

Our Ref AMP/14862CO/59/JLJ

ASHBURNHAM HOUSE  
1 MAITLAND ROAD  
LION BARN ESTATE  
NEEDHAM MARKET  
SUFFOLK  
IP6 8NZ

Telephone (01449) 723 723  
Fax (01449) 723 907  
[www.rsa-geotechnics.co.uk](http://www.rsa-geotechnics.co.uk)



31 January 2020

London Borough of Hackney  
Hackney Service Centre  
1 Hillman Street  
Hackney  
London  
E8 1DY

**For the attention of Mr Stuart Dunlop, Pollution Control Officer**

By Email only –  
[stuart.dunlop@hackney.gov.uk](mailto:stuart.dunlop@hackney.gov.uk)

Dear Stuart

**STONE STUDIOS, 80 TO 84 & 88 WALLIS ROAD, HACKNEY WICK E9 5LN  
- RADIELLO CARTRIDGE AIR MONITORING FOR VOC & SVOC**

This letter reports the findings of the fifty ninth round of air monitoring around the boundary of the above site by RSA Geotechnics Limited, at the request of Telford Homes PLC. Following the continuous monitoring undertaken during the bulk excavation of the basement areas of the site between May and September 2019, the monitoring was paused on cessation of earthworks. The monitoring recommenced on 28 October 2019, in advance of the remaining earthworks to be undertaken in the corridor area between the two basements; these works started on 18 November 2019.

The monitoring detailed in this report covers the period between 6 and 16 January 2020. The monitoring was for works undertaken in the northern part of the corridor area between the basements, however excavation works were paused from 4 December to evaluate the control of groundwater.

## **1. Introduction**

Earlier investigation of the site identified the potential for significant odour/vapour release during development. CFA piling works brought to surface hydrocarbon contaminated soils, as identified within the earlier site investigation. Some odours were reported, and odour/vapour issues were more pronounced during the initial bulk excavation phase for basement construction for Block A in September 2018; these works were ceased due to odour issues at that time.

Bulk earthworks recommenced under a new methodology on 7 May 2019. A detailed programme of daily site monitoring was maintained during these works, including continuous PID monitoring on the site boundary and on Wallis Road, as well as sampling and testing of ambient air to confirm concentrations are acceptable. This is supplemented by passive monitoring at the site boundary and in the surrounding area, as detailed in this report, which is reported on a nominal weekly basis.

Directors: **P A GAWNE** BSc MSc DIC FGS **A M PHILLIPS** FGS **A J SYMIS** Eng Tech TMICE FGS  
Directors & Consultants: **G J T SOUTHGATE** BSc CEng MICE **G L DAVIS** BSc CEng MIMMM CGeol FGS  
Registered Office: Ashburnham House 1 Maitland Road Needham Market Suffolk IP6 8NZ  
Registered No 1494361 VAT No 344 4442 66

Radiello 130 passive diffusive sampling tubes are installed at five locations around the perimeter of the site, at two residential receptor locations to the west and north of the site, and on the boundary of Mossbourne Academy School to the east of the site. This monitoring enables measurement of time-weighted average concentrations of BTEX, VOC and SVOC. Testing for speciated total petroleum hydrocarbons (TPH) is also undertaken, for two locations on the site boundary (Locations T1 and T2) and one location at the school (Location T3). Monitoring locations are as illustrated on drawing number 14862CO/2 Version B. As above, this passive longer-term monitoring is supplemented by additional monitoring and sampling in 'real-time' during active works on site.

Key volatile constituents of the contamination at the site were considered to be benzene and naphthalene, and these compounds have been adopted as markers for the initial assessment of contamination.

Initial assessment was undertaken adopting the EH40 Workplace Exposure Limit (WEL) for 8 hour time-weighted average (TWA) exposure for benzene of 1 ppm (3.25 mg/m<sup>3</sup>). There is no UK WEL screening value for naphthalene, however, the US Occupational Safety and Health Administration (OSHA) sets a Permissible Exposure limit (PEL) of 10 ppm (50 mg/m<sup>3</sup>) for naphthalene in workplace air (8 hour TWA). The National Institute for Occupational Safety and Health (NIOSH) 'immediately dangerous to life or health' (IDLH) screening value for naphthalene in air is 250 ppm.

