Investigation into Odour Complaints Received from Kill, Co. Kildare

– Interim report –

25th September 2025 to 30th April 2026

19/05/2026

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Executive Summary

Since May 2024, the Environmental Protection Agency (EPA) has undertaken an extensive programme of investigations and monitoring in response to recurring reports of creosote odour in Hillfort, Kill, Co. Kildare.

Odour impact assessments conducted throughout 2024, 2025, and 2026 to date indicate that off-site creosote odours have originated from two sites, Scanpole Ireland Limited and the adjacent ESB Pole Storage Yard at different times. A greater proportion of confirmed off-site odour events were associated with the ESB Pole Storage Yard, including periods when creosote treatment activities were not taking place at Scanpole. Kildare County Council is the appropriate regulatory authority for the ESB Pole Storage Yard, and they have been provided with details of the EPA's assessments.

To evaluate off-site creosote impact, the EPA deployed diffusion tubes across both sites and within the Hillfort residential estate. Laboratory analysis of these diffusion tubes demonstrated that concentrations of benzene were below the annual Air Quality Standard at all monitoring locations. All other monitored substances were below their calculated Environmental Assessment levels. These findings indicate that, while odours were reported by residents, monitored pollutant concentrations did not exceed applicable environmental or public-health thresholds.

In parallel, the EPA implemented a network of electronic Noses (eNoses) to provide continuous monitoring of ambient air composition. During the reporting period, eNose alert events did not correspond with odour complaints, and alerts were typically limited to sensors located in close proximity to operational activities on Scanpole Ireland Limited and creosote treated poles storage locations on the ESB site. The EPA will continue to utilise eNoses to assess changes during seasonal variation.

Analysis of the temporal distributions of complaints shows higher complaint volume during warmer months, however no consistent relationship was identified between complaints and temperature, wind direction, or day of the week. Several peaks in complaint numbers were linked to isolated dates rather than recurring conditions.

The EPA will continue odour assessments, enforcement activities, and ambient monitoring throughout 2026. This includes additional diffusion tube deployments, continued operation and evaluation of the eNose network, and a programme of targeted and unannounced odour assessments under varying meteorological conditions. The EPA will also continue coordinated engagement with Kildare County Council and will also maintain communication with the HSE in relation to any health concerns. This integrated monitoring and enforcement approach will support ongoing assessment of odour impacts and regulatory oversight of both sites.

Introduction

Since May 2024, the EPA has received 215 odour complaints, predominantly from residents of Hillfort Estate, Kill, Co. Kildare, describing a strong chemical, creosote odour. EPA investigations identified two potential odour sources: storage of creosote treated poles on both the ESB Pole Storage Yard and on the Scanpole Ireland Limited site, as well as removal of creosote treated poles from the treatment vessels on the Scanpole Ireland Limited site. Hillfort Estate is located approximately 3km west of both these sites, as shown in figure 1 below.

Figure 1. Scanpole Ireland Limited, ESB Pole Storage Yard, and Hillfort Residential Estate

Scanpole Ireland Limited operates a timber treatment facility in Kill, Co. Kildare under IE Licence P0325-02. The facility has operated since 1968 and specialises in the creosote treatment of utility poles. Creosote, a wood preservative with a strong distinctive odour, is applied in enclosed pressure chambers. Treated poles are subsequently stored on-site to dry before distribution.

The site was first granted an IPPC EPA licence in December 1998, to P.D.M Limited, now operating under the business name of Scanpole Ireland Limited. A revised Industrial Emissions (IE) licence was granted in 2019 which remains in effect.

Adjacent to the Scanpole facility is an ESB Networks storage yard, which holds both Scanpole treated poles and third-party treated poles imported into Ireland. As the ESB Pole Storage Yard does not conduct any licensable activities under the EPA Act 1992 as amended, Kildare County Council is the appropriate regulatory authority. Figure one below shows the Scanpole Ireland installation outlined in red and the ESB pole storage yard outlined in blue.

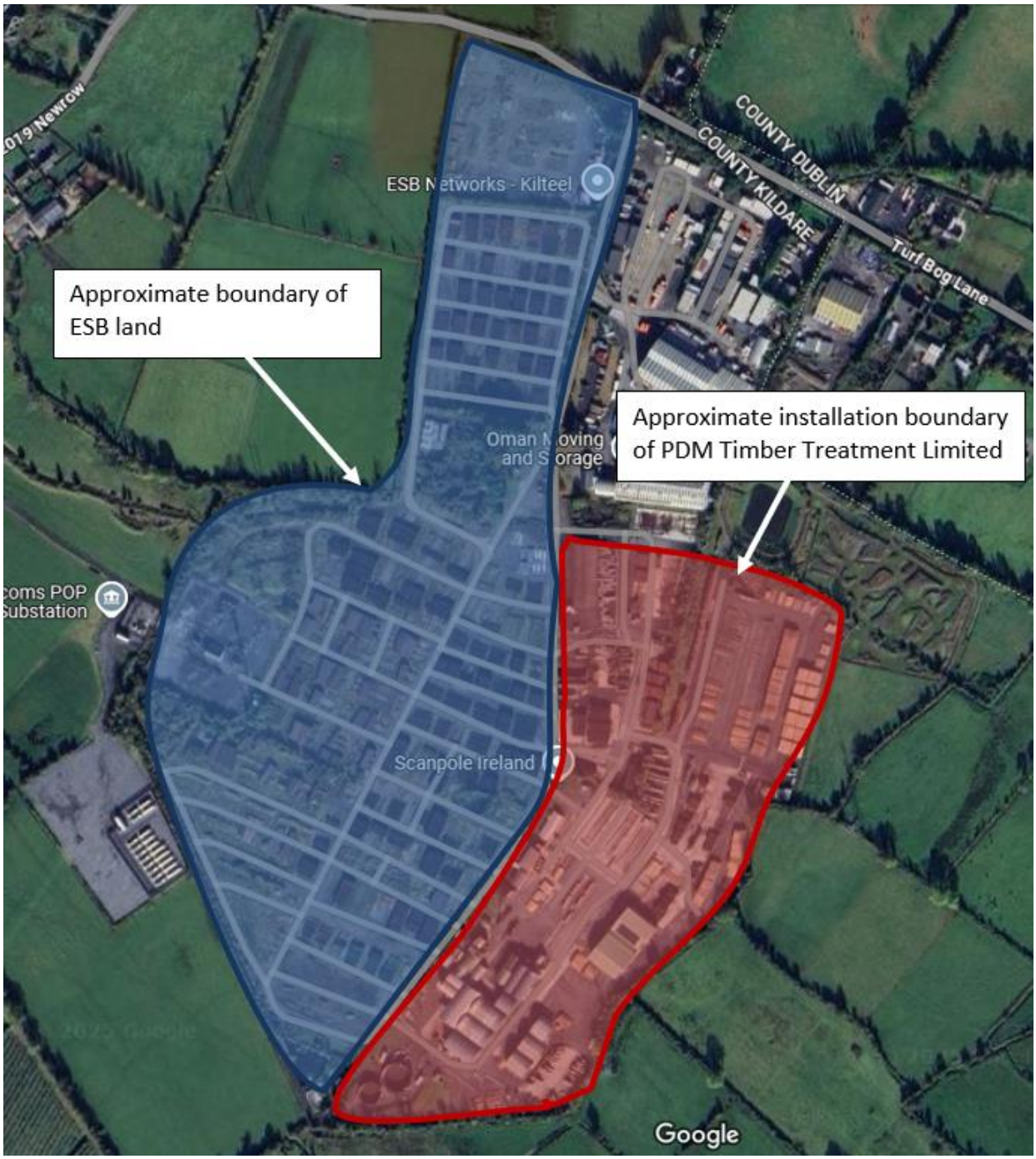

Figure 2. Scanpole Ireland Limited and ESB Pole Storage Yard

Summer 2024 Odour Investigation

Six odour complaints from Hillfort, Kill, Co. Kildare were received by the Agency during the first week of May 2024. These complaints described a strong creosote odour. In response, an Agency inspector carried out an odour impact assessment[1] in the vicinity of IE Licence P0325-02 Scanpole Ireland Limited on 05/06/2024. Persistent, moderate creosote odour was detected at one sensitive receptor location beyond, and downwind of, the Scanpole boundary.

During the subsequent site visit, odours consistent with those detected off-site were experienced upwind of the Scanpole Ireland Limited installation boundary. The odours detected off-site were determined to not have originated from the Scanpole Ireland Limited installation. Additionally, no treatment using creosote took place at the Scanpole Ireland Limited installation during that week due to the scheduled downtime and maintenance of the pressure vessels used in the creosote treatment process. The upwind source of creosote odour was determined to be the ESB Pole Storage Yard. The results of this site visit, along with the complaints received during that week were forwarded to Kildare County Council for investigation.

