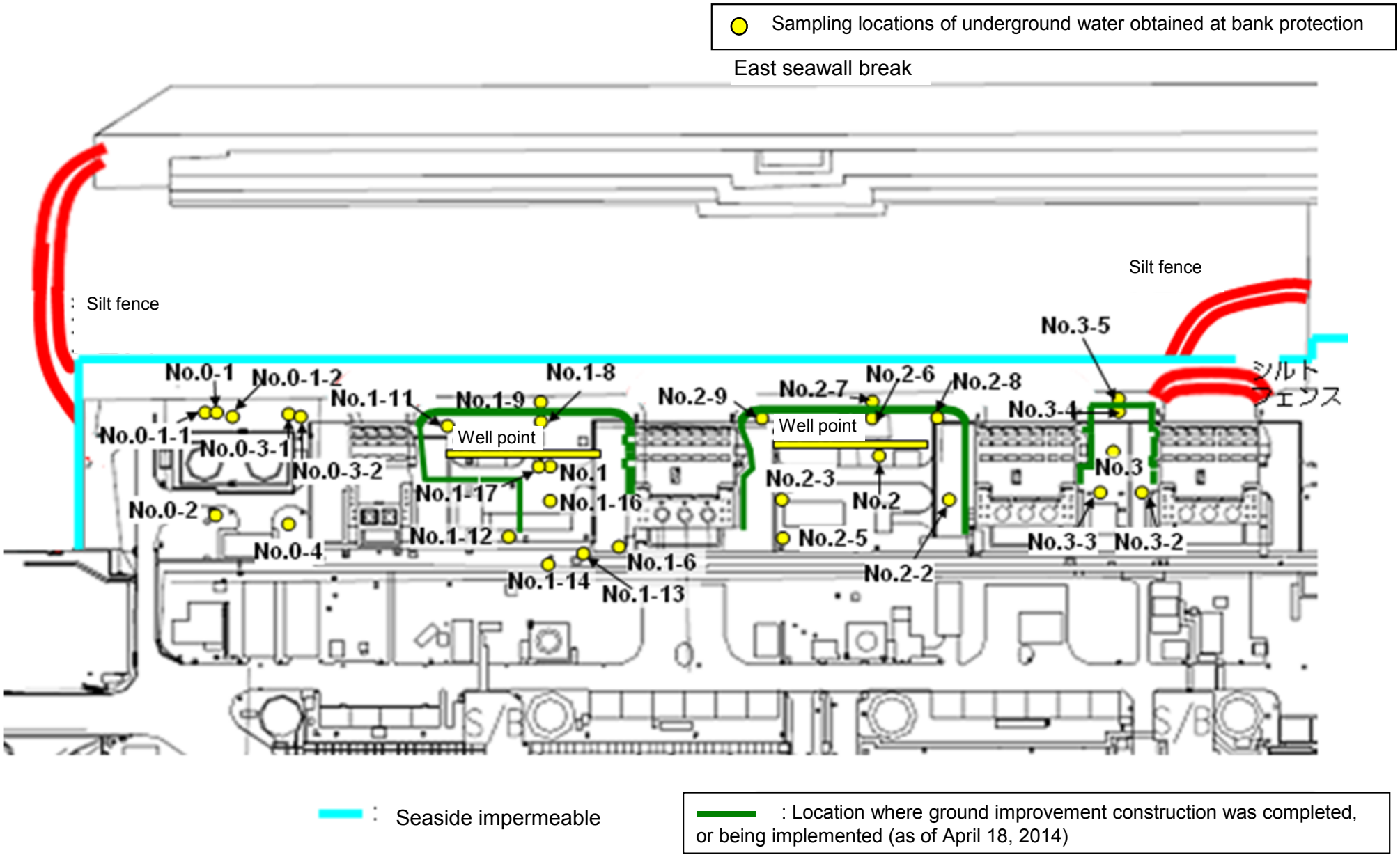
<Reference>
June 23, 2014
Tokyo Electric Power Company

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 (1/2)
Underground Water Obtained at Bank Protection

Unit: Bq/L (exclude chloride)

