

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

< Location D along the Mano River: Samples collected >

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 >

Locations	Latitude and longitude of the location		Survey date and time		Water			Sediment			Other	
	Scheduled latitude	Scheduled 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°	2015/8/20	9:58	10:27	20.5	20.4	Sand	2.5Y4/1	Pebbles	0.30	>50
D-2	37.7095°	140.9566°		13:03	13:21	21.5	21.4	Sand with sediment	2.5Y4/2	Pebbles	0.48	22
D-3	37.7051°	140.9623°		13:53	14:10	21.2	21.3	Sand	2.5Y4/1	Pebbles	0.47	24
D-4a	37.7308°	140.9081°		8:35	8:48	19.6	19.9	Sand with sediment	2.5Y3/3	None	0.38	>50
D-4b	37.7312°	140.9096°		9:24	-	19.8	-	-	-	-	0.33	>50
D-5	37.7214°	140.8889°		7:47	8:05	19.6	19.8	Sand	2.5Y4/1	None	0.58	>50

< Location D along the Mano 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)
	Scheduled latitude	Scheduled longitude	Date	Time (water)												
D-1	37.7331°	140.9254°	2015/8/20	9:58	7.6	<0.5	2.3	11.6	13.3	0.07	0.9	2	0.8	0.011	0.039	0.00096
D-2	37.7095°	140.9566°		13:03	7.3	0.7	4.2	9.4	14.4	0.08	1.3	12	16.8	0.019	0.072	-
D-3	37.7051°	140.9623°		13:53	7.2	0.7	4.0	9.2	14.7	0.08	1.3	12	15.6	0.015	0.058	-
D-4a	37.7308°	140.9081°		8:35	7.4	<0.5	1.9	8.7	12.6	0.07	0.8	2	1.0	0.0084	0.029	-
D-4b	37.7312°	140.9096°		9:24	7.5	<0.5	2.0	8.7	12.6	0.07	0.8	1	0.9	0.0088	0.032	-
D-5	37.7214°	140.8889°		7:47	7.5	<0.5	2.8	9.4	9.8	0.05	1.0	2	1.5	0.012	0.048	-

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

Locations	Latitude and longitude of the location		Survey date and time		pH	Redox potential (mV)	Water content (%)	IL (%)	TOC (mg/g-dry)	Soil particle density (g/cm3)	Grain size distribution							Cs-134 (Bq/kg-dry)	Cs-137 (Bq/kg-dry)	Sr-90 (Bq/kg-dry)	
	Scheduled latitude	Scheduled longitude	Date	Time (sediment)							Gravel (2-75mm) (%)	Coarse sand (0.85-2mm) (%)	Medium sand (0.25-0.85mm) (%)	Fine sand (0.075-0.25mm) (%)	Silt (0.005-0.0075mm) (%)	Clay (Less than 0.005mm)	Median grain diameter				Maximum grain diameter
D-1	37.7331°	140.9254°	2015/8/20	10:27	6.8	382	20.5	2.0	2.8	2.720	21.0	30.7	37.7	7.7	1.3	1.6	0.89	9.5	210	860	0.84
D-2	37.7095°	140.9566°		13:21	6.9	382	18.8	1.3	1.9	2.714	30.1	40.5	24.0	3.1	1.0	1.3	1.3	9.5	95	430	-
D-3	37.7051°	140.9623°		14:10	7.0	384	18.0	1.5	1.6	2.700	23.2	29.6	41.1	5.1	0.5	0.5	0.91	9.5	37	120	-
D-4a	37.7308°	140.9081°		8:48	7.0	389	16.5	1.9	2.3	2.730	28.9	38.3	28.7	3.0	0.5	0.6	1.3	19	240	980	-
D-5	37.7214°	140.8889°		8:05	7.1	386	17.5	1.6	1.8	2.718	19.3	41.5	32.5	5.5	0.6	0.6	1.1	4.8	150	590	-

< Location D along the Mano River: Analysis items Aquatic organisms >

Location	Sampling point	Latitude and longitude of the location		Sampling Date	Division	Class	Order	Family	Species name	English name	Population	Sample weight (kg-wet)	Growth stage	Note			Radioactive cesium (Bq/kg-wet)		Sr-90 (Bq/kg-wet)					
		Latitude	Longitude											Stomach contents	Measurement site	Cs-134	Cs-137							
D-3	-	37.7051°	140.9623°	H27.8.22	Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	14	0.27	Mature fish (3-year-old)	-	-	-	3.8	15	-					
D-4b	-	37.7312°	140.9096°	2015/8/20	Phycophyta	-	-	-	-	Riverbed Deposits (include algae)	-	0.046	-	-	-	42	150	-						
										Arthropod	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	Macromia amphigena	34	0.0070	Larva (dragonfly larva)	-	-	-	16	54	-
										Arthropod	Insecta	Odonata	Gomphidae	<i>Meligomphus viridicostus</i>	Onychogomphus viridicostus									
										Arthropod	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	Sieboldius albardae									
										Arthropod	Insecta	Odonata	Gomphidae	-	Davidius									
										Arthropod	Insecta	Odonata	Aeshmidae	<i>Anax nigrofasciatus nigrofasciatus</i>	Anax nigrofasciatus nigrofasciatus									
										Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata									
										Arthropod	Insecta	Megaloptera	Corydalidae	<i>Protolermes grandis</i>	Protolermes grandis									
										Arthropod	Malacostraca	Decapoda	Procambarus	<i>Procambarus clarkii</i>	Red swamp crayfish	2	0.037	Imago	-	-	-	33	130	-
										Arthropoda	Malacostraca	Decapoda	Atvidae	<i>Paratya improvisa</i>	Freshwater shrimp	236	0.018	Imago	-	-	-	8.2	29	-
										Mollusca	Bivalvia	Unionoida	Unionidae	<i>Inversimulium jokohumensis</i>	Yokohamashijiragai	3	0.020	Imago	-	-	-	58	230	-
										Vertebrata	Osteichthyes	Siluriformes	Baeridae	<i>Taichysurus tokiensis</i>	Cat-tailed bullhead	2	0.051	Mature fish (2-year-old)	Macrobrachium japonicum, Epiplatys, Tilapia	Viscera removed	5.8	22	-	
										Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Opsarichthys platypus</i>	Zacco platypus	6	0.063	Mature fish (2-year-old)	-	-	-	24	92	-
										Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	18	0.24	Mature fish (2-year-old)	-	-	-	12	40	-
										Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Misgurnus anguillicaudatus</i>	Oriental weatherfish	3	0.036	Mature fish (2-year-old)	-	-	-	30	120	-
										Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	1	0.0054	Inmature fish (0-year-old)	Fish	Viscera removed	N.D.(8.3)	21	-	
										Vertebrata	Osteichthyes	Perciformes	Gobiidae	-	Rhinogobius	20	0.045	Mature fish	-	-	-	20	79	-
										Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.12	-	-	-	-	-	86	340

*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.