# GeoAssist Limited

## Civil, Environmental & Geotechnical

*Client:*
Cringle Rd Developments Ltd
7 Leegate Close
Heaton Moor
Stockport
SK4 3NN

*Consultant/Engineer:*

Verification Report Plots 1 to 8 and 46 to 50

Residential Development at Land off Cringle Road, Levenshulme, Manchester,

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Heaton Norris
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SK4 1RU
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Oct 2023 Site Ref: 6048/VCR V1.00 PVR

*Client:*
Cringle Rd Developments Ltd
7 Leegate Close
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SK4 3NN

*Consultant:*

Verification Report Plots 1 to 8 and 46 to 50

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*Client:*
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SK4 3NN

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Verification Report Plots 1 to 8 and 46 to 50

## 1. Introduction

This report has been produced in order to provide information to verify that the remedial measures as detailed within the following reports have been applied as specified. All of which have been submitted in consideration of condition 8 Ground Conditions of the planning consent and discharged as acceptable by the relevant department of the LPA:

| Author | Date | Ref | Title / description |
|---|---|---|---|
| GeoAssist Ltd | Oct 2020 | 6048/VCR-RSDP v1.01 | Remediation Strategy and Deployment Plan |
| GeoAssist Ltd | March 2021 | 6048/VCR-GRA v1.00 | Gas Risk Assessment |
| GeoAssist Ltd | Oct 2022 | 6048/VCR-GRAU V2.00 | Gas Risk Assessment Update |
| GeoAssist Ltd | May 2023 | Technical Note 090523 Gas Risk | Explanatory note and justification based on LPA queries |

The approximate grid reference for the centre of the site is 388410, 393160 and the total area of the site is approximately 16,700 1.6ha. The total site area of the site is outlined with a red line on the site plan in Appendix A1. The blue line represents the plots which are covered by this verification report ie Plots 1 to 8 and 46 to 50.

## 2. Scope of Works

GeoAssist have been engaged to specifically look at providing the evidence required by the LPA to demonstrate that development has been carried out in accordance with the recommendations of the above reports and technical notes.

## 3. Description of the Site

### 3.1 Previous

The site is located on Land off Cringle Road, Levenshulme, Manchester. Access is off Cringle Road. The site forms an irregular shape, the topography of which is generally flat and level with the surrounding area. The land has previously been used as stables and associated pasture.

The site boundary is formed by Highfield Country Park to the north and west, Cringle Road forms part of the site boundary to the south, followed by residential property. Nelstrop Road North borders the east of the site, over which lies grazed paddocks.

### 3.2 Present

The development in process incorporates 57 residential dwelling units with vehicular access from Cringle Road and carparking with ancillary green space, landscaping and other works.

## 4. Remediation

### 4.1 Methodology

In summary the Approved Remediation Strategy and deployment plan recommended the following remediation treatments were implemented in limited areas of the site as depicted in the plan which forms appendix A1 to this report:

- Removal of Made Ground in affected areas to such depths that a minimum thickness of 600mm clean capping layer can be implemented in private residential garden soft landscaped areas of the site.
- The Installation of a clean cover system to be a minimum of 600mm in thickness in some residential gardens.
- Testing of the cover system at a rate of 1 sample per 50m$^3$ for Topsoil. And 1 sample per 200m$^3$ for subsoil.
- Segregation of contaminated soils in accessible areas at the location of WS5 (restricted by presence proposed dwelling houses) by means of excavating and installation of a marker membrane where appropriate.
- The incorporation of a Ground Gas membrane into the foundations of plots 8 to 25 inclusive.
- The incorporation of a standard/proprietry damp proof membrane into the foundations of plots 1 to 7 and 26 to 57 inclusive.

The remediation methodology pursued on this site follows a relatively simple engineered capping approach involving the removal, treatment and replacement of a quantity of subsoils in order to form capping where necessary.

## 5. Verification

### 5.1 Volumes of Soils and stockpile.

Site preparation works were undertaken in summer and autumn 2022. As part of this process and in order to prevent unnecessary vehicle movements and disposal of clean usable materials. The topsoil from the side of the site to the east of the remediation line (appendix A1) was stripped and stockpiled. The stockpile was then tested using the Clean up criteria and the British Standard for Topsoil Criteria to confirm the soil was suitable to be re used in post development garden areas. A further stockpile consisting of natural clay originating from foundation arisings to the eastern side of remediation line (appendix A1) were also stored in a separate stockpile and tested against the clean up criteria.

Topsoils form the within the remediation zone were stockpiled and tested and found to be free from contaminants but did not conform with the standard for topsoil.

Foundation arising from plots within the remediation zone were stockpiled and tested for disposal options.

A technical note incorporating photographs and the results of the stockpile sampling testing as well as a plan confirming the stockpile locations forms appendix B1 to this report.

To date (October 2023) Materials/spoil removed from site has been limited to wet clay soils on access roads etc that have rendered the site unworkable for practical reasons. All of this work was carried out in Jan 2023. WTN for these transactions form appendix B2.

### 5.2 Volumes of Imported Soils.

To date (October 2023) soils have not needed to be imported to site.

### 5.3 Testing to Confirm Compliance with Objectives

The only plots requiring remediation and capping with 600mm are plots 7 and 8 see appendix A1.

Photographs of the reduced dig and subsequent test sampling to confirm the depth of clean topsoil. Topsoil from stockpile A was used in this area. The results of which can be found in Appendix B1 to this report. In addition to the stockpile sampling four additional samples were recovered from the as placed profile of the capping to the rear gardens at plots 7 & 8 and submitted for sampling and analysis.

Elsewhere the hit and miss sampling was applied at shallow depth to confirm the underlying natural ground meets the Clean up Criteria. The results for plot 6 sample C1 at 0.20m depth indicate a minor exceedance of BaP and consequently The soils at plot 6 were excavated to a depth of 600mm on 05/10/2023 and replaced with soils from stockpile A to a depth of 600mm, which has been previously certified as clean and was retested on the 22/09/2023 and found to conform with the cleanup criteria. A photographic record of this simple remediation task forms appendix E1 to this report. The original analysis laboratory certificates and assessment of all validation samples taken on 22/09/2023 form appendix C2 and C3 to this report.

The results of the sampling at plots 7 and 8 confirm the depth of the capping is a minimum of 600mm in thickness and meets the clean up criteria set out in the approved remediation plan.

### 5.4 Verification of Installed Gas Measures

A visual inspection of an installed gas membrane on plots 7 and 8 was completed on 02/03/2023 by GeoAssist Limited. The contractor has provided invoice evidence for the purchase of a significant quantity of the Visqueen membrane as specified in the updated gas risk assessment report. These items were safely dry stored in a lockup container awaiting use on other plots as development progressed. Ancillary items such as Visqueen double sided tape and Visqueen foil tape in addition to preformed internal corners and top hats for service entry locations as well as Visqueen ZEDEX for joining the membrane across the cavity wall were also purchased as part of the gas protection system. The purchase invoice information provided by the client for the installed membrane system forms appendix D1 to this report.

The installation inspection confirmed that the installation was of a good quality and met with the membrane supplier installation instructions with good seals and laps. Upon completion of construction the membrane was covered with 130mm foam insulation board. And then a 1200gauge dpm for underfloor heating follow by a C35 concrete pour to form the finished floor. The Geoassist inspection record for plots 7&8 forms appendix D2 to this report in addition to the GeoAssist inspection the Building control inspection report forms appendix D3 to this report.

The confirmed combination of the protection elements provides a high level of confidence that a viable pathway is not likely to be present as a consequence of the subfloor void and the presence of an appropriately installed membrane.

Elsewhere plots 1 to 6 and 46 to 50 have adopted a standard/proprietary 1200gauge Damp Proof Membrane evidence of purchase is also included in appendix D1. For these membranes the contractor elected to purchase a membrane welding tool in order to make the installation process more efficient. The invoice for the membrane welding tool is provided in appendix D4. Photographs of the DPM installation in plot 3 form appendix D5 to this report.

## 6. Final Site Conditions

Evidence provided herein demonstrates that the remediation measures required have been correctly applied to Plots 1 to 8 and 46 to 50. Insitu testing of imported soils has demonstrated that the soils are suitable for incorporation into the development and that they do not pose a risk to site end users by means of substances within. Thorough visual inspection has confirmed that gas membrane installations are satisfactory and sub floor voids are present and vented in accordance with the building regulations which provides adequate ventilation to prevent any potential buildup of $CO_2$ The site has been developed in accordance with the planning requirements for contaminated land. A further report will follow as the second stage of the development is completed and staged applications are made for partial discharge of conditions. Evidence of any works that are not presently fully complete at this time will be provided in a supplementary verification addendum.

The developer and all contractors employed by the developer were required to monitor for, and report any, evidence of contamination found during construction. None was encountered or reported.

The evidence presented herein demonstrates that all reasonably practicable steps as set out in the Remediation Plan have been taken to ensure the site is fit for residential purposes and the risk to the occupiers from ground contamination is low in all reasonably foreseeable circumstances.

§ .





Matthew Benson MSc GMICE
Geotechnical/Environmental Engineer

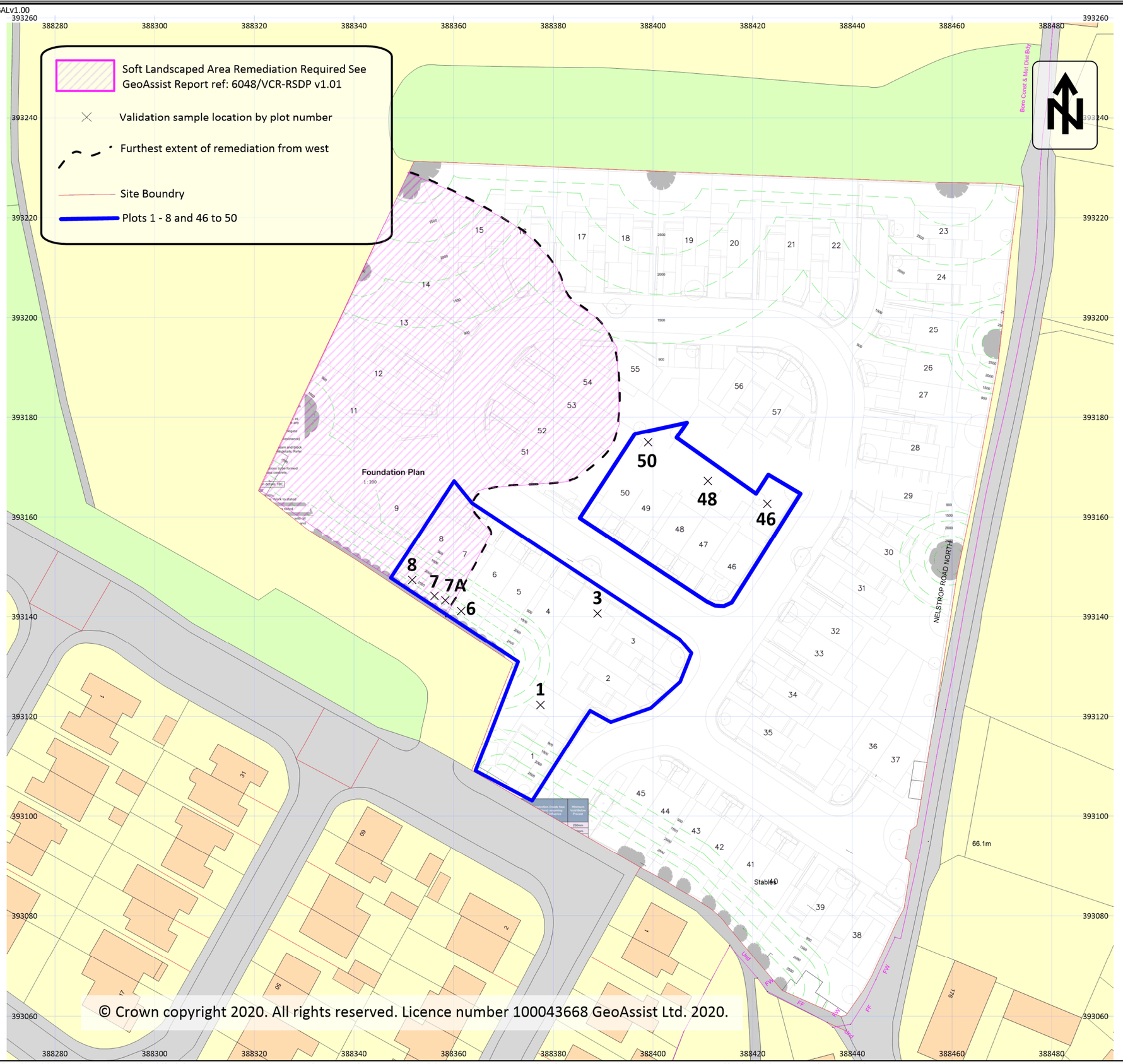
Mark Richardson MSc CEng MICE
Technical Director

GeoAssist are not liable for any errors, omissions or facts contained within data provided by third parties.
Field investigations have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions are, and can be, variable and have only been tested at isolated locations across the site. Therefore, the potential exists for ground conditions to be encountered which are different to those considered in this report. Chemical analysis was conducted for a number of parameters based on an expert understanding of the historical and operational data available at the time and it should not be inferred or otherwise, that other chemical species are not present.
This report has been prepared by GeoAssist Limited with all reasonable professional skill, care and diligence within the terms of the contract with Cringle Rd Developments Ltd. The report is confidential to Cringle Rd Developments Ltd, their/the named persons advisors and bankers, and GeoAssist Limited accepts no responsibility of whatever nature to third parties to whom this report may be divulged. GeoAssist Limited owns the copyright in this report. All rights are reserved, and unauthorised use is prohibited. Cringle Rd Developments Ltd may use the report for their/her/his own purposes.

# Appendix A

## A1 Site Plan

6048GALv1.00




**GeoAssist Limited**
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# A1. Site Plan

| | |
|---|---|
| **Site Name** | Land off Cringle Road |
| **Location** | Levenshulme, Manchester |
| **GeoAssist Ref** | |
| **Client** | Cringle Rd Developments Ltd |
| | 7 Leegate Close<br>Heaton Moor<br>Stockport<br>SK4 3NN |
| **Planning Consultant** | |
| **NGR (centre of site)** | 388410,393160 |
| **Production Date** | Oct 2023 |
| **Survey Method** | |
| **Surveyor** | Others |
| **Status** | Final v1.00 |
| | |
| **Base Survey** | OSGB36 |

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# Appendix B

B1 Stockpile sampling technical note 260922MB
B2 WTN Jan 2023 muck away

Technical Note 26/09/2022MB

This technical note has been issued following a request by the developer to undertake soil sampling on four stockpiles of soils originating on the site. The stockpile locations are shown on the attached plan and the material within each stockpile has been produced from site strip (topsoil) and foundation arisings as development progresses across the site. Materials handling good practice has been used to ensure material stockpiles have been appropriately segregated in paying due note to the requirements of the remediation strategy.

- Stockpile A – Topsoil stockpile eastern side – 2 Number Standard CLEA Maxi Tests Suites and 1 Number BS 3882 Topsoil Test suite undertaken. – Results demonstrate that the soil in the pile is free from contaminants and conforms with BS3882 ie the stockpile consist of BS Multipurpose Topsoil and is suitable for reuse on site
- Stockpile B – Subsoil stockpile eastern side consisting of natural Clay Soils only- 3 Number Standard CLEA Maxi Tests Suites – Results demonstrate that the soils in the pile are free from contaminants and suitable for reuse on site/off site disposal (if surplus)
- Stockpile C – Topsoil and organic matter(sods) western side. - 2 Number Standard CLEA Maxi Tests Suites and 1 Number BS 3882 Topsoil Test suite undertaken. – Results demonstrate that the soil in the pile is free from contaminants and does not conform with BS3882 ie the stockpile is NOT BS Topsoil and is not suitable for reuse on site as a topsoil material.
- Stockpile D –Subsoil material western side. - 3 Number Standard CLEA Maxi Tests Suites with BTEX and TP, undertaken for disposal options – Results demonstrate that the soils in the pile are free from contaminants.

