3/4/2021

Background determination. Data has been compiled from multiple sources and cleaned for consistency between datasets. Data have been combined from raw source files with Python scripts. Quality control checks have been performed on these large and varied datasets, however, if there are any data issues, please contact gbrunkhorst@anchorqea.com with any questions.

Data Files

The suspended solids database compilation consists of 3 files:

Final_dataset_2021-02-27.xlsx includes the concentrations for the final anthropogenic background dataset. Total PCBs Congeners, Dioxin/Furan TEQ, Arsenic, 1,2,3,7,8-PeCDD, 2,3,4,7,8-PeCDF, 2,3,7,8-TCDD, and 2,3,7,8-TCDF. Additional details provided in the column descriptions to the right.

GreenSuspendedSedSummary_2021-01-28.xlsx includes the concentrations for Total PCBs Congeners, Total PCBs Aroclors, Dioxin/Furan TEQ, and Arsenic, along with sample information (e.g., Green River Flow designation at the time of sampling). Additional details provided in the column descriptions to the right.

GreenSuspendedSedAll_2021-01-28.xlsx includes the concentrations for Total PCBs Congeners, Total PCBs Aroclors, Dioxin/Furan TEQ, and Arsenic, and PCB and Dioxin/Furan congeners. Note that PCB congener nomenclature is based on the source database and is not globally consistent. Additional details provided in the column descriptions to the right.

Represented studies

LDGW AOC3 Compilation of Existing Data and Data Evaluation Report (Compiled Suspended Solids)

https://ldwg.org/project-library/

King County 2016 (Suspended Solids)
https://green2.kingcounty.gov/sciencelibrary/Document.aspx?ArticleID=410

USGS 2018 (Suspended Solids)

https://pubs.usgs.gov/sir/2018/5133/sir20185133.pdf

Data File Column Descriptions

Final_dataset_2021-02-27.xlsx

Column Name

Research_Lead

Sample_Name

Sampling_Method

Chemical

Value

Unit

Detected

Description

Research entity that conducted the study

Sample ID

Sampling method used

Chemical

Concentration. Total PBCs based on sum of detected congeners. For Dioxin/ furan TEQ, TEQ calculated based on the mammalina TEFs (Van den Berg et. al. 2006) using 1/2 the detection limit for NDs. Fines-normalized concentration for organics: Total PCBs Congeners, Dioxin/Furan TEQ, 1,2,3,7,8-PeCDD, 2,3,4,7,8-PeCDF, 2,3,7,8-TCDD, and 2,3,7,8-TCDF.
Concentration unit, dry weight base or fines-normalized.
Flag for detections. Total and TEQ would be non-detect ("No") if all summed constituents are ND (however, this does not occur in the dataset [at least one congener is always detected]).

GreenSuspendedSedSummary_2021-01-28.xlsx

Column Name

Research_Lead

Sample_Name

Matrix

Sampling_Method

Start_Date

Sample_Date

Sample_Duration_days

Analysis_Method

Chemical

Value

Qualifier

Unit

Detected

Coelution

Fines

Description

Research entity that conducted the study. Note KC and USGS samples collected at RM 10.4 and ECY samples collected at RM 6.8

Sample ID

Suspended solids

Sampling method used

Date and time at the start of sampling or field deployment. Values populated from reports if not present in the source database.

Date and time of sample collection at the end of sampling

Duration of field deployment

Laboratory method

Chemical
Concentration. Total PBCs based on sum of detected congeners or Aroclors. If all Aroclors were non-detect, then the maximum of the detection limit was presented. For Dioxin/ furan TEQ, TEQ calculated based on the mammalina TEFs (Van den Berg et. al. 2006) using 1/2 the detection limit for NDs.
Validation or laboratory qualifier
Concentration unit, dry weight basis
Flag for detections. Totals are non-detect ("False") if all summed constituents are ND.

PCB congener coelution flag as provided by the source database. Note that nomenclature for PCB congeners is different for different databases.