	Underground water observation hole No.0-1	Underground water observation hole No.0-1-2	Underground water observation hole No.0-2	Underground water observation hole No.0-3-1	Underground water observation hole No.0-3-2	Underground water observation hole No.0-4	Underground water observation hole No.1	Underground water observation hole No.1-6	Underground water observation hole No.1-8	Underground water observation hole No.1-9	Underground water observation hole No.1-11	Underground water observation hole No.1-12	Underground water observation hole No.1-14	Underground water observation hole No.1-16	Underground water observation hole No.1-17
Date of sampling										Jun 19, 2014					
Time of sampling										7:10 AM					
Chloride (unit: ppm)										50					
Cs-134 (Approx. 2 years)										4.8					
Cs-137 (Approx.30 years)										14					
The other γ															
The other γ															
The other γ															
The other γ															
Gross β										ND(18)					
H-3 (Approx. 12 years)										ND(110)					
Sr-90（Approx. 29 years）										-					

	Groundwater pumped up from the well point (between Unit 1 and 2)	Underground water observation hole No.2	Underground water observation hole No.2-2	Underground water observation hole No.2-3	Underground water observation hole No.2-5	Underground water observation hole No.2-6	Underground water observation hole No.2-7	Underground water observation hole No.2-8	Groundwater pumped up from the well point (between Unit 2 and 3)	Underground water observation hole No.3	Underground water observation hole No.3-2	Underground water observation hole No.3-3	Underground water observation hole No.3-4	Underground water observation hole No.3-5
Date of sampling		Jun 18, 2014	Jun 18, 2014	Jun 18, 2014		Jun 19, 2014	Jun 20, 2014	Jun 18, 2014	Jun 18, 2014	Jun 18, 2014	Jun 18, 2014	Jun 18, 2014	Jun 18, 2014	Jun 18, 2014
Time of sampling		10:02 AM	11:17 AM	9:35 AM		9:13 AM	9:53 AM	10:46 AM	10:00 AM	10:33 AM	12:05 PM	12:39 PM	11:23 AM	10:46 AM
Chloride (unit: ppm)		-	-	-		-	800	-	-	-	-	-	-	1,200
Cs-134 (Approx. 2 years)		ND(0.36)	9.3	ND(0.46)		ND(0.38)	1.50	ND(0.41)	0.69	0.60	13	84	3.9	7.5
Cs-137 (Approx.30 years)		ND(0.44)	25	ND(0.55)		ND(0.52)	5.0	ND(0.54)	2.8	1.9	35	230	11	23
The other γ														
The other γ														
The other γ														
The other γ														
Gross β		210	450	770		2,400	1,300	3,800	110,000	ND(17)	2,600	3,500	19	68
H-3 (Approx. 12 years)		750	470	830		960	760	1,300	6,300	120	2,700	7,000	ND(110)	120
Sr-90（Approx. 29 years）		-	-	-		-	-	-	-	-	-	-	-	-

* Data announced this time is provided in a thick-frame. The other data was announced on June 19, 20, and 21.
* "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 (2/2)
Underground Water Obtained at Bank Protection

Unit: Bq/L (exclude chloride)

	Underground water observation hole No.0-1*	Underground water observation hole No.0-1-2	Underground water observation hole No.0-2	Underground water observation hole No.0-3-1	Underground water observation hole No.0-3-2	Underground water observation hole No.0-4	Underground water observation hole No.1	Underground water observation hole No.1-6	Underground water observation hole No.1-8	Underground water observation hole No.1-9	Underground water observation hole No.1-11	Underground water observation hole No.1-12	Underground water observation hole No.1-14	Underground water observation hole No.1-16	Underground water observation hole No.1-17
Date of sampling	Jun 22, 2014	Jun 22, 2014	Jun 22, 2014	Jun 22, 2014		Jun 22, 2014				Jun 22, 2014					
Time of sampling	12:00 PM	11:13 AM	10:38 AM	10:56 AM		10:04 AM				6:57 AM					
Chloride (unit: ppm)	-	-	-	-		-				42					
Cs-134 (Approx. 2 years)	22	ND(0.36)	ND(0.45)	ND(0.40)		0.47*1				6.9					
Cs-137 (Approx.30 years)	60	0.63	ND(0.60)	0.80		0.66				18					
The other γ															
The other γ															
The other γ															
The other γ															
Gross β	200	24*1	32	ND(17)		44*1				31					
H-3 (Approx. 12 years)	Under analysis	Under analysis	Under analysis	Under analysis		Under analysis				Under analysis					
Sr-90（Approx. 29 years）	-	-	-	-		-				-					

