**Spokane River Regional Toxics Task Force**

**Glossary of Terms**

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| Accuracy | **-** | In Quality Assurance Project Plans, a measure of the overall agreement of a measurement to a known value; includes a combination of random error (precision) and systematic error (bias) components of both sampling and analytical operations. Accuracy is determined by analysis of a reference material or reanalysis of a sample to which a material of known concentration or amount of pollutant has been added; usually expressed either as percent recovery or as a percent bias. (EPA) |
| Adaptive Management | **-** | A management approach that addresses uncertainty through iterative decision making based on monitoring outcomes and incorporating new information as it is learned. |
| Administrative and Contracting Entity (ACE) | **-** | The program management and contracting entity for the Spokane River Regional Toxics Task Force (SRRTTF). Ace serves at the will of the SRRTTF. |
| Ambient Concentrations | **-** | Concentrations of PCBs that are in the immediate surroundings where a sample is collected often associated with concentrations in air. |
| Analyte | **-** | The substance that is of chemical interest in an analysis. |
| Aquifer / River Interchange | **-** | A location where groundwater and surface river water interact. Groundwater can either be introduced to the river or river water can be lost to groundwater. |
| Aroclors | **-** | Aroclor is a PCB mixture produced from approximately 1930 to 1979. It is one of the most commonly known trade names for PCB mixtures. There are many types of Aroclors and each has a distinguishing suffix number that indicates the degree of chlorination. (EPA) |
| Best Management Practices (BMPs) | **-** | Under the Clean Water Act, Best Management Practices include schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of “waters of the United States.” BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. (40 CFR 122) |
| Bias | **-** | In Quality Assurance Project Plans, the systematic or persistent distortion of a measurement process that causes errors in one direction. Bias is determined by analysis of reference materials or spiked matrix samples. (EPA) |
| Blank | **-** | A “clean” sample that should contain none of the analyte of interest and is used to measure the sources of contamination at different collection and measurement stages. See also method blank and field blank. (EPA) |
| Calibration | **-** | The process of establishing the relationship between the response of measurement system and the value of the parameter being measured. |
| Calibration Verification | **-** | Verification that the measuring device is meeting specific requirements as outlined by the manufacturer. |
| Comparability | **-** | A measure of confidence that one data set can be compared to another and  Can be combined for the decision(s) to be made. Comparability is maintained by using consistent sample collection and handling methods, sample preparation and analytical procedures, holding times, stability issues, and QA protocols.(EPA) |
| Chain of Custody (COC) | **-** | The documentation of the control and transfer of samples from the collection of a sample to analysis and then to disposal. |
| Check Standard (Laboratory Control Sample) | **-** | See Laboratory Control Standard, |
| CLAM Sampler | **-** | Continuous low level aquatic monitoring technology for detecting ultra-low levels of PCBs. |
| Clean Water Act 303(d) list | **-** | The list of impaired rivers that each states, territories and tribes must delineate as part of the Clean Water Act of 1972. Listed water bodies do not meet water quality standards for one or more parameter. Waters that have been listed are prioritized and TMDLs may be developed for these water bodies.[[1]](#endnote-1),[[2]](#endnote-2) |
| Completeness |  | A measure of the amount of valid data needed to be obtained from a measurement system. Completeness is determined by comparing the number of valid measurements completed (samples collected or samples analyzed) with those established by the project’s quality criteria (Data Quality Objectives or performance/acceptance criteria). (EPA) |
| Composite Sampling | **-** | Composite sampling is a technique whereby multiple temporally or spatially discrete, media or tissue samples are combined, thoroughly homogenized, and treated as a single sample.  Although physical averaging can reduce the sensitivity of the analysis when taking a composite sample, the technique can 1) improve spatial or temporal coverage of an area without increasing sample number, 2) provide more information about average contaminant concentration over space or time, and 3) increase the ability to detect hot spots by increasing the number of locations sampled, and 4) reduce sampling and analysis cost.[[3]](#endnote-3) |
