



Our Ref: 2006010.002.01
Your Ref:

18 August 2021

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Dear Stuart

BLACKWELL FARM, EAST GRINSTEAD – SUPPLEMENTARY ASSESSMENT

TEC have been instructed by W Stirland Ltd to undertake supplementary assessment of Blackwell Farm, East Grinstead. All works were undertaken in accordance with our proposal letter dated 08 December 2020 and referenced CH.2006010.002A.

Background

The site is situated off Blackwell Farm Road to the east of East Grinstead town centre (Figure 1). The site covers an approximate area of 0.56 hectares, with the centre of the site situated at approximate National Grid Reference 539710, 138810. The nearest postcode is RH19 3HT.

The proposed development is understood to comprise the construction of 10 No. low rise residential dwellings with associated private gardens and hard infrastructure (Figure 2).

A desk study and preliminary geoenvironmental and geotechnical assessment has previously been prepared for the site by Land Science in September 2018, as detailed within the following report:

- Phase I and Phase II Geotechnical and Geo-Environmental Investigation – Blackwell Farm Road, East Grinstead, RH19 3JW. Prepared for The Guinness Partnership Limited. Report reference LS 3734 dated September 2018.

In addition, intrusive works were undertaken by TEC in October 2020, as detailed within the following report:

- Blackwell Farm, East Grinstead – Ground Investigation Report. Prepared by TEC for W Stirland Ltd. Report reference 2006010.001.01, dated January 2021.

While reference to these previous assessments should be made for full details, it was concluded that given the identified residual hydrocarbon contamination recorded within the south / southeast section of the site, and previously reported leachable concentrations of heavy metals, a potential significant risk to controlled waters could not be discounted. Therefore, further assessment comprising groundwater monitoring was recommended to confirm whether a significant risk was present.

In addition, organic deposits were recorded within the underlying possible made ground materials, to depths of up to 5.5mbgl. Initial monitoring undertaken by TEC and Land Science recorded carbon dioxide and methane concentrations associated with these deposits. Therefore, further gas monitoring was recommended to fully characterise the ground gas regime on site and inform appropriate ground gas protection measures for the development.

Supplementary Assessment

Ground Gas

The following potential sources have been identified on site:

- *Made ground and potential made ground with proportions of degradable organic content potentially associated with an infilled pond on site.*

No potentially significant off site ground gas sources have been identified in proximity to the site.

Land Science previously reported a maximum concentration of carbon dioxide of 7.0% from a single monitored borehole on site, with methane concentrations of 0.0% and maximum flow rates of 0.0 – 0.1l/hr. It was tentatively suggested the data may correspond to Characteristic Situation 2 (CS2) although it was acknowledged that further monitoring points and visits would be required to appropriately characterise the ground gas regime.

Ground Gas Monitoring Results

A single monitoring visit was completed by TEC as part of the initial investigation works completed by TEC in October 2020. A further 3no. monitoring rounds have been undertaken as part of these supplementary assessment works. All gas monitoring was undertaken using a calibrated GFM 430 infra-red gas analyser fitted with an internal flow pod. The monitoring results are summarised in Table 1 below, with the full results presented in Appendix C.

Table 1: Summary of Ground Gas Monitoring Data

Borehole	Response Zone /Strata	Potential source of ground gas	No. of monitoring occasions	Maximum Methane (%)	Maximum Carbon dioxide (%)	Minimum Oxygen (%)	Maximum Flow (l/hr)	Water levels (mbgl)	Range of atmospheric pressure (mb)
WS11	Made Ground	Potential Infilled Pond (on-site)	4	0.0 ^(1,2)	14.4 ^(1,2)	0.1	0.3 ^(1,2)	2.8 - Dry	996 – 1007
WS12				0.7 ^(1,2)	14.4 ^(1,2)	0.0	0.5 ^(1,2)	1.65 - Dry	996 – 1007
BH01				0.4 ^(1,2)	16.2 ^(1,2)	0.2	0.2 ^(1,2)	1.88 - 2.2	996 – 1007

Notes:

1 – Maximum recorded concentration

2 – Maximum stable concentration

Monitoring was undertaken during variable temporal conditions, including worst case low and falling atmospheric pressures.

Gas Screening Values (GSVs)

On the basis of the gas monitoring undertaken to-date, the site would be characterised in accordance with current guidance as having a worst case GSV of 0.0035l/hr for methane (based upon a maximum flow rate of 0.5l/hr and maximum recorded concentration of 0.7%v/v) and 0.081l/hr for carbon dioxide (based upon a maximum flow rate of 0.5l/hr and maximum concentration of 16.2%v/v).

