General information	
Type of data	Centrifugation
Place of experimentation	Pollution Research Group, University of KwaZulu-Natal (South Africa)
Dates of the experiments	2018 - 2019
Feedstock	
Type of faecal material	Faecal sludge from anaerobic baffled reactor (ABR) from a decentralised wastewater treatment plant (DEWAT)
Location of collection	Durban, South Africa
Age before collection	Unknown
Moisture content	~ 90%wt
Total solids content	~ 10%wt
Volatile solids content	~ 75%db
Ash content	~ 25%db
Presence of trash?	Yes (mainly small pieces of paper after pre-screening during pit emptying)
Pre-treatment	Screening to remove trash
Experimental Procedure	
Drying experimental setup	N.A.
Drying time	N.A.
Operating conditions	N.A.
Sample form in the dryer	N.A.
Analysed parameters	Moisture content (1) and water activity (2) of the cake after centrifugation
Employed methods	Direct measurement by the moisture analyzer balance *PCE-MB Series* (1) (SOP 8.7.1.5) and the water activity analyzer *AquaLab Tunable Diode Laser-TDL* (2) (SOP 8.8.3.3)
Publications	
Septien, S., Getahun, S., Mirara, S., Makununika, B.S.N., Mugauri, T.R., Singh, A., Pocock, J., Inambao, F., Velkushanova, K., Buckley, C.A. (2019). Investigations of faecal sludge drying from on-site sanitation facilities. Proceedings of the 10th Asia Pacific Drying Conference, Vadodara, India, 14-17 December.	

Data source files

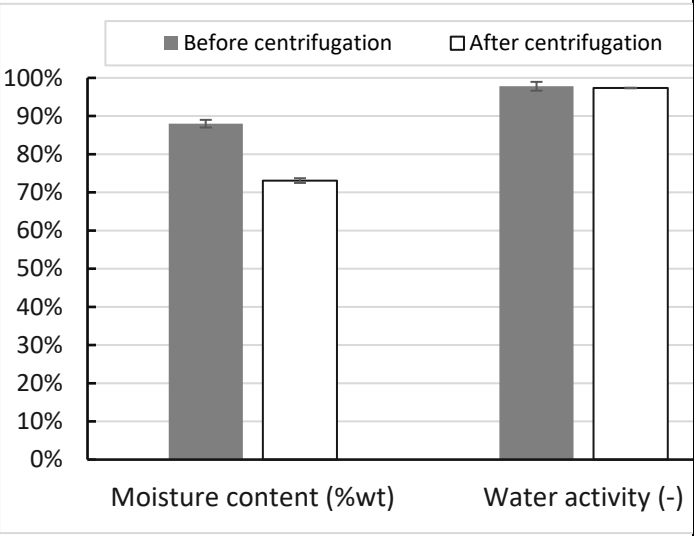
https://www.dropbox.com/s/76dejwq7ug1zwqy/Pre-%20and%20Post%20Centrifugation%20data%20for%20FS%20and%20fresh%20faeces%20.xlsx?dl=0

Additional Notes

- Centrifugation done in a centrifuge *HERMLE Z323*, during 120 minutes at a rate of 5000 RPM, for 40 g of sample per centrifuge tube