| Concentration (PCBs) (see also Loading (PCBs)) | **-** | The amount of PCB in a fixed volume of water. |
| Confidence Interval Testing | **-** | Sampling to confirm the appropriate sample size and frequency to be used for future sampling events. Designed to generate information on the temporal variability and measurement uncertainty of PCB concentrations in the Spokane River. |
| Confidence Limits | **-** | The upper and lower limits of a confidence interval. |
| Confounding Effects | **-** | Factors that are alternate explanations for an observed result. For example, bias in sampling and analysis that can be introduced by specific sampling location factors. |
| Data Quality Objectives Process | **-** | A systematic planning process that establishes criteria for data quality and then designs the data collection activities to achieve those criteria. The DQO Process improves the effectiveness, efficiency, and defensibility of data. (EPA) |
| Data Validation/Verification | **-** | An analyte specific process that validates the laboratory data against the MQOs for precision, bias, and sensitivity to verify measure performance. Examination of the data includes errors or omissions and the QC results for compliance with acceptance criteria. It involves a detailed examination of the data package to verify that appropriate measurements procedures and reporting criteria are met. (EPA) |
| Detection Limit | **-** | The minimum concentration of an analyte that can be identified, measured, and reported with 99% confidence that the analyte concentration is greater than zero. This is a statistical determination of precision and accurate quantification is not expected at this level.[[4]](#endnote-4) |
| Dioxin | **-** | A common name that typically refers to group of toxic chemical compounds that have similar structure and that are widely dispersed and bioaccumulate in organisms. Of particular concern are chlorinated dioxins and dioxin-like compounds that are regulated as carcinogens (cancer causing) by the environmental protection agency. |
| Dip Sampler | **-** | A sampling device, typically with a long handle, that is used when direct immersion is not an option, particularly in cases where access to the sampling location is difficult.[[5]](#endnote-5) |
| Direct Immersion | **-** | A sampling method in which water samples are collected by immersing the sampling container below the water surface so the sample goes directly into the sample bottle. |
| Discrete Analysis | **-** | The analysis of a single sample . . . location is not relevant. “Discrete” refers to how the sample goes through the analyzer |
| Dissolved Organic Carbon (DOC) | **-** | Organic compounds located in aquatic systems. DOC is defined as dissolved organic compounds capable of passing though a 0.45 micron filter. (40 CFR 141). DOC is an important food source for microorganisms and a measure of water quality. |
| Dissolved Oxygen (DO) | **-** | Oxygen that is available for biological use in aquatic systems. DO is an important water quality measure that is typically collected in conjunction with other water quality parameters. |
| Duplicate | **-** | Two samples collected or measurements made at the same time and location, or two portions of the same sample prepared and analyzed in the same batch. |
| Estimated Detection Limit (EDL) | **-** | Lowest concentration or amount of an analyte which, on an "a priori" basis, can be determined to a specified level of certainty to be greater than zero. Based on a signal to noise ratio. (See Detection Limit). |
| Estimated Quantification Limit (EQL) | **-** | The smallest detectable concentration of analyte greater than the detection limit where the required accuracy (precision and bias) is achieved for the intended purpose.[[6]](#endnote-6) |
| Equipment Blank | **-** | A sample of analyte-free media which has been used to rinse common sampling equipment to check effectiveness of decontamination procedures.[[7]](#endnote-7) |
| Fate and Transport Model | **-** | Model that estimates the movement and alteration of contaminants as they move through biota, air, surface water, soil, sediments, and groundwater. |
| Field Blank | **-** | A blank used to obtain information on contamination introduced during sample collection, storage and transport. The field blank is typically prepared by filling a clean container with pure de-ionized water and appropriate preservative, if any, for the specific sampling activity being undertaken. (EPA) |
| Gaining Reach | **-** | A reach of the river where water flow is increasing because the aquifer is flowing into the river. |
| Gauging Station | **-** | United Stated Geological Survey (USGS) operated in-steam measurement location that collects data on stream flow conditions typically every 15 to 60 minutes. |
