# CLEM7 in-tunnel air quality

## Monthly trend report – September 2018

The table below sets out the in-tunnel air quality criteria for the Clem 7 tunnel as set out in the Coordinator General's Report.

- For the month of September 2018 no notable trends have emerged.

Table 1: In-tunnel air quality criteria

| Parameter | Criteria |
|---|---|
| Carbon monoxide (CO) | 70 ppm generally<br>90 ppm in peak traffic congestion |
| Nitrogen dioxide (NO$_2$) | 1 ppm (average) |
| Visibility coefficient (K) | 0.005 m$_{-1}$ for free flowing traffic (greater than 50km/hr)<br>0.007 m$_{-1}$ otherwise |

Notes:

1. Monitoring and measuring protocols for each criteria as set out in the PIARC guidelines, as current December 2009.

2. Peak traffic congestion occures when traffic flows are less than 10 km/h.

3. Visibility coefficient (K-value) may fluctuate with peak conditions.

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# Visibility

Figure 1: In-tunnel visibility extinction coefficient - Northbound (15 minute averaged data)
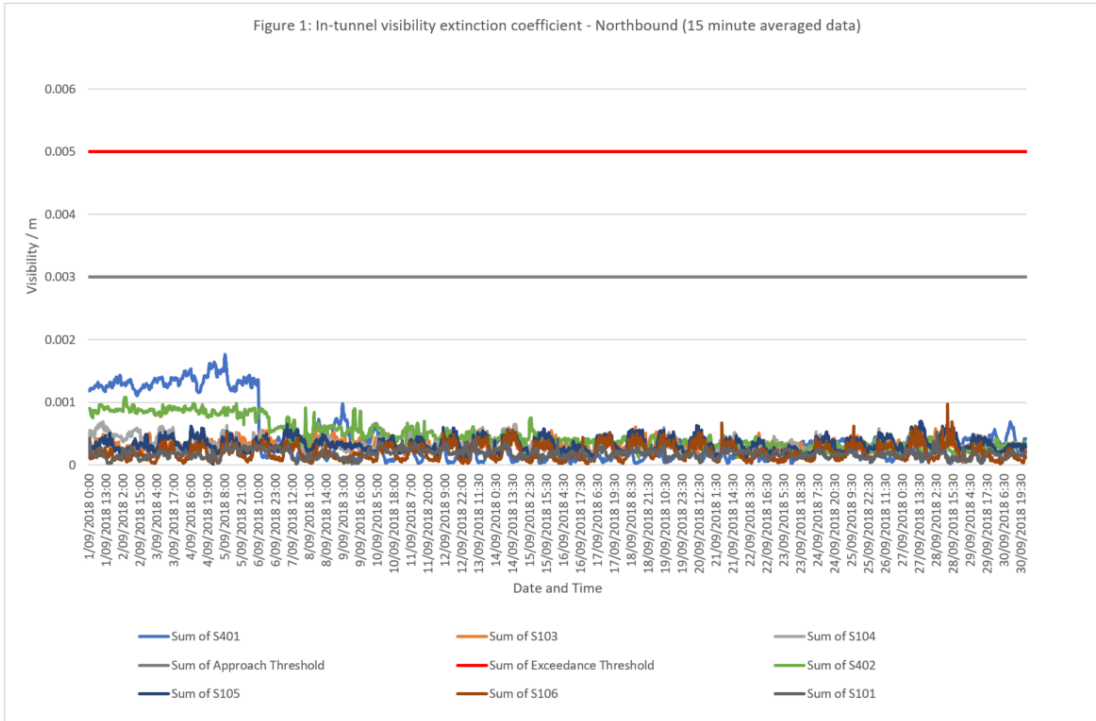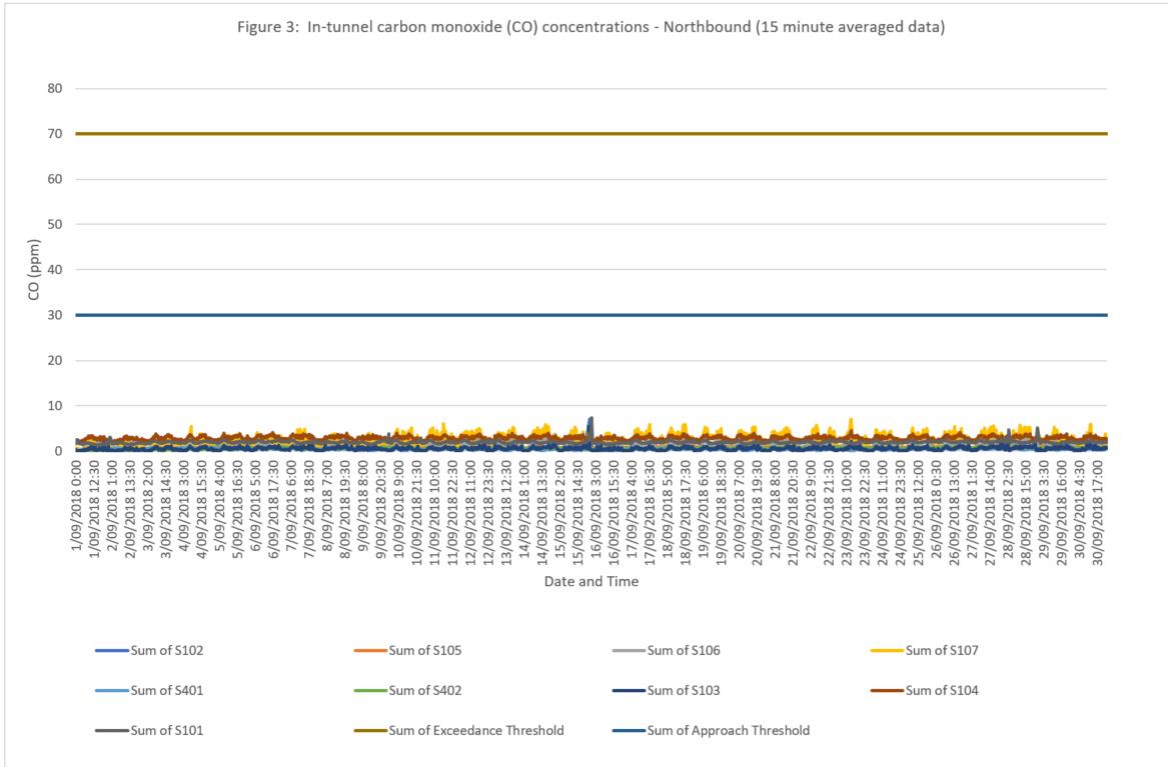