Description of Data

Moisture content and water activity of the cake before and after centrifugation



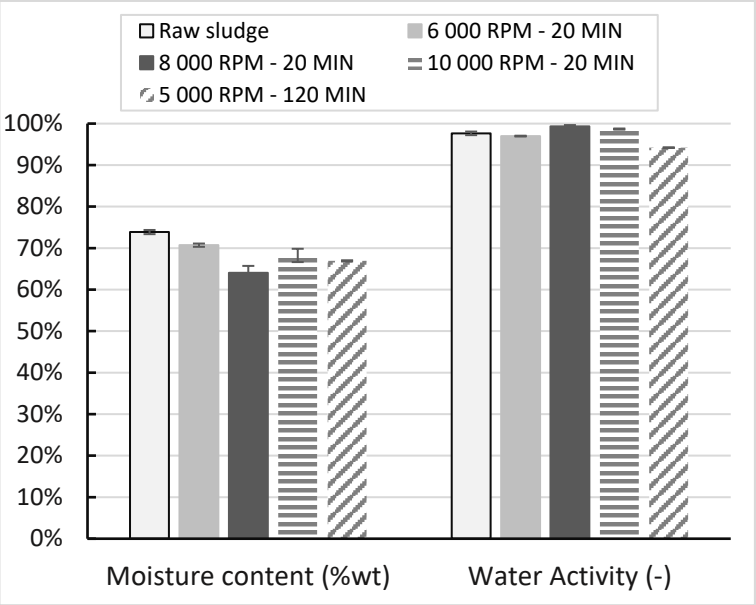
Observations:

- Considerable decrease of the moisture content after centrifugation
- Similar water activity of the sludge before and after centrifugation

General information	
Type of data	Centrifugation
Place of experimentation	Pollution Research Group, University of KwaZulu-Natal (South Africa)
Dates of the experiments	2018 - 2019
Feedstock	
Type of faecal material	Faecal sludge from urine diversion dry toilets (UDDT)
Location of collection	Durban, South Africa
Age before collection	Up to 3 years
Moisture content	~ 75%wt
Total solids content	~ 25%wt
Volatile solids content	~ 55%db
Ash content	~ 45%db
Presence of trash?	Yes (mainly stones, hair and plastics)
Pre-treatment	Screening to remove the trash
Experimental Procedure	
Drying experimental setup	N.A.
Drying time	N.A.
Operating conditions	N.A.
Sample form in the dryer	N.A.
Analysed parameters	Moisture content (1) and water activity (2) of the cake after centrifugation
Employed methods	(1) Use of moisture analyzer balance *PCE-MB Series* (SOP 8.7.1.5) (2) Use of water activity analyzer *AquaLab Tunable Diode Laser-TDL* (SOP 8.8.3.3)
Publications	
Septien, S., Getahun, S., Mirara, S., Makununika, B.S.N., Mugauri, T.R., Singh, A., Pocock, J., Inambao, F., Velkushanova, K., Buckley, C.A. (2019). Investigations of faecal sludge drying from on-site sanitation facilities. Proceedings of the 10th Asia Pacific Drying Conference, Vadodara, India, 14-17 December.	

Data source files
https://www.dropbox.com/s/gszw62ozno10ob2/Centrifugation%20of%20FS.xlsx?dl=0
Additional Notes
○ Centrifugation done in a centrifuge *HERMLE Z323*, during 20 minutes at a rate of 6000, 8000 and 10000 RPM, for 40 g of sample per centrifuge tube
Description of Data

Moisture content and water activity of the cake before and after centrifugation



Observations:

- Slight decrease of moisture content after centrifugation
- Almost no variation of water activity after centrifugation
- Better dewatering at high RPM or long times

General information	
Type of data	Centrifugation
Place of experimentation	Pollution Research Group, University of KwaZulu-Natal (South Africa)
Dates of the experiments	2018 - 2019
Feedstock	
Type of faecal material	Faecal sludge from dry ventilated improved pit latrine (VIP)
Location of collection	Durban, South Africa
Age before collection	Up to 5 years
Moisture content	~ 75%wt
Total solids content	~ 25%wt
Volatile solids content	~ 40%db
Ash content	~ 60%db
Presence of trash?	Yes (mainly hair extensions, plastic and rocks)
Pre-treatment	Screening to remove trash
Experimental Procedure	
Drying experimental setup	N.A.
Drying time	N.A.
Operating conditions	N.A.
Sample form in the dryer	N.A.
Analysed parameters	Moisture content and water activity of the cake after centrifugation
Employed methods	(1) Use of moisture analyzer balance *PCE-MB Series* (SOP 8.7.1.5) (2) Use of water activity analyzer *AquaLab Tunable Diode Laser-TDL* (SOP 8.8.3.3)
Publications	
Septien, S., Getahun, S., Mirara, S., Makununika, B.S.N., Mugauri, T.R., Singh, A., Pocock, J., Inambao, F., Velkushanova, K., Buckley, C.A. (2019). Investigations of faecal sludge drying from on-site sanitation facilities. Proceedings of the 10th Asia Pacific Drying Conference, Vadodara, India, 14-17 December.	

