



Annual Performance and Monitoring review

EPR Permit BR9685IX

Dow Silicones UK Ltd - 2022

+This report is to fulfil ERP permit BR9685IX condition 4.2.2

4.2.2 - For the following activities referenced in schedule 1, table S1.1 (A1 to A18) A report or reports on the performance of the activities over the previous year shall be submitted to Natural Resources Wales by 31 January (or other date agreed in writing by Natural Resources Wales) each year. The report(s) shall include as a minimum:

(a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data

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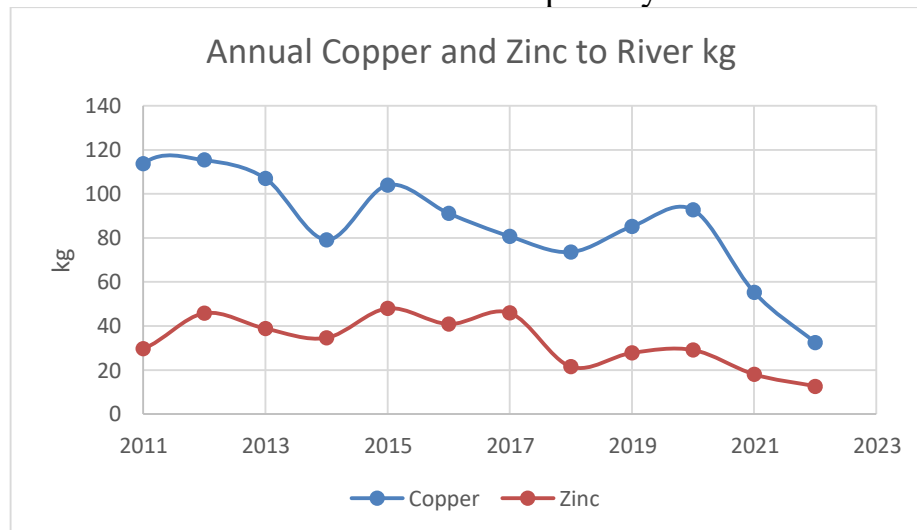
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Summary

The report includes details of our performance during 2022. SPC charts have been used for all analytical monitoring we carry out for releases to air and water.

Points of interest for 2022 :

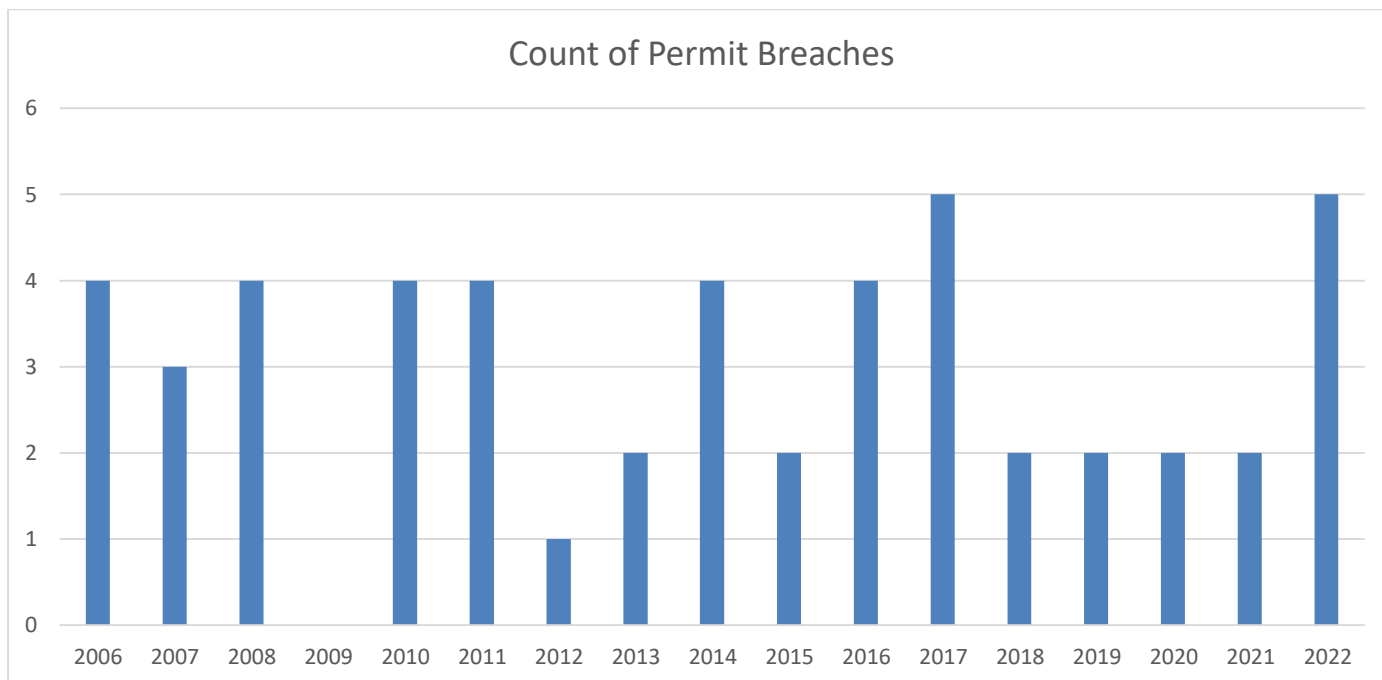
- Production was lower in 2022 than the last few previous years, this can be seen also with lower waste and lower operation of the CHP Cogen plant.
- WWT operational improvements have been very successful in reducing the Copper and Zinc in the effluent to river over the last couple of years



- The site had the largest shutdown ever during September and October. Essential improvements and maintenance was carried in all areas of the site.
- The SWWT process had operational challenges during November and December following start up from shutdown.
- The capped landfill area has now wilded nicely and is covered in wildflower and grass - Image taken June 2022



Incidents

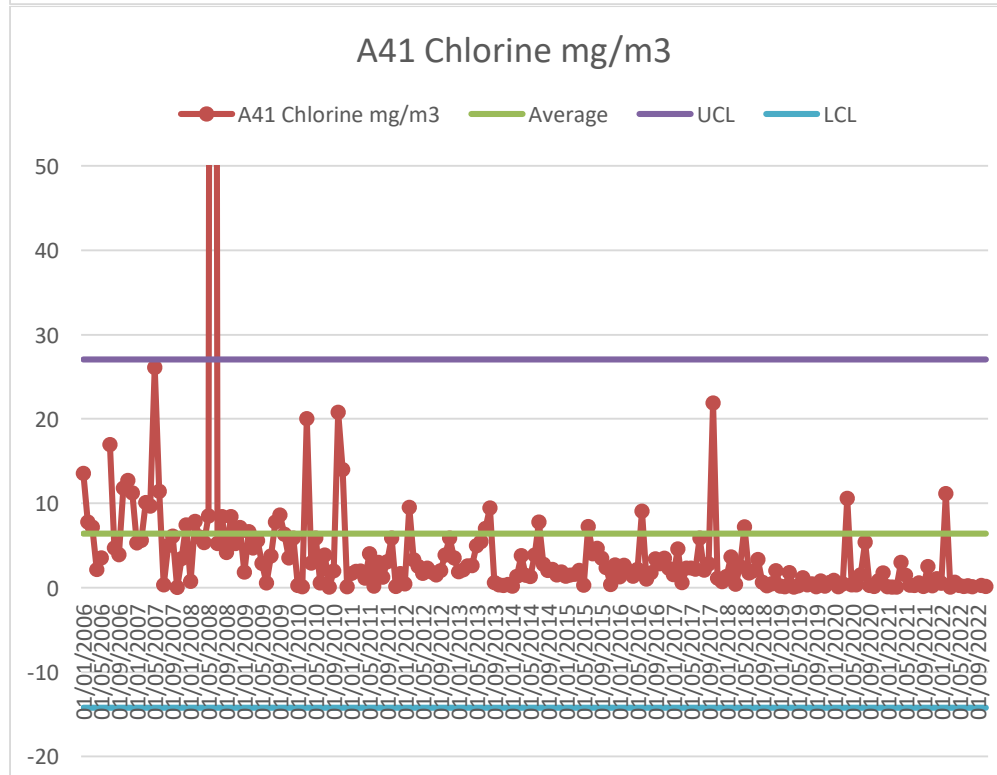
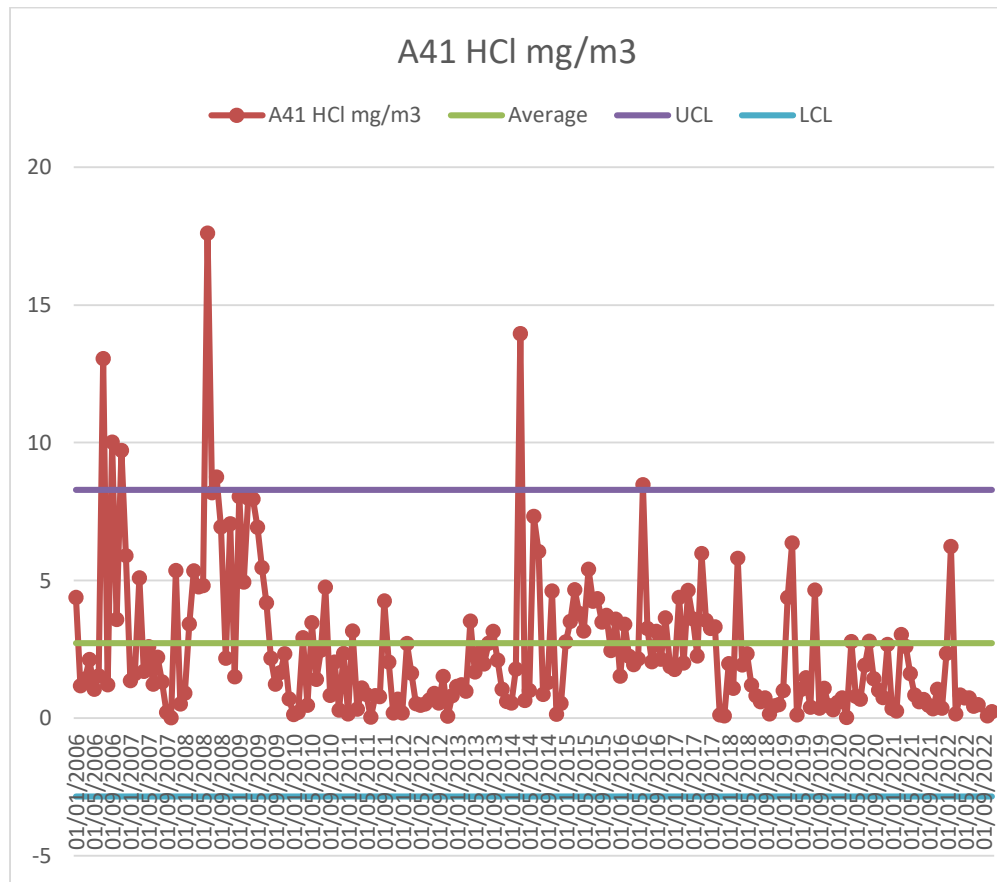


There were 5 reportable permit breaches during 2022:

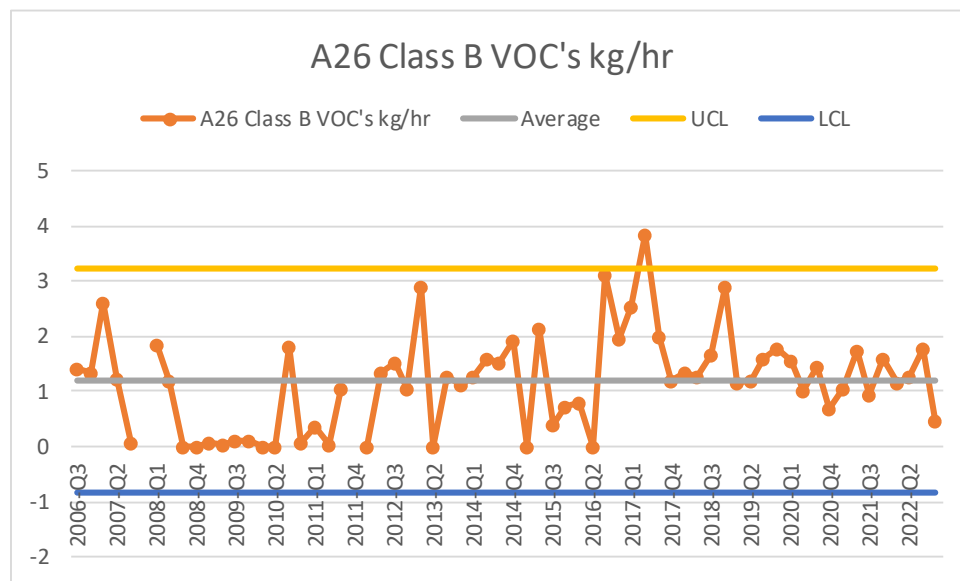
- High pH effluent to river – February: Calcium hydroxide ingress via and unsealed storm drain manhole coinciding with a period of no flow from SWWT to River Cadoxton.
- ERU particulates – February: Annual particulate sample failure, ongoing investigation throughout the year.
- Si bag filter – June: Failed bag filter on Silicon transfer equipment caused a small release of silicon dust. The size of the particles meant that the dust settled local to the release point. Transfer stopped immediately.
- Scum observed on river – December: Floating scum was observed stuck in vegetation on the River Cadoxton just downstream of the outfall. The particulates entering the river were within the permit limit, but had built up over a long period of time due to low river level, low flow, surface vegetation and the floating nature of the particulates.
- Unable to sample ERU/W922/W307 – Q4: Site not running due to issues with SWWT process.

