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Our Ref: 11323-L03 (00)

11 December 2020

Graham Construction
Ballygowan Road
Hillsborough
Co Down
BT26 6HX

[Issued by e-mail only]

For the attention of: Jonathan Bulmer

Dear Jonathan,

COVER SYSTEM VALIDATION REPORT – CORNBROOK HUB

1. INTRODUCTION

This document presents information obtained as part of the remedial actions carried out in accordance with the approved Remediation Strategy (RS) for the Cornbrook Hub development site located off Chester Road, Manchester, M15 4LZ .

This letter report has been produced in line with RSK's service constraints presented in Appendix A.

2. BACKGROUND

The redevelopment proposal is for a new 14-15 storey building to form 280 residential apartments, hotel and aparthotel and two commercial units with associated car parking, landscaping and adopted utility infrastructure, as per Manchester City Council (MCC) planning application reference 118625/FO/2017. Graham Construction is only responsible for the redevelopment works in the eastern section of the site where the apartment complex, one of the commercial units and associated parking are proposed and this area is referred to as the 'Graham Construction redevelopment area' or GCRA from herein. The extent of the GCRA in the context of the overall development is presented on Figure 1.

Previous phases of work undertaken by Shepard Gilmore in 2018 and RSK in 2018 identified the requirement for remediation to mitigate risks to human health from asbestos in soil after two samples of made ground collected from a window sample location 10m west of the GCRA were found to contain chrysotile loose fibrous debris and chrysotile fibres. Therefore, a cover system was proposed in soft landscaped areas where these are situated on made ground to break the contaminant linkage.

This letter report details the relevant field records/ descriptions, supporting photographs and certificates of chemical analysis associated with the validation of imported soils placed as 'clean' cover within the soft landscaped area within the south western corner of site.

3. SPECIFIC REMEDIATION REQUIREMENTS

The RS prepared by RSK concluded that the majority of the built development was to comprise surface hard cover (i.e. buildings, car parking and walkways) and, where present, the hard surfacing would be sufficient to provide an engineered break in the contaminant linkage thus protecting end-users of the site. However, a small area of soft landscaping was proposed in the southwest corner of the GCRA and it was concluded that in this area of the development any site-derived granular made ground would not be suitable to remain within 300mm of soft cover finish level, therefore, a soil cover system would be required in these areas. The area of soft landscaping requiring validation is approximately 100m² in area.

3.1 Physical Validation requirements

Section 4.2 of the approved RS specified that in soft landscaped areas of the site a 'clean' cover soil system meeting the below specification was required:

- The cover system shall be a minimum of 300mm thick and comprise a 150mm minimum thickness of topsoil, overlying 150mm of subsoil. A geotextile break layer should be placed between the cover system and any underlying made ground.

It is noted that the client requested that the 300mm of cover soil be comprised entirely of topsoil so a sufficiently thick growing medium was available for future vegetation proposed for planting in this area. Whilst this is a deviation from cover system specification presented in the RS, RSK considers this to be acceptable given the presence of a geotextile break layer which will prevent mixing between imported cover soil layer and the underlying made ground.

The RS required that validation of the physical thickness of cover soils placed in soft landscaping areas be completed an environmental specialist at a frequency of one per 25m² or one per landscaped area.

3.2 Chemical validation frequency and criteria

The RS required that the chemical suitability of imported cover soils be confirmed prior to placement via a programme of sampling and chemical testing with chemical data compared against the relevant RSK generic assessment criteria (GAC) for the specific end-use in the area of the site where placement of the soils is proposed. In the context of this validation report imported the chemical suitability of cover soils was assessed against RSK's GAC for residential without homegrown produce end-use, as presented in Appendix D of the RS and not reproduced in this report. These GAC were considered to provide a conservative approach to the assessment given the proposed end-use of the site is considered to be less sensitive (i.e. apartment and hotel). The RS stipulated that the imported material required sampling and testing for presence of contaminants at a minimum frequency of one sample per 125m³ with a minimum of three samples requiring testing per source of material.

4. REMEDIATION VALIDATION

An engineer from RSK attended site on two occasions. The first visit was completed on 7 December 2020 and comprised inspection and sampling of a stockpile of the imported topsoil following its delivery

to site. A second visit was completed on 10 December 2020 to inspect the cover system detail following placement of the geotextile break layer and imported topsoil in the soft landscaped area. Details of the records provided by Graham Construction and collected by RSK as part of the validation process are provided in the sections below.

4.1 Chemical testing

Graham confirmed that approximately c.112T (94m³) of certified topsoil was imported to the site from the source site at Barton Grange Farm, Gladwyn Farm, Fiddlers Lane, Irlam, Greater Manchester, M44 6QB. Copies of the material import tickets provided to RSK are presented in **Appendix B**. Copies of the chemical testing certificates provided to RSK by the suppliers via Graham Construction are presented within **Appendix E**.

4.2 Chemical testing undertaken at source

In support of the material transfer, chemical certificates of analysis for samples of the imported materials collected at the source site were provided to RSK. Review of the chemical testing data against RSK's GAC indicated no exceedances of the assessment criteria.

Copies of the supplier's chemical testing certificates relating to imported topsoil are presented in **Appendix E**.