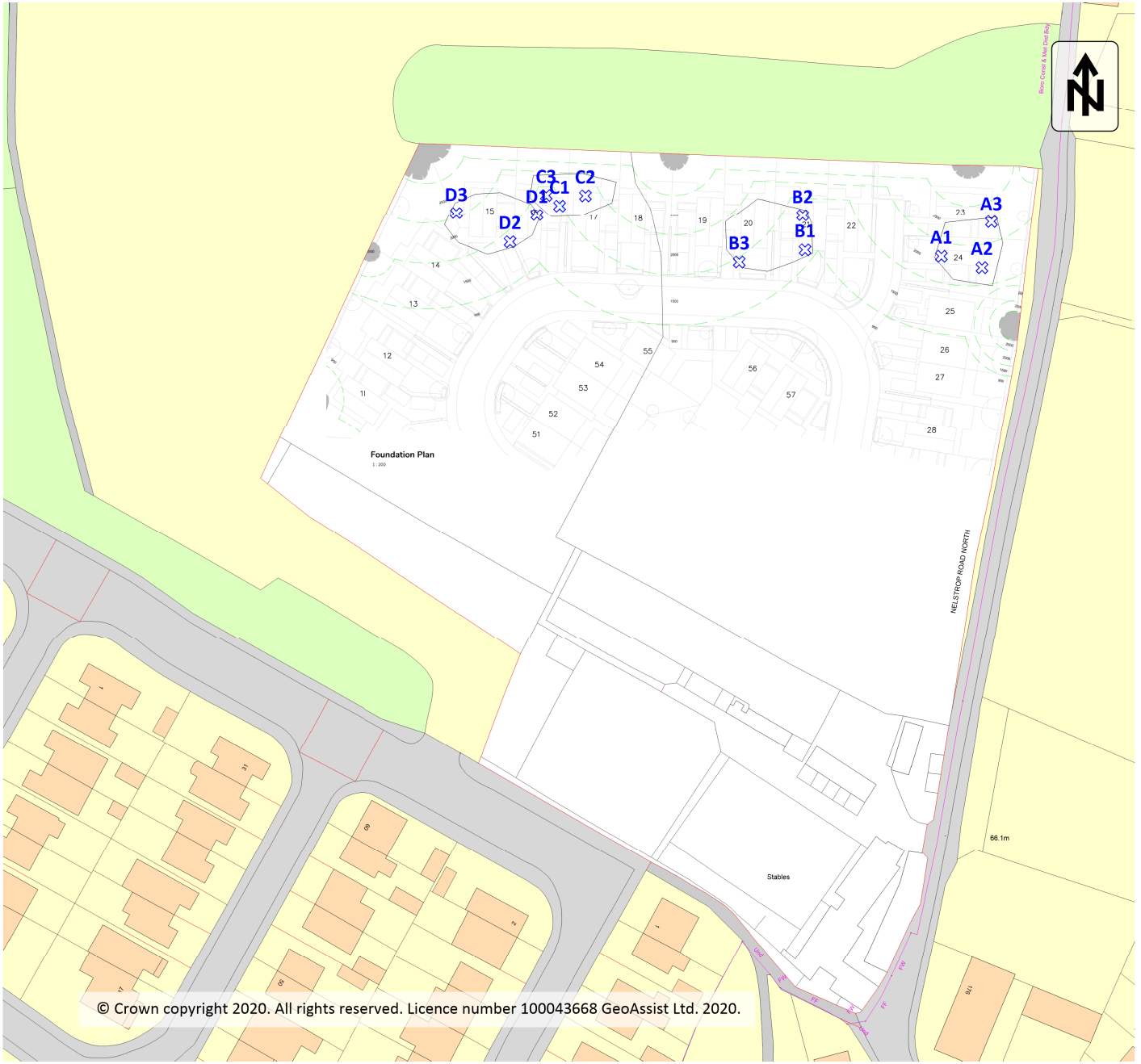
Where materials are removed from site via a recognised waste channel ie licenced waste haulier it is incumbent on the developer or the developers representatives to ensure that a waste transfer note covering all materials is obtained or individual note covering each load are collected and retained for the final validation report.






| | |
|---|---|
| P1. Stockpile A – BS3882 Topsoil East Site | P2. Stockpile B –Inert Natural Clay Subsoil East Site |
| P3. Stockpile C – Inert Soil and Grass West Site | P4. Stockpile D – Inert Subsoils West Site |

6048GALv1.00





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# A1. Plan

| | |
|---|---|
| **Site Name** | Land off Cringle Road |
| **Location** | Levenshulme, Manchester |
| **GeoAssist Ref** | |
| **Client** | Cringle Rd Developments Ltd |
| | 7 Leegate Close<br>Heaton Moor<br>Stockport<br>SK4 3NN |
| **Planning Consultant** | |
| **NGR (centre of site)** | 388410,393160 |
| **Production Date** | Aug 22 |
| **Survey Method** | |
| **Surveyor** | Others |
| **Status** | Final v1.00 |
| | |
| **Base Survey** | OSGB36 |

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# Analytical Report Number : 22-76904

Replaces Analytical Report Number: 22-76904, issue no. 1
Report format change.

| | | | |
|---|---|---|---|
| **Project / Site name:** | Land off Cringle Road Manchester | **Samples received on:** | 09/08/2022 |
| **Your job number:** | 6048 VCR | **Samples instructed on/ Analysis started on:** | 09/08/2022 |
| **Your order number:** | 2220806 | **Analysis completed by:** | 18/08/2022 |
| **Report Issue Number:** | 2 | **Report issued on:** | 26/09/2022 |
| **Samples Analysed:** | 1 soil sample | | |

**Signed:**

Joanna Wawrzeczko
Reporting Specialist
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

**i2 Analytical**
7 Woodshots Meadow
Croxley Green Business Park
Watford, WD18 8YS

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Fax: 01923 237404
email:reception@i2analytical.com

# Certificate of Analysis

## BS 3882:2015 Specification For Topsoil

| | Pass BS 3882 for Multipurpose Topsoil; | | client | |
|---|---|---|---|---|
| **Report No:** | **22-76904** | | **GeoAssist Ltd** | |
| **Location** | Land off Cringle Road Manchester | | | |
| **Lab Reference (Sample Number)** | 2382103 | | | |
| **Sampling Date** | 08/08/2022 | | | |
| **Sample ID** | A-C2 | | | |
| **Depth (m)** | **0.00** | | | |

| | | unit | Result | Compliant with range (Y/N) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Multi-P | Acid | Calc | Low-F | Low-F(a) | Low-F(c) |
| **Soil texture** | <2mm fraction | %m/m | CLAY LOAM | Y | Y | Y | Y | Y | Y |
| | | | | | | | | | |
| **Maximum coarse fragment content:** | >2mm | %m/m | 13.00 | Y | Y | Y | Y | Y | Y |
| | >20mm | %m/m | 0.00 | Y | Y | Y | Y | Y | Y |
| | >50mm | %m/m | 0.00 | Y | Y | Y | Y | Y | Y |
| | | | | | | | | | |
| **Mass loss on ignition** | | % | 13.00 | | | | | | |
| | Clay 5-20% | | Y | Y | Y | Y | Y | Y | Y |
| | Clay 20-35% | | - | - | - | - | - | - | - |
| | | | | | | | | | |
| **Soil pH:** | | pH | 7.00 | Y | N | N | Y | N | N |
| | | | | | | | | | |
| **Carbonate:** | | %m/m | 5.50 | - | - | Y | - | - | Y |
| | | | | | | | | | |
| **Available plant nutrients** | Nitrogen | %m/m | 0.70 | Y | Y | Y | - | - | - |
| | Extractable Phosphate (as P) | mg/l | 71.00 | Y | Y | Y | N | N | N |
| | Extractable Potassium | mg/l | 319.00 | Y | Y | Y | - | - | - |
| | Extractable Magnesium | mg/l | 83.00 | Y | Y | Y | - | - | - |
| | | | | | | | | | |
| **Carbon: Nitrogen Ratio:** | | :1 | 11.00 | Y | Y | Y | Y | Y | Y |
| | | | | | | | | | |
| **Conductivity** | | us/cm | 2400.00 | Y | - | - | - | - | - |
| | | | | | | | | | |
| **Phytotoxic contaminants:** | ** Total Zinc | mg/kg | 84.00 | Y | Y | Y | Y | Y | Y |
| | ** Total Copper | mg/kg | 44.00 | Y | Y | Y | Y | Y | Y |
| | ** Total Nickel | mg/kg | 17.00 | Y | Y | Y | Y | Y | Y |
| | | | | | | | | | |
| **Visible contaminants:** | >2mm | %m/m | 0.00 | Y | Y | Y | Y | Y | Y |
| | Plastics | %m/m | 0.00 | Y | Y | Y | Y | Y | Y |
| | Sharps | no. in 1 kg | 0.00 | Y | Y | Y | Y | Y | Y |
| | | | | | | | | | |
| **Compliancy:** | | | | Pass | Fail | Fail | Fail | Fail | Fail |

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and I2 cannot be held responsible for any discrepencies with current legislation

** = MCERTS accrediited



This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number : 22-76904**
**Project / Site name: Land off Cringle Road Manchester**

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description * |
|---|---|---|---|---|
| 2382103 | A-C2 | None Supplied | None Supplied | Brown loam with vegetation and gravel |

**Analytical Report Number : 22-76904**
**Project / Site name: Land off Cringle Road Manchester**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Geotechnical Testing in Soil | See attached geotechnical report | See attached geotechnical report | | W | NONE |
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| Textural Classification Diagram | Textural classification Diagram | BS3882:2015 | | D | NONE |
| Carbon to Nitrogen Ratio (Topsoil - BS3882:2015) | Carbon to Nitrogen ratio (:1) calculated using Loss on Ignition. | BS3882:2015 | L01TS2015 | W | NONE |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| Kjeldahl nitrogen in soil | Determination of total nitrogen using the Kjeldahl-digestion method and colorimetric determination. | In house method based on BS 7755-3.7:1995 & | L087-PL | D | NONE |
| Topsoil | See attached report. | BS 3882: 2015 | PL | W | NONE |
| Mass loss on ignition (Topsoil - BS3882) | Determination of Loss on Ignition as per BS 3882:2015. | BS3882:2015 | L047-PL | D | NONE |
| Carbonate (Topsoil - BS3882) | Determination of Carbonate as per BS 3882:2015. | BS3882:2015 | L034-PL | D | NONE |
| Phosphorus as PO4 (BS3882/BS8601) | Determiation of the extractable phosphorus in soil, in accordance with BS3882:2007 methodology. | BS3882:2015 & BS8601:2013 | L048-PL | D | NONE |
| Coarse Fragment and Contaminant Analysis | Determination of >2mm contaminants | BS3882:2007 & BS8601:2013 & PAS 100:2005 | L01TS | D | NONE |
| Nitrogen (TKN) | Determination of total nitrogen by Kjeldahl method. | BS3882:2007 | L087-PL | D | NONE |
| Conductivity (BS3882/BS8601) | Determination of the conductivity of soil in accordance with BS 3882:2007 methodology | BS3882:2007 & BS8601:2013 | L099-PL | D | NONE |
| pH (BS3882/BS8601) | Determination of the pH of soil in accordance with BS 3882:2007 methodology | BS3882:2007 & BS8601:2013 | L099-PL | D | NONE |
| Extractable/Available Metals (BS3882/BS8601) | Determiation of the extractable metals in soil, in accordance with BS3882:2007 methodology. | BS3882:2007 & BS8601:2013 | L038-PL | D | NONE |
| Sodium (exchangeable %) | Determination of exchangeable sodium (%) by calculation, in accordance with BS3882:2007 methodology. | BS3882:2007 | L038-PL | D | NONE |

**Analytical Report Number : 22-76904**
**Project / Site name: Land off Cringle Road Manchester**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Textural Classification (BS3882/BS8601) | Determination of the textural classifcation of soil following BS3882:2007 methodology. | BS3882:2007 & BS8601:2013 | L01TS | D | NONE |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**
**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

# TEST CERTIFICATE

**SPECIFICATION FOR TOPSOIL**
Tested in Accordance with: BS 3882: 2015

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

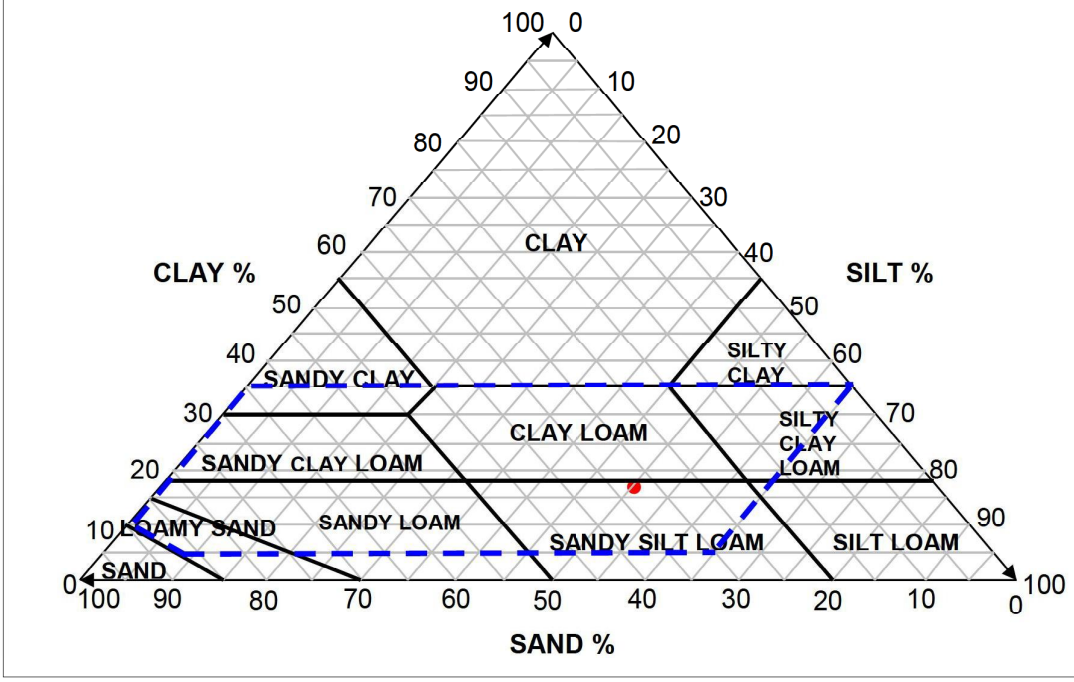
| | | | |
|---|---|---|---|
| Client: | GeoAssist Ltd | Client Reference: | 6048 VCR |
| Client Address: | Unit 4, Sheffield Street, Heaton Norris, Stockport, Cheshire, SK4 1RU | Job Number: | 22-76904 |
| | | Date Sampled: | 08/08/2022 |
| | | Date Received: | 09/08/2022 |
| Contact: | Mark Richardson | Date Tested: | 12/08/2022 |
| Site Address: | Land off Cringle Road Manchester | Sampled By: | Not Given |

*Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland*

**Test Results:**

| | | | |
|---|---|---|---|
| Laboratory Reference: | 2382103 | Depth Top [m]: | 0.00 |
| Hole No.: | A-C2 | Depth Base [m]: | Not Given |
| Sample Reference: | Not Given | Sample Type: | B |
| Sample Description: | CLAY LOAM | | |

## Soil Texture Triangle




| Sample Proportion | % dry mass |
|---|---|
| Sand | 32.9 |
| Silt | 49.1 |
| Clay | 18.0 |

Compliant with range (Y/N)

**Multipurpose topsoil** Y

Remarks:

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

**Signed:** Dudzińska Anna

Anna Dudzinska
PL Deputy Head of Reporting Team
**for and on behalf of i2 Analytical Ltd**



**Date Reported:** 16/08/2022

**GF 286.9**

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# Analytical Report Number : 22-76901

| | | | |
|---|---|---|---|
| **Project / Site name:** | Land off Cringle Road Manchester | **Samples received on:** | 09/08/2022 |
| **Your job number:** | 6048 VCR | **Samples instructed on/ Analysis started on:** | 09/08/2022 |
| **Your order number:** | 2220806 | **Analysis completed by:** | 18/08/2022 |
| **Report Issue Number:** | 1 | **Report issued on:** | 18/08/2022 |
| **Samples Analysed:** | 5 soil samples | | |

**Signed:**

Joanna Wawrzeczko
Reporting Specialist
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

| | |
|---|---|
| soils | - 4 weeks from reporting |
| leachates | - 2 weeks from reporting |
| waters | - 2 weeks from reporting |
| asbestos | - 6 months from reporting |

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-76901**
**Project / Site name: Land off Cringle Road Manchester**
**Your Order No: 2220806**

| Lab Sample Number | | | | 2382096 | 2382097 | 2382098 | 2382099 | 2382100 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | A-C1 | A-C3 | B-C1 | B-C2 | B-C3 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled | | | | 08/08/2022 | 08/08/2022 | 08/08/2022 | 08/08/2022 | 08/08/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 13 | 13 | 13 | 17 | 12 |
| Total mass of sample received | kg | 0.001 | NONE | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | - | - | - |
| Asbestos Analyst ID | N/A | N/A | N/A | JMA | JMA | N/A | N/A | N/A |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | 6.7 | 6.2 | 5.2 | 7.4 | 6.7 |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Free Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Thiocyanate as SCN | mg/kg | 5 | NONE | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Total Sulphate as SO4 | % | 0.005 | MCERTS | 0.033 | 0.075 | 0.022 | 0.01 | 0.014 |
| Sulphide | mg/kg | 1 | MCERTS | 5.2 | 1.9 | 2.7 | 16 | 1.6 |
| Total Sulphur | % | 0.005 | MCERTS | 0.037 | 0.054 | 0.01 | 0.01 | 0.011 |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | 0.52 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene | mg/kg | 0.05 | MCERTS | 0.33 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 4.8 | 0.95 | < 0.05 | < 0.05 | < 0.05 |
| Anthracene | mg/kg | 0.05 | MCERTS | 0.82 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 6.4 | 1.9 | < 0.05 | < 0.05 | < 0.05 |
| Pyrene | mg/kg | 0.05 | MCERTS | 5.3 | 2 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 2.8 | 1 | < 0.05 | < 0.05 | < 0.05 |
| Chrysene | mg/kg | 0.05 | MCERTS | 1.8 | 1.1 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | 2.1 | 1.1 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | 1.2 | 0.87 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 1.6 | 1.2 | < 0.05 | < 0.05 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 0.7 | 0.45 | < 0.05 | < 0.05 | < 0.05 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | 0.23 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 0.89 | 0.6 | < 0.05 | < 0.05 | < 0.05 |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 29.5 | 11.2 | < 0.80 | < 0.80 | < 0.80 |

