9:35 AM	10:52 AM	9:41 AM	9:50 AM	11:03 AM	12:02 PM	9:52 AM	10:25 AM	9:54 AM
Cs-134	0.61		0.66	0.39	ND (0.42)	1.4	0.80	0.92	1.7	2.1	3.0
Cs-137	1.6		1.2	1.1	0.64	3.0	2.1	2.4	4.4	4.6	5.8
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	210		290	210	300	86	160	79	170	120	170
H-3	23,000	23,000	34,000	35,000	42,000	45,000	38,000	30,000	20,000	19,000	Under measurement
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.

**Groundwater observation hole No.0-2 (Bq/L)**

Sampling date	2013/9/2	2013/9/8	2013/9/15	2013/9/22	2013/9/29
Sampling time	9:51 AM	12:35 PM	10:32 AM	11:15 AM	10:52 AM
Cs-134	ND (0.47)	ND (0.46)	ND (0.42)	ND (0.45)	ND (0.39)
Cs-137	0.75	0.67	0.93	ND (0.55)	ND (0.46)
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 (24)	ND (17)	19	37	24
H-3	ND (120)	ND (130)	ND (120)	ND (121)	Under measurement
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.

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

Sampling date	2012/12/2 <sup>1</sup>	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	2013/7/4	2013/7/8	2013/7/11	2013/7/15	2013/7/19
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	11:50 AM	1:30 PM	12:51 PM	1:00 PM	8:02 AM
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	ND (0.64)	ND (0.50)	ND (0.61)	ND (0.43)	ND (0.48)
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	ND (0.47)	ND (0.47)	1.0	ND (0.49)	0.73
Ru-106	ND	26	19	19	21	18	19	16	20	16	ND	24	16	15	18	17
Mn-54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.50
Sb-125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.7	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	1,500	1,800	1,600	1,500	1,400
H-3	29,000	500,000	460,000	500,000	470,000	450,000	440,000	430,000	450,000	430,000	420,000	430,000	410,000	390,000	400,000	420,000
Sr-90	8.6	1,000	890	1,200	1,200	Under measurement	Under measurement	Under measurement	-	-	-	-	-	-	-	-

\*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	2013/7/22	2013/7/25	2013/7/29	2013/8/1	2013/8/5	2013/8/8	2013/8/12	2013/8/15	2013/8/19	2013/8/22	2013/8/26	2013/8/29	2013/8/30	2013/9/2	2013/9/5	2013/9/9
Sampling time	1:21 PM	1:15 PM	11:50 AM	11:55 AM	12:23 PM	11:29 AM	10:46 AM	12:01 PM	10:21 AM	10:58 AM	10:36 AM	10:15 AM	11:25 AM	10:07 AM	9:40 AM	10:51 AM
Cs-134	ND (0.42)	ND (0.42)	ND (0.46)	ND (0.44)	ND (0.52)	0.52	ND (0.42)	ND (0.54)	3.2	ND (0.57)	ND (0.47)	13	0.98	1.5	2.5	ND (0.40)
Cs-137	ND (0.45)	ND (0.55)	ND (0.51)	0.55	0.62	1.1	0.50	ND (0.49)	4.3	0.66	0.84	31	2.1	3.5	5.7	0.72
Ru-106	ND	ND	17	14	17	15	12	11	14	7.9	14	17	17	11	12	12
Mn-54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
All β	1,400	1,400	1,300	1,300	1,400	1,300	1,700	1,700	1,500	1,500	1,500	1,400	1,700	1,300	1,500	650
H-3	430,000	430,000	420,000	440,000	430,000	430,000	380,000	370,000	310,000	430,000	420,000	390,000	390,000	400,000	370,000	350,000
Sr-90	-	Under measurement	-	-	-	-	-	-	-	-	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	2013/9/12	2013/9/16	2013/9/19	2013/9/23	2013/9/30
Sampling time	9:30 AM	10:25 AM	10:02 AM	11:11 AM	9:45 AM
Cs-134	ND (0.46)	ND (0.57)	ND (0.43)	ND (0.44)	ND (0.49)
Cs-137	ND (0.58)	ND (0.67)	ND (0.57)	0.81	ND (0.59)
Ru-106	6.5	7.6	7.0	7.3	6.0
Mn-54	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND	ND
All β	1,000	940	770	820	560
H-3	360,000	360,000	330,000	330,000	Under measurement
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.

