2020 GLHHFTS Fish Tissue Data Dictionary for Aroclor Results
November 2023

The Office of Science and Technology (OST) is providing the fish tissue results from the 2020 Great Lakes Human Health Fish Fillet Tissue Study (GLHHFFTS) from the analysis of nine Aroclor mixtures.

This document represent represents the "data dictionary" for the Aroclor results. The field names and descriptions for the analytical results are specific to the Aroclor results. OST is also providing information on the fish composite samples collected during the study and used to create the fillet tissue samples that were analyzed.

Data Tab for Aroclors	
Field Name	**Description**
EPA Region	The EPA Region in which the sample was collected.
State	USPS 2-letter abbreviation for the state in which the sample was collected.
Lake	Name of the Great Lake from which the sample was collected.
Site ID	The identifier assigned by EPA to the site. The first three characters are "NGL," the next two are the site selection year (20), followed by the State abbreviation and the 4-digit site location.
EPA Sample ID	Unique 6-digit number assigned by EPA.
Tissue Type	An indication of the tissue used for the analysis. For the 2020 GLHHFFTS, all of the samples were prepared from composited fillet tissue.
% Lipids	The lipid content of the sample, measured independently of the Aroclor analysis.
Method	An abbreviation for the analytical method or technique employed for the analysis, in this case, gas chromatography combined with an electron capture detector (GC/ECD)
Analyte	Common name for the analyte, e.g., Aroclor 1016
CAS Number	Chemical Abstracts Service Registry Number assigned by CAS to the analyte.
Amount	Concentration of the analyte, if detected. If this field is blank, then the analyte was not detected in the sample. In order to accommodate the range of concentrations in these samples, all of the results are presented with the same number of decimal places for an analyte class. For the Aroclors, the amount field is presented to 2 decimal places. However, these results have at most 3 significant figures, regardless of the number of decimal places (e.g., an Aroclor value of 250.00 does not imply 5 significant figures).
MDL	The nominal method detection limit for the analyte, based on the procedure in 40 CFR part 136, not adjusted for actual sample size, in the units shown in the Units column. For Aroclors, MDLs are reported to 2 decimal places.
QL	The nominal quantitation limit (QL) or "Minimum Level" for the analyte, based on the lowest calibration standard analyzed, not adjusted for sample size, in the units shown in the Units column. For Aroclors, QLs are reported to 1 decimal place.
Units 1	The weight/weight units of ng/g
Units 2	The "parts per billion" notation ppb, which is equivalent to ng/g
Lab Flag	The data qualifier flag(s) applied by the laboratory: U = Analyte not detected J = Result between the MDL and the QL *+ = LCS above the acceptance limit, potential high bias F1 = Matrix spike sample outside acceptance limit p = RPD between results on two columns >40%. Lower value reported
SCC Code	Qualifiers applied by the Sample Control Center staff at GDIT during data validation. The individual SCC codes are identified and defined in the table of SCC codes below.
Comments	A text translation of the SCC code combinations applied to each result.

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Sample Information Tab	
Field Name	**Description**
EPA Region	The EPA Region in which the sample was collected.
State	USPS 2-letter abbreviation for the state in which the sample was collected.
Site ID	The identifier assigned by EPA to the site. The first three characters are "NGL," the next two are the site selection year (20), followed by the State abbreviation and the 4-digit site location.
Lake	Name of the Great Lake from which the sample was collected.
Latitude	Latitude, in decimal format, to 5 decimal places.
Longitude	Longitude, in decimal format, to 5 decimal places.
EPA Sample ID	Unique 6-digit number assigned by EPA.
Sample Collection Date	Actual sampling date, in MM/DD/YYYY format.
Sample Specimen ID	The 6-digit EPA Sample ID, followed by a decimal point and a value between 1 and 10. The decimal portion identifies the number assigned to the individual fish specimen in the composite sample.
Spec Sort	A specimen sorting field designed to account for the fact that samples with more than 9 specimens do not sort properly (i.e., XX.10 sorts before XX.2).
Species - Scientific Name	Latin name (Genus and species) based on Nelson *et al.* (2004), *Common and Scientific Names of Fishes from the United States, Canada, and Mexico*, Sixth Edition.
Species - Common Name	Generally accepted common name based on Nelson *et al.* (2004).
Family	Latin name of the Family based on Nelson *et al.* (2004).
Tissue Type	The type of fish tissue used to prepare the sample. For the GLHHFFTS, all of the samples were prepared from fillet tissue.
Total Length (mm)	Length of each individual specimen in millimeters (mm).
Included in Fillet Composite?	This field indicates if the specimen was included in the tissue sample for analysis or not. The options are either "Yes" or "No" and the rationale is explained in the "Instructions" field to the far right.
Predator or Bottom Dweller	Classification of the species as either: P = Predator species, or BD = Bottom-dweller species
Composite Classification	Routine vs. Non-routine composite, based on the fish composite sample criteria specified in the human health fish sampling procedures.
Deviation	For non-routine composites, the nature of the deviation from the criteria (e.g., number of fish, fish length, or both).
Fillet Sample Preparation Instructions	Instructions from EPA/OW/OST to the sample preparation laboratory regarding which specimens to include in the fillet composite sample for analysis, based on specimen length, species, etc.

Individual SCC Codes Applied to the Aroclor Results		
SCC Code	**Comments**	**Implication**
HISR, J	High internal standard recovery, result is estimated	An internal standard is added to every sample extract before analysis and used as part of the quantification procedure. The recovery of that internal standard is tracked and if it is above the acceptance limit, it may affect the result for the analyte and the results for detected chemicals are considered estimated values.
HLCS, J	High LCS recovery, result is estimated	The lab control sample (LCS) is a clean reference matrix. If recovery in the LCS is high, there may be a high bias for that analyte and the results for detected chemicals are considered estimated values.
HPD, J	High percent difference between GC column results (greater than 25%), result is estimated	The analysis is conducted on two different gas chromatography (GC) columns. The method specifies that the two results should agree within ±25% and that the lower result is to be reported. When the percent difference exceeds 25%, the results for detected chemicals are considered estimated values.

Individual SCC Codes Applied to the Aroclor Results		
SCC Code	**Comments**	**Implication**
HSSR, J	High surrogate recovery, result is estimated	Surrogate (non-target) compounds are added to every sample before extraction and are used to assess the overall analytical process. When surrogate recoveries are high, there may be a high bias for the target analytes and the results for detected chemicals are considered estimated values.
HVER, J	High CALVER, result is estimated	The results for the calibration verification associated with the chemical were above the acceptance limit, suggesting a possible high bias. The results for detected chemicals are considered estimated values.
J	Estimated	When applied alone, this code indicates that the result is at or above the MDL, but below the QL. This flag also may be applied in conjunction with other flags to indicate the potential for greater uncertainty.
LMSR	Low matrix spike or matrix spike duplicate recovery, result may be biased low	The matrix spike (MS) and matrix spike duplicate (MSD) samples are additional aliquots of a field sample that are spiked with the target analytes. If recovery in the MS or MSD is low, there may be a low bias for that analyte and the results for detected chemicals are considered estimated values.
LSSR, J	Low surrogate recovery, result is estimated	Surrogate (non-target) compounds are added to every sample before extraction and are used to assess the overall analytical process. When surrogate recoveries are low, there may be a low bias for the target analytes and the results for detected chemicals are considered estimated values.

Note: Commas are used to separate related parts of a single code (e.g., “HLCS, J” is considered one code), while semicolons are used to separate different codes (e.g., “HSSR, J; HISR, J” is the combination of two codes).