In July 2024, the Agency received two further complaints describing creosote odour in Kill, Co. Kildare. In response, an odour assessment was undertaken by an Agency Inspector on 09/07/2024. Persistent, moderate creosote odour was detected at 1 no. sensitive receptor locations beyond, and downwind of, the Scanpole Ireland Limited boundary. During the subsequent site visit, odours consistent with those detected off-site were experienced on the Scanpole Ireland Limited site at the treated timber pads and at a treatment vessel when a charge was being removed. During this inspection, creosote odour was also perceptible at the ESB Pole Storage Yard which was upwind/cross wind of Scanpole Ireland Limited at that time. .

A further 20 odour complaints describing creosote-type odours in Kill, Co. Kildare were received by the EPA during the remainder of 2024. To investigate these complaints, the EPA carried out odour impact assessments on 19/11/2024 and 11/12/2024. During the post-assessment site visit on 11/12/2024, and as part of a scoping project, eNoses were deployed to detect variations in reactive gas concentrations in ambient air and to provide qualitative insights into air composition at both the Scanpole Ireland Limited and the adjacent ESB Pole Storage Yard.

This scoping project aimed to evaluate the suitability of Electronic Noses (eNoses) for detecting odours associated with the sites. eNoses are compact sensor-based instruments capable of identifying subtle changes in reactive gas concentrations. As part of the preliminary assessment, measurements were collected using a mobile eNose at 22 locations across both sites. The eNose monitoring project is described in further detail later in this report.

[1] In accordance with EPA Air Guidance document AG5 (Odour Impact Assessment Guidance for EPA Licensed Sites

2025 Odour Investigations

Over the course of 2025, the EPA received a total of 152 complaints regarding creosote odours in Kill, Co. Kildare. In response, the Agency undertook a series of enforcement and investigative actions which are described in further detail below. Further details in relation to enforcement history of the Scanpole licence (IE Licence P0325-02) is available on **LEAP Online**.

March

Three odour complaints were received in March 2025 describing a creosote odour in Kill, Co. Kildare. In response, the EPA undertook an odour assessment on 13/03/2025. No odours originating from the Scanpole installation were detected downwind during this assessment.

A second odour assessment was carried out approximately 3 km downwind on the same day to coincide with the removal of a creosote treated charge from the treatment vessel at12:30. An intermittent, moderate creosote odour was detected between 12:35 and 12:50 at the downwind location, no odour was detected thereafter.

As part of the scoping project, an eNose assessment was used during the removal of the creosote treated charge to evaluate the suitability of eNoses for detecting odours associated with the site. A mobile eNose was deployed directly downwind of the treatment vessel, and the sensor responsive to aromatics, hydrocarbons with functional groups, and sulphur containing gases recorded an increase beginning at 12:33, with two peaks at 12:35 and 12:44.

April

A total of 18 complaints was received in April 2025 describing creosote odours in Kill, Co. Kildare. An odour impact assessment was completed on 08/04/2025. During the off-site odour assessment, no odours consistent with Scanpole Ireland Limited activity were detected.

May

A total of 56 odour complaints was received in May 2025 describing creosote odour in Kill, Co. Kildare. In response, the EPA carried out a site visit on 23/05/2025 to discuss ongoing odour complaints with the licensee and to determine whether the proposed monitoring locations for eNose installation had suitable infrastructure in place.

June

Eighteen complaints were received in June 2025 describing creosote odour in Kill, Co. Kildare. An odour assessment was undertaken on 25/06/2025 in accordance with EPA Air Guidance AG5. A persistent, strong creosote odour was detected at one sensitive location beyond and downwind of the Scanpole installation boundary. During the subsequent site inspection, creosote odour was detected immediately downwind of stored treated poles on the Scanpole site. However, odours consistent with those experienced off-site were not detected immediately downwind of the Scanpole installation boundary. Stronger odours consistent with those detected off-site were

recorded downwind of the adjacent ESB Pole Storage Yard, where a persistent and very strong creosote odour was experienced.

The licensee confirmed that no creosote-based production had taken place during the week commencing 23/06/2025 due to scheduled maintenance of the treatment vessels. At the time of the assessment, Treatment Vessel 1 was operating with Tanasote oil only. Based on these findings, the EPA determined that the off-site odour did not originate from Scanpole Ireland Limited and the ESB Pole Storage Yard was identified as the source. The EPA forwarded the inspection findings to Kildare County Council for investigation.

July

Sixteen odour complaints were received in July 2025. A meeting between the EPA and Kildare County Council was held on 11/07/2025 to discuss ongoing odour issues associated with the ESB pole storage yard and Scanpole installation. A meeting between the ESB and the EPA took place on the same day to review actions being taken by the ESB to address off-site odour impacts. A meeting between the EPA and HSE Public Health Dublin Midlands was held on 25/07/2025.

August

Twenty-three odour complaints were received in August 2025. An odour assessment was undertaken on 19/08/2025. Intermittent, faint creosote odours were detected at two locations beyond and downwind of the Scanpole installation boundary. During the subsequent site visit, faint creosote odour was detected on-site. However, odours consistent with those detected off-site were not experienced immediately downwind of the Scanpole installation boundary. Stronger creosote odours consistent with those detected off-site were identified at the adjacent ESB Pole Storage Yard. The inspector concluded that the off-site odours did not originate from Scanpole Ireland Limited. The EPA forwarded the inspection findings to Kildare County Council for investigation.

September

No odour complaints were received by the EPA in September 2025. The EPA installed a total of 14 eNose units across the Scanpole and ESB sites. Further detail of this eNose investigation project is provided further on in this report.

October

Eight complaints describing creosote odour in Kill, Co. Kildare were received in October 2025.

November

Six complaints describing odour in Kill, Co. Kildare were received in November. On 12/11/25 the EPA installed diffusion tubes at 18 locations at Scanpole Ireland Limited, the neighbouring ESB Pole Storage yard and in the residential estate of Hillfort, Kill, Co. Kildare. These diffusion tubes are discussed in further detail later in this report.

December

Four complaints were received in December 2025 over a two-day period describing creosote odour being experienced in Hillfort, Kill, Co. Kildare.

Complaint profile

The number of creosote odour complaints generally increases during the warmer summer months. Figure 3 below illustrates the total number of odour complaints received each month in 2025 alongside both the average and maximum monthly temperatures recorded by Met Éireann.[2]

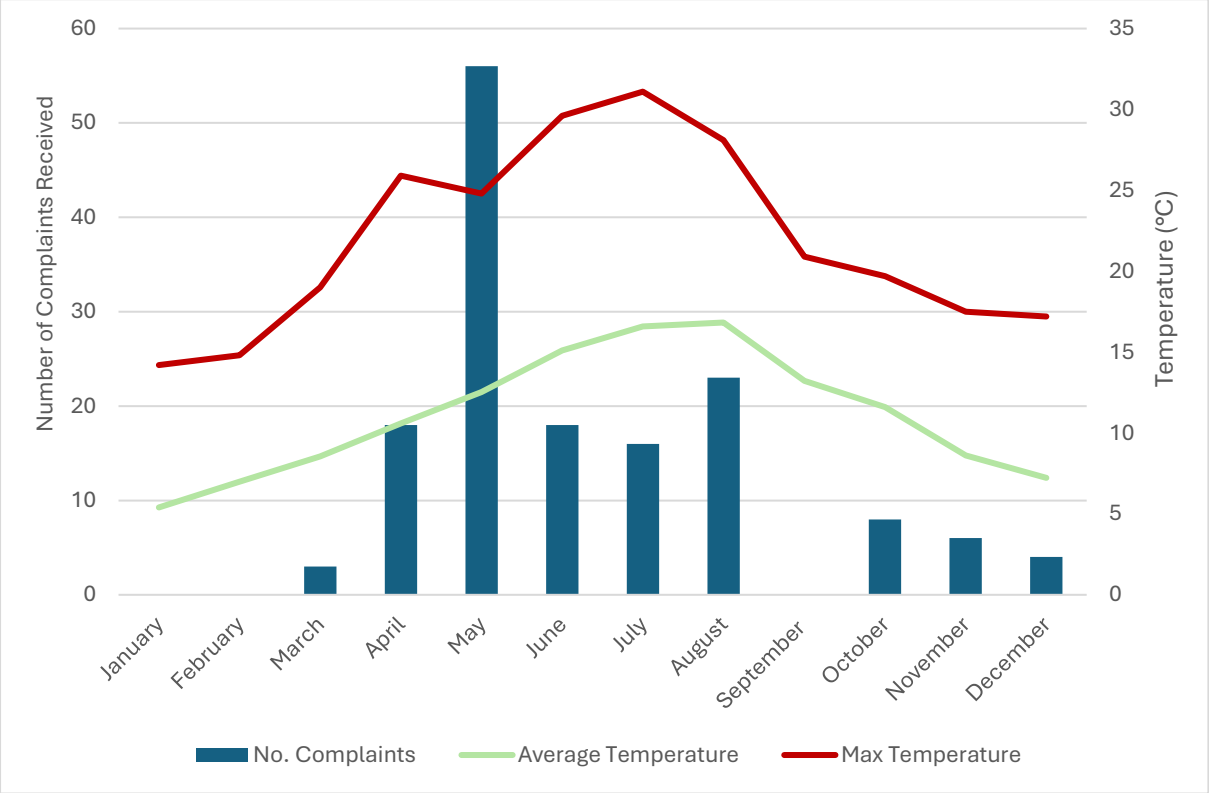

Figure 3. Total number of odour complaints received each month in 2025, shown with the average and highest temperatures recorded for each month.