**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 measurement	-	-	-

\* "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)	2013/7/18	2013/7/18 (Filtration)	2013/7/22	2013/7/22 (Filtration)	2013/7/25	2013/7/25 (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	1:23 PM	1:23 PM	1:47 PM	1:47 PM	2:00 PM	2:00 PM
Cs-134	99	9,000	94	11,000	130	10,000	8,200	98	5,900	ND (21)	5,400	ND (25)	3,500	50	2,600	ND (22)
Cs-137	210	18,000	190	22,000	270	20,000	17,000	150	12,000	ND (21)	11,000	ND (25)	7,300	71	5,400	25
Ru-106	95	ND	/	ND	/	/	ND	/	ND	/	ND	/	ND	/	ND	/
Mn-54	62	25	/	ND	/	/	ND	/	ND	/	ND	/	ND	/	ND	/
Co-60	1.2	3.1	/	ND	/	/	ND	/	ND	/	ND	/	ND	/	ND	/
Sb-125	35	ND	/	ND	/	/	ND	/	250	/	ND	/	ND	/	ND	/
All β	900,000	890,000	920,000	900,000	890,000	/	890,000	/	890,000	/	880,000	/	880,000	/	880,000	/
H-3	380,000	360,000	/	370,000	/	/	380,000	/	350,000	/	350,000	/	350,000	/	370,000	/
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	2013/7/29	2013/7/29 (Filtration)	2013/8/1	2013/8/1 (Filtration)	2013/8/5	2013/8/5 (Filtration)	2013/8/8	2013/8/8 (Filtration)	2013/8/12	2013/8/12 (Filtration)	2013/8/15	2013/8/15 (Filtration)	2013/8/19	2013/8/19 (Filtration)	2013/8/22	2013/8/22 (Filtration)
Sampling time	12:10 PM	12:10 PM	12:25 PM	12:25 PM	12:46 PM	12:46 PM	1:38 PM	1:38 PM	12:27 PM	12:27 PM	1:35 PM	1:35 PM	12:06 PM	12:06 PM	12:33 PM	12:33 PM
Cs-134	1,300	ND (18)	760	ND (26)	350	ND (18)	200	19	180	ND (20)	150	ND (18)	880	53	150	110
Cs-137	2,700	ND (21)	1,600	45	750	ND (22)	400	29	400	ND (23)	360	38	1,900	97	360	230
Ru-106	ND	/	ND	/	ND	/	ND	/	ND	/	160	/	ND	/	ND	/
Mn-54	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/
Co-60	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/
Sb-125	180	/	110	/	110	/	170	/	130	/	95	/	200	/	ND	/
All β	870,000	/	870,000	/	880,000	/	880,000	/	890,000	/	880,000	/	870,000	/	840,000	/
H-3	350,000	/	380,000	/	390,000	/	170,000	/	180,000	/	300,000	/	180,000	/	400,000	/
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	2013/8/26	2013/8/26 (Filtration)	2013/8/29	2013/8/29 (Filtration)	2013/9/2	2013/9/2 (Filtration)	2013/9/5	2013/9/5 (Filtration)	2013/9/9	2013/9/9 (Filtration)	2013/9/12	2013/9/12 (Filtration)	2013/9/16	2013/9/16 (Filtration)	2013/9/23	2013/9/23 (Filtration)
Sampling time	12:35 PM	12:35 PM	11:42 AM	11:42 AM	11:56 AM	11:56 AM	1:40 PM	1:40 PM	1:37 PM	1:37 PM	9:58 AM	9:58 AM	10:54 AM	1:40 PM	10:45 AM	10:45 AM
Cs-134	110	80	120	75	140	66	82	52	54	41	110	35	78	90	71	42
Cs-137	270	170	260	160	300	150	180	100	110	94	270	100	180	200	170	75
Ru-106	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/
Mn-54	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/
Co-60	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/
Sb-125	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/	ND	/
All β	760,000	/	680,000	/	590,000	/	500,000	/	460,000	/	430,000	/	430,000	350,000	280,000	/
H-3	380,000	/	380,000	/	350,000	/	310,000	/	280,000	/	310,000	/	430,000	290,000	270,000	/
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	2013/9/26	2013/9/26 (Filtration)	2013/9/30	2013/9/30 (Filtration)
Sampling time	11:55 AM	12:35 PM	11:09 AM	11:09 AM
Cs-134	150	58	520	370
Cs-137	360	140	1,200	800
Ru-106	ND	/	ND	/
Mn-54	ND	/	ND	/
Co-60	ND	/	ND	/
Sb-125	ND	/	ND	/
All β	270,000	/	160,000	/
H-3	270,000	/	Under measurement	/
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.1-3 (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	2013/8/15	2013/8/19	2013/8/22	2013/8/26	2013/8/29	2013/9/2
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	12:26 PM	10:54 AM	11:25 AM	11:18 AM	10:38 AM	10:37 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)	ND (0.64)	ND (0.56)	1.0	1.1	1.3	10
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)	ND (0.76)	ND (0.65)	2.3	2.1	3.3	24
Ru-106	16	14	15	17	11	16	15	11	17	12	11	14	12	5.1	4.6	ND
Mn-54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Co-60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sb-125	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	ND	ND
All β	92,000	100,000	120,000	150,000	150,000	150,000	150,000	150,000	150,000	160,000	160,000	120,000	130,000	61,000	33,000	21,000
H-3	290,000	250,000	270,000	260,000	260,000	250,000	250,000	230,000	240,000	210,000	190,000	190,000	220,000	250,000	230,000	200,000
Sr-90	Under measurement	-	-	-	-	-	-	-	Under measurement	-	-	-	-	-	-	-