Data source files

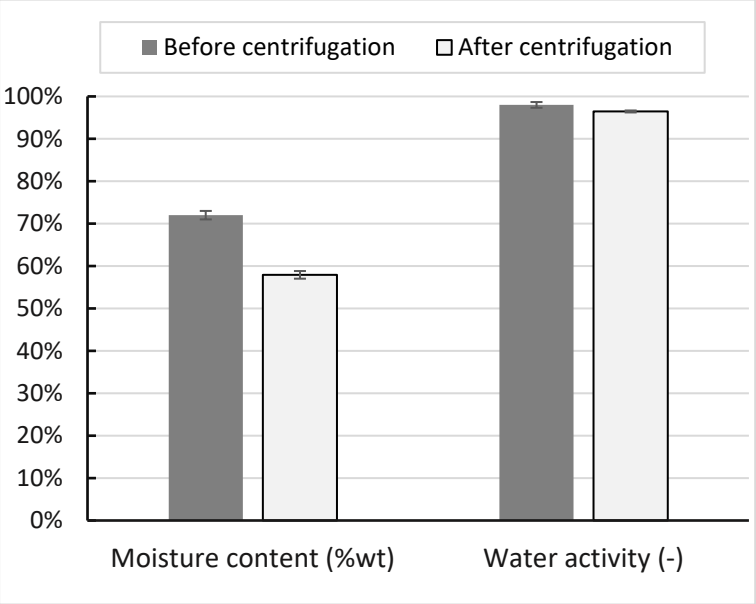
https://www.dropbox.com/s/76dejwq7ug1zwqy/Pre-%20and%20Post%20Centrifugation%20data%20for%20FS%20and%20fresh%20faeces%20.xlsx?dl=0

Additional Notes

- Centrifugation done in a centrifuge *HERMLE Z323*, during 120 minutes at a rate of 5000 RPM, for 40 g of sample per centrifuge tube

Description of Data

Moisture content and water activity of the cake before and after centrifugation



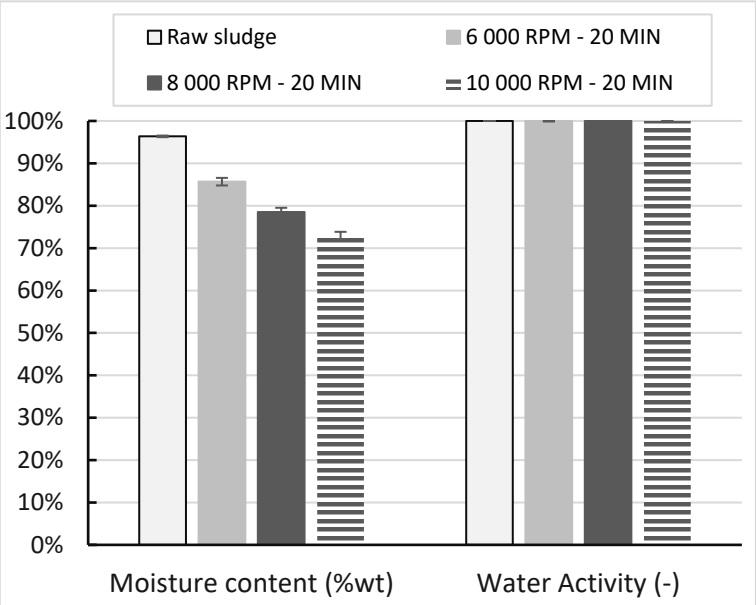
Observations:

- Considerable decrease of the moisture content after centrifugation
- Slight decrease of the water activity of the sludge after centrifugation

General information	
Type of data	Centrifugation
Place of experimentation	Pollution Research Group, University of KwaZulu-Natal (South Africa)
Dates of the experiments	2018 - 2019
Feedstock	
Type of faecal material	Faecal sludge from wet ventilated pit latrines (VIP)
Location of collection	Durban, South Africa
Age before collection	Up to 5 years
Moisture content	~ 95%wt
Total solids content	~ 5%wt
Volatile solids content	~ 65%db
Ash content	~ 35%db
Presence of trash?	No (sludge pre-screened during pit emptying)
Pre-treatment	Mixing
Experimental Procedure	
Drying experimental setup	N.A.
Drying time	N.A.
Operating conditions	N.A.
Sample form in the dryer	N.A.
Analysed parameters	Moisture content (1) and water activity (2) of the cake after centrifugation
Employed methods	(3) Use of moisture analyzer balance *PCE-MB Series* (SOP 8.7.1.5) (4) Use of water activity analyzer *AquaLab Tunable Diode Laser-TDL* (SOP 8.8.3.3)
Publications	
Septien, S., Getahun, S., Mirara, S., Makununika, B.S.N., Mugauri, T.R., Singh, A., Pocock, J., Inambao, F., Velkushanova, K., Buckley, C.A. (2019). Investigations of faecal sludge drying from on-site sanitation facilities. Proceedings of the 10th Asia Pacific Drying Conference, Vadodara, India, 14-17 December.	

Data source files
https://www.dropbox.com/s/gszw62ozno10ob2/Centrifugation%20of%20FS.xlsx?dl=0
Additional Notes
○ Centrifugation done in a centrifuge *HERMLE Z323*, during 20 minutes at a rate of 6000, 8000 and 10000 RPM, for 40 g of sample per centrifuge tube
Description of Data

Moisture content and water activity of the cake before and after centrifugation



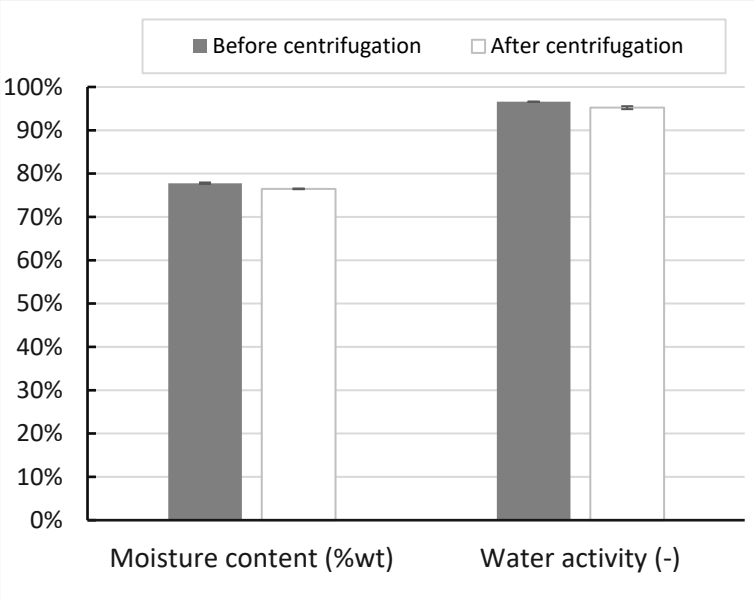
Observations:

- Considerable decrease of moisture content after centrifugation
- No variation of water activity after centrifugation
- Better dewatering by increasing the RPM

