



Post Construction Remediation Report

SEGRO Park, Hayes
(former Nestle Factory)

Date: March 2022

Issue: 02

Reference: 18-148

Status: Information

Prepared by: PWE

Date: 04/03/2022

Authorised by: NRB

Issuing office: BKM

DOCUMENT CONTROL

Issue	Date	Status	BC Author	BC Approval	Notes
1	01/03/2022	Information	PWE	NRB	
2	04/03/2022	Information	PWE	NRB	Minor amendment to para 3.3

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CONTENTS

	Page No.
1. INTRODUCTION.....	1
1.1 APPOINTMENT	1
1.2 BACKGROUND AND REPORT PURPOSE.....	1
1.3 PREVIOUS REPORTS	1
1.4 PLANNING MATTERS.....	2
2. SITE AND ENVIRONMENTAL SETTING	4
2.1 LOCATION AND DESCRIPTION	4
2.2 PREVIOUS INVESTIGATION FINDINGS	4
2.3 REMEDIATION STRATEGY	4
2.4 DEMOLITION-PHASE REMEDIATION	4
3. CONSTRUCTION PHASE SITE VISITS AND REMEDIATION.....	6
4. IMPORTED TOPSOIL.....	15
5. SUMMARY AND CONCLUSIONS	16

APPENDICES

APPENDIX A –	SITE LOCATION PLAN
APPENDIX B –	ARCHITECT'S LAYOUT DRAWING
APPENDIX C –	LABORATORY CHEMICAL ANALYSIS REPORT
APPENDIX D –	IMPORTED TOPSOIL ANALYSIS REPORT

1. INTRODUCTION

1.1 APPOINTMENT

- 1.1.1 HDR Bradbrook was appointed by SEGRO Properties Limited (the Client) to produce a Post Construction Remediation Report for the site known as SEGRO Park Hayes, in the London Borough of Hillingdon.

1.2 BACKGROUND AND REPORT PURPOSE

- 1.2.1 SEGRO Park Hayes is located on the site of a former coffee manufacturing plant operated by Nestle UK Ltd, which ceased production and closed at the end of 2014. The Nestle factory covered a total of about 12 hectares, of which 5 hectares is being redeveloped by SEGRO for light industrial / warehouse units (see architect's drawing in Appendix B). The remainder of the former Nestle factory is being redeveloped separately by others for residential use, and is not covered by this report.
- 1.2.2 The purpose of this report is to describe environmental remediation undertaken during the construction period of the SEGRO redevelopment, between November 2020 and February 2022.
- 1.2.3 It follows and should be read alongside a Post Demolition Remediation Report produced by HDR Bradbrook in January 2020.

1.3 PREVIOUS REPORTS

Capita Reports for SEGRO

- 1.3.1 Prior to closure of the Nestle factory a geo-environmental investigation was undertaken by Capita Property & Infrastructure Limited covering the whole of the 12 hectare site. The findings of that investigation were presented in the following report:
- Geo-environmental Investigation and Assessment, ref. CS075666-PE-14-211-R Revision A dated 24 November 2014.
- 1.3.2 The 2014 report was followed by a further investigation relating specifically to the area being developed by SEGRO for new commercial properties:
- Further Geo-environmental Investigation and Assessment ref. CS-075666-PE-16-113-R Revision A dated 6 June 2016.
- 1.3.3 A Remediation Strategy was then produced by Capita based on the findings of the preceding reports:
- Remediation Strategy, ref. CS-075666-PE-16-131-R dated 11 July 2016.
- 1.3.4 An additional phase of investigation was then undertaken by Capita in 2018 to augment the earlier work. This comprised four boreholes located within the Eden Building and the Green Bean Warehouse, which were previously inaccessible:

- Additional Geo-environmental Assessment, ref. CS-075666-JD-18-113-R dated June 2018.

Geosyntec Reports for Nestle

1.3.5 The following reports were produced for Nestlé UK Ltd by Geosyntec Consultants Ltd and were reviewed as part of Capita's November 2014 assessment:

- Phase 1 Environmental Assessment of the Nestlé UK Ltd Facility in Hayes, Middlesex. Project ref. GCU0124020 dated September 2013.
- Phase 2 Environmental Assessment of the Nestlé UK Ltd Facility in Hayes, Middlesex. Project ref. GCU0124024 dated June 2014.
- Subsurface Asbestos Investigation: Main Building Undercroft & South-Eastern Surrounding Area. Project ref. GCU0124025 dated July 2014.
- Letter report titled "Update on Groundwater Monitoring Results post September-14 round" dated 23 October 2014.

1.4 PLANNING MATTERS

1.4.1 Condition 87 of the planning consent for the proposed redevelopment, granted by the London Borough of Hillingdon (ref. 1331/APP/2017/1883), relates to the remediation of ground affected by contamination. The condition states:

The scheme to remediate any contamination in relation to the industrial development is to be completed in accordance with the following Environmental Reports prepared by Capita and as submitted with the Planning Application:

- Remediation Report, dated 11 July 2016
- Further Geo-environmental Assessment, dated 6 June 2016

These reports set out site investigation and remediation strategies. All works which form part of the remediation scheme for the industrial development shall be completed before any part of the industrial development is occupied or brought into use.

If during remedial or development works contamination not addressed in the submitted remediation scheme is identified an addendum to the remediation scheme shall be submitted to and approved in writing by the LPA prior to implementation; and

Upon completion of the approved remedial works, this condition will not be discharged until a comprehensive verification report has been submitted to and approved by the LPA. The report shall include the details of the final remediation works and their verification to show that the works have been carried out in full and in accordance with the approved methodology.

No contaminated soils or other materials shall be imported to the site. All imported soils for landscaping purposes shall be clean and free of contamination. Before any part of the development is occupied, all imported soils shall be independently tested for chemical contamination, and the results of this testing shall be submitted and approved in writing by the Local Planning Authority. All soils used for gardens and/or landscaping purposes shall be clean and free of contamination.

- 1.4.2 This report, alongside the Post Demolition Remediation Report, intends to satisfy the requirements of Condition 87.