\* "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	2013/8/15	2013/8/19	2013/8/22
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	11:30 AM	9:50 AM	10:20 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)	ND (0.47)	1.1	1.0
Cs-137	3.6	2.0	0.67	1.0	1.1	0.88	1.1	1.4	0.65	1.2	1.3	1.2	2.1	1.8
Ru-106	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.1	ND	ND	ND	ND
Mn-54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
All β	330	250	67	50	110	110	78	130	130	170	150	220	380	240
H-3	69,000	98,000	60,000	42,000	46,000	50,000	51,000	57,000	64,000	76,000	72,000	76,000	75,000	21,000
Sr-90	Under measurement	-	-	-	-	-	-	-	-	-	Under measurement	-	-	-

\* "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	2013/8/15	2013/8/19	2013/8/22	2013/8/26	2013/8/29	2013/9/2	2013/9/5
Sampling time	1:05 PM	11:55 AM	10:38 AM	1:05 PM	12:00 PM	1:02 PM	11:40 AM	12:00 PM	12:00 PM	11:13 AM	11:16 AM	12:58 PM
Cs-134	21	310	260	250	190	150	130	91	53	62	40	50
Cs-137	44	650	540	520	390	320	260	190	110	130	85	110
Ru-106	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mn-54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sb-125	ND	ND	6.7	12	8.9	9.3	ND	ND	ND	ND	ND	ND
All β	1,200	56,000	47,000	52,000	26,000	21,000	13,000	6,200	3,400	2,600	2,000	820
H-3	28,000	56,000	45,000	57,000	70,000	72,000	56,000	28,000	30,000	24,000	23,000	23,000
Sr-90	Under measurement	-	-	-	-	-	-	Under measurement	-	-	-	-