4.3 Chemical testing undertaken following import

A total of four samples of topsoil were collected by RSK from stockpiles of imported topsoil following delivery to site. Samples were collected in a selection of containers appropriate to the anticipated testing suite before being placed into cool boxes with icepacks. The samples were transferred to the testing laboratory at Envirolab, Hyde under chain of custody documentation and tested for a general suite of analysis including speciated PAHs, heavy metals, pH, total organic carbon and asbestos in soil to allow assessment of the chemical suitability of the imported topsoil for use within 300mm of the surface in the soft cover area at the site. Copies of the chemical testing certificates are presented in **Appendix F**.

Comparison of the chemical data with the RSK GAC indicated no exceedances of the assessment criteria. A copy of this assessment is as presented on **Appendix G**.

4.4 Physical validation

3No. inspection pits (reference IP101 to IP103, inclusive) were hand-excavated by RSK at a general spread of locations across the soft landscaping area in the south western corner of the site. The inspection pits confirmed that imported cover soils placed within soft landscaped areas were of sufficient thickness, composition and construction to meet the requirements of the RS. As required by the RS, the presence of a geotextile break layer was recorded at the base of each inspection pit.

Photographic records of the physical inspections are presented in **Appendix C**. Summary tables of the ground conditions encountered in the validation inspection pits are provided in **Appendix D**.

A plan showing the locations of the inspection pits is included as **Figure 1**.

5. CONCLUSIONS

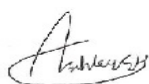
Based on the assessment of physical inspection records and chemical testing data collected by RSK together with information provided to RSK for review by Graham Construction, it is concluded that imported cover soils placed in the soft landscaping area are of both sufficient construction and chemical quality to meet the requirements the approved RS. On this basis, it is concluded that the requirements of the RS have been achieved and further assessment and/ or validation of cover soils are not considered necessary at this time.

This concludes the cover system validation report for the Cornbrook Hub redevelopment scheme located at Chester Road, Manchester, M15 4LZ.

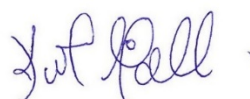
Should you wish to discuss this letter report in more detail, please do not hesitate to contact the undersigned.

Yours sincerely

On behalf of RSK Environment Limited



Ashley Standen-Howard
Geo-environmental Consultant
Author



Karl Hall
Principal Geo-environmental Engineer
Technical Reviewer

Encs

Figure 1	Inspection pit locations
Appendix A	Service constraints
Appendix B	Material import tickets
Appendix C	Photographic log
Appendix D	Summary log of ground conditions
Appendix E	Chemical testing certificates relating to imported topsoil - source
Appendix F	Chemical testing certificates relating to imported topsoil - on site
Appendix G	Comparison of Chemical Data with import criteria

FIGURES

APPENDIX A

SERVICE CONSTRAINTS

1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for Graham Construction (the "Client") in accordance with the terms of a contract [RSK Environment Standard Terms and Conditions] between RSK and the Client, dated 28 October 2019. The Services were performed by RSK with the reasonable skill and care ordinarily exercised by an environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the Client.
2. Other than that, expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.
3. Unless otherwise agreed in writing, the Services were performed by RSK exclusively for the purposes of the Client. RSK is not aware of any interest of or reliance by any party other than the Client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. **Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.**
4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK 's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date of this report, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.
5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the Client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.
6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the Client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, invasive plants, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials, unless specifically identified in the Services.
7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a visual inspection of the site together with RSK's interpretation of information, including documentation, obtained from third parties and from the Client on the history and usage of the site,

unless specifically identified in the Services or accreditation system (such as UKAS ISO 17020:2012 clause 7.1.6):

- a. The Services were based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely.
- b. The Services were limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the visual inspection.
- c. The Services did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services.

RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the Client and RSK.

8. The intrusive environmental site investigation aspects of the Services are a limited sampling of the site at pre-determined locations based on the known historic / operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the properties of the materials adjacent and local conditions, together with the position of any current structures and underground utilities and facilities, and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters (as stipulated in the scope between the client and RSK, based on an understanding of the available operational and historical information) and it should not be inferred that other chemical species are not present.
9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.
10. The comments given in this report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows, may vary from those reported due to seasonal, or other, effects and the limitations stated in the data should be recognised.
11. Asbestos is often observed to be present in soils in discrete areas. Whilst asbestos-containing materials may have been locally encountered during the fieldworks or supporting laboratory analysis, the history of brownfield and demolition sites indicates that asbestos fibres may be present more widely in soils and aggregates, which could be encountered during more extensive ground works.
12. Unless stated otherwise, only preliminary geotechnical recommendations are presented in this report and these should be verified in a Geotechnical Design Report, once proposed construction and structural design proposals are confirmed.



APPENDIX B

MATERIAL IMPORT TICKETS

LANDSCAPE CENTRE

SUPPLIERS OF LANDSCAPING PRODUCTS

GRAB WAGON & MACHINE HIRE

4196

Licence No. CBDU 311218

Vat Reg. No. 759 3058 03

BARTON GRANGE FARM,
FIDDLERS LANE, IRLAM,
MANCHESTER M44 6QB
Telephone: 0161 776 2728
Fax: 0161 775 7539

THURS
Mr. PEECH (KEV B. M30) Delivery Date: 26-11-20

Delivery Address: SALFORD

Delivered: ☐ Topsoil ☐ Screened Soil ☐ Hardcore ☐ Crush Brick/Concrete

Collected: ☐ Spoil off-site ☐ Contaminated Spoil off-site ☐ General Waste ☐ Top Soil ☐ Hardcore

☐ Other (please specify).....