Air monitoring

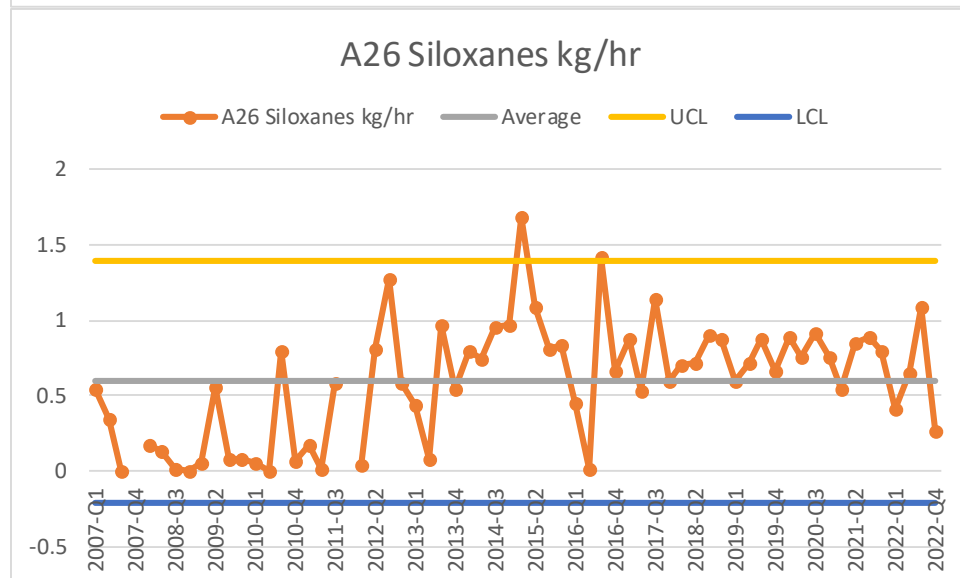
Trends for Monthly monitoring



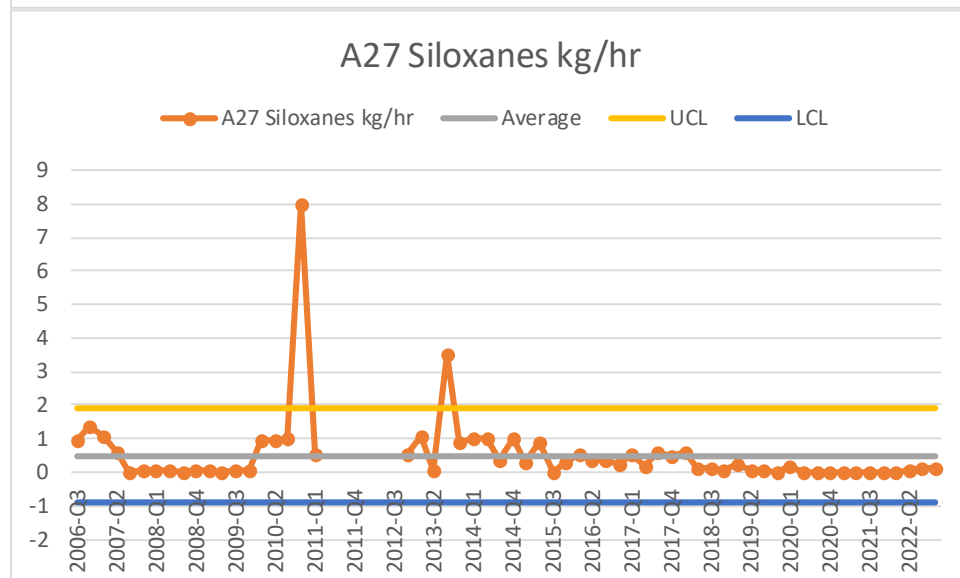
Trends for Quarterly monitoring:



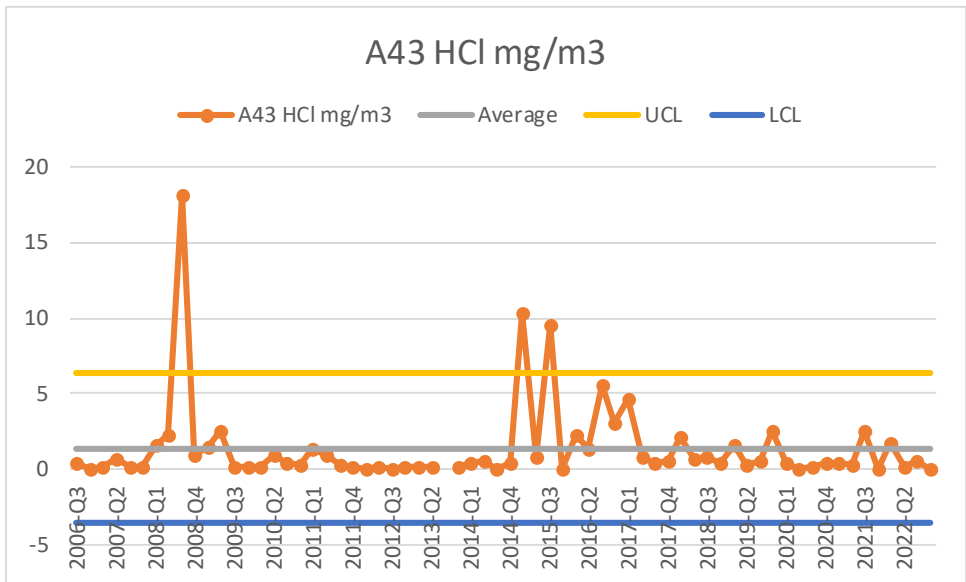
Results in control.



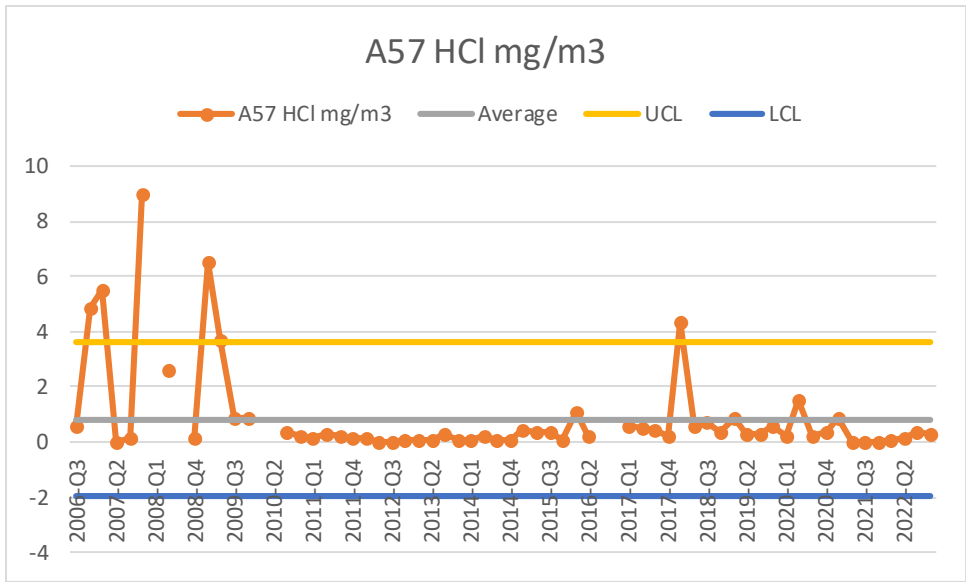
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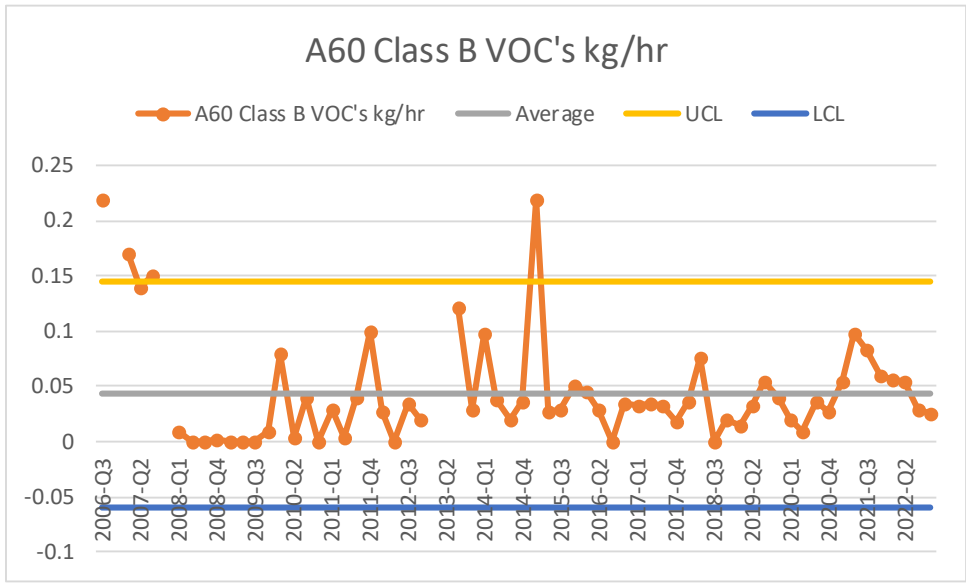
Results in control.



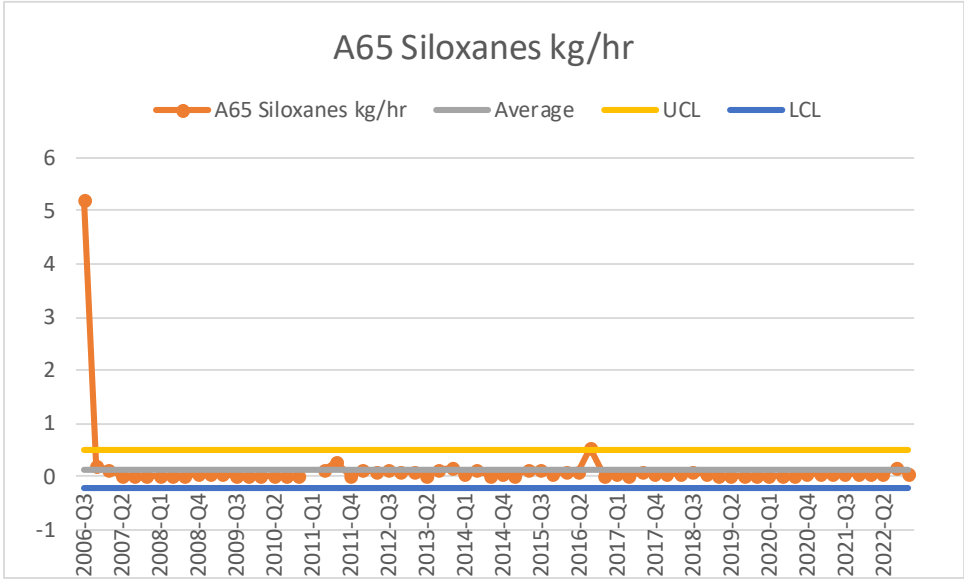
Results in control and within permit limit (10mg/m3).



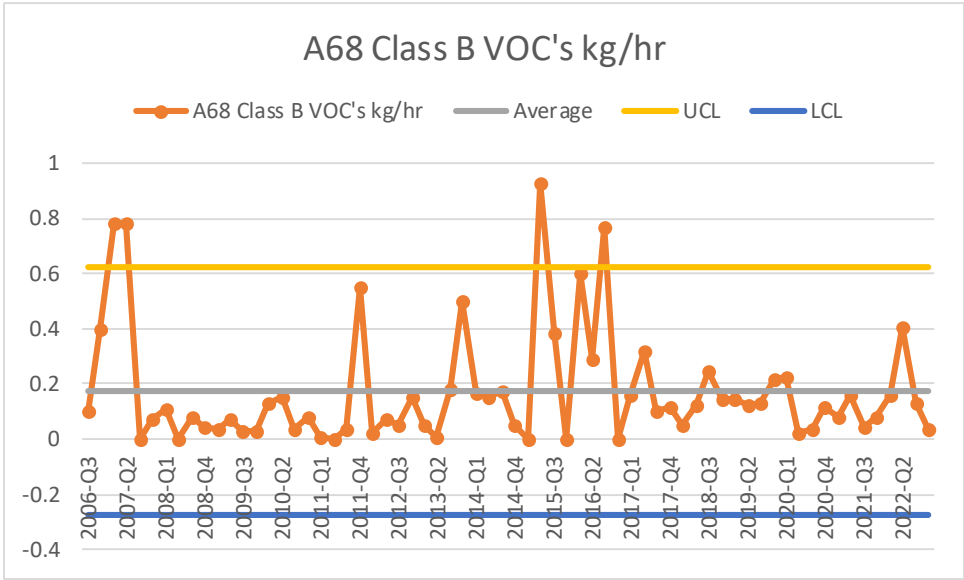
Results in control and within permit limit (10mg/m3).



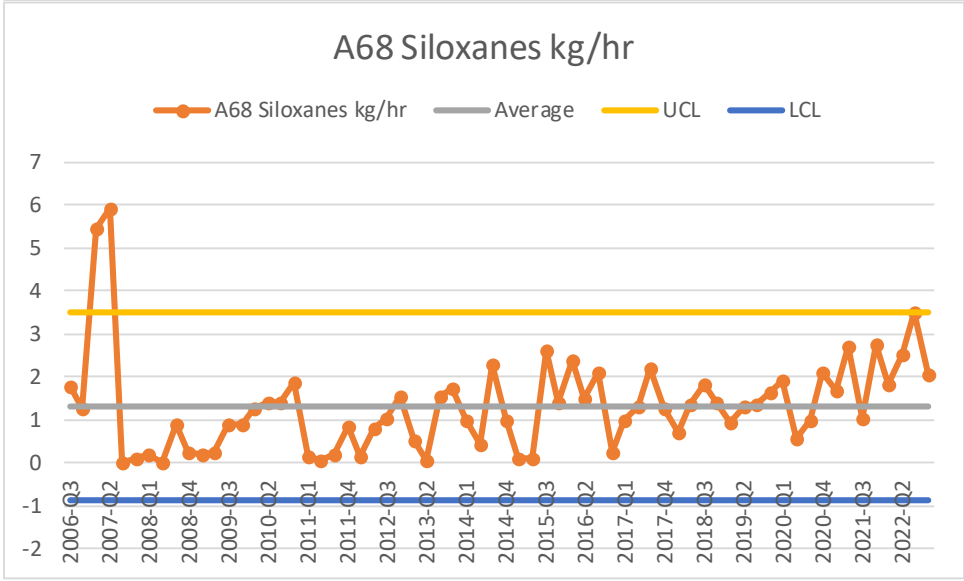
Results in control.