\* "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.1-8 (Bq/L)**

Sampling date	2013/8/20	2013/8/26	2013/9/2	2013/9/9	2013/9/16	2013/9/23	2013/9/30
Sampling time	9:40 AM	9:36 AM	9:37 AM	10:15 AM	10:00 AM	9:40 AM	9:00 AM
Cs-134	21	26	30	17	31	20	17
Cs-137	45	58	63	37	67	45	37
Ru-106	ND	ND	ND	ND	ND	ND	ND
Mn-54	ND	0.52	ND	ND	0.76	0.46	ND
Co-60	ND	ND	ND	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND	ND	ND	ND
All β	1,100	1,200	1,100	370	2,100	1,900	1,500
H-3	950	840	1,100	1,200	1,900	2,100	Under measurement
Sr-90	Under measurement	-	-	-	Under measurement	-	-

\* "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.1-9 (Bq/L)**

Sampling date	2013/9/3	2013/9/3 (Filtration)	2013/9/5	2013/9/5 (Filtration)	2013/9/8	2013/9/10	2013/9/12	2013/9/15	2013/9/17	2013/9/19	2013/9/22	2013/9/24	2013/9/26	2013/9/29	2013/10/1
Sampling time	10:20 AM	10:20 AM	10:20 AM	10:20 AM	8:40 AM	6:20 AM	6:55 AM	6:06 AM	6:30 AM	6:24 AM	6:22 AM	6:16 AM	6:16 AM	6:18 AM	6:23 AM
Cs-134	170	66	110	41	59	33	8.7	45	29	19	17	10	11	11	12
Cs-137	380	120	240	110	140	77	20	100	69	45	40	23	23	25	28
Ru-106	ND	/	ND	/	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mn-54	ND	/	ND	/	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Co-60	ND	/	ND	/	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sb-125	ND	/	ND	/	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
All β	470	/	540	/	600	200	270	350	260	240	230	160	310	250	140
H-3	670	/	580	/	560	380	650	680	570	650	600	680	690	550	Under measurement
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.

**Groundwater observation hole No.1-11 (Bq/L)**

Sampling date	2013/9/13	2013/9/16	2013/9/19	2013/9/23	2013/9/26	2013/9/30
Sampling time	10:35 AM	9:35 AM	9:35 AM	10:10 AM	9:25 AM	9:23 AM
Cs-134	ND (0.36)	ND (0.40)	ND (0.48)	0.44	0.45	ND (0.48)
Cs-137	0.48	ND (0.58)	0.74	1.2	1.1	1.0
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	43	42	57	29	36	32
H-3	85,000	72,000	68,000	76,000	55,000	Under measurement
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.

**Groundwater observation hole No.1-16 (Bq/L)**

Sampling date	2013/9/26	2013/9/30
Sampling time	11:30 AM	10:38 AM
Cs-134	ND (0.99)	ND (0.18)
Cs-137	2.1	2.3
Ru-106	ND	ND
Mn-54	ND	ND
Co-60	ND	ND
Sb-125	ND	ND
All β	400,000	450,000
H-3	43,000	Under measurement
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.

**Groundwater pumped up from the well point (Bq/L)**

Sampling date	2013/8/19	2013/8/26	2013/9/2	2013/9/9	2013/9/16	2013/9/23	2013/9/30
Sampling time	11:20 AM	10:30 AM	9:35 AM	1:30 PM	9:45 AM	9:30 AM	8:55 AM
Cs-134	1.5	1.0	ND (1.6)	ND (0.63)	15	110	30
Cs-137	3.4	2.1	ND (1.6)	ND (0.68)	32	250	69.0
Ru-106	17	9.7	25	9.0	12	ND	ND
Mn-54	ND	ND	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND	ND	ND	ND
All β	190,000	5,900	360,000	89,000	450,000	700,000	490,000
H-3	460,000	260,000	380,000	220,000	290,000	340,000	Under measurement
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 (Bq/L)**

Sampling date	2012/12/8 <sup>2</sup>	2013/5/24	2013/5/31	2013/6/7 <sup>1</sup>	2013/6/7 <sup>2</sup>	2013/6/21	2013/6/26	2013/7/1	2013/7/4	2013/7/8	2013/7/9	2013/7/11	2013/7/15	2013/7/18	2013/7/22	2013/7/25
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	11:30 AM	10:50 AM	11:22 AM	11:37 AM	11:04 AM
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	ND (0.47)	ND (0.37)	ND (0.36)	ND (0.44)	ND (0.39)
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	1.2	ND (0.44)	0.50	ND (0.53)	0.46
Ru-106	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mn-54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND	ND	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	1,400	49	1,100	430	330
H-3	410	380	340	390	340	560	850	740	530	730	670	410	530	540	710	500
Sr-90	8.2	28	54	5.2	5.1	Under measurement	-	-	-	-	-	-	-	-	-	-

