

Auchencorth Moss NMVOC 2024

James Dernie

07/04/2025

Current status

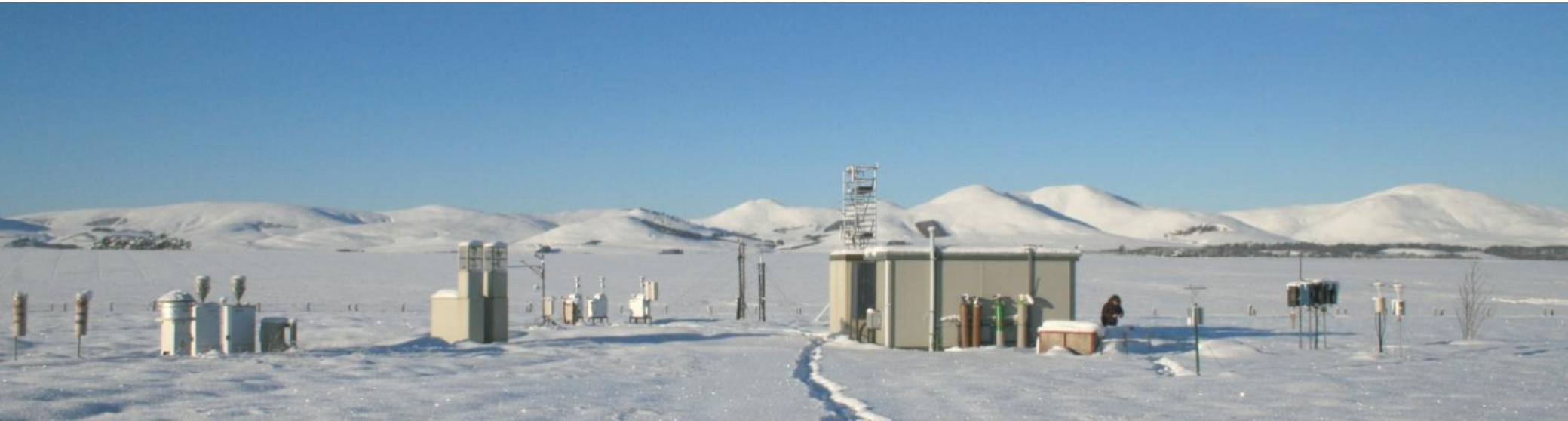
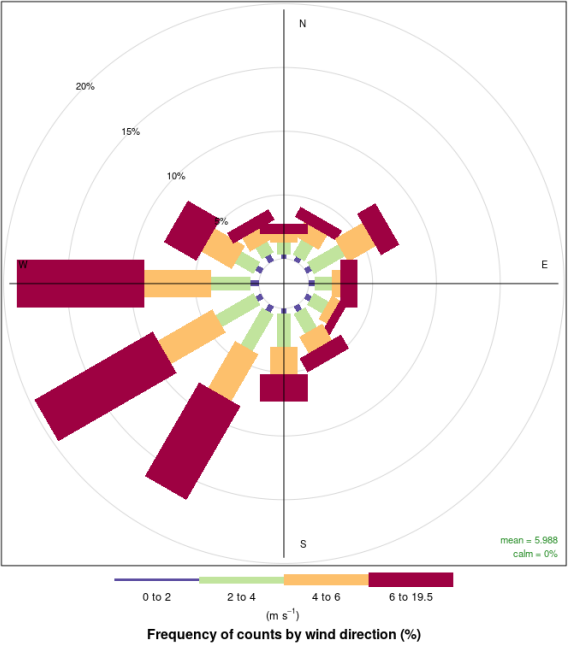
Main problems

Anomalies

Changes during the last year

New instrumentation

Current status. Operational. Alt 260m Inlet height 4m



Main problems

- There was a gap from 15th February until 22nd February 2024, this was caused by an under qualified person carrying out PAT testing on equipment at the station. UKCEH asked the individual to leave site after several pieces of equipment didn't work again following tests. Following this incident, the instrument needed a new fuse, which was installed by the PerkinElmer engineer. The touch screen went blank.
- There were many problems with the instrument following the issue above, some of the configured set points were not met, such as the flow rate
 - The flow rate became less stable and was replaced on 29th March.
 - The vacuum pump was replaced on 8th April
 - On 1st May the PerkinElmer engineer visited again to replace some components, but the flow rate read 32 ml/min.
 - The engineer revisited on 22nd May, 5th June and 26th June to try various things after ordering parts from PerkinElmer USA. Still the instrument was not working properly, Ricardo asked them to remove the thermal desorber and take it to the workshop at PerkinElmer UK.
 - Eventually it was discovered that the power supply switching board needed to be replaced.
 - Data resumes on 27th July.

