

○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	Survey date and time			Latitude and longitude of the location		Water	Sediment					Other	
	Date	Time (Water)	Time (Sediment)	Latitude	Longitude	Water temperature (degrees C)	Sediment temperature (degrees C)	Property	Color	Odor	Contaminants	Water depth (m)	Transparency (cm)
D-1	2012/10/24	11:30	11:45	37.733100°	140.925400°	16.0	15.8	Sand	2.5Y-3/1	None	None	0.25	>50
D-2	2012/10/24	13:46	13:55	37.709450°	140.956583°	16.0	15.7	Sand gravel	2.5Y-4/3	smelling of the sea	Pebbles	0.30	>50
D-3	2012/10/24	14:18	14:27	37.705100°	140.962250°	16.2	16.0	Sand/sediment	2.5Y-4/3	None	Pebbles	0.20	>50
D-4a	2012/10/24	10:29	10:35	37.730833°	140.908050°	14.0	14.0	Sand gravel	2.5Y-3/1	None	None	0.50	>50
D-4b	2012/10/24	10:52	-	37.731217°	140.909633°	14.0	-	-	-	-	-	0.45	>50
D-5	2012/10/24	9:37	9:40	37.721383°	140.888883°	14.3	14.0	Sand	2.5Y-3/3	Muddy odor	Leaves	0.90	>50

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

Locations	Survey date and time		Latitude and longitude of the location		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)
	Date	Time	Latitude	Longitude												
D-1	2012/10/24	11:30	37.733100°	140.925400°	7.9	<0.5	2.9	11.6	10.3	0.07	1.2	<1	0.7	0.032	0.057	0.0018
D-2	2012/10/24	13:46	37.709450°	140.956583°	7.3	<0.5	2.8	10.2	12.2	0.06	1.3	1	1.2	0.027	0.050	-
D-3	2012/10/24	14:18	37.705100°	140.962250°	7.0	<0.5	2.6	10.2	13.4	0.09	1.2	2	1.2	0.023	0.041	-
D-4a	2012/10/24	10:29	37.730833°	140.908050°	7.6	<0.5	2.9	10.9	10.0	0.06	1.2	<1	0.7	0.055	0.093	-
D-4b	2012/10/24	10:52	37.731217°	140.909633°	7.7	<0.5	3.0	10.8	9.8	0.05	1.2	1	1.0	0.038	0.063	-
D-5	2012/10/24	9:37	37.721383°	140.888883°	7.9	0.9	3.8	11.1	8.7	0.09	1.4	8	0.9	0.054	0.091	-

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

Locations	Survey date and time		Latitude and longitude of the location		pH	Redox potential E _{NHLE} (mV)	Water content (%)	IL (%)	TOC (mg/g-dry)	Soil particle density (g/cm3)	Grain size distribution						Median grain diameter (mm)	Maximum grain diameter (mm)	Cs-134 (Bq/kg-dry)	Cs-137 (Bq/kg-dry)	Sr-90 (Bq/kg-dry)
	Date	Time	Latitude	Longitude							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) (%)					
D-1	2012/10/24	11:45	37.733100°	140.925400°	7.1	256	26.5	2.6	2	2.701	5.4	11.2	54.6	20.3	1.6	6.9	0.390	19.00	870	1,400	2.6
D-2	2012/10/24	13:55	37.709450°	140.956583°	6.9	301	17.3	1.6	<1	2.682	40.1	31.2	24.7	2.3	0.1	1.6	1.500	19.00	550	910	-
D-3	2012/10/24	14:27	37.705100°	140.962250°	6.9	350	22.6	2.1	2	2.677	24.3	14.8	35.8	17.5	1.6	6.0	0.590	26.50	390	650	-
D-4a	2012/10/24	10:35	37.730833°	140.908050°	7.2	370	21.9	2.7	2	2.697	37.3	19.8	27.2	10.4	0.9	4.4	1.100	26.50	790	1,300	-
D-5	2012/10/24	9:40	37.721383°	140.888883°	7.3	384	31.7	2.9	1	2.689	0.3	3.5	76.4	12.5	1.5	5.8	0.390	4.75	800	1,300	-

