

Your Ref:

Our Ref: BC608 L001 / JT

Formation Design and Build Ltd
Oakwood House
414-422 Hackney Road
London E2 7SY

19th April 2024

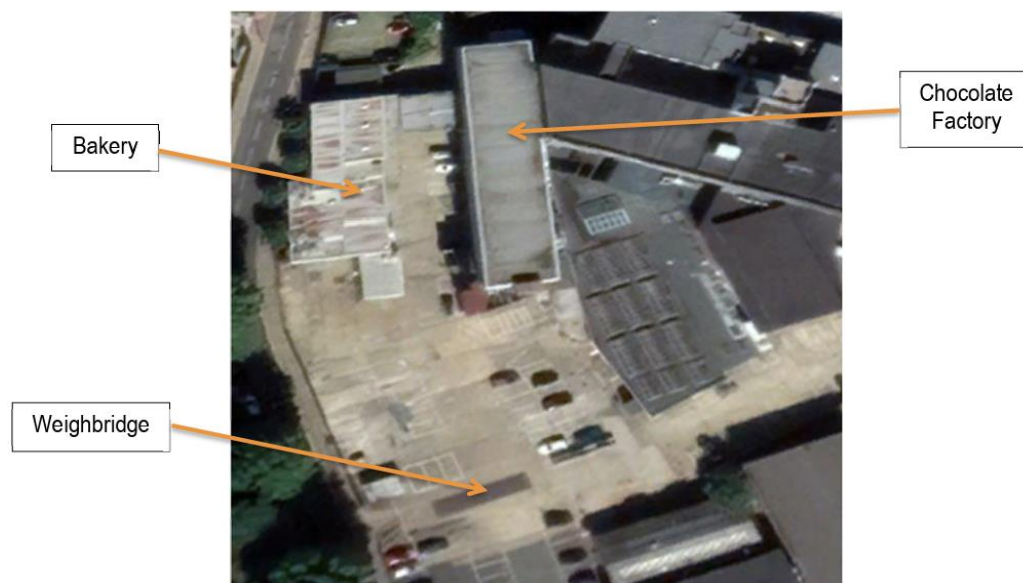
For the attention of Mark O'Dwyer

**BLOCK E, THE CHOCOLATE FACTORY, WOOD GREEN, LONDON. N22 6XJ
CONTAMINATION VERIFICATION REPORT**

1 INTRODUCTION

The Brownfield Consultancy was instructed by Formation Design and Build (the client) to prepare a verification report for contamination remediation works at the above site.

The footprint of Block E was formerly occupied by a Bakery and part of the Chocolate Factory complex, with the remainder of the site a Car Park. The southern boundary was marked by a Weighbridge. All structures were removed and a seven to eight storey residential building has been built. An aerial photograph showing the main buildings pre-redevelopment is presented below.



This report has been prepared to satisfy Condition 20 of the planning permission.

A Phase 1 & 2 Contaminated Land and Geotechnical site investigation was undertaken by The Brownfield Consultancy in February and March 2022 and reported in 'Site Investigation Report' (Ref: BC608 RE001 27.05.2022). The reader is referred to this report and a summary of our findings is presented in the following section.

2 PREVIOUS WORK

Our Phase 1 Preliminary Contamination Assessment identified Made Ground resulting from the construction and demolition of existing and former structures as the only potential source of contamination. Contaminants include asbestos, metal contaminants, polycyclic aromatic hydrocarbons and ground gas.

The intrusive fieldwork was undertaken on 12th and 13th February 2022 and consisted of 2No. cable percussion boreholes (BH1 and BH2) and 4No. dynamic sampler boreholes (WS1-WS4). WS3 fell short of its target depth due to rapid groundwater ingress in 'base' materials at 0.60m bgl. The hole was repositioned 2m south and named WS3A. The site was undergoing demolition during our investigations and thus coverage of the site was limited due to Health and Safety protocols. Standpipes were installed in WS1, WS2 and WS3A to facilitate monitoring of the groundwater level and land-borne gases. The response zone was from 1.00m to 4.00m. A gas tap was fitted and the installation completed with a protective flush stop-tap box cover set in concrete.

Gas monitoring was undertaken on three occasions between 28th April 2022 and 10th May 2022 from the borehole installations. Gas monitoring involved the measurement of methane (CH₄), carbon dioxide (CO₂) and oxygen (O₂) together with atmospheric pressure, downhole pressure and flow rates using a calibrated Geotech GA 2000 gas analyser. Following ground gas measurements the boreholes were dipped to the water table and the base of each borehole.

A programme of chemical laboratory testing was scheduled on 13No. soil samples taken from various depths in the Made Ground and natural soils recovered from the boreholes.

All samples were placed into suitable containers for the required chemical analysis and transported, on the day of collection to I2 in Watford which is accredited under UKAS and MCerts. The following table summarises the contaminants scheduled:-

Summary of Soil Chemical Laboratory Testing Suites

Determinant	No.
Metals suite	8
Speciated Polycyclic Aromatic Hydrocarbons (PAH)	7
Asbestos screen	9
Asbestos quantification	1
TPH (C ₁₀ -C ₄₀)	5
TPH Texas banded	3
Waste Acceptance Criteria	1

2.1 Ground Conditions

The exploratory holes confirmed the site to be underlain by the London Clay formation. Made Ground was also revealed. The total thickness of Made Ground varied in the boreholes from 0.60 – 2.00m.

Reinforced Concrete was present at all borehole locations and was found in thicknesses of 0.10m to 0.60m. Immediately underlying the concrete at most locations except BH2 was a variably thick bed of flint, brick and concrete GRAVEL. In turn, this was usually underlain by beds of soft sandy clays with inclusions of gravel. A second layer of concrete was encountered in BH1 at 0.40 – 0.45m. In BH2 concrete was encountered to 0.60m which in turn was underlain by soft reworked London Clay with inclusions of brick and concrete to a depth of 2.00m.

The London Clay consisted of the typical profile of an upper weathered bed of soft becoming firm, becoming stiff, fissured, brown silty clay with patches of silt/fine sand and selenite crystals, over unweathered, stiff, fissured grey silty clay at depths of 7.00m to 7.50m. The clay was soft to depths of 3.00m and became very stiff below approximately 15m depth. There was a high degree of consistency in the depth versus strength profiles across the two deep boreholes.

2.2 Contamination

Exceedances of the '*residential without plant uptake*' guideline values for lead were recorded in BH1 at 0.50m (2300mg/kg), WS2 at 0.20m (5000mg/kg) and WS2 at 0.50m (4100mg/kg). All three exceedances were recorded in granular 'base' materials (demolition rubble) directly underlying concrete. The concentrations are highly elevated yet are not unusual for Made Ground soils across the City of London.

Exceedances of the guideline values for PAH compounds were not recorded.

Five samples of Made Ground and three samples of London Clay were scheduled for hydrocarbon analysis from depths ranging from 0.25m – 0.90m bgl. A maximum concentration of 110 mg/kg was recorded in BH1 (0.50m) again contained within 'base' materials (demolition rubble). This concentration is not considered to present a risk to human health.

9No. samples of shallow Made Ground were submitted to an asbestos screen. Asbestos was recorded in one location, WS2 (0.50m), in 'base' materials directly underlying concrete. 'Chrysotile loose fibres' was recorded. The sample was subsequently scheduled for asbestos quantification which recorded a wt% of 'less than detection limit' (<0.001wt%) indicating that the risk is minimal to end users and construction workers.

2.3 Gas Protection Requirements

Methane was not recorded during any of the 3 visits. A maximum concentration of carbon dioxide of 0.6% and a maximum flow rate of 2.1l/h was recorded. A GSV of 0.0126l/h is calculated. Referring to Table 2 of BS8485 (2015), the site can be categorised as a Characteristic Situation 1 (CS1). Gas protection measures are not required.