2. SITE AND ENVIRONMENTAL SETTING

2.1 LOCATION AND DESCRIPTION

- 2.1.1 The site is located off North Hyde Gardens in Hayes, approximately centred on post code UB3 4RF and at Ordnance Survey National Grid Reference 510100, 179190. A location plan is provided in Appendix A.
- 2.1.2 Details of the site description and layout prior to redevelopment, and its previous development history, are provided in the previous reports. These reports also describe the underlying geology and hydrogeology.

2.2 PREVIOUS INVESTIGATION FINDINGS

- 2.2.1 Extensive laboratory analysis of soil and groundwater samples was undertaken for the various phases of geo-environmental investigation. These were concluded not to indicate severe chemical impacts in the area and context of the proposed commercial redevelopment.
- 2.2.2 However there was a reported persistent presence of asbestos containing materials (ACM) in shallow soils, requiring a degree of risk mitigation. In most instances the asbestos comprised loose fibres at low concentrations (<0.001% to 0.22% by mass), predominantly chrysotile but also small amounts of amosite and crocidolite. However there was also evidence of potential accumulations of ACM such as degraded insulation lagging and in other forms such as asbestos cement entrained within the Made Ground.

2.3 REMEDIATION STRATEGY

- 2.3.1 The approved Remediation Strategy proposed that as far as reasonably practical asbestos should be removed from shallow soils.
- 2.3.2 Regular inspections of the ground formation were to be undertaken during the lifting of hard surfacing and where possible the ACM hand-picked by suitably qualified and experienced personnel. Any such ACM should then be disposed of from site to a licenced facility.
- 2.3.3 It was further proposed that in some instances bulk soil removal might be necessary if hand picking proved not to be feasible.
- 2.3.4 Validation testing was to be undertaken on completion to demonstrate adequate removal.
- 2.3.5 A reactive strategy to manage any previously undiscovered 'hotspots' of for example hydrocarbon impact was also agreed.

2.4 DEMOLITION-PHASE REMEDIATION

- 2.4.1 As anticipated from the ground investigations, asbestos containing materials (ACM) were encountered during the demolition period (November 2018 to January 2020) in several locations in shallow soil below the previous buildings and external

roads/service yards. Remediation works comprised hand-picking of the ACM from granular subbase and off-site disposal; disposal of fragments of concrete floor slabs or service yard slabs where fragments of ACM were permanently embedded into the concrete; and localised removal of soils containing ACM that could not be practically sorted on site. Full details are provided in the post-demolition report.

- 2.4.2 It was reported that notwithstanding these efforts, residual fragments of ACM may remain in localised areas, and that main development contractor (Volker Fitzpatrick Limited) should make due allowance for maintaining a watching brief during the main construction period. If ACM were to be observed, for example in excavations formed for new building foundations, for drainage attenuation tanks or for utility trenches, it should be removed by suitably experienced and qualified personnel.

3. CONSTRUCTION PHASE SITE VISITS AND REMEDIATION

- 3.1 HDR Bradbrook undertook periodic site visits during the construction period in its role as retained consultant civil and structural engineer. This allowed for frequent engagement with the main contractor, VFL. These visits also allowed for direct observation of soil conditions in exposed areas as the development progressed.
- 3.2 A selection of photographs and matters noted during these visits are provided below:

August 2020



Removal of remnant buried obstructions at Unit 4.



Suspected hydrocarbon impacted soils observed during obstruction removal at Unit 4.

- 3.3 Following the observation of possible localised hydrocarbon impact, the affected soils were excavated and stockpiled. Two samples of this soil were submitted for laboratory analysis to determine 'contaminant' concentrations – the laboratory report is provided in Appendix C. The data indicate trace concentrations of aliphatic and aromatic TPH were present and that these were well below applicable screening values as adopted during previous phases of assessment. As such no remedial action was warranted. Notwithstanding, the stockpiled soil was removed from site as part of the development's overall earthworks operations.

September 2020



Removal of remnant hard surfacing on northern boundary



Ongoing earthworks for Unit 4

April 2021



Installation of
drainage attenuation
tank – Units 2 and 3



Excavations in front of Unit 4
retained facade

July 2021



Foundation excavations for units 2 and 3.



Excavation for loading dock to units 2 and 3.

September 2021



Excavation for loading dock to units 4.



Excavation for loading dock to unit 1.

October 2022



Estate road
construction (with unit 3
in background)



Unit 4 behind retained
facade

December 2021



Service yard area to
front of Unit 4



General site view:
unit 1 to left; unit 4 centre;
units 2/3 to right

January 2022



Unit 4 – excavations
behind retained façade.

February 2022



Utility installation below
estate road.



Unit 4 – floor slab
installation

4. IMPORTED TOPSOIL

4.1 Topsoil was imported to the site for use in areas of soft landscaping, predominantly to the site perimeter. As required under the planning condition, this topsoil was tested for suitability and to confirm the absence of contaminants. The analysis was undertaken by Freeland Horticulture Limited and included for:

- Phytotoxic elements - As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn and B.
- Total cyanide and total phenols.
- Poly nuclear aromatic hydrocarbons (PAH – US EPA 16 priority compounds).
- Aromatic and aromatic hydrocarbons.
- Benzene, ethyl benzene, toluene, and xylenes.
- Asbestos.

4.2 The analysis also included determination of plant nutrient content.

4.3 The topsoil was described as dark brown slightly moist and friable with a well-developed fine to medium granular structure. It contained a low fraction of small stones and no deleterious material (such as building waste, glass, roots or weed rhizomes) and no unusual odours (e.g. hydrocarbons) were detected.

4.4 The detailed laboratory analysis and the topsoil's observed characteristics indicate the soil to be free of contamination and compliant with the requirements of condition 87.