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

Location	Sampling Date	Latitude and longitude of the location		Division	Class	Order	Family	Species name	English name	Population	Sample weight (kg-wet)	Cs-134 (Bq/kg-wet)	Cs-137 (Bq/kg-wet)	Sr-90 (Bq/kg-wet)	Note		
		Latitude	Longitude												Growth stage	Stomach contents	
D-1 D-2 D-3	2012/11/5	37.733100° 37.709450° 37.705100°	140.925400° 140.956583° 140.962250°	Vertebrata	Osteichthyes	Osmeriformes	Osmeridae	<i>Plecoglossus altivelis</i>	Sweetfish (natural upstream)	57	2.1	120	210	0.83	Mature fish	Some (details unknown)	
D-4a D-4b	2012/10/24	37.730833° 37.731217°	140.908050° 140.909633°	Vertebrata	Osteichthyes	Osmeriformes	Zygnemataceae	<i>Spirogyra</i> sp.	Spirogyra	—	0.052	200	340	—	—	—	
				Streptophyta	Zygnematophyceae	Zygnematales	Stenopsychidae	<i>Stenopsyche marmorata</i>	<u>Stenopsyche marmorata</u>	503	0.074	190	320	—	Larva	—	
				Arthropod	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche sauteri</i>	<u>Parastenopsyche sauteri</u>	—	—	—	—	—	—	—	—
				Arthropod	Insecta	Trichoptera	Corduliidae	<i>Macromia amphigena amphigena</i>	<u>Macromia amphigena</u>	—	—	—	—	—	—	—	—
				Arthropod	Insecta	Odonata	Calopterygidae	<i>Calopteryx atrata</i>	<u>Calopteryx atrata</u>	—	—	—	—	—	—	—	—
				Arthropod	Insecta	Odonata	Calopterygidae	<i>Calopteryx cornelia</i>	<u>Calopteryx cornelia</u>	—	—	—	—	—	—	—	—
				Arthropod	Insecta	Odonata	Calopterygidae	<i>Calopteryx</i> sp.	<u>Calopteryx</u>	—	—	—	—	—	—	—	—
				Arthropoda	Insecta	Odonata	Calopterygidae	<i>Mnais costalis</i>	<u>Mnais costalis</u>	—	—	—	—	—	—	—	—
				Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius nanus</i>	<u>Davidius nanus</u>	—	—	—	—	—	—	—	—
				Arthropod	Insecta	Odonata	Gomphidae	<i>Davidius</i> sp.	<u>Davidius</u>	87	0.021	44	69	—	Larva	—	
				Arthropod	Insecta	Odonata	Gomphidae	<i>Onychogomphus viridicostus</i>	<u>Onychogomphus viridicostus</u>	—	—	—	—	—	—	—	—
				Arthropod	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	<u>Sieboldius albardae</u>	—	—	—	—	—	—	—	—
				Arthropod	Insecta	Odonata	Gomphidae	<i>Sinogomphus flavolimbatus</i>	<u>Sinogomphus flavolimbatus</u>	—	—	—	—	—	—	—	—
				Arthropod	Insecta	Odonata	Gomphidae	<i>Stylogomphus suzuki</i>	<u>Stylogomphus suzuki</u>	—	—	—	—	—	—	—	—
				Arthropod	Insecta	Odonata	Aeshnidae	<i>Anax parthenope</i>	<u>Anax parthenope</u>	—	—	—	—	—	—	—	—
				Arthropod	Insecta	Odonata	Corydalidae	<i>Parachauliodes continentalis</i>	<u>Parachauliodes continentalis</u> Weele	—	—	—	—	—	—	—	—
				Arthropod	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	<u>Protohermes grandis</u>	129	0.039	47	80	—	Larva	—	
				Arthropod	Insecta	Megaloptera	Atyidae	Atyidae	<u>Freshwater shrimp</u>	139	0.022	84	140	—	Adult	—	
				Arthropod	Malacostraca	Decapoda	Pleuroceridae	<i>Semisulcospira libertina</i>	<u>Semisulcospira libertina</u>	61	0.070	160	280	—	Adult	—	
				Mollusca	Gastropoda	Sorbococoncha	Salmonidae	<i>Oncorhynchus keta</i>	Salmon	2	3.6	N.D. (<0.88)	1.1	0.028	Mature fish	Some (details unknown)	
Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout	1	0.21	300	500	—	Mature fish	Some (details unknown)					
Vertebrata	Osteichthyes	Salmoniformes	Gobiidae	<i>Rhinogobius</i> sp.	Rhinogobius	49	0.11	280	460	—	Mature fish	—					
Vertebrata	Osteichthyes	Perciformes	—	—	Tadpole	20	0.013	430	680	—	Larva	—					
Vertebrata	Amphibia	Anura	—	—	CPOM (litter)	—	—	190	320	—	—	—					

Note) The Japanese name of the underlined, indicating that in the sample is the most harvested species.