**Analytical Report Number: 22-76901**
**Project / Site name: Land off Cringle Road Manchester**
**Your Order No: 2220806**

| Lab Sample Number | | | | 2382096 | 2382097 | 2382098 | 2382099 | 2382100 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | A-C1 | A-C3 | B-C1 | B-C2 | B-C3 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled | | | | 08/08/2022 | 08/08/2022 | 08/08/2022 | 08/08/2022 | 08/08/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 13 | 12 | 9 | 9 | 9.3 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | 87 | 100 | 86 | 62 | 120 |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 0.95 | 0.72 | 1.1 | 0.77 | 1.2 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 0.4 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 1.2 | NONE | < 1.2 | < 1.2 | 1.3 | < 1.2 | < 1.2 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 18 | 19 | 30 | 26 | 26 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 36 | 45 | 27 | 17 | 25 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 76 | 78 | 13 | 15 | 21 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 18 | 14 | 28 | 16 | 28 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | 28 | 26 | 33 | 31 | 30 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 81 | 77 | 59 | 33 | 52 |

U/S = Unsuitable Sample  I/S = Insufficient Sample

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**Analytical Report Number : 22-76901**
**Project / Site name: Land off Cringle Road Manchester**

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description * |
|---|---|---|---|---|
| 2382096 | A-C1 | None Supplied | None Supplied | Brown loam with vegetation and gravel |
| 2382097 | A-C3 | None Supplied | None Supplied | Brown loam with vegetation and gravel |
| 2382098 | B-C1 | None Supplied | None Supplied | Brown clay and sand with gravel. |
| 2382099 | B-C2 | None Supplied | None Supplied | Brown clay and sand with gravel. |
| 2382100 | B-C3 | None Supplied | None Supplied | Brown clay and sand with gravel. |

**Analytical Report Number : 22-76901**
**Project / Site name: Land off Cringle Road Manchester**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| Asbestos identification in soil | Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques. | In house method based on HSG 248 | A001-PL | D | ISO 17025 |
| Boron, water soluble, in soil | Determination of water soluble boron in soil by hot water extract followed by ICP-OES. | In-house method based on Second Site Properties version 3 | L038-PL | D | MCERTS |
| Free cyanide in soil | Determination of free cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | MCERTS |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Monohydric phenols in soil | Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | MCERTS |
| Speciated EPA-16 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement. | In house method. | L099-PL | D | MCERTS |
| Sulphide in soil | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method | L010-PL | D | MCERTS |
| Thiocyanate in soil | Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer). | In-house method | L082-PL | D | NONE |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| Total cyanide in soil | Determination of total cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | MCERTS |
| Hexavalent chromium in soil (Lower Level) | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method | L080-PL | W | NONE |
| Total Sulphate in soil as % | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |
| Total Sulphur in soil as % | Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**
**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

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The results included within the report are representative of the samples submitted for analysis.

# Soils Risk Assessment

Site Reference: 6048 VCR
Project Site: Land off Cringle Road
Project Location: Levenshulme, Manchester
Client: Cringle Rd Developments Ltd

| i2 Reference | Residential | A-C1 | A-C3 | B-C1 | B-C2 | B-C3 |
|---|---|---|---|---|---|---|
| Customer Sample Ref: | C4SL / S4UL | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile |
| | SOM 1% GAC | 08/08/2022 | 08/08/2022 | 08/08/2022 | 08/08/2022 | 08/08/2022 |
| Determinand | LQM II | | | | | |
| Arsenic | 27 | 13 | 12 | 9 | 9 | 9.3 |
| Boron (water-soluble) | 290 | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 |
| Cadmium | 22 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Chromium* | 910 | 18 | 19 | 30 | 26 | 26 |
| Chromium VI | 21 | 1.2 | 1.2 | 1.3 | 1.2 | 1.2 |
| Copper | 2400 | 36 | 45 | 27 | 17 | 25 |
| Cyanide(Total) | - | 1 | 1 | 1 | 1 | 1 |
| Cyanide(free)** | 34 | 1 | 1 | 1 | 1 | 1 |
| Lead | 200 | 76 | 78 | 13 | 15 | 21 |
| Mercury | 1.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Nickel | 130 | 18 | 14 | 28 | 16 | 28 |
| pH | - | 6.7 | 6.2 | 5.2 | 7.4 | 6.7 |
| Phenols(Mono) | 280 | 1 | 1 | 1 | 1 | 1 |
| Selenium | 250 | 1 | 1 | 1 | 1 | 1 |
| SO4(Total) | - | 0.033 | 0.075 | 0.022 | 0.01 | 0.014 |
| Sulphide | - | 5.2 | 1.9 | 2.7 | 16 | 1.6 |
| Sulphur(Free) | - | 0.037 | 0.054 | 0.01 | 0.01 | 0.011 |
| Thiocyanate | - | 5 | 5 | 5 | 5 | 5 |
| Zinc | 3700 | 81 | 77 | 59 | 33 | 52 |
| | | | | | | |
| Acenaphthene | 1100 | 0.52 | 0.05 | 0.05 | 0.05 | 0.05 |
| Acenaphthylene | 920 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| Anthracene | 11000 | 0.82 | 0.05 | 0.05 | 0.05 | 0.05 |
| Benzo(a)Anthracene | - | 2.8 | 1 | 0.05 | 0.05 | 0.05 |
| Benzo(a)Pyrene SM | 5 | 1.6 | 1.2 | 0.05 | 0.05 | 0.05 |
| Benzo(b)Fluoranthene | - | 2.1 | 1.1 | 0.05 | 0.05 | 0.05 |
| Benzo(ghi)Perylene | - | 0.89 | 0.6 | 0.05 | 0.05 | 0.05 |
| Benzo(k)Fluoranthene | - | 1.2 | 0.87 | 0.05 | 0.05 | 0.05 |
| Chrysene | - | 1.8 | 1.1 | 0.05 | 0.05 | 0.05 |
| Dibenzo(ah)Anthracene | - | 0.23 | 0.05 | 0.05 | 0.05 | 0.05 |
| Fluoranthene | 890 | 6.4 | 1.9 | 0.05 | 0.05 | 0.05 |
| Fluorene | 860 | 0.33 | 0.05 | 0.05 | 0.05 | 0.05 |
| Indeno(123-cd)Pyrene | - | 0.7 | 0.45 | 0.05 | 0.05 | 0.05 |
| Naphthalene | 13 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| Phenanthrene | 440 | 4.8 | 0.95 | 0.05 | 0.05 | 0.05 |
| Pyrene | 2000 | 5.3 | 2 | 0.05 | 0.05 | 0.05 |
| | | | | | | |
| PAH(total) | 500 | 29.5 | 11.2 | 0.8 | 0.8 | 0.8 |
| | | | | | | |
| Asbestos | Not-detected | Not-detected | Not-detected | - | - | - |

All Units mg/kg unless otherwise stated — Indicates Exceedance of Applicable Level — SM = Surrogate Marker

*Criteria Assumes Chromium III

**Criteria is derrived considering acute effects on 1-2yo Female Receptor ingesting a single dose of 3g of soil

**Criteria is derrived considering Total TPH (C10 to C35) is formed entirley of a 50:50 Aliphatic and Aromatic Split C8-C10 range

**Basis of Assessment Criteria:** EA 2005 WAC (Human Health Value) — C4SL
LQM S4UL — Atrisk 06

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# Analytical Report Number : 22-76893

Replaces Analytical Report Number: 22-76893, issue no. 1
Report format change.

| | | | |
|---|---|---|---|
| **Project / Site name:** | Land off Cringle Road Manchester | **Samples received on:** | 09/08/2022 |
| **Your job number:** | 6048 VCR | **Samples instructed on/ Analysis started on:** | 09/08/2022 |
| **Your order number:** | 2220807 | **Analysis completed by:** | 18/08/2022 |
| **Report Issue Number:** | 2 | **Report issued on:** | 26/09/2022 |
| **Samples Analysed:** | 1 soil sample | | |

**Signed:**

Joanna Wawrzeczko
Reporting Specialist
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

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The results included within the report are representative of the samples submitted for analysis.

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# Certificate of Analysis

## BS 3882:2015 Specification For Topsoil

| | Fail BS 3882 | | client | |
|---|---|---|---|---|
| **Report No:** | **22-76893** | | **GeoAssist Ltd** | |
| **Location** | Land off Cringle Road Manchester | | | |
| **Lab Reference (Sample Number)** | 2382087 | | | |
| **Sampling Date** | 08/08/2022 | | | |
| **Sample ID** | C-C2 | | | |
| **Depth (m)** | **0.00** | | **Compliant with range (Y/N)** | |

| | | unit | Result | Multi-P | Acid | Calc | Low-F | Low-F(a) | Low-F(c) |
|---|---|---|---|---|---|---|---|---|---|
| **Soil texture** | <2mm fraction | %m/m | SANDY LOAM | Y | Y | Y | Y | Y | Y |
| **Maximum coarse fragment content:** | >2mm | %m/m | 5.40 | Y | Y | Y | Y | Y | Y |
| | >20mm | %m/m | 0.00 | Y | Y | Y | Y | Y | Y |
| | >50mm | %m/m | 0.00 | Y | Y | Y | Y | Y | Y |
| **Mass loss on ignition** | | % | 10.00 | | | | | | |
| | Clay 5-20% | | Y | Y | Y | Y | Y | Y | Y |
| | Clay 20-35% | | - | - | - | - | - | - | - |
| **Soil pH:** | | pH | 6.50 | Y | N | N | Y | N | N |
| **Carbonate:** | | %m/m | 4.90 | - | - | Y | - | - | Y |
| **Available plant nutrients** | Nitrogen | %m/m | 0.42 | Y | Y | Y | - | - | - |
| | Extractable Phosphate (as P) | mg/l | 15.00 | N | N | N | Y | Y | Y |
| | Extractable Potassium | mg/l | 65.90 | N | N | N | - | - | - |
| | Extractable Magnesium | mg/l | 32.00 | N | N | N | - | - | - |
| **Carbon: Nitrogen Ratio:** | | :1 | 14.00 | Y | Y | Y | Y | Y | Y |
| **Conductivity** | | us/cm | 1700.00 | Y | - | - | - | - | - |
| **Phytotoxic contaminants:** | ** Total Zinc | mg/kg | 220.00 | N | N | N | N | N | N |
| | ** Total Copper | mg/kg | 42.00 | Y | Y | Y | Y | Y | Y |
| | ** Total Nickel | mg/kg | 17.00 | Y | Y | Y | Y | Y | Y |
| **Visible contaminants:** | >2mm | %m/m | 0.00 | Y | Y | Y | Y | Y | Y |
| | Plastics | %m/m | 0.00 | Y | Y | Y | Y | Y | Y |
| | Sharps | no. in 1 kg | 0.00 | Y | Y | Y | Y | Y | Y |
| **Compliancy:** | | | | Fail | Fail | Fail | Fail | Fail | Fail |

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and I2 cannot be held responsible for any discrepencies with current legislation

** = MCERTS accrediited



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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number : 22-76893**
**Project / Site name: Land off Cringle Road Manchester**

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description * |
|---|---|---|---|---|
| 2382087 | C-C2 | None Supplied | None Supplied | Brown loam with vegetation and gravel |

**Analytical Report Number : 22-76893**
**Project / Site name: Land off Cringle Road Manchester**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Geotechnical Testing in Soil | See attached geotechnical report | See attached geotechnical report | | W | NONE |
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| Textural Classification Diagram | Textural classification Diagram | BS3882:2015 | | D | NONE |
| Carbon to Nitrogen Ratio (Topsoil - BS3882:2015) | Carbon to Nitrogen ratio (:1) calculated using Loss on Ignition. | BS3882:2015 | L01TS2015 | W | NONE |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| Kjeldahl nitrogen in soil | Determination of total nitrogen using the Kjeldahl-digestion method and colorimetric determination. | In house method based on BS 7755-3.7:1995 & | L087-PL | D | NONE |
| Topsoil | See attached report. | BS 3882: 2015 | PL | W | NONE |
| Mass loss on ignition (Topsoil - BS3882) | Determination of Loss on Ignition as per BS 3882:2015. | BS3882:2015 | L047-PL | D | NONE |
| Carbonate (Topsoil - BS3882) | Determination of Carbonate as per BS 3882:2015. | BS3882:2015 | L034-PL | D | NONE |
| Phosphorus as PO4 (BS3882/BS8601) | Determiation of the extractable phosphorus in soil, in accordance with BS3882:2007 methodology. | BS3882:2015 & BS8601:2013 | L048-PL | D | NONE |
| Coarse Fragment and Contaminant Analysis | Determination of >2mm contaminants | BS3882:2007 & BS8601:2013 & PAS 100:2005 | L01TS | D | NONE |
| Nitrogen (TKN) | Determination of total nitrogen by Kjeldahl method. | BS3882:2007 | L087-PL | D | NONE |
| Conductivity (BS3882/BS8601) | Determination of the conductivity of soil in accordance with BS 3882:2007 methodology | BS3882:2007 & BS8601:2013 | L099-PL | D | NONE |
| pH (BS3882/BS8601) | Determination of the pH of soil in accordance with BS 3882:2007 methodology | BS3882:2007 & BS8601:2013 | L099-PL | D | NONE |
| Extractable/Available Metals (BS3882/BS8601) | Determiation of the extractable metals in soil, in accordance with BS3882:2007 methodology. | BS3882:2007 & BS8601:2013 | L038-PL | D | NONE |
| Sodium (exchangeable %) | Determination of exchangeable sodium (%) by calculation, in accordance with BS3882:2007 methodology. | BS3882:2007 | L038-PL | D | NONE |

**Analytical Report Number : 22-76893**
**Project / Site name: Land off Cringle Road Manchester**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Textural Classification (BS3882/BS8601) | Determination of the textural classifcation of soil following BS3882:2007 methodology. | BS3882:2007 & BS8601:2013 | L01TS | D | NONE |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**
**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

# TEST CERTIFICATE

**SPECIFICATION FOR TOPSOIL**
Tested in Accordance with: BS 3882: 2015

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

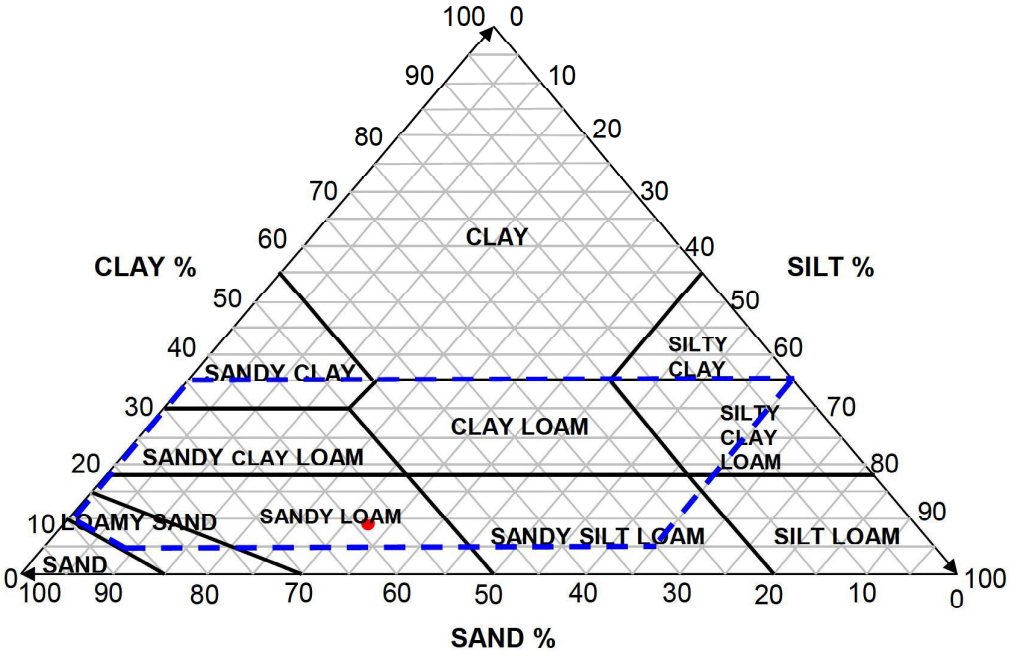
| | | | |
|---|---|---|---|
| Client: | GeoAssist Ltd | Client Reference: | 6048 VCR |
| Client Address: | Unit 4, Sheffield Street, Heaton Norris, Stockport, Cheshire, SK4 1RU | Job Number: | 22-76893 |
| | | Date Sampled: | 08/08/2022 |
| | | Date Received: | 09/08/2022 |
| Contact: | Matthew Benson | Date Tested: | 12/08/2022 |
| Site Address: | Land off Cringle Road Manchester | Sampled By: | Not Given |

*Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland*

**Test Results:**

| | | | |
|---|---|---|---|
| Laboratory Reference: | 2382087 | Depth Top [m]: | 0.00 |
| Hole No.: | C-C2 | Depth Base [m]: | Not Given |
| Sample Reference: | Not Given | Sample Type: | B |
| Sample Description: | SANDY LOAM | | |

## Soil Texture Triangle




| Sample Proportion | % dry mass |
|---|---|
| Sand | 58.9 |
| Silt | 30.9 |
| Clay | 10.2 |

Compliant with range (Y/N)

**Multipurpose topsoil** Y

Remarks:

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

**Signed:** Dudzińska Anna

Anna Dudzinska
PL Deputy Head of Reporting Team
**for and on behalf of i2 Analytical Ltd**



**Date Reported:** 16/08/2022

**GF 286.9**

**Matthew Benson**
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# Analytical Report Number : 22-76890

| | | | |
|---|---|---|---|
| **Project / Site name:** | Land off Cringle Road Manchester | **Samples received on:** | 09/08/2022 |
| **Your job number:** | 6048 VCR | **Samples instructed on/ Analysis started on:** | 09/08/2022 |
| **Your order number:** | 2220807 | **Analysis completed by:** | 18/08/2022 |
| **Report Issue Number:** | 1 | **Report issued on:** | 18/08/2022 |
| **Samples Analysed:** | 2 soil samples | | |

**Signed:**

Dominika Warjan
Junior Reporting Specialist
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

| | |
|---|---|
| soils | - 4 weeks from reporting |
| leachates | - 2 weeks from reporting |
| waters | - 2 weeks from reporting |
| asbestos | - 6 months from reporting |

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-76890**
**Project / Site name: Land off Cringle Road Manchester**
**Your Order No: 2220807**

| Lab Sample Number | | | | 2382082 | 2382083 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | C-C1 | C-C3 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied |
| **Date Sampled** | | | | 08/08/2022 | 08/08/2022 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 21 | 24 |
| Total mass of sample received | kg | 0.001 | NONE | 0.3 | 0.3 |

| | | | | | |
|---|---|---|---|---|---|
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected |
| Asbestos Analyst ID | N/A | N/A | N/A | JMA | JMA |

**General Inorganics**

| | | | | | |
|---|---|---|---|---|---|
| pH - Automated | pH Units | N/A | MCERTS | 7.1 | 6.9 |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 |
| Free Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 |
| Thiocyanate as SCN | mg/kg | 5 | NONE | < 5.0 | < 5.0 |
| Total Sulphate as SO4 | % | 0.005 | MCERTS | 0.067 | 0.07 |
| Sulphide | mg/kg | 1 | MCERTS | 36 | 6 |
| Total Sulphur | % | 0.005 | MCERTS | 0.047 | 0.047 |

**Total Phenols**

| | | | | | |
|---|---|---|---|---|---|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 |

**Speciated PAHs**

| | | | | | |
|---|---|---|---|---|---|
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.8 |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.37 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 0.43 | 1.8 |
| Anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.37 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 0.71 | 2.1 |
| Pyrene | mg/kg | 0.05 | MCERTS | 0.65 | 2 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 0.41 | 1.2 |
| Chrysene | mg/kg | 0.05 | MCERTS | 0.33 | 1.1 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | 0.31 | 1.3 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | 0.23 | 0.76 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 0.31 | 1.2 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.51 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 0.2 | 0.71 |

**Total PAH**

| | | | | | |
|---|---|---|---|---|---|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 3.58 | 14 |

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**Analytical Report Number: 22-76890**
**Project / Site name: Land off Cringle Road Manchester**
**Your Order No: 2220807**

| Lab Sample Number | | | | 2382082 | 2382083 |
|---|---|---|---|---|---|
| Sample Reference | | | | C-C1 | C-C3 |
| Sample Number | | | | None Supplied | None Supplied |
| Depth (m) | | | | None Supplied | None Supplied |
| Date Sampled | | | | 08/08/2022 | 08/08/2022 |
| Time Taken | | | | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| **Heavy Metals / Metalloids** | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 15 | 18 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | 110 | 200 |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 0.92 | 0.95 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 0.7 | 0.5 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 1.2 | NONE | < 1.2 | < 1.2 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 30 | 22 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 37 | 49 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 41 | 130 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 23 | 21 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | 43 | 31 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 96 | 140 |
| **Monoaromatics & Oxygenates** | | | | | |
| Benzene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 |
| Toluene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 |
| Ethylbenzene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 |
| p & m-xylene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 |
| o-xylene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 |
| **Petroleum Hydrocarbons** | | | | | |
| TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$ | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$ | mg/kg | 2 | MCERTS | < 2.0 | < 2.0 |
| TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | < 8.0 | < 8.0 |
| TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | < 8.0 | < 8.0 |
| TPH-CWG - Aliphatic >EC35 - EC40 $_{EH\_CU\_1D\_AL}$ | mg/kg | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$ | mg/kg | 10 | MCERTS | < 10 | < 10 |
| TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$ | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$ | mg/kg | 2 | MCERTS | < 2.0 | 3.7 |
| TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | < 10 | 13 |
| TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | 14 | 28 |
| TPH-CWG - Aromatic >EC35 - EC40 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$ | mg/kg | 10 | MCERTS | 21 | 45 |
| TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | 14 | 45 |

U/S = Unsuitable Sample  I/S = Insufficient Sample

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The results included within the report relate only to the sample(s) submitted for testing.

**Analytical Report Number : 22-76890**
**Project / Site name: Land off Cringle Road Manchester**

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description * |
|---|---|---|---|---|
| 2382082 | C-C1 | None Supplied | None Supplied | Brown loam with vegetation and gravel |
| 2382083 | C-C3 | None Supplied | None Supplied | Brown loam with vegetation and gravel |

**Analytical Report Number : 22-76890**
**Project / Site name: Land off Cringle Road Manchester**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| Asbestos identification in soil | Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques. | In house method based on HSG 248 | A001-PL | D | ISO 17025 |
| Boron, water soluble, in soil | Determination of water soluble boron in soil by hot water extract followed by ICP-OES. | In-house method based on Second Site Properties version 3 | L038-PL | D | MCERTS |
| Free cyanide in soil | Determination of free cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | MCERTS |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Monohydric phenols in soil | Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | MCERTS |
| Speciated EPA-16 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement. | In house method. | L099-PL | D | MCERTS |
| Sulphide in soil | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method | L010-PL | D | MCERTS |
| Thiocyanate in soil | Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer). | In-house method | L082-PL | D | NONE |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| Total cyanide in soil | Determination of total cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | MCERTS |
| BTEX and MTBE in soil (Monoaromatics) | Determination of BTEX in soil by headspace GC-MS. | In-house method based on USEPA8260 | L073B-PL | W | MCERTS |
| TPH in (Soil) | Determination of TPH bands by HS-GC-MS/GC-FID | In-house method, TPH with carbon banding and silica gel split/cleanup. | L076-PL | D | MCERTS |
| TPHCWG (Soil) | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. | In-house method with silica gel split/clean up. | L088/76-PL | W | MCERTS |
| Hexavalent chromium in soil (Lower Level) | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method | L080-PL | W | NONE |
| Total Sulphate in soil as % | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |

**Analytical Report Number : 22-76890**
**Project / Site name: Land off Cringle Road Manchester**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Total Sulphur in soil as % | Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**
**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

| Acronym | Descriptions |
|---|---|
| HS | Headspace Analysis |
| MS | Mass spectrometry |
| FID | Flame Ionisation Detector |
| GC | Gas Chromatography |
| EH | Extractable Hydrocarbons (i.e. everything extracted by the solvent(s)) |
| CU | Clean-up - e.g. by Florisil®, silica gel |
| 1D | GC - Single coil/column gas chromatography |
| 2D | GC-GC - Double coil/column gas chromatography |
| Total | Aliphatics & Aromatics |
| AL | Aliphatics |
| AR | Aromatics |
| #1 | EH_2D_Total but with humics mathematically subtracted |
| #2 | EH_2D_Total but with fatty acids mathematically subtracted |
| _ | Operator - understore to separate acronyms (exception for +) |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total |

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# Analytical Report Number : 22-76880

| | | | |
|---|---|---|---|
| **Project / Site name:** | Land off Cringle Road Manchester | **Samples received on:** | 09/08/2022 |
| **Your job number:** | 6048 VCR | **Samples instructed on/ Analysis started on:** | 09/08/2022 |
| **Your order number:** | 2220805 | **Analysis completed by:** | 18/08/2022 |
| **Report Issue Number:** | 1 | **Report issued on:** | 18/08/2022 |
| **Samples Analysed:** | 3 soil samples | | |

**Signed:**

Dominika Warjan
Junior Reporting Specialist
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-76880**
**Project / Site name: Land off Cringle Road Manchester**
**Your Order No: 2220805**

| Lab Sample Number | | | | 2382029 | 2382030 | 2382031 |
|---|---|---|---|---|---|---|
| **Sample Reference** | | | | D-C1 | D-C2 | D-C3 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied | None Supplied |
| **Date Sampled** | | | | 08/08/2022 | 08/08/2022 | 08/08/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 21 | 16 | 16 |
| Total mass of sample received | kg | 0.001 | NONE | 0.3 | 0.3 | 0.3 |
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected |
| Asbestos Analyst ID | N/A | N/A | N/A | JSW | JSW | JSW |
| **General Inorganics** | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | 7.1 | 7.1 | 7.2 |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| Free Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| Thiocyanate as SCN | mg/kg | 5 | NONE | < 5.0 | < 5.0 | < 5.0 |
| Total Sulphate as SO4 | % | 0.005 | MCERTS | 0.033 | 0.023 | 0.045 |
| Sulphide | mg/kg | 1 | MCERTS | 7.8 | 12 | 26 |
| Total Sulphur | % | 0.005 | MCERTS | 0.027 | 0.019 | 0.035 |
| **Total Phenols** | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| **Speciated PAHs** | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.28 | 0.35 |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | 0.23 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 1.2 | 1.4 | 2.5 |
| Anthracene | mg/kg | 0.05 | MCERTS | 0.36 | 0.44 | 0.56 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 1.9 | 2.4 | 4.1 |
| Pyrene | mg/kg | 0.05 | MCERTS | 1.8 | 2.4 | 4 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 1 | 1.3 | 2.4 |
| Chrysene | mg/kg | 0.05 | MCERTS | 1.2 | 1.2 | 1.7 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | 0.93 | 1.2 | 2.4 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | 0.59 | 0.4 | 0.91 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 1.1 | 0.97 | 2.4 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 0.51 | 0.56 | 0.97 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | 0.34 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 0.65 | 0.68 | 1.3 |
| **Total PAH** | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 11.3 | 13.2 | 23.9 |

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The results included within the report relate only to the sample(s) submitted for testing.

**Analytical Report Number: 22-76880**
**Project / Site name: Land off Cringle Road Manchester**
**Your Order No: 2220805**

| Lab Sample Number | | | | 2382029 | 2382030 | 2382031 |
|---|---|---|---|---|---|---|
| Sample Reference | | | | D-C1 | D-C2 | D-C3 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | None Supplied | None Supplied | None Supplied |
| Date Sampled | | | | 08/08/2022 | 08/08/2022 | 08/08/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | |
| **Heavy Metals / Metalloids** | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 12 | 15 | 12 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | 120 | 140 | 130 |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 0.84 | 1.1 | 0.84 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | 1.1 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 1.2 | NONE | 1.7 | < 1.2 | < 1.2 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 26 | 32 | 25 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 36 | 34 | 46 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 68 | 66 | 110 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 21 | 29 | 20 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | 33 | 40 | 32 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 96 | 240 | 110 |
| **Monoaromatics & Oxygenates** | | | | | | |
| Benzene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| Toluene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| o-xylene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| **Petroleum Hydrocarbons** | | | | | | |
| TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$ | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$ | mg/kg | 2 | MCERTS | < 2.0 | < 2.0 | < 2.0 |
| TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | < 8.0 | < 8.0 | < 8.0 |
| TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | < 8.0 | < 8.0 | < 8.0 |
| TPH-CWG - Aliphatic >EC35 - EC40 $_{EH\_CU\_1D\_AL}$ | mg/kg | 10 | NONE | < 10 | < 10 | < 10 |
| TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$ | mg/kg | 10 | MCERTS | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$ | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$ | mg/kg | 2 | MCERTS | < 2.0 | < 2.0 | 2.5 |
| TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | 21 | < 10 | 11 |
| TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | 38 | 20 | 21 |
| TPH-CWG - Aromatic >EC35 - EC40 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | NONE | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$ | mg/kg | 10 | MCERTS | 58 | 30 | 35 |
| TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | 58 | 20 | 35 |

U/S = Unsuitable Sample  I/S = Insufficient Sample

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The results included within the report relate only to the sample(s) submitted for testing.

**Analytical Report Number : 22-76880**
**Project / Site name: Land off Cringle Road Manchester**

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description * |
|---|---|---|---|---|
| 2382029 | D-C1 | None Supplied | None Supplied | Brown clay and sand. |
| 2382030 | D-C2 | None Supplied | None Supplied | Brown clay and loam with rubble and vegetation. |
| 2382031 | D-C3 | None Supplied | None Supplied | Brown clay and loam with gravel. |

**Analytical Report Number : 22-76880**
**Project / Site name: Land off Cringle Road Manchester**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| Asbestos identification in soil | Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques. | In house method based on HSG 248 | A001-PL | D | ISO 17025 |
| Boron, water soluble, in soil | Determination of water soluble boron in soil by hot water extract followed by ICP-OES. | In-house method based on Second Site Properties version 3 | L038-PL | D | MCERTS |
| Free cyanide in soil | Determination of free cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | MCERTS |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Monohydric phenols in soil | Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | MCERTS |
| Speciated EPA-16 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement. | In house method. | L099-PL | D | MCERTS |
| Sulphide in soil | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method | L010-PL | D | MCERTS |
| Thiocyanate in soil | Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer). | In-house method | L082-PL | D | NONE |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| Total cyanide in soil | Determination of total cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | MCERTS |
| BTEX and MTBE in soil (Monoaromatics) | Determination of BTEX in soil by headspace GC-MS. | In-house method based on USEPA8260 | L073B-PL | W | MCERTS |
| TPH in (Soil) | Determination of TPH bands by HS-GC-MS/GC-FID | In-house method, TPH with carbon banding and silica gel split/cleanup. | L076-PL | D | MCERTS |
| TPHCWG (Soil) | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. | In-house method with silica gel split/clean up. | L088/76-PL | W | MCERTS |
| Hexavalent chromium in soil (Lower Level) | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method | L080-PL | W | NONE |
| Total Sulphate in soil as % | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |

**Analytical Report Number : 22-76880**
**Project / Site name: Land off Cringle Road Manchester**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Total Sulphur in soil as % | Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**
**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

| Acronym | Descriptions |
|---|---|
| HS | Headspace Analysis |
| MS | Mass spectrometry |
| FID | Flame Ionisation Detector |
| GC | Gas Chromatography |
| EH | Extractable Hydrocarbons (i.e. everything extracted by the solvent(s)) |
| CU | Clean-up - e.g. by Florisil®, silica gel |
| 1D | GC - Single coil/column gas chromatography |
| 2D | GC-GC - Double coil/column gas chromatography |
| Total | Aliphatics & Aromatics |
| AL | Aliphatics |
| AR | Aromatics |
| #1 | EH_2D_Total but with humics mathematically subtracted |
| #2 | EH_2D_Total but with fatty acids mathematically subtracted |
| _ | Operator - understore to separate acronyms (exception for +) |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total |