\*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	2013/7/29	2013/8/1	2013/8/5	2013/8/8	2013/8/12	2013/8/15	2013/8/19	2013/8/22	2013/8/26	2013/8/29	2013/9/1	2013/9/4	2013/9/8	2013/9/11	2013/9/15	2013/9/18
Sampling time	11:30 AM	12:05 PM	11:18 AM	11:36 AM	11:10 AM	11:32 AM	9:57 AM	9:25 AM	10:15 AM	10:10 AM	10:00 AM	10:10 AM	11:50 AM	9:27 AM	11:05 AM	9:24 AM
Cs-134	ND (0.40)	ND (0.35)	ND (0.42)	ND (0.39)	ND (0.38)	ND (0.46)	ND (0.42)	ND (0.41)	ND (0.43)	ND (0.43)	ND (0.41)	ND (0.44)	ND (0.47)	0.36	ND (0.36)	ND (0.37)
Cs-137	ND (0.47)	1.2	ND (0.53)	ND (0.49)	ND (0.48)	ND (0.53)	0.68	0.74	0.66	ND (0.54)	ND (0.55)	0.53	0.70	0.64	0.85	ND (0.44)
Ru-106	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mn-54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
All β	400	210	450	390	210	200	420	270	86	140	230	300	220	96	140	260
H-3	660	640	700	670	580	550	730	450	440	590	670	680	540	520	590	800
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	2013/9/22	2013/9/25	2013/9/29	2013/10/2
Sampling time	9:34 AM	9:31 AM	9:33 AM	9:17 AM
Cs-134	ND (0.48)	ND (0.42)	0.49	ND (0.35)
Cs-137	0.67	0.52	0.94	ND (0.45)
Ru-106	ND	ND	ND	ND
Mn-54	ND	ND	ND	ND
Co-60	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND
All β	380	480	290	180
H-3	680	720	740	Under measurement
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	2013/8/15	2013/8/19	2013/8/22	2013/8/26	2013/8/29	2013/9/1	2013/9/4
Sampling time	11:28 AM	10:53 AM	11:19 AM	10:40 AM	11:05 AM	10:34 AM	10:56 AM	9:18 AM	9:57 AM	9:45 AM	9:36 AM	9:30 AM	9:40 AM
Cs-134	ND (0.42)	ND (0.43)	0.44	ND (0.44)	ND (0.40)	ND (0.43)	ND (0.37)	ND (0.45)	ND (0.43)	ND (0.43)	ND (0.43)	0.66	ND (0.40)
Cs-137	0.69	1.0	0.95	0.55	0.69	0.48	ND (0.52)	ND (0.61)	ND (0.56)	ND (0.54)	1.1	1.1	0.82
Ru-106	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mn-54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Co-60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sb-125	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
All β	ND (17)	380	ND (17)	ND (22)	ND (18)	ND (19)	ND (18)	ND (18)	17	ND (18)	ND (20)	ND (19)	29
H-3	120	170	180	210	210	290	260	330	310	440	370	270	380
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	2013/9/1	2013/9/3	2013/9/5	2013/9/8	2013/9/10	2013/9/12	2013/9/15	2013/9/17	2013/9/19	2013/9/22	2013/9/24	2013/9/26	2013/9/29	2013/10/01
Surface layer	Surface layer	Surface layer	Surface layer	Surface layer	Surface layer	Surface layer	Surface layer	Surface layer	Surface layer	Surface layer	Surface layer	Surface layer	Surface layer	Surface layer
Sampling time	6:12 AM	6:11 AM	6:15 AM	6:05 AM	6:16 AM	6:50 AM	6:02 AM	6:35 AM	6:14	6:18	6:14	6:14 AM	6:15 AM	6:21 AM
Cs-134	23	16	17	30	39	24	22	21	22	28	17	17	24	22
Cs-137	40	39	47	67	80	45	47	42	45	59	38	42	53	45
All β	370	420	390	580	690	360	320	220	360	480	360	300	360	310
H-3	1,600	890	1,200	1,700	1,900	1,500	840	720	1,100	1,500	860	860	1,200	Under measurement
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.