A detailed air quality assessment was subsequently undertaken by Peak Environmental Solutions, to determine human health risk based vapour monitoring criteria for adjacent land users, taking into account adjacent and distal commercial, school and residential receptors, for the main earthworks proposed to be undertaken over a period of nominally 10 weeks. The assessment report was submitted to LLDC, Hackney Council and PHE for review, and a revised version of the report was submitted on 17 January 2019 to LLDC responding to queries raised on the initial review of the report. The screening values are influenced by the duration of the works; the longer the exposure, the lower the thresholds. A Technical Note was issued in April 2019 providing threshold values for works of 10, 15, 20 and 25 weeks. Tables 1a and 1b below summarise threshold values for 10 to 25 week exposure:

| <b>Table 1a – Passive Threshold-Uc Criteria in mg/m<sup>3</sup></b> |   |                   |               |                    |
|---|---|-------------------|---------------|--------------------|
| <b>Substance</b>  | <b>Passive Threshold-Uc in mg/m<sup>3</sup> 10-25 week exposure</b> |                   |               |                    |
|   | <b>Adjacent</b>   | <b>Distal</b>     |               |                    |
|   | <b>Commercial &amp; Passer-by</b>                                   | <b>Commercial</b> | <b>School</b> | <b>Residential</b> |
| Naphthalene   | 0.16-0.06   | 0.16-0.06         | 0.06-0.02     | 0.04-0.015         |
| Sum TPH   | 25-20   | 25-20             | 18-7          | 10-5               |
| Aliphatic TPH C5-C6   | Via Sum TPH   | Via Sum TPH       | Via Sum TPH   | Via Sum TPH        |
| Aliphatic TPH C6-8  |   |                   |               |                    |
| Aliphatic TPH C8-10   |   |                   |               |                    |
| Aliphatic TPH C10-12  |   |                   |               |                    |
| Aliphatic TPH C12-16  |   |                   |               |                    |
| Aromatic TPH C5-7 (threshold Benzene)                               |   |                   |               |                    |
| Aromatic TPH C7-8 (Toluene)   |   |                   |               |                    |
| Aromatic TPH C8-C10   | 7.4-4.1   | 7.4-4.1           | 1.8-0.8       | 1.3-0.54           |
| Aromatic TPH C10-12   |   |                   |               |                    |
| Aromatic TPH C12-16   |   |                   |               |                    |
| Sum Methylnaphthalenes  | 0.3-0.18  | 0.3-0.18          | 0.2-0.08      | 0.14-0.055         |
| Benzene   | 0.19-0.11   | 0.19-0.11         | 0.13-0.05     | 0.09-0.035         |
| Toluene   | Pragmatic 10-4.7  | Pragmatic 10-4.7  | 4-1.9         | 3-1.3              |
| Ethylbenzene  |   |                   |               |                    |
| Sum Xylenes   |   |                   |               |                    |
| Sum TMB   | 0.14-0.08   | 0.14-0.08         | 0.04-0.02     | 0.03-0.01          |

Notes: These thresholds take into account parameter CF-est where relevant (correction factor for time-weighted average concentrations).

| <b>Table 1b – Active Threshold-Uc Criteria in mg/m<sup>3</sup></b> |  |                   |               |                    |
|--|--|-------------------|---------------|--------------------|
| <b>Substance</b>   | <b>Active Threshold-Uc in mg/m<sup>3</sup> 10-25 week exposure</b> |                   |               |                    |
|  | <b>Adjacent</b>  | <b>Distal</b>     |               |                    |
|  | <b>Commercial &amp; Passer-by</b>                                  | <b>Commercial</b> | <b>School</b> | <b>Residential</b> |
| Naphthalene  | 0.55-0.22  | 0.55-0.22         | 0.19-0.08     | 0.04-0.015         |
| Sum TPH  | 100-74   | 100-74            | 60-25         | 10-5               |
| Aliphatic TPH C5-C6  | Via Sum TPH  | Via Sum TPH       | Via Sum TPH   | Via Sum TPH        |
| Aliphatic TPH C6-8   |  |                   |               |                    |
| Aliphatic TPH C8-10  |  |                   |               |                    |
| Aliphatic TPH C10-12   |  |                   |               |                    |
| Aliphatic TPH C12-16   |  |                   |               |                    |
| Aromatic TPH C5-7 (threshold Benzene)                              |  |                   |               |                    |
| Aromatic TPH C7-8 (Toluene)  |  |                   |               |                    |
| Aromatic TPH C8-C10  | 35-14  | 35-14             | 6-2.7         | 1.3-0.54           |
| Aromatic TPH C10-12  |  |                   |               |                    |
| Aromatic TPH C12-16  |  |                   |               |                    |
| Sum Methylnaphthalenes   | 1.5-0.61   | 1.5-0.61          | 0.7-0.28      | 0.14-0.055         |
| Benzene  | 0.9-0.37   | 0.9-0.37          | 0.44-0.18     | 0.09-0.035         |
| Toluene  | Pragmatic 10   | Pragmatic 10      | Pragmatic 5   | 3-1.3              |
| Ethylbenzene   |  |                   |               |                    |
| Sum Xylenes  |  |                   |               |                    |
| Sum TMB  | 0.45-0.27  | 0.45-0.27         | 0.13-0.053    | 0.03-0.01          |

