

Results of Radioactive Material Monitoring of Aquatic Organisms (Location G in Lake Hayama)

<Location G in Lake Hayama: Samples collected>

Locations	General items		Radioactive materials			
	Water	Sediment	Water (Cs)	Water (Sr)	Sediment (Cs)	Sediment (Sr)
G-1	○	○	○	○	○	○
G-2	○	○	○	-	○	-
G-4	○	○	○	-	○	-

<Location G in Lake Hayama: Site measurement item>

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)	Secchi disk depth (m)
G-1(Surface layer)	37.7348°	140.8102°	2020/12/3	10:56	11:05	10.7	9.9	Sand sediment	7.5Y 3/2	Plant pieces	3.4	2.0
G-1(Bottom layer)						9.9						
G-2(Surface layer)	37.7267°	140.8223°		09:27	09:35	11.7	11.2	Sand sediment	7.5Y 4/2	Plant pieces	8.8	2.0
G-2(Bottom layer)						11.0						
G-4	37.7382°	140.8035°	14:00	14:10	6.3	6.3	Sand	7.5Y 5/3	None	0.3	>0.5	

<Location G in Lake Hayama: 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)	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)												
G-1(Surface layer)	37.7348°	140.8102°	2020/12/3	10:56	7.1	0.9	3.6	10.2	7.4	0.04	1.6	3	2.9	N.D.(0.0013)	0.018	-
G-1(Bottom layer)					7.2	0.9	3.7	10.2	7.3	0.04	1.6	3	3.0	N.D.(0.0013)	0.018	0.00085
G-2(Surface layer)	37.7267°	140.8223°		09:27	7.2	1.0	4.3	9.4	7.3	0.04	1.9	3	3.0	N.D.(0.0013)	0.019	-
G-2(Bottom layer)					7.2	0.7	3.4	9.4	7.3	0.04	1.8	3	3.0	0.0030	0.036	-
G-4	37.7382°	140.8035°	14:00	7.4	<0.5	2.1	12.2	7.3	0.04	0.8	<1	0.3	N.D.(0.0011)	0.0026	-	

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

<Location G in Lake Hayama: General survey items/Analysis of radioactive materials Sediment>

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 (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)
G-1	37.7348°	140.8102°	2020/12/3	11:05	7.5	142	35.8	6.7	16.2	2.708	0.4	1.9	30.4	35.8	18.8	12.7	0.16	4.8	38	750	1.7
G-2	37.7267°	140.8223°		09:35	7.3	138	41.6	6.8	18.0	2.659	5.9	3.5	6.3	26.8	34.4	23.1	0.045	19	60	1300	-
G-4	37.7382°	140.8035°		14:10	7.7	329	24.1	2.4	1.9	2.706	5.1	41.0	45.3	5.6	0.2	2.8	0.80	9.5	13	290	-

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

<Location G in Lake Hayama: 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		
G-1 G-2 G-3	In the lake	37.7348° 37.7267° 37.7302°	140.8102° 140.8223° 140.8307°	2020/12/3	Algae/plant	-	-	-	-	Plankton (Planktonic algae)	-	0.019	-	-	-	1.9	N.D.(1.9)	1.9	-	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	20	0.021	Immature fish	-	-	-	14	N.D.(1.9)	14	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Carassius auratus</i>	<i>Carassius auratus langsdorffii</i>	2	3.0	Mature fish	Obscure digesta	Viscera removed	30	N.D.(1.5)	30	0.79	
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Cyprinus carpio</i>	Common carp	1	2.2	Mature fish	Obscure digesta	Viscera removed	4.0	N.D.(1.5)	4.0	0.27	
					Vertebrata	Osteichthyes	Salmoniformes	Osmeridae	<i>Hypomesus nipponensis</i>	Japanese smelt	2	0.0045	Mature fish	-	-	-	12	N.D.(6.9)	12	-
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	1	0.013	Immature fish	-	-	-	17	N.D.(9.1)	17	-
G-4	Inflowing rivers	37.7382°	140.8035°	2020/12/3	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0053	-	-	-	59	N.D.(14)	59	-	
					Arthropoda	Insecta	Ephemeroptera	Ephemeridae	<i>Ephemera japonica</i>	Ephemera japonica	216	0.012	Larva	-	-	-	55.6	3.6	52	-
					Arthropoda	Insecta	Plecoptera	Perlidae	<i>Oyamia lugubris</i>	<i>Oyamia lugubris</i>	236	0.023	Larva	-	-	-	1.9	N.D.(2.0)	1.9	-
					Arthropoda	Insecta	Plecoptera	Perlidae	<i>Kamimuria tibialis</i>	<i>Kamimuria tibialis</i>										
					Arthropoda	Insecta	Plecoptera	Perlidae	<i>Paragnetina sp.</i>	Paragnetina	51	0.0086	Larva	-	-	-	14	N.D.(4.4)	14	-
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	<i>Stenopsyche marmorata</i>										
					Arthropoda	Insecta	Odonata	Corduliidae	<i>Macromia amphigena amphigena</i>	<i>Macromia amphigena</i>										
					Arthropoda	Insecta	Odonata	Cordulegastridae	<i>Anotogaster sieboldii</i>	<i>Anotogaster sieboldii</i>	69	0.019	Larva(Dragonfly larva)	-	-	-	5.5	N.D.(4.9)	5.5	-
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Melligomphus viridicostus</i>	<i>Melligomphus viridicostus</i>										
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	<i>Davidius</i>										
					Arthropoda	Insecta	Odonata	Aeshnidae	<i>Boyeria maclachlani</i>	<i>Boyeria maclachlani</i>	14	0.011	Larva	-	-	-	6.6	N.D.(5.3)	6.6	-
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	<i>Protohermes grandis</i>										
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	26	0.021	Immature fish	-	-	-	9.2	N.D.(2.1)	9.2	-
					Coarse Particulate Organic Matter	-	-	-	-	Bottom fallen leaves	-	0.21	-	-	-	7.8	N.D.(0.50)	7.8	-	

*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.