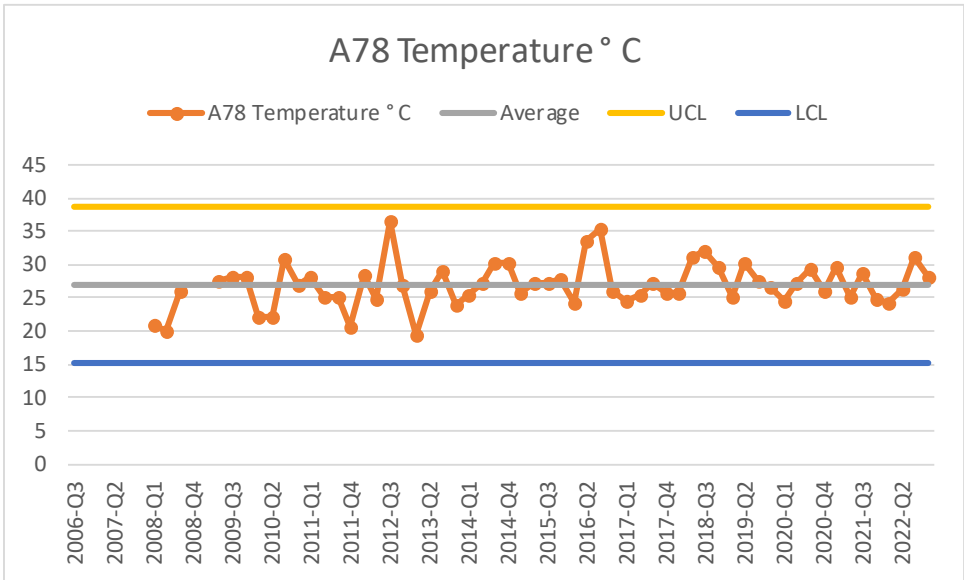
Results in control.



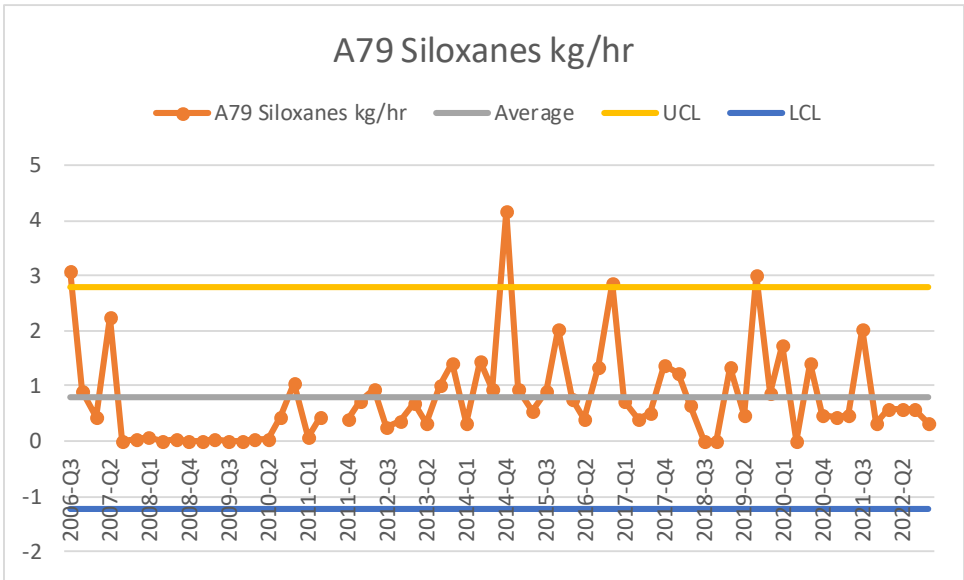
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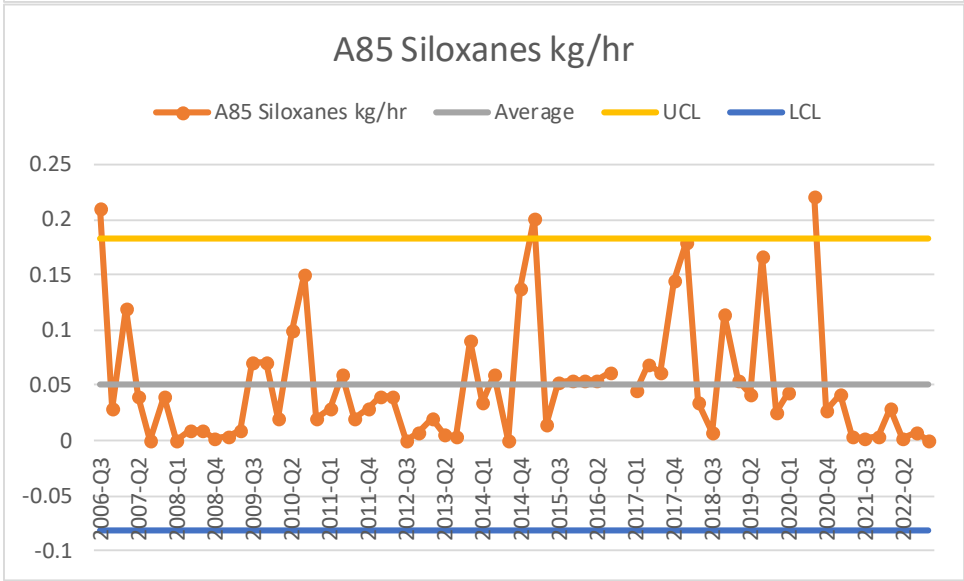
Results in control.



Results in control.

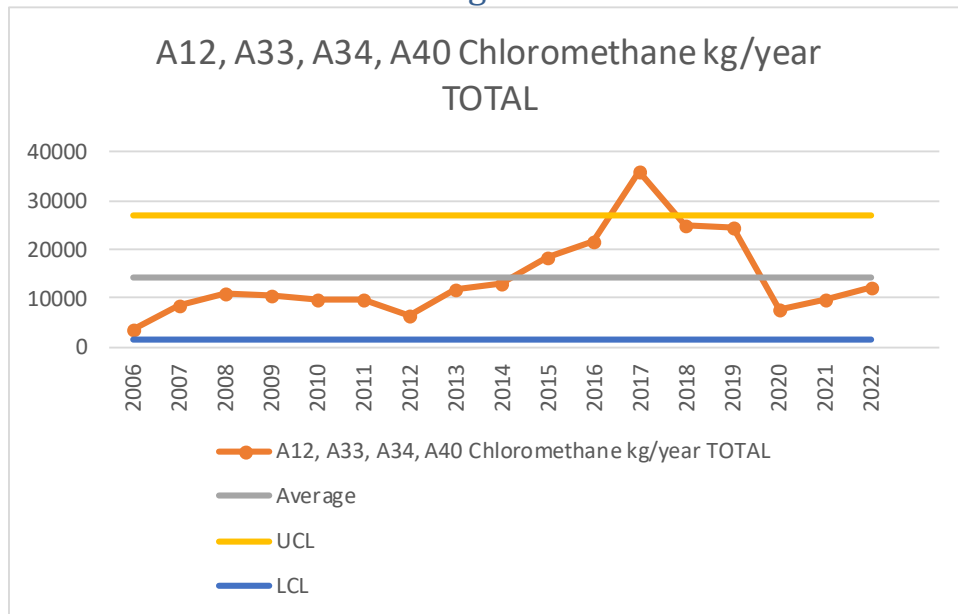


Results in control.

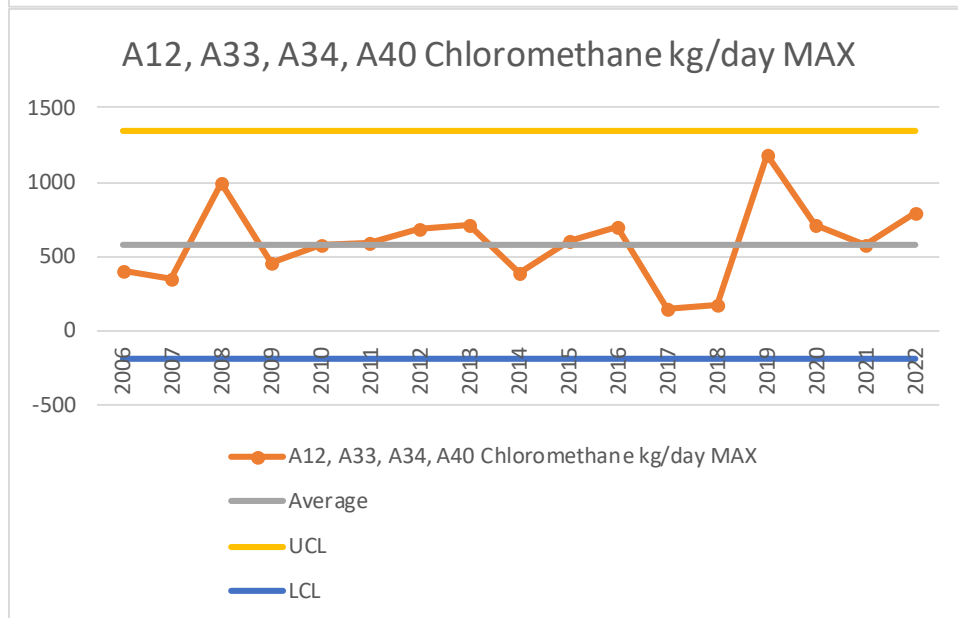


Results low and in control.

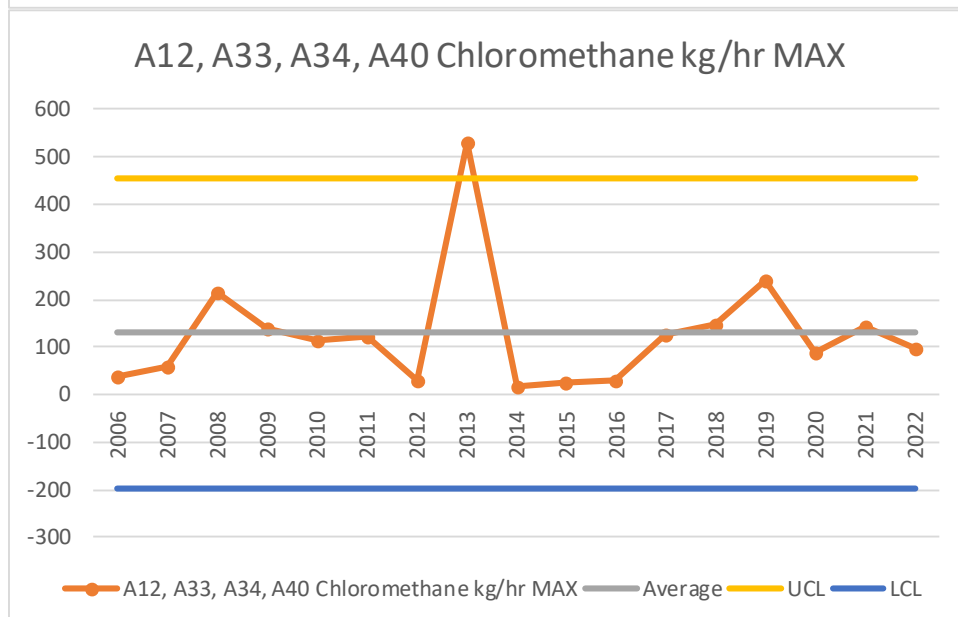
Trends for Annual monitoring:



W714 (A12) and W718 (A33) did not run during 2022.

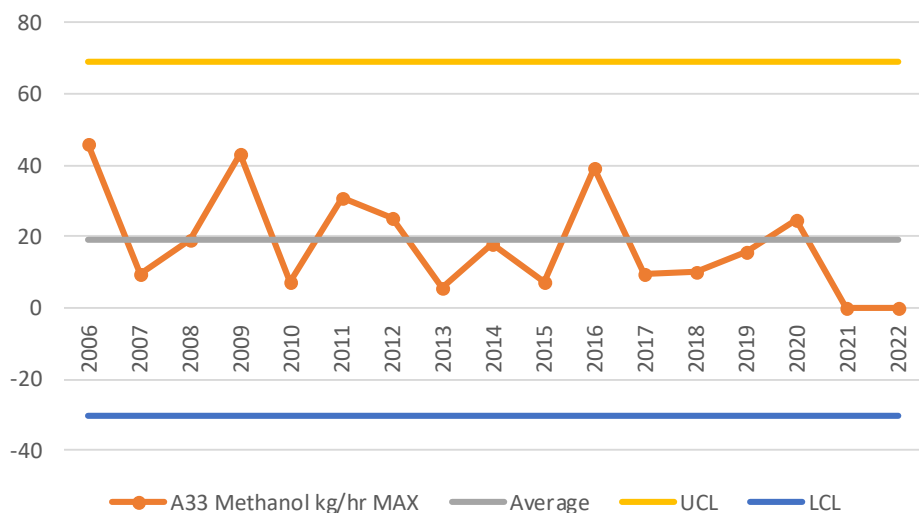


W714 (A12) and W718 (A33) did not run during 2022.
Results in control and within permit limit (1000 kg/day).