S402 Due to high baseline, sensor was removed from the tunnel for refurbishment and re-installed in early September during tunnel closure.
S401 Displayed erratic reading first week after September shutdown maintenance, however returned to normal operation.
S102 Sensor adjusted during September 2018 shutdown. Data displaying erratic readings has been invalidated due to instrument fault.
S107 Sensor adjusted during September 2018 shutdown. Data displaying erratic readings has been invalidated due to instrument fault.

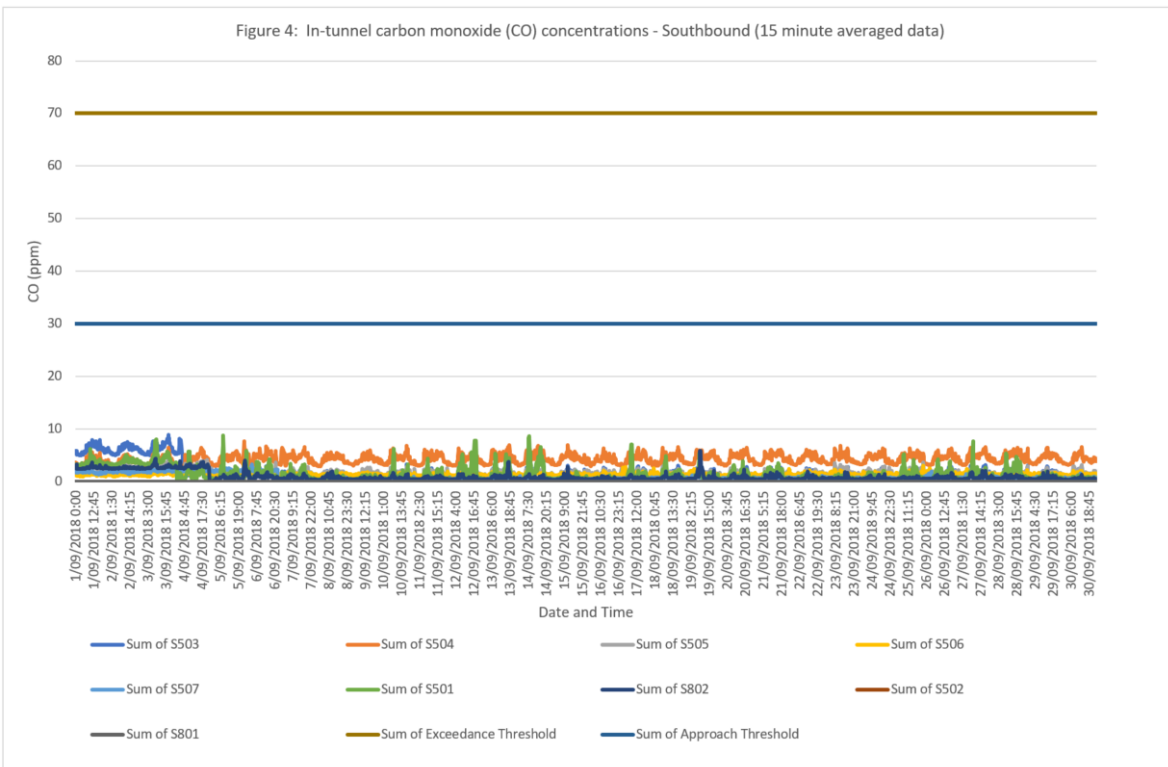Figure 2: In-tunnel visibility extinction coefficient - Southbound (15 minute averaged data)
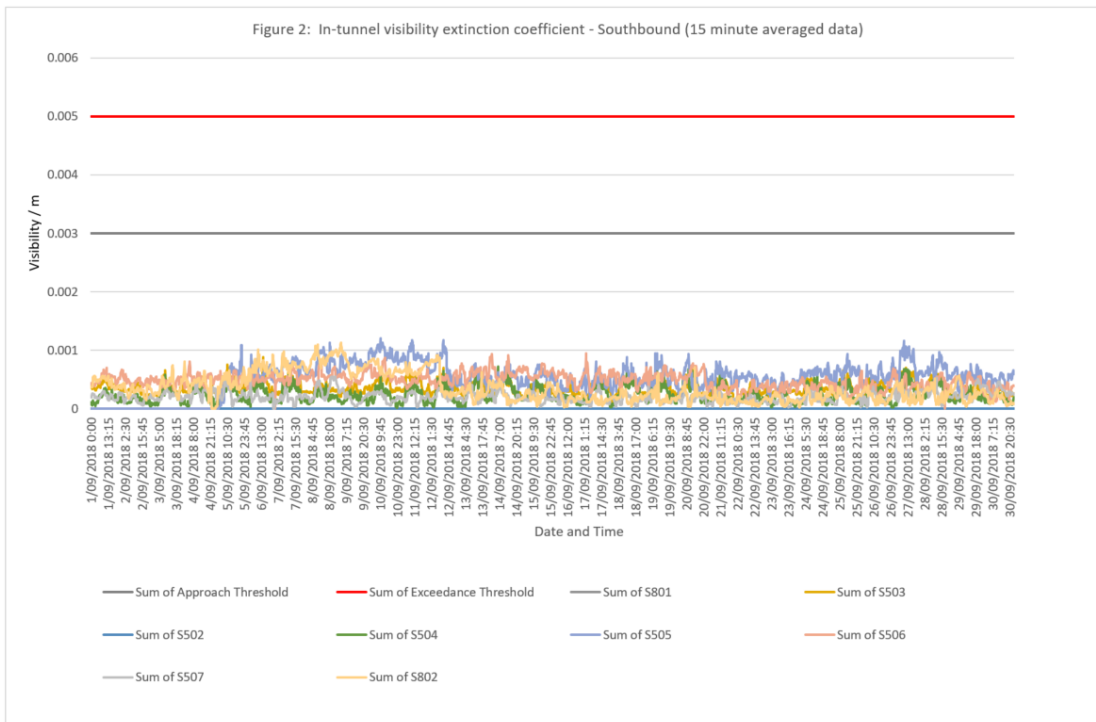