Description:

16 B/B Rootzone

Work

Hours Worked

Travel Time

Total Hours

Consignee's Signature:.....

Name).....

CONDITIONS OF SALE: It is essential that all written particulars entered above should be checked by Consignee, since this delivery note once signed by the Consignee represents formal acceptance of the materials/work 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.

LANDSCAPE CENTRE

SUPPLIERS OF LANDSCAPING PRODUCTS

GRAB WAGON & MACHINE HIRE

4107

Licence No. CBDU 134082

Vat Reg. No. 759 3058 03

BARTON GRANGE FARM,
FIDDLERS LANE, IRLAM,
MANCHESTER M44 6QB
Telephone: 0161 776 2728
Fax: 0161 775 7539

Mr. Breedon Landscapes Delivery Date: 27-11-20

Delivery Address: GREEN VILLAGE

Delivered: ☐ Topsoil ☐ Screened Soil ☐ Hardcore ☐ Crush Brick/Concrete

Collected: ☐ Spoil off-site ☐ Contaminated Spoil off-site ☐ General Waste ☐ Top Soil ☐ Hardcore

☐ Other (please specify).....

Description:

6 B/B Rootzone Single Size

Day Work

Hours Worked

Travel Time

Total Hours

Consignee's Signature:.....

(Print Name).....

CONDITIONS OF SALE: It is essential that all written particulars entered above should be checked by Consignee, since this delivery note once signed by the Consignee represents formal acceptance of the materials/work 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.

LANDSCAPE CENTRE

SUPPLIERS OF LANDSCAPING PRODUCTS
GRAB WAGON & MACHINE HIRE

4187

Licence No. CBDU 134082
Vat Reg. No. 759 3058 03

BARTON GRANGE FARM,
FIDDLERS LANE, IRLAM,
MANCHESTER M44 6QB
Telephone: 0161 776 2728
Fax: 0161 775 7539

Mr. Beech Landscaper Delivery Date: 25-11-20

Delivery Address: Salford

- Delivered: ☐ Topsoil ☐ Screened Soil ☐ Hardcore ☐ Crush Brick/Concrete
Collected: ☐ Spoil off-site ☐ Contaminated Spoil off-site ☐ General Waste ☐ Top Soil ☐ Hardcore
☐ Other (please specify).....

Description:

17 M/B Rootzone

Day Work

Hours Worked

Travel Time

Total Hours

Consignee's Signature:.....

(Print Name).....

CONDITIONS OF SALE: It is essential that all written particulars entered above should be checked by Consignee, since this delivery note once signed by the Consignee represents formal acceptance of the materials/work 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.

LANDSCAPE CENTRE

SUPPLIERS OF LANDSCAPING PRODUCTS
GRAB WAGON & MACHINE HIRE

4134

Licence No. CBDU 311218
Vat Reg. No. 759 3058 03

BARTON GRANGE FARM,
FIDDLERS LANE, IRLAM,
MANCHESTER M44 6QB
Telephone: 0161 776 2728
Fax: 0161 775 7539

Mr. BEECH Delivery Date: 4-12-20

Delivery Address: GRAHAM'S (TOP OF CHESTER RD)

MANCHESTER

- Delivered: ☐ Topsoil ☐ Screened Soil ☐ Hardcore ☐ Crush Brick/Concrete
Collected: ☐ Spoil off-site ☐ Contaminated Spoil off-site ☐ General Waste ☐ Top Soil ☐ Hardcore
☐ Other (please specify).....

Description:

16 B/B Rootzone

Day Work

Hours Worked

Travel Time

Total Hours

Consignee's Signature:.....

(Print Name).....

CONDITIONS OF SALE: It is essential that all written particulars entered above should be checked by Consignee, since this delivery note once signed by the Consignee represents formal acceptance of the materials/work 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.

LANDSCAPE CENTRE

SUPPLIERS OF LANDSCAPING PRODUCTS

GRAB WAGON & MACHINE HIRE

4135

Licence No. CBDU 311218

Vat Reg. No. 759 3058 03

BARTON GRANGE FARM,
FIDDLERS LANE, IRLAM,
MANCHESTER M44 6QB
Telephone: 0161 776 2728
Fax: 0161 775 7539

Mr. BEECH Delivery Date: 7-12-20

Delivery Address: GRAHAM (TOP OF CHESTER RD)

MANCHESTER

Delivered: ☐ Topsoil ☐ Screened Soil ☐ Hardcore ☐ Crush Brick/Concrete

Collected: ☐ Spoil off-site ☐ Contaminated Spoil off-site ☐ General Waste ☐ Top Soil ☐ Hardcore

☐ Other (please specify).....

Description:

16. B/B ROOTZONE

Day Work

Hours Worked

Travel Time

Total Hours

Consignee's Signature:.....

(Print Name).....

CONDITIONS OF SALE: It is essential that all written particulars entered above should be checked by Consignee, since this delivery note once signed by the Consignee represents formal acceptance of the materials/work 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.

LANDSCAPE CENTRE

SUPPLIERS OF LANDSCAPING PRODUCTS

GRAB WAGON & MACHINE HIRE

4172

Licence No. CBDU 311218

Vat Reg. No. 759 3058 03

BARTON GRANGE FARM,
FIDDLERS LANE, IRLAM,
MANCHESTER M44 6QB
Telephone: 0161 776 2728
Fax: 0161 775 7539

Mr. Beech Landscaper Delivery Date: 23/11/20

Delivery Address: Stanley St Salford

Delivered: ☐ Topsoil ☐ Screened Soil ☐ Hardcore ☐ Crush Brick/Concrete

Collected: ☐ Spoil off-site ☐ Contaminated Spoil off-site ☐ General Waste ☐ Top Soil ☐ Hardcore

☐ Other (please specify).....