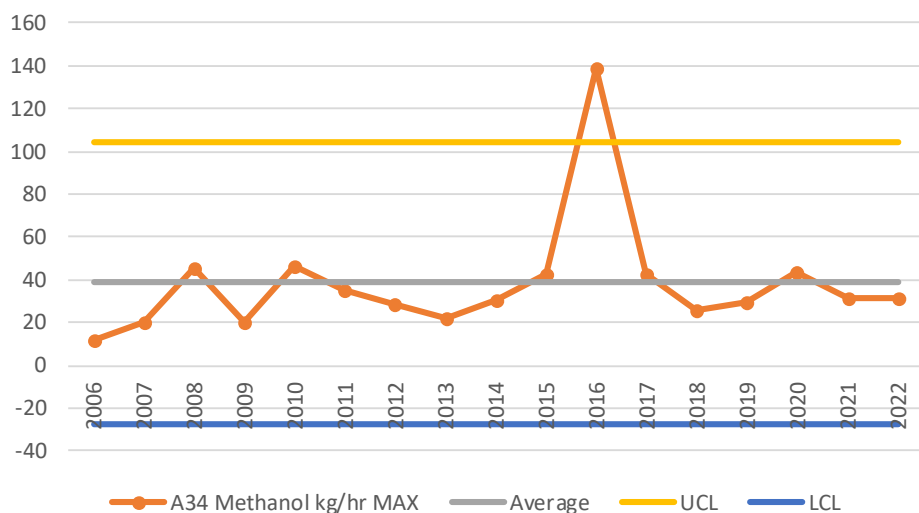
W714 (A12) and W718 (A33) did not run during 2022.
Results in control and within permit limit (250 kg/hr).

A33 Methanol kg/hr MAX



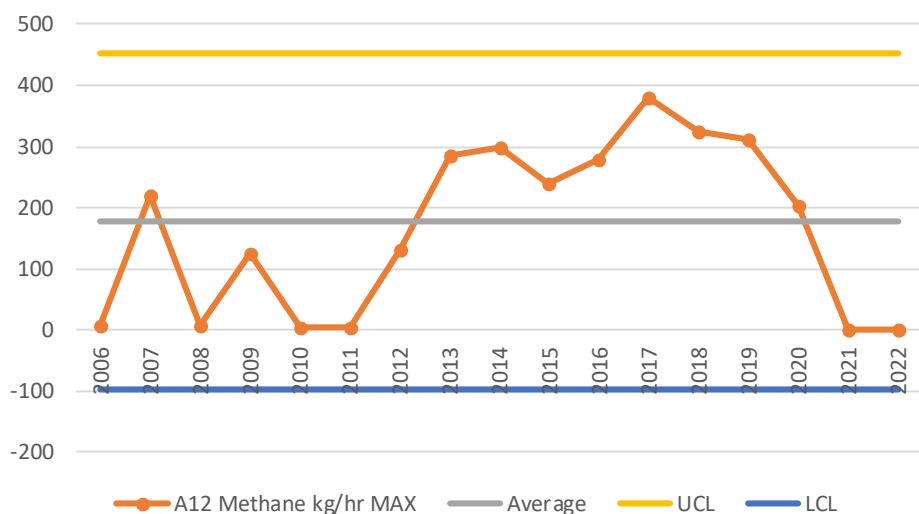
W718 (A33) did not run during 2021 and 2022.

A34 Methanol kg/hr MAX



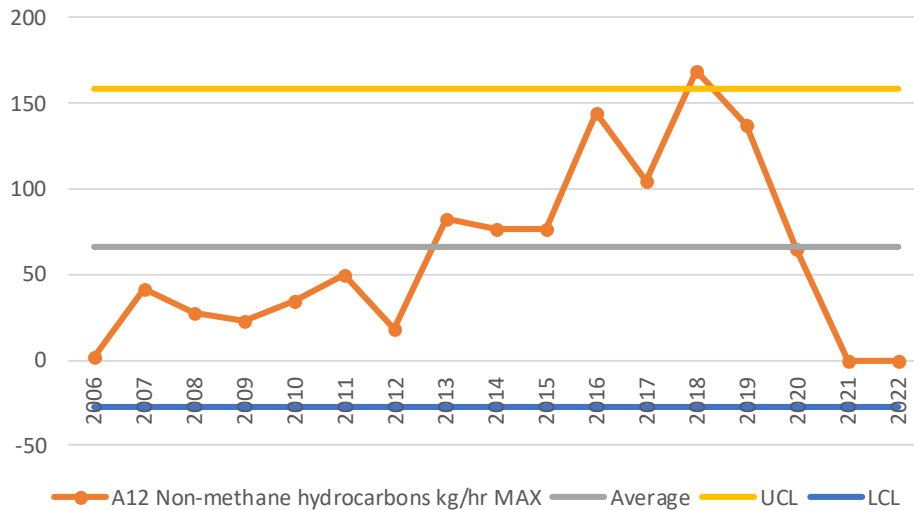
Results in control and within permit limit (max flow of 60kg/hr).

A12 Methane kg/hr MAX



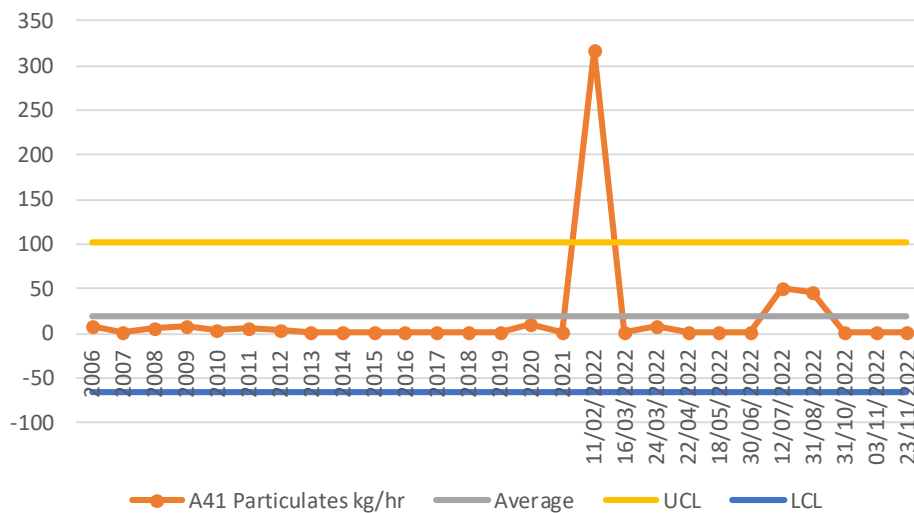
W714 (A12) did not run during 2021 and 2022.

A12 Non-methane hydrocarbons kg/hr MAX



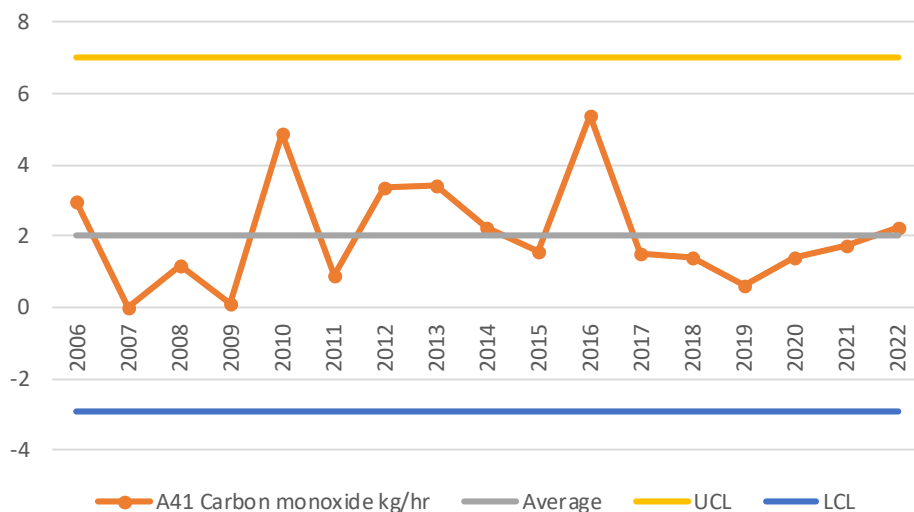
W714 (A12) did not run during 2021 and 2022.

A41 Particulates kg/hr



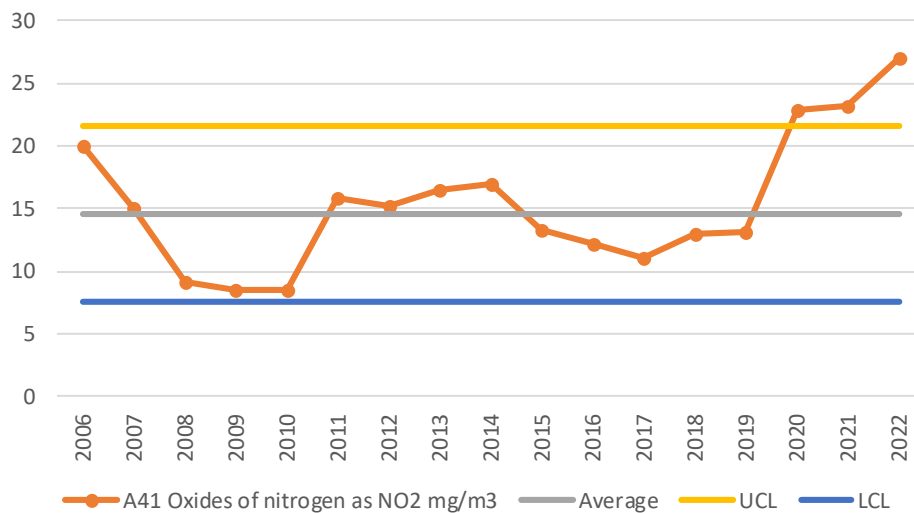
All results for 2022 included on the chart – investigation still ongoing regarding permit exceedances during 2022. Permit limit (10 mg/m3).

A41 Carbon monoxide kg/hr



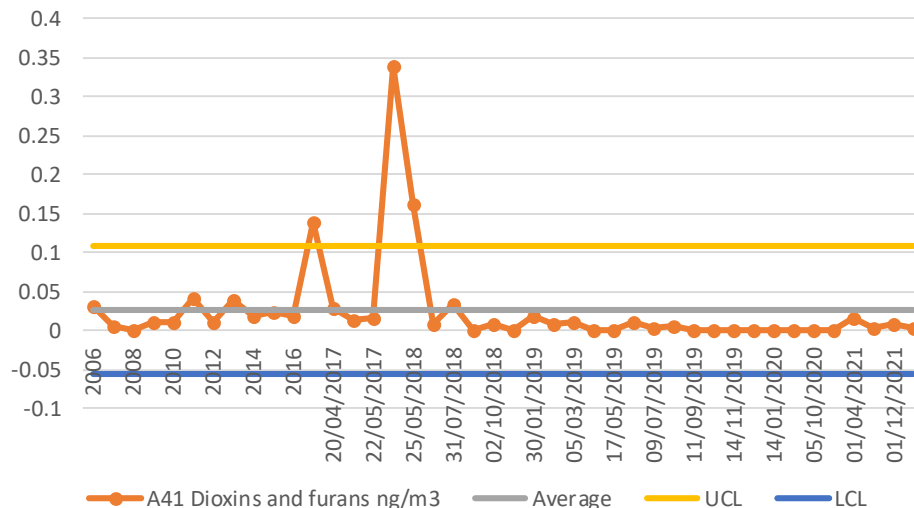
Results in control and within permit limit (50mg/m3).

A41 Oxides of nitrogen as NO2 mg/m3



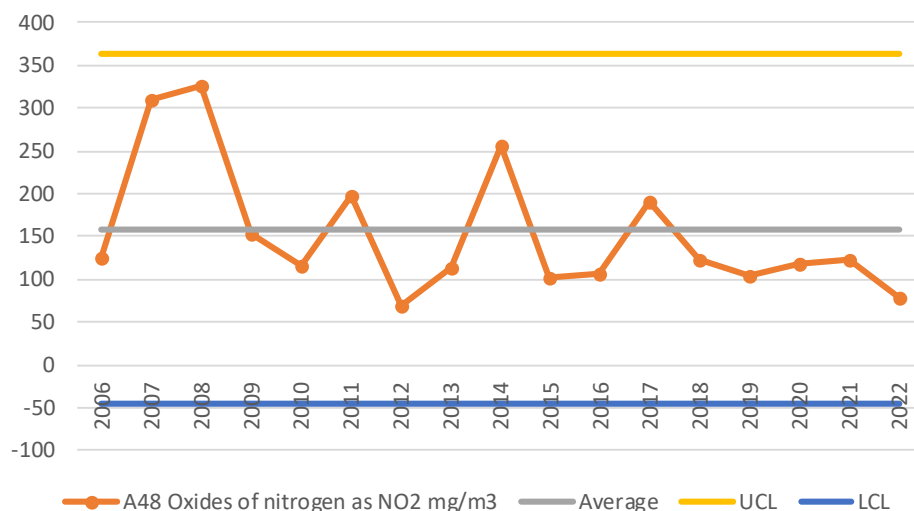
Results out of control high, but still well within permit limit (100mg/m3). This will continue to be monitored on a monthly basis.

A41 Dioxins and furans ng/m3

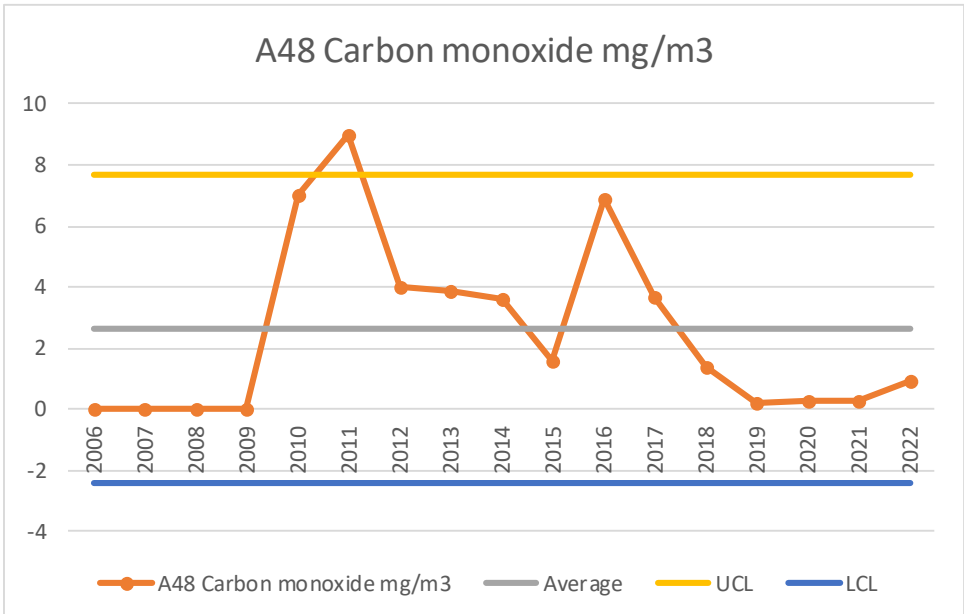


Results in control and within permit limit (0.1ng/m3).