2 – Met Éireann Annual Climate Statement 2025

An assessment of the 2025 complaints did not indicate any clear correlation between odour incidents and specific days of the week. As shown in Figure 4 below, complaints were distributed across the week. The higher number of complaints on Fridays was primarily due to clusters of reports submitted on three specific dates: Friday 2nd May, Friday 16th May, and Friday 20th June.

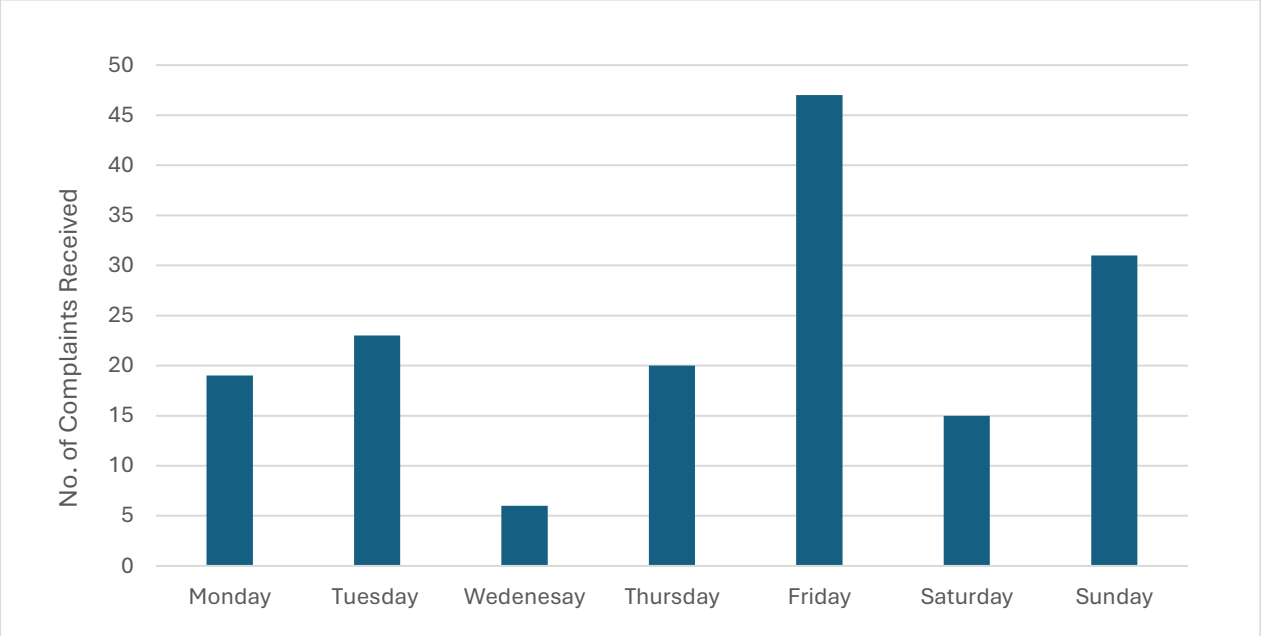

Figure 4. Distribution of Number of Complaints Received Across Days of the Week for 2025.

Table 1 below lists the ten dates on which the highest number of complaints were received, together with the maximum temperature and wind direction recorded on each day. Again, no consistent relationship is observed between temperature, wind direction, and complaint frequency.

Table 1. Dates with highest complaint numbers and associated weather conditions.

Date	Max Temperature	Wind Direction	No. Complaints Received
Friday 2nd May	16	S	16
Friday 20th June	26.1	NE	11
Friday 16th May	18.7	ENE	11
Tuesday 12th August	25.5	ENE	10
Sunday 18th May	17.8	ENE	9
Saturday 12th July	29.4	WSW	9
Monday 11th August	22.5	ENE	8
Sunday 9th November	14	ESE	6
Monday 19th May	14	E	6
Thursday 10th April	18.3	E	6

2026 Odour Impact Assessment Campaign

Between 8 January 2026 and 27 April 2026, ten odour impact assessments were undertaken in the vicinity of Scanpole Ireland Limited and the ESB Pole Storage Yard, with odour detected on seven occasions, as detailed in Table 2 below.

Where odour was present, it was most commonly characterised as "persistent and moderate" in intensity, with only one instance described as "intermittent and moderate." The recorded sources of odour were Scanpole Ireland Limited and/or the ESB Pole Storage Yard, with one occasion identifying the ESB site alone. Additionally, on six occasions where both sites were determined to be contributing to off-site odour, the ESB Pole Storage Yard was described as having the more intense odour, with Inspectors noting that this was likely due to the greater number of creosote-treated poles present on site.

Wind direction appears to be a contributing factor to odour detection. Off-site odour impact was predominantly confirmed during southerly, south-westerly, easterly, and westerly wind conditions. This is likely due to the close proximity of accessible downwind locations to both sites during these wind directions. Meanwhile, during northerly wind conditions, the closest accessible downwind locations is approximately 2km from both sites. This increased distance between the odour source and the location of the downwind odour impact assessment site allows greater dispersion of the odour.

Overall, the data indicates a recurring pattern of moderate, persistent odour impacts associated with both sites, influenced primarily by wind direction and spatial factors, and potentially by seasonal conditions.

Table 2. 2026 Odour Impact Assessment Details.

Date	Odour	Strength Odour	Wind Direction	Source
08/01/2026	No	N/A	Northeasterly	N/A
11/02/2026	Yes	Persistent & Moderate	Southerly	Scanpole & ESB
03/03/2026	Yes	Persistent & Moderate	Easterly	Scanpole & ESB
02/04/2026	Yes	Persistent & Moderate	South-westerly	Scanpole & ESB
07/04/2026	Yes	Persistent & Moderate	Southeasterly	ESB
08/04/2026	Yes	Persistent & Moderate	Westerly	Scanpole & ESB
13/04/2026	Yes	Persistent & Moderate	South-westerly	Scanpole & ESB
15/04/2026	No	N/A	Westerly	N/A
16/04/2026	Yes	Intermittent & Moderate	South-westerly	Scanpole & ESB
27/04/2026	No	N/A	Northerly	N/A

eNoses Monitoring Programme

In December 2024, a scoping project was conducted at the Scanpole installation and the ESB pole storage yard to assess the suitability of Electronic Noses (eNoses) for detecting odours associated with these sites. As part of the preliminary assessment, measurements were collected using a mobile eNose at 22 locations across both areas. The results of this initial survey were then reviewed with the eNose supplier to confirm that the technology was appropriate for the intended application.

In September 2025, a total of 14 eNose units were installed across the Scanpole and ESB sites. The eNose is a compact instrument equipped with a sensor array capable of detecting small variations in reactive gas concentrations in ambient air. These devices operate continuously, sampling the surrounding air and providing qualitative information on changes in air composition.

The purpose of deploying the eNose network was to establish continuous odour monitoring across both the Scanpole Ireland Limited site and ESB Pole storage site, with the objective of capturing any fugitive odour emissions in real time. Each eNose transmits data wirelessly, allowing real-time access to monitoring results, and can issue automated email alerts when significant changes in ambient air composition are detected. The locations of the installed eNose units are illustrated in Figure 5 below. Further details in relation to the operation of eNoses is included in Appendix 1.