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S505 repaired during September closure. Returned to normal operation from early September.
S501 Sensor repaired during tunnel closure, however displaying erratic readings. Data has been invalidated for September due to instrument fault.
S502 and S801 reinstalled in tunnel during September shutdown, however further issues. No data available. To be repaired during November shutdown.

# Carbon monoxide



Figure 3: In-tunnel carbon monoxide (CO) concentrations - Northbound (15 minute averaged data)

No comments.



Figure 4: In-tunnel carbon monoxide (CO) concentrations - Southbound (15 minute averaged data)
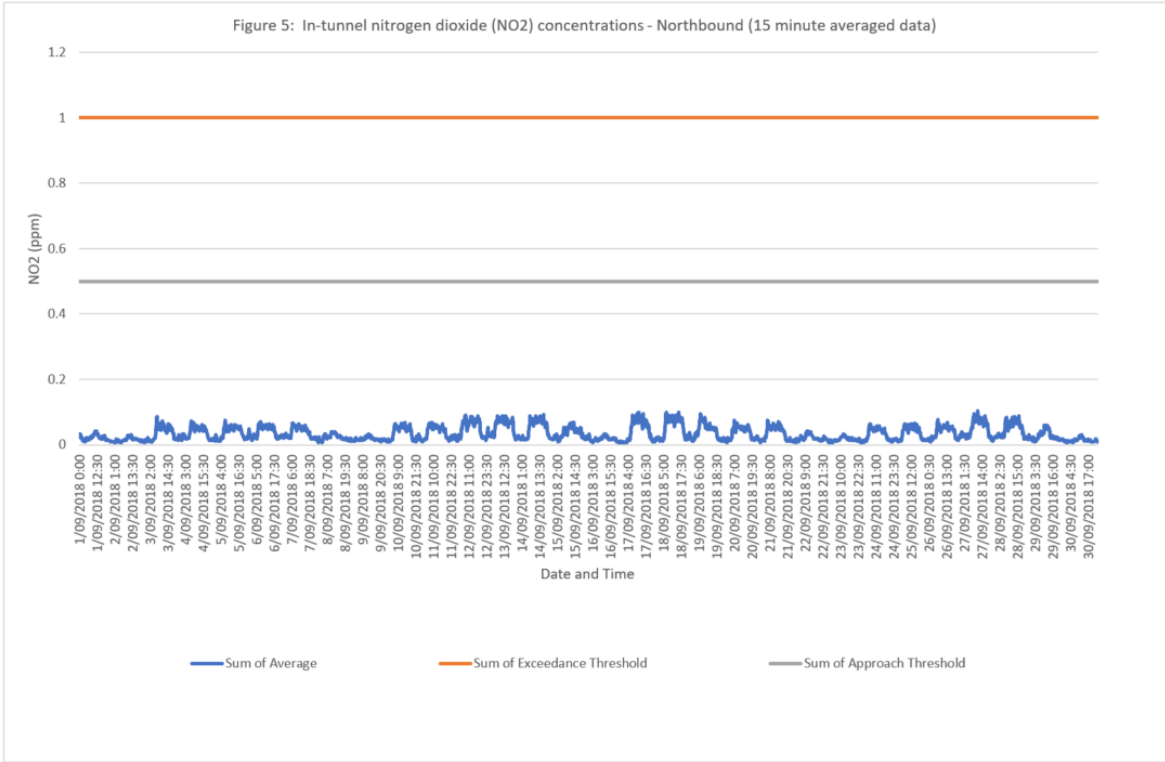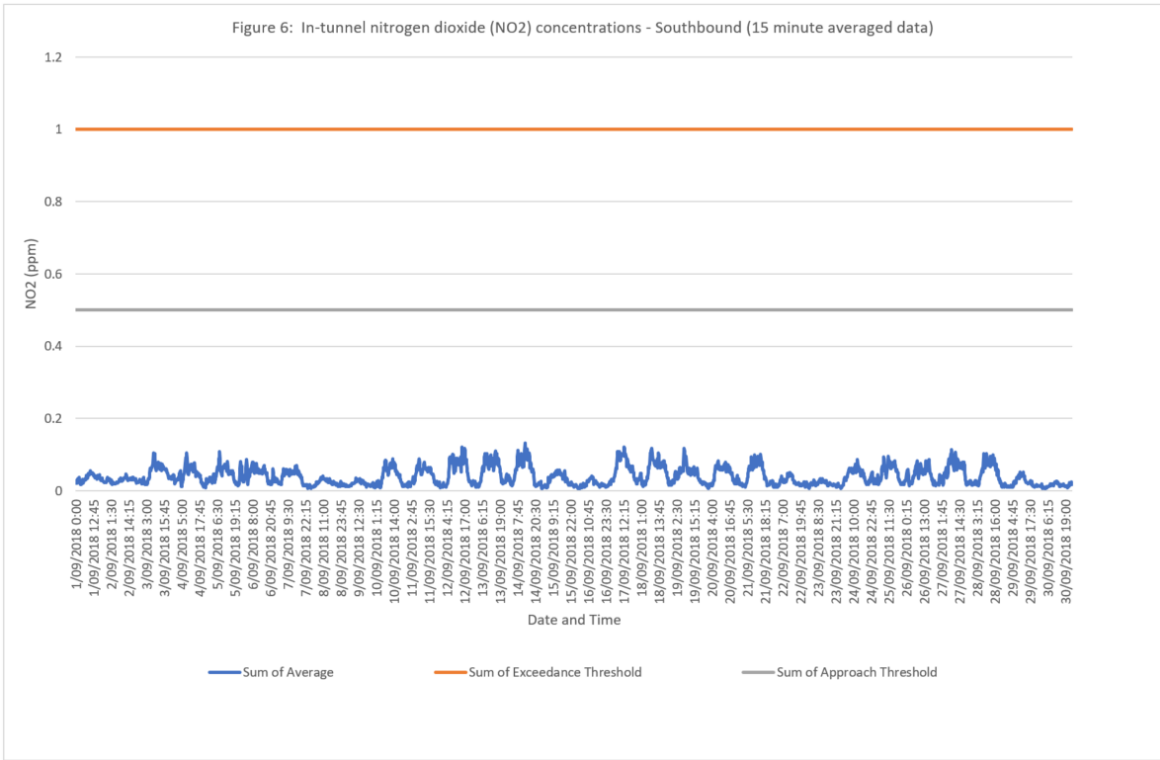
S504 displaying high baselines. Corrective maintenance performed during October tunnel closure.
S502 and S801 Instruments were re-installed in early September 2018 during tunnel closure.
S802 and S503 displaying high baselines, adjusted during September tunnel closure.

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# Nitrogen dioxide



Figure 5: In-tunnel nitrogen dioxide (NO2) concentrations - Northbound (15 minute averaged data)

S402 Sensor was re-installed in early September during tunnel closure.



Figure 6: In-tunnel nitrogen dioxide (NO2) concentrations - Southbound (15 minute averaged data)

S502 and S801 removed from tunnel for refurbishment and re-installed in early September during tunnel closure. Further issues. To be completed during November shutdown.
S501 Corrective maintenance was performed in early September at tunnel closure. Sensor displaying high baseline to be investigated during November shutdown.
S506 Sensor displaying high baseline to be investigated during November shutdown.