Description:

6 B/B Road zone

Day Work

Hours Worked

Travel Time

Total Hours

Consignee's Signature:.....

(Print Name).....

CONDITIONS OF SALE: It is essential that all written particulars entered above should be checked by Consignee, since this delivery note once signed by the Consignee represents formal acceptance of the materials/work 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.

LANDSCAPE CENTRE

SUPPLIERS OF LANDSCAPING PRODUCTS
GRAB WAGON & MACHINE HIRE

Licence No. CBDU 134082
Vat Reg. No. 759 3058 03

BARTON GRANGE FARM,
FIDDLERS LANE, IRLAM,
MANCHESTER M44 6QB
Telephone: 0161 776 2728
Fax: 0161 775 7539

Mr. *Beech Landscaping* Delivery Date: *23/11/20*

Delivery Address: *Stanley St Salford*

Delivered: ☐ Topsoil ☐ Screened Soil ☐ Hardcore ☐ Crush Brick/Concrete
Collected: ☐ Spoil off-site ☐ Contaminated Spoil off-site ☐ General Waste ☐ Top Soil ☐ Hardcore
☐ Other (please specify).....

Description:

16 B/B Rootzone.

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

Consignee's Signature:.....

(Print Name).....

CONDITIONS OF SALE: It is essential that all written particulars entered above should be checked by Consignee, since this delivery note once signed by the Consignee represents formal acceptance of the materials/work 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.

LANDSCAPE CENTRE

SUPPLIERS OF LANDSCAPING PRODUCTS
GRAB WAGON & MACHINE HIRE

Licence No. CBDU 311218
Vat Reg. No. 759 3058 03

BARTON GRANGE FARM,
FIDDLERS LANE, IRLAM,
MANCHESTER M44 6QB
Telephone: 0161 776 2728
Fax: 0161 775 7539

Mr. *Beech Landscaping* Delivery Date: *25-11-20*

Delivery Address: *Salford*

Delivered: ☐ Topsoil ☐ Screened Soil ☐ Hardcore ☐ Crush Brick/Concrete
Collected: ☐ Spoil off-site ☐ Contaminated Spoil off-site ☐ General Waste ☐ Top Soil ☐ Hardcore
☐ Other (please specify).....

Description:

*3 B/B Rootzone
40m² total*

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

Consignee's Signature:.....

(Print Name).....

CONDITIONS OF SALE: It is essential that all written particulars entered above should be checked by Consignee, since this delivery note once signed by the Consignee represents formal acceptance of the materials/work 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.

LANDSCAPE CENTRE

SUPPLIERS OF LANDSCAPING PRODUCTS
GRAB WAGON & MACHINE HIRE

4212

Licence No. CBDU 311218
Vat Reg. No. 759 3058 03

BARTON GRANGE FARM,
FIDDLERS LANE, IRLAM,
MANCHESTER M44 6QB
Telephone: 0161 776 2728
Fax: 0161 775 7539

Mr. PEECH Delivery Date: 8-12-20

Delivery Address: CHASTEL ROAD (GRAHAM SIDE)

MANCHESTER

Delivered: ☐ Topsoil ☐ Screened Soil ☐ Hardcore ☐ Crush Brick/Concrete

Collected: ☐ Spoil off-site ☐ Contaminated Spoil off-site ☐ General Waste ☐ Top Soil ☐ Hardcore

☐ Other (please specify).....

Description:

16 x B/B ROOTZONE

Day Work

Hours Worked

Travel Time

Total Hours

Consignee's Signature:.....

(Print Name).....

CONDITIONS OF SALE: It is essential that all written particulars entered above should be checked by Consignee, since this delivery note once signed by the Consignee represents formal acceptance of the materials/work 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.

APPENDIX C

PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG		
Soft landscaping area	Date: 07/12/2020	
Black geotextile layer placed prior to topsoil covering the area		

Trial Hole: IP101	Date: 10/12/2020	
Topsoil thickness: 0.47m Total cover thickness: 0.47m		

Trial Hole: IP102	Date: 10/12/2020	
Topsoil thickness: 0.46m Total cover thickness: 0.46m		

Trial Hole: IP103	Date: 10/12/2020	
Topsoil thickness: 0.30m Total cover thickness: 0.30m		

APPENDIX D

SUMMARY LOG OF GROUND CONDITIONS

Trial hole location	Depth (m bgl)	Description
IP101	GL-0.47	Soft brown slightly gravelly very sandy CLAY with frequent rootlets. Gravel is subangular to subrounded fine to medium of natural lithics (sandstone, mudstone). Sand is fine to coarse. (IMPORTED TOPSOIL) @ 0.47m geotextile layer at base of hole
IP102	GL-0.46	Soft brown slightly gravelly very sandy CLAY with frequent rootlets. Gravel is subangular to subrounded fine to medium of natural lithics (sandstone, mudstone). Sand is fine to coarse. (IMPORTED TOPSOIL) @ 0.46m geotextile layer at base of hole
IP103	GL-0.30	Soft brown slightly gravelly very sandy CLAY with frequent rootlets. Gravel is subangular to subrounded fine to medium of natural lithics (sandstone, mudstone). Sand is fine to coarse. (IMPORTED TOPSOIL) @ 0.30m geotextile layer at base of hole

APPENDIX E

CHEMICAL TESTING CERTIFICATES RELATING TO IMPORTED TOPSOIL - SOURCE



Freeland Horticulture Ltd
Rosedale Nursery
College Road
Hextable
Kent
BR8 7LT

Attention: Philippa Lambourne

Our Ref: SLC-848-SA

29 July 2020

Dear Philippa

Topsoil Analysis Report: Astley, Greater Manchester Topsoil – July 2019

We have completed the analysis of the topsoil sample recently taken from the above site and have the pleasure of reporting our findings. The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes.