The values in Table 1a are used in the assessment of results from the time-weighted average passive sorbent tube monitoring, while the values in Table 1b are relevant to comparison with active 'real-time' sampling using vacuum canisters, pumped sorbent tubes or other methods.

## 2. Fieldwork

The fifty-ninth round of monitoring discussed in this report was undertaken over a ten-day period between 6 and 16 January 2020.

## 3. Laboratory Analysis

Cross reference between the laboratory test references and the sample locations is given in Table 3.

| <b>Table 3 – Laboratory reference and sample location summary</b> |                                    |
|---|------------------------------------|
| <b>Location</b>   | <b>Laboratory sample reference</b> |
| V1  | R364F                              |
| V2  | S732H                              |
| V3  | S733H                              |
| V4  | S738H                              |
| V5  | S727H                              |
| V6  | U926T                              |
| V7  | S735H                              |
| V8  | S734H                              |
| T1  | U942T                              |
| T2  | U941T                              |
| T3  | U933T                              |

The laboratory analysis included suites of both VOCs and SVOCs. The results were calculated as time-weighted average concentrations.

Concentrations of VOCs were all below the detection limit for the test method, of  $1 \mu\text{g}/\text{m}^3$  (equivalent to 0.0003 ppm for benzene). Concentrations of SVOCs were generally below the detection limit for the test method. A single location (V4) on the site boundary recorded a very low concentration for naphthalene of  $2 \mu\text{g}/\text{m}^3$ .

Threshold values are influenced by the duration of the exposure; thresholds will be lower for an extended earthworks period. Re-assessment will be undertaken as the works progress to ensure the thresholds remain protective.

It should be noted that the methods of test for VOC and SVOC are significantly different; VOC analysis is undertaken using headspace analysis while the SVOC analysis uses a solvent to desorb determinands from the sampling tube prior to analysis. Consequently there may be some variation in concentrations of determinands measured depending on the method of analysis.

Testing for speciated total petroleum hydrocarbons (TPH) at the two locations on the site boundary and one location at the school (Locations T1, T2 and T3) recorded all concentrations to be below the detection limit for the test method of  $100 \mu\text{g}/\text{m}^3$ .

#### 4. Conclusions

Concentrations of VOC, SVOC and BTEX were well below the screening values adopted for assessment, as described in this letter report.

Monitoring will be maintained during active earthworks activities at the site, and will be reported nominally on a weekly basis.

Should you require any further information or assistance, please do not hesitate to contact us.

