R2 Reasonable Potential Tool Parameter Report

PR0024163 - 001 : Lead, total [as Pb]

Evaluated from 08/04/2017 to 08/04/2022

FACILITY INFORMATION:

PRASA HATILLO WTP

STATE ROAD 2, KM 88.9

HATILLO, PR

WQS Import File: PR2022Standards-RPTool.xlsx

SUMMARY STATISTICS:

Number of Samples: 19

Min: 0.8 ug/L

Mean: ug/L

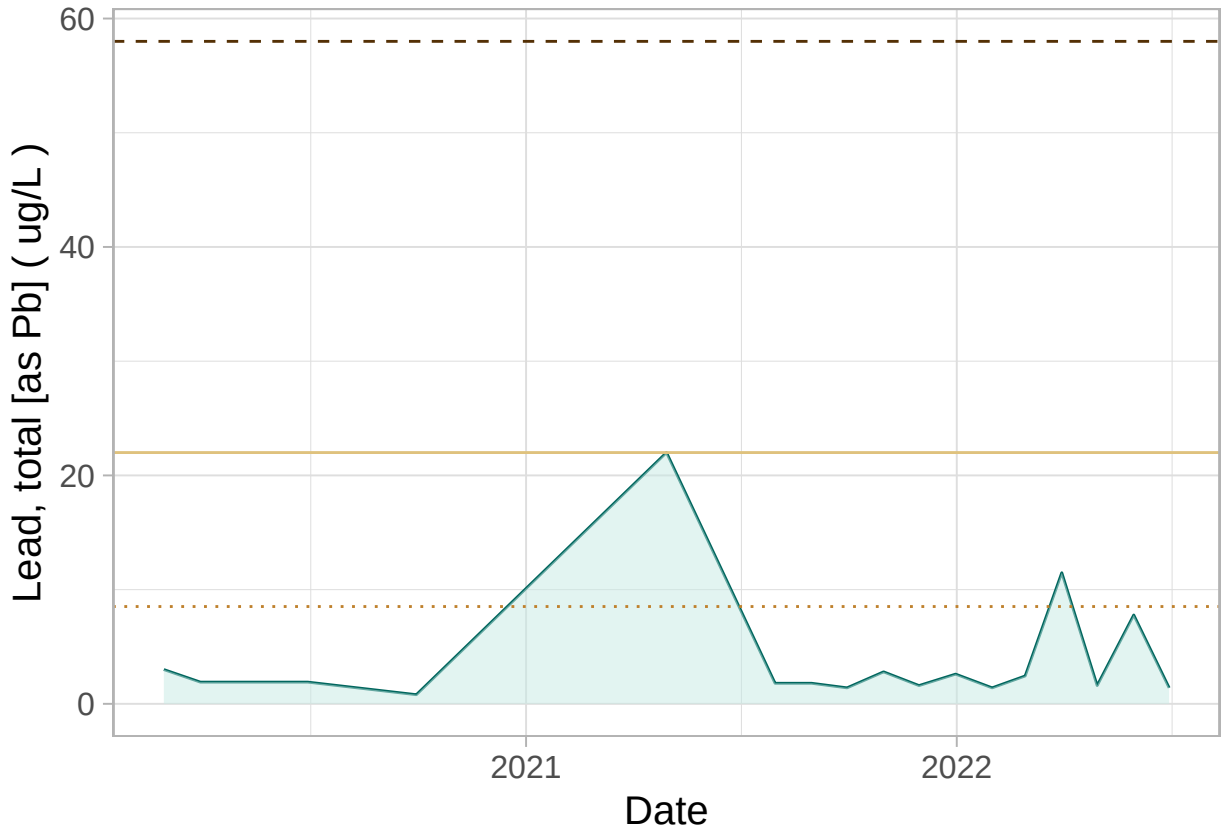
Max: 22 ug/L

WQS - SB: 8.52 ug/L

WQS - SD: NA ug/L

RWC: 58 ug/L

TIME SERIES



—Max: 22 ug/L

...WQS - SB: 8.52 ug/L

- - WQS - SD: NA ug/L

–RWC: 58 ug/L

RECEIVING WATER CONCENTRATION CALCULATIONS

assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55

$$
\begin{aligned}
Number of samples &= n \\
Maximum effluent concentration &= max \\
Dilution Ratio &= DR \\
Coefficient of Variation (CV) &= S_n/\mu or 0.6 when n \leq 10 \\
Z - statistic &= Z_x \\
RPM &= \frac{exp(Z_{95}\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))}{exp(Z_x\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))} \\
RWC &= maximum effluent concentration * RPM * Dilution Ratio
\end{aligned}
$$

$$
\begin{aligned}
n &= 19 \\
max &= 22 \\
DR &= 1 \\
CV &= 1.3581008 \\
Z_{95} &= 1.645 \\
Z_x &= 0.6963685
\end{aligned}
$$

$$
\begin{aligned}
RPM &= \frac{exp(1.645\ln(1+1.3581008^2)^{0.5} - 0.5\ln(1+1.3581008^2))}{exp(0.6963685\ln(1+1.3581008^2)^{0.5} - 0.5\ln(1+1.3581008^2))} \\
&= 2.64
\end{aligned}
$$

$$
\begin{aligned}
RWC &= 22 * 2.64 * 1 \\
&= 58
\end{aligned}
$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit	NODI Code
PR0024163	001	Lead, total [as Pb]	2020-02-29	3.00	ug/L	
PR0024163	001	Lead, total [as Pb]	2020-03-31	1.90	ug/L	
PR0024163	001	Lead, total [as Pb]	2020-04-30	1.90	ug/L	
PR0024163	001	Lead, total [as Pb]	2020-05-31	1.90	ug/L	
PR0024163	001	Lead, total [as Pb]	2020-06-30	1.90	ug/L	
PR0024163	001	Lead, total [as Pb]	2020-09-30	0.80	ug/L	
PR0024163	001	Lead, total [as Pb]	2021-04-30	22.00	ug/L	
PR0024163	001	Lead, total [as Pb]	2021-07-31	1.80	ug/L	
PR0024163	001	Lead, total [as Pb]	2021-08-31	1.80	ug/L	
PR0024163	001	Lead, total [as Pb]	2021-09-30	1.40	ug/L	
PR0024163	001	Lead, total [as Pb]	2021-10-31	2.80	ug/L	
PR0024163	001	Lead, total [as Pb]	2021-11-30	1.60	ug/L	
PR0024163	001	Lead, total [as Pb]	2021-12-31	2.60	ug/L	
PR0024163	001	Lead, total [as Pb]	2022-01-31	1.40	ug/L	
PR0024163	001	Lead, total [as Pb]	2022-02-28	2.44	ug/L	
PR0024163	001	Lead, total [as Pb]	2022-03-31	11.48	ug/L	
PR0024163	001	Lead, total [as Pb]	2022-04-30	1.60	ug/L	
PR0024163	001	Lead, total [as Pb]	2022-05-31	7.78	ug/L	
PR0024163	001	Lead, total [as Pb]	2022-06-30	1.40	ug/L	