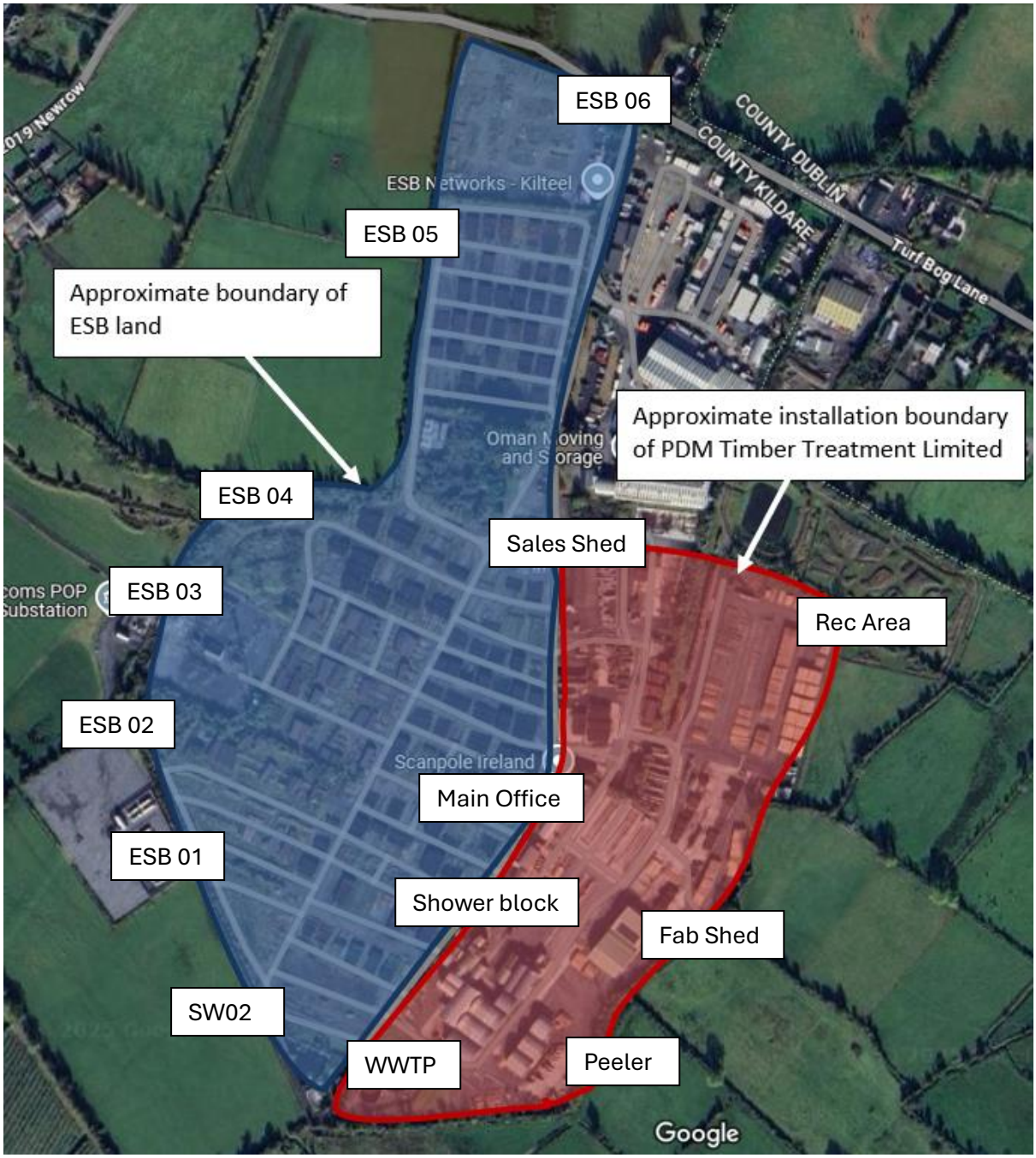

Figure 5. Map of eNose locations

eNose Alarm Events: September – December 2025

Table 2 below summarises all red trigger alerts generated by the eNose units between the commencement of the project on 25 September 2025 and 31 December 2025. A total of 18 complaints were received during this reporting period. None of these complaints coincided with an eNose alert from the site.

Table 3: eNose alert information 25/09/25 to 31/12/25

Date	Time	Duration	eNose	Wind	Activity on site	Corresponding Complaint (Y/N)
13/11/2025	17:33	3 min	ESB-01 (22102)	SSE	AM and PM charges; cylinder doors open at 07:00hrs and 17:15hrs	N
25/11/2025	14:41	3 min	Fab Shed (21938)	WSW	Four deliveries of treated poles	N
25/11/2025	17:32	140 min on/off	Main office (25434D6)	SSW	AM and PM charges; cylinder doors open at 07:00hrs and 17:15hrs & Four deliveries of treated poles	N
05/12/2025	07:12	4 min	Shower block (22068)	SSW	AM and PM charges; cylinder doors open at 07:00hrs and 13:00hrs	N
16/12/2025	12:33	8 min	Fab Shed (21938)	WSW	Cylinder doors were opened at 7am and 1pm	N

eNose Alarm Events: January – March 2026

The table below summarises all trigger alerts generated by the eNose units between 1 January 2026 and 31 March 2026. On 11 March 2026, additional yellow and orange alarm thresholds were introduced following a review of complaint data, which suggested that some reported odour events in earlier months may have corresponded more closely with lower-level alarm triggers. However, subsequent analysis indicated that this was not the case during the reporting period. Appendix 2 provides a comprehensive record of all yellow and orange alarm events occurring between 11 March and 31 March 2026, following the introduction of the additional alarm thresholds.

A total of 25 odour complaints were received during this timeframe. Of these, only one complaint, recorded on 19 March 2026, coincided with a yellow level eNose alarm. However, wind direction data at 21:00 on 19 March indicated a north-easterly wind, meaning that the Hillfort housing estate was not downwind of either site at the time the complaint was made.

Table 4: eNose alert information 01/01/26 to 31/03/26

Date	Time	Duration	eNose	Wind	Activity on site	Corresponding Complaint (Y/N)	Level
07/01/2026	08:37	13 min	Fab Shed (21938)	WSW	Plant/pole storage	N	Red
08/01/2026	12:27	4 min	Fab Shed (21938)	E/ ESE	eNose upwind of both sites during this wind direction	N	Red
13/01/2026	09:24	12 min	Fab Shed (21938)	NW	Plant/pole storage	N	Red
22/01/2025	10:54	18 min	Fab Shed (21938)	W	Plant/pole storage	N	Red
20/02/2026	11:03	26 min	Fab Shed (21938)	SSW	Plant/pole storage	N	Red
20/02/2026	14:02	19 min	Fab Shed (21938)	SSW	Plant/pole storage	N	Red
04/03/2026	09:43	14 min	Fab Shed (21938)	NW	Pole storage	N	Red
09/03/2026	15:43	6 min	Fab Shed (21938)	WNW	Pole storage	N	Red
18/03/2026	08:43	60 min	Fab Shed (21938)	NE	eNose upwind both sites during this wind direction	N	Red

19/03/2026	07:16	7 min	WWTP	NE	eNose upwind both sites during this wind direction	N	Red
19/03/2026	12:45	25 min	Fab Shed (21938)	NE	eNose upwind both sites during this wind direction	N	Red
19/03/2026	16:09	25 mins	Fab Shed (21938)	NE	eNose upwind both sites during this wind direction	N	Red
21/03/2026	08:46	25 mins	Fab Shed (21938)	SW	No site activities – Pole storage	N	Red
25/03/2026	07:13	7 mins	Fab Shed (21938)	W	Plant/pole storage	N	Red
31/03/2026	08:55	6 min	Fab Shed (21938)	SW	Plant/pole storage	N	Red
31/03/2026	15:14	8 mins	Fab Shed (21938)	SW	Plant/pole storage	N	Red

Diffusion Tube Assessment

In addition to the eNose monitoring programme, a round of passive diffusion tube sampling was undertaken at both the ESB and Scanpole sites in November 2025. Diffusion tubes provide a simple and cost-effective means of passive air sampling and are widely used to measure average concentrations of gaseous air pollutants over extended exposure periods.

The suite of parameters selected for analysis reflected the potential fugitive emissions associated with the creosote treatment process. The following compounds were included:

Benzene, Trichloroethene, Toluene, Tetrachloroethene, Chlorobenzene, Ethylbenzene, m/p-Xylene, Styrene, o-Xylene, 1,3,5- Trimethylbenzene, 1,2,4- Trimethylbenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, Naphthalene.

Diffusion tubes were deployed at the same locations as the eNose units (as shown previously in Figure 3). An additional four tubes were installed in Hillfort, the area from which the majority of odour complaints had originated. The Hillfort deployment locations are presented in Figure 6 below. The tubes were in place between 12 November and 26 November 2025, after which they were returned to Gradko Environmental for laboratory analysis. Results were issued on 11/12/25 and are summarised in table 2 below, with the full analysis results in Appendix 1.