Yours sincerely  
RSA Geotechnics Ltd

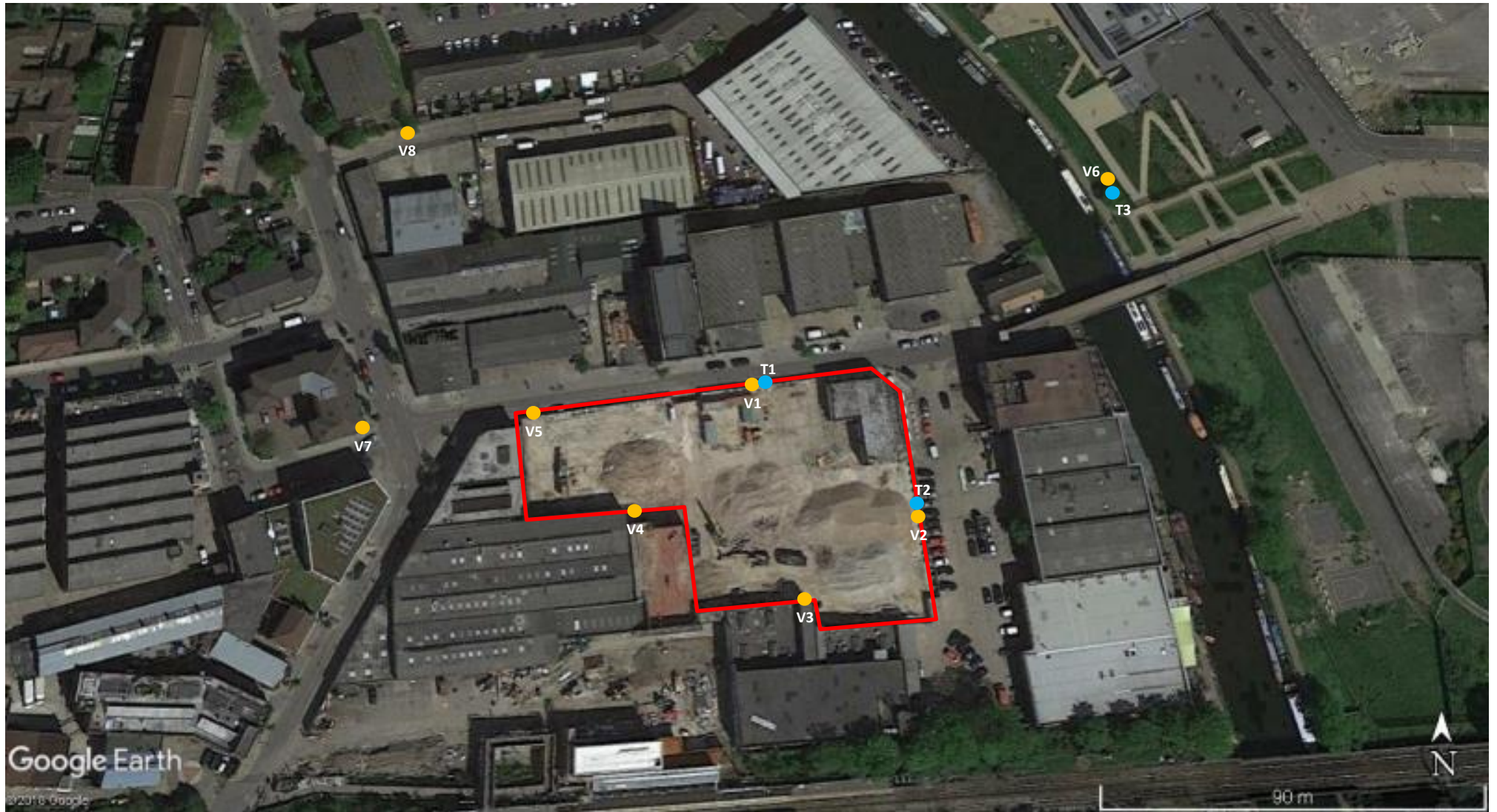
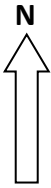


**Adrian Phillips, FGS**  
**Technical Director**

Encs Passive Air Monitoring - Drawing Number 14862CO/2 Version B  
Laboratory Test Reports (ELAB, 20-26623 & 57122)

Copy (Email) to: Jason Lumb (Arup) [jason.lumb@arup.com](mailto:jason.lumb@arup.com)  
Jeff Widd (Arup) [jeff.widd@arup.com](mailto:jeff.widd@arup.com)  
Hilary Wrenn (LLDC) [hilarywrenn@londonlegacy.co.uk](mailto:hilarywrenn@londonlegacy.co.uk)  
LLDC [lldc@arup.com](mailto:lldc@arup.com)  
Stephen Pedro (Telford Homes) [stephen.pedro@telfordhomes.london](mailto:stephen.pedro@telfordhomes.london)  
Fintan Mooney (Telford Homes) [fintan.mooney@telfordhomes.london](mailto:fintan.mooney@telfordhomes.london)  
[wallisroad@fourcommunications.com](mailto:wallisroad@fourcommunications.com)





Google Earth

©2018 Google

90 m

|  |   |
|--|---|
| <p><b>PASSIVE AIR MONITORING</b><br/>(Based upon Google earth image)</p> <p>80 - 84 AND 88 WALLIS ROAD, HACKNEY WICK, E9 5LN</p> | <p>NOTE: All locations are approximate</p> <p>Date 8 MARCH 2019</p> |
|  | <p>Scale NOT TO SCALE</p>   |
| <p><b>RSA GEOTECHNICS LIMITED</b></p>  | <p>Drawing No 14862CO/2 Version B</p>                               |