SOIL SAMPLING & EXAMINATION

At the time of our sampling visit the topsoil was stored in a stockpile. A series of 10 hand augered trial holes were constructed across the stockpile for the purpose of soil examination and sample collection. As the soil examination confirmed a consistent topsoil composition, the ten samples were combined together to form one composite sample for analysis purposes. The soil was described as a dark brown, slightly moist, friable *loamy sand* with a well developed, fine to medium granular structure. The soil contained a low fraction of small stones and no deleterious materials (eg. building waste materials, glass, roots or rhizomes of pernicious weeds) or unusual odours (eg. hydrocarbons) were recorded.

LABORATORY ANALYSIS

The topsoil sample was submitted to a UKAS accredited laboratory for routine physical and chemical parameters to confirm the composition and fertility of the soil. The following parameters were determined:

- ⊕ pH & electrical conductivity values;
- ⊕ major plant nutrients (N, P, K, Mg) & organic matter content;
- ⊕ particle size distribution and stone content;
- ⊕ heavy metals & potentially toxic elements (As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn, B);
- ⊕ sulphate, sulphur, sulphide;
- ⊕ total cyanide and total (mono) phenols;
- ⊕ speciated PAHs (US EPA16)
- ⊕ banded aromatic and aliphatic petroleum hydrocarbons (C₅-C₃₅).
- ⊕ Asbestos

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below.

Phone: 01322 619161;

COMMENTS

pH & Electrical Conductivity (salinity) Values

The sample was alkaline in nature (pH 8.5) with a pH value that would be suitable for general landscaping purposes, and in particular for species classified as either *wide pH tolerant* or *lime tolerant*.

The electrical conductivity value using the soil:water extract was low (439µS/cm) indicating that soluble salts are not present at levels that would be harmful to plants.

Organic Matter & Nutrient Status

The sample was rich in organic matter and all major plant nutrients. No further additions of compost or fertiliser are required, or indeed recommended, for at least the first growing season.

Particle Size Distribution & Stone Content

The sample contained 76% sand and fell into the loamy *sand* texture class. This particle size distribution is considered suitable for a broad range of landscape applications, including tree and shrub planting, turfing and seeding.

The sample was free from stones of 50 mm and upwards in diameter and only contained a slight fraction of smaller stones (0.6%). As such, stones will not restrict the use of the soil for landscaping purposes.

Potential Contaminants

We are not aware of any specified contaminant levels set for the proposed end-use of this topsoil so the following comments are based on the Soil Guideline Values (SGVs) for residential end-use presented in the Contaminated Land Exposure Assessment (CLEA) Model (EA/DEFRA:2002). The SGVs currently only consider a limited range of parameters so where a potential contaminant is not covered by the CLEA Model other relevant schedules for contamination assessment, such as the Dutch Guidelines, and professional judgement have been used.

Of the potential contaminants determined, none was found at levels that would indicate significant contamination.

CONCLUSION

The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes. From the soil examination and laboratory analysis, the soil is described as an alkaline, non-saline, loamy sand. The organic matter and nutrient levels are acceptable, and no significant contamination was found with respect to the parameters determined. This soil would adhere to the current BS3882 specification for 'multipurpose grade'.

To conclude, based on our findings, the topsoil would be considered well-suited to general landscaping purposes provided the physical condition of the soil is maintained.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if you have any queries or comments.

George Longmuir MSc Soil Sci. M.I Soil Sci.

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Astley, Greater Manchester
Month/Year	July 20
Our Ref	0848-SA
Date	29 July 2020

Composite sample
pH Value & Salinity

pH value (1:2.5 soil/water ext)	units	8.5
Electrical Conductivity (1:2.5 soil/water ext)	µS/cm	439
Neutralising Value (CaCO ₃ equivalent)	%	4.4
Neutralising Value (CaO equivalent)	%	2.4

Organic Matter & Nutrient Status

Organic Matter (LOI)	%	5.6
Organic Carbon (Derived)	%	3.3
Total Nitrogen	%	0.213
Carbon:Nitrogen Ratio	:1	15
Available Phosphorus	mg/l	48.0
Available Potassium	mg/l	612
Available Magnesium	mg/l	216

Particle Size Analysis & Stones

Clay (<0.002mm)	%	7
Silt (0.063-0.002mm)	%	17
Sand (2.0-0.063mm)	%	6
Texture Class	UK Class	Sandy Sand

