

OResults of Radioactive Material Monitoring of Aquatic Organisms (Locations A and B along the Abukuma River)

<Locations A and B along the Abukuma River: Samples collected>

Locations	Items	General items		Radioactive materials		
		Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)
A-1		○	○	○	○	○
A-2		○	○	○	-	○
B-2		○	○	○	-	○
B-3		○	○	○	-	○

<Locations A and B along the Abukuma River: Site measurement item>

Locations	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	Contaminants	Water depth (m)	Transparency (cm)	
A-1(Surface layer)		37.6210°	140.5218°	2024/12/8	09:05	09:32	6.6	7.2	Sand with silt	5Y4/1	None	4.60	>50 (1.5m)*	
A-1(Bottom layer)	08:46													
A-2		37.5673°	140.3946°		11:18	11:32	6.9	7.1	Sand	10Y4/3	None	0.35	>50	
B-2		37.8121°	140.5058°		15:22	15:35	8.0	8.4	Sand	10Y4/2	None	0.60	>50	
B-3		37.8182°	140.4679°		14:15	14:20	8.5	7.6	Sand	10Y3/3	None	0.48	>50	

* The number in parentheses indicates Secchi disk depth.

<Locations A and B along the Abukuma River: General survey items/Analysis of radioactive materials Water>

Locations	Items	Latitude and longitude of the location		Survey date and time		pH	BOD (mg/L)	COD (mg/L)	DO (mg/L)	Electric 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 (water)												
A-1(Surface layer)		37.6210°	140.5218°	2024/12/8	09:05	7.9	1.4	3.2	11.6	20.6	0.10	1.6	3	3.7	N.D.(0.0014)	0.0039	0.00086
A-1(Bottom layer)	08:46				7.6	1.5	3.5	11.9	20.5	0.10	1.6	4	3.5	N.D.(0.0015)	0.0027	-	
A-2		37.5673°	140.3946°		11:18	7.5	0.8	1.7	12.3	12.2	0.06	0.8	<1	0.9	N.D.(0.0013)	0.0034	-
B-2		37.8121°	140.5058°		15:22	7.9	1.1	2.8	13.5	20.0	0.10	1.3	4	2.8	N.D.(0.0015)	0.0024	-
B-3		37.8182°	140.4679°		14:15	7.7	0.8	2.8	12.5	10.2	0.05	1.4	2	1.2	N.D.(0.0015)	0.0025	-

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

<Locations A and B along the Abukuma River: General survey items/Analysis of radioactive materials Sediment>

Locations	Items	Latitude and longitude of the location		Survey date and time		pH	Redox potential E _{NHE} (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 (sediment)							Gravel (2-75mm) (%)	Coarse sand (0.85-2mm) (%)	Medium sand (0.25-0.85mm) (%)	Fine sand (0.075-0.25mm) (%)	Silt (0.005-0.075mm) (%)	Clay (Less than 0.005mm) (%)				Median grain diameter (mm)	Maximum grain diameter (mm)	
												0.1	3.7	57.4	23.3	5.8	1.8				9.7	0.30	4.8
A-1		37.6210°	140.5218°	2024/12/8	09:32	7.0	212	27.3	2.6	4.8	2.720	0.1	3.7	57.4	23.3	5.8	1.8	9.7	0.30	4.8	2.0	150	0.21
A-2		37.5673°	140.3946°		11:32	7.2	500	25.3	2.0	2.4	2.700	9.6	53.2	33.9	1.5	1.8	1.0	4.8	1.8	4.8	1.8	140	-
B-2		37.8121°	140.5058°		15:35	7.0	476	21.8	1.5	1.4	2.760	0.0	3.7	72.6	19.1	1.3	3.3	0.39	4.8	0.97	83	-	
B-3		37.8182°	140.4679°		14:20	7.3	507	16.0	0.9	0.6	2.650	37.0	43.2	18.1	0.4	1.3	1.6	9.5	0.44	25	-		

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

<Locations A and B along the Abukuma River: Analysis items Aquatic organisms>

Locations	Sampling point	Latitude and longitude of the location		Sampling date	Division	Class	Order	Family	Scientific name	English name	Population	Sample weight (kg-wet)	Note			Radioactive cesium (Bq/kg-wet)			Sr-90 (Bq/kg-wet)	
		Latitude	Longitude										Growth stage	Stomach contents	Measurement site	Total	Cs-134	Cs-137		
A-1	The main stream of the Abukuma River	37.6210°	140.5218°	2024/12/6	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.015	-	-	-	62	N.D.(7.3)	62	-	
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	<i>Protohermes grandis</i>	21	0.017	Larva	-	-	-	N.D.	N.D.(3.0)	N.D.(2.4)	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	7	0.039	Immature fish	-	-	-	2.3	N.D.(0.73)	2.3	-
					Coarse Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.22	-	-	-	-	4.7	N.D.(0.93)	4.7	-
A-2	Harase River	37.5673°	140.3946°	2024/12/6	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.029	-	-	-	68	N.D.(6.4)	68	-	
					Arthropoda	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	<i>Macromia amphigena</i>	47	0.020	Larva (Dragonfly larva)	-	-	-	4.7	N.D.(2.1)	4.7	-
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Melligomphus viridicostus</i>	<i>Melligomphus viridicostus</i>										
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	<i>Sieboldius albardae</i>										
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	<i>Davidius</i>										
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Shaogomphus postocularis</i>	<i>Shaogomphus postocularis</i>	1	0.013	Immature fish	-	-	-	4.7	N.D.(2.8)	4.7	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace										
					Coarse Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.25	-	-	-	-	-	28	N.D.(1.4)	28
B-2	The main stream of the Abukuma River	37.8121°	140.5058°	2024/12/1	Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	5	1.5	Mature fish	Obscure digesta	Viscera removed	5.4	N.D.(0.89)	5.4	0.19	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	<i>Carassius auratus langsdorffii</i>	3	0.46	Mature fish	Obscure digesta	Viscera removed	5.3	N.D.(0.59)	5.3	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Hemibarbus barbus</i>	<i>Hemibarbus barbus</i>	3	3.6	Mature fish	Obscure digesta	Viscera removed	4.3	N.D.(0.56)	4.3	0.32	
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus salmoides</i>	Largemouth bass	1	0.12	Immature fish	Fish	Viscera removed	7.3	N.D.(0.65)	7.3	-	
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	3	0.69	Immature fish	Fish	Viscera removed	4.9	N.D.(0.39)	4.9	-	
					Vertebrata	Osteichthyes	Siluriformes	Ictaluridae	<i>Ictalurus punctatus</i>	Channel catfish	3	2.6	Immature fish	Bryophyte,Fruit of the plant	Viscera removed	6.9	N.D.(0.87)	6.9	0.14	
					Coarse Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.24	-	-	-	-	-	8.0	N.D.(1.5)	8.0
B-3	Surikami River	37.8182°	140.4679°	2024/12/6	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.037	-	-	-	20	N.D.(3.4)	20	-	
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	<i>Stenopsyche marmorata</i>	724	0.18	Larva	-	-	-	6.2	N.D.(0.48)	6.2	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	7	0.028	Immature fish	-	-	-	2.3	N.D.(1.8)	2.3	-
					Coarse Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.24	-	-	-	-	8.0	N.D.(1.5)	8.0	-

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

*6: 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.

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

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