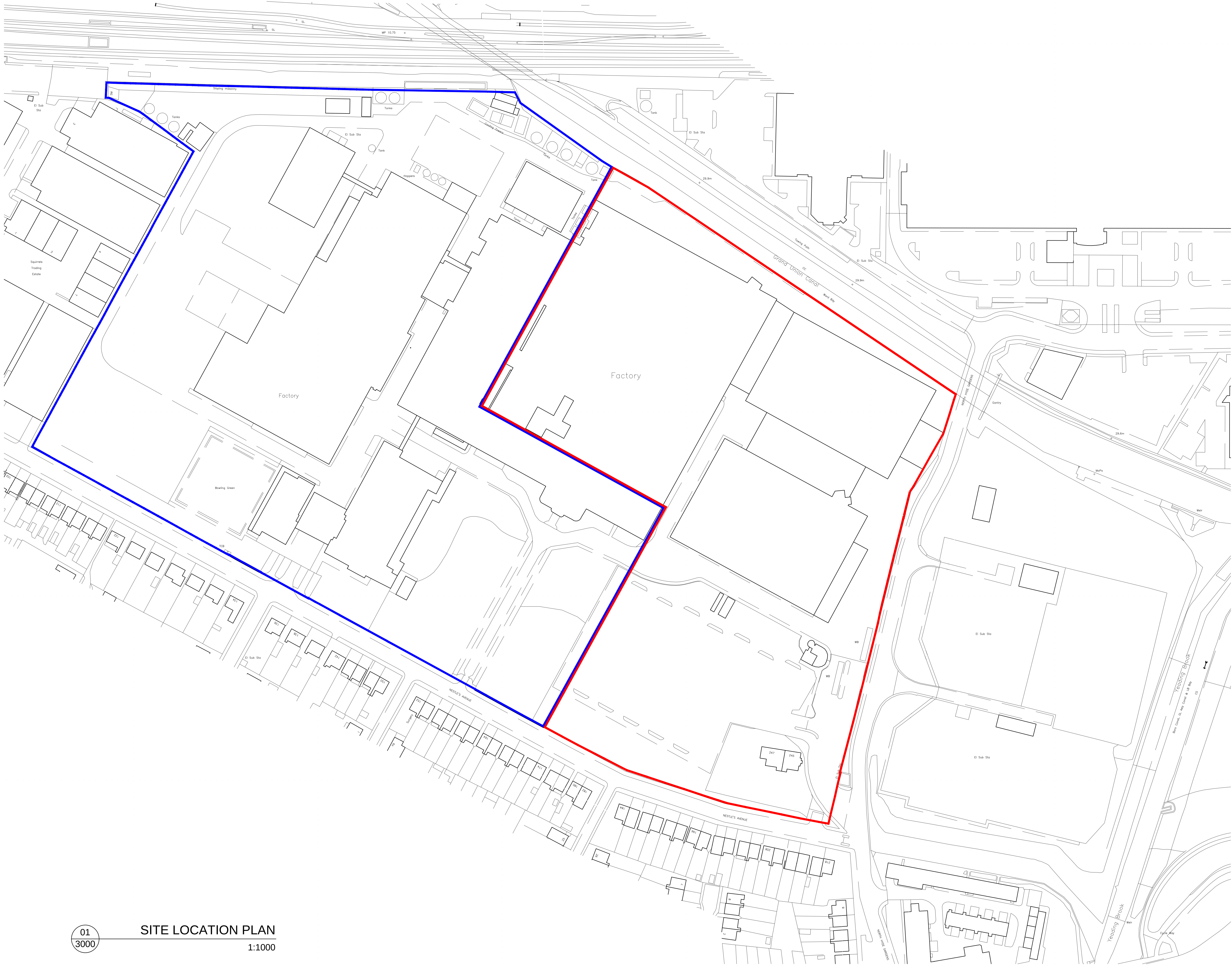
4.5 A copy of the Freeland report is enclosed in Appendix D.

5. SUMMARY AND CONCLUSIONS

- 5.1 This Post Construction Remediation Report is intended to conclude geo-environmental matters relating the commercial redevelopment by SEGRO of part of the former Nestle factory in Hayes. Construction works commenced in November 2020 and at the time of reporting - February 2022 – were well advanced, with no additional significant below-ground works anticipated.
- 5.2 A Remediation Strategy for the site was produced in July 2016, informed by various phases of intrusive ground investigation and risk assessment. A Post Demolition Remediation Report was drafted in January 2020, detailing environmental remediation undertaken during demolition and clearance of the former Nestle factory buildings.
- 5.3 No additional areas of ground contamination were discovered during the construction period. As a result there was no requirement for additional remediation works.
- 5.4 Laboratory analysis indicates imported topsoil for placement in areas of soft landscaping to be free of contamination and therefore suitable for use at the site.
- 5.5 It is concluded that remediation of the site has been completed in accordance with the approved strategy and the applicable planning conditions.

APPENDIX A

SITE LOCATION PLAN



NOTES:

BASED ON OS MAP REPRODUCED BY PERMISSION OF
CONTROLLER OF HM STATIONARY OFFICE (c) CROWN
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DO NOT USE ELECTRONIC VERSIONS OF THIS DRAWING TO
DETERMINE DIMENSIONS UNLESS SPECIFICALLY
AUTHORISED BY MICHAEL SPARKS ASSOCIATES

KEY:

EMPLOYMENT BOUNDARY

RESIDENTIAL BOUNDARY

CONSTRUCTION

REV	DATE	NOTE	DRAW	CHK
P01	01/04/2021	S3 - FOR REVIEW & COMMENT (PRELIM-CONSTR)	AKS	AC

**MICHAEL
SPARKS
ASSOCIATES**

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TELEPHONE 020 7736 6162
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SEGro