Anomalies

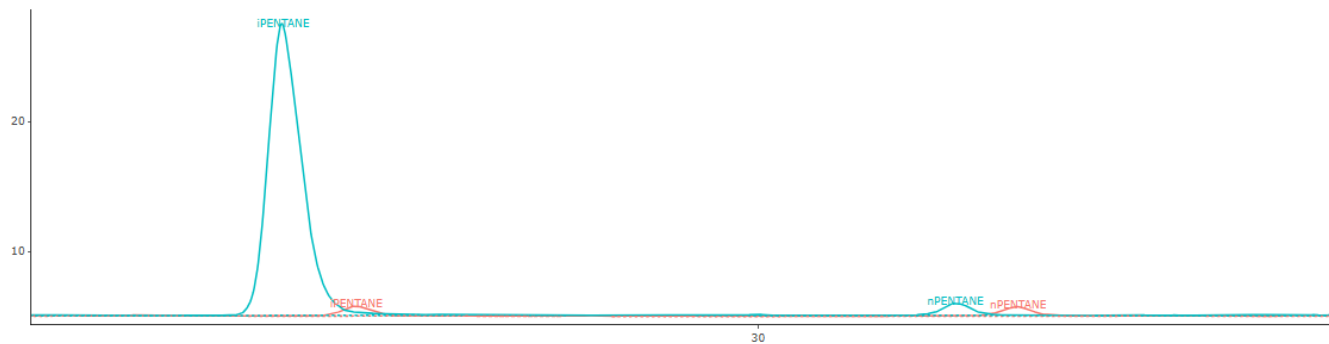
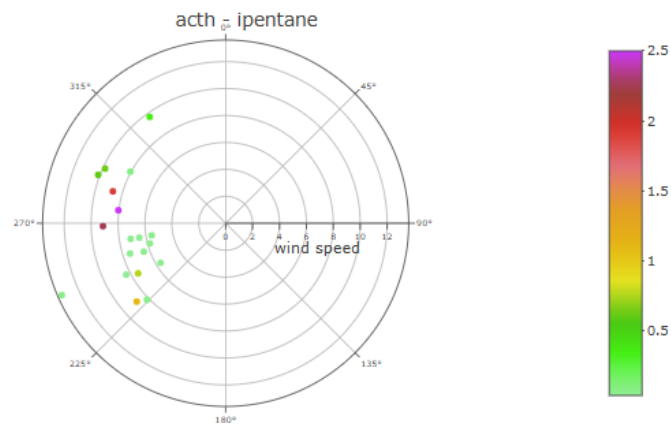
- Largest spike on 13th September for Propane and other alkanes



Anomalies

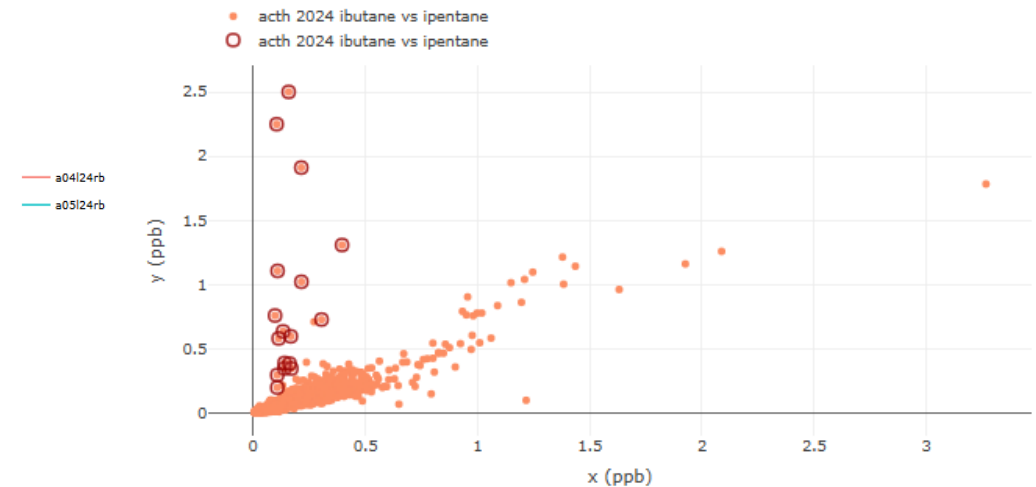
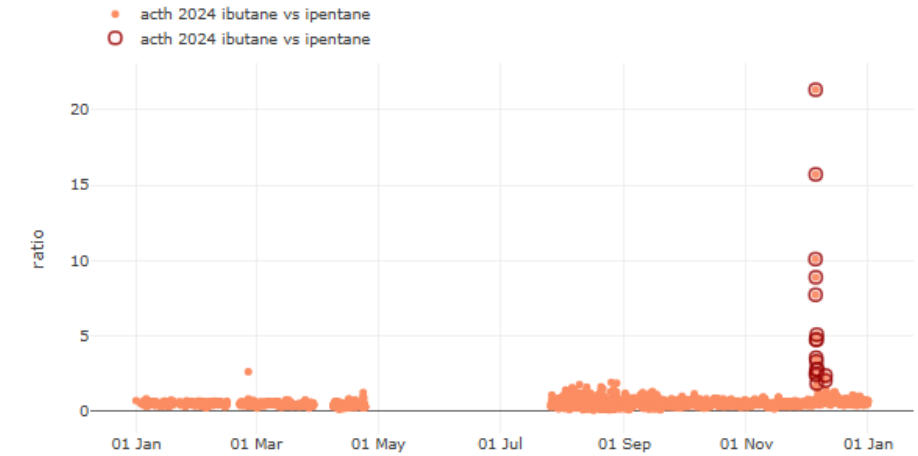
- One example of unusual concentrations
- Largest spike on 5th December for iso-pentane

VOC
iPENTANE



X
ibutane

Y
ipentane



Changes during the last year

- No significant changes to the instrument in the last year, but we have decided to stop reporting pentene and butene isomers from 2025 onwards at rural locations as there is rarely anything to detect.

New Instrumentation

- Ricardo have been involved in two trials for a commercially available instrument that can measure NMVOCs and OVOCs, where parts can be guaranteed for ~10 years and a manufacturers support contract can be put in place.
- We had to sign an NDA as it's a competitive procurement exercise, so we're not allowed to say anything about the results yet, sorry!
- At present, in our view, a single commercially available analyser does not exist 'off the shelf' that can measure OVOCs without compromising the NMVOCs in some way.

Thank you

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