On the basis of the results obtained from the monitoring visits and the conceptual site model, it is considered that the installation of ground gas measures based on a Characteristic Situation 2 designation in accordance with BS8485:2019 would be appropriate for a Type A structure (or Amber 1 in accordance with the NHBC Traffic Light guidance where the development proposals are based on the 'typical house' used in the modelling for the traffic light classification system, defined as a house up to three storeys with <100m² footprint and minimum 150mm depth of clear ventilated void).

In accordance with guidance presented in BS8485:2019 and CIRIA C735, the design of the gas protection measures; the

installation of the measures and the required verification inspection; and the monitoring and testing of the measures should be recorded in a report or series of reports, with design and as-built drawings.

Controlled Waters

Previous assessment works completed by Land Science recorded elevated leachable heavy metal concentrations within the tested made ground deposits. In addition, visual and olfactory evidence of residual hydrocarbon impact was recorded within the shallow ground materials in the south/ south-east of the site during the subsequent investigation works completed by TEC in October 2020, with a maximum TPH concentration of 1310mg/kg recorded. Perched water strikes were recorded during the investigation at depths of 3.0mbgl within 2No locations (WS12 and WS13). No further groundwater was encountered during the intrusive works.

2No rounds of perched water sampling and analysis have been undertaken as part of these supplementary works. Standing depths within the boreholes recorded as part of the subsequent monitoring visits are summarised in Table 2 below.

Table 2: Summary of Groundwater Conditions

Location	Standing Depths (mbgl)			Strata	Sampling Details
	17.06.2021	08.07.2021	20.07.2021		
WS11	Dry	Dry	Dry	Natural	Not sampled
WS12	1.66	1.65	1.69	Made Ground	Groundwater sample collected and analysed on 17.06.2021 and 08.07.2021
BH01	1.90	1.91	1.88		

Perched water samples were collected and chemically tested at i2 Analytical Ltd, a UKAS/MCERTS accredited laboratory, for the following parameters:

- *Heavy metals and metalloids*
- *Phenols (monohydric)*
- *Cyanide*
- *Speciated Polyaromatic Hydrocarbons (PAH);*
- *Total Petroleum Hydrocarbons (TPH CWG), including BTEX and MTBE; and*
- *Semi Volatile Organic Compounds (SVOC) and Volatile Organic Compounds (VOC).*

The results of the sampling are presented in Appendix A.

Detailed information on the background legislation and selection of the GAC used within this assessment for controlled waters is presented in Appendix B.

Based on the conceptual understanding, the nearest significant controlled waters receptor is considered to be the underlying Secondary A Aquifer of the Lower Tunbridge Wells Sand, and the stream reported approximately 50m east of the site. The nearest groundwater abstractions are recorded approximately 850m and 960m north of the site associated with 2no. boreholes operated by South East Water Plc for public, potable water supply at Hackenden Pumping Station. The BGS borehole records for these abstractions indicate resting water levels at a depth of ~92m (305ft) when measured in 1962, within the Lower Tunbridge Wells Sand.

Summary of Results

The controlled waters generic quantitative risk assessment is presented in Appendix B. The results of the assessment

recorded exceedances of the GAC and therefore, the following contaminants of potential concern (CoPC) have been identified within the groundwater at the site:

- *Ammonium (NH₄);*
- *Anthracene; and*
- *Fluoranthene.*

While elevated SVOC concentrations associated with the above PAHs were recorded in the sampled perched water, concentrations of VOC's and TPH were reported as below laboratory limit of detection within both locations, suggesting no vertical migration of the residual hydrocarbon contamination recorded on site during the previous investigation. In addition, heavy metal concentrations were recorded to be below the GAC deemed protective of the identified controlled water receptors.

Concentrations of ammoniacal nitrogen have been recorded to exceed the generic assessment criteria (GAC) of 500µg/l (based on the UK Drinking Water Standard for Ammonium as NH₄⁺) in all sampled perched water. The results are considered likely to be associated with anaerobic degradation of organic matter as recorded within the shallow ground materials on site – localised pockets of peat, organic clay and decayed roots were noted to depths of around 3 – 5.5m, considered to be associated with the former stream and ponds historically recorded on site (now infilled). No further potential sources of ammonium have been identified in relation to the site.

No groundwater was recorded within the deeper boreholes undertaken on site to depths between 10.8m and 11.5mbgl, within the Lower Tunbridge Wells Sand deposits. The nearest BGS borehole record (approximately 300m east of the site) indicates groundwater was struck at a depth of 20m within the sands/ sandstone during drilling of a borehole in June 2020 for East Grinstead Town Football Club. The boreholes for Hackenden Pumping Station record resting groundwater levels of around 10m – 15mbgl.