TITLE
NESTLES AVENUE, HAYES

DRAWING
SITE LOCATION PLAN

CLIENT
SEGRO

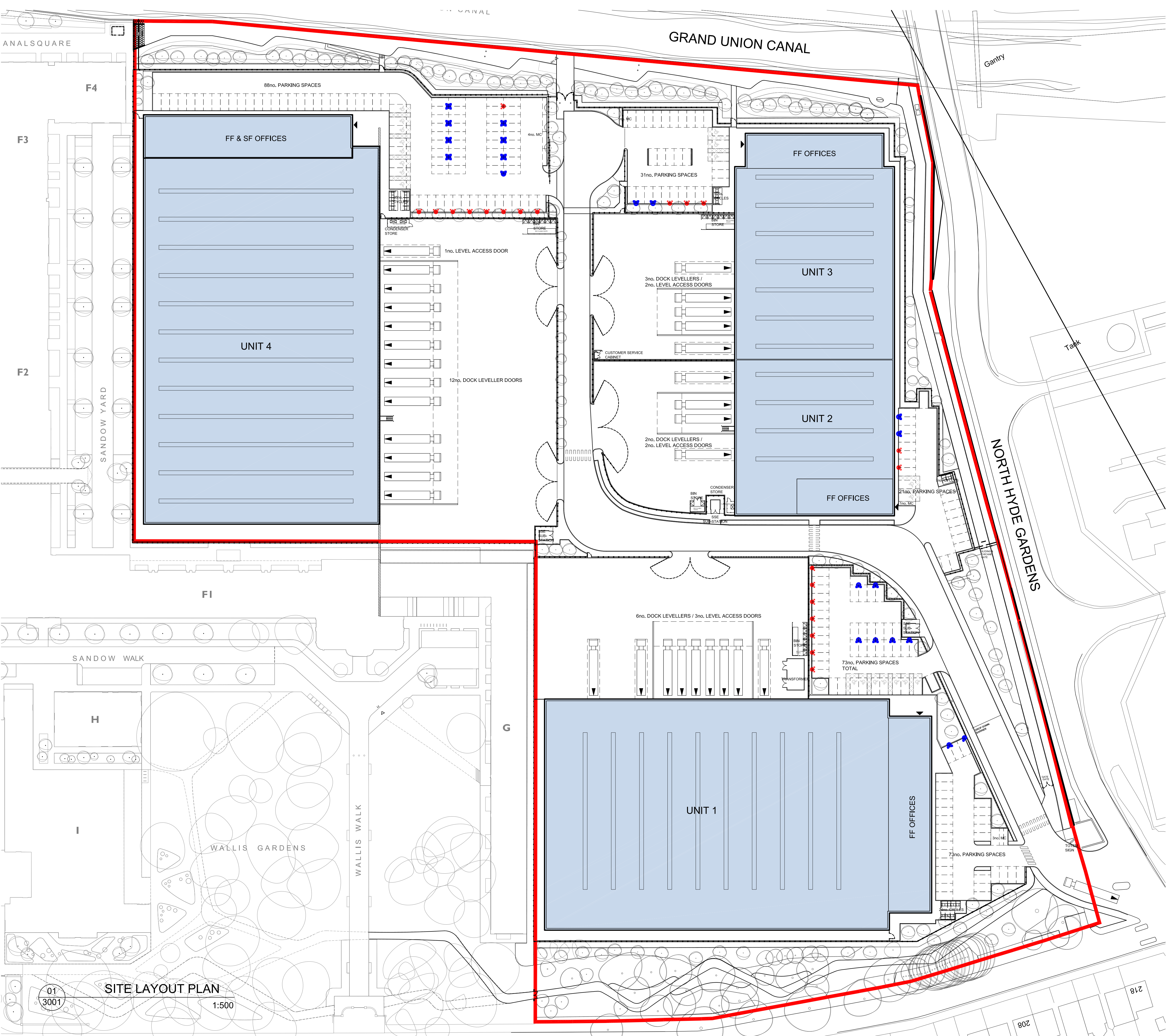
DATE MARCH 2021	SCALE 1:100 @ A1	DRAWN AKS
STATUS CONSTRUCTION		CHECKED AC

DRAWING NUMBER
SPHAY-MSA-Z0-EX-DR-A-3000

REFER TO SUPERSEDED SHEET No: 30680-MSA-Z0-GF-DR-A-3000 FOR PREVIOUS TENDER REVISION

APPENDIX B

ARCHITECT'S DEVELOPMENT LAYOUT DRAWING



NOTES:

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AUTHORISED BY MICHAEL SPARKS ASSOCIATES

KEY:

- SITE BOUNDARY
- ACTIVE CAR CHARGING POINTS
- PASSIVE CAR CHARGING POINTS



CONSTRUCTION					
C01	10/09/2021	SITE PLAN UPDATED TO INCLUDE POSITIONING OF TRANSFORMER AND CONDENSER ENCLOSURES.	LP	AC	
P01	01/04/2021	S3 - FOR REVIEW & COMMENT (PRELIM-CONSTR)	AKS	AC	
REV	DATE	NOTE	DRAW	CHK	



CHARTERED ARCHITECTS

11 PLATO PLACE
ST. DIONIS ROAD
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TITLE
NESTLES AVENUE, HAYES

DRAWING
SITE LAYOUT PLAN

CLIENT
SEGRO

DATE MARCH 2021	SCALE 1:500 @ A1	DRAWN AKS
STATUS CONSTRUCTION		CHECKED AC

DRAWING NUMBER
SPHAY-MSA-Z0-EX-DR-A-3001 C01

APPENDIX C

LABORATORY CHEMICAL ANALYSIS REPORT



Lorne McLundie
Construction Testing Solutions Ltd
Quarry Farm View
Bowbridge Lane
Newark
Nottinghamshire
NG24 3BZ

DETS Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 20-10234

Site Reference: Former Nestle Factory, Hayes

Project / Job Ref: MD1706

Order No: PO/2020/GC

Sample Receipt Date: 07/09/2020

Sample Scheduled Date: 07/09/2020

Report Issue Number: 1

Reporting Date: 15/09/2020

Authorised by:

Dave Ashworth
Technical Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate					
DETS Report No: 20-10234	Date Sampled	03/09/20	03/09/20		
Construction Testing Solutions Ltd	Time Sampled	None Supplied	None Supplied		
Site Reference: Former Nestle Factory, Hayes	TP / BH No	WVY22211	WVY22212		
Project / Job Ref: MD1706	Additional Refs	Stockpile as per map	Stockpile as per map		
Order No: PO/2020/GC	Depth (m)	None Supplied	None Supplied		
Reporting Date: 15/09/2020	DETS Sample No	496814	496815		

Determinand	Unit	RL	Accreditation	Not Detected	Detected			
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected				
Sample Matrix ^(S)	Material Type	N/a	NONE		Small bundle of Chrysotile			
Asbestos Type ^(S)	PLM Result	N/a	ISO17025		Chrysotile			
Asbestos Quantification ^(S)	%	< 0.001	ISO17025		0.001			
pH	pH Units	N/a	MCERTS	9.9	9.5			
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2			
Total Organic Carbon (TOC)	%	< 0.1	MCERTS	0.7	1.2			
Arsenic (As)	mg/kg	< 2	MCERTS	11	12			
W/S Boron	mg/kg	< 1	NONE	< 1	< 1			
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2			
Chromium (Cr)	mg/kg	< 2	MCERTS	23	22			
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2			
Copper (Cu)	mg/kg	< 4	MCERTS	15	26			
Lead (Pb)	mg/kg	< 3	MCERTS	22	59			
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1			
Nickel (Ni)	mg/kg	< 3	MCERTS	18	19			
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3			
Zinc (Zn)	mg/kg	< 3	MCERTS	54	99			
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Speciated PAHs