Unit A2  
Windmill Road  
Ponswood Industrial Estate  
St Leonards on Sea  
East Sussex  
TN38 9BY  
Telephone: (01424) 718618

[cs@elab-uk.co.uk](mailto:cs@elab-uk.co.uk)  
[info@elab-uk.co.uk](mailto:info@elab-uk.co.uk)

---

THE ENVIRONMENTAL LABORATORY LTD

---

**Analytical Report Number:** 20-26623

**Issue:** 1

**Date of Issue:** 23/01/2020

**Contact:** Adrian Phillips

**Customer Details:** RSA Geotechnics Ltd  
Ashburnham House  
1 Maitland Road  
Needham Market  
Suffolk IP6 8NZ

**Quotation No:** Q18-01116

**Order No:** 14862CO

**Customer Reference:** 14862CO

**Date Received:** 17/01/2020

**Date Approved:** 23/01/2020

**Details:** Wallis Road Air Monitoring 6 to 16 January 2020

**Approved by:**

Mike Varley, Technical Manager

---

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)

---

This report may only be reproduced in full

---

---



## Sample Summary

Report No.: 20-26623, issue number 1

| Elab No. | Client's Ref.                 | Date Sampled | Date Scheduled | Description | Deviations |
|----------|-------------------------------|--------------|----------------|-------------|------------|
| 194833   | R364F RTV1                    | 16/01/2020   | 20/01/2020     |             |            |
| 194834   | S732H RTV2                    | 16/01/2020   | 20/01/2020     |             |            |
| 194835   | S733H RTV3                    | 16/01/2020   | 20/01/2020     |             |            |
| 194836   | S738H RTV4                    | 16/01/2020   | 20/01/2020     |             |            |
| 194837   | S727H RTV5                    | 16/01/2020   | 20/01/2020     |             |            |
| 194838   | S730H Labelled @ (U926T) RTV6 | 16/01/2020   | 20/01/2020     |             |            |
| 194839   | S735H RTV7                    | 16/01/2020   | 20/01/2020     |             |            |
| 194840   | S734H RTV8                    | 16/01/2020   | 20/01/2020     |             |            |





# Results Summary

Report No.: 20-26623, issue number 1

|                               |       |       |     | ELAB Reference     | 194833     | 194834     | 194835     | 194836     | 194837     | 194838                   | 194839     | 194840     |
|-------------------------------|-------|-------|-----|--------------------|------------|------------|------------|------------|------------|--------------------------|------------|------------|
|                               |       |       |     | Customer Reference | RTV1       | RTV2       | RTV3       | RTV4       | RTV5       | RTV6                     | RTV7       | RTV8       |
|                               |       |       |     | Sample ID          |            |            |            |            |            |                          |            |            |
|                               |       |       |     | Sample Type        | GAS        | GAS        | GAS        | GAS        | GAS        | GAS                      | GAS        | GAS        |
|                               |       |       |     | Sample Location    | R364F      | S732H      | S733H      | S738H      | S727H      | S730H Labelled @ (U926T) | S735H      | S734H      |
|                               |       |       |     | Sample Depth (m)   |            |            |            |            |            |                          |            |            |
|                               |       |       |     | Sampling Date      | 16/01/2020 | 16/01/2020 | 16/01/2020 | 16/01/2020 | 16/01/2020 | 16/01/2020               | 16/01/2020 | 16/01/2020 |
| Determinand                   | Codes | Units | LOD |                    |            |            |            |            |            |                          |            |            |
| <b>VOC</b>                    |       |       |     |                    |            |            |            |            |            |                          |            |            |
| MTBE                          | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Heptane                       | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Octane                        | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Nonane                        | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Benzene                       | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Toluene                       | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Ethylbenzene                  | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| m+p-xylene                    | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| o-xylene                      | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| cis-1,2-dichloroethene        | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1,1-Dichloroethane            | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Chloroform                    | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Tetrachloromethane            | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1,1,1-Trichloroethane         | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Trichloroethylene             | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Tetrachloroethylene           | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1,1,1,2-Tetrachloroethane     | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1,1,2,2-Tetrachloroethane     | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Chlorobenzene                 | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Bromobenzene                  | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Bromodichloromethane          | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Methylethylbenzene            | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1,1-Dichloro-1-propene        | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Trans - 1-2 -dichloroethylene | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 2,2-Dichloropropane           | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Bromochloromethane            | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1,2-Dichloroethane            | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Dibromomethane                | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1,2-Dichloropropane           | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| cis-1,3-Dichloro-1-propene    | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| trans-1,3-Dichloro-1-propene  | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1,1,2-Trichloroethane         | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Dibromochloromethane          | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1,3-Dichloropropane           | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Dibromoethane                 | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Styrene                       | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Propylbenzene                 | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 2-Chlorotoluene               | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1,2,4-Trimethylbenzene        | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 4-Chlorotoluene               | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| t-butylbenzene                | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1,3,5-Trimethylbenzene        | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1-methylpropylbenzene         | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| p-cymene                      | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1,3-Dichlorobenzene           | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Butylbenzene                  | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1,2-Dibromo-3-chloropropane   | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Hexachlorobutadiene           | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1-2-3 - Trichlorobenzene      | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Naphthalene                   | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1-2-4 - Trichlorobenzene      | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1,4-Dichlorobenzene           | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| 1,2-Dichlorobenzene           | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |
| Bromoform                     | N     | µg/m3 | 1   | <1                 | <1         | <1         | <1         | <1         | <1         | <1                       | <1         | <1         |