2.4 Contaminated Land and Remediation Recommendations

1. The Desk Top Study identified demolition rubble underlying existing concrete as the only 'potential' source of contamination below the site. Testing of this material revealed very low levels of contamination with the exception of lead. Lead was highly elevated in the demolition rubble in three locations with concentrations ranging from 2300mg/kg to 5000mg/kg. We would recommend that, as far as possible, the existing 'base' materials i.e. 'demolition fill', currently underlying concrete, should be reused below hardcover on site and not disposed of to landfill. Surplus London Clay arisings will be classified as inert waste.
2. It is recognised that the current investigation was limited due to ongoing demolition. However the likelihood of encountering anything other than demolition rubble across the site is considered unlikely. It is incumbent upon the principal groundworks contractor to maintain a 'Watching Brief' during groundworks. It is also the responsibility of the Site

Manager to inform the Brownfield Consultancy should unexpected contamination be observed.

3. Upgraded water supply pipework, protective against chemical attack by hydrocarbons, is considered necessary at this site.
4. Gas protection measures are not required. Radon protection measures are not required.
5. Provision of cover systems in areas of soft landscaping

Near surface soils on site are considered to pose a risk to human health with respect to future site users. In this regard, a capping layer is recommended in the proposed areas of landscaping, to act as a barrier to the underlying soils which are impacted with lead. The capping thickness will be 450mm of imported topsoil and cohesive subsoil, including a minimum of 150mm topsoil. The subsoil/topsoil imported to form the capping layer will be a clean soil from a known and reputable source. Chemical certification of the source material test results and details of the source/s will be provided by the Contractor prior to capping material being brought to site.

Once placed, the capping layer will be subject to validation and the soils will not contain contaminant concentrations that exceed the maximum permissible assessment criteria as included in the table on Page 14. Inspection pits will be dug to validate the capping layer construction and samples taken for laboratory analysis to confirm the chemical suitability on a frequency of 1 per 100m³ or a minimum of 3 per source, whichever is greater.

The purpose of this Verification Report is to document the successful implementation of these recommendations.

3 DISCOVERY OF FOUR UNDERGROUND FUEL STORAGE TANKS (UST).

On 20th June 2022, during concrete slab removal, the client informed us that they had uncovered four small USTs, approximately 15m northeast of the Weighbridge. All four tanks were the same size, approximately 3.00m(l), 2.00m (h) x 2.00m (w) and were located in the configuration presented on the drawing in Appendix B-1 and overleaf. Three of the four had already been exhumed. We were informed by the client that one of the four tanks was not within their land ownership boundary and that it remained in-situ. The excavations had been backfilled with crushed concrete.

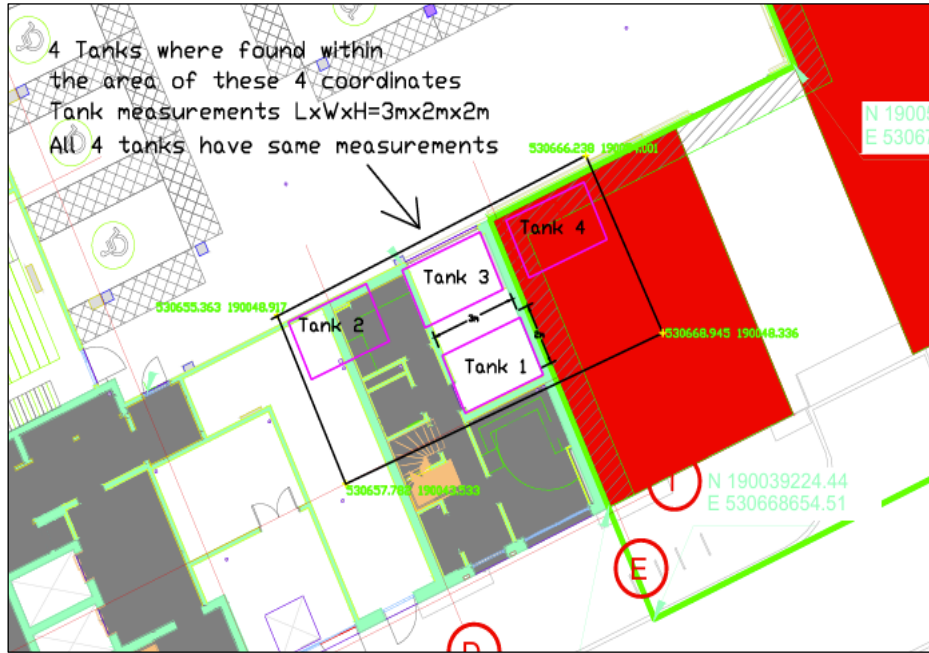
We were informed by the client that the tanks were decommissioned before they took possession of the site and were filled with water. The tanks were emptied and removed from site as scrap metal.

The Brownfield Consultancy visited site on 28th June 2022. The three exhumed tanks were lying on the ground surface. We informed site personnel that we needed to investigate the following:-

- Made Ground and natural London Clay deposits directly below the former tanks / crushed concrete backfill.
- A visual inspection of the soil below the tank that remained in the ground, if possible.

Excavation works commenced on 28th June 2022. Photographs of the works are presented in Appendix B-2. The results of laboratory analysis of soil validation samples are presented in Appendix B-3. Where it was safe to do so, entry into the excavations to collect samples was undertaken. Alternatively, the excavator would obtain samples with an overturned bucket, when instructed.

Referring to the drawing below, and on the advice of the operative who removed the tanks, we started the excavation above Tank 1. Tank 4 remained in-situ.



Crushed concrete extended to a depth of 1.65m. At this depth grey gravelly CLAY (Made Ground) was encountered and a validation sample was collected and labelled 'Backfill'(1.65m). The excavator was instructed to continue vertically until undisturbed London Clay was encountered which was intercepted at approximately 3.00m. At this depth water flowed into the pit. A second validation sample was collected and labelled 'Base East' (3.00m).

We extended the excavation in a northerly direction towards Tank 3. A sample of reworked London Clay (Made Ground) was collected for laboratory testing, labelled 'Backfill West' (2.20m). Once again we instructed the excavator to continue until undisturbed London Clay was encountered. A second deeper validation sample was collected of London Clay labelled 'Base West' (3.10m). Perched groundwater again flooded the excavation at a depth of 3.00m begl. A sample of London Clay was collected from the northern sidewall of Tank 3 and labelled N.Sidewall (3.20m).

The western wall of Tank 4 was exposed and the soil below could be inspected. A sample was collected from below the tank on its western sidewall and labelled 'W. Sidewall' (2.90m). No hydrocarbon impacts were recorded.

The excavation was becoming unstable and backfilling was required. We closely inspected the Made Ground arisings and they were deemed acceptable to place back into the excavation i.e. negligible visual and olfactory hydrocarbon impacts.

The excavation was extended in a westerly direction towards Tank 2, again removing Crushed Concrete and Made Ground. Two further Validation samples were collected labelled 'Base West' (3.40m) and Base North (3.30m). Both of these samples were London Clay.

We were satisfied that the tanks had not leaked fuel over the years and that all soil arisings could be placed back into the excavation.

3.1 Validation Results

Eight validation samples were collected from the base and sidewalls of the excavation and were submitted to laboratory analysis for TPHCWG, BTEX, MTBE and 16 PAH.

Four validation samples 'Backfill West' (2.20m), W Sidewall (2.90m), Base West (3.10m) and Backfill (1.65m) recorded low concentrations of Total PAH ranging from 1.09-15.7 mg/kg. The concentrations of individual PAH compounds do not exceed the acceptable guideline values for a 'residential without plant uptake' end use. A concentration of 31.1mg/kg TPH aromatic was recorded in 'Backfill' (1.65m). again this concentration is not elevated and is not cause for concern.

4 TOPSOIL VALIDATION

The topsoil used to fill the podium and the small areas of landscaping along the western boundary of Block E was sourced from 'Beckenham Topsoil Mix'. An independent certificate on its quality is presented in Appendix A-4.

On 19th March 2024, the Brownfield Consultancy visited site to undertake formal validation of topsoil thicknesses. An exploratory hole location plan is presented in Appendix A-1 and Photographs of the hand dug pits are presented in Appendix A-2. The thickness of podium soil was not verified as this does not rest directly onto potentially contaminated soil. Notwithstanding this, a sample from the Podium was collected for laboratory analysis.