DETS Report No: 20-10234	Date Sampled	03/09/20	03/09/20			
Construction Testing Solutions Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Former Nestle Factory, Hayes	TP / BH No	WVY22211	WVY22212			
Project / Job Ref: MD1706	Additional Refs	Stockpile as per map	Stockpile as per map			
Order No: PO/2020/GC	Depth (m)	None Supplied	None Supplied			
Reporting Date: 15/09/2020	DETS Sample No	496814	496815			

Determinand	Unit	RL	Accreditation				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	0.24		
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Phenanthrene	mg/kg	< 0.1	MCERTS	0.36	0.61		
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.11		
Fluoranthene	mg/kg	< 0.1	MCERTS	0.20	0.43		
Pyrene	mg/kg	< 0.1	MCERTS	0.24	0.43		
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.18		
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	0.19		
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.13	0.18		
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.13		
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Coronene	mg/kg	< 0.1	NONE	< 0.1	< 0.1		
Total Oily Waste PAHs	mg/kg	< 1	MCERTS	< 1	< 1		
Total Dutch 10 PAHs	mg/kg	< 1	MCERTS	< 1	1.9		
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	2.5		
Total WAC-17 PAHs	mg/kg	< 1.7	NONE	< 1.7	2.5		



DETS Ltd
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Rose Lane
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Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - TPH CWG Banded					
DETS Report No: 20-10234	Date Sampled	03/09/20	03/09/20		
Construction Testing Solutions Ltd	Time Sampled	None Supplied	None Supplied		
Site Reference: Former Nestle Factory, Hayes	TP / BH No	WVY22211	WVY22212		
Project / Job Ref: MD1706	Additional Refs	Stockpile as per map	Stockpile as per map		
Order No: PO/2020/GC	Depth (m)	None Supplied	None Supplied		
Reporting Date: 15/09/2020	DETS Sample No	496814	496815		

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01			
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05			
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	5	9			
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	18	35			
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	61	115			
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	44	80			
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	62			
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	128	300			
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01			
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05			
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2			
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	8	13			
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	78	120			
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	83	133			
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	12	19			
Aromatic (C5 - C35)	mg/kg	< 21	NONE	180	284			
Total >C5 - C35	mg/kg	< 42	NONE	308	584			



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - BTEX / MTBE

DETS Report No: 20-10234	Date Sampled	03/09/20	03/09/20			
Construction Testing Solutions Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Former Nestle Factory, Hayes	TP / BH No	WVY22211	WVY22212			
Project / Job Ref: MD1706	Additional Refs	Stockpile as per map	Stockpile as per map			
Order No: PO/2020/GC	Depth (m)	None Supplied	None Supplied			
Reporting Date: 15/09/2020	DETS Sample No	496814	496815			

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2			
Toluene	ug/kg	< 5	MCERTS	< 5	< 5			
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2			
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2			
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2			
MTBE	ug/kg	< 5	MCERTS	< 5	< 5			



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
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Tel : 01622 850410

Soil Analysis Certificate - PCB (7 Congeners)

DETS Report No: 20-10234	Date Sampled	03/09/20	03/09/20			
Construction Testing Solutions Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Former Nestle Factory, Hayes	TP / BH No	WVY22211	WVY22212			
Project / Job Ref: MD1706	Additional Refs	Stockpile as per map	Stockpile as per map			
Order No: PO/2020/GC	Depth (m)	None Supplied	None Supplied			
Reporting Date: 15/09/2020	DETS Sample No	496814	496815			

Determinand	Unit	RL	Accreditation					
PCB Congener 28	mg/kg	0.008	NONE	< 0.008	< 0.008			
PCB Congener 52	mg/kg	0.008	NONE	< 0.008	< 0.008			
PCB Congener 101	mg/kg	0.008	NONE	< 0.008	< 0.008			
PCB Congener 118	mg/kg	0.008	NONE	< 0.008	< 0.008			
PCB Congener 138	mg/kg	0.008	NONE	< 0.008	< 0.008			
PCB Congener 153	mg/kg	0.008	NONE	< 0.008	< 0.008			
PCB Congener 180	mg/kg	0.008	NONE	< 0.008	< 0.008			
Total PCB (7 Congeners)	mg/kg	< 0.1	NONE	< 0.1	< 0.1			