# Results Summary

Report No.: 20-26623, issue number 1

|                             | ELAB Reference     | 194833     | 194834     | 194835     | 194836     | 194837     | 194838                | 194839     | 194840     |
|-----------------------------|--------------------|------------|------------|------------|------------|------------|-----------------------|------------|------------|
|                             | Customer Reference | RTV1       | RTV2       | RTV3       | RTV4       | RTV5       | RTV6                  | RTV7       | RTV8       |
|                             | Sample ID          |            |            |            |            |            |                       |            |            |
|                             | Sample Type        | GAS        | GAS        | GAS        | GAS        | GAS        | GAS                   | GAS        | GAS        |
|                             | Sample Location    | R364F      | S732H      | S733H      | S738H      | S727H      | Labelled @<br>(U926T) | S735H      | S734H      |
|                             | Sample Depth (m)   |            |            |            |            |            |                       |            |            |
|                             | Sampling Date      | 16/01/2020 | 16/01/2020 | 16/01/2020 | 16/01/2020 | 16/01/2020 | 16/01/2020            | 16/01/2020 | 16/01/2020 |
| Determinand                 | Codes              | Units      | LOD        |            |            |            |                       |            |            |
| <b>SVOC</b>                 |                    |            |            |            |            |            |                       |            |            |
| Phenol                      | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Aniline                     | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Bis(2-chloroethyl)ether     | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 2-Chlorophenol              | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 1,3-Dichlorobenzene         | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 1,4-Dichlorobenzene         | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Benzyl Alcohol              | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 1,2-Dichlorobenzene         | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 2-Methylphenol              | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Bis(2-chloroisopropyl)ether | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 3 and 4-methylphenol        | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| N-Nitrosodi-n-propylamine   | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Hexachloroethane            | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Nitrobenzene                | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Isophorone                  | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 2-Nitrophenol               | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 2,4-Dimethylphenol          | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Bis(2-chloroethoxy)methane  | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 2,4-Dichlorophenol          | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 1,3,5-Trichlorobenzene      | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Naphthalene                 | N                  | µg/m3      | 1          | < 1        | < 1        | 2          | < 1                   | < 1        | < 1        |
| 3-Chloroaniline             | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Hexachloro-1,3-butadiene    | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 4-Chloro-3-methylphenol     | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 2-Methylnaphthalene         | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 1-Methylnaphthalene         | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Hexachlorocyclopentadiene   | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 2,4,6-Trichlorophenol       | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 2,4,5-Trichlorophenol       | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 1-Chloronaphthalene         | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 2-Nitroaniline              | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 1,4-Dinitrobenzene          | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Dimethyl phthalate          | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 1-3-dinitrobenzene          | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 2-6-dinitrotoluene          | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Acenaphthylene              | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 1,2-Dinitrobenzene          | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 3-Nitroaniline              | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Acenaphthene                | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 4-nitrophenol               | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Dibenzofuran                | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 2,3,5,6-Tetrachlorophenol   | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 2,3,4,6-Tetrachlorophenol   | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Diethyl phthalate           | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 1-chloro-4-phenoxybenzene   | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Fluorene                    | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 4-Nitroaniline              | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Dinitro-o-cresol            | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Diphenylamine               | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Azobenzene                  | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| 1-bromo-4-phenoxybenzene    | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Hexachlorobenzene           | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Pentachlorophenol           | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Phenanthrene                | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Anthracene                  | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Carbazole                   | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Dibutyl phthalate           | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Fluoranthene                | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Pyrene                      | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Butyl benzyl phthalate      | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Bis-2-ethylhexyladipate     | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Diisooctyl phthalate        | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Benzo(a)anthracene          | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Chrysene                    | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Bis(2-ethylhexyl)phthalate  | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Benzo(b)fluoranthene        | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Benzo(k)fluoranthene        | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Benzo(a)pyrene              | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Indeno(1,2,3-CD)pyrene      | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Dibenz(ah)anthracene        | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |
| Benzo(ghi)perylene          | N                  | µg/m3      | 1          | < 1        | < 1        | < 1        | < 1                   | < 1        | < 1        |



