

CEMS Fault log

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MRI FT in back flush due to alarm

20/02/26 - 09:05 Fault occurred on standby.

Symptoms

The standby was stuck in a loop of.

MIR FT – In measure / Dwell

In this state the oxygen value was 19/20 dropping to around 4 before changing to below.

MIR FT – In back flush due to alarm

When it changed over to this the oxygen level began to rise to 19/20 along with the backflush flowmeter passing, before finally going back to above.

Repair

Since the fault had occurred during the daily background check I initiated one manually.

The system ran through its background check and was then switched back over to continuous measure.

Once the continuous measure had done its flush the fault had cleared and the standby rack was back in.

CEMS Master and slave not talking (Purple readings)

20/02/26 - 14:00 Failed connection between CEMS master and Slave pc causing purple/no readings on DCS.

Symptoms

No connection between CEMS and DCS causing no readings to come through.

Repair

C + I called and instructed to reset CEMS master computer and CEMS slave computer to re-establish connection.

Update

- 1) Both master and slave computers have been updated to only try and update between 1000 and 1400 with a warning message beforehand allowing people to plan for the software update / restart.



03/03/2026

The issue is that CDAS is using up all of the available RAM that it can use (4Gb is available per program). When the program starts it is using around 1.5Gb, which slowly increases over time until it runs out.

The part of the program using the most RAM is Data Visualisation, which is the part that displays the live data. The most likely causes, I believe, are either a mismatch between the master & slave configuration or regular repeat alarms being generated and logged.

05/03/2026

I've copied the configuration from the Master to the Slave and I've setup a performance monitor to log the memory usage. I'll connect in again later today and tomorrow morning to see how the memory usage is looking.

CEMS Fault A=0pts S=Low mV (reading on FID)

23/02/26 - 09:00 Analyser 1 FID showing 0 Amplification and low signal mV.

Symptoms

Analyser 1 FID showing 0 Amplification and low signal mV also noted HTC was reading at -3.5 MG/M3.

Repair

C+I In to look at FID, fully cleaned and back operational.

Update

- 1) Fault reoccurred, C + I back in and replaced the amplifier card within the FID, Low mV signals were not being amplified.
- 2) This issue happened again on the 24/06/2026 and the 28/06/2026. It is believed that has started to happen since the Line 1 analyser was set to do a Z.Ref every 6 hours rather than every hour (Which is how to other analysers run). Will contact C+I to investigate.

Unable to pass QAL 3

19/02/2026 - Ongoing issues with the CEMS when trying to complete QAL 3s.

- 19/02/2026 Attempted to complete QAL 3, however Propane on Standby and HCl on Line 2 was unable to pass.

23-25/03/2026 - Line 1 Analyser faults as above.

- 02/03/2026 - attempted QAL 3, Propane unable to pass on standby. multiple attempts carried out.
- 04/03/2026 Attempted QAL 3 propane failure, recalibration of analyser for H3C8.
- 05/03/2026 Attempted QAL 3 old, failed data for propane excluded allowing standby to pass on QAL 3. Issue with HCl on line 2, old failed data excluded for HCl and analyser calibrated but still getting failures for SPAN.
- 06/03/2026 Fault finding HCl gas line 2, bottle store data updated, gas regulator adjusted and multiple attempts at QAL 3 for HCl, graph looks allot steadier but still not passing.

Symptoms

Standby Propane failure.

Line 2 HCl Failure.

Actions

Recalibration of the FID.

PC bottle store update

The bottle updates are done when putting a new calibration bottle in.

View > Data Collection Module > Edit > Gas Store > View Bottle Details

From here you can enter a new expiry date for the bottle that has been replaced and update the ppm values of the gasses within the bottle (if different from what is already installed). The values are found on the label of the new calibration bottle.

Bottle regulators

If necessary to change/check the regulator pressure this should be done when the analyser is pulling in the gas from the bottle.

Gas can be injected by following the first steps in recalibration or when starting a QAL3.

Standby analyser QAL 3 failure

10/06/2026 - Standby analyser all gasses pass apart from propane, data not being passed from analyser to the data collection module, C+I Investigating issues. Actual readings are good just not being transferred across.

Symptoms

No data for propane being transferred from the analyser over to the data collection module on the standby analyser.

Actions

C+I Investigating issues, they believe there may be a leak on the system causing data to be incorrectly displayed on the data collection module on CDAS as the actual analyser shows that propane is being read at the correct concentration.

CEMS Auto PC selection

13/05/2026 - CEMS Master PC crashed causing the system to swap over to the Slave PC, upon trying to reestablish connection to run from the Master the connection between the DCS and CEMS PCs dropped out.

Symptoms

Loss of connection between CEMS PCs and DCS.

Actions

C+I was onsite when the issue occurred, upon investigation he found that the connection between DCS and CEMS PCs would not establish unless the system was put into manual mode and the Master PC selected for readings.

Update

- 1) We are currently awaiting a date for both C+I and Emmerson to be onsite at the same time to allow for them to look at the signal diagram for CEMS and see how they act under fault conditions and how auto PC selection can be reinstated.

Line 1 Duty Analyser Bouncing HCL Readings

21/06/26 - Operators in the control room reported discrepancies between the L1 and L2 analysers for HCL readings. And noted the L1 HCL readings were spiking constantly.

Symptoms

Spiking readings from the L1 Analyser.

Actions

Upon investigation it was found the thermal cover had been left off in the L1 duty HoFi probe box. This was causing a cold spot on the system and making HCL Pool in the line for the L1 analyser. The thermal cover was refitted and given an hour to heat up to operating temperature. After this time the spiking had stopped and the HCL readings were back on a steady curve.