Stones 2-20mm	% by DW	0.6
Stones 20-50mm	% by DW	0.0
Stones >50mm	% by DW	0.0

Potential Contaminants

Total Arsenic (As)	mg/kg	3.4
Total Cadmium (Cd)	mg/kg	0.16
Total Chromium (Cr)	mg/kg	12.1
Hexavalent Chromium (Cr ^{VI})	mg/kg	<0.1
Total Copper (Cu)	mg/kg	11.8
Total Lead (Pb)	mg/kg	34.6
Total Mercury (Hg)	mg/kg	<0.2
Total Nickel (Ni)	mg/kg	10.4
Total Selenium (Se)	mg/kg	0.12
Total Zinc (Zn)	mg/kg	50.9
Total Beryllium (Be)	mg/kg	<1
Total Barium (Ba)	mg/kg	58.2
Total Vanadium (V)	mg/kg	15.4
Hot Water Soluble Boron (B)	mg/kg	1.5
Total Cyanide (CN)	mg/kg	<1
Elemental Sulphur (S)	mg/kg	<5
Easily Liberated Sulphide (S ²⁻)	mg/kg	<1
Water Soluble Sulphate (SO ₄ ²⁻)	mg/l	85.2
Total Phenols Index	mg/kg	<1
Asbestos Screen	-	N.D.

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Astley, Greater Manchester
Month/Year	July 20
Our Ref	0848-SA
Date	29 July 2020

Polyaromatic Hydrocarbons

Naphthalene	mg/kg	<0.05
Acenaphthylene	mg/kg	<0.05
Acenaphthene	mg/kg	<0.05
Fluorene	mg/kg	<0.05
Phenanthrene	mg/kg	0.1
Anthracene	mg/kg	<0.05
Fluoranthene	mg/kg	0.4
Pyrene	mg/kg	0.3
Benzo[a]anthracene	mg/kg	0.2
Chrysene	mg/kg	0.3
Benzo[b]fluoranthene	mg/kg	0.3
Benzo[k]fluoranthene	mg/kg	0.1
Benzo[a]pyrene	mg/kg	0.3
Indeno[1,2,3-cd]pyrene	mg/kg	0.2
Dibenzo[a,h]anthracene	mg/kg	<0.1
Benzo[g,h,i]perylene	mg/kg	0.2
Total PAHs sum US EPA 16	mg/kg	2.4

Banded Petroleum Hydrocarbons

Aliphatic TPH >C ₅ -C ₆	mg/kg	<2
Aliphatic TPH >C ₆ -C ₈	mg/kg	<0.4
Aliphatic TPH >C ₈ -C ₁₀	mg/kg	<4
Aliphatic TPH >C ₁₀ -C ₁₂	mg/kg	<4
Aliphatic TPH >C ₁₂ -C ₁₆	mg/kg	<4
Aliphatic TPH >C ₁₆ -C ₂₁	mg/kg	<4
Aliphatic TPH >C ₂₁ -C ₃₅	mg/kg	<9
Aliphatic TPH >C ₃₅ -C ₄₄	mg/kg	<12

Aromatic TPH >C ₅ -C ₇	mg/kg	<0.02
Aromatic TPH >C ₇ -C ₈	mg/kg	<0.02
Aromatic TPH >C ₈ -C ₁₀	mg/kg	<0.02
Aromatic TPH >C ₁₀ -C ₁₂	mg/kg	<4
Aromatic TPH >C ₁₂ -C ₁₆	mg/kg	5.5
Aromatic TPH >C ₁₆ -C ₂₁	mg/kg	7.0
Aromatic TPH >C ₂₁ -C ₃₅	mg/kg	36.1
Aromatic TPH >C ₃₅ -C ₄₄	mg/kg	9.6

Total Petroleum Hydrocarbons (C ₅ -C ₄₄)	mg/kg	58.2
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BTEX

Benzene	mg/kg	<0.02
Toluene	mg/kg	<0.2
Ethyl Benzene	mg/kg	<0.04
m- & p-Xylene	mg/kg	<0.2
o-Xylene	mg/kg	<0.1

APPENDIX F

CHEMICAL TESTING CERTIFICATES RELATING TO IMPORTED TOPSOIL - ON SITE

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 20/10538
Issue Number: 1
Date: 11 December, 2020

Client: RSK Environment Ltd Manchester
Fourways House
57 Hilton Street
Manchester
Lancashire
UK
M1 2EJ

Project Manager: Ashley Standen-Howard
Project Name: Cornbrook
Project Ref: 11323
Order No: N/A
Date Samples Received: 07/12/20
Date Instructions Received: 07/12/20
Date Analysis Completed: 11/12/20

Prepared by:


Melanie Marshall
Laboratory Coordinator

Approved by:


Sophie France
Client Service Manager

Envirolab Job Number: 20/10538

Client Project Name: Cornbrook

Client Project Ref: 11323

Lab Sample ID	20/10538/1	20/10538/2	20/10538/3	20/10538/4				Units	Limit of Detection	Method ref
Client Sample No	1	2	3	4						
Client Sample ID	Topsoil	Topsoil	Topsoil	Topsoil						
Depth to Top										
Depth To Bottom										
Date Sampled	07-Dec-20	07-Dec-20	07-Dec-20	07-Dec-20						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	4AE	4AE	4AE	4AE						
% Stones >10mm _A	<0.1	<0.1	<0.1	<0.1				% w/w	0.1	A-T-044
pH _D ^{M#}	8.56	8.38	8.44	8.39				pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.08	0.13	0.14	0.15				g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	360	460	480	490				mg/kg	200	A-T-028s
Organic matter _D ^{M#}	5.1	4.8	5.6	4.3				% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	1	1	<1	1				mg/kg	1	A-T-024s
Cadmium _D ^{M#}	0.6	0.6	0.6	0.7				mg/kg	0.5	A-T-024s
Copper _D ^{M#}	14	11	13	12				mg/kg	1	A-T-024s
Chromium _D ^{M#}	12	10	11	43				mg/kg	1	A-T-024s
Lead _D ^{M#}	18	14	16	18				mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17				mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	10	8	9	9				mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-024s
Zinc _D ^{M#}	38	42	34	40				mg/kg	5	A-T-024s