DETS Ltd
: 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Waste Acceptance Criteria Analytical Certificate - BS EN 12457/2																																							
DETS Report No: 20-10234		Date Sampled	03/09/20			<table border="1"> <thead> <tr> <th colspan="3">Landfill Waste Acceptance Criteria Limits</th> </tr> <tr> <th>Inert Waste Landfill</th> <th>Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill</th> <th>Hazardous Waste Landfill</th> </tr> </thead> <tbody> <tr> <td>3%</td> <td>5%</td> <td>6%</td> </tr> <tr> <td>--</td> <td>--</td> <td>10%</td> </tr> <tr> <td>6</td> <td>--</td> <td>--</td> </tr> <tr> <td>1</td> <td>--</td> <td>--</td> </tr> <tr> <td>500</td> <td>--</td> <td>--</td> </tr> <tr> <td>100</td> <td>--</td> <td>--</td> </tr> <tr> <td>--</td> <td>>6</td> <td>--</td> </tr> <tr> <td>--</td> <td>To be evaluated</td> <td>To be evaluated</td> </tr> </tbody> </table>				Landfill Waste Acceptance Criteria Limits			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	3%	5%	6%	--	--	10%	6	--	--	1	--	--	500	--	--	100	--	--	--	>6	--	--	To be evaluated	To be evaluated
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Construction Testing Solutions Ltd		Time Sampled	None Supplied																																				
Site Reference: Former Nestle Factory, Hayes		TP / BH No	WVY22211																																				
Project / Job Ref: MD1706		Additional Refs	Stockpile as per map																																				
Order No: PO/2020/GC		Depth (m)	None Supplied																																				
Reporting Date: 15/09/2020		DETS Sample No	496814																																				
Determinand	Unit	MDL																																					
TOC ^{MU}	%	< 0.1	0.7																																				
Loss on Ignition	%	< 0.01	2.20																																				
BTEX ^{MU}	mg/kg	< 0.05	< 0.05																																				
Sum of PCBs	mg/kg	< 0.1	< 0.1																																				
Mineral Oil ^{MU}	mg/kg	< 10	130																																				
Total PAH ^{MU}	mg/kg	< 1.7	< 1.7																																				
pH ^{MU}	pH Units	N/a	9.9																																				
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	< 1																																				
Eluate Analysis			10:1 mg/l			Cumulative 10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)																																
Arsenic ^U		0.02			0.2	0.5	2	25																															
Barium ^U		< 0.02			< 0.2	20	100	300																															
Cadmium ^U		< 0.0005			< 0.005	0.04	1	5																															
Chromium ^U		< 0.005			< 0.05	0.5	10	70																															
Copper ^U		0.02			0.2	2	50	100																															
Mercury ^U		< 0.0005			< 0.005	0.01	0.2	2																															
Molybdenum ^U		0.012			0.12	0.5	10	30																															
Nickel ^U		< 0.007			< 0.07	0.4	10	40																															
Lead ^U		< 0.005			< 0.05	0.5	10	50																															
Antimony ^U		< 0.005			< 0.05	0.06	0.7	5																															
Selenium ^U		< 0.005			< 0.05	0.1	0.5	7																															
Zinc ^U		0.010			0.10	4	50	200																															
Chloride ^U		3.4			34	800	15000	25000																															
Fluoride ^U		0.8			8	10	150	500																															
Sulphate ^U		15.2			152	1000	20000	50000																															
TDS		78			780	4000	60000	100000																															
Phenol Index		< 0.01			< 0.1	1	-	-																															
DOC		22.2			222	500	800	1000																															
Leach Test Information																																							
Sample Mass (kg)		0.10																																					
Dry Matter (%)		88																																					
Moisture (%)		13.8																																					
Stage 1																																							
Volume Eluate L10 (litres)		0.89																																					

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion
 Stated limits are for guidance only and DETS Ltd cannot be held responsible for any discrepancies with current legislation
 M Denotes MCERTS accredited test
 U Denotes ISO17025 accredited test



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--	To be evaluated	To be evaluated																																					
Construction Testing Solutions Ltd		Time Sampled		None Supplied																																			
Site Reference: Former Nestle Factory, Hayes		TP / BH No		WVY22212																																			
Project / Job Ref: MD1706		Additional Refs		Stockpile as per map																																			
Order No: PO/2020/GC		Depth (m)		None Supplied																																			
Reporting Date: 15/09/2020		DETS Sample No		496815																																			
Determinand	Unit	MDL																																					
TOC ^{MU}	%	< 0.1	1.2																																				
Loss on Ignition	%	< 0.01	2.90																																				
BTEX ^{MU}	mg/kg	< 0.05	< 0.05																																				
Sum of PCBs	mg/kg	< 0.1	< 0.1																																				
Mineral Oil ^{MU}	mg/kg	< 10	308																																				
Total PAH ^{MU}	mg/kg	< 1.7	2.5																																				
pH ^{MU}	pH Units	N/a	9.5																																				
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	< 1																																				
Eluate Analysis				10:1 mg/l			Cumulative 10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)																															
Arsenic ^U		0.02				0.2	0.5	2	25																														
Barium ^U		< 0.02				< 0.2	20	100	300																														
Cadmium ^U		< 0.0005				< 0.005	0.04	1	5																														
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Mercury ^U		< 0.0005				< 0.005	0.01	0.2	2																														
Molybdenum ^U		0.025				0.25	0.5	10	30																														
Nickel ^U		0.009				0.09	0.4	10	40																														
Lead ^U		< 0.005				< 0.05	0.5	10	50																														
Antimony ^U		0.009				0.09	0.06	0.7	5																														
Selenium ^U		< 0.005				< 0.05	0.1	0.5	7																														
Zinc ^U		0.007				0.07	4	50	200																														
Chloride ^U		2.2				22	800	15000	25000																														
Fluoride ^U		0.5				< 5	10	150	500																														
Sulphate ^U		21.6				216	1000	20000	50000																														
TDS		121				1210	4000	60000	100000																														
Phenol Index		< 0.01				< 0.1	1	-	-																														
DOC		24.9				249	500	800	1000																														
Leach Test Information																																							
Sample Mass (kg)				0.10																																			
Dry Matter (%)				89.2																																			
Moisture (%)				12.2																																			
Stage 1																																							
Volume Eluate L10 (litres)				0.89																																			

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Soil Analysis Certificate - Sample Descriptions

DETS Report No: 20-10234	
Construction Testing Solutions Ltd	
Site Reference: Former Nestle Factory, Hayes	
Project / Job Ref: MD1706	
Order No: PO/2020/GC	
Reporting Date: 15/09/2020	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
496814	WVY22211	Stockpile as per map	None Supplied	12.1	Brown loamy sand with stones
496815	WVY22212	Stockpile as per map	None Supplied	10.8	Brown loamy sand with stones

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{1/5}

Unsuitable Sample ^{U/S}



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Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 20-10234

