

●Results of Radioactive Material Monitoring of Aquatic Organisms (Location E along the Niida River)

< Location E along the Niida River: Samples collected >

Items	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 Niida River: Site measurement item >

Items	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	Odor	Contaminants	Water depth (m)	Transparency (cm)
E-1	37.661400°	140.911533°	2013/10/11	7:53	7:56	18.5	18.6	Sand gravel	2.5Y4/6	None	Pebbles	0.30	>50
E-2a	37.664350°	140.945250°		10:15	10:22	19.4	19.4	Silt	2.5Y3/3	Sediment smell	Fallen leaves, plant fragments	0.39	>50
E-2b	37.664050°	140.945900°		9:52	—	18.9	—	—	—	—	—	0.21	>50
E-3	37.644700°	141.001333°		13:13	13:17	21.1	21.1	Sand	2.5Y4/3	Swampland smell	None	0.17	>50
E-4	37.646300°	140.965800°		12:27	12:31	21.1	21.1	Sand	2.5Y4/2	None	None	0.37	>50
E-5	37.665050°	140.917500°	9:05	9:08	18.8	18.9	Sand	2.5Y3/3	None	None	0.34	>50	

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

Items	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	37.661400°	140.911533°	2013/10/11	7:53	7.5	0.6	2.6	9.6	7.3	0.04	1.0	1	0.6	0.081	0.18	0.0025
E-2a	37.664350°	140.945250°		10:15	7.3	<0.5	2.5	9.8	8.0	0.05	1.0	2	1.0	0.066	0.14	—
E-2b	37.664050°	140.945900°		9:52	7.4	<0.5	2.4	9.7	7.9	0.05	0.9	1	0.9	0.075	0.16	—
E-3	37.644700°	141.001333°		13:13	7.4	0.9	2.8	9.6	10.7	0.06	1.2	2	1.0	0.052	0.11	—
E-4	37.646300°	140.965800°		12:27	7.8	<0.5	2.2	10.4	8.8	0.05	1.0	2	1.1	0.046	0.11	—
E-5	37.665050°	140.917500°	9:05	7.6	<0.5	2.4	10.9	7.6	0.04	1.1	2	1.1	0.068	0.15	—	

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

Items	Latitude and longitude of the location		Survey date and time		pH	Redox potential E _{NHLE} (mV)	Water content (%)	IL (%)	TOC (mg/g-dry)	Soil particle density (g/cm ³)	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	37.661400°	140.911533°	2013/10/11	7:56	7.0	368	15.1	0.8	<1	2.668	32.6	59.3	6.9	0.1	0.3	0.8	1.6	19	430	1,100	0.25
E-2a	37.664350°	140.945250°		10:22	6.7	352	55.4	6.4	12	2.590	1.7	4.6	21.9	33.5	15.7	22.6	0.14	4.75	4,000	9,000	—
E-3	37.644700°	141.001333°		13:17	7.0	350	16.1	0.8	<1	2.662	6.8	52.4	36.6	2.3	0.6	1.3	0.96	9.5	250	560	—
E-4	37.646300°	140.965800°		12:31	6.6	374	25.8	1.5	1	2.673	0	3.3	79.0	12.8	1.5	3.4	0.42	2	410	900	—
E-5	37.665050°	140.917500°		9:08	6.9	382	17.8	0.9	1	2.669	16.4	47.2	29.9	3.2	0.9	2.4	1.0	19	620	1,400	—

Note) N.D. means to be below 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					
E-1 E-2a E-2b	37.661400° 37.664350° 37.664050°	140.911533° 140.945250° 140.945900°	2013/10/14	Algae/plant	—	—	—	—	Attached algae	—	0.053	—	—	540	1,200	—		
				Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	<i>Stenopsyche marmorata</i>	109	0.018	Larva	—	—	330	770	—	
				Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche sauteri</i>	<i>Parastenopsyche sauteri</i>									
				Arthropod	Insecta	Odonata	Cordulidae	<i>Macromia amphigena amphigena</i>	<i>Macromia amphigena</i>									
				Arthropod	Insecta	Odonata	Cordulegastridae	<i>Anotogaster sieboldii</i>	<i>Anotogaster sieboldii</i>									
				Arthropod	Insecta	Odonata	Gomphidae	<i>Asiagomphus melaenops</i>	<i>Asiagomphus melaenops</i>									
				Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius nanus</i>	<i>Davidius nanus</i>									
				Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	<i>Davidius</i>									
				Arthropod	Insecta	Odonata	Gomphidae	<i>Onychogomphus viridicostus</i>	<i>Onychogomphus viridicostus</i>									
				Arthropod	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	<i>Sieboldius albardae</i>									
				Arthropod	Insecta	Odonata	Libellulidae	<i>Orthetrum albistylum speciosum</i>	<i>Common skimmer</i>									
				Arthropod	Insecta	Odonata	Aeshnidae	<i>Anax parthenope julius</i>	<i>Anax parthenope</i>									
				Arthropod	Malacostraca	Decapoda	Procambarus	<i>Procambarus clarkei</i>	<i>Red swamp crawfish</i>	3	0.077	Imago	—	—	100	230	—	
				Arthropod	Malacostraca	Decapoda	Atyidae	<i>Atyidae</i>	<i>Freshwater shrimp</i>	408	0.072	Imago	—	—	130	300	—	
				Arthropod	Malacostraca	Decapoda	Grapsidae	<i>Eriocheir japonica</i>	<i>Japanese mitten crab</i>	10	0.30	Imago	—	—	91	210	—	
				Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Hemibarbus barbus</i>	<i>Hemibarbus barbus</i>	20	0.070	Yearling fish	Some (details unknown)	—	49	110	—	
				Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Pseudogobio esocinus</i>	<i>Pseudogobio esocinus</i>	4	0.065	1-year-old fish	Some (details unknown)	—	42	96	—	
				Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	<i>Japanese dace</i>	13	0.062	Yearling fish	Some (details unknown)	—	68	170	—	
				Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Zacco platypus</i>	<i>Zacco platypus</i>	32	0.21	2-year-old fish	Some (details unknown)	—	63	140	—	
				Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	<i>R. fluviatilis</i>	28	0.18	Mature fish	—	—	200	460	—	
				Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius sp.</i>	<i>R. sp. CB</i>	21	0.077	Mature fish	—	—	110	260	—	
				Amphibia	Amphibia	Anura	Ranidae	<i>Rana catesbeiana</i>	<i>American Bullfrog (tadpole)</i>	5	0.042	Larva	—	—	500	1,100	—	
			2013/11/5	Vertebrata	Osteichthyes	Anguilliformes	Anguillidae	<i>Anguilla japonica</i>	<i>Japanese eel</i>	2	0.50	Mature fish	Crustacean fragments	120	280	—		
			2013/11/6	Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	<i>Amur catfish</i>	3	1.9	Mature fish	None	140	310	0.77		

Note 1) When multiple types of aquatic organisms were collected, a sample was prepared by mixing them.

Note 2) For species with stomach contents as indicated in the note column, all stomach contents were removed for conducting the analysis.

Note 3) Underlined names in the English name column indicate species largest in number in the respective samples.

Note 4) A statement in red in the "Growth stage" column shows the age assessed based on squama or otolith.

Note 5) N.D. means to be below the detection limit.