Envirolab Job Number: 20/10538

Client Project Name: Cornbrook

Client Project Ref: 11323

Lab Sample ID	20/10538/1	20/10538/2	20/10538/3	20/10538/4				Units	Limit of Detection	Method ref
Client Sample No	1	2	3	4						
Client Sample ID	Topsoil	Topsoil	Topsoil	Topsoil						
Depth to Top										
Depth To Bottom										
Date Sampled	07-Dec-20	07-Dec-20	07-Dec-20	07-Dec-20						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	4AE	4AE	4AE	4AE						
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil [#]	NAD	NAD	NAD	NAD						A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A	N/A	N/A						A-T-045

Envirolab Job Number: 20/10538

Client Project Name: Cornbrook

Client Project Ref: 11323

Lab Sample ID	20/10538/1	20/10538/2	20/10538/3	20/10538/4				Units	Limit of Detection	Method ref
Client Sample No	1	2	3	4						
Client Sample ID	Topsoil	Topsoil	Topsoil	Topsoil						
Depth to Top										
Depth To Bottom										
Date Sampled	07-Dec-20	07-Dec-20	07-Dec-20	07-Dec-20						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	4AE	4AE	4AE	4AE						
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	0.02				mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	<0.02	0.04				mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.05	0.05	0.05	0.06				mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.05	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.07	0.07	<0.05	0.09				mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	<0.05	<0.05				mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	<0.07				mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.08	0.08	0.09	0.10				mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.14	0.14	0.15	0.16				mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.05	0.05	<0.03	0.05				mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03	<0.03				mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.07	0.08	0.07	0.07				mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.13	0.14	0.15	0.16				mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	0.64	0.61	0.51	0.75				mg/kg	0.01	A-T-019s

Envirolab Job Number: 20/10538

Client Project Name: Cornbrook

Client Project Ref: 11323

Lab Sample ID	20/10538/1	20/10538/2	20/10538/3	20/10538/4				Units	Limit of Detection	Method ref
Client Sample No	1	2	3	4						
Client Sample ID	Topsoil	Topsoil	Topsoil	Topsoil						
Depth to Top										
Depth To Bottom										
Date Sampled	07-Dec-20	07-Dec-20	07-Dec-20	07-Dec-20						
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES						
Sample Matrix Code	4AE	4AE	4AE	4AE						
TPH CWG										
Ali >C5-C6 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	5	7	4	5				mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	35	70	29	46				mg/kg	1	A-T-055s
Total Aliphatics _A	40	77	33	51				mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	2	1	2	2				mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1	<1				mg/kg	1	A-T-055s
Aro >C12-C16 _A	8	8	7	7				mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	14	16	12	12				mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	198	226	156	185				mg/kg	1	A-T-055s
Total Aromatics _A	223	252	178	207				mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C35) _A	263	329	211	258				mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: RSK Environment Ltd Manchester, Fourways House, 57 Hilton Street,
Manchester, Lancashire , UK, M1 2EJ

Project: Cornbrook

Clients Project No: 11323

Project No: 20/10538

Date Received: 07/12/2020 (am)

Cool Box Temperatures (°C): 10.0

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

APPENDIX G

COMPARISON OF CHEMICAL DATA WITH IMPORT CRITERIA

Project name	Cornbrook	Notes	
Project code	11323		
Client name	Graham Construction		
Address			
NGR			
Land use	Residential without home-grown produce		
SOM	6%		
GAC version	2019_00		