| Grab Sample | **-** | A sample collected at a specific place and specific time. |
| Groundwater Contribution | **-** | PCBs in groundwater that contribute to the loading in the river in the gaining reaches. |
| Headwaters | **-** | Upgradient streams that are the origins of the larger, downstream waterbodies. Headwaters typically have no upstream tributaries and are the furthest point upstream of a river outlet. |
| Health and Safety Plan (HASP) | **-** | A plan that outlines policies and procedures used to ensure the health and safety of employees administering sample collection in the field. |
| High Volume Sampling (HVS) | **-** | A sampling technique that concentrates pollutants from a high volume of water in order to detect and quantify instream. Pollutants that are present in low concentrations. HVS is used in analysis and quantification of ultra low concentrations of PCBs and Dioxin. |
| Human health water quality criteria (HHWQC) | **-** | Criteria developed by the Environmental Protection Agency (EPA) that delineates the amount of a chemical that can be contained in a water body before it is a risk to human health.[[8]](#endnote-8) |
| Hydraulic Residence Time | **-** | The amount of time a compound remains in an aquatic system. |
| Inadvertently generated PCBS | **-** | Chemical processes that under heat, chlorinate hydrocarbons unintentionally creating PCBS. TSCA allows a range of inadvertent production no greater than 25 parts per million for imported products. |
| In-Situ Measurements | **-** | Local or on-site measurements. |
| Invasive Species Plan | **-** | A plan that outlines the policies and procedures to follow to prevent the spread of non-native noxious weeds, pathogens and exotic flora and fauna among water bodies. |
| J-Flagged Data | **-** | The analyte was positively identified-the associated numerical value is the approximate concentration of the analyte in the sample. The “J” qualifier indicates that one or more QA/QC requirements have not met contact required  Acceptance criteria but the instrumentation was functioning properly during the analysis. For example, a “J” qualifier may indicate that the sample was difficult to analyze or that the value may lay near the low end of the linear range of the instrument. “J” data are considered biased, but provide definitive analyte identification[[9]](#endnote-9) |
| Laboratory Blank | **-** | See method blank. |
| Laboratory Control Standard (LCS) | **-** | A prepared sample that is used to demonstrate that the laboratory can perform the overall analytical approach in a matrix free of interferences (e.g., in reagent water, clean sand, or another suitable reference matrix). [[10]](#endnote-10)  An LCS is prepared independently of calibration standards and analyzed along with the samples to check the precision of the measurement system. The LCS can also be used to check the bias due to the way calibration is done. It is also call a Check Standard. |
| Load Allocation | **-** | The portion of the loading capacity attributed to (1) the existing or future nonpoint sources of pollution and (2) natural background sources. [[11]](#endnote-11) |
| Loading (PCBs) | **-** | The actual mass of PCB over a specified time period. The load equals the concentration of PCBs in the water (mass/volume e.g. Mg/liter or parts per million (ppm)) multiplied by the flow rate (volume/unit of time e.g. liter/second). |
| Losing Reach | **-** | A reach of the river where water flow is decreasing because river water is flowing into the aquifer. |
| Matrix Spike | **-** | A QC sample prepared by adding a known amount of the target analyte to a portion of a sample to check for bias due to interference or matrix effects. |
| Measurement Quality Objectives (MQOs) | **-** | The performance or acceptance criteria for individual data quality indicators, including precisions, bias and sensitivity. |
| Measurement Result | **-** | A value obtained by carrying out the procedure described in the method. |
| Measurement Uncertainty | **-** | The range of values attributed to a specific measurement. The measurement uncertainty explains the level of confidence in a particular. |
| Memorandum of Agreement | **-** | A written agreement between multiple parties that delineates the purpose, policies and procedures that will direct a collaborative effort. |
| Method | **-** | A set of written instructions completely defining the procedure to be used. |
| Method Blank | **-** | A type of blank, prepared by the laboratory, which represents the sample matrix as closely as possible and is analyzed exactly like the calibration standards, samples, and quality control (QC) samples. Results of method blanks provide an estimate of the within-batch variability of the blank response and an indication of bias introduced by the analytical procedure. Same as laboratory blank. (EPA) |