# Soils Risk Assessment

Site Reference: 6048 VCR
Project Site: Land off Cringle Road
Project Location: Levenshulme, Manchester
Client: Cringle Rd Developments Ltd

| i2 Reference | Residential | C-C1 | C-C3 | D-C1 | D-C2 | D-C3 |
|---|---|---|---|---|---|---|
| Customer Sample Ref: | C4SL / S4UL | Stockpile | Stockpile | Stockpile | Stockpile | Stockpile |
| | SOM 1% GAC | 08/08/2022 | 08/08/2022 | 08/08/2022 | 08/08/2022 | 08/08/2022 |
| Determinand | LQM II | | | | | |
| Arsenic | 27 | 15 | 18 | 12 | 15 | 12 |
| Boron (water-soluble) | 290 | 0.7 | 0.5 | 0.2 | 0.2 | 0.2 |
| Cadmium | 22 | 0.2 | 0.2 | 0.2 | 1.1 | 0.2 |
| Chromium* | 910 | 30 | 22 | 26 | 32 | 25 |
| Chromium VI | 21 | 1.2 | 1.2 | 1.7 | 1.2 | 1.2 |
| Copper | 2400 | 37 | 49 | 36 | 34 | 46 |
| Cyanide(Total) | - | 1 | 1 | 1 | 1 | 1 |
| Cyanide(free)** | 34 | 1 | 1 | 1 | 1 | 1 |
| Lead | 200 | 41 | 130 | 68 | 66 | 110 |
| Mercury | 1.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Nickel | 130 | 23 | 21 | 21 | 29 | 20 |
| pH | - | 7.1 | 6.9 | 7.1 | 7.1 | 7.2 |
| Phenols(Mono) | 280 | 1 | 1 | 1 | 1 | 1 |
| Selenium | 250 | 1 | 1 | 1 | 1 | 1 |
| SO4(Total) | - | 0.067 | 0.07 | 0.033 | 0.023 | 0.045 |
| Sulphide | - | 36 | 6 | 7.8 | 12 | 26 |
| Sulphur(Free) | - | 0.047 | 0.047 | 0.027 | 0.019 | 0.035 |
| Thiocyanate | - | 5 | 5 | 5 | 5 | 5 |
| Zinc | 3700 | 96 | 140 | 96 | 240 | 110 |
| | | | | | | |
| Acenaphthene | 1100 | 0.05 | 0.8 | 0.05 | 0.28 | 0.35 |
| Acenaphthylene | 920 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| Anthracene | 11000 | 0.05 | 0.37 | 0.36 | 0.44 | 0.56 |
| Benzo(a)Anthracene | - | 0.41 | 1.2 | 1 | 1.3 | 2.4 |
| Benzo(a)Pyrene [SV] | 5 | 0.31 | 1.2 | 1.1 | 0.97 | 2.4 |
| Benzo(b)Fluoranthene | - | 0.31 | 1.3 | 0.93 | 1.2 | 2.4 |
| Benzo(ghi)Perylene | - | 0.2 | 0.71 | 0.65 | 0.68 | 1.3 |
| Benzo(k)Fluoranthene | - | 0.23 | 0.76 | 0.59 | 0.4 | 0.91 |
| Chrysene | - | 0.33 | 1.1 | 1.2 | 1.2 | 1.7 |
| Dibenzo(ah)Anthracene | - | 0.05 | 0.05 | 0.05 | 0.05 | 0.34 |
| Fluoranthene | 890 | 0.71 | 2.1 | 1.9 | 2.4 | 4.1 |
| Fluorene | 860 | 0.05 | 0.37 | 0.05 | 0.05 | 0.23 |
| Indeno(123-cd)Pyrene | - | 0.05 | 0.51 | 0.51 | 0.56 | 0.97 |
| Naphthalene | 13 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| Phenanthrene | 440 | 0.43 | 1.8 | 1.2 | 1.4 | 2.5 |
| Pyrene | 2000 | 0.65 | 2 | 1.8 | 2.4 | 4 |
| | | | | | | |
| PAH(total) | 500 | 3.58 | 14 | 11.3 | 13.2 | 23.9 |
| | | | | | | |
| Asbestos | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected |
| TPH (C6-C8 aliphatic) | 530 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| TPH (C8-C10 aliphatic) | 150 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| TPH (C10-C12 aliphatic) | 760 | 1 | 1 | 1 | 1 | 1 |
| TPH (C12-C16 aliphatic) | 4300 | 2 | 2 | 2 | 2 | 2 |
| TPH (C16-C21 aliphatic) | 110000 | 8 | 8 | 8 | 8 | 8 |
| TPH (C21-C35 aliphatic) | 110000 | 8 | 8 | 8 | 8 | 8 |
| | | | | | | |
| TPH (C5-C7 aromatic) | 300 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| TPH (C7-C8 aromatic) | 660 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| TPH (C8-C10 aromatic) | 190 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| TPH (C10-C12 aromatic) | 380 | 1 | 1 | 1 | 1 | 1 |
| TPH (C12-C16 aromatic) | 660 | 2 | 3.7 | 2 | 2 | 2.5 |
| TPH (C16-C21 aromatic) | 930 | 10 | 13 | 21 | 10 | 11 |
| TPH (C21-C35 aromatic) | 1700 | 14 | 28 | 38 | 20 | 21 |
| | | | | | | |
| Benzene | 2.4 | 1 | 1 | 1 | 1 | 1 |
| Toluene | 7.5 | 1 | 1 | 1 | 1 | 1 |
| EthylBenzene | 260 | 1 | 1 | 1 | 1 | 1 |
| M/P Xylene | 310 | 1 | 1 | 1 | 1 | 1 |

All Units mg/kg unless otherwise stated — Indicates Exceedance of Applicable Level — [SV] = Surrogate Marker

*Criteria Assumes Chromium III

**Criteria is derrived considering acute effects on 1-2yo Female Receptor ingesting a single dose of 3g of soil

**Criteria is derrived considering Total TPH (C10 to C35) is formed entirley of a 50:50 Aliphatic and Aromatic Split C8-C10 range

| Basis of Assessment Criteria: | EA 2005 WAC (Human Health Value) | C4SL |
|---|---|---|
| | LQM S4UL | Atrisk 06 |

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WDF Demolition & Excavation Ltd
Whitfield Dairy Farm
Shaw
Oldham
Lancashire
OL2 7UJ



TOWERHOUSE SYSTEMS LTD
16C HESKETH AVENUE
MANCHESTER
M20 2QW

22401
23/01/2023
TOWERHOU

Invoice

| Quantity | Details | Unit Price | Net Amt | VAT % | VAT |
|---|---|---|---|---|---|
| 1.00 | 23/01/2023 SITE ADDRESS- CRINGLE ROAD<br>WET MUCK AWAY @ £300.00 PER LOAD<br>TICKET NUMBER 107330 | 300.00 | 300.00 | 20.00 | 60.00 |

**PAYMENT TERMS: STRICTLY 7 DAYS**

Telephone : 01706 843659
Email : accounts@wdf-ltd.co.uk
Company reg no : 07517555
Vat reg no : 107 3378 25
Royal Bank of Scotland
Sort code 16 34 24
Account number 11111731
Please make all cheques payable to WDF Demolition & Excavation Ltd

| | |
|---|---|
| **Total Net Amount** | 300.00 |
| **Carriage Net** | 0.00 |
| **Total VAT Amount** | 60.00 |
| **Invoice Total** | 360.00 |

WDF LTD 22401

№ 107330

Date 23/1/23

**W.D.F. Demolition & Excavation Limited**
Whitfield Dairy Farm, Shaw, Oldham, OL2 7UJ
Office: 01706 843659 • Mobile: 07958 119466
Email: info@wdf-ltd.co.uk • www.wdf-ltd.co.uk

Job No .....

Licence No. CB/DU54473

Customer Name ..... TOWER HOUSE .....

Site Address ..... CRINGLE RD .....

Delivery Address .....

Driver Name ..... QAZ ..... Wagon No. TCX

| Material | 1 x 8 Wheeler Load | Skip / Size | Paid / Not Paid |
|---|---|---|---|
| | | | |

**Description**

X1 LOAD WET MUCK AWAY

| Day Work | Hours Worked | Travel Time | Total Hours |
|---|---|---|---|
| | | | |

Print Name EDWARD GEIJA ..... Signature .....

Job Title .....

**CONDITIONS OF SALE** - It is essential that all written particulars entered above should be checked by the Consignee, since the delivery note, once signed by the Consignee represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted. All complaints, whether in respect of material or circumstances must be made to the driver of the vehicle and be confirmed in writing direct to the company involved only. Any skips hired by the customer are the customer's responsibility if stolen or damaged. Skips may only be hired for a maximum of two weeks without incurring additional costs.

WDF Demolition & Excavation Ltd
Whitfield Dairy Farm
Shaw
Oldham
Lancashire
OL2 7UJ

TOWERHOUSE SYSTEMS LTD
16C HESKETH AVENUE
MANCHESTER
M20 2QW

22415
24/01/2023
TOWERHOU

Invoice

| Quantity | Details | Unit Price | Net Amt | VAT % | VAT |
|---|---|---|---|---|---|
| 3.00 | 24/01/2023 SITE ADDRESS- CRINGLE ROAD<br>MUCK AWAY @ £300.00 PER LOAD<br>TICKET NUMBER 109009 107335 107334 =3 | 300.00 | 900.00 | 20.00 | 180.00 |

PAYMENT TERMS: STRICTLY 7 DAYS

Telephone : 01706 843659
Email : accounts@wdf-ltd.co.uk
Company reg no : 07517555
Vat reg no : 107 3378 25
Royal Bank of Scotland
Sort code 16 34 24
Account number 11111731
Please make all cheques payable to WDF Demolition & Excavation Ltd

| | |
|---|---|
| **Total Net Amount** | 900.00 |
| **Carriage Net** | 0.00 |
| **Total VAT Amount** | 180.00 |
| **Invoice Total** | 1,080.00 |

WDF LTD 22415

**W.D.F. Demolition & Excavation Limited**

Whitfield Dairy Farm, Shaw, Oldham, OL2 7UJ
Office: 01706 843659 • Mobile: 07958 119466
Email: info@wdf-ltd.co.uk • www.wdf-ltd.co.uk

Nº 109009

Date 24.1.23

Job No .....

Licence No. CB/DU54473

Customer Name ..... COLDER HOUSE

Site Address ..... M19 2RB

.....

Delivery Address .....

.....

Driver Name ..... MICK ..... Wagon No ..... HL5

| Material | 1 x 8 Wheeler Load | Skip / Size | Paid / Not Paid |
|---|---|---|---|
| | | | |

**Description**

1 X MUCK AWAY

| Day Work | Hours Worked | Travel Time | Total Hours |
|---|---|---|---|
| ..... | ..... | ..... | ..... |

*Print Name* EDWARD LEWIS ..... *Signature* .....

*Job Title* .....

**CONDITIONS OF SALE** - It is essential that all written particulars entered above should be checked by the Consignee, since the delivery note, once signed by the Consignee represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted. All complaints, whether in respect of material or circumstances must be made to the driver of the vehicle and be confirmed in writing direct to the company immediately. Any skips hired by the customer are the customer's responsibility if stolen or damaged. Skips may only be hired for a maximum of two weeks without incurring additional costs.

WDF LTD

No 107335

**W.D.F. Demolition & Excavation Limited**

Whitfield Dairy Farm, Shaw, Oldham, OL2 7UJ
Office: 01706 843659 • Mobile: 07958 119466
Email: info@wdf-ltd.co.uk • www.wdf-ltd.co.uk

Date 24/1/23

Job No .....

Licence No. CB/DU54473

Customer Name ..... TOWER HOUSE

Site Address ..... CRINGLE RD

Delivery Address .....

Driver Name ..... GAZ ..... Wagon No. TCX

| Material | 1 x 8 Wheeler Load | Skip / Size | Paid / Not Paid |
|---|---|---|---|
| | | | |

**Description**

X1 MOCK AWAY

| Day Work | Hours Worked | Travel Time | Total Hours |
|---|---|---|---|
| | | | |

*Print Name* EDWARD LENSA ..... *Signature* .....

*Job Title* .....

CONDITIONS OF SALE - It is essential that all written particulars entered above should be checked by the Consignee, since the delivery note, once signed by the Consignee represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted. All complaints, whether in respect of material or circumstances must be made to the driver of the vehicle and be confirmed in writing direct to the company immediately. Any skips hired by the customer are the customer's responsibility if stolen or damaged. Skips may only be hired for a maximum of two weeks without incurring additional costs.

WDF LTD

**W.D.F. Demolition & Excavation Limited**

Whitfield Dairy Farm, Shaw, Oldham, OL2 7UJ
Office: 01706 843659 • Mobile: 07958 119466
Email: info@wdf-ltd.co.uk • www.wdf-ltd.co.uk

No 107334

Date 24/1/23

Job No

Licence No. CB/DU54473

Customer Name TOWER HOUSE

Site Address CRINGLE RD

Delivery Address

Driver Name QAZ

Wagon No. TCX

| Material | 1 x 8 Wheeler Load | Skip / Size | Paid / Not Paid |
|---|---|---|---|
| | | | |

**Description**

X1 MUCK AWAY

| Day Work | Hours Worked | Travel Time | Total Hours |
|---|---|---|---|
| | | | |

Print Name L. BARTLEY

Signature

Job Title

**CONDITIONS OF SALE** It is essential that all written particulars entered above should be checked by the Consignee, since the delivery note, once signed by the Consignee represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted. All complaints, whether in respect of material or circumstances must be made to the driver of the vehicle and be confirmed in writing direct to the company immediately. Any skips hired by the customer are the customer's responsibility if stolen or damaged. Skips may only be hired for a maximum of two weeks without incurring additional costs.

WDF Demolition & Excavation Ltd
Whitfield Dairy Farm
Shaw
Oldham
Lancashire
OL2 7UJ

TOWERHOUSE SYSTEMS LTD
16C HESKETH AVENUE
MANCHESTER
M20 2QW

22418
25/01/2023
TOWERHOU

Invoice

| Quantity | Details | Unit Price | Net Amt | VAT % | VAT |
|---|---|---|---|---|---|
| 1.00 | 25/01/2023 SITE ADDRESS- CRINGLE ROAD<br>MUCK AWAY @ £300.00 PER LOAD<br>TICKET NUMBER 106996 | 300.00 | 300.00 | 20.00 | 60.00 |

PAYMENT TERMS: STRICTLY 7 DAYS

Telephone : 01706 843659
Email : accounts@wdf-ltd.co.uk
Company reg no : 07517555
Vat reg no : 107 3378 25
Royal Bank of Scotland
Sort code 16 34 24
Account number 11111731
Please make all checues payable to WDF Demolition & Excavation Ltd

| | |
|---|---|
| **Total Net Amount** | 300.00 |
| **Carriage Net** | 0.00 |
| **Total VAT Amount** | 60.00 |
| **Invoice Total** | 360.00 |

WDF LTD 22418

**W.D.F. Demolition & Excavation Limited**

Whitfield Dairy Farm, Shaw, Oldham, OL2 7UJ
Office: 01706 843659 • Mobile: 07958 119466
Email: info@wdf-ltd.co.uk • www.wdf-ltd.co.uk

No 106996

Date 25 / 1 / 23

Job No .....

Licence No. CB/DU54473

Customer Name ..... FISHER HOMES .....

Site Address ..... CRINGLE RD .....

.....

Delivery Address .....

.....

Driver Name ..... M.L.W ..... Wagon No. H.L.W

| Material | ~~1 x 8~~ Wheeler Load | Skip / Size | Paid / Not Paid |
|---|---|---|---|
| | | | |

**Description**

1 MUCK AWAY

| Day Work | Hours Worked | Travel Time | Total Hours |
|---|---|---|---|
| ..... | ..... | ..... | ..... |

*Print Name* ..... Kevin Bailey ..... *Signature* .....

*Job Title* .....

**CONDITIONS OF SALE** - It is essential that all written particulars entered above should be checked by the Consignee, since the delivery note, once signed by the Consignee represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted. All complaints, whether in respect of material or circumstances must be made to the driver of the vehicle and be confirmed in writing direct to the company immediately. Any skips hired by the customer are the customer's responsibility if stolen or damaged. Skips may only be hired for a maximum of two weeks without incurring additional costs.

WDF Demolition & Excavation Ltd
Whitfield Dairy Farm
Shaw
Oldham
Lancashire
OL2 7UJ

TOWERHOUSE SYSTEMS LTD
16C HESKETH AVENUE
MANCHESTER
M20 2QW

22426
26/01/2023
TOWERHOU

Invoice

| Quantity | Details | Unit Price | Net Amt | VAT % | VAT |
|---|---|---|---|---|---|
| 1.00 | 26/01/2023 SITE ADDRESS- CRINGLE ROAD<br>MUCK AWAY @ £300.00 PER LOAD<br>TICKET NUMBER 107341 | 300.00 | 300.00 | 20.00 | 60.00 |

PAYMENT TERMS: STRICTLY 7 DAYS

Telephone : 01706 843659
Email : accounts@wdf-ltd.co.uk
Company reg no : 07517555
Vat reg no : 107 3378 25
Royal Bank of Scotland
Sort code 16 34 24
Account number 11111731
Please make all cheques payable to WDF Demolition & Excavation Ltd

| | |
|---|---|
| **Total Net Amount** | 300.00 |
| **Carriage Net** | 0.00 |
| **Total VAT Amount** | 60.00 |
| **Invoice Total** | 360.00 |

WDF LTD 22426

**W.D.F. Demolition & Excavation Limited**

Whitfield Dairy Farm, Shaw, Oldham, OL2 7UJ
Office: 01706 843659 • Mobile: 07958 119466
Email: info@wdf-ltd.co.uk • www.wdf-ltd.co.uk

№ 107341

Date 26/1/23

Job No .....

Licence No. CB/DU54473

Customer Name ..... TOWER HOUSE

Site Address ..... CRINGLE RD

Delivery Address .....

Driver Name ..... RAZ ..... Wagon No. TCX

| Material | 1 x 8 Wheeler Load | Skip / Size | Paid / Not Paid |
|---|---|---|---|
| | | | |

**Description**

X1 Muck Away

| Day Work | Hours Worked | Travel Time | Total Hours |
|---|---|---|---|
| | | | |

Print Name ..... D. ANCHOR ..... Signature ..... D ANC

Job Title .....