	Groundwater pumped up from the well point (between Unit 1 and 2)	Underground water observation hole No.2	Underground water observation hole No.2-2	Underground water observation hole No.2-3	Underground water observation hole No.2-5	Underground water observation hole No.2-6	Underground water observation hole No.2-7	Underground water observation hole No.2-8	Groundwater pumped up from the well point (between Unit 2 and 3)	Underground water observation hole No.3	Underground water observation hole No.3-2	Underground water observation hole No.3-3	Underground water observation hole No.3-4	Underground water observation hole No.3-5
Date of sampling		Jun 22, 2014	Jun 22, 2014	Jun 22, 2014			Jun 22, 2014	Jun 22, 2014	Jun 22, 2014					
Time of sampling		10:12 AM	11:17 AM	9:41 AM			10:30 AM	10:52 AM	10:00 AM					
Chloride (unit: ppm)		-	-	-			800	-	-					
Cs-134 (Approx. 2 years)		ND(0.41)	7.7	ND(0.41)			ND(0.42)	ND(0.47)	ND(0.73)					
Cs-137 (Approx.30 years)		ND(0.52)	22	ND(0.54)			1.1	ND(0.55)	ND(0.86)					
The other γ														
The other γ														
The other γ														
The other γ														
Gross β		200	420	880			990	4,400	140,000					
H-3 (Approx. 12 years)		Under analysis	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.
* The results obtained in the observation hole No.0-1 are for a reference, since the water was highly turbid. (γ and Gross β will be measured after filtration. If filtration takes a long time, γ will not be measured.)
*1 The highest measurement value (compared to the previous values provided in the handouts published in 'Detailed Analysis Results in the Port of Fukushima Daiichi NPS, around Discharge Channel and Bank Protection')

<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.0-1-1	Groundwater observation hole No.0-1-2	Groundwater observation hole No.0-2	Groundwater observation hole No.0-3-1	Groundwater observation hole No.0-3-2	Groundwater observation hole No.0-4	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.1-6
Cs-134 (Approx. 2 years)	29 <5/25>	ND	0.61 <3/2>	0.61 〔10/13〕	0.64 <4/6>	0.82 <1/14>	ND	13 〔8/29〕	1.9 〔7/8〕	11,000 〔7/9〕	10 〔9/2〕	1.5 〔7/8〕	310 〔8/5〕	7,400 <6/16>
Cs-137 (Approx.30 years)	78 <5/25>	ND	1.5 <3/2>	2.2 <1/12>	1.1 <4/6>	2.1 <1/14>	1.4 <1/12>	31 〔8/29〕	3.6 〔7/8〕	22,000 〔7/9〕	24 〔9/2〕	3.6 〔7/8〕	650 〔8/5〕	20,000 <6/16>
The other γ Ru-106 (Approx. 370 days)	ND	ND	ND	ND	ND	ND	ND	26 〔5/24〕	7.9 〔7/8〕	160 〔8/15〕	17 〔7/22〕〔8/8〕	3.1 〔8/8〕	ND	ND
The other γ Mn-54 (Approx. 310 days)	ND	ND	ND	ND	ND	0.64 <2/20>	ND	ND	1.0 〔7/5〕	62 〔7/5〕	ND	ND	ND	320 <2/13> <2/17>
The other γ Co-60 (Approx. 5 years)	ND	ND	ND	ND	ND	ND	ND	0.50 〔7/19〕	ND	3.1 〔7/8〕	ND	ND	ND	830 <2/20>
The other γ Sb-125 (Approx. 3 years)	ND	ND	ND	ND	ND	ND	ND	1.7 〔7/11〕	ND	250 〔7/15〕	1.4 〔7/12〕〔8/26〕	ND	12 〔8/8〕	34 <5/19>
Gross β	300 [8/29] <5/18>	21 〔12/7〕	21 〔11/10〕	87 〔10/13〕	ND	67*1 〔12/11〕	29 〔12/29〕	1,900 〔5/24〕	4,400 〔7/8〕	9,300,000 〔7/8〕	160,000 〔8/12〕〔8/15〕	380 〔8/19〕	56,000 〔8/5〕	890,000 <6/19>
H-3 (Approx. 12 years)	45,000 〔8/29〕	18,000 〔12/7〕	74,000 [12/15] <1/19>	6,800 <2/16>	ND	76,000 <2/6>	56,000 <2/23>	500,000 〔5/24〕〔6/7〕	630,000 〔7/8〕	430,000 〔9/16〕	290,000 〔7/12〕	98,000 〔7/11〕	72,000 〔8/15〕	*2 110,000 <2/6>
Sr-90(Approx. 29 years)	140 〔8/8〕	7.9 〔12/7〕	2.6 〔11/10〕	0.73 〔9/2〕	1.5 〔11/20〕	2.3 〔12/6〕	ND(0.83) 〔10/27〕	1,300 〔8/22〕	2,300 〔6/28〕	5,000,000 〔7/5〕	130,000 〔8/8〕	200 〔7/8〕	5,100 〔8/22〕	-