## Method Summary

Report No.: 20-26623, issue number 1

| Parameter    | Codes | Analysis Undertaken On | Date Tested | Method Number | Technique |
|--------------|-------|------------------------|-------------|---------------|-----------|
| SVOC - Tubes | N     |                        | 20/01/2020  | 167           | GC-MS     |
| VOC - Tubes  | N     |                        | 20/01/2020  | 181           | GC-MS     |

Tests marked N are not UKAS accredited



## Report Information

Report No.: 20-26623, issue number 1

### Key

---

|     |   |
|-----|---|
| U   | hold UKAS accreditation   |
| M   | hold MCERTS and UKAS accreditation  |
| N   | do not currently hold UKAS accreditation                                    |
| ^   | MCERTS accreditation not applicable for sample matrix                       |
| *   | UKAS accreditation not applicable for sample matrix                         |
| S   | Subcontracted to approved laboratory UKAS Accredited for the test           |
| SM  | Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test    |
| NS  | Subcontracted to approved laboratory. UKAS accreditation is not applicable. |
| I/S | Insufficient Sample   |
| U/S | Unsuitable sample   |
| n/t | Not tested  |
| <   | means "less than"   |
| >   | means "greater than"  |

Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.

ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the sample received.

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

### Deviation Codes

---

- |   |  |
|---|--|
| a | No date of sampling supplied                             |
| b | No time of sampling supplied (Waters Only)               |
| c | Sample not received in appropriate containers            |
| d | Sample not received in cooled condition                  |
| e | The container has been incorrectly filled                |
| f | Sample age exceeds stability time (sampling to receipt)  |
| g | Sample age exceeds stability time (sampling to analysis) |

Where a sample has a deviation code, the applicable test result may be invalid.

### Sample Retention and Disposal

---

All soil samples will be retained for a period of one month

All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage



Unit A2  
Windmill Road  
Ponswood Industrial Estate  
St Leonards on Sea  
East Sussex  
TN38 9BY  
Telephone (01424) 718618  
Facsimile (01424) 729911

---

## THE ENVIRONMENTAL LABORATORY LTD

---

Adrian Phillips  
RSA Geotechnics Ltd  
1 Maitland Road  
Needham Market  
Suffolk, IP6 8NZ

Reporting Date: 30 January 2020

### ANALYTICAL REPORT No. 57122

**Samples Received By:** Laboratory Courier  
**Sample Receipt Date:** 27/01/20  
**Your Job No:** 14862CO  
**Your Order No:** 14862CO  
**Site Location:** Wallis Road Air Monitoring 16 January to 23 January 2020  
**No Samples Received:** 3  
**Date of Sampling:** 23/01/20

---

*This report was written by:* Stuart Ballard

Authorised By;

Mike Varley  
Technical Manager (BSc, CChem  
CSci, FRSC)

---

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)

---



# THE ENVIRONMENTAL LABORATORY LTD

Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards On Sea, East Sussex, TN38 9BY

Tel: 01424 718618 Fax: 01424 729911

## ANALYTICAL REPORT No. 57122

Location: Wallis Road Air Monitoring 16 January to 23 January 2020



Your Job No: 14862C0  
 Your Order No: 14862C0  
 Reporting Date: 30/01/20

F.A.O. Adrian Phillips  
 RSA Geotechnics Ltd  
 1 Maitland Road  
 Needham Market  
 Suffolk, IP6 8NZ