General information	
Type of data	Centrifugation
Place of experimentation	Pollution Research Group, University of KwaZulu-Natal (South Africa)
Dates of the experiments	2018 - 2019
Feedstock	
Type of faecal material	Fresh faeces
Location of collection	Durban, South Africa
Age before collection	A few days
Moisture content	~ 80%wt
Total solids content	~ 20%wt
Volatile solids content	~ 85%db
Ash content	~ 15%db
Presence of trash?	No
Pre-treatment	Mixing
Experimental Procedure	
Drying experimental setup	N.A.
Drying time	N.A.
Operating conditions	N.A.
Sample form in the dryer	N.A.
Analysed parameters	Moisture content (1) and water activity (2) of the cake after centrifugation
Employed method	(5) Use of moisture analyzer balance *PCE-MB Series* (SOP 8.7.1.5) (6) Use of water activity analyzer *AquaLab Tunable Diode Laser-TDL* (SOP 8.8.3.3)
Publications	
Septien, S., Getahun, S., Mirara, S., Makununika, B.S.N., Mugauri, T.R., Singh, A., Pocock, J., Inambao, F., Velkushanova, K., Buckley, C.A. (2019). Investigations of faecal sludge drying from on-site sanitation facilities. Proceedings of the 10th Asia Pacific Drying Conference, Vadodara, India, 14-17 December.	

Data source files
https://www.dropbox.com/s/76dejwq7ug1zwqy/Pre-%20and%20Post%20Centrifugation%20data%20for%20FS%20and%20fresh%20faeces%20.xlsx?dl=0
Additional Notes
○ Fresh faeces collected from voluntary and anonymous donations from healthy young adults ○ Centrifugation done in a centrifuge *HERMLE Z323*, during 120 minutes at a rate of 5000 RPM, for 40 g of sample per centrifuge tube
Description of Data

Moisture content and water activity of the cake before and after centrifugation



Observations:

- Almost no decrease of the moisture content and water activity after centrifugation

General information	
Type of data	Centrifugation
Place of experimentation	○ Sandec: Department Sanitation, Water and Solid Waste for Development, Eawag: Federal Institute of Aquatic Science and Technology (Switzerland) ○ Delvic Sanitation Initiatives, Dakar (Senegal)
Dates of the experiments	2018
Feedstock	
Type of faecal material	Faecal sludge from septic tanks/holding tanks and pit latrines from a variety of sources (incl. households, schools, public toilets, offices, places of worship, and restaurants)
Location of collection	○ Dakar, Senegal ○ Dar es Salaam, Tanzania
Age before collection	Variable (from several weeks to several years)
Moisture content	87.0 – 99.8 %wt
Total solids content	0.2 – 13 %wt
Volatile solids content	26 – 85 %db
Ash content	15 – 74 %db
Presence of trash?	No
Pre-treatment	None
Experimental Procedure	
Drying experimental setup	N.A.
Drying time	N.A.
Operating conditions	N.A.
Sample form in the dryer	N.A.
Analysed parameters	Total solids content, volatile solids content, total suspended solids, total volatile suspended solids, and extracellular polymer substances concentration of the bulk sludge. Total solids content of the cake after centrifugation.
Employed methods	(1) Weighing the sample before and after oven drying at 105°C for 24 h (2) Weighing the sample before and after ignition at 550°C (3) Weighing the solids after filtration of a known volume of sample followed by oven drying at 105°C

	(4) Weighing the solids after filtration of a known volume of sample followed by ignition at 550°C (5) Extraction by sonication and then analysis using size exclusion chromatography *LC-OCD-OND* for organic carbon detection-organic nitrogen detection

Publications

Ward, B. J., Traber, J., Gueye, A., Diop, B., Morgenroth, E., & Strande, L. (2019). Evaluation of conceptual model and predictors of faecal sludge dewatering performance in Senegal and Tanzania. *Water Research*, *167*, 115101.