Figure 6. Diffusion tube locations at Hillfort

Table 5: Diffusion tube results compared to equivalent limits.

Quantitative Compounds	AQS (ug/m^3)	Calculated Annual EAL (ug/m^3)	Results (ug/m^3)																	
			Sales Shed	Recreation Area	Main Office	Shower Block	Fab Shed	Peeler	WWTP	Near SW02	ESB-01	ESB-02	ESB-03 Mast	ESB-04	ESB-05	ESB-06	Hillfort-01	Hillfort-02	Hillfort-03	Hillfort-04
Benzene	5	N/A	0.2912	0.4888	0.3172	0.5434	0.2808	0.312	0.3068	0.3042	0.234	0.221	0.2704	0.3614	0.3172	0.2028	0.2626	0.3484	0.3016	0.2626
Trichloroethene	N/A	547	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052
Toluene	N/A	1920	0.13	0.1872	4.524	8.008	3.172	5.122	2.73	1.9994	4.862	3.198	0.13	0.13	1.625	0.13	0.13	0.1664	5.824	0.13
Tetrachloroethene	N/A	1380	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052
Chlorobenzene	N/A	230	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Ethylbenzene	N/A	4420	0.13	0.13	2.808	2.444	0.13	2.808	0.13	2.0878	0.8112	1.482	0.2132	0.13	2.4908	0.13	0.13	0.13	1.482	0.13
m/p-Xylene	N/A	2210	0.13	0.13	2.574	2.496	0.2678	2.73	0.2418	1.9656	0.8944	1.4196	0.2288	0.13	2.3322	0.13	0.13	0.13	1.404	0.13
Styrene	N/A	850	0.13	0.052	0.1014	0.1716	0.0702	0.0988	0.0572	0.1014	0.1274	0.0702	0.052	0.052	0.0546	0.052	0.052	0.052	0.5824	0.052
o-Xylene	N/A	2210	0.13	0.13	0.8008	0.8502	0.13	0.897	0.13	0.6318	0.312	0.442	0.13	0.13	0.7176	0.13	0.13	0.13	0.481	0.13
1,3,5-Trimethylbenzene	N/A	1000	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052
1,2,4-Trimethylbenzene	N/A	1000	0.052	0.052	0.052	0.1092	0.0936	0.104	0.091	0.0572	0.052	0.091	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052
1,3-Dichlorobenzene	N/A	120	0.005	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
1,4-Dichlorobenzene	N/A	120	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
1,2-Dichlorobenzene	N/A	1220	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Naphthalene	N/A	500	0.86	0.2054	1.0322	0.9256	0.4134	0.6266	0.286	0.2314	0.3302	0.234	0.2782	0.2288	0.52	0.325	0.052	0.052	0.052	0.052

Many of the parameters assessed do not have prescribed limit values under the EPA Air Quality Standards[2], with the exception of Benzene, which has an annual limit value of 5 µg/m^3. For all other substances, Environmental Assessment Limits (EALs) were calculated in accordance with the Health and Safety Authority (HSA) Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) (Amendment) Regulations 2014 (S.I. No. 623/2015)[3].

The method used to derive EALs from occupational exposure levels follows the approach set out in the EPA Guidance Document: Air Dispersion Modelling from Industrial Installations (AG4). Under this methodology:

- The long-term (annual) EAL is calculated by applying a division factor of 100 to the 8-hour Occupational Exposure Limit (OEL). This factor accounts for both the longer exposure duration for the general population and their potentially greater sensitivity compared with workers.
- The short-term (1-hour) EAL is calculated by applying a division factor of 10 to the Short-Term Exposure Limit (STEL). In this case, only population sensitivity needs to be considered; no adjustment for exposure duration is required.
- Where no STEL is available, a surrogate value equivalent to three times the 8-hour OEL may be used, as permitted in AG4.

The calculated EALs for all parameters are presented in Table 6 below.

2 - Air Quality Standards | AirQuality.ie
3- chemical-agents-cop-2024-v1.pdf

Table 6: EAL calculated limits for relevant parameters

Limits info	Air Quality Standard (takes precedent when available), ug/m3	8hr OELV mg/m3	STEL mg/m3	Derived STEL mg/m3	Calculated Annual EAL ug/m3	Calculated hourly EAL ug/m3
Quantitative Compounds						
Benzene	5	0.666	N/A	1.998	6.66	199.8
Trichloroethene	N/A	54.7	164.1	n/a	547	16410
Toluene	N/A	192	384	N/A	1920	38400
Tetrachloroethene	N/A	138	275	N/A	1380	27500
Chlorobenzene	N/A	23	70	N/A	230	7000
Ethylbenzene	N/A	442	884	N/A	4420	88400
m/p-Xylene	N/A	221	442	N/A	2210	44200
Styrene	N/A	85	170	N/A	850	17000
o-Xylene	N/A	221	N/A	663	2210	66300
1,3,5- Trimethylbenzene	N/A	100	442	N/A	1000	44200
1,2,4- Trimethylbenzene	N/A	100	N/A	300	1000	30000
1,3-Dichlorobenzene	N/A	12	N/A	36	120	3600
1,4-Dichlorobenzene	N/A	12	60	N/A	120	6000
1,2-Dichlorobenzene	N/A	122	306	N/A	1220	30600
Naphthalene	N/A	50	N/A	150	500	15000

Evaluation of Monitoring and Investigation Findings to Date

Table 3 and table 4 summarise the eNose alerts issued to the Agency between 25 September 2025 and 31st March 2026, alongside site activities and any associated complaints received during the same period. Based on the data available for this period, no correlation has been identified between eNose alerts and odour complaints.

On three occasions, an alert coincided with the scheduled opening of the creosote treatment chamber. However, these alerts were detected predominantly at eNose units positioned in close proximity to the chamber. This pattern suggests that any odour detected during these events was localised and did not migrate beyond the immediate operational area.

The diffusion tube monitoring results showed that all measured concentrations on both sites, and off-site, including Benzene, were below the applicable Annual Environmental Limit Values (AELVs) as well as the calculated Environmental Assessment Levels (EALs) for all other monitored parameters.

Ongoing and Future Work

The monitoring programme will continue throughout 2026, with the aim of capturing variations in eNose measurements under differing seasonal and meteorological conditions. The eNose units will remain in place to monitor odours and wind direction, and to issue alerts when threshold levels are exceeded. The EPA will continue, where possible, to conduct odour assessments in response to these alerts.

Diffusion tube monitoring will also continue during 2026, with three additional monitoring rounds planned. To account for potential seasonal variability, particularly during periods when creosote volatility may increase, deployments will take place during the warmer months (Spring, Summer, and Autumn). The next deployment round is scheduled for late March 2026.

Data from both the eNose system and the diffusion tubes will continue to be assessed and reported on a quarterly basis, including comparisons of alert events with complaint records and odour assessment findings. Diffusion tube results will be evaluated against the relevant environmental limits for each monitoring round.

In parallel, the EPA will continue its ongoing enforcement activities at the Scanpole Ireland Limited site, including site inspections, stakeholder engagement, and routine odour assessments, to ensure continued oversight of compliance performance. The EPA will also maintain active engagement with Kildare County Council where complaints describing creosote odour in Kill are received, and specifically where EPA odour impact assessments identify the ESB pole storage yard as the source of off-site creosote odour. In addition, the EPA will continue to liaise with the HSE on any health concerns raised in relation to creosote odours experienced in the Kill area.

Conclusion

The EPA's investigation into odour complaints from Hillfort, Kill, Co. Kildare has shown that off-site creosote odours have originated from both the Scanpole Ireland Limited installation and the adjacent ESB Pole Storage Yard. EPA odour impact assessments carried out since May 2024 have attributed off-site impacts to each site on separate occasions. However, a greater number of confirmed incidents were associated with the ESB Pole Storage Yard, including periods when no creosote treatment was taking place at Scanpole Ireland Limited.

Only one odour non-compliance has been issued to Scanpole Ireland Limited during the reporting period, and this occurred while an Inspector was downwind at the time a creosote treated charge was being removed from the treatment vessel. A greater proportion of confirmed off-site odour events were associated with the ESB Pole Storage Yard, including periods when creosote treatment activities were not taking place at Scanpole. Kildare County Council is the appropriate regulatory authority for the ESB Pole Storage Yard, and they have been provided with details of the EPA's assessments.

The diffusion tube monitoring results undertaken in November 2025 demonstrated that concentrations of benzene, along with all other monitored parameters were below the applicable Air Quality Standards and the calculated Environmental Assessment Levels at all locations, including on both sites and in the Hillfort residential area. These findings indicate that while odour nuisance has been reported by residents, the measured air pollutant levels remain well below environmental and health-based thresholds.