Unit: Bq/L

	Groundwater observation hole No.1-8	Groundwater observation hole No.1-9	Groundwater observation hole No.1-10	Groundwater observation hole No.1-11	Groundwater observation hole No.1-12	Groundwater observation hole No.1-13	Groundwater observation hole No.1-14	Groundwater observation hole No.1-16	Groundwater observation hole No.1-17	Groundwater pumped up from the well point (between Unit 1 and 2)	Groundwater observation hole No.2	Groundwater observation hole No.2-1*	Groundwater observation hole No.2-2	Groundwater observation hole No.2-3
Cs-134 (Approx. 2 years)	47 〔11/25〕	170 〔9/3〕	-	1.1 <1/13>	74 〔10/21〕	37,000 <2/13>	*2 88 <2/27>	*1 3.1 〔12/13〕	1.3 <6/12>	110 〔9/23〕	0.88 <2/26>	0.66 〔9/1〕	15 <2/12>	2.2 <2/26>
Cs-137 (Approx.30 years)	110 〔11/25〕	380 〔9/3〕	-	3.4 <4/28>	170 〔10/21〕	93,000 <2/13>	*2 230 <2/27>	5.6 <6/9>	2.8 <4/28>	250 〔9/23〕	2.5 <2/26>	1.1 〔8/29〕〔9/1〕	38 <2/12>	5.5 <2/26>
The other γ Ru-106 (Approx. 370 days)	ND	ND	-	ND	5.4 〔10/28〕	ND	ND	9.2 〔10/28〕	5.5 <4/21> <5/1>	25 〔9/2〕	ND	ND	ND	ND
The other γ Mn-54 (Approx. 310 days)	12 <2/3>	ND	-	ND	ND	ND	0.4 <6/9>	ND	ND	8.5 <4/28>	ND	ND	ND	0.29 〔12/6〕
The other γ Co-60 (Approx. 5 years)	1.3 <2/3>	ND	-	ND	0.51 〔10/24〕	ND	0.44 <5/29>	0.9 〔11/7〕	0.61 〔11/25〕	0.61 <6/9>	ND	ND	ND	ND
The other γ Sb-125 (Approx. 3 years)	ND	ND	-	ND	61 〔10/21〕	ND	ND	24 <6/16>	2.1 〔11/25〕	ND	ND	ND	ND	ND
Gross β	59,000 <2/3>	*2 2,100 〔11/17〕	*2 78 <1/27>	2,300 〔12/26〕	1,100 <5/5>	260,000 <2/12> <2/13>	4,800 <6/9>	3,100,000 <1/20> <1/30> <2/3>	63,000 <6/12>	1,900,000 〔9/23〕	1,700 〔7/8〕	380 〔7/29〕	600 <4/16>	1,500 〔12/6〕 <1/8>
H-3 (Approx. 12 years)	33,000 <6/2>	*2 860 〔11/14〕	*2 270,000 <1/27>	85,000 〔9/13〕	440,000 〔10/31〕	88,000 <2/12>	23,000 <2/13>	43,000 〔9/26〕	32,000 <1/20>	460,000 〔8/19〕	1,000 <2/23>	440 〔8/26〕	660 <1/8>	1,700 〔12/6〕
Sr-90(Approx. 29 years)	20,000 〔12/9〕	300 〔10/3〕	—	18 〔10/21〕	290 〔10/21〕	Under analysis	98 〔12/9〕	1,400,000 〔12/9〕	9.5 〔12/9〕	—	54 〔5/31〕	5.9 〔7/25〕	320 〔12/25〕	1,200 〔12/6〕

