

○Results of Radioactive Material Monitoring of Aquatic Organisms (Location D along the Mano River)

< Location D along the Mano River: Samples collected >

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

< Location D along the Mano River: Site measurement item >

Items 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)
D-1	37.7331°	140.9254°	2014/12/6	9:44	9:55	6.1	6.5	Sand	2.5Y4/2	Pebbles	0.37	>50.0
D-2	37.7095°	140.9565°		10:41	10:46	6.9	6.8	Sand	2.5Y3/3	None	0.36	>50.0
D-3	37.7051°	140.9623°		12:13	12:16	9.0	9.0	Sand	2.5Y4/2	None	0.54	>50.0
D-4a	37.7309°	140.9081°		8:34	8:40	6.1	5.9	Sand	2.5Y4/2	Pebbles	0.40	>50.0
D-4b	37.7312°	140.9095°		9:10	—	6.0	—	—	—	—	0.29	>50.0
D-5	37.7216°	140.8895°		7:48	7:56	6.1	5.9	Sand	2.5Y4/1	Pebbles/roots	0.90	>50.0

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

Items 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												
D-1	37.7331°	140.9254°	2014/12/6	9:44	7.6	<0.5	2.2	13.4	10.5	0.06	1.1	<1	0.6	0.013	0.041	0.0013
D-2	37.7095°	140.9565°		10:41	7.3	<0.5	2.3	12.7	12.1	0.07	1.2	<1	0.7	0.0054	0.016	—
D-3	37.7051°	140.9623°		12:13	7.1	<0.5	4.5	12.2	12.2	0.07	0.9	<1	0.6	0.0053	0.014	—
D-4a	37.7309°	140.9081°		8:34	7.5	<0.5	2.7	12.2	10.2	0.06	1.1	3	1.3	0.0097	0.028	—
D-4b	37.7312°	140.9095°		9:10	7.5	<0.5	2.6	12.4	10.0	0.06	1.1	1	0.7	0.0093	0.025	—
D-5	37.7216°	140.8895°		7:48	7.6	<0.5	3.1	12.8	9.0	0.05	1.2	<1	0.6	0.0098	0.031	—

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

Items Locations	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)			
D-1	37.7331°	140.9254°	2014/12/6	9:55	7.2	376	19.2	1.6	2.6	2.699	35.9	35.2	19.1	7.6	1.3	0.9	1.5	19	290	890	—
D-2	37.7095°	140.9565°		10:46	7.1	397	19.1	1.1	1.2	2.711	18.4	48.4	30.0	2.3	0.5	0.4	1.1	19	160	490	—
D-3	37.7051°	140.9623°		12:16	7.1	404	23.3	1.3	1.5	2.713	6.7	15.2	64.9	11.0	1.3	0.9	0.47	9.5	44	140	—
D-4a	37.7309°	140.9081°		8:40	7.2	413	19.9	1.6	1.4	2.738	18.4	40.7	35.8	4.0	0.7	0.4	1.0	19	310	1,000	—
D-4b	37.7312°	140.9095°		9:10	7.2	403	19.6	1.4	1.0	2.692	32.8	49.4	16.0	1.2	0.3	0.3	1.5	19	140	430	—

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

< Location D along the Mano 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				
D-4a D-4b	—	37.7309° 37.7312° 140.9081° 140.9095°	2014/12/2 2014/12/9	Algae/plant	—	—	—	—	River bottom materials (incl. algae)	Considerable number	0.043	—	—	—	78	260	—	
				Arthropoda	Insecta	Ephemeroptera	Isonychiidae	<i>Isonychia japonica</i>	Isonychiidae	309	0.011	Larva	—	—	—	24	76	—
				Arthropoda	Insecta	Plecoptera	Ephemeropteroidea	<i>Kamimuria tibialis</i>	Kamimuria tibialis	410	0.021	Larva	—	—	—	2.9	9.7	—
				Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	256	0.020	Larva	—	—	—	43	140	—
				Arthropod	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	Albardae	43	0.012	Larva (dragonfly larva)	—	—	—	9.9	32	—
				Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius nanus</i>	Davidius nanus									
				Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	Davidius									
				Arthropod	Insecta	Odonata	Aeshnidae	<i>Anax parthenope julius</i>	Anax parthenope	40	0.024	Larva	—	—	—	20	55	—
				Arthropod	Insecta	Odonata	Aeshnidae	<i>Boyeria maclachlani</i>	Boyeria maclachlani	150	0.020	Imago	—	—	—	10	36	—
				Arthropod	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	Protohermes grandis	26	0.034	Imago	—	—	—	15	47	—
				Arthropoda	Malacostraca	Decapoda	Atyidae	<i>Paratya improvisa</i>	Freshwater shrimp	20	0.018	Mature fish	—	—	—	2.5	8.3	—
				Mollusca	Gastropoda	Sorbeoconcha	Pleuroceridae	<i>Semisulcospira libertina</i>	Semisulcospira libertina	1	0.019	Mature fish	—	—	—	24	80	—
				Vertebrata	Osteichthyes	Osmeriformes	Osmeridae	<i>Hypomesus nipponensis</i>	Japanese smelt	3	1.5	Mature fish	—	—	—	11	33	1.3
				Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	9	0.026	Mature fish	—	—	—	23	65	—
				Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus langsdorffii</i>	Carassius auratus langsdorffii	3	1.5	Mature fish	—	—	—	11	33	1.3
				Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius sp.</i>	R. sp. CB	9	0.026	Mature fish	—	—	—	23	65	—
				Coarse particulate organic matters	—	—	—	—	—	—	—	Fallen leaves	Considerable number	0.23	—	—	—	54

*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.