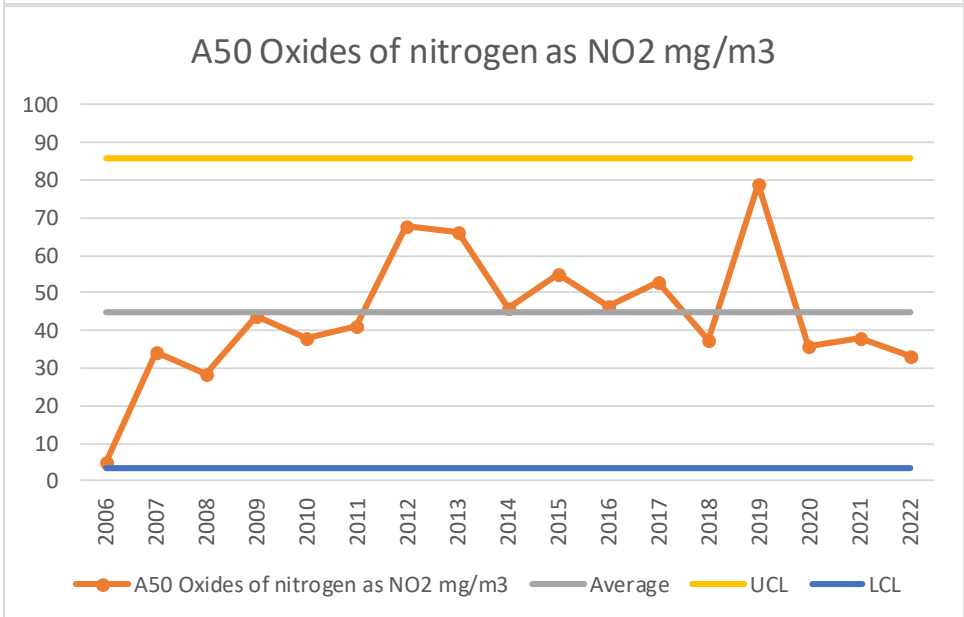
A48 Oxides of nitrogen as NO2 mg/m3



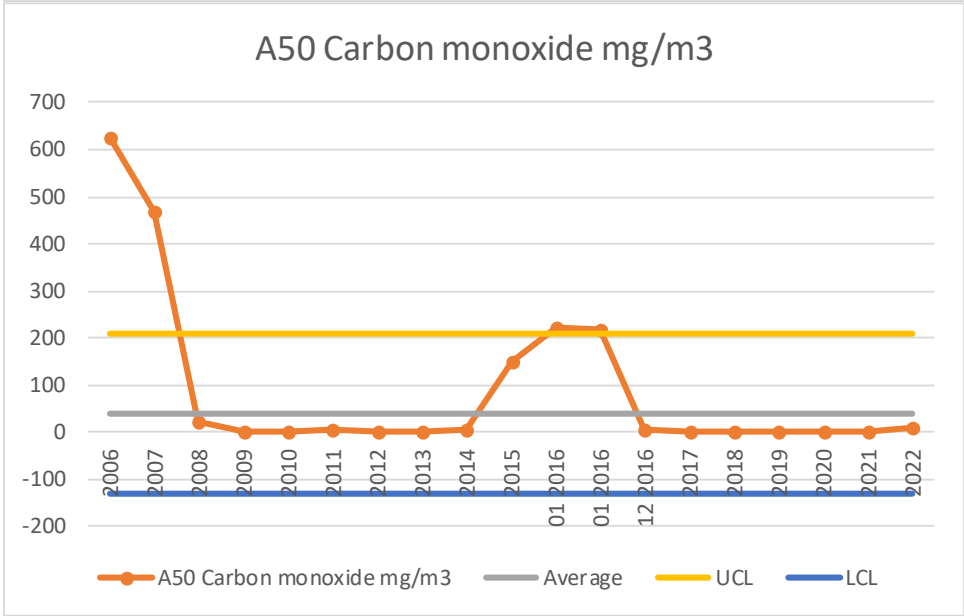
Results in control.



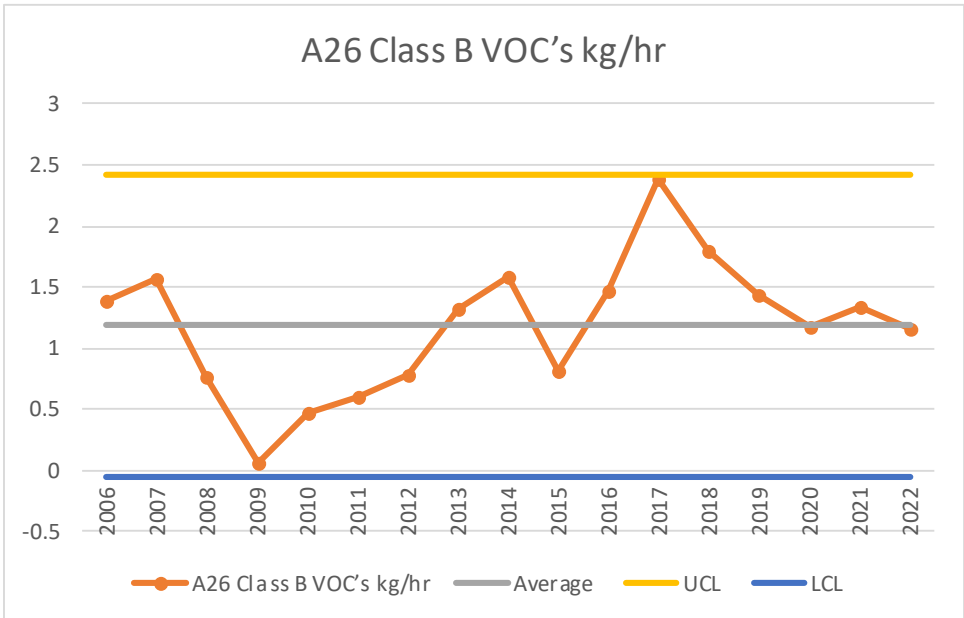
Results in control.



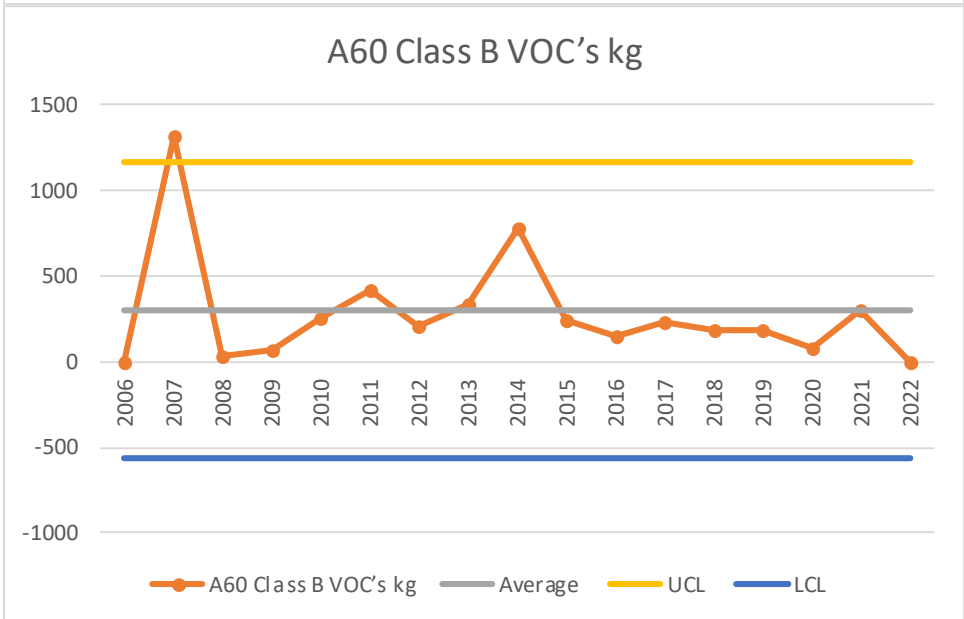
Results in control and within permit limit (200mg/m3).



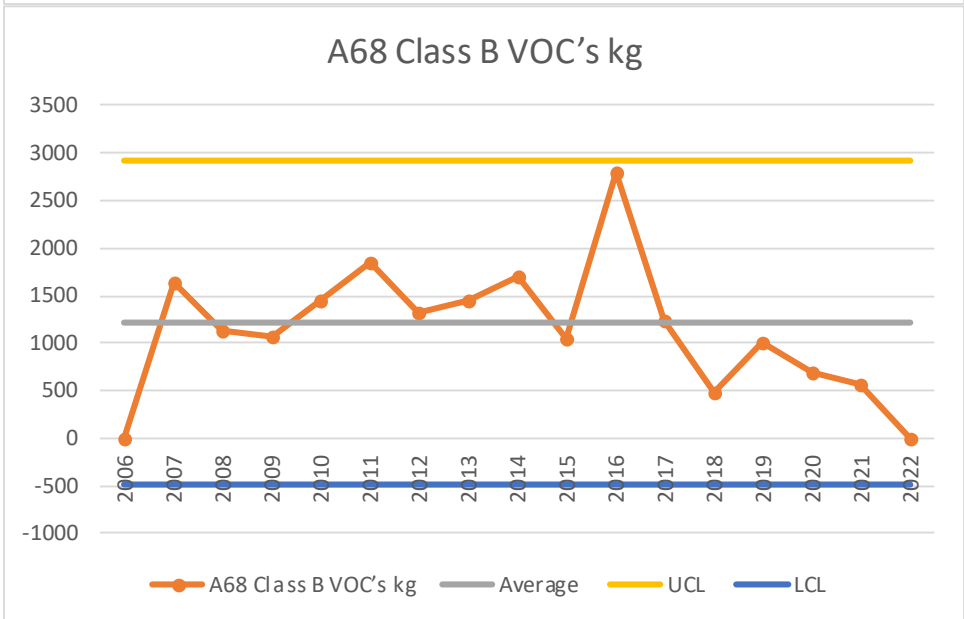
Results in control and within permit limit (200mg/m3).



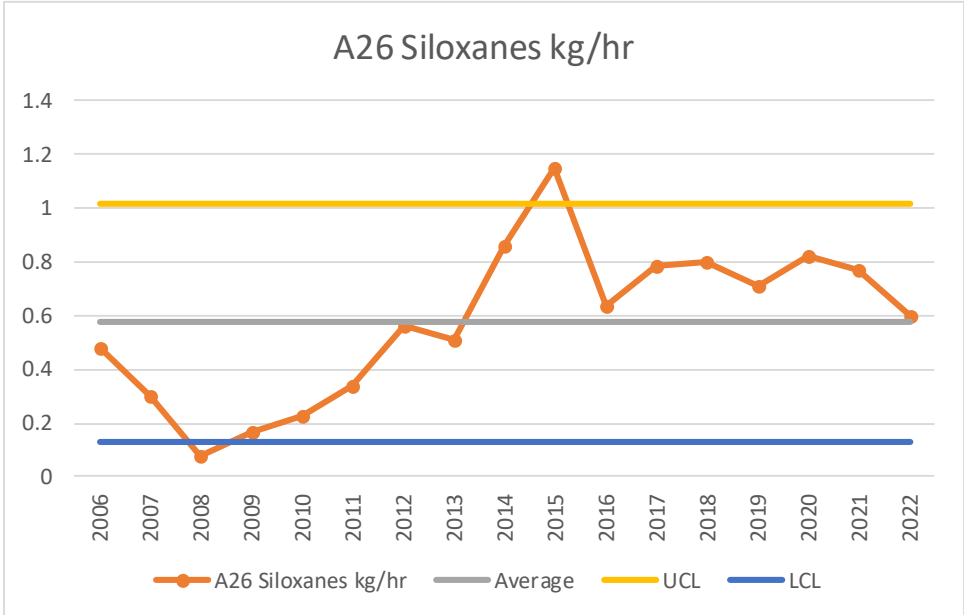
Results in control.