| N-Flagged Data | **-** | The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”[[12]](#endnote-12) |
| National Discharge Elimination System (NPDES) | **-** | A program authorized by the Clean Water Act to regulate the entrance of point source pollutants into waterways. |
| NJ-Flagged Data | **-** | The analysis indicates the presence of the analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration. (. [[13]](#endnote-13) |
| Non-point Source pollution | **-** | Under the Clean Water Act, any source of water pollution that does not meet the legal definition of "point source" in section 502(14) of the Clean Water Act. Typically non-point source pollution is pollution from land runoff, precipitation, atmospheric deposition, drainage, seepage or hydrologic modification. (EPA) |
| Parameter | **-** | A specified characteristic of a population or sample. |
| PCB Congener | **-** | A PCB compound that is single and unique. Congeners are named by the number of chlorine substituents and their position in the PCB molecule. There are 209 different unique PCB congeners. |
| PCB Homolog | **-** | A PCB congener subcategory grouping those with equal number of chlorine substituents. These include: Monochlorobiphenyl, Dichlorobiphenyl, Trichlorobiphenyl, Tetrachlorobiphenyl, Pentachlorobiphenyl, Hexachlorobiphenyl, Heptachlorobiphenyl, Octachlorobiphenyl, and Nonachlorobiphenyl, and Decachlorobiphenyl (PCB-209) |
| Permitted Sources | **-** | Point sources of PCBs or other pollutants with NPDES discharge permits. |
| pH | **-** | In water, a measure of the acidity or alkalinity of a substance on a scale of 1-14, and is the negative log of the hydrogen ion concentration. A value of 7 is neutral. Values lower than 7 indicate acidic conditions, values higher than 7 indicate alkaline conditions. |
| Point Source pollution | **-** | Under the Clean Water Act, any “discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural storm water discharges and return flows from irrigated agriculture.” (EPA) |
| Polychlorinated byphenyls (PCBs) | **-** | A family of toxic human-made compounds that persist in the environment and accumulate in animal tissue. There are 209 different PCB molecules that range in toxicity. PCB mixtures vary, from thin and light-colored liquids to yellow or even black waxy solids. |
| Population | **-** | The hypothetical set of all possible observations of the type which is being investigated. |
| Precision | **-** | In Quality Assurance Project Plans, the measure of agreement among repeated measurements of the same property under identical or substantially similar conditions; usually calculated as either the range or as the standard deviation. Laboratory precision is determined by repeated analyses using the same method on the same analytical instrument. Interlaboratory precision is measured by analyzing the same sample with the same method. Typically the sample is split in the field, handled, preserved, and stored consistently before submittal to multiple laboratories. Field precision is determined by collecting, processing and analyzing collocated (duplicate) samples (EPA). |
| Quality Assurance (QA) | **-** | An integrated system of management activities involving planning, implementation, assessment, reporting, and quality improvement to ensure that a process, item, or service is of the type and quality needed for decision-making.(EPA) |
| Quality Assurance Project Plan(QAPP) | **-** | A formal document that describes the procedures that are to be used to assure that the management; data generation, acquisition, validation and usability; and assessment and oversight of the project are executed in a manner consistent with applicable United States Environmental Protection Agency and the Department of Ecology guidelines. |
| Quality Control (QC) | **-** | The overall system of technical activities that measures the attributes and performance of a process, item, or service against defined standards to verify that they meet the specifications established in the QAPP (EPA) |
| R-Flagged Data |  | The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte cannot be verified and the result has been rejected. A sample result may be qualified with an “R” qualifier when the instrument did not remain “in control” or the stability or sensitivity of the instrument were not maintained during the analysis[[14]](#endnote-14) |
| Recurrence Interval | **-** | The likelihood of a particular event happening again. |
| Relative Percent Difference (RPD) | **-** | The difference, in percent, between two samples. RPD is a measure of the precision of the data.[[15]](#endnote-15) |
| Representativeness |  | “The degree to which data accurately and precisely represent a  characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition.” (ANSI/ASQC 1995). Representativeness is determined by evaluating whether or not the data from the collected samples appropriately reflect the environment or condition being measured or studied. (EPA) |