The eNose network installed in September 2025, did not show any clear correlation between alert events and odour complaints during the reporting period. Although the system provides continuous qualitative information, the current dataset is insufficient to draw a firm conclusion about the relationship between eNose alerts and odour incidents, and further monitoring is required.

Analysis of the temporal distributions of complaints shows higher complaint volume during warmer months, however no consistent relationship was identified between complaints and temperature, wind direction, or day of the week. Several peaks in complaint numbers were linked to isolated dates rather than recurring conditions.

The EPA will continue its programme of odour monitoring and enforcement throughout 2026, including planned rounds of diffusion tube sampling during warmer months, continued operation of the eNose network, and both targeted and random odour impact assessments to capture a range of meteorological conditions. The EPA will maintain ongoing engagement with Kildare County Council where assessments indicate odour originating from the ESB Pole Storage Yard and will continue liaising with the HSE on any health concerns raised by residents. This continued programme of assessment and inter-agency coordination will support ongoing evaluation of odour sources and compliance.

Appendices

Appendix 1 – Information on Operation of eNoses

eNose Operation

eNoses use non-selective sensors that respond to any compound capable of donating or accepting electrons through a redox reaction. As a result, all sensors will exhibit a reaction when exposed to reactive substances or gas mixtures. It is therefore important to note that an eNose is not a gas analyser and does not provide gas-specific identification. Instead, each sensor within the array demonstrates varying sensitivities to different groups of odour-related compounds, as outlined below:

Green sensor	-	Aromatic compounds
Red sensor	-	Aliphatic compounds
Orange sensor	-	Aliphatic compounds
Blue sensor	-	Methane compounds

Alert thresholds can be configured within the system so that the eNose notifies operators of anomalous or unexpected air conditions. In general, a change of approximately 0.5 dB in sensor output is considered indicative of a shift in ambient air composition; however, such a change does not necessarily correspond to a perceptible odour event.

Before alarm thresholds can be reliably interpreted for any project, a dataset must first be established to determine which alerts correspond to genuine changes in each reactive component. Alarm limits are configured so that inspectors receive an email notification whenever a threshold is exceeded.

Common Invent (the eNose supplier/manufacturer) reviews the monitoring data over an initial one-month period. Following this review, alarm thresholds are set in consultation with the EPA, based on the 98th, 99th, and 99.9th percentile signal values (dB) recorded during that period. The selection of appropriate threshold values takes into account the specific context of each eNose location (e.g., industrial or residential setting) as well as any known risks or potential for odour nuisance at certain signal levels. Thresholds may be adjusted subsequently if they prove unsuitable for the area.

All monitoring results and real-time data are accessible online through a dedicated project dashboard. The web suite presents data for each individual eNose, which is displayed as a colour-coded dot on a GIS map. The colour represents the air composition detected by the sensor, with the following scale:

Green	normal atmospheric situation, normal trace gas concentration in ambient air
Yellow	small increase of the trace gas concentration in ambient air
Orange	clear increase of the trace gas concentration in ambient air
Red	considerable increase of the trace gas concentration in ambient air, unusual air composition

Figure 7 presents an example of the dashboard map view, illustrating the eNose locations and their corresponding alert statuses.

Figure 7. Map of eNoses showing individual alert status

Graphs displaying the responses of individual eNoses can be accessed by selecting each unit within the websuite. Alarm thresholds are shown as straight, colour-coded lines corresponding to the predefined alarm levels. An example of such a response graph is presented in Figure 5 below.

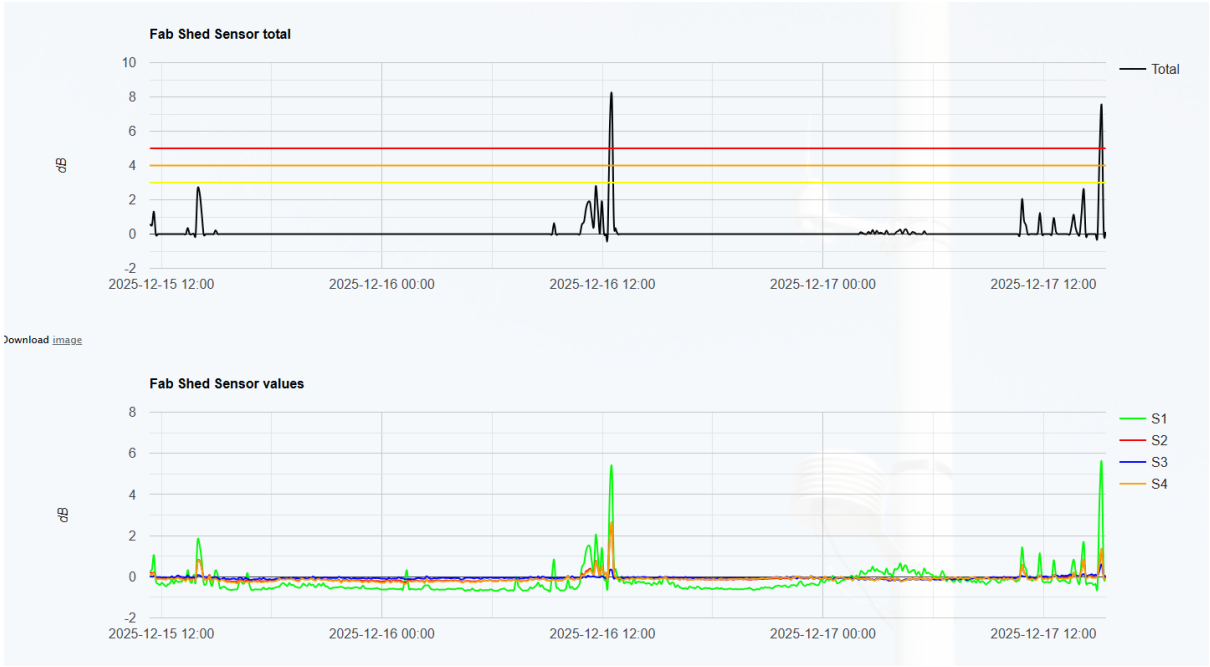

Figure 8: Example of eNose graphical output with alarm levels

An email alert was configured to issue automatically whenever the red trigger level was exceeded at any of the eNose units installed on the sites. This notification informs the EPA of a significant change in ambient air conditions and indicates when an odour event is most likely to occur.

Appendix 2 – Orange and Yellow eNose alarm Events

13/03/2026	**10:50**	**20 min**	**Fab Shed (21938)**	**SW**	**N**	**Yellow**
13/03/2026	10:52	6 min	Fab Shed (21938)	SW	N	Orange
16/03/2026	09:48	15 min	Fab Shed (21938)	SW	N	Yellow
18/03/2026	03:55	3 min	Fab Shed (21938)	NE	N	Yellow
18/03/2026	05:46	3 min	Fab Shed (21938)	NE	N	Yellow
18/03/2026	08:41	80 min	Fab Shed (21938)	NE	N	Orange
18/03/2026	08:41	100 min	Fab Shed (21938)	NE	N	Yellow
18/03/2026	09:08	7 min	Peeler	NE	N	Yellow
19/03/2026	07:15	20 min	WWTP	NE	N	Yellow
19/03/2026	07:15	10 min	WWTP	NE	N	Orange
19/03/2026	08:57	35 min	Fab Shed (21938)	NE	N	Yellow
19/03/2026	12:18	25 mins	Main office (25434D6)	NE	N	Yellow
19/03/2026	12:45	38 min	Fab Shed (21938)	NE	N	Orange
19/03/2026	12:45	75 mins	Fab Shed (21938)	NE	N	Yellow
19/03/2026	16:10	30 mins	Fab Shed (21938)	NE	N	Orange
19/03/2026	16:12	50 mins	Fab Shed (21938)	NE	N	Yellow
19/03/2026	17:09	25 mins	WWTP	NE	N	Orange