Data source files

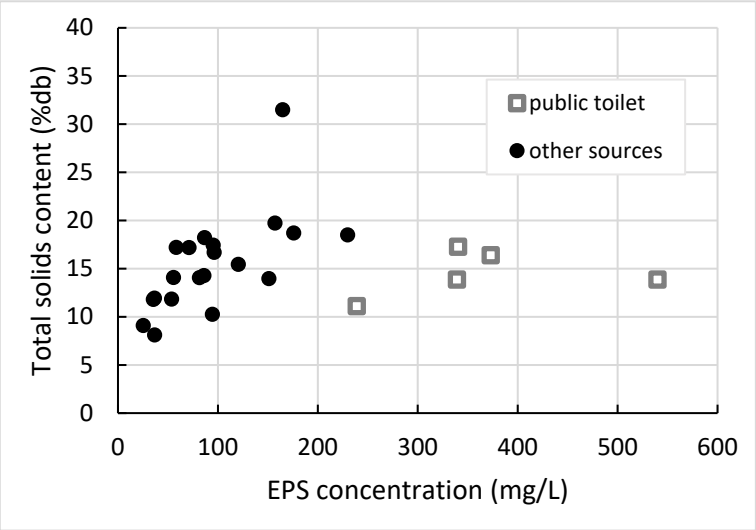
https://data.mendeley.com/datasets/w5y55vf3cn/1

Additional Notes

-

Description of Data

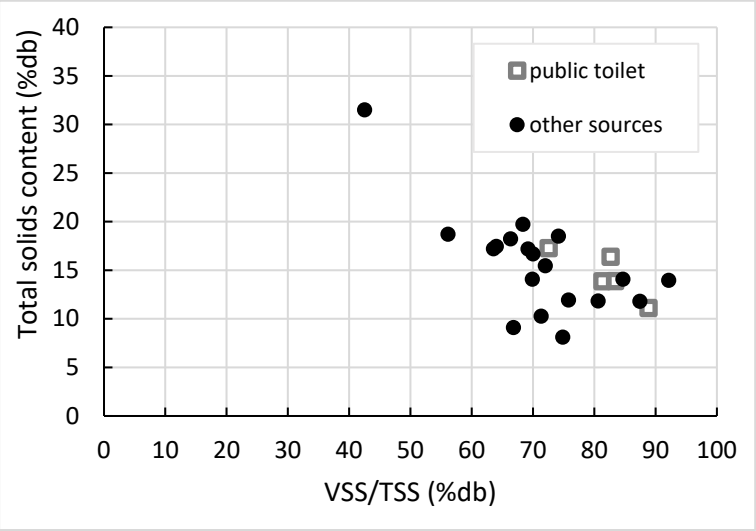
Total solids content of the cake after centrifugation versus the extracellular polymeric substances (EPS) concentration



Observations:

- No apparent relationship between dewatered cake solids after centrifugation with the EPS concentration and the VSS fraction
- No discernible difference in centrifuge dewaterability based on sludge source

Total solids content of the cake after centrifugation versus the ratio volatile suspended solids (VSS) to total suspended solids (TSS)



General information	
Type of data	Capillary suction time
Place of experimentation	○ Sandec: Department Sanitation, Water and Solid Waste for Development, Eawag: Swiss Federal Institute of Aquatic Science and Technology (Switzerland) ○ Delvic Sanitation Initiatives, Dakar (Senegal)
Dates of the experiments	2018
Feedstock	
Type of faecal material	Faecal sludge from septic tanks/holding tanks and pit latrines from a variety of sources (incl. households, schools, public toilets, offices, places of worship, and restaurants)
Location of collection	○ Dakar, Senegal ○ Dar es Salaam, Tanzania
Age before collection	Variable (from several weeks to several years)
Moisture content	87.0 – 99.8 %wt
Total solids content	0.2 – 13 %wt
Volatile solids content	26 – 85 %db
Ash content	15 – 74 %db
Presence of trash?	No
Pre-treatment	None
Experimental Procedure	
Drying experimental setup	N.A.
Drying time	N.A.
Operating conditions	N.A.
Sample form in the dryer	N.A.
Analysed parameters	Capillary suction time, volatile solids content, total suspended solids, total volatile suspended solids, electrical conductivity, and extracellular polymer substance concentration of the bulk sludge.
Employed methods	(1) Use of the capillary suction time analyser *Triton 319 Multi-CST* (2) Weighing the sample before and after ignition at 550°C (3) Weighing the solids after filtration of a known volume of sample followed by oven drying at 105°C (4) Weighing the solids after filtration of a known volume of sample followed by ignition at 550°C