The capping was found to be adequate i.e. $\geq 450\text{mm}$ in each of the landscaped areas with the exception of HP4. HP4 comprised of 0.30m of imported topsoil overlying clean imported sand and gravel. We were informed that this forms the drainage blanket and is a necessary element of the landscaped plots. A second pit was excavated and similar ground conditions were encountered.

To complement the existing chemical laboratory analysis of imported topsoil, we collected 4No. samples of topsoil and one sample of the drainage blanket from TP4 (0.40m) and scheduled them for the following laboratory analysis:-

Podium (0.05m)	Metals, 16 PAH, TPH Total.
HP1 (0.30m)	Metals, 16 PAH, asbestos.
HP3 (0.45m)	Metals, 16 PAH.
HP4 (0.40m)	Metals, 16 PAH, asbestos.
HP5 (0.10m)	Metals, 16 PAH, asbestos, TPH Total.

Concentrations of determinants were less than the trigger values (C4SL and S4UL) for a '*residential without plant uptake*' end use. Asbestos was not recorded. The laboratory results are included in Appendix A-3.

Based upon our findings, the recommendations for the clean cover layer have been followed by the Principal Contractor and the soils are uncontaminated. Topsoil thickness in HP4 was found to be 0.15m short of the required depth. However, a layer of turf will raise this area by 0.05-0.10m and this is considered acceptable for a landscaped plot.

5 PROTECTION OF INCOMING WATER SUPPLY PIPES

Photographs and a receipt of purchase were supplied by Formation Design and Build and these are presented below.

From:

Formation (M&E) Limited
Oakwood House
414-422 Hackney Road
London
E2 7SY



VAT Reg No:

To:

Wolseley UK Ltd
2 Kingmaker Court
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DY

Purchase Order

Ref. 1070
Invoice / Tax date 08/11/2022
Our Order No.
Account No. WOLSELEY
Project Chocolate Factory
Cost Code M01K

Qty	Product Code	Product Description	Unit Price	Net Amount
1.00	GPS	GPS 125MMX50M P-LINE COIL SDR17		
1.00	GPS	GPS 90MMX50M P-LINE COIL SDR17		
2.00	GPS	GPS 90MMX90D P-LINE ELBOW E/F		
2.00	GPS	GPS 125MMX90D P-LINE ELBOW E/F		

Delivery Address

Formation (M&E) Limited





6 WATCHING BRIEF

Formation Design and Build and 4D Structures have provided a statement on the Watching Brief and this is presented in Appendix A.

7 CONCLUSIONS

This report details contaminated land remediation works at the site known as The Chocolate Factory. The purpose of this report is to document that our remediation recommendations set out in our 'Site Investigation Report' (Ref: BC608 RE001 27.05.2022) have been fulfilled. We conclude the following:-

- During groundworks, and in accordance with the Watching Brief, four underground storage tanks were discovered, three of which were within the site boundary. The three tanks were exhumed and the excavation backfilled. The Brownfield Consultancy attended site to supervise a 're-excavation' of the area. Fuel impacts were not recorded. Photographs and soil analyses are presented in Appendix B.
- Barrier pipe has been installed.
- The Topsoil imported to landscaped areas is acceptable both in thickness and chemical quality. Photographs and soil analyses are presented in Appendix A.
- The site is considered to be fit for its intended use.

We recommend that copy of this report is submitted to the Local Authority for their approval.

Prepared and approved by

JIM TWADDLE BSc (Hons) CGeol FGS
Director

<i>Appendix A</i>	<i>Topsoil Verification</i>
<i>A-1</i>	<i>Exploratory Hole Location Plan</i>
<i>A-2</i>	<i>Photographs</i>
<i>A-3</i>	<i>Chemical Laboratory Analysis</i>
<i>A-4</i>	<i>Pre-Import Chemical Laboratory Analysis</i>
<i>Appendix B</i>	<i>Discovery of 4No. USTs</i>
<i>B-1</i>	<i>Tank Locations on Master Site Plan</i>
<i>B-2</i>	<i>Photographs of Tank Validation</i>
<i>B-3</i>	<i>Chemical Laboratory Analysis</i>
<i>Appendix C</i>	<i>Watching Brief</i>
<i>Appendix D</i>	<i>Limitations</i>

APPENDIX A

Topsoil Verification

APPENDIX A-1

Exploratory Hole Location Plan

BLOCK E, THE CHOCOLATE FACTORY

TOPSOIL VALIDATION SAMPLE LOCATION PLAN





- Key:**
- Site Boundary
 - Land Registry Boundary
 - Proposed trees
 - Proposed hedge planting
 - Proposed ornamental planting

Surfacing:

- P1** Charcon, Andover Textured Infilla, 600mm x 300mm x 80mm, Colour: Light Grey Fleck, Laid: Stretcher bond.
- P1a** Double header course of Charcon, Andover textured Infilla, 200mm x 100mm x 80mm Colour: Light Grey Fleck Laid: Stack bond
- P2** Marshalls, Saxon Paving 450mm x 450mm x 50mm, slab, Colour: Buff, Laid: Stack bond.
- P3** Permeable asphalt.
- P3a** Thermoplastic line markings to demarcate crossing and to meet highways standards. To Engineer's detail.
- P5** Charcon, Andover textured Infilla, 600mm x 300mm x 80mm, Colour: Silver Fleck, Laid: Stretcher Bond
- P5a** Double header course of Charcon, Andover textured Infilla, 200mm x 100mm x 80mm, Colour: Silver Fleck, Laid: stack bond
- P6** Asphalt
- T1** Tactile pavers, 400mm x 400mm x 60mm. Dark grey contrasting colour. Laid: Stack bond.

Edging & Kerbs:

- K1** 150mm wide Granite Kerb with upstand Colour: Silver Grey
- K2** 125x255mm British standard bullnose with upstand concrete kerb by Marshalls. Colour: Natural.
- K3** 150mm wide granite kerb. Laid: Flush Colour: Silver grey
- E1** 50x150mm British standard edging by Marshalls or similar approved. Colour: Natural.
- E2** 50mm wide Saxon edging by Marshalls. Colour: Buff

Railings, fences, gates and Furniture:

- R1** 1.2m Flat bar metal railing, powder coated. Colour: black
- G** Gate to match R1 Railing
- TG** Tree grille. Landmark street furniture, stainless steel Linear Grille, SKU:LMTP05/07/001
- DG** Broxap door guarding BX14/DB
- C1** Cycle Stand - Kent stainless Alblon. - KAC815
- BS1** Bin store to Architect's detail.
- BL1** Steel vehicle bollard, 900mm high, circular section, black powder coated,Product, Broxap BX1660-RT Southwark or similar and approved.

Drainage:

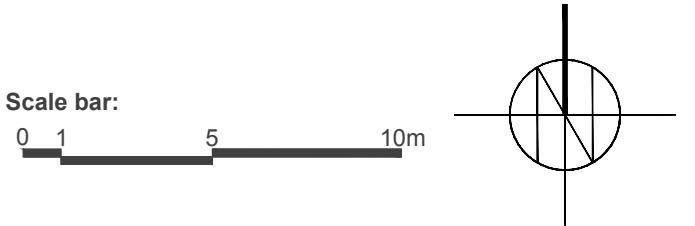
- SD** Slot drain to Engineer's detail.

General Notes

- For proposed planting scheme refer to the Planting Plan.

NOTES:

- This drawing is to be read in conjunction with all relevant contract documentation from the design team, with any conflicting information to be brought to the attention of Davis Landscape Ltd in writing before commencing on site.
- The contractor is to check and verify all levels and dimensions before construction. Any discrepancies are to be brought to the attention of Davis Landscape Ltd in writing before commencing on site.
- All dimensions in mm, unless otherwise stated.
- Do not scale from this drawing.
- All sub base and concrete specification, fixings, brackets & the like to Engineers' details & specification.
- We are not liable for the detailed design of above ground drainage, ground drainage, sub-bases, foundations, retaining structures, fall from height barriers and building waterproofing details.
- All proprietary products shall be installed in accordance with manufacturers written instructions.



