

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

<Location G in Lake Hayama: Samples collected>

Items	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>

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)	Secchi disk depth (m)
G-1(Surface layer)	37.7348°	140.8102°	2021/6/16	11:00	11:10	25.5	22.9	Sediment	7.5Y 3/2	Plant pieces	2.9	1.1
G-1(Bottom layer)						25.4						
G-2(Surface layer)	37.7267°	140.8223°		09:30	09:45	24.8	12.1	Sediment	7.5Y 4/2	Plant pieces	7.0	3.0
G-2(Bottom layer)						15.4						
G-4	37.7382°	140.8035°	14:50	15:00	21.5	21.2	Sand gravel	7.5Y 5/3	Plant pieces	0.5	>1.0	

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

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)												
G-1(Surface layer)	37.7348°	140.8102°	2021/6/16	11:00	7.5	1.1	4.1	9.2	7.6	0.05	1.7	6	5.2	N.D.(0.0014)	0.017	-
G-1(Bottom layer)					7.6	1.3	4.0	8.7	8.0	0.05	1.8	7	5.9	N.D.(0.0014)	0.022	0.00073
G-2(Surface layer)	37.7267°	140.8223°		09:30	7.8	0.8	3.6	9.2	8.1	0.04	1.6	3	2.6	N.D.(0.0013)	0.0099	-
G-2(Bottom layer)					7.2	0.6	3.2	7.7	7.9	0.04	1.5	2	2.0	N.D.(0.0014)	0.011	-
G-4	37.7382°	140.8035°	14:50	7.8	0.9	2.9	8.9	9.5	0.05	1.2	6	2.9	N.D.(0.0012)	0.0056	-	

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>

Items	Latitude and longitude of the location		Survey date and time		pH	Redox potential E <sub>NHIE</sub> (mV)	Water content (%)	IL (%)	TOC (mg/g-dry)	Soil particle density (g/cm <sup>3</sup> )	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°	2021/6/16	11:10	7.4	180	49.3	12.8	42.0	2.574	0.0	0.0	0.3	2.4	70.2	27.1	0.015	0.85	99	2300	2.5
G-2	37.7267°	140.8223°		09:45	7.2	129	43.3	10.0	55.5	2.535	12.7	1.9	1.7	7.6	48.4	27.7	0.018	19	77	2000	-
G-4	37.7382°	140.8035°		15:00	7.7	293	27.1	2.6	1.7	2.695	4.1	11.2	60.1	12.7	6.0	5.9	0.42	19	19	420	-