	(5) Use of an electrical conductivity probe (6) Extraction by sonication and then analysis using size exclusion chromatography *LC-OCD-OND* for organic carbon detection-organic nitrogen detection

Publications

Ward, B. J., Traber, J., Gueye, A., Diop, B., Morgenroth, E., & Strande, L. (2019). Evaluation of conceptual model and predictors of faecal sludge dewatering performance in Senegal and Tanzania. *Water Research*, *167*, 115101.

Data source files

https://data.mendeley.com/datasets/w5y55vf3cn/1

Additional Notes

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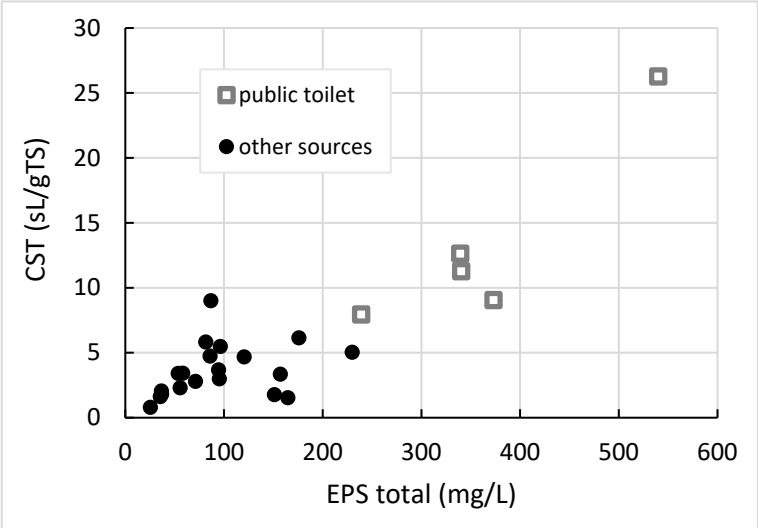
Description of Data

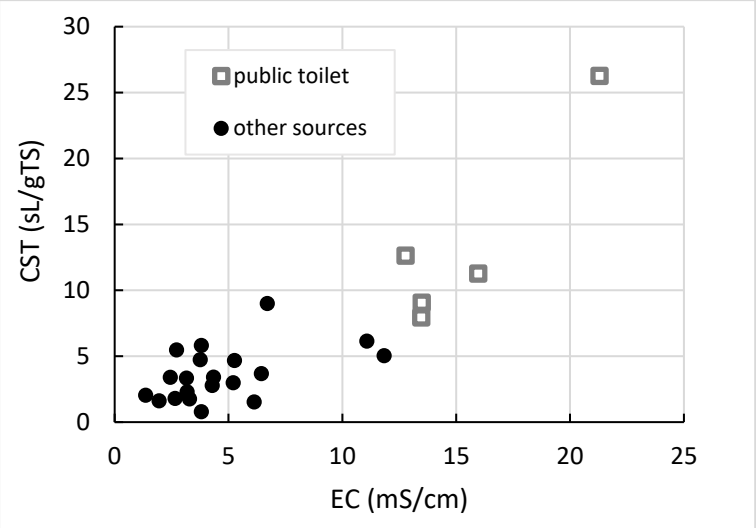
Capillary suction time (CST) versus extracellular polymeric substances (EPS) concentration



Observations:

- CST increases linearly with EPS concentration and EC
- Public toilet sludge had higher EPS concentrations and EC, with correspondingly slower filtration (higher CST)
- No apparent relationship between filtration time (CST) and the VSS fraction

Capillary suction time (CST) versus electrical conductivity (EC)



Capillary suction time (CST) versus the ratio of volatile suspended solids (VSS) to total suspended solids (TSS)