

◦Results of Radioactive Material Monitoring of Aquatic Organisms (Location E along the Nidda River)

< Location E along the Nidda River: Samples collected >

Locations	General items		Radioactive materials			
	Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
E-1	○	○	○	○	○	○
E-2a	○	○	○	—	○	—
E-2b	○	—	○	—	—	—
E-3	○	○	○	—	○	—
E-4	○	○	○	—	○	—
E-5	○	○	○	—	○	—

< Location E along the Nidda River: Site measurement item >

Locations	Latitude and longitude of the location		Survey date and time		Water			Sediment			Other	
	Latitude	Longitude	Date	Time (water)	Time (sediment)	Water temperature (degrees C)	Sediment temperature (degrees C)	Property	Color	Contaminants	Water depth (m)	Transparency (cm)
E-1	37.66145°	140.91140°	2014/9/2	8:08	8:18	18.1	20.3	Sand	10YR4/3	Pebbles	0.36	>50.0
E-2a	37.66428°	140.94548°		10:53	11:00	19.3	19.6	Sediment with sand	2.5Y4/2	Plant	0.70	41.0
E-2b	37.66405°	140.94583°		10:28	—	19.1	—	—	—	—	0.58	>50.0
E-3	37.64458°	141.00170°		14:10	14:25	20.6	20.6	Sand	2.5Y3/3	Pebbles	0.38	>50.0
E-4	37.64630°	140.96575°		13:13	13:25	20.0	20.3	Sand	2.5Y4/2	Pebbles	0.67	>50.0
E-5	37.66515°	140.91752°		9:17	9:30	18.4	18.9	Sand	2.5Y4/3	Pebbles, plant	0.46	>50.0

< Location E along the Nidda River: General survey items/Analysis of radioactive materials Water >

Locations	Latitude and longitude of the location		Survey date and time		pH	BOD (mg/L)	COD (mg/L)	DO (mg/L)	Electrical conductivity (mS/m)	Salinity	TOC (mg/L)	SS (mg/L)	Turbidity (FNU)	Cs-134 (Bq/L)	Cs-137 (Bq/L)	Sr-90 (Bq/L)
	Latitude	Longitude	Date	Time												
E-1	37.66145°	140.91140°	2014/9/2	8:08	7.8	0.5	2.7	9.8	7.0	0.04	1.1	5	2.5	0.40	1.2	0.0021
E-2a	37.66428°	140.94548°		10:53	7.5	0.5	2.5	9.8	7.3	0.04	1.1	2	1.9	0.053	0.15	—
E-2b	37.66405°	140.94583°		10:28	7.6	0.5	2.7	9.3	7.1	0.04	1.1	5	2.7	0.078	0.22	—
E-3	37.64458°	141.00170°		14:10	7.5	<0.5	3.1	9.5	8.3	0.05	1.1	6	2.3	0.066	0.18	—
E-4	37.64630°	140.96575°		13:13	7.6	<0.5	3.0	9.5	7.4	0.04	1.1	5	2.1	0.041	0.12	—
E-5	37.66515°	140.91752°		9:17	7.6	<0.5	2.5	10.2	7.0	0.04	1.1	4	2.1	0.051	0.15	—

< Location E along the Nidda River: General survey items/Analysis of radioactive materials Sediment >

Locations	Latitude and longitude of the location		Survey date and time		pH	Redox potential E <sub>NHE</sub> (mV)	Water content (%)	IL (%)	TOC (mg/g-dry)	Soil particle density (g/cm <sup>3</sup> )	Grain size distribution						Cs-134 (Bq/kg-dry)	Cs-137 (Bq/kg-dry)	Sr-90 (Bq/kg-dry)		
	Latitude	Longitude	Date	Time							Gravel (2-75mm) (%)	Coarse sand (0.85-2mm) (%)	Medium sand (0.25-0.85mm) (%)	Fine sand (0.075-0.25mm) (%)	Silt (0.005-0.075mm) (%)	Clay (Less than 0.005mm) (%)				Median grain diameter (mm)	Maximum grain diameter (mm)
E-1	37.66145°	140.91140°	2014/9/2	8:18	7.1	271	18.1	0.7	1.4	2.664	31.8	53.8	14.0	0.2	0.1	0.1	1.5	9.5	230	670	0.20
E-2a	37.66428°	140.94548°		11:00	6.5	292	26.1	3.0	10.5	2.663	46.4	15.1	14.7	11.4	5.7	6.7	1.7	9.5	2,000	5,600	—
E-3	37.64458°	141.00170°		14:25	6.9	289	15.0	1.0	1.8	2.675	38.3	27.9	32.4	1.0	0.2	0.2	1.4	9.5	82	270	—
E-4	37.64630°	140.96575°		13:25	6.8	288	17.0	0.8	1.8	2.678	22.2	35.4	40.8	1.3	0.1	0.2	0.99	9.5	110	300	—
E-5	37.66515°	140.91752°		9:30	6.9	291	18.4	1.4	2.1	2.690	36.4	30.5	27.8	4.2	0.5	0.6	1.4	9.5	460	1,400	—

Note)N.D. means to be below the detection limit and figures in parentheses show the detection limit.