**CONDITIONS OF SALE**. It is essential that all written particulars entered above should be checked by the Consignee, since the delivery note, once signed by the Consignee represents formal acceptance of the material in good order and condition and subsequent complaints cannot be accepted. All complaints, whether in respect of material or circumstances must be made to the driver of the vehicle and be confirmed in writing direct to the company immediately. Any skips hired by the customer are the customer's responsibility if stolen or damaged. Skips may only be hired for a maximum of two weeks without incurring additional costs.

# Appendix C

C1 Plots 7 & 8 Remediation Photographs

C2 I2 Analytical Test Results

C3 Analytical Results with Assessment Criteria







| | |
|---|---|
| Rear of Plots 7 and 8 soft landscaped areas reduced dig | Rear of Plots 7 and 8 soft landscaped areas reduced dig |
| Rear of Plots 7 and 8 soft landscaped areas reduced dig | Rear of Plots 7 and 8 soft landscaped areas reduced dig |

**GeoAssist Limited**
Civil, Environmental & Geotechnical
Telephone: +44 (0) 161 480 8885 e-mail : info@geoassist.co.uk

# C1 Site Photos

| | |
|---|---|
| **Site Name** | Land off Cringle Road |
| **Location** | Levenshulme, Manchester |
| **GeoAssist Ref** | 6048VCR |
| **Client** | Cringle Rd Developments Ltd |
| | 7 Leegate Close<br>Heaton Moor<br>Stockport<br>SK4 3NN |
| **Planning Consultant** | |
| **NGR (centre of site)** | 388410,393160 |
| **Production Date** | Oct 2023 |
| **Survey Method** | |
| **Surveyor** | Others |
| **Status** | Final v1.00 |
| | |
| **Base Survey** | OSGB36 |

ace
consultancy engineering business environment

GeoAssist Limited
Civil, Environmental & Geotechnical
Telephone: +44 (0) 161 480 8885 e-mail : info@geoassist.co.uk

# C1 Site Photos

| | |
|---|---|
| **Site Name** | Land off Cringle Road |
| **Location** | Levenshulme, Manchester |
| **GeoAssist Ref** | 6048VCR |
| **Client** | Cringle Rd Developments Ltd |
| | 7 Leegate Close<br>Heaton Moor<br>Stockport<br>SK4 3NN |
| **Planning Consultant** | |
| **NGR (centre of site)** | 388410,393160 |
| **Production Date** | Oct 2023 |
| **Survey Method** | |
| **Surveyor** | Others |
| **Status** | Final v1.00 |
| | |
| **Base Survey** | OSGB36 |
































| | | | |
|---|---|---|---|
| Plot 8 Validation Sampling | Plot 8 Validation Sampling | Plot 8 Validation Sampling | Plot 8 Validation Sampling |
| Plot 7 Location 1 Validation Sampling | Plot 7 Location 1 Validation Sampling | Plot 7 Location 1 Validation Sampling | Plot 7 Location 1 Validation Sampling |
| Plot 7 Location 2 Validation Sampling | Plot 7 Location 2 Validation Sampling | Plot 7 Location 2 Validation Sampling | Plot 7 Location 2 Validation Sampling |

consultancy engineering business environment

**Matthew Benson**
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**e:** info@geoassist.co.uk

i2 Analytical Ltd.
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Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

**t:** 01923 225404
**f:** 01923 237404
**e:** reception@i2analytical.com

# Analytical Report Number : 23-58518

| | | | |
|---|---|---|---|
| **Project / Site name:** | Land off Cringle Road, Manchester | **Samples received on:** | 25/09/2023 |
| **Your job number:** | 6048-VCR | **Samples instructed on/ Analysis started on:** | 25/09/2023 |
| **Your order number:** | 2230922 | **Analysis completed by:** | 04/10/2023 |
| **Report Issue Number:** | 1 | **Report issued on:** | 04/10/2023 |
| **Samples Analysed:** | 10 soil samples | | |

**Signed:**

Anna Goc
PL Head of Reporting Team
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

| | |
|---|---|
| soils | - 4 weeks from reporting |
| leachates | - 2 weeks from reporting |
| waters | - 2 weeks from reporting |
| asbestos | - 6 months from reporting |

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

**Analytical Report Number: 23-58518**
**Project / Site name: Land off Cringle Road, Manchester**
**Your Order No: 2230922**

| Lab Sample Number | | | | 2822994 | 2822995 | 2822996 | 2822997 | 2822998 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | PLOT 6 - C1 | PLOT 7 -C1 | PLOT 7 -C2 | PLOT 7A - C1 | PLOT 7A - C2 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.20 | 0.20 | 0.50 | 0.20 | 0.50 |
| Date Sampled | | | | 22/09/2023 | 22/09/2023 | 22/09/2023 | 22/09/2023 | 22/09/2023 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 23 | 25 | 26 | 27 | 27 |
| Total mass of sample received | kg | 0.001 | NONE | 0.6 | 0.5 | 0.6 | 0.6 | 0.5 |
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected |
| Asbestos Analyst ID | N/A | N/A | N/A | WEM | WEM | WEM | WEM | WEM |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | 7.6 | 7 | 7 | 6.8 | 7.1 |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Free Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Sulphate as SO4 | % | 0.005 | MCERTS | 0.071 | 0.075 | 0.081 | 0.081 | 0.079 |
| Sulphide | mg/kg | 1 | MCERTS | 4.9 | 1.1 | < 1.0 | 1.2 | 1.7 |
| Total Sulphur | % | 0.005 | MCERTS | 0.067 | 0.077 | 0.084 | 0.08 | 0.085 |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | 0.43 | 0.23 | 0.15 | 0.07 | 0.05 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | 0.07 | < 0.05 | < 0.05 | 0.05 | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | 2.4 | 0.25 | 0.65 | 0.47 | 0.15 |
| Fluorene | mg/kg | 0.05 | MCERTS | 2 | 0.17 | 0.45 | 0.35 | 0.12 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 15 | 1.6 | 3.4 | 2.8 | 1 |
| Anthracene | mg/kg | 0.05 | MCERTS | 3.2 | 0.31 | 0.75 | 0.62 | 0.2 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 17 | 2.5 | 4.2 | 4.1 | 2 |
| Pyrene | mg/kg | 0.05 | MCERTS | 15 | 2.3 | 3.9 | 3.9 | 2 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 6.5 | 1.1 | 1.9 | 1.8 | 0.92 |
| Chrysene | mg/kg | 0.05 | MCERTS | 6.4 | 1.3 | 1.8 | 1.9 | 1.1 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | 6.7 | 1.4 | 2.1 | 2 | 1.3 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | 2.8 | 0.55 | 0.67 | 0.85 | 0.42 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 6.3 | 1.2 | 1.8 | 1.9 | 1.1 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 3.1 | 0.65 | 0.88 | 0.95 | 0.58 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | 0.75 | 0.16 | 0.23 | 0.22 | 0.14 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 3.6 | 0.72 | 0.99 | 1.1 | 0.63 |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | 90.9 | 14.4 | 24 | 23 | 11.6 |

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The results included within the report relate only to the sample(s) submitted for testing.

**Analytical Report Number: 23-58518**
**Project / Site name: Land off Cringle Road, Manchester**
**Your Order No: 2230922**

| Lab Sample Number | | | | 2822994 | 2822995 | 2822996 | 2822997 | 2822998 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | PLOT 6 - C1 | PLOT 7 -C1 | PLOT 7 -C2 | PLOT 7A - C1 | PLOT 7A - C2 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.20 | 0.20 | 0.50 | 0.20 | 0.50 |
| **Date Sampled** | | | | 22/09/2023 | 22/09/2023 | 22/09/2023 | 22/09/2023 | 22/09/2023 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 12 | 13 | 15 | 16 | 14 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | 140 | 120 | 130 | 120 | 120 |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 0.86 | 0.83 | 0.89 | 0.87 | 0.87 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 1 | 0.6 | 1 | 0.8 | 0.9 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | 0.5 | 0.6 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 1.2 | NONE | < 1.2 | < 1.2 | < 1.2 | < 1.2 | < 1.2 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 21 | 18 | 20 | 19 | 20 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 60 | 50 | 57 | 55 | 53 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 100 | 83 | 100 | 110 | 91 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | 0.4 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 17 | 14 | 16 | 15 | 15 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | 27 | 26 | 30 | 29 | 29 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 110 | 90 | 110 | 98 | 96 |

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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**Analytical Report Number: 23-58518**
**Project / Site name: Land off Cringle Road, Manchester**
**Your Order No: 2230922**

| Lab Sample Number | | | | 2822999 | 2823000 | 2823001 | 2823002 | 2823003 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | PLOT 8 - C1 | PLOT 8 - C2 | PLOT 1 - C1 | A - C4 | A - C5 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.20 | 0.50 | 0.10 | Stockpile | Stockpile |
| Date Sampled | | | | 22/09/2023 | 22/09/2023 | 22/09/2023 | 22/09/2023 | 22/09/2023 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 26 | 26 | 30 | 24 | 28 |
| Total mass of sample received | kg | 0.001 | NONE | 0.5 | 0.5 | 0.6 | 0.5 | 0.5 |
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected |
| Asbestos Analyst ID | N/A | N/A | N/A | WEM | WEM | WEM | WEM | WEM |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | 7.1 | 6.8 | 7.4 | 7.2 | 7.3 |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Free Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Sulphate as SO4 | % | 0.005 | MCERTS | 0.07 | 0.068 | 0.083 | 0.093 | 0.084 |
| Sulphide | mg/kg | 1 | MCERTS | 2 | 1.3 | < 1.0 | < 1.0 | 8.9 |
| Total Sulphur | % | 0.005 | MCERTS | 0.074 | 0.079 | 0.069 | 0.074 | 0.085 |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | 0.05 | 0.05 | 0.06 | 0.05 | 0.05 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | 0.13 | 0.17 | 0.2 | 0.17 | 0.15 |
| Fluorene | mg/kg | 0.05 | MCERTS | 0.1 | 0.12 | 0.13 | 0.13 | 0.09 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 0.78 | 1.2 | 1.2 | 1 | 0.88 |
| Anthracene | mg/kg | 0.05 | MCERTS | 0.14 | 0.21 | 0.21 | 0.17 | 0.16 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 1.6 | 2.3 | 2.2 | 1.8 | 1.8 |
| Pyrene | mg/kg | 0.05 | MCERTS | 1.5 | 2.2 | 2.1 | 1.8 | 1.8 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 0.8 | 1.1 | 1 | 0.93 | 0.87 |
| Chrysene | mg/kg | 0.05 | MCERTS | 0.88 | 1.2 | 1.2 | 0.92 | 1 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | 1.1 | 1.3 | 1.4 | 1.2 | 1.2 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | 0.31 | 0.52 | 0.46 | 0.33 | 0.38 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 0.89 | 1.2 | 1.2 | 1 | 1 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 0.48 | 0.56 | 0.61 | 0.5 | 0.51 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | 0.11 | 0.15 | 0.15 | 0.11 | 0.12 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 0.53 | 0.66 | 0.7 | 0.57 | 0.57 |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | 9.41 | 12.9 | 12.8 | 10.7 | 10.7 |

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**Analytical Report Number: 23-58518**
**Project / Site name: Land off Cringle Road, Manchester**
**Your Order No: 2230922**

| Lab Sample Number | | | | 2822999 | 2823000 | 2823001 | 2823002 | 2823003 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | PLOT 8 - C1 | PLOT 8 - C2 | PLOT 1 - C1 | A - C4 | A - C5 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.20 | 0.50 | 0.10 | Stockpile | Stockpile |
| **Date Sampled** | | | | 22/09/2023 | 22/09/2023 | 22/09/2023 | 22/09/2023 | 22/09/2023 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 14 | 14 | 13 | 12 | 12 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | 110 | 120 | 100 | 97 | 110 |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 0.83 | 0.9 | 0.75 | 0.73 | 0.78 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 0.5 | 0.6 | 0.5 | 0.2 | 0.5 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 1.2 | NONE | < 1.2 | < 1.2 | < 1.2 | < 1.2 | < 1.2 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 18 | 20 | 16 | 16 | 17 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 50 | 52 | 45 | 43 | 47 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 85 | 140 | 81 | 74 | 80 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | 0.4 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 14 | 16 | 13 | 12 | 13 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | 27 | 31 | 26 | 24 | 25 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 89 | 95 | 81 | 77 | 83 |

U/S = Unsuitable Sample  I/S = Insufficient Sample  ND = Not detected

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

**Analytical Report Number : 23-58518**
**Project / Site name: Land off Cringle Road, Manchester**

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description * |
|---|---|---|---|---|
| 2822994 | PLOT 6 - C1 | None Supplied | 0.2 | Brown clay and sand with gravel and vegetation. |
| 2822995 | PLOT 7 -C1 | None Supplied | 0.2 | Brown clay and sand with gravel and vegetation. |
| 2822996 | PLOT 7 -C2 | None Supplied | 0.5 | Brown clay and sand with gravel and vegetation. |
| 2822997 | PLOT 7A - C1 | None Supplied | 0.2 | Brown clay and sand with gravel and vegetation. |
| 2822998 | PLOT 7A - C2 | None Supplied | 0.5 | Brown clay and sand with gravel and vegetation. |
| 2822999 | PLOT 8 - C1 | None Supplied | 0.2 | Brown clay and sand with gravel and vegetation. |
| 2823000 | PLOT 8 - C2 | None Supplied | 0.5 | Brown clay and sand with gravel and vegetation. |
| 2823001 | PLOT 1 - C1 | None Supplied | 0.1 | Brown clay and sand with gravel and vegetation. |
| 2823002 | A - C4 | None Supplied | Stockpile | Brown clay and sand with gravel and vegetation. |
| 2823003 | A - C5 | None Supplied | Stockpile | Brown clay and sand with gravel and vegetation. |

**Analytical Report Number : 23-58518**
**Project / Site name: Land off Cringle Road, Manchester**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| Asbestos identification in soil | Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques. | In house method based on HSG 248 | A001-PL | D | ISO 17025 |
| Boron, water soluble, in soil | Determination of water soluble boron in soil by hot water extract followed by ICP-OES. | In-house method based on Second Site Properties version 3 | L038-PL | D | MCERTS |
| Free cyanide in soil | Determination of free cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | MCERTS |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Monohydric phenols in soil | Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | MCERTS |
| Speciated EPA-16 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. Refer to CoA for analyte specific accreditation. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement. | In house method. | L099-PL | D | MCERTS |
| Sulphide in soil | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method | L010-PL | D | MCERTS |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| Total cyanide in soil | Determination of total cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | MCERTS |
| Hexavalent chromium in soil (Lower Level) | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method | L080-PL | W | NONE |

**Analytical Report Number : 23-58518**
**Project / Site name: Land off Cringle Road, Manchester**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Total Sulphate in soil as % | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |
| Total Sulphur in soil as % | Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled. | In house asbestos methods A001 & A006. | A006-PL | D | NONE |

**For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).**
**For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).**
**For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**
**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