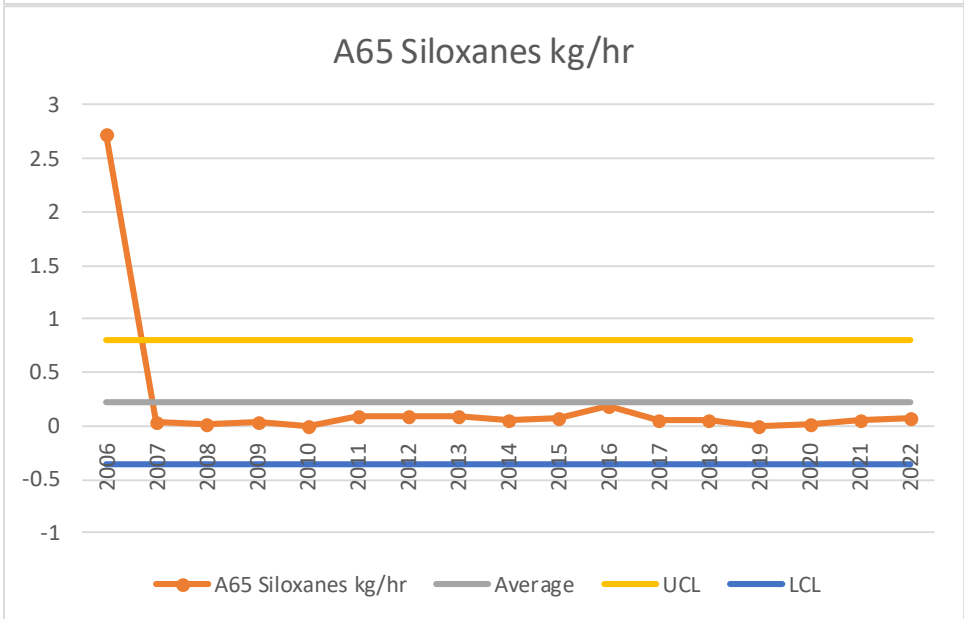
Results in control



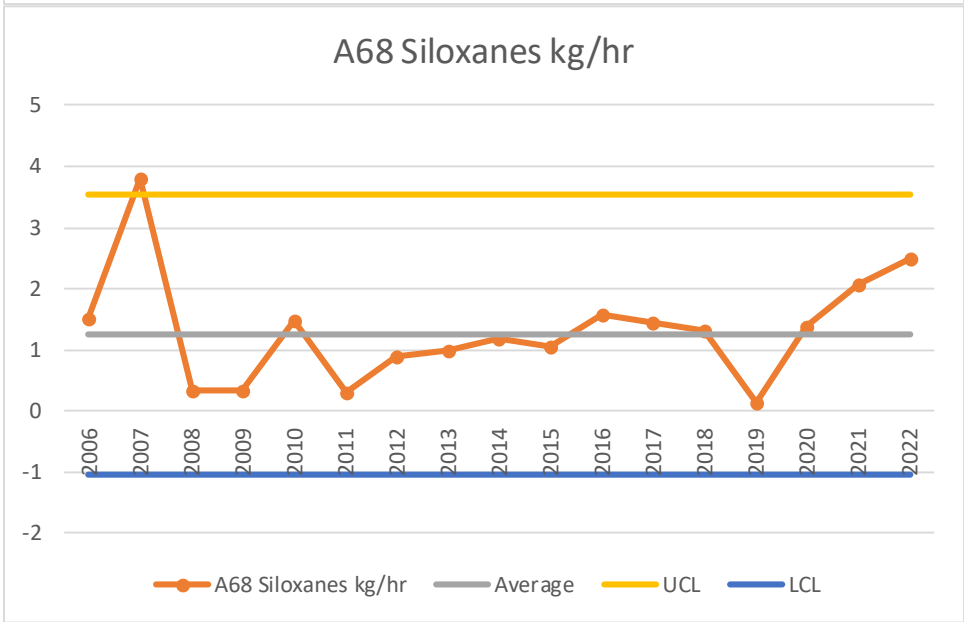
Results in control



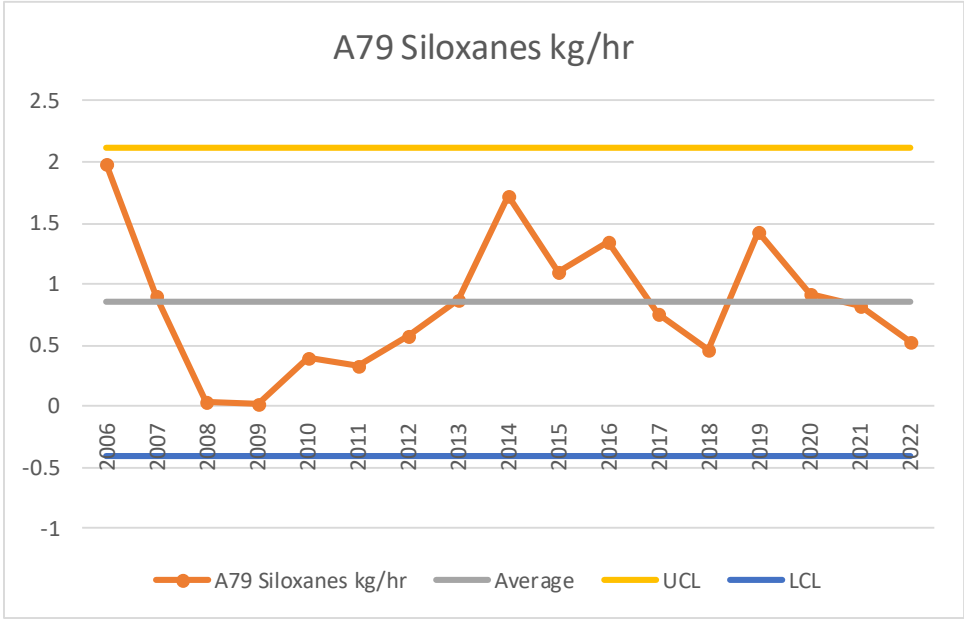
Results in control



Results in control

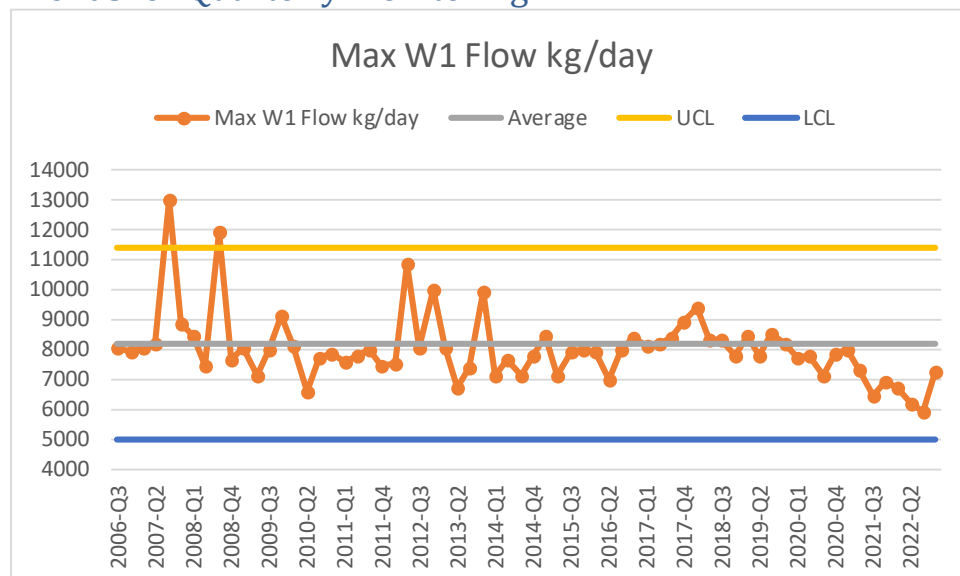


Results in control

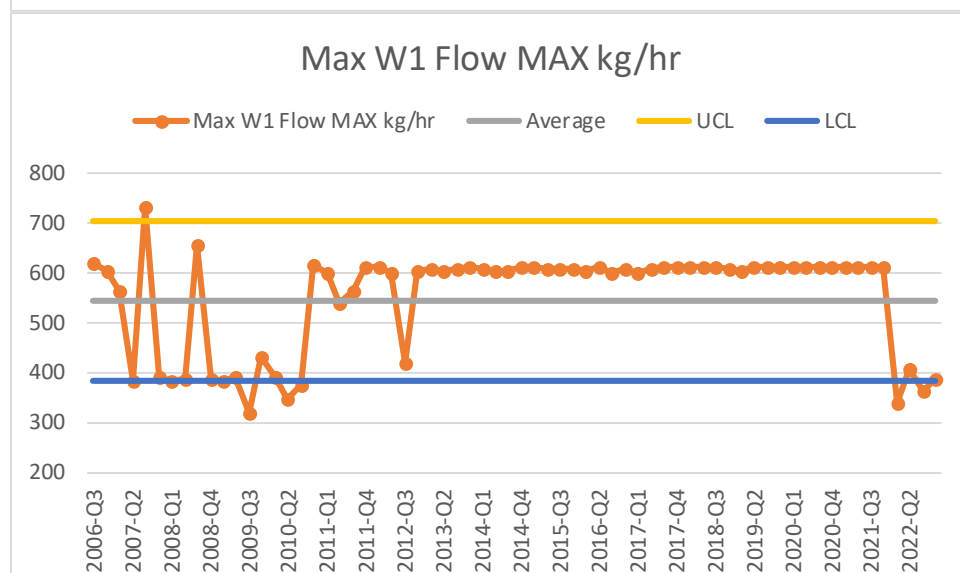


Water monitoring

Trends for Quarterly monitoring:

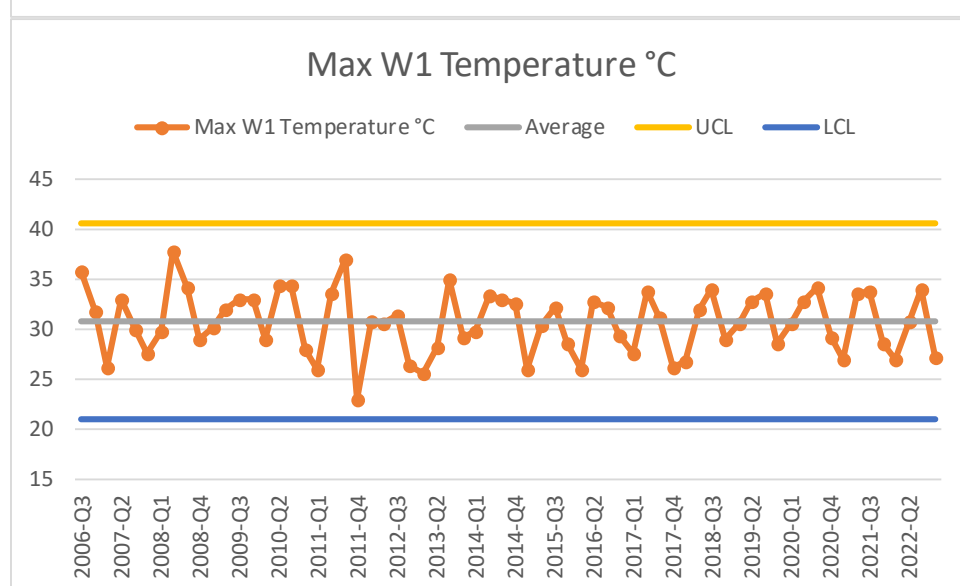


Results in control and within permit limit (11,000 m³/day)

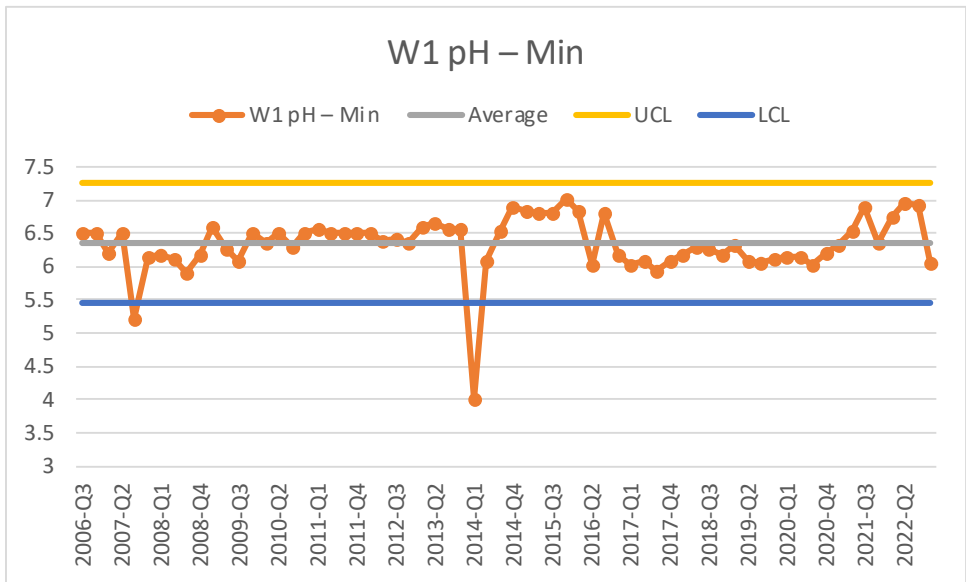


Results in control and within permit limit (625 m³/hr)

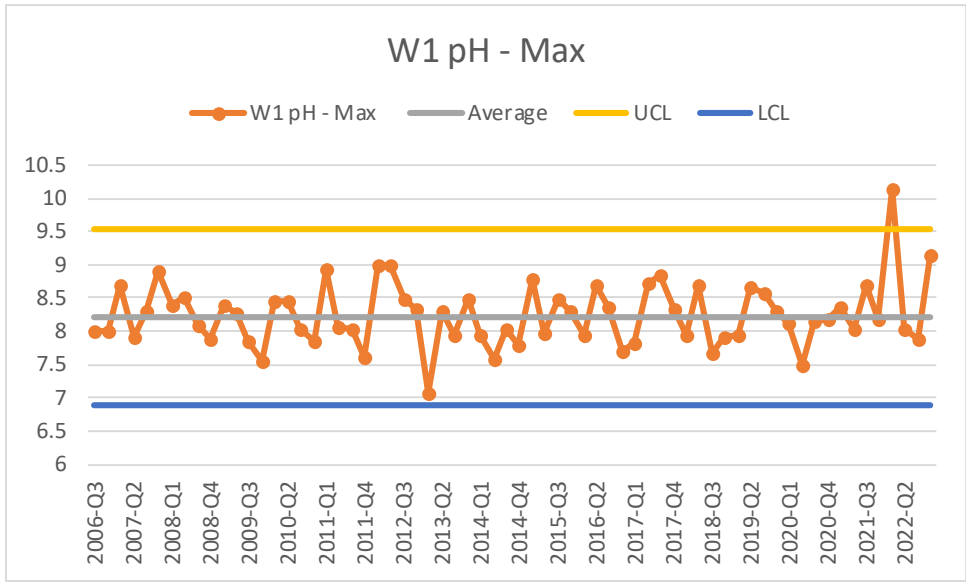
Data from Q1 2022 onwards calculated using max of 15 minute averages rather than instantaneous maximums (in line with MCERTS)