Construction Testing Solutions Ltd

Site Reference: Former Nestle Factory, Hayes

Project / Job Ref: MD1706

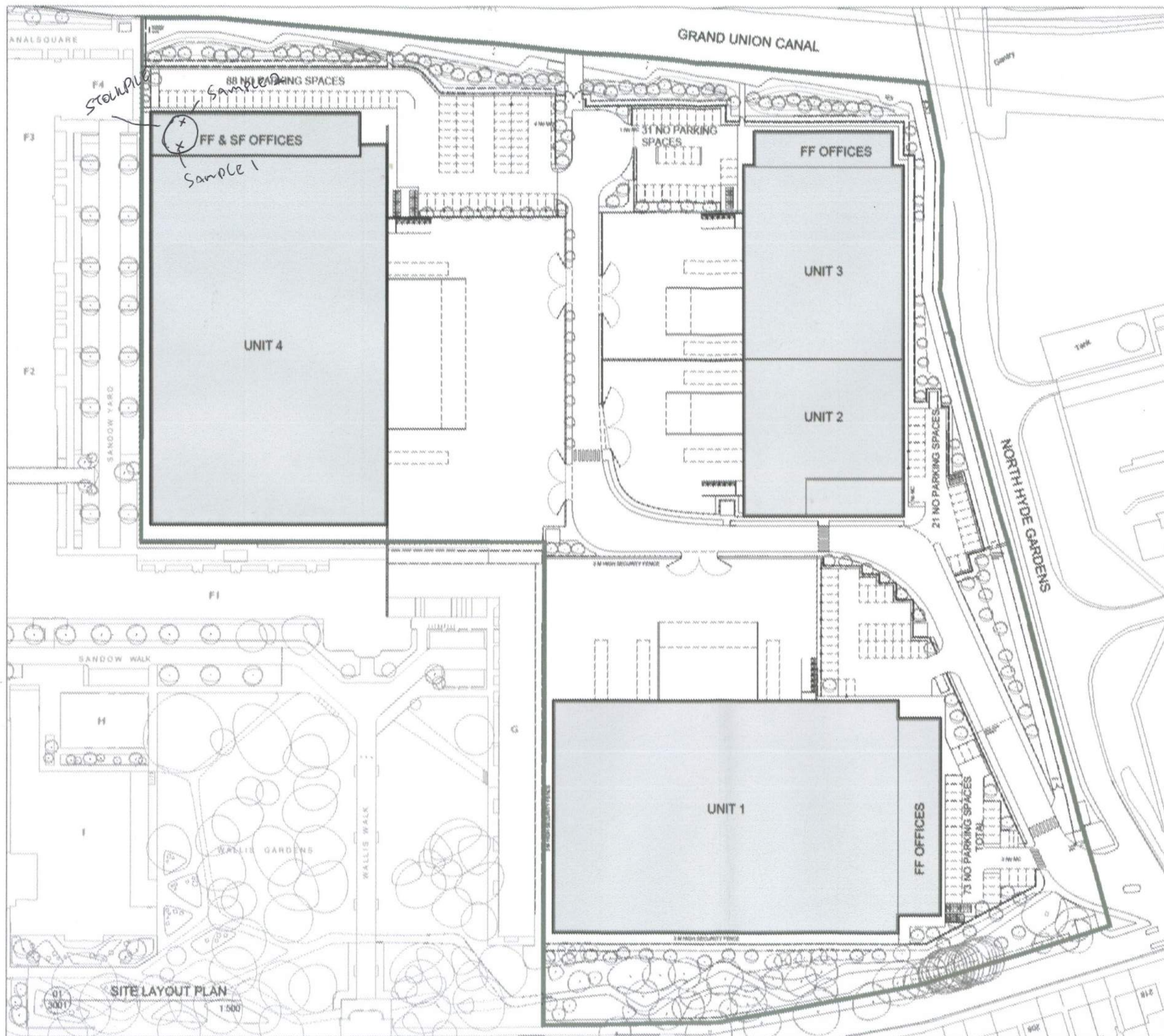
Order No: PO/2020/GC

Reporting Date: 15/09/2020

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphénylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

Parameter	Matrix Type	Suite Reference	Expanded Uncertainty Measurement	Unit
TOC	Soil	BS EN 12457	13.49	%
Loss on Ignition	Soil	BS EN 12457	17	%
BTEX	Soil	BS EN 12457	14	%
Sum of PCBs	Soil	BS EN 12457	23	%
Mineral Oil	Soil	BS EN 12457	9	%
Total PAH	Soil	BS EN 12457	20	%
pH	Soil	BS EN 12457	0.399	Units
Acid Neutralisation Capacity	Soil	BS EN 12457	18	%
Arsenic	Leachate	BS EN 12457	16.63	%
Barium	Leachate	BS EN 12457	14.29	%
Cadmium	Leachate	BS EN 12457	14.44	%
Chromium	Leachate	BS EN 12457	18.06	%
Copper	Leachate	BS EN 12457	21.27	%
Mercury	Leachate	BS EN 12457	24.13	%
Molybdenum	Leachate	BS EN 12457	12.55	%
Nickel	Leachate	BS EN 12457	20.08	%
Lead	Leachate	BS EN 12457	13.43	%
Antimony	Leachate	BS EN 12457	18.85	%
Selenium	Leachate	BS EN 12457	18.91	%
Zinc	Leachate	BS EN 12457	13.71	%
Chloride	Leachate	BS EN 12457	16	%
Fluoride	Leachate	BS EN 12457	19.4	%
Sulphate	Leachate	BS EN 12457	19.63	%
TDS	Leachate	BS EN 12457	12	%
Phenol Index	Leachate	BS EN 12457	14	%
DOC	Leachate	BS EN 12457	10	%
Clay Content	Soil	BS 3882: 2015	15	%
Silt Content	Soil	BS 3882: 2015	14	%
Sand Content	Soil	BS 3882: 2015	13	%
Loss on Ignition	Soil	BS 3882: 2015	17	%
pH	Soil	BS 3882: 2015	0.399	Units
Carbonate	Soil	BS 3882: 2015	16	%
Total Nitrogen	Soil	BS 3882: 2015	12	%
Phosphorus (Extractable)	Soil	BS 3882: 2015	24	%
Potassium (Extractable)	Soil	BS 3882: 2015	20	%
Magnesium (Extractable)	Soil	BS 3882: 2015	26	%
Zinc	Soil	BS 3882: 2015	14.9	%
Copper	Soil	BS 3882: 2015	16	%
Nickel	Soil	BS 3882: 2015	17.7	%
Available Sodium	Soil	BS 3882: 2015	23	%
Available Calcium	Soil	BS 3882: 2015	23	%
Electrical Conductivity	Soil	BS 3882: 2015	10	%



NOTES:

BASED ON THE INFORMATION PROVIDED BY THE CLIENT AND THE DESIGN TEAM. THE DESIGN TEAM HAS NOT CONDUCTED A VISUAL SURVEY OF THE SITE. THE DESIGN TEAM HAS NOT CONDUCTED A VISUAL SURVEY OF THE SITE. THE DESIGN TEAM HAS NOT CONDUCTED A VISUAL SURVEY OF THE SITE.