# Soils Risk Assessment

Site Reference: 6048 VCR
Project Site: Land off Cringle Road
Project Location: Levenshulme, Manchester
Client: Cringle Rd Developments Ltd

| i2 Reference | Residential | PLOT 6 - C1 | PLOT 7 -C1 | PLOT 7 -C2 | PLOT 7A - C1 | PLOT 7A - C2 | PLOT 8 - C1 | PLOT 8 - C2 | PLOT 1 - C1 | A - C4 | A - C5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Customer Sample Ref: | C4SL / S4UL | 0.20 | 0.20 | 0.50 | 0.20 | 0.50 | 0.20 | 0.50 | 0.10 | Stockpile | Stockpile |
| | SOM 1% GAC | 22/09/2023 | 22/09/2023 | 22/09/2023 | 22/09/2023 | 22/09/2023 | 22/09/2023 | 22/09/2023 | 22/09/2023 | 22/09/2023 | 22/09/2023 |
| Determinand | LQM II | | | | | | | | | | |
| Arsenic | 27 | 12 | 13 | 15 | 16 | 14 | 14 | 14 | 13 | 12 | 12 |
| Boron (water-soluble) | 290 | 1 | 0.6 | 1 | 0.8 | 0.9 | 0.5 | 0.6 | 0.5 | 0.2 | 0.5 |
| Cadmium | 22 | 0.2 | 0.5 | 0.6 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Chromium* | 910 | 21 | 18 | 20 | 19 | 20 | 18 | 20 | 16 | 16 | 17 |
| Chromium VI | 21 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| Copper | 2400 | 60 | 50 | 57 | 55 | 53 | 50 | 52 | 45 | 43 | 47 |
| Cyanide(Total) | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cyanide(free)** | 34 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Lead | 200 | 100 | 83 | 100 | 110 | 91 | 85 | 140 | 81 | 74 | 80 |
| Mercury | 1.2 | 0.3 | 0.3 | 0.3 | 0.4 | 0.3 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 |
| Nickel | 130 | 17 | 14 | 16 | 15 | 15 | 14 | 16 | 13 | 12 | 13 |
| pH | - | 7.6 | 7 | 7 | 6.8 | 7.1 | 7.1 | 6.8 | 7.4 | 7.2 | 7.3 |
| Phenols(Mono) | 280 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Selenium | 250 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| SO4(Total) | - | 0.071 | 0.075 | 0.081 | 0.081 | 0.079 | 0.07 | 0.068 | 0.083 | 0.093 | 0.084 |
| Sulphide | - | 4.9 | 1.1 | 1 | 1.2 | 1.7 | 2 | 1.3 | 1 | 1 | 8.9 |
| Sulphur(Free) | - | 0.067 | 0.077 | 0.084 | 0.08 | 0.085 | 0.074 | 0.079 | 0.069 | 0.074 | 0.085 |
| Thiocyanate | - | - | - | - | - | - | - | - | - | - | - |
| Zinc | 3700 | 110 | 90 | 110 | 98 | 96 | 89 | 95 | 81 | 77 | 83 |
| | | | | | | | | | | | |
| Acenaphthene | 1100 | 2.4 | 0.25 | 0.65 | 0.47 | 0.15 | 0.13 | 0.17 | 0.2 | 0.17 | 0.15 |
| Acenaphthylene | 920 | 0.07 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| Anthracene | 11000 | 3.2 | 0.31 | 0.75 | 0.62 | 0.2 | 0.14 | 0.21 | 0.21 | 0.17 | 0.16 |
| Benzo(a)Anthracene | - | 6.5 | 1.1 | 1.9 | 1.8 | 0.92 | 0.8 | 1.1 | 1 | 0.93 | 0.87 |
| Benzo(a)Pyrene [SM] | 5 | 6.3 | 1.2 | 1.8 | 1.9 | 1.1 | 0.89 | 1.2 | 1.2 | 1 | 1 |
| Benzo(b)Fluoranthene | - | 6.7 | 1.4 | 2.1 | 2 | 1.3 | 1.1 | 1.3 | 1.4 | 1.2 | 1.2 |
| Benzo(ghi)Perylene | - | 3.6 | 0.72 | 0.99 | 1.1 | 0.63 | 0.53 | 0.66 | 0.7 | 0.57 | 0.57 |
| Benzo(k)Fluoranthene | - | 2.8 | 0.55 | 0.67 | 0.85 | 0.42 | 0.31 | 0.52 | 0.46 | 0.33 | 0.38 |
| Chrysene | - | 6.4 | 1.3 | 1.8 | 1.9 | 1.1 | 0.88 | 1.2 | 1.2 | 0.92 | 1 |
| Dibenzo(ah)Anthracene | - | 0.75 | 0.16 | 0.23 | 0.22 | 0.14 | 0.11 | 0.15 | 0.15 | 0.11 | 0.12 |
| Fluoranthene | 890 | 17 | 2.5 | 4.2 | 4.1 | 2 | 1.6 | 2.3 | 2.2 | 1.8 | 1.8 |
| Fluorene | 860 | 2 | 0.17 | 0.45 | 0.35 | 0.12 | 0.1 | 0.12 | 0.13 | 0.13 | 0.09 |
| Indeno(123-cd)Pyrene | - | 3.1 | 0.65 | 0.88 | 0.95 | 0.58 | 0.48 | 0.56 | 0.61 | 0.5 | 0.51 |
| Naphthalene | 13 | 0.43 | 0.23 | 0.15 | 0.07 | 0.05 | 0.05 | 0.05 | 0.06 | 0.05 | 0.05 |
| Phenanthrene | 440 | 15 | 1.6 | 3.4 | 2.8 | 1 | 0.78 | 1.2 | 1.2 | 1 | 0.88 |
| Pyrene | 2000 | 15 | 2.3 | 3.9 | 3.9 | 2 | 1.5 | 2.2 | 2.1 | 1.8 | 1.8 |
| | | | | | | | | | | | |
| PAH(total) | 500 | 90.9 | 14.4 | 24 | 23 | 11.6 | 9.41 | 12.9 | 12.8 | 10.7 | 10.7 |
| | | | | | | | | | | | |
| Asbestos | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected |

All Units mg/kg unless otherwise stated  Indicates Exceedance of Applicable Level  [SM] = Surrogate Marker

*Criteria Assumes Chromium III

**Criteria is derrived considering acute effects on 1-2yo Female Receptor ingesting a single dose of 3g of soil

**Criteria is derrived considering Total TPH (C10 to C35) is formed entirley of a 50:50 Aliphatic and Aromatic Split C8-C10 range

Basis of Assessment Criteria: EA 2005 WAC (Human Health Value) C4SL
LQM S4UL Atrisk 06

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# Appendix D

D1 Visqueen Proof of Purchase & Delivery

D2 Plot 7 & 8Gas Membrane Inspection & Photographs

D3 Building Control Inspectors Record Sheet

D4 Membrane Welding Tool Proof of Purchase & Delivery

D5 Photographic Record of typical DPM installation Plot 3

Lintels North West Ltd
Unit 3, Fourth Avenue, Trafford Park, Manchester, M17 1DB
Tel: 0161 872 6993 Fax: 0161 872 3690
Email: sales@lintelsnorthwest.co.uk
Web: www.lintelsnorthwest.co.uk
VAT Reg No. 437849506
Registered Co. 02113031

# ARCHIVE INVOICE



**INVOICE TO**
Cringle Road Developments LTD

| A/C No. | INV DATE | INV No. |
|---|---|---|
| T044 | 14/02/23 | 182544 |
| ORDER No. | OPERATOR | DESP DATE |
| T232147 | 9 | 14/02/23 |
| DELIVERY METHOD | | |
| LNW Delivery Vehicle | | |
| CUSTOMER ORDER No. | | |
| nick / visqueen | | |

| Part No | Qty | Description | Per | Price | Disc % | Total | V |
|---|---|---|---|---|---|---|---|
| 112/ZED900 | 20.00 | Zedex 900mm DPC (18sq.m) | EACH | 61.16 | 0.00 | 1223.20 | 2 |
| 112/DST | 20.00 | Visqueen Pro Double Sided Tape Jointing Tape 50mm x 10m | EACH | 6.95 | 0.00 | 139.00 | 2 |
| XSP00005349 | 50.00 | Top Hats 110mm Rigid Visqueen | EACH | 14.56 | 0.00 | 728.00 | 2 |
| XSP00005293 | 50.00 | PFU-225 ZX Party Wall Stop End 100x225x300x100x90 | EACH | 32.78 | 0.00 | 1639.00 | 2 |
| XSP00005294 | 150.00 | PFU-501 ZX External Corner 100x225x125x102 90 deg | EACH | 18.40 | 0.00 | 2760.00 | 2 |
| XSP00005295 | 150.00 | PFU-501 ZX Internal Corner 100x225x125x102 90 deg | EACH | 18.40 | 0.00 | 2760.00 | 2 |
| 124/LPGM | 15.00 | 4 x 12.5m - Yellow 500mu C/F Roll | EACH | 102.89 | 0.00 | 1543.35 | 2 |
| 112/FBT | 20.00 | Gas Resistant Foil Backed Tape 75mm x 50m | EACH | 15.09 | 0.00 | 301.80 | 2 |
| | | Payments | | | | | |
| | | **Deposit Redeemed 13313.22** | | | | | |

**DELIVERY ADDRESS**
Towerhouse Systems Ltd
Cringle Road
Levenshulme
Manchester
07798618345
M19 2RR

**BACS DETAILS**
The Co-Operative Bank
Sort Code: 08 92 99
Account Number: 69801949

| | |
|---|---|
| SUB TOTAL | 11094.35 |
| DISCOUNT | 0.00 |
| CARRIAGE | 0.00 |
| TOTAL VAT | 2218.87 |
| TOTAL DUE | 13313.22 |

E. & O.E. TAX POINT AS INVOICE DATE.
VAT IS PAYABLE AT 20%

Lintels North West Ltd
Unit 3, Fourth Avenue, Trafford Park, Manchester, M17 1DB
Tel: 0161 872 6993 Fax: 0161 872 3690
Email: sales@lintelsnorthwest.co.uk
Web: www.lintelsnorthwest.co.uk
VAT Reg No. 437849506
Registered Co. 02113031

LINTELS NORTHWEST LTD

# INVOICE



**INVOICE TO**
Towerhouse Systems Ltd
16C Hesketh Avenue
Manchester
M20 2QW

| A/C No. | INV DATE | INV No. |
|---|---|---|
| T044 | 15/02/23 | 182613 |
| ORDER No. | OPERATOR | DESP DATE |
| T232398 | 9 | 15/02/23 |
| DELIVERY METHOD | | |
| LNW Delivery Vehicle | | |
| CUSTOMER ORDER No. | | |
| nick / samples | | |

| Part No | Qty | Description | Per | Price | Disc % | Total | V |
|---|---|---|---|---|---|---|---|
| XSP00005412 | 1.00 | Zedex Corner Unit 330x225x225 90 degrees | EACH | 29.12 | 0.00 | 29.12 | 2 |
| XSP00005413 | 1.00 | PFU-202 ZX Revers Corner Cloak 100x325x225x150x300 | EACH | 27.00 | 0.00 | 27.00 | 2 |

**DELIVERY ADDRESS**
Towerhouse Systems Ltd
Cringle Road
Levenshulme
Manchester
07798618345
M19 2RR

**BACS DETAILS**
The Co-Operative Bank
Sort Code: 08 92 99
Account Number: 69801949

| | |
|---|---|
| SUB TOTAL | 56.12 |
| DISCOUNT | 0.00 |
| CARRIAGE | 25.00 |
| TOTAL VAT | 16.22 |
| TOTAL DUE | 97.34 |

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LINTELS NORTHWEST LTD

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**INVOICE TO**
Cringle Rd Developments LTD

| A/C No. | INV DATE | INV No. |
|---|---|---|
| T044 | 01/03/23 | 183317 |
| ORDER No. | OPERATOR | DESP DATE |
| T234434 | 9 | 01/03/23 |
| DELIVERY METHOD | | |
| LNW Delivery Vehicle | | |
| CUSTOMER ORDER No. | | |
| nick | | |

| Part No | Qty | Description | Per | Price | Disc % | Total | V |
|---|---|---|---|---|---|---|---|
| 112/DST | 20.00 | Visqueen Pro Double Sided Tape Jointing Tape 50mm x 10m | EACH | 6.95 | 0.00 | 139.00 | 2 |
| 112/FBT | 20.00 | Gas Resistant Foil Backed Tape 75mm x 50m | EACH | 15.09 | 0.00 | 301.80 | 2 |
| | | Payments | | | | | |
| | | **BACS/Chq 528.96** | | | | | |

**DELIVERY ADDRESS**
Towerhouse Systems Ltd
Cringle Road
Levenshulme
Manchester
07798618345
M19 2RR

**BACS DETAILS**
The Co-Operative Bank
Sort Code: 08 92 99
Account Number: 69801949

| | |
|---|---|
| SUB TOTAL | 440.80 |
| DISCOUNT | 0.00 |
| CARRIAGE | 0.00 |
| TOTAL VAT | 88.16 |
| TOTAL DUE | 528.96 |

E. & O.E. TAX POINT AS INVOICE DATE.
VAT IS PAYABLE AT 20%

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VAT Reg No. 437849506
Registered Co. 02113031

LINTELS NORTHWEST LTD

# INVOICE



**INVOICE TO**
Cringle Road Developments Ltd
16c Hesketh Avenue
Manchester
M20 2QW

| A/C No. | INV DATE | INV No. |
|---|---|---|
| C084 | 14/04/23 | 185383 |
| ORDER No. | OPERATOR | DESP DATE |
| T237883 | 9 | 14/04/23 |
| DELIVERY METHOD | | |
| LNW Delivery Vehicle | | |
| CUSTOMER ORDER No. | | |
| nick | | |

| Part No | Qty | Description | Per | Price | Disc % | Total | V |
|---|---|---|---|---|---|---|---|
| 101/TT4250 | 5000.00 | Type 4 Wall Ties 250mm | EACH | 29.66 | 0.00 | 593.20 | 2 |
| 112/ZED450 | 30.00 | Zedex 450mm DPC (9.0sq.m) | EACH | 33.03 | 0.00 | 990.90 | 2 |
| 112/DST | 40.00 | Visqueen Pro Double Sided Tape Jointing Tape 50mm x 10m | EACH | 6.96 | 0.00 | 278.40 | 2 |

**DELIVERY ADDRESS**
Cringle Rd Developments LTD
Cringle Road
Levenshulme
Manchester
07798618345
M19 2RR

**BACS DETAILS**
The Co-Operative Bank
Sort Code: 08 92 99
Account Number: 69801949

| | |
|---|---|
| SUB TOTAL | 1862.50 |
| DISCOUNT | 0.00 |
| CARRIAGE | 0.00 |
| TOTAL VAT | 372.50 |
| TOTAL DUE | 2235.00 |

E. & O.E. TAX POINT AS INVOICE DATE.
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Unit 3, Fourth Avenue, Trafford Park, Manchester, M17 1DB
Tel: 0161 872 6993 Fax: 0161 872 3690
Email: sales@lintelsnorthwest.co.uk
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VAT Reg No. 437849506
Registered Co. 02113031

LINTELS NORTHWEST LTD

# INVOICE



**INVOICE TO**
Cringle Road Developments Ltd
16c Hesketh Avenue
Manchester
M20 2QW

| A/C No. | INV DATE | INV No. |
|---|---|---|
| C084 | 05/05/23 | 186401 |
| ORDER No. | OPERATOR | DESP DATE |
| T239670 | 9 | 05/05/23 |
| DELIVERY METHOD | | |
| LNW Delivery Vehicle | | |
| CUSTOMER ORDER No. | | |
| nick | | |

| Part No | Qty | Description | Per | Price | Disc % | Total | V |
|---|---|---|---|---|---|---|---|
| 112/DST100 | 20.00 | Ultimate Double Sided Jointing Tape 100mm x 15m | EACH | 24.35 | 0.00 | 487.00 | 2 |

**DELIVERY ADDRESS**
Cringle Rd Developments LTD
Cringle Road
Levenshulme
Manchester
07798618345
M19 2RR

**BACS DETAILS**
The Co-Operative Bank
Sort Code: 08 92 99
Account Number: 69801949

| | |
|---|---|
| SUB TOTAL | 487.00 |
| DISCOUNT | 0.00 |
| CARRIAGE | 0.00 |
| TOTAL VAT | 97.40 |
| TOTAL DUE | 584.40 |

E. & O.E. TAX POINT AS INVOICE DATE.
VAT IS PAYABLE AT 20%

Lintels North West Ltd
Unit 3, Fourth Avenue, Trafford Park, Manchester, M17 1DB
Tel: 0161 872 6993 Fax: 0161 872 3690
Email: sales@lintelsnorthwest.co.uk
Web: www.lintelsnorthwest.co.uk
VAT Reg No. 437849506
Registered Co. 02113031

# INVOICE



**INVOICE TO**
Cringle Road Developments Ltd
16c Hesketh Avenue
Manchester
M20 2QW

| A/C No. | INV DATE | INV No. |
|---|---|---|
| C084 | 14/06/23 | 188222 |
| ORDER No. | OPERATOR | DESP DATE |
| T242689 | 9 | 14/06/23 |
| DELIVERY METHOD | | |
| Collected | | |
| CUSTOMER ORDER No. | | |
| nick | | |

| Part No | Qty | Description | Per | Price | Disc % | Total | V |
|---|---|---|---|---|---|---|---|
| 124/TPU110 | 11.00 | Top Hat Units 110mm Rigid | EACH | 8.50 | 0.00 | 93.50 | 2 |
| 124/PLY1200 | 10.00 | Damp Proof Membrane 300mu 4x25m | EACH | 28.18 | 0.00 | 281.80 | 2 |

**DELIVERY ADDRESS**
Cringle Rd Developments LTD
Cringle Road
Levenshulme
Manchester
07798618345
M19 2RR

**BACS DETAILS**
The Co-Operative Bank
Sort Code: 08 92 99
Account Number: 69801949

| | |
|---|---|
| SUB TOTAL | 375.30 |
| DISCOUNT | 0.00 |
| CARRIAGE | 0.00 |
| TOTAL VAT | 75.06 |
| TOTAL DUE | 450.36 |

E. & O.E. TAX POINT AS INVOICE DATE.
VAT IS PAYABLE AT 20%

# VISUAL INSPECTION OF GAS PROTECTION MEASURES

| | |
|---|---|
| Site name: 6648 VCR | Gas characteristic situation: Amber 1 02/03/23 |
| Job number: Cingle Road | Type of development and building/block checked: (residential/ ~~commercial/other~~) |
| Date: 02/03/23 | Building description: Semi-detached |
| Visit by: MB & WB | Foundation type: (suspended floor/ ~~raft/other~~) |
| Weather at time of inspection: overcast | Gas protection type: passive/ ~~active~~ |

| No. | Item | Comments (see notes) |
|---|---|---|
| **1 *Gas membrane*** | | |
| 1.1 | Condition of sub-grade and underside of gas membrane | Beam and block floor level |
| 1.2 | Gas membrane type | Visqueen CC2 Yellow taped not welded |
| 1.3 | Gas membrane condition | good no defects noted Sheet in container. |
| 1.4 | Joining tape product | Visqueen double sided and visqueen Jointing |
| 1.5 | Lapping design | All measured at 300 to 500mm |
| 1.6 | Laps, ~~welds~~ and joints seals | All correct ~~and~~ well made |
| 1.7 | Service entries seals | Visqueen locations 110 top hats at all |
| **2 *Passive venting*** | | |
| 2.1 | Sub-floor void | 250 clear checked |
| 2.2 | External wall airbricks | 10 per property (150 x 80) cranked to void |
| 2.3 | Internal sleeper walls | Bridged with Visqueen Zedex |
| 2.4 | ~~External vent trenches~~/ducts | All above ground level |
| **3 *Active venting*** | | |
| 3.1 | System details | None |
| ***Additional notes:*** | | |