19/03/2026	21:00	10 min	Near SW02 (W)	NE	Y	Yellow
20/03/2026	07:48	5 min	Main office (25434D6)	S	N	Yellow
20/03/2026	08:30	40min	Peeler	S	N	Yellow
20/03/2026	18:49	20 min	ESB-05	S	N	Yellow
21/03/2026	08:46	35 min	Fab Shed (21938)	SW	N	Yellow
21/03/2026	08:46	30 mins	Fab Shed (21938)	SW	N	Orange
21/03/2026	15:11	50 mins	ESB-06	SW	N	Yellow
23/03/2026	01:11	3 min	Near SW02 (W)	S	N	Yellow
23/03/2026	07:15	12 min	Peeler	S	N	Yellow
25/03/2026	07:13	10 mins	Fab Shed (21938)	W	N	Orange
25/03/2026	07:10	15 mins	Fab Shed (21938)	W	N	Yellow
26/03/2026	00:04	20 min	Fab Shed (21938)	SW	N	Yellow
26/03/2026	12:07	14 mins	Fab Shed (21938)	SW	N	Yellow
26/03/2026	14:57	10 mins	Fab Shed (21938)	SW	N	Yellow
30/03/2026	17:20	9 min	Fab Shed (21938)	WSW	N	Yellow
30/03/2026	17:20	6 min	Fab Shed (21938)	WSW	N	Orange
31/03/2026	08:55	12 min	Fab Shed (21938)	SW	N	Yellow
31/03/2026	08:55	8 min	Fab Shed (21938)	SW	N	Orange

31/03/2026	14:03	15 mins	Fab Shed (21938)	SW	N	Yellow
31/03/2026	15:14	10 mins	Fab Shed (21938)	SW	N	Orange

Appendix 3 – Diffusion Tube analysis results

Report Number	**T07704R**
Customer	**Environmental Protection Agency** **Accounts Section** **PO Box 3000 Johnstown** **Castle Estate** **Co Wexrord** **Ireland**
Booking In Reference	**O1204**
Despatch Note Number	**117512**
Date Samples Received	**04/12/2025**
Diffusion Tube Type	**Tenax**

Analysis of specified compounds in accordance with in house method GLM 13

UKAS Accreditation Status		
	Analysis is UKAS accredited under our Fixed Scope for methods	
U	GLM 13	Benzene, Toluene, Ethylbenzene & Xylenes
U	GLM 13-1	Trichloroethene, Tetrachloroethene, Chlorobenzene, Styrene, 1,3,5- Trimethylbenzene, 1,2,4- Trimethylbenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene and Naphthalene

Tube Number	**003579**
Gradko Lab Reference	**08T2181**
Exposure Time (mins)*	**20076**
Sample ID	**Sales Shed**

	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	11.2	0.5	1.7
Trichloroethene	U	<2	<0.05	<0.3
Toluene	U	<5	<0.2	<0.8
Tetrachloroethene	U	<2	<0.05	<0.3
Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	<5	<0.2	<0.7
m/p-Xylene	U	<5	<0.2	<0.7
Styrene	U	<2	<0.05	<0.2
o-Xylene	U	<5	<0.2	<0.7
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2
1,2,4- Trimethylbenzene	U	<2	<0.05	<0.2
1,3-Dichlorobenzene	U	<5	<0.1	<0.7
1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7
Naphthalene	U	33.1	0.8	4.2

Tube Number	**GRA10821**
Gradko Lab Reference	**08T2182**
Exposure Time (mins)*	**20142**
Sample ID	**Recreation Area**

	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	18.8	0.9	2.8
Trichloroethene	U	<2.0	<0.05	<0.3
Toluene	U	7.2	0.3	1.1
Tetrachloroethene	U	<2	<0.05	<0.3
Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	<5	<0.2	<0.7

m/p-Xylene	U	<5	<0.2	<0.7
Styrene	U	<2	<0.05	<0.2
o-Xylene	U	<5	<0.2	<0.7
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2
1,2,4- Trimethylbenzene	U	<2	<0.05	<0.2
1,3-Dichlorobenzene	U	<5	<0.1	<0.7
1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7
Naphthalene	U	7.9	0.2	1.0

Tube Number	**GRA09008**			
Gradko Lab Reference	**08T2183**			
Exposure Time (mins)*	**20109**			
Sample ID	**Main Office**			
	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	12.2	0.6	1.8
Trichloroethene	U	<2	<0.05	<0.3
Toluene	U	174	7.1	26
Tetrachloroethene	U	<2	<0.05	<0.3
Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	108	3.6	15
m/p-Xylene	U	99	3.3	14
Styrene	U	3.9	0.1	0.4
o-Xylene	U	30.8	1.0	4.4
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2
1,2,4- Trimethylbenzene	U	<2	<0.05	<0.2
1,3-Dichlorobenzene	U	<5	<0.1	<0.7
1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7

Naphthalene	U	39.7	1.0	5.1
Tube Number	**GRA03365**			
Gradko Lab Reference	**08T2184**			
Exposure Time (mins)*	**20107**			
Sample ID	**Shower Block**			
	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	20.9	1.0	3.1
Trichloroethene	U	<2	<0.05	<0.3
Toluene	U	308	13	46
Tetrachloroethene	U	<2	<0.05	<0.3
Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	94	3.1	13
m/p-Xylene	U	96	3.2	14
Styrene	U	6.6	0.2	0.7
o-Xylene	U	32.7	1.1	4.6
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2
1,2,4- Trimethylbenzene	U	4.2	0.1	0.5
1,3-Dichlorobenzene	U	<5	<0.1	<0.7
1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7
Naphthalene	U	35.6	0.9	4.5
Tube Number	**004906**			
Gradko Lab Reference	**08T2185**			
Exposure Time (mins)*	**20140**			
Sample ID	**Fab Shed**			
	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***

Benzene	U	10.8	0.5	1.6
Trichloroethene	U	<2	<0.05	<0.3
Toluene	U	122	5.0	18
Tetrachloroethene	U	<2	<0.05	<0.3
Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	<5	<0.2	<0.7
m/p-Xylene	U	10.3	0.3	1.5
Styrene	U	2.7	0.1	0.3
o-Xylene	U	<5	<0.2	<0.7
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2
1,2,4- Trimethylbenzene	U	3.6	0.1	0.4
1,3-Dichlorobenzene	U	<5	<0.1	<0.7
1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7
Naphthalene	U	15.9	0.4	2.0

Tube Number	**003569**			
Gradko Lab Reference	**08T2186**			
Exposure Time (mins)*	**20137**			
Sample ID	**Peeler**			
	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	12.0	0.6	1.8
Trichloroethene	U	<2	<0.05	<0.3
Toluene	U	197	8.0	30
Tetrachloroethene	U	<2	<0.05	<0.3
Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	108	3.6	15
m/p-Xylene	U	105	3.5	15
Styrene	U	3.8	0.1	0.4

o-Xylene	U	34.5	1.2	4.9
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2
1,2,4- Trimethylbenzene	U	4.0	0.1	0.5
1,3-Dichlorobenzene	U	<5	<0.1	<0.7
1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7
Naphthalene	U	24.1	0.6	3.1

Tube Number	**006264**			
Gradko Lab Reference	**08T2187**			
Exposure Time (mins)*	**20135**			
Sample ID	**WWTP**			
	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	11.8	0.6	1.8
Trichloroethene	U	<2	<0.05	<0.3
Toluene	U	105	4.3	16
Tetrachloroethene	U	<2	<0.05	<0.3
Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	<5	<0.2	<0.7
m/p-Xylene	U	9.3	0.3	1.3
Styrene	U	2.2	0.1	0.2
o-Xylene	U	<5	<0.2	<0.7
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2
1,2,4- Trimethylbenzene	U	3.5	0.1	0.4
1,3-Dichlorobenzene	U	<5	<0.1	<0.7
1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7
Naphthalene	U	11.0	0.3	1.4

Tube Number	**GRA01585**			
Gradko Lab Reference	**08T2188R**			
Exposure Time (mins)*	**20130**			
Sample ID	**Near SW02**			
	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	11.7	0.6	1.8
Trichloroethene	U	<2	<0.05	<0.3
Toluene	U	76.9	3.1	11.5
Tetrachloroethene	U	<2	<0.05	<0.3
Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	80.3	2.7	11.4
m/p-Xylene	U	75.6	2.5	10.7
Styrene	U	3.9	0.1	0.4
o-Xylene	U	24.3	0.8	3.4
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2
1,2,4- Trimethylbenzene	U	2.2	0.1	0.3
1,3-Dichlorobenzene	U	<5	<0.1	<0.7
1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7
Naphthalene	U	8.9	0.2	1.1

Tube Number	**GRA10430**			
Gradko Lab Reference	**08T2189**			
Exposure Time (mins)*	**20128**			
Sample ID	**ESB-01**			
	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	9.0	0.4	1.4
Trichloroethene	U	<2	<0.05	<0.3

Toluene	U	187	7.6	28
Tetrachloroethene	U	<2	<0.05	<0.3
Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	31.2	1.0	4.4
m/p-Xylene	U	34.4	1.1	4.9
Styrene	U	4.9	0.1	0.5
o-Xylene	U	12.0	0.4	1.7
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2
1,2,4- Trimethylbenzene	U	<2	<0.05	<0.2
1,3-Dichlorobenzene	U	<5	<0.1	<0.7
1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7
Naphthalene	U	12.7	0.3	1.6