KEY:

----- SITE BOUNDARY

TENDER

#	16/10/2019	Design advice at Authority and live tool	AT	AC
#	06/04/2019	Issued final tender design	AT	AC
#	16/11/2018	Issue for tender	AT	AC
REV	DATE	REV	BY	DATE



Michael Sparks

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SEGRO

NESTLES AVENUE, HAYES
SITE LAYOUT PLAN

SEGRO

DATE: NOVEMBER 2018
SCALE: 1:500 @ A1
TYPE: TENDER

30080-MSA-20-GF-DR-A-3001

APPENDIX D

IMPORTED TOPSOIL ANALYSIS REPORT



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

Attention: Philippa Lambourne

Our Ref: 0987-SA

9 November 2021

Dear Philippa

Topsoil Analysis Report: Potters Bar, Hertfordshire Topsoil – November 2021

We have completed the analysis of the topsoil sample recently taken from the above site and it has been forwarded to an approved laboratory for analysis 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 and its compliance with the current British Standard for topsoil (BS3882).

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 dark brown, slightly moist and friable 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 and MCERTS 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

*Freeland horticulture Ltd. Registered in England: Rosedale Nursery, College Road, Hextable, Kent BR8 7LT
Company Registration No: 04015968*

COMMENTS

pH & Electrical Conductivity (salinity) Values

The sample was alkaline in nature (pH 8.5) with a pH value that would be considered suitable for general landscaping purposes.

The electrical conductivity (salinity) value using the soil:water extract was (1145 μ S/cm) indicating that soluble salts are not present at levels that would be harmful to plants.

The electrical conductivity values by CaSO₄ extract (BS3882 requirement) fell below the maximum specified value (3300 μ S/cm) given in BS3882:2015.

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.

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

Particle Size Distribution & Stone Content

The sample contained 85% 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 Virtually free from stones of 50 mm and upwards in diameter and only contained a slight fraction of smaller stones (10.4%). 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. This includes human health, environmental protection and metals considered toxic to plants. In the absence of any 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 presented in 'The LQM/CIEH S4UIs' for Human Health Risk Assessment (2015) and DEFRA SP1010: 'Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document (2014)'.
Freeland 01322619161

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

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	Potters Bar, Hertfordshire
Month/Year	November 21
Our Ref	0987-SA
Date	09 November 2021

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	1145
Electrical Conductivity (1:2.5 soil/CaSO ₄ ext)	µS/cm	2950
Neutralising Value (CaCO ₃ equivalent)	%	10.5

Organic Matter & Nutrient Status

Organic Matter (LOI)	%	8.6
Organic Carbon (Derived)	%	5.0
Total Nitrogen	%	0.380
Carbon:Nitrogen Ratio	:1	13.2
Available Phosphorus	mg/l	77.6
Available Potassium	mg/l	1487
Available Magnesium	mg/l	124

Particle Size Analysis & Stones

Clay (<0.002mm)	%	6
Silt (0.063-0.002mm)	%	5
Sand (2.0-0.063mm)	%	85
Texture Class	UK Class	Very Sandy

Stones 2-20mm	% by DW	7.5
Stones 20-50mm	% by DW	2.9
Stones >50mm	% by DW	0.0

Potential Contaminants

Total Arsenic (As)	mg/kg	12.0
Total Cadmium (Cd)	mg/kg	0.23
Total Chromium (Cr)	mg/kg	21.9
Hexavalent Chromium (Cr ^{VI})	mg/kg	<0.2
Total Copper (Cu)	mg/kg	20.0
Total Lead (Pb)	mg/kg	23.5
Total Mercury (Hg)	mg/kg	<0.2
Total Nickel (Ni)	mg/kg	18.7
Total Selenium (Se)	mg/kg	0.48
Total Zinc (Zn)	mg/kg	97.2
Total Beryllium (Be)	mg/kg	<1
Total Barium (Ba)	mg/kg	73.3
Total Vanadium (V)	mg/kg	24.8
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	78.0
Total Phenols Index	mg/kg	<1
Asbestos Screen	-	N.D.

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Potters Bar, Hertfordshire
Month/Year	November 21
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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	0.1
Pyrene	mg/kg	0.1
Benzo[a]anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo[b]fluoranthene	mg/kg	<0.1
Benzo[k]fluoranthene	mg/kg	<0.1
Benzo[a]pyrene	mg/kg	<0.1
Indeno[1,2,3-cd]pyrene	mg/kg	<0.1
Dibenzo[a,h]anthracene	mg/kg	<0.1
Benzo[g,h,i]perylene	mg/kg	<0.1
Total PAHs sum US EPA 16	mg/kg	<1

Banded Petroleum Hydrocarbons

Aliphatic TPH >C ₅ -C ₆	mg/kg	0.16
Aliphatic TPH >C ₆ -C ₈	mg/kg	0.06
Aliphatic TPH >C ₈ -C ₁₀	mg/kg	<0.05
Aliphatic TPH >C ₁₀ -C ₁₂	mg/kg	<10
Aliphatic TPH >C ₁₂ -C ₁₆	mg/kg	<10
Aliphatic TPH >C ₁₆ -C ₂₁	mg/kg	<10
Aliphatic TPH >C ₂₁ -C ₃₅	mg/kg	23.0
Aliphatic TPH >C ₃₅ -C ₄₄	mg/kg	<12

Aromatic TPH >C ₅ -C ₇	mg/kg	<0.05
Aromatic TPH >C ₇ -C ₈	mg/kg	<0.05
Aromatic TPH >C ₈ -C ₁₀	mg/kg	<0.05
Aromatic TPH >C ₁₀ -C ₁₂	mg/kg	<10
Aromatic TPH >C ₁₂ -C ₁₆	mg/kg	<10
Aromatic TPH >C ₁₆ -C ₂₁	mg/kg	<10
Aromatic TPH >C ₂₁ -C ₃₅	mg/kg	28.0
Aromatic TPH >C ₃₅ -C ₄₄	mg/kg	16.0

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