Unit: Bq/L

	Groundwater observation hole No.2-5	Groundwater observation hole No.2-6	Groundwater observation hole No.2-7	Groundwater observation hole No.2-8	Groundwater observation hole No.2-9	Groundwater pumped up from the well point (between Unit 2 and 3)	Groundwater observation hole No.3	Groundwater observation hole No.3-1*	Groundwater observation hole No.3-2	Groundwater observation hole No.3-3	Groundwater observation hole No.3-4	Groundwater observation hole No.3-5
Cs-134 (Approx. 2 years)	41 <5/7>	17 <3/11>	3.5 <2/23>	0.47 <4/9>	ND	2.0 <4/23>	3.5 〔7/25〕	1.2 〔7/25〕〔8/8〕	13 <6/18>	73 <5/21>	3.9 <6/18>	64 <1/15>
Cs-137 (Approx.30 years)	110 <5/7>	50 <3/11>	9.0 <2/23>	1.3 <4/9>	*2 0.58 <2/11>	4.7 <4/23>	5.9 〔8/8〕	2.6 〔8/1〕	35 <6/18>	200 <5/21>	12 <6/11>	170 <1/15> <6/4>
The other γ Ru-106 (Approx. 370 days)	ND	ND	ND	ND	*2 6.5 <2/11>	ND	ND	ND	ND	ND	ND	-
The other γ Mn-54 (Approx. 310 days)	0.95 <6/4>	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.54 〔10/30〕	-
The other γ Co-60 (Approx. 5 years)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-
The other γ Sb-125 (Approx. 3 years)	74 <5/7>	ND	ND	ND	ND	ND	1.6 <1/1>	ND	ND	ND	ND	-
Gross β	150,000 <2/12>	3,200 〔12/5〕	1,300 <6/20>	4,400 <6/15>	*2 1,700 <2/7>	240,000 〔12/12〕	1,400 〔7/11〕	180 〔8/1〕	*2 2,800 <5/28>	4,900 <4/30>	33 <6/11>	350 <5/28>
H-3 (Approx. 12 years)	7,900 <4/9>	1,200 〔11/24〕〔11/27〕	1,100 <1/19>	1,700 <4/6> <6/8>	*2 13,000 <2/7> <2/11>	6,300 <6/11> <6/15>	3,200 〔2012/12/12〕	460 〔8/1〕	2,800 <5/14> <6/11>	8,000 <5/7>	170 〔9/18〕	170 <1/8>
Sr-90(Approx. 29 years)	Under analysis	Under analysis	ND(1.4) 〔11/21〕	Under analysis	Under analysis	-	8.3 〔2012/12/12〕	4.4 〔7/23〕	Under analysis	-	ND	-

● Since some samples are still under analysis, the highest dose of the Strontium-90 is among those previously announced.
*1 Analysis result of pumped water.
*2 The results are for a reference, since the water was highly turbid. (γ and Gross β were measured after filtration.)

* "ND" indicates that the measurement result is below the detection limit.
* Date of sampling is provided in parentheses. ( ): 2013, < >: 2014
* "*" is provided next to the name of the holes where the sampling could not be performed due to the chemical injection of ground improvement.