Percent fines for the sample

GreenSuspendedSedAll_2021-01-28.xlsx

Column Name

Task

Research_Lead

Location_Name

Sample_Name

Matrix

Sampling_Method

KC_Sample_Desc

Start_Date

Sample_Date

Sample_Duration_days

Analysis_Method

Chemical_Group

CAS_Number

Chemical

Fraction

Description

Database task code

Research entity that conducted the study. Note KC and USGS samples collected at RM 10.4 and ECY samples collected at RM 6.8

Database location code

Sample ID

Suspended solids

Sampling method used

Additional information on King County data

Date and time at the start of sampling or field deployment. Values populated from reports if not present in the source database.

Date and time of sample collection at the end of sampling

Duration of field deployment

Laboratory method
Chemical group

Chemical CAS number

Chemical

Suspended sediment

https://pubs.usgs.gov/ds/0880/

https://pubs.er.usgs.gov/publication/ds973

https://pubs.er.usgs.gov/publication/ds1073

Ecology Contaminant Loading to the Lower Duwamish Waterway from Suspended Sediment in the Green River (Suspended Solids)

https://apps.ecology.wa.gov/gsp/DocViewer.ashx?did=40980

Data sources

EIM download for the following study IDs:

GRNRVLD13

GRNRVLD14

GRNRVLD16
LDW_08

LDWG AOC3 database found on LDWG.org. Tables:
Upstream_Solids

USGS field data pull from station 12113390
USGS_data_pull_12113390_All.xlsx
Miscellaneous data were pulled from PDF source documents for studies (links below)

AQ Scripts in order of execution

\\fuji\anchor\Projects\Port of Seattle\060003-01 East WW SRI_FS\PP ROD\Anthropogenic\AB Meeting 3 - Green\Script
ss_wrangle-01.ipynb
ss_wrangle-02.ipynb

:s

Fines_Unit

Fines_source

TOC

TOC_Unit

Data_Source

HH_Flow_sam_ave_cfs

HH_Flow_Start_Date_cfs

Precip_sam_ave_in_hr

Precip_sam_12hr_ave_in_hr

Precip_antecedent_48hr_ave_in_hr

DER_Event_Type

KC_Sample_Desc
KC_Condition
KC_Notes

Percent (by volume or mass depending on the analysis)

Source of fines information , since fines data were sometimes only available in source documents
Total organic carbon for the sample

Percent

Source of the sample concentration data

Average flow in cubic feet per second during sampling from below the Howard Hanson dam, data from USGS, station 12105900 GREEN RIVER BELOW HOWARD A HANSON DAM, WA

Average flow in cubic feet per second on the start_date of sampling from below the Howard Hanson dam, data from USGS, station 12105900 GREEN RIVER BELOW HOWARD A HANSON DAM, WA

Average precipitation in inches per hour during sampling from the King County Tukwilla Rainfall Station (TUKW), data obtained from King County.

Average precipitation in inches per hour during and 12 hours before sampling from the King County Tukwilla Rainfall Station (TUKW), data obtained from King County. This is analoguous to the King County (2016) method for quantifying rainfall for analysis.

Average precipitation in inches per hour 48 hours before sampling from the King County Tukwilla Rainfall Station (TUKW), data obtained from King County. This is analoguous to the USGS (2018) method for quantifying rainfall for analysis.

Event type categorization used in the LDWG Data Evaluation Report

Additional information on King County data
Additional information on King County data
Additional information on King County data

Value

Qualifier

Unit

Detected

Coelution

Coelution

Fines

Fines_Unit

Fines_source

TOC

TOC_Unit

Data_Source

Concentration. Total PBCs based on sum of detected congeners or Aroclors. If all Aroclors were non-detect, then the maximum of the detection limit was presented. For Dioxin/ furan TEQ, TEQ calculated based on the mammalina TEFs (Van den Berg et. al. 2006) using 1/2 the detection limit for NDs.

Validation or laboratory qualifier

Concentration unit, dry weight basis
Flag for detections. Totals are non-detect ("False") if all summed constituents are ND.

PCB congener boelution flag as provided by the source database. Note that nomenclature for PCB congeners is different for different databases.

Flag for PCB congener. Note that the different datasets reported coelutions differently.

Percent fines for the sample

Percent (by volume or mass depending on the analysis)

Source of fines information , since fines data were sometimes only available in source documents

Total organic carbon for the sample

Percent

Source of the sample concentration data

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