### TPH CWG - Tubes

| Characteristic                          | TUBE                 | TUBE          | TUBE          |
|---|----------------------|---------------|---------------|
| Date Sampled                            | 23/01/20             | 23/01/20      | 23/01/20      |
| TP/BH                                   | U942T - RT T1        | U941T - RT T2 | U933T - RT T3 |
| Our ref                                 | 38570                | 38571         | 38572         |
| <b><u>Aromatic</u></b>                  |                      |               |               |
| >EC <sub>5</sub> -EC <sub>7</sub>       | (µg/m <sup>3</sup> ) | <100          | <100          |
| >EC <sub>7</sub> -EC <sub>8</sub>       | (µg/m <sup>3</sup> ) | <100          | <100          |
| >EC <sub>8</sub> -EC <sub>10</sub>      | (µg/m <sup>3</sup> ) | <100          | <100          |
| >EC <sub>10</sub> -EC <sub>12</sub>     | (µg/m <sup>3</sup> ) | <100          | <100          |
| >EC <sub>12</sub> -EC <sub>16</sub>     | (µg/m <sup>3</sup> ) | <100          | <100          |
| >EC <sub>16</sub> -EC <sub>21</sub>     | (µg/m <sup>3</sup> ) | <100          | <100          |
| >EC <sub>21</sub> -EC <sub>35</sub>     | (µg/m <sup>3</sup> ) | <100          | <100          |
| >EC <sub>35</sub> -EC <sub>40</sub>     | (µg/m <sup>3</sup> ) | <100          | <100          |
| <b><u>Aliphatic</u></b>                 |                      |               |               |
| >EC <sub>5</sub> -EC <sub>6</sub>       | (µg/m <sup>3</sup> ) | <100          | <100          |
| >EC <sub>6</sub> -EC <sub>8</sub>       | (µg/m <sup>3</sup> ) | <100          | <100          |
| >EC <sub>8</sub> -EC <sub>10</sub>      | (µg/m <sup>3</sup> ) | <100          | <100          |
| >EC <sub>10</sub> -EC <sub>12</sub>     | (µg/m <sup>3</sup> ) | <100          | <100          |
| >EC <sub>12</sub> -EC <sub>16</sub>     | (µg/m <sup>3</sup> ) | <100          | <100          |
| >EC <sub>16</sub> -EC <sub>21</sub>     | (µg/m <sup>3</sup> ) | <100          | <100          |
| >EC <sub>21</sub> -EC <sub>35</sub>     | (µg/m <sup>3</sup> ) | <100          | <100          |
| >EC <sub>35</sub> -EC <sub>40</sub>     | (µg/m <sup>3</sup> ) | <100          | <100          |
| TPH (C <sub>5</sub> - C <sub>40</sub> ) | (µg/m <sup>3</sup> ) | <100          | <100          |

All results expressed on dry weight basis

\*\* - MCERTS accredited test

Stuart Ballard



Unit A2  
Windmill Road  
Ponswood Industrial Estate  
St Leonards on Sea  
East Sussex  
TN38 9BY  
Telephone (01424) 718618  
Facsimile (01424) 729911

---

---

## THE ENVIRONMENTAL LABORATORY LTD

---

---

### SAMPLE RECEIPT AND TEST DATES

Our Analytical Report Number      57122  
Your Ref No:                                14862CO  
Sample Receipt Date:                    27/01/20  
Reporting Date:                            30/01/20  
  
Registered:                                 27/01/20  
Prepared:                                    27/01/20  
Analysis complete:                        30/01/20

### TEST METHOD SUMMARY

| PARAMETER                | Analysis<br>Undertaken on | Date Tested | Method<br>Number | Technique          |
|--------------------------|---------------------------|-------------|------------------|--------------------|
| Carbon Banding (TPH CWG) | As submitted sample       | 29/01/20    | 214              | Gas chromatography |

Note:- Documented In-house procedure based on HSG 248 2005

\*\* - MCERTS Accredited test

Determinands not marked with \* or \*\* are not accredited

MCERTS accreditation covers samples which are predominantly sand, clay, loam or combinations of these three soil types

---

---

Any comments, opinions, or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)

---

---