FOR TENDER			
Rev	Description	Date	By
P	Site boundary line amended	16.11.23	BA
O	Paving details updated in the Key.	15.11.23	BA
N	Tree locations amended due to drainage and utility layout.	31.10.23	BA
M	South Road surface amended	18.10.23	BA
L	Key dimensions added to pavements	13.10.23	BA
K	South Road widened	05.10.23	BA
J	Site Boundary amended to match Land Registry boundary. Kerbs aligned.	03.10.23	BA
I	Site extended to the south to include footpath. Kerb alignment amended and DGs added.	13.09.23	BA
H	Furniture spec updated / E/W entrances realigned.	05.09.23	BA
G	Granite kerb widths amended	15.08.23	YW
F	Car parking bays added. Amendments made to pavement along Western Rd.	11.08.23	BA
E	Site area extended. Materials amended.	08.08.23	BA
D	Minor updates to landscape Layout	06.06.23	BA
C	Minor updates	29.03.23	BA
B	Minor updates	01.03.23	BA
A	Planning boundary updated	22.02.23	ISJ

Davis Landscape Architecture

15 Iliffe Yard, London, SE17 3QA
020 7277 1035
mail@davisla.com | www.davisla.com

Client
Formation Design

Job Title
Chocolate Factory, Wood Green

Drawing Title
Landscape General Arrangement Plan
Ground Floor- Extended Site

Scale : 1:200@A1
Date : 25.01.23
Drawing No. : L0833L01

Drawn : BA
Checked : JD
Rev. : P

APPENDIX A-2

Photographs

Photographs



Podium

Photographs of the Site



HP1



Photographs of the Site



HP2



Photographs of the Site



HP3



Photographs of the Site



HP4 (Pit 2)



HP4 (Pit 2)

Photographs of the Site



HP5



Photographs of the Site



APPENDIX A-3

Chemical Laboratory Analysis

The Brownfield Consultancy
Woodstock
Memorial Road
Fenny Compton
Warwickshire
CV47 2XU

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

e: jim.twaddle@brownfieldconsultancy.co.uk

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

Analytical Report Number : 24-010275

Project / Site name:	Block E, The Chocolate Factory, N22 6XJ	Samples received on:	20/03/2024
Your job number:	BC608	Samples instructed on/ Analysis started on:	21/03/2024
Your order number:		Analysis completed by:	28/03/2024
Report Issue Number:	1	Report issued on:	29/03/2024
Samples Analysed:	5 soil samples		

Signed:

Izabela Wójcik

Izabela Wójcik
Senior 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.

Analytical Report Number: 24-010275

Project / Site name: Block E, The Chocolate Factory, N22 6XJ

Lab Sample Number				151084	151085	151086	151087	151088
Sample Reference				Podium	HP1	HP3	HP4	HP5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.05	0.30	0.45	0.40	0.10
Date Sampled				19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024
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	20	20	14	10	19
Total mass of sample received	kg	0.1	NONE	0.3	0.8	0.3	0.5	0.8

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	Not-detected	-	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	-	PDO	-	PDO	PDO

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.06	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.12	0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.06	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.07	0.08	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.73	1.2	0.09	0.07	0.06
Anthracene	mg/kg	0.05	MCERTS	0.19	0.24	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	2	1.8	0.27	0.16	0.21
Pyrene	mg/kg	0.05	MCERTS	1.8	1.5	0.23	0.15	0.2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.93	0.63	0.11	0.09	0.1
Chrysene	mg/kg	0.05	MCERTS	1.1	0.7	0.1	0.09	0.1
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	1.3	0.79	0.13	0.1	0.16
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.72	0.33	0.08	0.05	0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.1	0.63	0.1	0.11	0.15
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.61	0.33	< 0.05	0.05	0.07
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.17	0.1	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.72	0.38	< 0.05	0.05	0.07

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	11.5	8.78	1.11	0.92	1.17
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	8.3	4.3	6.3	5.5
Boron (water soluble)	mg/kg	0.2	MCERTS	1.3	1.5	1.2	0.3	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	21	14	12	22
Copper (aqua regia extractable)	mg/kg	1	MCERTS	41	32	15	8.2	15
Lead (aqua regia extractable)	mg/kg	1	MCERTS	96	35	17	13	30
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	15	12	7	9.5	9.9
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	130	58	31	30	52

Petroleum Hydrocarbons

TPH (C10 - C40) _{EH_CU_ID_TOTAL}	mg/kg	10	MCERTS	22	-	-	-	< 10
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 24-010275
Project / Site name: Block E, The Chocolate Factory, N22 6XJ

* 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 *
151084	Podium	None Supplied	0.05	Brown loam and clay with gravel and vegetation
151085	Hp1	None Supplied	0.3	Brown loam and clay with gravel and vegetation
151086	HP3	None Supplied	0.45	Brown sand with gravel
151087	HP4	None Supplied	0.4	Brown sand with gravel
151088	HP5	None Supplied	0.1	Brown loam and sand with gravel

Analytical Report Number : 24-010275

Project / Site name: Block E, The Chocolate Factory, N22 6XJ

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
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, 2021	A001B	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	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.	L019B	D	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	L038B	D	MCERTS
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	L038B	D	MCERTS
Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088	D/W	MCERTS

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 30°C.

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

Sample Deviation Report



Analytical Report Number : 24-010275

Project / Site name: Block E, The Chocolate Factory, N22 6XJ

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
HP4	N/A	S	151087	b	Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil	L064B	b

APPENDIX A-4

Pre-Import Chemical Laboratory Analysis



TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Mr Dan Batinas
H. Sivyer Transport Ltd
160 Sydenham Road
London
SE26 5JZ

19th October 2023
Our Ref: TOHA/23/1130/1/SS
Your Ref: PO 184351

Dear Sirs

Topsoil Analysis: Beckenham Topsoil Mix

We have completed the analysis of the soil sample recently submitted, referenced *Beckenham Topsoil Mix*, and have pleasure reporting our findings.

The purpose of the analysis was to determine the suitability of the sample for general landscape purposes. In addition, this sample has been assessed to determine its compliance with the requirements of the British Standard for Topsoil (*BS3882:2015 – Specification for Topsoil – Table 1, Multipurpose Topsoil*).

This report presents the results of analysis for the sample submitted to our office, and it should be considered 'indicative' of the topsoil source. The report and results should therefore not be used by third parties as a means of verification or validation testing or waste designation purposes, especially after the topsoil has left the H. Sivyer Transport Ltd site.

SAMPLE EXAMINATION

The sample was described as a very dark brown (Munsell Colour 10YR 2/2), slightly moist, friable, very slightly calcareous SANDY LOAM with a weakly developed, very fine to fine granular and subangular blocky structure*. The sample was moderately stony and contained a moderate proportion of organic fines and occasional woody fragments. No unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

*This appraisal of soil structure was made from examination of a disturbed sample(s). Structure is a key soil characteristic that may only be accurately assessed by examination in an in-situ state.

Tim O'Hare Associates LLP
Howbery Park Wallingford Oxfordshire OX10 8BA
T:01491 822653 E:info@toha.co.uk
www.toha.co.uk



Plate 1: Beckenham Topsoil Mix Sample

ANALYTICAL SCHEDULE

The sample was submitted to a UKAS and MCERTS accredited laboratory for a range of physical and chemical tests to confirm the composition and fertility of the soil, and the concentration of selected potential contaminants. The following parameters were determined:

- detailed particle size analysis (% 5 sands, silt, clay);
- pH and electrical conductivity values;
- exchangeable sodium percentage;
- major plant nutrients (N, P, K, Mg);
- organic matter content;
- C:N ratio;
- heavy metals (As, B, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn);
- total cyanide and total (mono) phenols;
- speciated PAHs (US EPA16 suite);
- aromatic and aliphatic TPH (C5-C35 banding);
- benzene, toluene, ethylbenzene, xylene (BTEX).