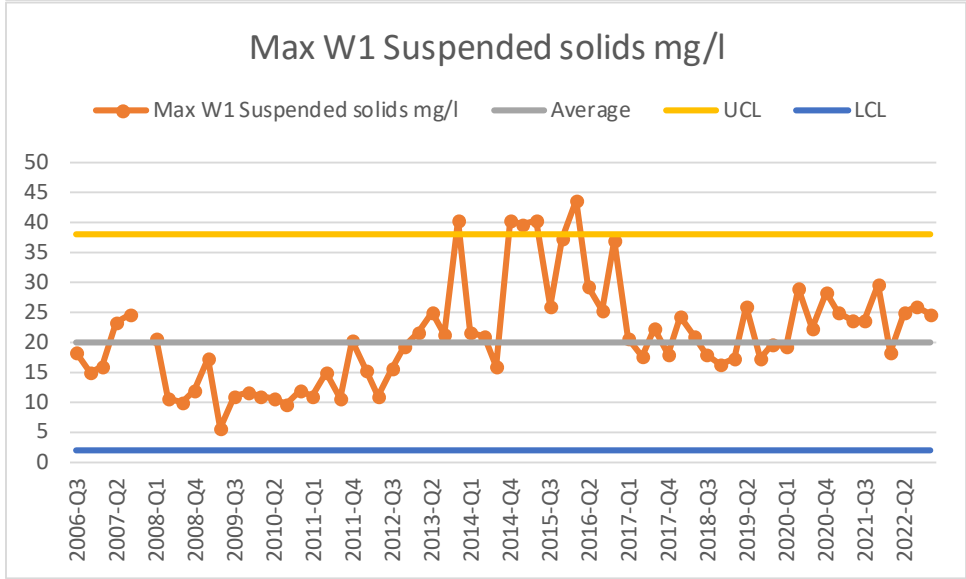
Results in control and within permit limit (40°C)



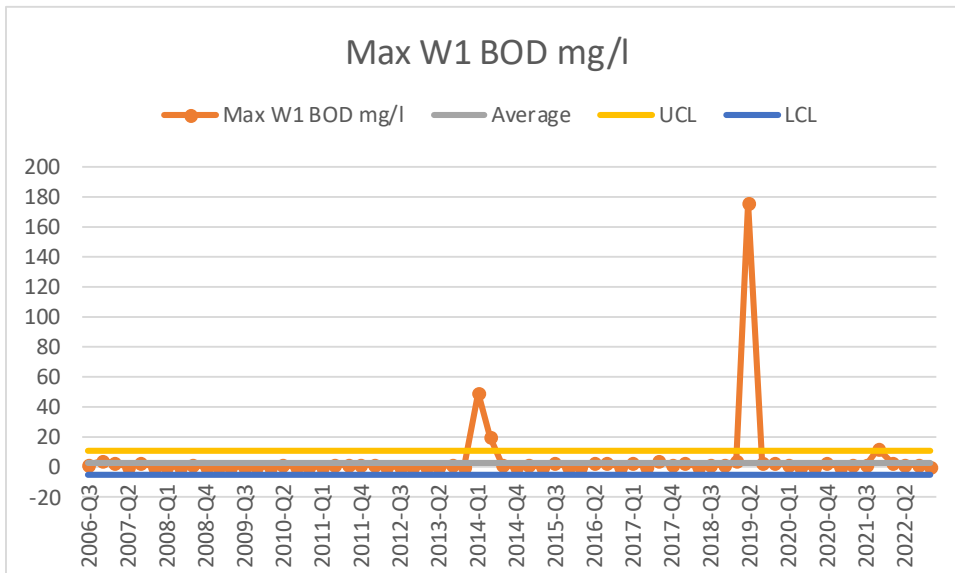
Results in control and within permit limit (>6)



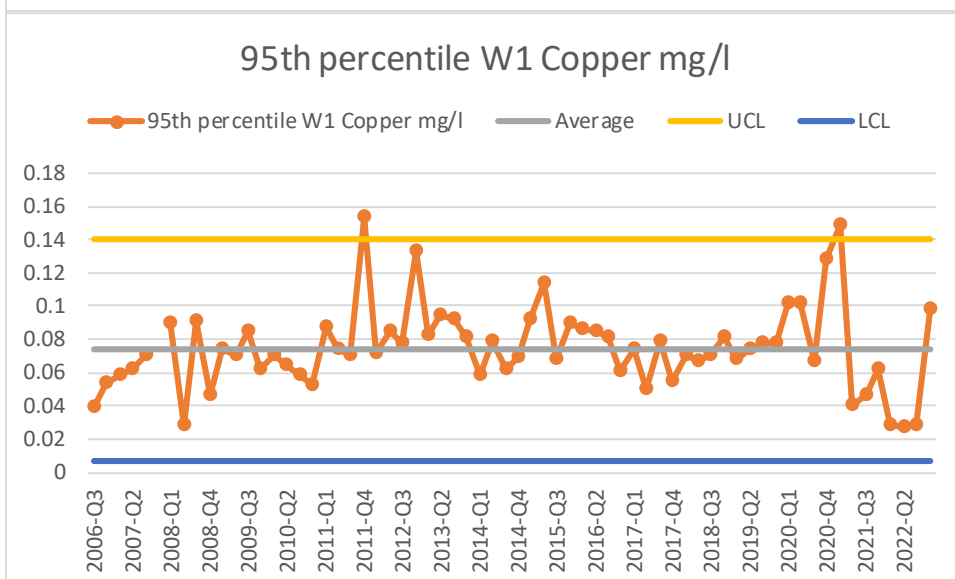
Q1 permit breach reported. Other results in control and within permit limit (<9)



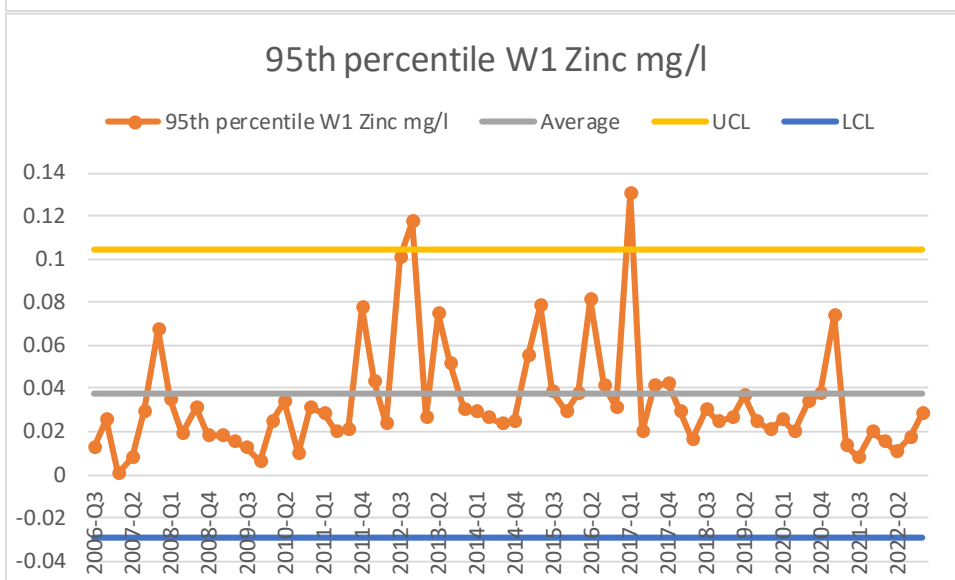
Results in control and within permit limit (30 mg/l)



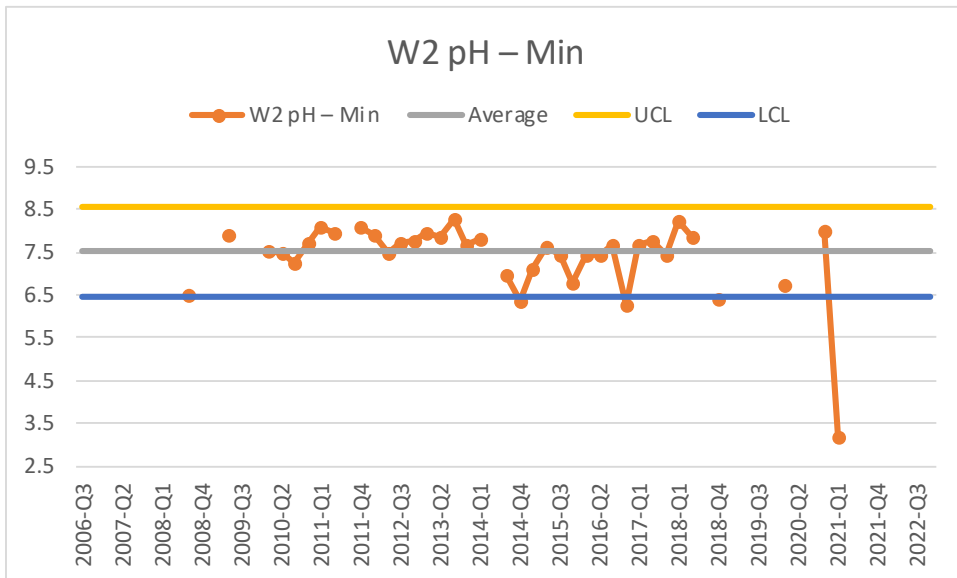
1 Result out of control during 2022, but still within permit limit (20 mg/l)



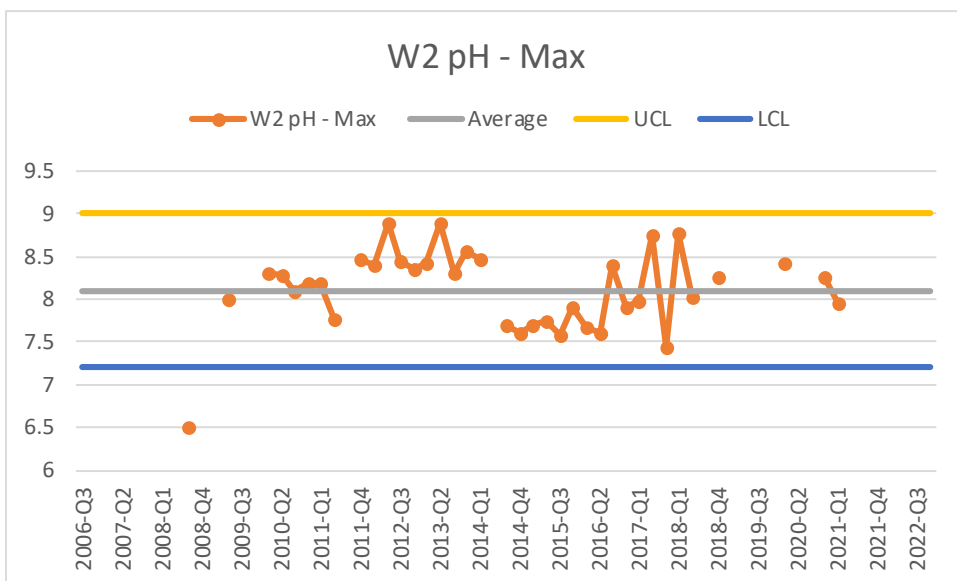
Q4 2022 95th % result was very close to permit limit due to issues with SWWT. 2021 work on PWWT and SWWT processes has had a good result with the Q1,Q2 and Q3 95th % results being lower than they have been for more than 10 years.



Results in control and within permit limit (0.5 mg/l)

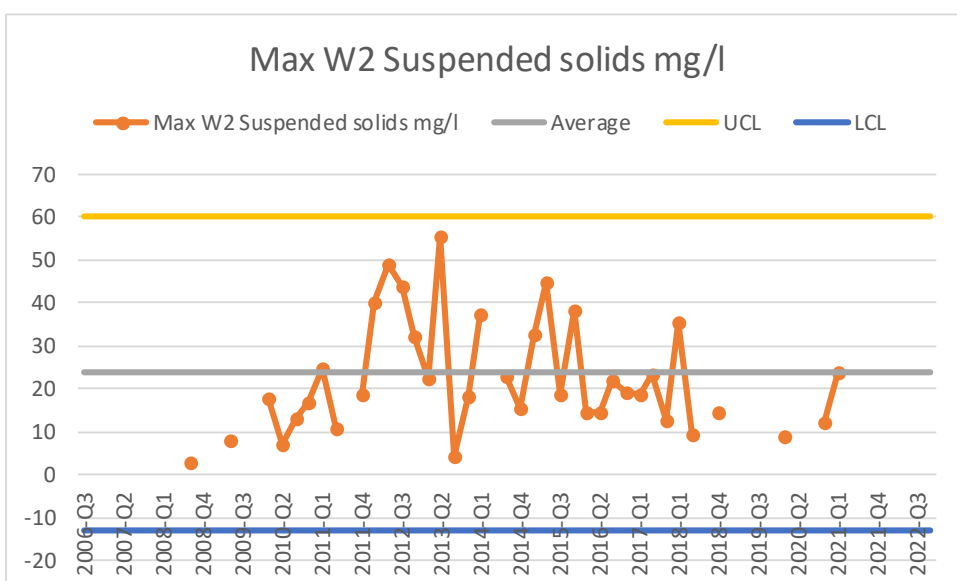


No storm water released to river in 2022



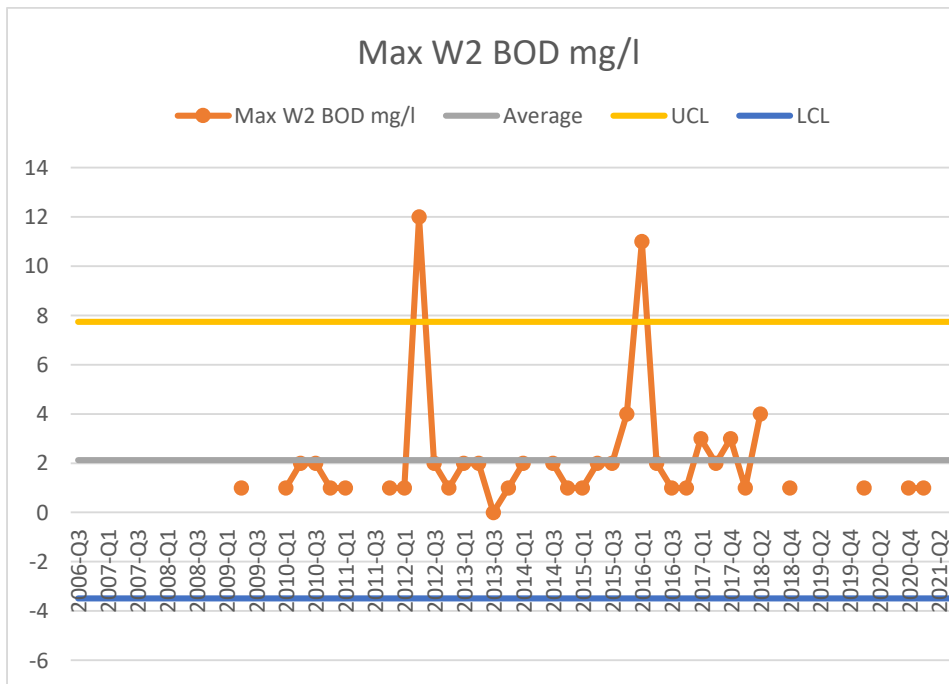
No storm water released to river in 2022