Tube Number	**005505**			
Gradko Lab Reference	**08T2190**			
Exposure Time (mins)*	**20125**			
Sample ID	**ESB-02**			
	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	8.5	0.4	1.3
Trichloroethene	U	<2	<0.05	<0.3
Toluene	U	123	5.0	18
Tetrachloroethene	U	<2	<0.05	<0.3
Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	57.0	1.9	8.1
m/p-Xylene	U	54.6	1.8	7.7
Styrene	U	2.7	0.1	0.3
o-Xylene	U	17.0	0.6	2.4
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2

1,2,4- Trimethylbenzene	U	3.5	0.1	0.4
1,3-Dichlorobenzene	U	<5	<0.1	<0.7
1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7
Naphthalene	U	9.0	0.2	1.1

Tube Number	**004871**			
Gradko Lab Reference	**08T2191**			
Exposure Time (mins)*	**20120**			
Sample ID	**ESB-03 Mast**			
	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	10.4	0.5	1.6
Trichloroethene	U	<2	<0.05	<0.3
Toluene	U	<5	<0.2	<0.7
Tetrachloroethene	U	<2	<0.05	<0.3
Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	8.2	0.3	1.2
m/p-Xylene	U	8.8	0.3	1.2
Styrene	U	<2	<0.05	<0.2
o-Xylene	U	<5	<0.2	<0.7
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2
1,2,4- Trimethylbenzene	U	<2	<0.05	<0.2
1,3-Dichlorobenzene	U	<5	<0.1	<0.7
1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7
Naphthalene	U	10.7	0.3	1.4

Tube Number	**005071**
Gradko Lab Reference	**08T2192**

Exposure Time (mins)*	**20119**			
Sample ID	**ESB-04**			
	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	13.9	0.7	2.1
Trichloroethene	U	<2	<0.05	<0.3
Toluene	U	<5	<0.2	<0.7
Tetrachloroethene	U	<2	<0.05	<0.3
Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	<5	<0.2	<0.7
m/p-Xylene	U	<5	<0.2	<0.7
Styrene	U	<2	<0.05	<0.2
o-Xylene	U	<5	<0.2	<0.7
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2
1,2,4- Trimethylbenzene	U	<2	<0.05	<0.2
1,3-Dichlorobenzene	U	<5	<0.1	<0.7
1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7
Naphthalene	U	8.8	0.2	1.1

Tube Number	**GRA10467**			
Gradko Lab Reference	**08T2193**			
Exposure Time (mins)*	**20119**			
Sample ID	**ESB-05**			
	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	12.2	0.6	1.8
Trichloroethene	U	<2	<0.05	<0.3
Toluene	U	62.5	2.5	9.4
Tetrachloroethene	U	<2	<0.05	<0.3

Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	95.8	3.2	13.6
m/p-Xylene	U	89.7	3.0	12.7
Styrene	U	2.1	0.1	0.2
o-Xylene	U	27.6	0.9	3.9
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2
1,2,4- Trimethylbenzene	U	<2	<0.05	<0.2
1,3-Dichlorobenzene	U	<5	<0.1	<0.7
1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7
Naphthalene	U	20.0	0.5	2.5

Tube Number	**GRA09878**			
Gradko Lab Reference	**08T2194**			
Exposure Time (mins)*	**20117**			
Sample ID	**ESB-06**			
	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	7.8	0.4	1.2
Trichloroethene	U	<2	<0.05	<0.3
Toluene	U	<5	<0.2	<0.7
Tetrachloroethene	U	<2	<0.05	<0.3
Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	<5	<0.2	<0.7
m/p-Xylene	U	<5	<0.2	<0.7
Styrene	U	<2	<0.05	<0.2
o-Xylene	U	<5	<0.2	<0.7
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2
1,2,4- Trimethylbenzene	U	<2	<0.05	<0.2
1,3-Dichlorobenzene	U	<5	<0.1	<0.7

1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7
Naphthalene	U	12.5	0.3	1.6

Tube Number	**006107**			
Gradko Lab Reference	**08T2195**			
Exposure Time (mins)*	**20095**			
Sample ID	**Hillfort-01**			
	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	10.1	0.5	1.5
Trichloroethene	U	<2	<0.05	<0.3
Toluene	U	<5	<0.2	<0.8
Tetrachloroethene	U	<2	<0.05	<0.3
Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	<5	<0.2	<0.7
m/p-Xylene	U	<5	<0.2	<0.7
Styrene	U	<2	<0.05	<0.2
o-Xylene	U	<5	<0.2	<0.7
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2
1,2,4- Trimethylbenzene	U	<2	<0.05	<0.2
1,3-Dichlorobenzene	U	<5	<0.1	<0.7
1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7
Naphthalene	U	<2	<0.05	<0.3

Tube Number	**003940**
Gradko Lab Reference	**08T2196**
Exposure Time (mins)*	**20093**
Sample ID	**Hillfort-02**

	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	13.4	0.6	2.0
Trichloroethene	U	<2	<0.05	<0.3
Toluene	U	6.4	0.3	1.0
Tetrachloroethene	U	<2	<0.05	<0.3
Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	<5	<0.2	<0.7
m/p-Xylene	U	<5	<0.2	<0.7
Styrene	U	<2	<0.05	<0.2
o-Xylene	U	<5	<0.2	<0.7
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2
1,2,4- Trimethylbenzene	U	<2	<0.05	<0.2
1,3-Dichlorobenzene	U	<5	<0.1	<0.7
1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7
Naphthalene	U	<2	<0.05	<0.3

Tube Number	**004177**
Gradko Lab Reference	**08T2197**
Exposure Time (mins)*	**20092**
Sample ID	**Hillfort-03**

	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	11.6	0.6	1.7
Trichloroethene	U	<2.0	<0.05	<0.3
Toluene	U	224	9.2	34
Tetrachloroethene	U	<2.0	<0.05	<0.3
Chlorobenzene	U	<5.0	<0.1	<0.6
Ethylbenzene	U	57.0	1.9	8.1

m/p-Xylene	U	54.0	1.8	7.6
Styrene	U	22.4	0.6	2.3
o-Xylene	U	18.5	0.6	2.6
1,3,5- Trimethylbenzene	U	<2.0	<0.05	<0.2
1,2,4- Trimethylbenzene	U	<2.0	<0.05	<0.2
1,3-Dichlorobenzene	U	<5.0	<0.1	<0.7
1,4-Dichlorobenzene	U	<5.0	<0.1	<0.7
1,2-Dichlorobenzene	U	<5.0	<0.1	<0.7
Naphthalene	U	<2.0	<0.05	<0.3

Tube Number	**GRA06711**			
Gradko Lab Reference	**08T2198**			
Exposure Time (mins)*	**20089**			
Sample ID	**Hillfort-04**			
	Accreditation Status			
Quantitative Compounds		**ng on tube**	**ppb in air***	**µgm^{-3}***
Benzene	U	10.1	0.5	1.5
Trichloroethene	U	<2	<0.05	<0.3
Toluene	U	<5	<0.2	<0.8
Tetrachloroethene	U	<2	<0.05	<0.3
Chlorobenzene	U	<5	<0.1	<0.6
Ethylbenzene	U	<5	<0.2	<0.7
m/p-Xylene	U	<5	<0.2	<0.7
Styrene	U	<2	<0.05	<0.2
o-Xylene	U	<5	<0.2	<0.7
1,3,5- Trimethylbenzene	U	<2	<0.05	<0.2
1,2,4- Trimethylbenzene	U	<2	<0.05	<0.2
1,3-Dichlorobenzene	U	<5	<0.1	<0.7
1,4-Dichlorobenzene	U	<5	<0.1	<0.7
1,2-Dichlorobenzene	U	<5	<0.1	<0.7

Naphthalene	U	<2	<0.05	<0.3

Tube Number	**GRA10303**	
Gradko Lab Reference	**251211_TXTABLANK_68**	
Sample ID	**Laboratory Blank**	
	Accreditation Status	
Quantitative Compounds		**ng on tube**
Benzene	U	<5
Trichloroethene	U	<2
Toluene	U	<5
Tetrachloroethene	U	<2
Chlorobenzene	U	<5
Ethylbenzene	U	<5
m/p-Xylene	U	<5
Styrene	U	<2
o-Xylene	U	<5
1,3,5- Trimethylbenzene	U	<2
1,2,4- Trimethylbenzene	U	<2
1,3-Dichlorobenzene	U	<5
1,4-Dichlorobenzene	U	<5
1,2-Dichlorobenzene	U	<5
Naphthalene	U	<2

Results are not blank corrected.

The laboratory blank is a system check and will not be from the same batch of tubes analysed.