## *Notes: inspection checklist*

| | | |
|---|---|---|
| 1.1 | Underside of gas membrane | Check that the sub grade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria. |
| 1.2 | Gas membrane type | Manufacturer and product specification, gauge, colour, brand/name, material batch/roll numbers, storage arrangements (protected from dirt/damage?) |
| 1.3 | Gas membrane condition | Open punctures, tears, rips, stretching? Excessive footprints/evidence of traffic? Presence of debris? Repairs? Signs of weakness such as raised or sunken indentations? Protection plan in place to restrict access to lain gas membrane? |
| 1.4 | Joining tape product | Product type, brand, thickness, material, width, colour? Use of double sided tape? |
| 1.5 | Lapping design | Joints lapped and sealed in accordance with manufacturer's requirements/ specification? Minimum overlap insured? Sections taped twice? |
| 1.6 | Laps and joints sealed | ~~Welds complete?~~ Appropriate joining/double sided tape used? |
| 1.7 | Service entries sealed | Top hats seal arrangements fixed around service entries? ~~Use of Jubilee clips?~~ |
| 2.1 | Sub-floor void | Is a check possible? ~~Void former? Gravel (type/specification)~~? Height of void space? Is it clear? |
| 2.2 | External wall airbricks | Numbers, size, positions as design drawing? |
| 2.3 | Internal sleeper walls | Ventilation holes (honeycomb brickwork/pipe crossings?) – size, spacing, location in accordance with design? |
| 2.4 | External vent trenches/ducts | Located and constructed in accordance with design drawings? If open-topped gravel – gravel type/presence of fines? If pipe or other vent, check position and construction for functionality and absence of blockages. Ability of void former to withstand bearing of the superstructure? |
| 3.1 | Active venting | Type of air supply: mechanical, natural, combined? Location/condition/number of fans and vents? Location and size of inlets? Provision of air-cleaning devices and air heaters? Supply and exhaust ductwork? Alarm provision/installation? Gas monitoring system in under-floor void? |

## *Photographs*

| No. | Description |
|---|---|
| | Numerous |
| | |
| | |
| | |

| | |
|---|---|
| The gas protection measures inspected: | a Are acceptable and comply with the specification |
| | b Are acceptable but attention is drawn to issues related to item no. xxx |
| | c Are not acceptable due to the issues related to item no. xxx |

**Name:** M Bevan **Signature:** **Date:** 02/05/23

GeoAssist Limited
Civil, Environmental & Geotechnical
Telephone: +44 (0) 161 480 8885 e-mail : info@geoassist.co.uk

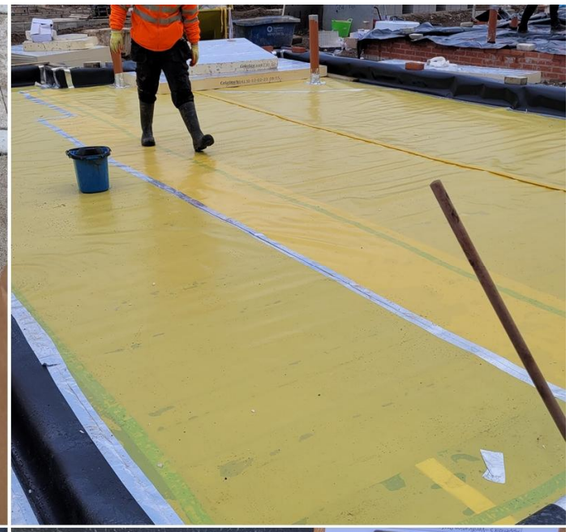
# D2 Membrane Photos

## Plots 7&8

| | |
|---|---|
| **Site Name** | Land off Cringle Road |
| **Location** | Levenshulme, Manchester |
| **GeoAssist Ref** | 6048VCR |
| **Client** | Cringle Rd Developments Ltd |
| | 7 Leegate Close<br>Heaton Moor<br>Stockport<br>SK4 3NN |
| **Planning Consultant** | |
| **NGR (centre of site)** | 388410,393160 |
| **Production Date** | Oct 2023 |
| **Survey Method** | |
| **Surveyor** | Others |
| **Status** | Final v1.00 |
| | |
| **Base Survey** | OSGB36 |





















| | | |
|---|---|---|
| Visqueen Zedex Preformed Corner | Visqueen Top Hat service entry (not fitted ) | Visqueen Membrane installed and lapped |
| Zedex across internal party wall | Floor insulation boards to protect membrane | Visqueen Lap Joint and connection to Zedex |
| Double sided tape | Foil Tape | Cranked telescopic void vents x4 along side elevation |



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# Site Inspection Report

A Premier Guarantee Building Control, Building Control surveyor has completed this inspection at Shores Fold Farm, Cringle Road, Levenshulme, Manchester, M19, PL-PG-10019588 on 14/03/2023.

Progress on site was noted as below, with comments and guidance provided accordingly.

## Building Control Plot Progress

| | |
|---|---|
| Key Actions | |
| Construction Stage | Ground Floor |
| Plot | Plot 10 |
| Plot Elements Viewed | |
| Comments | Works upto ground floor level, gas membrane installed fully over cavity, corner and joints correctly sealed. Full fill insulation installed below filling residual cavity. Telescopic vents installed at correct intervals. Insulation installed above gas membrane 130mm and 1200g dpm above. Underfloor heating pipes commenced, c35 concrete to pour above. |
| Future Guidance | Continuous cavity trays to be installed above gas membrane. |

| | |
|---|---|
| Key Actions | |
| Construction Stage | Ground Floor |
| Plot | Plot 5 |
| Plot Elements Viewed | |
| Comments | Works upto ground floor level, gas membrane installed fully over cavity, corner and joints correctly sealed. Full fill insulation installed below filling residual cavity. Telescopic vents installed at correct intervals. Insulation installed above gas membrane 130mm and 1200g dpm above. Underfloor heating pipes commenced, c35 concrete to pour above. |
| Future Guidance | Continuous cavity trays to be installed above gas membrane. |

| | |
|---|---|
| Key Actions | |
| Construction Stage | Ground Floor |
| Plot | Plot 6 |
| Plot Elements Viewed | |
| Comments | Works upto ground floor level, gas membrane installed fully over cavity, corner and joints correctly sealed. Full fill insulation installed below filling residual cavity. Telescopic vents installed at correct intervals. Insulation installed above gas membrane 130mm and 1200g dpm above. Underfloor heating pipes commenced, c35 concrete to pour above. |
| Future Guidance | Continuous cavity trays to be installed above gas membrane. |

| | |
|---|---|
| Key Actions | |
| Construction Stage | Ground Floor |
| Plot | Plot 7 |
| Plot Elements Viewed | |
| Comments | Works upto ground floor level, gas membrane installed fully over cavity, corner and joints correctly sealed. Full fill insulation installed below filling residual cavity. Telescopic vents installed at correct intervals. Insulation installed above gas membrane 130mm and 1200g dpm above. Underfloor heating pipes commenced, c35 concrete to pour above. |
| Future Guidance | Continuous cavity trays to be installed above gas membrane. |

| | |
|---|---|
| Key Actions | |
| Construction Stage | Ground Floor |
| Plot | Plot 8 |
| Plot Elements Viewed | |
| Comments | Works upto ground floor level, gas membrane installed fully over cavity, corner and joints correctly sealed. Full fill insulation installed below filling residual cavity. Telescopic vents installed at correct intervals. Insulation installed above gas membrane 130mm and 1200g dpm above. Underfloor heating pipes commenced, c35 concrete to pour above. |
| Future Guidance | Continuous cavity trays to be installed above gas membrane. |

| | |
|---|---|
| Key Actions | |

| | |
|---|---|
| Construction Stage | Ground Floor |
| Plot | Plot 9 |
| Plot Elements Viewed | |
| Comments | Works upto ground floor level, gas membrane installed fully over cavity, corner and joints correctly sealed. Full fill insulation installed below filling residual cavity. Telescopic vents installed at correct intervals. Insulation installed above gas membrane 130mm and 1200g dpm above. Underfloor heating pipes commenced, c35 concrete to pour above. |
| Future Guidance | Continuous cavity trays to be installed above gas membrane. |

| | |
|---|---|
| Key Actions | |
| Construction Stage | Superstructure above DPC (1st Lift) |
| Plot | Plot 1 |
| Plot Elements Viewed | |
| Comments | Brickwork nearing ff chamber, insulation to be blown in, continuous cavity trays installed above telescopic vents, ties spaced correctly and doubled up to openings and corners. Cavity barriers installed to party walls and tight filling cavity on plots 2-3. Satisfactory. Padstones installed ready for steel beams. |
| Future Guidance | Ensure steel has correct bearing when installed. |

| | |
|---|---|
| Key Actions | |
| Construction Stage | Superstructure above DPC (1st Lift) |
| Plot | Plot 2 |
| Plot Elements Viewed | |
| Comments | Brickwork nearing ff chamber, insulation to be blown in, continuous cavity trays installed above telescopic vents, ties spaced correctly and doubled up to openings and corners. Cavity barriers installed to party walls and tight filling cavity on plots 2-3. Satisfactory. Padstones installed ready for steel beams. |
| Future Guidance | Ensure steel has correct bearing when installed. |

| | |
|---|---|
| Key Actions | |
| Construction Stage | Superstructure above DPC (1st Lift) |
| Plot | Plot 3 |
| Plot Elements Viewed | |
| Comments | Brickwork nearing ff chamber, insulation to be blown in, continuous cavity trays installed above telescopic vents, ties spaced correctly and doubled up to openings and corners. Cavity barriers installed to party walls and tight filling cavity on plots 2-3. Satisfactory. Padstones installed ready for steel beams. |
| Future Guidance | Ensure steel has correct bearing when installed. |

A further inspection will be required when At ff chamber to plots 1-3 and 46-47. I would be grateful if you would contact me with at least 48 hours' notice to confirm an exact inspection date. Please note this inspection may be carried out remotely.

**In addition to this report please also review your technical overview document which details all of our technical requirements, and is maintained throughout the build.**

This site inspection has been completed by Premier Guarantee Building Control. With all building work, the owner and occupier of the property or land in question is ultimately responsible for complying with the relevant planning rules and building regulations. The role of building control is to act as an independent third party check and to take such steps as are reasonable to be satisfied that the Works comply with the Building Regulations.

Where a project has warranty cover, please be aware that the building regulations form a minimum standard and that in some instance a higher standard or additional information may be required by the warranty Surveyor.

Should you wish to discuss anything in more detail please contact me.

Yours sincerely,

Mr Steven Grant
07776433760

UKFR Roofing & Insulation Specialists - T/A UK Flat Roofing, Vat Number: GB 201555155,
08458624004
sales@ukflatroofing.com
ukflatroofing.com (https://ukflatroofing.com)

**Invoice No.** #8512
Valid Until: 22nd May 2023 09:29

**Delivery Address**
CRINGEL RD DEVELOPMENTS LTD
RACHEL ALEXANDER
SHORES FOLD CONSTRUCTION SITE
END OF CRINGLE ROAD
MANCHESTER
M19 2RR
United Kingdom

**Billing Address**
CRINGLE RD DEVELOPMENTS LTD
NICK MASKREY
16c
Hesketh Avenue
MANCHESTER
M20 2QW
United Kingdom

**Date** 15-05-2023 10:51
**Payment Method** Shopblocks Pay powered by Stripe
**Delivery** Standard Delivery (Estimated 2 - 4 Working Days)
**STATUS** PAID

**Customer** RACHEL ALEXANDER
cringle@towerhousesystems.co.uk
07851465880

# Your Order

| Code | Description | Qty | Price | VAT | Total |
|---|---|---|---|---|---|
| STROOFKIT-240 | Leister Triac ST Roof Kit<br>Brand: Leister<br>Voltage: 240V | 1 | £661.80 | £110.30 | £661.80 |
| | | | | **Sub-Total** | **£661.80** |
| | | | | **Delivery** | **£18.00** |
| | | | | **VAT @ 20%** | **£113.30** |
| | | | | TOTAL | £679.80 |

Bank Transfer is payable to:

(Please put your order number as the reference)

Account Name is: UK Flat Roofing
Account Number: 62931369
Sort Code: 01-09-75

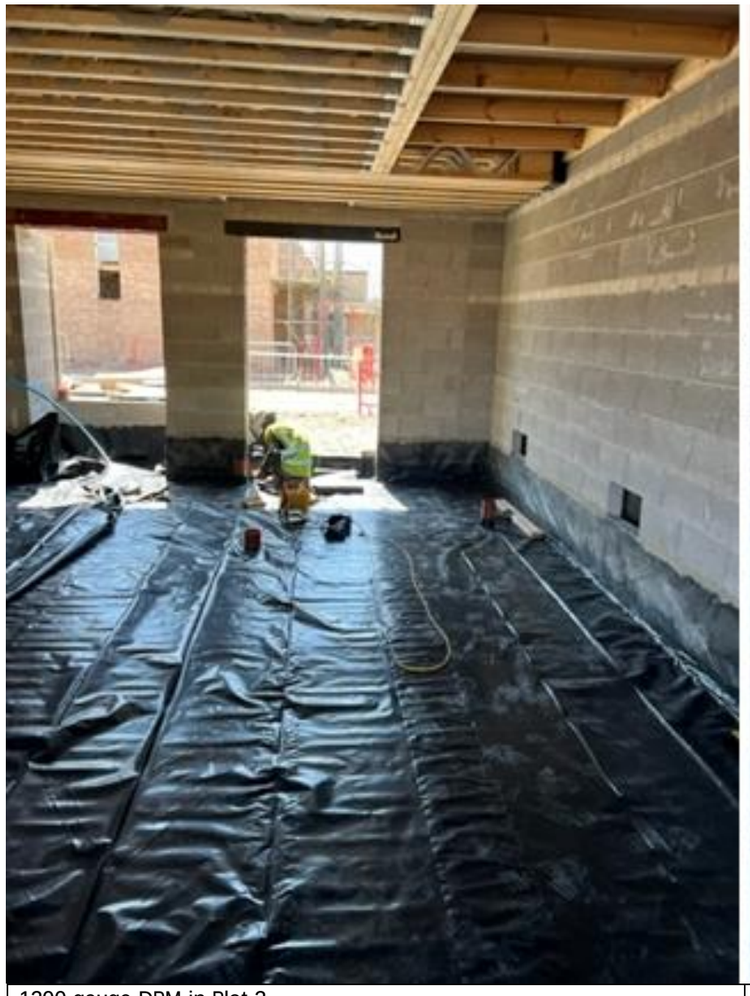
GeoAssist Limited
Civil, Environmental & Geotechnical
Telephone: +44 (0) 161 480 8885 e-mail : info@geoassist.co.uk

# D5 DPM Photos

## Plot 3

| | |
|---|---|
| **Site Name** | Land off Cringle Road |
| **Location** | Levenshulme, Manchester |
| **GeoAssist Ref** | 6048VCR |
| **Client** | Cringle Rd Developments Ltd |
| | 7 Leegate Close<br>Heaton Moor<br>Stockport<br>SK4 3NN |
| **Planning Consultant** | |
| **NGR (centre of site)** | 388410,393160 |
| **Production Date** | Oct 2023 |
| **Survey Method** | |
| **Surveyor** | Others |
| **Status** | Final v1.00 |
| | |
| **Base Survey** | OSGB36 |

6048GALv1.00



1200 gauge DPM in Plot 3



Welded Joint to Visqueen Zedex through cavity wall



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# Appendix E

## E1 Photographic Record of soils replacement on Plot 6 on 05/10/23

GeoAssist Limited
Civil, Environmental & Geotechnical
Telephone: +44 (0) 161 480 8885 e-mail : info@geoassist.co.uk

# E1 Plot 6 Photos

| | |
|---|---|
| **Site Name** | Land off Cringle Road |
| **Location** | Levenshulme, Manchester |
| **GeoAssist Ref** | 6048VCR |
| **Client** | Cringle Rd Developments Ltd |
| | 7 Leegate Close<br>Heaton Moor<br>Stockport<br>SK4 3NN |
| **Planning Consultant** | |
| **NGR (centre of site)** | 388410,393160 |
| **Production Date** | 05/10/2023 |
| **Survey Method** | |
| **Surveyor** | Others |
| **Status** | Final v1.00 |
| | |
| **Base Survey** | OSGB36 |








| | |
|---|---|
| Plot 6 05/10/23 following removal of soil. Dumper is sat on area that will be covered by hardstanding | Plot 6 05/10/23 following placement of Stockpile A topsoil in soft landscaped areas. |
| Plot 6 05/10/23 following placement of Stockpile A topsoil in soft landscaped areas. | |

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