Results in control and within permit limit (<9)



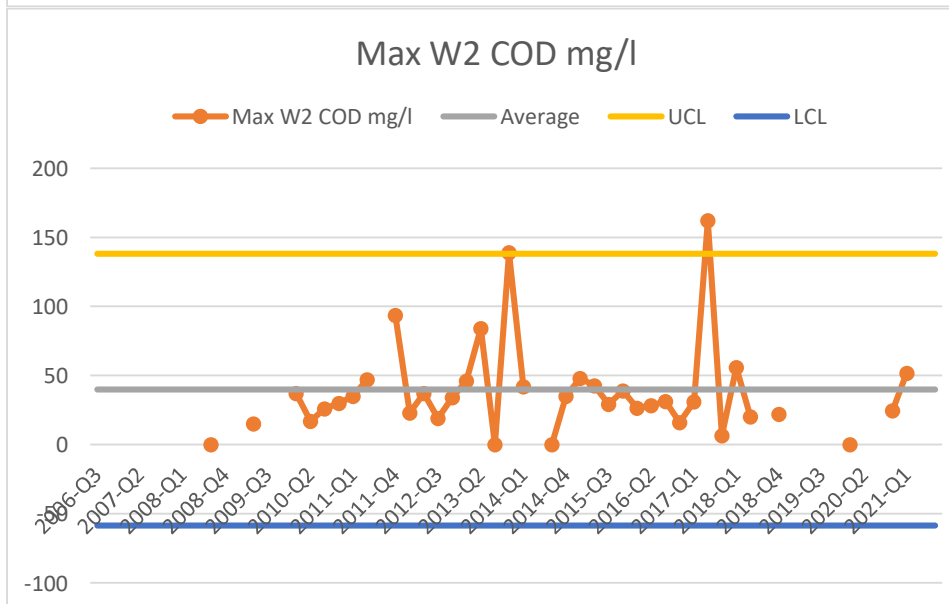
No storm water released to river in 2022

Results in control and within permit limit (30 mg/l)



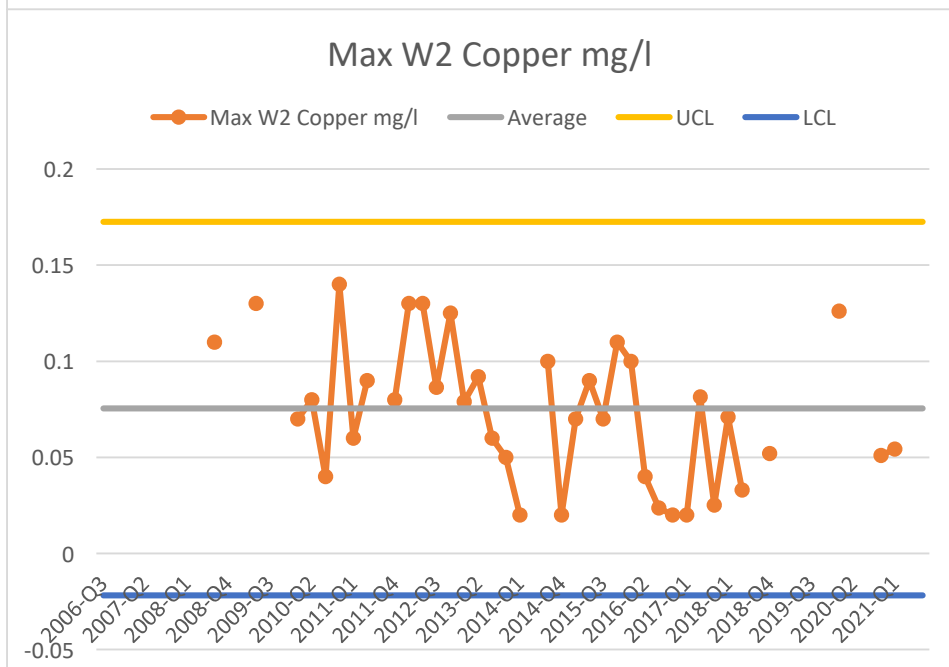
No storm water released to river in 2022

Results in control and within permit limit (20 mg/l)



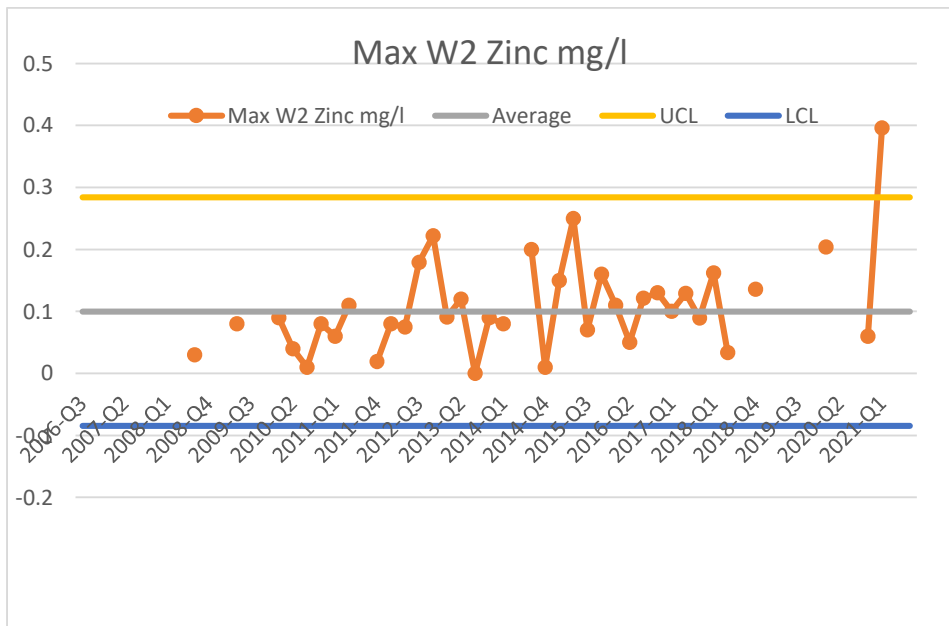
No storm water released to river in 2022

Results in control and within permit limit (125 mg/l)



No storm water released to river in 2022

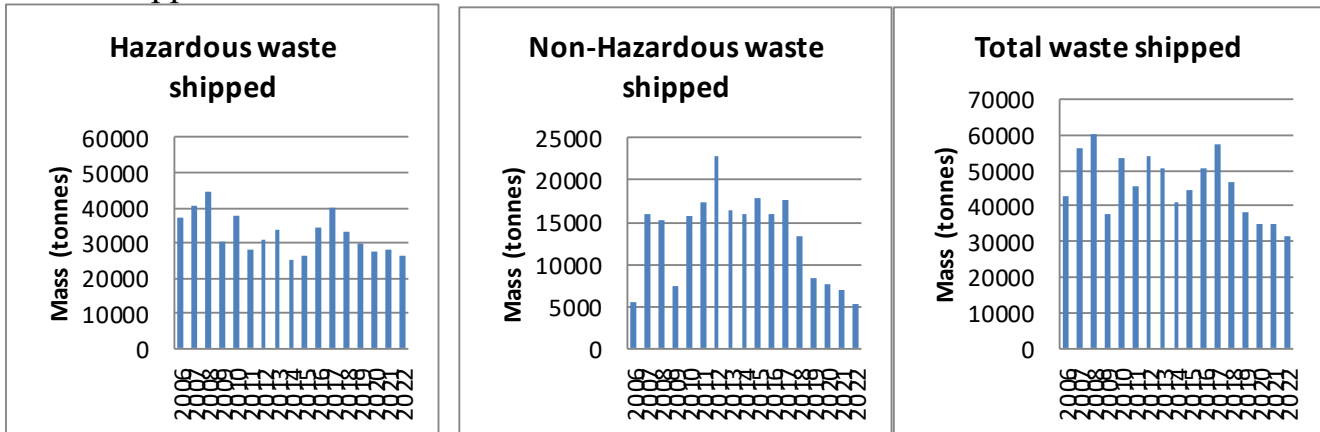
Results in control and within permit limit (0.15 mg/l)



No storm water released to river in 2022

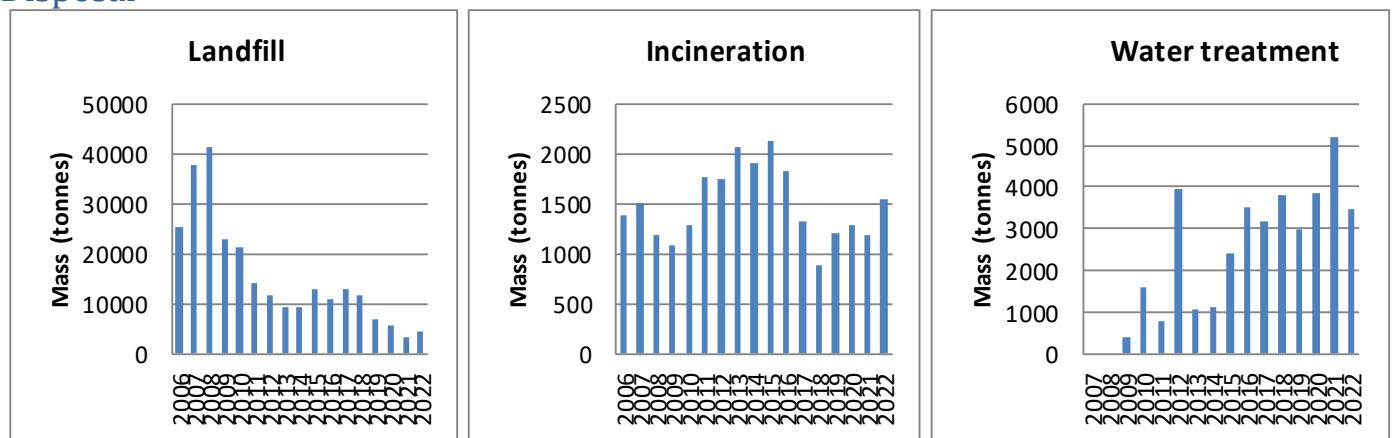
Waste

Waste shipped from the site in 2022 was as follows:

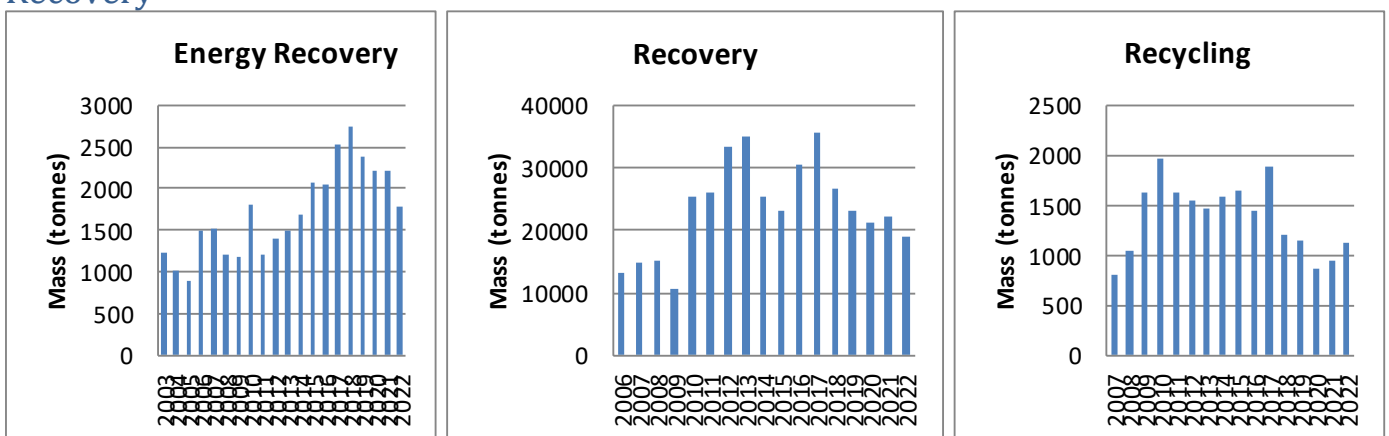


Waste shipments were slightly lower in 2022 over 2021 due to slightly lower production.

Disposal



Recovery



- A slight shift from Energy recovery to Incineration as we are no longer able to send waste to Germany for Energy recovery and it has to be incinerated.
- Recycling saw a small increase from last year, but was more in line with previous years

Complaints

There were 5 complaints to the Barry Industrial complex helpline in 2022

- 4 noise complaints – 2 attributed to site operations, 1 for steam turbine at CHP plant and 1 for construction of tent by main car park.
- 1 dust complaint – this was not attributable to the chemical complex as the wind had been in the opposite direction when the dust had been observed.