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

RESULTS OF ANALYSIS

Particle Size Analysis and Stone Content

The sample fell into the *sandy loam* texture class. However, further detailed particle size analysis revealed the sample to have a high proportion of particles in the *very fine* (0.05-0.15mm), *fine* (0.15-0.25mm) and *medium* (0.25-0.50mm) fractions. Topsoils such as this are prone to self-compaction when initially placed in a landscape environment, which can lead to limited drainage and poor aeration, particularly if the soil does not display a well-defined structure. To reduce the risk of self-compaction, we recommend placing this soil to a maximum depth of 300mm, which is in line with *BS3882:2015*, section A.3.

The stone content of the sample was moderate comprising entirely of stones <20mm in size and, as such, stones are unlikely to constitute a limitation for general landscape purposes.

pH and Electrical Conductivity Values

The sample was alkaline in reaction (pH 7.7). This pH value would be considered suitable for general landscape purposes provided species with a wide pH tolerance or those known to prefer alkaline soils are selected for planting, turfing and seeding.

The electrical conductivity (salinity) value (water extract) was moderate, which indicates that soluble salts were not present at levels that would be harmful to plants.

The electrical conductivity value by CaSO₄ extract (3316 µS/cm - BS3882 requirement) slightly exceeded the maximum specified value (3300 µS/cm) given in BS3882:2015 – Table 1. Further testing of electrical conductivity by water extract indicates that excess soluble salts should not present a significant risk to plants.

Organic Matter and Fertility Status

The sample was well supplied with organic matter and all major plant nutrients. The level of extractable potassium (1621 mg/l) slightly exceeded the maximum permissible value (1500 mg/l) given in BS3882:2015 – Table 1.

The C:N ratio of the sample was acceptable for general landscape purposes.

Potential Contaminants

With reference to BS3882:2015 - Table 1: Notes 3 and 4, there is a recommendation to confirm levels of potential contaminants in relation to the topsoil's proposed end use. This includes human health, environmental protection and metals considered toxic to plants. In the absence of site-specific assessment criteria, the concentrations that affect human health have been compared with the *residential with homegrown produce* land use in the Suitable For Use Levels (S4ULs) presented in *The LQM/CIEH S4ULs for Human Health Risk Assessment* (2015) and the DEFRA SP1010: *Development of Category 4 Screening Levels (C4SLs) for Assessment of Land Affected by Contamination – Policy Companion Document* (2014).

Of the potential contaminants determined, none was found at levels that exceed their guideline values.

Phytotoxic Contaminants

Of the phytotoxic (toxic to plants) contaminants determined (copper, nickel, zinc), none was found at levels that exceeded the maximum permissible levels specified in BS3882:2015 – Table 1.

CONCLUSION

The purpose of the analysis was to determine the suitability of the topsoil sample for general landscape purposes. The analysis has also been undertaken to determine the sample's compliance with the requirements of the British Standard for Topsoil (BS3882:2015 – Specification for Topsoil – Table 1, Multipurpose Topsoil).

From the soil examination and subsequent laboratory analysis, the sample was described as an alkaline, non-saline, very slightly calcareous sandy loam with a weakly developed structure and moderate stone content. The sample was adequate to well supplied with organic matter and all major plant nutrients. Of the potential contaminants determined, none exceeded their guideline values.

To conclude, based on our findings, the topsoil represented by this sample would be considered suitable for general landscape purposes (trees, shrubs and amenity grass), provided species with a wide pH tolerance or those known to prefer alkaline soils are selected and the physical condition of the soil is satisfactory. The slightly elevated potassium and electrical conductivity levels should fall when the soil is wetted by rainfall or irrigation impacts.

To minimise the risk of self-compaction, we recommend placing this soil to a maximum depth of **300mm**.

The sample was largely compliant with the requirements of the British Standard for Topsoil (BS3882:2015 – Specification for Topsoil – Table 1, Multipurpose Topsoil) with the exception of a slightly elevated electrical conductivity value (CaSO₄ extract) and extractable potassium content.

On this occasion, these non-compliances are considered minor when reviewed in the context of all the other results and considering the proposed end-use of this soil.

Soil Handling Recommendations

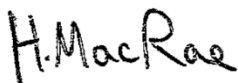
It is important to maintain the physical condition of the soil and avoid structural damage during all phases of soil handling (e.g. stockpiling, resspreading, cultivating, planting, seeding or turfing). As a consequence, soil handling operations should be carried out when soil is sufficiently dry to be non-plastic (friable) in consistency.

It is important to ensure that the soil is not unnecessarily compacted by trampling or trafficking by site machinery, and soil handling should be stopped during and after heavy rainfall and not continued until the soil is friable in consistency. If the soil is structurally damaged and compacted at any stage during the course of soiling or landscaping works, it should be cultivated appropriately to relieve the compaction and to restore the soil's structure prior to any planting, turfing or seeding.

Further details on soil handling are provided in Annex A of BS3882:2015.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if we can be of further assistance.

Yours faithfully



Harriet MacRae
BSc MSc
Graduate Soil Scientist



Aaron Cross
BSc MSc
Soil Scientist

For and on behalf of Tim O'Hare Associates LLP



TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Client:	H Sivyer Transport Ltd
Project:	Various
Job:	Topsoil Analysis - BS3882:2015
Date:	19/10/2023
Job Ref No:	TOHA/23/1130/1/SS

Sample Reference		
		Accreditation
Clay (<0.002mm)	%	UKAS
Silt (0.002-0.05mm)	%	UKAS
Very Fine Sand (0.05-0.15mm)	%	UKAS
Fine Sand (0.15-0.25mm)	%	UKAS
Medium Sand (0.25-0.50mm)	%	UKAS
Coarse Sand (0.50-1.0mm)	%	UKAS
Very Coarse Sand (1.0-2.0mm)	%	UKAS
Total Sand (0.05-2.0mm)	%	UKAS
Texture Class (UK Classification)	--	UKAS
Stones (2-20mm)	% DW	GLP
Stones (20-50mm)	% DW	GLP
Stones (>50mm)	% DW	GLP

pH Value (1:2.5 water extract)	units	UKAS
Electrical Conductivity (1:2.5 water extract)	uS/cm	UKAS
Electrical Conductivity (1:2 CaSO ₄ extract)	uS/cm	UKAS
Exchangeable Sodium Percentage	%	UKAS
Organic Matter (LOI)	%	UKAS
Total Nitrogen (Dumas)	%	UKAS
C : N Ratio	ratio	UKAS
Extractable Phosphorus	mg/l	UKAS
Extractable Potassium	mg/l	UKAS
Extractable Magnesium	mg/l	UKAS

Total Arsenic (As)	mg/kg	MCERTS
Total Cadmium (Cd)	mg/kg	MCERTS
Total Chromium (Cr)	mg/kg	MCERTS
Hexavalent Chromium (Cr VI)	mg/kg	MCERTS
Total Copper (Cu)	mg/kg	MCERTS
Total Lead (Pb)	mg/kg	MCERTS
Total Mercury (Hg)	mg/kg	MCERTS
Total Nickel (Ni)	mg/kg	MCERTS
Total Selenium (Se)	mg/kg	MCERTS
Total Zinc (Zn)	mg/kg	MCERTS
Water Soluble Boron (B)	mg/kg	MCERTS
Total Cyanide (CN)	mg/kg	MCERTS
Total (mono) Phenols	mg/kg	MCERTS

Naphthalene	mg/kg	MCERTS
Acenaphthylene	mg/kg	MCERTS
Acenaphthene	mg/kg	MCERTS
Fluorene	mg/kg	MCERTS
Phenanthrene	mg/kg	MCERTS
Anthracene	mg/kg	MCERTS
Fluoranthene	mg/kg	MCERTS
Pyrene	mg/kg	MCERTS
Benzo(a)anthracene	mg/kg	MCERTS
Chrysene	mg/kg	MCERTS
Benzo(b)fluoranthene	mg/kg	MCERTS
Benzo(k)fluoranthene	mg/kg	MCERTS
Benzo(a)pyrene	mg/kg	MCERTS
Indeno(1,2,3-cd)pyrene	mg/kg	MCERTS
Dibenzo(a,h)anthracene	mg/kg	MCERTS
Benzo(g,h,i)perylene	mg/kg	MCERTS
Total PAHs (sum USEPA16)	mg/kg	MCERTS