| Sensitivity | **-** | The capability of a method or instrument to discriminate between measurement responses representing different levels of the variable of interest. Sensitivity is determined by identifying the minimum concentration or attribute that can be measured by a method (method detection limit), by an instrument (instrument detection limit),  or by a laboratory (quantification limit). |
| Standard Operating Procedure (SOP) | **-** | A document that describes the approved method for performing routine procedures. |
| Synoptic Survey | **-** | A series of sampling events executed with the purpose of getting a snapshot of the river during a specific time period during specific conditions (low flow, high flow/wet weather etc). |
| Total Maximum Daily Load (TMDL) | **-** | The maximum load of a pollutant allowable in a given body of water so as not to exceed water quality standards set by the Clean Water Act. |
| Transfer Blank | **-** | A blank obtained by pouring deionized water into the sample container in the field. Transfer blanks give information about contamination of the sample resulting from the field handling activities (sometimes referred to as atmospheric blanks) |
| Trip Blank | **-** | A blank obtained by taking a sample container that was sealed at the lab into the field and then back to the lab again. Trip blanks give information about contamination that might occur during the transport of the sample container. |
| TSCA | **-** | Toxic Substances Control Act of 1976. TSCA regulates chemical substances and mixtures such as PCBs [[16]](#endnote-16) ,[[17]](#endnote-17). Many substances (food, drugs, pesticides) are exempt from TSCA and it allows for the inadvertent production of PCBs during manufacturing. |
| U-Flagged Data | **-** | The substance or analyte was analyzed for, but no quantifiable concentration was found.[[18]](#endnote-18) |
| Wasteload Allocation | **-** | The portion of receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution (e.g., permitted waste treatment facilities).[[19]](#endnote-19) |
| UJ-Flagged Data | **-** | The analyte was not quantifiable and one or more QA/QC requirements have not met acceptance criteria[[20]](#endnote-20) |
| § 401 Certification | **-** | Any permitted source of water to a US water body must receive a water quality certification from the State that it is located in under section 401 of the Clean Water Act. This certification provides resources and tools for meeting water quality standards.[[21]](#endnote-21), [[22]](#endnote-22) |
|  |  | For later inclusion: lipid content, hole fish, fillet (regarding fish and bioaccumulation) |
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1. http://yosemite.epa.gov/r10/water.nsf/tmdls/cwa+303d+list [↑](#endnote-ref-1)
2. http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/overview.cfm [↑](#endnote-ref-2)
3. http://www.epa.gov/reg3hscd/risk/eco/faqs/composite.htm [↑](#endnote-ref-3)
4. http://www.epa.gov/fem/pdfs/Env\_Measurement\_Glossary\_Final\_Jan\_2010.pdf [↑](#endnote-ref-4)
5. http://www.epa.gov/region6/qa/qadevtools/TableContents.pdf [↑](#endnote-ref-5)
6. http://www.epa.gov/fem/pdfs/Env\_Measurement\_Glossary\_Final\_Jan\_2010.pdf [↑](#endnote-ref-6)
7. http://www.epa.gov/fem/pdfs/Env\_Measurement\_Glossary\_Final\_Jan\_2010.pdf [↑](#endnote-ref-7)
8. http://www2.epa.gov/wqc/human-health-water-quality-criteria [↑](#endnote-ref-8)
9. http://www.epa.gov/superfund/sites/npl/hrsres/fact/docoroc.pdf [↑](#endnote-ref-9)
10. http://www.epa.gov/epawaste/hazard/testmethods/faq/faqs\_qc.htm#Spike [↑](#endnote-ref-10)
11. http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/glossary.cfm#l [↑](#endnote-ref-11)
12. http://www.epa.gov/superfund/sites/npl/hrsres/fact/docoroc.pdf [↑](#endnote-ref-12)
13. http://www.epa.gov/superfund/sites/npl/hrsres/fact/docoroc.pdf [↑](#endnote-ref-13)
14. http://www.epa.gov/superfund/sites/npl/hrsres/fact/docoroc.pdf [↑](#endnote-ref-14)
15. http://www.epa.gov/owow/monitoring/volunteer/qapp/qappch3.pdf [↑](#endnote-ref-15)
16. http://www2.epa.gov/laws-regulations/summary-toxic-substances-control-act [↑](#endnote-ref-16)
17. http://www.epw.senate.gov/tsca.pdf [↑](#endnote-ref-17)
18. http://www.epa.gov/superfund/sites/npl/hrsres/fact/docoroc.pdf [↑](#endnote-ref-18)
19. http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/glossary.cfm#l [↑](#endnote-ref-19)
20. http://www.epa.gov/superfund/sites/npl/hrsres/fact/docoroc.pdf [↑](#endnote-ref-20)
21. http://water.epa.gov/lawsregs/guidance/cwa/waterquality\_index.cfm [↑](#endnote-ref-21)
22. http://water.epa.gov/lawsregs/guidance/cwa/upload/cwa-401-handbook-2010-interim.pdf [↑](#endnote-ref-22)