< Location E along the Niida River: Analysis items Aquatic organisms >

Location		Latitude and longitude of the location		Sampling Date	Division	Class	Order	Family	Species name	English name	Population	Sample weight (kg-wet)	Note			Cs-134 (Bq/kg-wet)	Cs-137 (Bq/kg-wet)	Sr-90 (Bq/kg-wet)		
		Latitude	Longitude										Growth stage	Stomach contents	Measurement site					
E-2a E-2b	—	37.66428° 37.66405°	140.94548° 140.94583°	2014/8/31	Algae/plant	—	—	—	—	River bottom materials (incl. algae)	Considerable number	0.040	—	—	—	120	350	—		
					Arthropoda	Insecta	Ephemeroptera	Isonychidae	<i>Isonychia japonica</i>	Isonychiidae	642	0.028	Larva	—	—	—	260	710	—	
					Arthropod	Insecta	Ephemeroptera	Heptageniidae	<i>Heptageniidae</i>	Heptageniidae	343	0.0056	Larva	—	—	—	67	180	—	
					Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	192	0.028	Larva	—	—	—	210	620	—	
					Arthropod	Insecta	Odonata	Cordulidae	<i>Macromia amphigena</i>	Macromia amphigena	132	0.023	Larva (dragonfly larva)	—	—	—	30	81	—	
					Arthropod	Insecta	Odonata	Gomphidae	<i>Asiagomphus melaenops</i>	Asiagomphus melaenops										
					Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	Davidius										
					Arthropod	Insecta	Odonata	Gomphidae	<i>Onychogomphus viridicostus</i>	<i>Onychogomphus viridicostus</i>										
					Arthropod	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	Albardae	10	0.0062	Larva	—	—	—	49	140	—	
					Arthropod	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	Protohermes grandis										
					Arthropoda	Arachnida	Araneae	Araneidae	<i>Argiope bruennichi</i>	Wasp spider	16	0.0057	Imago	—	—	—	11	22	—	
					Arthropod	Malacostraca	Decapoda	Procambarus	<i>Procambarus clarkii</i>	Red swamp crawfish	4	0.055	Imago	—	—	—	64	180	—	
					Arthropod	Malacostraca	Decapoda	Grapsidae	<i>Eriocheir japonica</i>	Japanese mitten crab	30	0.26	Imago	—	—	—	59	170	—	
					Mollusca	Gastropoda	Sorbeoconcha	Pleuroceridae	<i>Semisulcospira libertina</i>	Semisulcospira libertina	31	0.062	Imago	—	—	—	Molluscan body	22	67	—
					Vertebrata	Osteichthyes	Osmeriformes	Osmeridae	<i>Plecoglossus altivelis</i>	Sweetfish	18	0.34	Immature fish	Some (details unknown)	—	—	Viscera removed	53	150	—
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Acheilognathus melanogaster</i>	Acheilognathus melanogaster	3	0.012	Mature fish (1-year-old)	Some (details unknown)	—	—	Viscera removed	41	120	—
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	6	0.12	Mature fish (2-year-old)	Some (details unknown)	—	—	Viscera removed	56	150	—
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Zacco platypus</i>	Pale chub	9	0.080	Mature fish (2-year-old)	Some (details unknown)	—	—	Viscera removed	30	80	—
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Lepomis macrochirus</i>	Bluegill	1	0.020	Mature fish (2-year-old)	Some (details unknown)	—	—	Viscera removed	41	110	—
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus salmoides</i>	Largemouth bass	4	0.060	Immature fish (1-year-old)	Some (details unknown)	—	—	Viscera removed	48	150	—
Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius sp.</i>	R. sp. CB	9	0.028	Mature fish	—	—	—	64	190	—						
Vertebrata	Amphibia	Anura	Rana	<i>Rana catesbeiana</i>	American Bullfrog	3	0.048	Larva (tadpoles)	—	—	—	480	1,400	—						
Coarse particulate organic matters (CPOMs)	—	—	—	—	Fallen leaves	Considerable number	0.57	—	—	—	—	300	850	—						

\*1: Organisms were collected in or around the targeted water areas.

\*2: When multiple types of aquatic organisms were collected, a sample was prepared by mixing them.

\*3: For a sample made of multiple types of aquatic organisms, the name of the dominant one largest in number is underlined.

\*4: Basically, measurement was conducted for all organism samples. Viscera (stomach and bowels) were removed for the measurement when possible so that undigested food and sediments, etc. in the digestive system would be excluded.

\*5: A statement in red in the "Growth stage" column shows the age assessed based on squama or otolith

\*6: Plankton (suspended algae) is the residue remaining after the filtration of lake water or seawater with a plankton net (40µm-mesh).

\*7: River bottom materials (incl. algae) are algae, etc. that were scratched off stones with a brush, etc. and may include very fine particles such as inorganic silt and clay.

\*8: N.D. means to be below the detection limit and figures in parentheses show the detection limit.

\*9: Activity concentrations include counting errors, but the details are omitted here.