Aliphatic TPH >C5 - C6	mg/kg	MCERTS
Aliphatic TPH >C6 - C8	mg/kg	MCERTS
Aliphatic TPH >C8 - C10	mg/kg	MCERTS
Aliphatic TPH >C10 - C12	mg/kg	MCERTS
Aliphatic TPH >C12 - C16	mg/kg	MCERTS
Aliphatic TPH >C16 - C21	mg/kg	MCERTS
Aliphatic TPH >C21 - C35	mg/kg	MCERTS
Aliphatic TPH (C5 - C35)	mg/kg	MCERTS
Aromatic TPH >C5 - C7	mg/kg	MCERTS
Aromatic TPH >C7 - C8	mg/kg	MCERTS
Aromatic TPH >C8 - C10	mg/kg	MCERTS
Aromatic TPH >C10 - C12	mg/kg	MCERTS
Aromatic TPH >C12 - C16	mg/kg	MCERTS
Aromatic TPH >C16 - C21	mg/kg	MCERTS
Aromatic TPH >C21 - C35	mg/kg	MCERTS
Aromatic TPH (C5 - C35)	mg/kg	MCERTS

Benzene	mg/kg	MCERTS
Toluene	mg/kg	MCERTS
Ethylbenzene	mg/kg	MCERTS
p & m-xylene	mg/kg	MCERTS
o-xylene	mg/kg	MCERTS
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	MCERTS

Beckenham Topsoil Mix

15
8
19
24
25
6
3
77
SL
19
0
0

7.7
1206
3316
4.8
5.1
0.24
12
89
1621
160

7
< 0.2
12
< 1.8
20
33
< 0.3
6.2
< 1.0
59
2.2
< 1.0
< 1.0

< 0.05
< 0.05
0.15
< 0.05
0.16
< 0.05
0.29
0.22
0.1
0.16
0.21
0.08
0.12
0.1
< 0.05
0.14
1.7

< 0.10
< 0.10
< 0.10
< 1.0
< 2.0
< 8.0
< 8.0
< 10
< 0.10
< 0.10
< 0.10
< 1.0
< 2.0
< 10
< 10
< 10

< 0.005
< 0.005
< 0.005
< 0.005
< 0.005
< 0.005

SL = SANDY LOAM

Visual Examination

The sample was described as a very dark brown (Munsell Colour 10YR 2/2), slightly moist, friable, very slightly calcareous SANDY LOAM with a weakly developed, very fine to fine granular and subangular blocky structure. The sample was moderately stony and contained a moderate proportion of organic fines and occasional woody fragments. No unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

Results of analysis should be read in conjunction with the report they were issued with.

The contents of this certificate shall not be reproduced without the express written permission of Tim O'Hare Associates LLP.

H. MacRae

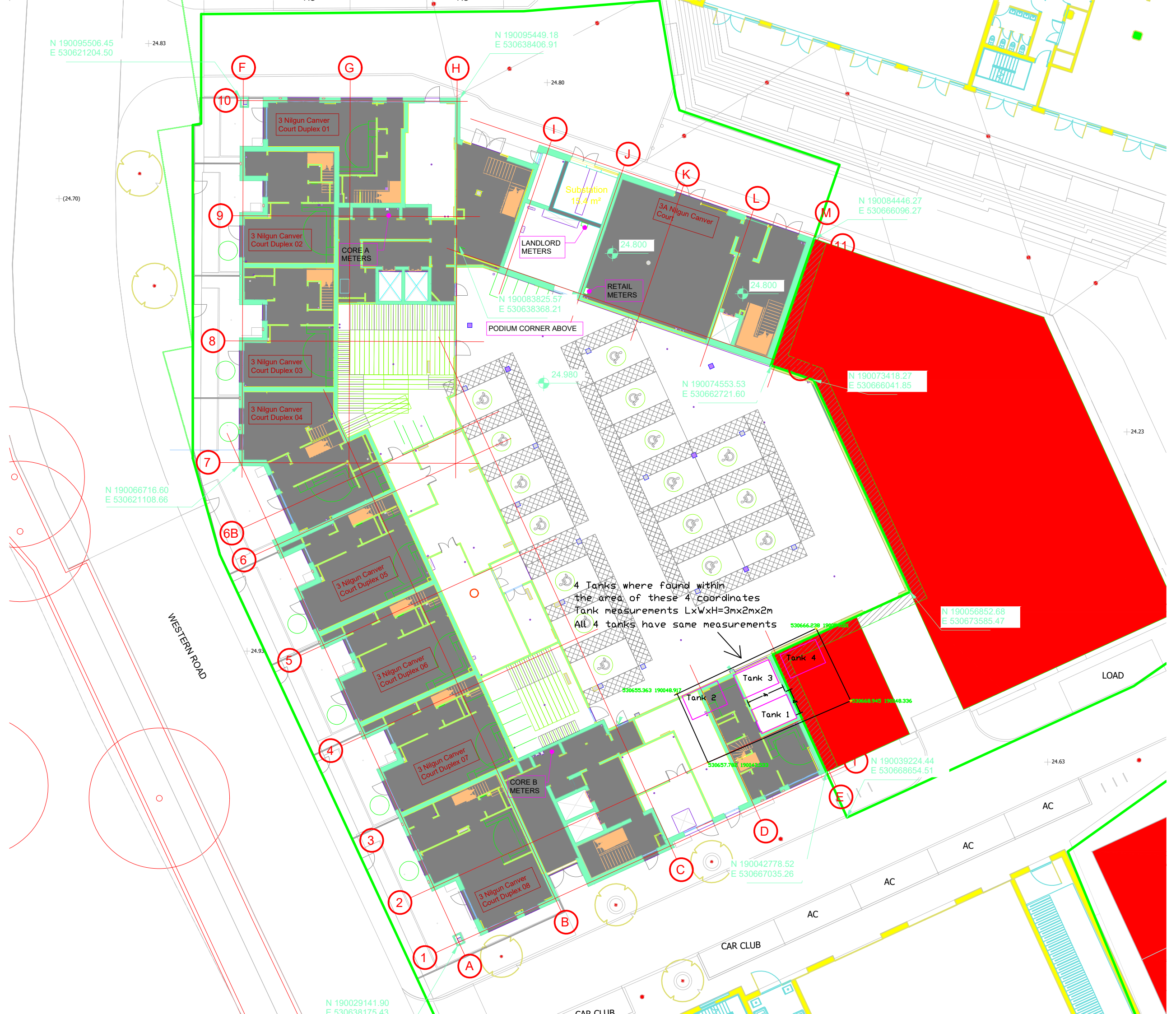
Harriet MacRae
BSc MSc
Graduate Soil Scientist

APPENDIX B

Discovery of 4No. USTs

APPENDIX B-1

Tank Locations on Master Site Plan



APPENDIX B-2

Photographs of Tank Validation

Photographs



Photos provided by 4D Structures



Photographs of the Site



28 June 2022 – three exhumed USTs.



Tank 4 remains in-situ.

Photographs of the Site



Looking northerly – excavation commenced above Tank 1.



Cohesive Made Ground at 1.65m. Validation sample collected.

Photographs of the Site



We extended the excavation through cohesive Made Ground to reach London Clay.



Photographs of the Site



Water ingress at 3.00m.



Extended excavation northerly below Tank 3.

Photographs of the Site



Photographs of the Site



Stockpile of arisings.



London Clay reached at approximately 3.10m Validation sample Base West 3.10m.

Photographs of the Site



Arisings



Arisings

Photographs of the Site



Western side of Tank 4.



Photographs of the Site



Brown sand at the base of Tank 4.

Photographs of the Site



Validation Sample 'W. Sidewall' (2.90m). Soil directly below w. sidewall of Tank 4.