									Lab sample ID	20/10538/1	20/10538/2	20/10538/3	20/10538/4						
									Client sample ID	Topsoil	Topsoil	Topsoil	Topsoil						
									Depth to top										
									Depth to bottom										
									Date sampled	07/12/20	07/12/20	07/12/20	07/12/20						
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects											
Metals and Inorganics																			
Arsenic	mg/kg	40		1	<1	4	3	1	1	1	<1	1							
Cadmium	mg/kg	149		0.7	0.6	4	4	0	0.6	0.6	0.6	0.7							
Chromium	mg/kg	910	21	43	10	4	4	0	12	10	11	43							
Copper	mg/kg	7100		14	11	4	4	0	14	11	13	12							
Lead	mg/kg	310		18	14	4	4	0	18	14	16	18							
Mercury	mg/kg	56	1.2		<0.17	4	0	4	<0.17	<0.17	<0.17	<0.17							
Nickel	mg/kg	180		10	8	4	4	0	10	8	9	9							
Selenium	mg/kg	430			<1	4	0	4	<1	<1	<1	<1							
Zinc	mg/kg	40000		42	34	4	4	0	38	42	34	40							
Asbestos																			
Asbestos in soil																			
Petroleum Hydrocarbons																			
Ali >C5-C6	mg/kg	161			<0.01	4	0	4	<0.01	<0.01	<0.01	<0.01							
Ali >C6-C8	mg/kg	530			<0.01	4	0	4	<0.01	<0.01	<0.01	<0.01							
Ali >C8-C10	mg/kg	155			<1	4	0	4	<1	<1	<1	<1							
Ali >C10-C12	mg/kg	770	283		<1	4	0	4	<1	<1	<1	<1							
Ali >C12-C16	mg/kg	4400	142		<1	4	0	4	<1	<1	<1	<1							
Ali >C16-C21	mg/kg			7	4	4	4	0	5	7	4	5							
Ali >C21-C35	mg/kg			70	29	4	4	0	35	70	29	46							
Ali >C16-C35 calculated	mg/kg	111000		77	33	4	4	0	40	77	33	51							
Total Aliphatics	mg/kg			77	33	4	4	0	40	77	33	51							
Aro >C5-C7	mg/kg				<0.01	4	0	4	<0.01	<0.01	<0.01	<0.01							
Aro >C7-C8	mg/kg				<0.01	4	0	4	<0.01	<0.01	<0.01	<0.01							
Aro >C8-C10	mg/kg	269		2	1	4	4	0	2	1	2	2							
Aro >C10-C12	mg/kg	1200			<1	4	0	4	<1	<1	<1	<1							
Aro >C12-C16	mg/kg	2500		8	7	4	4	0	8	8	7	7							
Aro >C16-C21	mg/kg	1900		16	12	4	4	0	14	16	12	12							
Aro >C21-C35	mg/kg	1900		226	156	4	4	0	198	226	156	185							
Total Aromatics	mg/kg			252	178	4	4	0	223	252	178	207							
TPH (Ali & Aro)	mg/kg			329	211	4	4	0	263	329	211	258							
BTEX - Benzene	mg/kg	3.3			<0.01	4	0	4	<0.01	<0.01	<0.01	<0.01							
BTEX - Toluene	mg/kg	3900			<0.01	4	0	4	<0.01	<0.01	<0.01	<0.01							
BTEX - Ethyl Benzene	mg/kg	440			<0.01	4	0	4	<0.01	<0.01	<0.01	<0.01							
BTEX - o Xylene	mg/kg	480			<0.01	4	0	4	<0.01	<0.01	<0.01	<0.01							
BTEX - m & p Xylene	mg/kg	430			<0.01	4	0	4	<0.01	<0.01	<0.01	<0.01							
MTBE	mg/kg	320			<0.01	4	0	4	<0.01	<0.01	<0.01	<0.01							
Polycyclic aromatic hydrocarbons																			
Acenaphthene	mg/kg	7400			<0.01	4	0	4	<0.01	<0.01	<0.01	<0.01							
Acenaphthylene	mg/kg	7400		0.02	<0.01	4	1	3	<0.01	<0.01	<0.01	0.02							
Anthracene	mg/kg	37000		0.04	<0.02	4	1	3	<0.02	<0.02	<0.02	0.04							
Benzo(a)anthracene	mg/kg	15		0.06	0.05	4	4	0	0.05	0.05	0.05	0.06							
Benzo(a)pyrene	mg/kg	5.3		0.05	<0.04	4	1	3	0.05	<0.04	<0.04	<0.04							
Benzo(b)fluoranthene	mg/kg	4.1		0.09	<0.05	4	3	1	0.07	0.07	<0.05	0.09							

										Lab sample ID	20/10538/1	20/10538/2	20/10538/3	20/10538/4						
										Client sample ID	Topsoil	Topsoil	Topsoil	Topsoil						
										Depth to top										
										Depth to bottom										
										Date sampled	07/12/20	07/12/20	07/12/20	07/12/20						
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects												
Benzo(ghi)perylene	mg/kg	359			<0.05	4	0	4	<0.05	<0.05	<0.05	<0.05								
Benzo(k)fluoranthene	mg/kg	107			<0.07	4	0	4	<0.07	<0.07	<0.07	<0.07								
Chrysene	mg/kg	32		0.1	0.08	4	4	0	0.08	0.08	0.09	0.1								
Dibenzo(ah)anthracene	mg/kg	0.32			<0.04	4	0	4	<0.04	<0.04	<0.04	<0.04								
Fluoranthene	mg/kg	1600		0.16	0.14	4	4	0	0.14	0.14	0.15	0.16								
Fluorene	mg/kg	4500	183		<0.01	4	0	4	<0.01	<0.01	<0.01	<0.01								
Indeno(123-cd)pyrene	mg/kg	46		0.05	<0.03	4	3	1	0.05	0.05	<0.03	0.05								
Naphthalene	mg/kg	125			<0.03	4	0	4	<0.03	<0.03	<0.03	<0.03								
Phenanthrene	mg/kg	1520		0.08	0.07	4	4	0	0.07	0.08	0.07	0.07								
Pyrene	mg/kg	3800		0.16	0.13	4	4	0	0.13	0.14	0.15	0.16								
Total PAH-16MS	mg/kg			0.75	0.51	4	4	0	0.64	0.61	0.51	0.75								
Other analytes																				
% Stones >10mm	% w/w				<0.1	4	0	4	<0.1	<0.1	<0.1	<0.1								
Organic matter	% w/w			5.6	4.3	4	4	0	5.1	4.8	5.6	4.3								
pH	pH			8.56	8.38	4	4	0	8.56	8.38	8.44	8.39								
Sulphate (acid soluble)	mg/kg			490	360	4	4	0	360	460	480	490								
Sulphate (water sol 2:1)	g/l			0.15	0.08	4	4	0	0.08	0.13	0.14	0.15								