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°	2021/6/16	Algae/plant	-	-	-	-	Plankton (Planktonic algae)	-	0.015	-	-	-	N.D.	N.D.(2.3)	N.D.(2.0)	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	10	0.043	Immature fish	-	-	22	N.D.(4.4)	22	-
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Micropterus dolomieu</i>	Small mouth bass	2	1.3	Immature fish,Mature fish	Obscure digesta	Viscera removed	93.7	3.7	90	0.41
					Vertebrata	Osteichthyes	Perciformes	Centrarchidae	<i>Lepomis macrochirus</i>	Bluegill	6	0.015	Immature fish	-	-	11	N.D.(4.9)	11	-
					Vertebrata	Osteichthyes	Siluriformes	Siluridae	<i>Silurus asotus</i>	Amur catfish	3	0.11	Immature fish	Rhinogobius	Viscera removed	15	N.D.(2.4)	15	-
					Vertebrata	Amphibia	Anura	Lithobates	<i>Lithobates catesbeianus</i>	American bullfrog	1	0.40	Imago	-	-	26	N.D.(2.2)	26	-
G-4	Inflowing rivers	37.7382°	140.8035°	2021/6/16	Algae/plant	-	-	-	-	Riverbed Deposits (Include algae)	-	0.0093	-	-	-	193	13	180	-
					Arthropoda	Insecta	Ephemeroptera	Potamanthidae	<i>Potamanthus formosus</i>	Potamanthus formosus	182	0.015	Larva	-	-	37	N.D.(8.0)	37	-
					Arthropoda	Insecta	Ephemeroptera	Isonychiidae	<i>Isonychia valida</i>	Isonychia valida									
					Arthropoda	Insecta	Ephemeroptera	Ephemeridae	<i>Ephemera japonica</i>	<u>Ephemera japonica</u>									
					Arthropoda	Insecta	Plecoptera	Perlidae	<i>Paragnetina suzukii</i>	Paragnetina suzukii Okamoto	73	0.0034	Larva	-	-	N.D.	N.D.(7.9)	N.D.(6.4)	-
					Arthropoda	Insecta	Plecoptera	Perlidae	<i>Neoperla sp.</i>	<u>Neoperla</u>									
					Arthropoda	Insecta	Trichoptera	Stenopsychidae	<i>Stenopsyche marmorata</i>	Stenopsyche marmorata	36	0.0098	Larva	-	-	38	N.D.(5.2)	38	-
					Arthropoda	Insecta	Odonata	Cordulegastridae	<i>Anotogaster sieboldii</i>	Anotogaster sieboldii	69	0.0089	Larva(Dragonfly larva)	-	-	7.3	N.D.(5.3)	7.3	-
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Nihonogomphus viridis</i>	Nihonogomphus viridis									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Melligomphus viridicostus</i>	Melligomphus viridicostus									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Sieboldius albardae</i>	Sieboldius albardae									
					Arthropoda	Insecta	Odonata	Gomphidae	<i>Davidius sp.</i>	<u>Davidius</u>									
					Arthropoda	Insecta	Megaloptera	Corydalidae	<i>Protohermes grandis</i>	Protohermes grandis	17	0.016	Larva	-	-	3.9	N.D.(2.3)	3.9	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Phoxinus lagowskii steindachneri</i>	Amur minnow	7	0.012	Immature fish	-	-	12	N.D.(3.5)	12	-
					Vertebrata	Osteichthyes	Cypriniformes	Cyprinidae	<i>Tribolodon hakonensis</i>	Japanese dace	46	0.27	Immature fish,Mature fish	-	-	14	N.D.(2.1)	14	-
					Vertebrata	Osteichthyes	Cypriniformes	Cobitidae	<i>Misgurnus anguillicaudatus</i>	Oriental weatherfish	3	0.015	Immature fish,Mature fish	-	-	9.0	N.D.(2.8)	9.0	-
					Vertebrata	Osteichthyes	Salmoniformes	Salmonidae	<i>Oncorhynchus masou</i>	Yamame trout	10	0.066	Immature fish	-	-	22	N.D.(4.3)	22	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius fluviatilis</i>	Rhinogobius fluviatilis	5	0.020	Immature fish,Mature fish	-	-	20	N.D.(4.7)	20	-
					Vertebrata	Osteichthyes	Perciformes	Gobiidae	<i>Rhinogobius flumineus</i>	Rhinogobius flumineus	52	0.025	Immature fish	-	-	5.3	N.D.(3.0)	5.3	-
					Vertebrata	Osteichthyes	Siluriformes	Bagridae	<i>Tachysurus tokiensis</i>	Cut-tailed bullhead	4	0.15	Immature fish,Mature fish	Ephemera,Plecoptera	Viscera removed	7.9	N.D.(2.6)	7.9	-
					Vertebrata	Cephalaspidomorphi	Petromyzontiformes	Petromyzontidae	<i>Lethenteron reissneri</i>	Far eastern brook lamprey	1	0.0035	Ammocoetes(larva)	-	-	8.4	N.D.(7.6)	8.4	-
					Vertebrata	Amphibia	Anura	-	-	Frog	110	0.057	Larva(Tadpole)	-	-	262	12	250	-
					Vertebrata	Amphibia	Caudata	Salamandridae	<i>Cynops pyrrhogaster</i>	Cynops pyrrhogaster	11	0.070	Imago	-	-	26	N.D.(3.0)	26	-
					Coarse Particulate Organic Matter	-	-	-	-	-	-	0.20	-	-	74.6	2.6	72	-	

\*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.