High Frequency Wastewater Data

High Frequency Data Source

This vignette covers the high frequency data collected by the Wisconsin State Lab of Hygiene. This Wastewater data covers 6 weeks of 9 measurements per day, 6 days a week. This has 17 columns where 4 categorical variables and 13 measurement columns which analyse 6 signals.

The data is broken down by site, date, filter and well. Site is where the sample was collected from a range of 10 locations. Filter and well are what level of replicates it is. Filter is the high level category representing the different collections. Well contains the info about what technical batch it was. The numbering of the categories is arbitrary from day to day.

```
## Warning: Transformation introduced infinite values in continuous y-axis
```

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## Warning: Removed 20 rows containing missing values (`geom_point()`).
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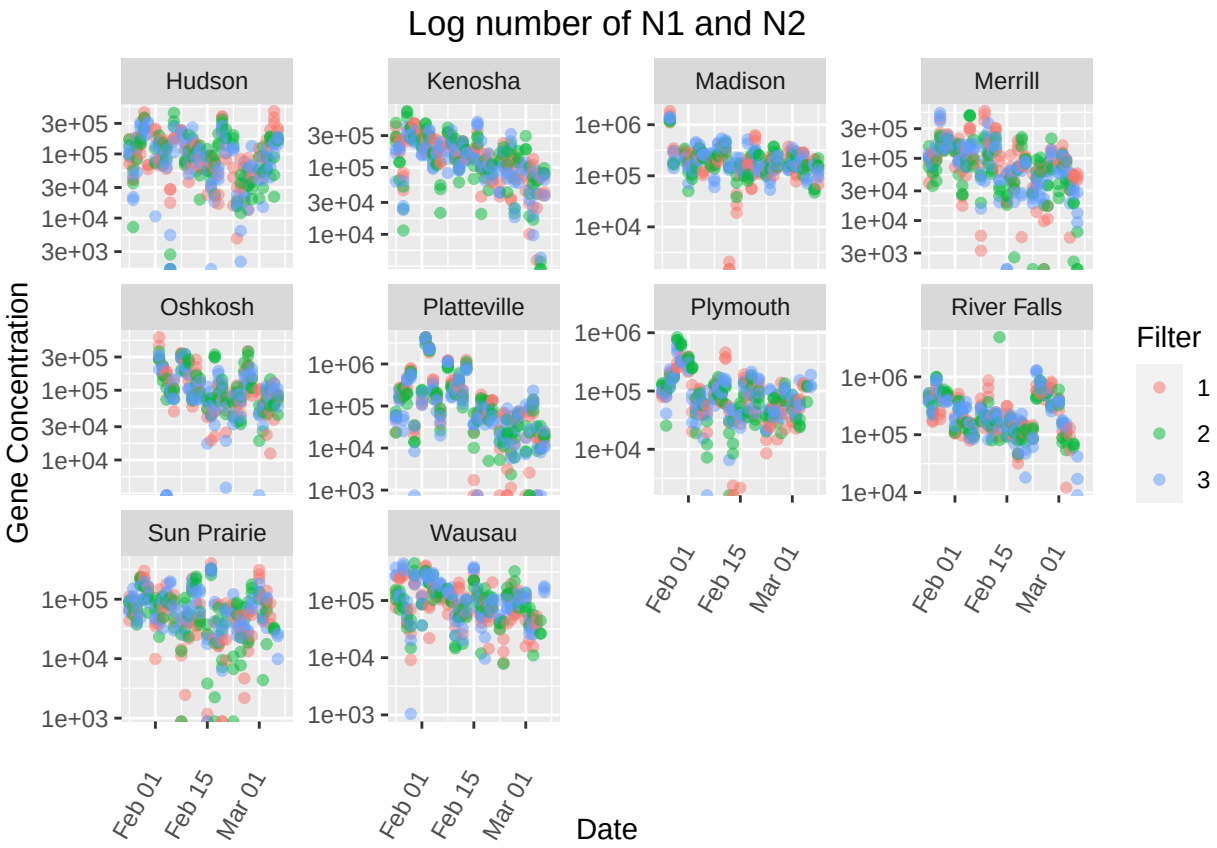

Otherwise the signals measured were N1 and N2, different genes of Covid-19, PMMOV, BCoV, HF183, and CrP, which are intended to function as normalizers. These signals can have a couple of different companion columns. The Ct version is what the machine measured which was the number of spins to detect the genes.

This is an exponential decay transformation to the Base column. The other extra column is the LOD which says if the measurement was below the lab's level of detection. This might mean the exact number is less reliable.

site	date	Filter	Well	N1	N1LOD	N2	N2LOD	PMMOV	BCoV	HF183	CrP
Hudson	2021-01-25	1	1	70268	FALSE	40121	TRUE	8335368	1.92	236887243	119023953
Hudson	2021-01-25	1	2	171547	FALSE	67953	FALSE	8756036	2.06	210693707	99677418
Hudson	2021-01-25	1	3	88856	FALSE	54756	TRUE	7268880	1.95	162485283	90503607
Hudson	2021-01-25	2	1	138137	FALSE	110372	FALSE	6945237	4.15	265156508	98203103
Hudson	2021-01-25	2	2	168132	FALSE	107241	FALSE	6917604	4.76	203828374	91220128
Hudson	2021-01-25	2	3	98634	FALSE	67862	FALSE	7103485	6.10	296482397	97912594

We used this data set in some analysis here