\* "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	2013/8/19	2013/8/20 Surface	2013/8/20 Lower layer	2013/8/26	2013/9/2	2013/9/9	2013/9/16	2013/9/23
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	6:32 AM	11:16 AM	11:25 AM	6:20 AM	6:08 AM	6:20 AM	6:15 AM	6:31 AM
Cs-134	9.9	7.3	2.6	12	ND (2.0)	11	12	22	20	14	4.8	12	9.8	14	28	15
Cs-137	23	16	7.0	26	ND (2.0)	22	28	45	43	30	7.7	26	22	36	50	28
All β	230	130	18	260	ND (21)	120	210	390	160	180	57	320	250	280	130	230
H-3	250	ND (120)	ND (120)	430	ND (120)	280	280	650	270	-	-	310	430	410	200	Under measurement
Sr-90	Under measurement	-	-	-	Under measurement	-	-	-	Under measurement	-	-	-	-	-	-	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	2013/9/30
Sampling time	6:29 AM
Cs-134	13
Cs-137	29
All β	170
H-3	Under measurement
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	2013/8/21	2013/8/27	2013/9/3	2013/9/11	2013/9/18	2013/9/28
Sampling time	8:17 AM	8:09 AM	8:14 AM	8:39 AM	9:16 AM	9:00 AM	9:42 AM
Cs-134	ND (1.5)	ND (1.1)	ND (0.66)	ND (0.88)	ND (0.70)	ND (0.67)	ND (0.61)
Cs-137	ND (1.4)	ND (1.4)	ND (0.49)	ND (0.58)	ND (0.62)	ND (0.52)	ND (0.57)
All β	ND (18)	ND (20)	ND (17)	ND (16)	ND (17)	ND (16)	ND (16)
H-3	4.7	ND (2.9)	ND (2.0)	ND (1.8)	ND (1.9)	ND (1.7)	ND (1.7)
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	2013/8/21	2013/8/27	2013/9/3	2013/9/11	2013/9/18	2013/9/28
Sampling time	8:21 AM	8:16 AM	8:20 AM	8:39 AM	8:59 AM	8:44 AM	9:51 AM
Cs-134	ND (1.1)	ND (1.0)	ND (0.84)	ND (0.63)	ND (0.80)	ND (0.45)	ND (0.66)
Cs-137	ND (1.1)	ND (1.3)	ND (0.69)	ND (0.69)	ND (0.71)	ND (0.68)	ND (0.64)
All β	ND (18)	ND (20)	ND (17)	ND (16)	ND (17)	ND (16)	ND (16)
H-3	ND (2.9)	ND (2.9)	ND (2.0)	ND (1.8)	ND (1.9)	3.6	ND (1.7)
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	2013/8/21	2013/8/27	2013/9/3	2013/9/11	2013/9/18	2013/9/28
Sampling time	8:09 AM	8:01 AM	8:07 AM	8:31 AM	9:06 AM	8:52 AM	9:56 AM
Cs-134	ND (1.5)	ND (1.0)	ND (0.69)	ND (0.43)	ND (0.74)	ND (0.68)	ND (0.64)
Cs-137	ND (1.1)	ND (1.4)	ND (0.68)	ND (0.66)	ND (0.64)	ND (0.82)	ND (0.57)
All β	ND (18)	ND (20)	ND (17)	ND (16)	ND (17)	ND (16)	ND (16)
H-3	ND (2.9)	ND (2.9)	ND (2.0)	ND (1.8)	ND (1.9)	ND (1.7)	ND (1.7)
Sr-90	-	-	-	-	-	-	-

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