Arisings.

Photographs of the Site



No evidence of fuel contamination in soil or groundwater.

Photographs of the Site



Extended the excavation in a westerly direction to below Tank 2.



Photographs of the Site



Photographs of the Site



Soil and groundwater below Tank 2.



Photographs of the Site



APPENDIX B-3

Chemical Laboratory Analysis



Jim Twaddle
The Brownfield Consultancy
Woodstock
Memorial Road
Fenny Compton
Warwickshire
CV47 2XU

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

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

e: jim.twaddle@brownfieldconsultancy.co.uk

Analytical Report Number : 22-68321

Project / Site name:	Block E The Chocolate Factory N22 6XJ	Samples received on:	29/06/2022
Your job number:	BC608	Samples instructed on/ Analysis started on:	30/06/2022
Your order number:		Analysis completed by:	11/07/2022
Report Issue Number:	1	Report issued on:	11/07/2022
Samples Analysed:	8 soil samples		

Martyna Langer

Signed:

Martyna Langer
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

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.

Analytical Report Number: 22-68321

Project / Site name: Block E The Chocolate Factory N22 6XJ

Lab Sample Number				2332772	2332773	2332774	2332775	2332776
Sample Reference				Backfill West	Base North	Base West	W Sidewall	Base West
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.20	3.30	3.40	2.90	3.10
Date Sampled				28/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022
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	21	23	22	21	25
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3	0.3

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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.41	< 0.05	< 0.05	0.23	0.28
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.69	< 0.05	< 0.05	0.47	0.45
Pyrene	mg/kg	0.05	MCERTS	0.62	< 0.05	< 0.05	0.39	0.37
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.35	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.61	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	2.68	< 0.80	< 0.80	1.09	1.1
-----------------------------	-------	-----	--------	------	--------	--------	------	-----

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Analytical Report Number: 22-68321

Project / Site name: Block E The Chocolate Factory N22 6XJ

Lab Sample Number				2332772	2332773	2332774	2332775	2332776
Sample Reference				Backfill West	Base North	Base West	W Sidewall	Base West
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.20	3.30	3.40	2.90	3.10
Date Sampled				28/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 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	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 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	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 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	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 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	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 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	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

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

Analytical Report Number: 22-68321

Project / Site name: Block E The Chocolate Factory N22 6XJ

Lab Sample Number				2332777	2332778	2332779
Sample Reference				Backfill	N Sidewell	Base East
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				1.65	3.20	3.00
Date Sampled				28/06/2022	28/06/2022	28/06/2022
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	24	21	24
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3

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	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	2.1	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.28	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	3.6	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	3.2	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.5	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	1.9	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.2	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.71	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.1	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	15.7	< 0.80	< 0.80
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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

Analytical Report Number: 22-68321

Project / Site name: Block E The Chocolate Factory N22 6XJ

Lab Sample Number				2332777	2332778	2332779
Sample Reference				Backfill	N Sidewell	Base East
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				1.65	3.20	3.00
Date Sampled				28/06/2022	28/06/2022	28/06/2022
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
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 (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	1.1	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	11	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	MCERTS	19	< 10	< 10

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

Analytical Report Number : 22-68321

Project / Site name: Block E The Chocolate Factory N22 6XJ

* 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 *
2332772	Backfill West	None Supplied	2.2	Brown clay and sand with gravel.
2332773	Base North	None Supplied	3.3	Brown clay and sand.
2332774	Base West	None Supplied	3.4	Brown clay and sand.
2332775	W Sidewall	None Supplied	2.9	Brown clay.
2332776	Base West	None Supplied	3.1	Grey clay.
2332777	Backfill	None Supplied	1.65	Brown clay and sand with gravel.
2332778	N Sidewall	None Supplied	3.2	Brown clay.
2332779	Base East	None Supplied	3	Grey clay.

Analytical Report Number : 22-68321

Project / Site name: Block E The Chocolate Factory N22 6XJ

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
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
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
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
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
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

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

APPENDIX C

Watching Brief

Contamination – Watching Brief



Client: Formation Design & Build Ltd

Project Name: Block E2, The Chocolate Factory,
Wood Green, London

Work Contractor: 4D Structures

Contents

1. Introduction
2. Watching Brief Statement
3. Appendices
 - Appendix A- Toolbox Talks

1.0 Introduction

For potentially contaminated sites there will generally be a requirement to put in place a watching brief on the development. This requires the contractor to be vigilant to any (further) contamination on the site uncovered during development works which was not identified within the Phase II ground investigation.

As Phase II site investigations are generally less intrusive and expansive than ground works during a development it is not uncommon that further, unforeseen areas of contamination are encountered.

If contamination is suspected then a competent person will be required to attend the site and undertake further investigation, sampling and testing. The remediation plan must then be updated to reflect any further findings during this stage.

In relation to the development at Block E2, The Chocolate factory, N22 6XJ the supplementary site investigation and remediation method statement report prepared by The Brownfield Consultancy makes the following recommendations.

13.9 Watching Brief

It is likely that additional hotspots of contamination may be encountered during groundworks. During groundworks it is the responsibility of the Site Manager to ensure a strict watching brief is maintained. This will consist of a record of:-

- Any observations of contamination made during the course of development by any member of site staff, contractor or visitor.
- A photographic record of the key stages of development and key occurrences including any contamination found during the course of the development, the formation levels of excavations, any reduced level dig/mass excavation, formation of landscaped or garden areas, etc.

It is also the responsibility of the Site Manager to inform the Brownfield Consultancy should unexpected contamination be observed.

Upon completion of the works, a written and signed statement will be obtained by the following parties:

- Ground works contractor(s) upon completion of foundations and ground works.
- On site manager upon completion of groundworks and landscaping work.
- Environmental Consultant upon completion of groundworks and landscaping works.

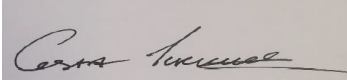
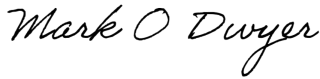
The written statement must clearly state whether or not evidence of contamination was identified during the course of the development and what action that was taken.

The site-specific Watching Brief Statement can be found in the next section.

2. Watching Brief Statement

I'm writing to confirm on behalf of 4D Structures as the contractor who undertook the removal of existing slab and installation of the piling mat on site at Block E2, The Chocolate Factory, Wood Green between the 07/06/2022 and 11/07/2022. During the course of work at Block E2 we observed one potential contamination during the course of our works. We notified Brownfields Consultants to take samples of the soil and all results were reported clean.

All site operatives were briefed regarding the potential presence of contamination on the site, and Toolbox Talks carried out on regular occasions throughout the project- See Appendix A for example of toolbox talk briefing.

Signed On Behalf of Subcontractor – 4D Structures Ltd.	Name: Costa Iuriciuc Position: Project Manager. Signature: 
Signed On Behalf of Main Contractor – Formation Design & Build Ltd.	Name: Mark O'Dwyer Position: Contracts Manager Signature: 

Toolbox Talk – ENV004	
Topic/subject covered:	Contaminated Land

A: Details of the briefing

Location of briefing:		Company:	
Name of presenter:		Position:	
Date:		Time:	

B: Employee actions – Briefing/toolbox talk must be given before work starts – Include main parts of the briefing/toolbox talk in the below section, including actions which must be taken and avoided (Do's and Don'ts)

Purpose of Briefing
Land which has been used for industrial processes may be contaminated by wastes and fuels. When working on such sites special precautions may be required to prevent the contaminants from spreading into the wider environment and to protect workers from harm. The briefing will detail the hazards associated with contaminated land and the measures that should be taken to protect yourself and the surrounding environment from these hazards.
Hazards
• Health effects from exposure to dusts.
• Weak ground may not support plant or structures.
• Voids beneath the surface due to disused tanks and services.
• Asbestos waste.
• Run-off to rivers of sediments and contaminants.
• Chemicals - inhalation, ingestion.
• Radioactive waste.
• Fuels.
• Unexploded ordinance.
Reasons for Concern
The topic covers a wide range of hazards. The type and level of potential harm varies but may include:

• Harm to health of workers, visitors and trespassers ranging from skin and respiratory irritation to cancer, birth defects and death
• Harm to the ecosystem and the health of wildlife on the land being worked
• Harm to the ecosystem, or those using neighbouring land from run-off or spread of contamination
• Property damage and accidents to plant during construction, e.g. collapse of structures built on weak ground
• Corrosion to building materials and services
• Contamination of water including drinking water supplies (the works themselves, or new structures and services may cause contaminants to move through new pathways to ground and surface water sources)
• Harm to users of the land after construction works are complete, due to bringing contaminated soil closer to the surface, or a new type of occupancy exposes people to harm, e.g. vacant brownfield site converted to housing
• Trenches and confined spaces may be filled with toxic or asphyxiate gases due to land being disturbed
• Fire and explosion.
Your client or employer could be held liable if the work undertaken causes water pollution or risks to human health or the environment so it's important that you follow any systems of work which have been set up and also report promptly any new concerns you find on site.
Control Measures
• Your supervisor or manager should inform you of the types of contaminants which are likely to be present on site and the actions you need to take to avoid harm to yourself or others.
• Familiarise yourself with any risk assessments and safe systems of work for contaminated land, waste management and pollution control.
• Understand which materials are permitted to be reused on site and any restrictions which apply, and make sure you follow those rules.
• Be aware of the location of emergency spill materials on site and how to use them.
• Use designated wheel/vehicle wash areas.
• Make sure that you follow the site waste plan including for excavated material which may fall within the hazardous waste category on some sites.
• If you discover any unexpected materials, stop work and report it immediately so that the materials can be identified. Examples of such materials include:
* Buried drums, tanks, pipework or containers

* Soil or water which is strange colour or which has an unexpected smell (however, do not deliberately sniff an unknown substance)
* Other unexpected objects and materials
* Signs of oil present in soil or water.
Wear the personal protective clothing you are instructed to wear.
Wear the right respiratory protection for the job and follow any instructions you've been given, including information on how to wear it properly.
Attend a face-fit test when asked to do so.
Change disposable masks and filters regularly, report loss or damage and store masks in a clean dry place.
Follow good hygiene practices to avoid cross contamination of your clean clothing.
Wash your hands and face before eating, drinking or smoking, and only eat, drink or smoke in designated areas.
Use disposable clothing or site laundry facilities as directed to avoid taking home contaminated laundry
Follow any site rules for work in excavations or confined spaces.
Report any concerns about contaminated land, the suspected release of pollutants, damage to bunds or pumps etc. to your supervisor, as a matter of urgency.
Key Points
Disturbing contaminated land can damage your own health and that of others. It can also harm wildlife, and the wider ecosystem. Some contaminants can lead to more immediate damage by fire or explosion, structural collapse or enabling toxic gases to fill confined spaces.
If contaminants are known to be present this will be explained by your supervisor or manager.
Make sure you follow any site-specific rules to contain the contaminated materials in the designated areas.
Protect yourself with good hygiene practices and the effective use of personal protective clothing.
If you discover unexpected materials or new concerns, inform your supervisor or a manager immediately.

Toolbox Talk – ENV004			
Topic/subject covered:		Contaminated Land	
Location of briefing:		Company:	
We the undersigned fully understand of the contents of this briefing/toolbox talk. If we are unable to carry out our work safely we agree that we must immediately stop work and inform our line manager or supervisor			
Date	Name	Position/Role	Signature
Given by:		Position:	Signature:
I confirm that the above delegates attended the above stated briefing/toolbox/training			
Please ensure that a copy of this briefing/toolbox talk/training register is sent to the Training Department at Head Office.			

APPENDIX D

Limitations

NOTES ON LIMITATIONS

This report has been prepared by the Brownfield Consultancy with all reasonable skill, care and diligence. This report is confidential and has been prepared solely for the benefit of the client as stated at the front of the report in relation to a specific development or scheme; and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed.

Should any third party wish to use or rely upon the contents of the report, written approval must be sought from The Brownfield Consultancy; a charge may be levied against such approval. We accept no responsibility or liability for the consequences of this document being used for any purpose or project other than for which it was commissioned, and: this document to any third party with whom an agreement has not been executed.

Any comments given are based on the understanding that the proposed development will be as detailed. The Brownfield Consultancy warrants the accuracy of this report up to and including the published date. Additional information, improved practice or changes in legislation may necessitate this report having to be reviewed in whole or in part after that date.

This report is only valid when used in its entirety. Any information or advice included in the report should not be relied upon until considered in the context of the whole report. Whilst this report and the opinion made herein are correct to the best of our belief we cannot guarantee the accuracy or completeness of any information provided by third parties.

The opinions and recommendations expressed in this report are based on statute, guidance, and appropriate practice current at the date of its preparation. The Brownfield Consultancy does not accept any liability whatsoever for the consequences of any future legislative changes or the release of subsequent guidance documentation, etc. Such changes may render some of the opinions and advice in this report inappropriate or incorrect and we will be pleased to advise if any report requires revision due to changing circumstances. Following delivery of a report we have no obligation to advise the Client or any other party of such changes or their repercussions.

Phase 1 Reports

The work undertaken to provide the basis of a Phase I report comprised a study of available documented information from a variety of sources, together with (where appropriate) a brief walk over inspection of the site. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Historical maps and aerial photographs provide a “snap shot” in time about conditions or activities at the site and cannot be relied upon as indicators of any events or activities that may have taken place at other times. Any borehole data from the British Geological Survey sources are included on the following basis: “The British Geological Survey accept no responsibility for omissions or misinterpretation of the data from their Data Bank as this may be old or obtained from non-BGS sources and may not represent current interpretation”.

Phase II Intrusive Investigations

The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, and ground and groundwater conditions to allow a reasonable risk assessment to be made. The conclusions and recommendations made in this site appraisal report and the opinions expressed are based on the information reviewed and/or the ground conditions encountered in exploratory holes and the results of any field or laboratory testing undertaken. There may be ground conditions at the site that have not been disclosed by the information reviewed or by the investigative work undertaken. Such undisclosed conditions cannot be taken into account in any analysis and reporting.

Some of the conclusions in this site appraisal report may be based on third party data. No guarantee can be given for the accuracy or completeness of any of the third party data used.

The evaluation and conclusions do not preclude the existence of contamination, which could not reasonably have been revealed by the current work. Given the discrete nature of sampling, no investigation technique is capable of identifying all conditions present in all areas. The number of sampling points and the methods of sampling and testing do not preclude the existence of localised “hotspots” of contamination or different ground conditions where concentrations may be significantly higher than those actually encountered. Hence this report should be used for information purposes only and should not be construed as a comprehensive characterisation of all site conditions.

It should be noted that groundwater levels, groundwater chemistry, surface water levels, surface water chemistry, soil gas concentrations and soil gas flow rates can vary due to seasonal, climatic, tidal and man-made effects.

Exploratory hole locations provided in the report are generally established by tape measurement from existing features or boundaries. Hole locations are not accurately surveyed and ground levels at these locations are not obtained unless specifically requested.

The interpretation carried out in this report is based on scientific and engineering appraisal carried out by suitably experienced and qualified technical consultants based on the scope of our engagement. We have not taken into account the perceptions of, for example, banks, insurers, other funders, lay people, etc., unless the report has been prepared specifically for that purpose. Advice from other specialists may be required such as the legal, planning and architecture professions, whether specifically recommended in our report or not.

The objectives of the investigation have been linked to establishing the risks associated with potential human targets, building materials, the environment (including adjacent land), and to surface and ground water. The amount of exploratory work and chemical testing undertaken has necessarily been restricted by the short timescale available, and the locations of exploratory holes have been restricted to areas unoccupied by the building(s) on the site and by buried services.

New information, improved practices and legislation may necessitate an alteration to the report in whole, or in part, after its submission. Therefore with any change in circumstances or after the expiry of one year from the date of the report, the report should be referred to the Brownfield Consultancy Limited for re-assessment and, if necessary, re-appraisal.

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