Given the underlying thickness of unsaturated zone below the made ground (of at least 5.3-7.0m), and the distance to the identified controlled waters receptors (groundwater abstractions (850m-960m) and nearest surface water (small stream approximately 50m east),) it is considered that the risk to these receptors is low owing to the resulting attenuation and dilution of the concentrations of PAHs and ammoniacal nitrogen recorded in the perched water on site. In addition, the recorded ammoniacal nitrogen concentrations are considered likely to be associated with background levels for the area resulting from degradation of organic matter from the previous stream and ponds on site.

Waste

Basic Characterisation testing, including WAC testing, was undertaken on 5No. representative samples of made ground encountered at the site, in accordance with the guidance outlined within the Environment Agency document 'Waste Sampling and Testing for Disposal to Landfill' (EBPRI 11507B; March 2013)'. The sampling locations are presented on Figure 2, while exploratory hole logs are presented in Appendix D.

Based upon Table 5.3 of the guidance, the WAC tests results indicate that should sampled materials be required to be disposed of to landfill, the materials encountered within HDP05, in the southern area of the site indicated to be an infilled pond, may not be classified as inert due the recorded total organic carbon (TOC) and/ or loss on ignition (LOI) percentages, and owing to the previously recorded fragments of chrysotile recorded by Land Science in this area only, in the made ground at a depth of 1.5m.

The results of the remaining samples indicate the surrounding shallow made ground materials on site may be classified as inert waste.

Notwithstanding this, it should be noted that while this initial assessment gives classifications based on industry guidance, the final decision with regard to waste acceptance classification is dependent upon the individual landfill operator. Therefore, it is recommended that the Basic Characterisation test results, WAC tests data, as well as all total contaminant results and background information regarding the waste source and origin (as contained within this report and the previous Ground Investigation Report) are forwarded to the selected landfill/waste facility to gain confirmation with regards to the acceptability of the waste materials that may be generated from the site.

18 August 2021

It should also be noted that inert, non-hazardous and hazardous waste must be treated before it can be sent to landfill, in accordance with the requirements of the Landfill Directive and in the context of these works treatment could include “source segregation”. This would involve careful separation of waste material types on site to demonstrate the minimisation of the disposal of waste to landfill.

Should re-use of excavated materials be proposed, consideration will need to be given to appropriate regulatory guidance.

Conclusions

Ground Gas

On the basis of the results obtained from the monitoring visits and the conceptual site model, it is considered that the installation of ground gas measures based on a Characteristic Situation 2 designation in accordance with BS8485:2019 would be appropriate for a Type A structure (or Amber 1 in accordance with the NHBC Traffic Light guidance where the development proposals are based on the ‘typical house’ used in the modelling for the traffic light classification system, defined as a house up to three storeys with <100m² footprint and minimum 150mm depth of clear ventilated void).

In accordance with guidance presented in BS8485:2019 and CIRIA C735, the design of the gas protection measures; the installation of the measures and the required verification inspection; and the monitoring and testing of the measures should be recorded in a report or series of reports, with design and as-built drawings.

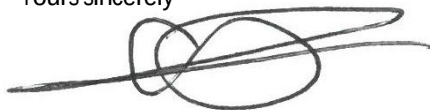
Groundwater

While elevated concentrations of PAH and ammoniacal nitrogen were recorded within the sampled perched water encountered at the site, given the underlying thickness of unsaturated zone below the made ground (of at least 5.3-7.0m), and the distance to the identified controlled waters receptors (groundwater abstractions (850m-960m) and nearest surface water (small stream approximately 50m east),) it is considered that the risk to these receptors is low owing to the resulting attenuation and dilution. In addition, the recorded ammoniacal nitrogen concentrations are considered likely to be associated with background levels for the area resulting from degradation of organic matter from the previous stream and ponds on site.

The previous assessment recommended piled foundations would be required for the proposed development. Owing to the potential for piling to create a preferential pathway for any contaminants to migrate downwards to the underlying Secondary A Aquifer and the potential for gases to migrate upwards, a piling/ foundation works risk assessment may be required in support of the proposed piling works.

We trust that you find the above suitable for your current requirements. However, should you have any questions or queries, please do not hesitate to contact the undersigned.

Yours sincerely



Claire Hooley

Director

For and on behalf of

TEC



Alexandra Flint

Director

Figure 1 – Site Location Plan

Figure 2 – Proposed Development and Exploratory Hole Location Plan

Appendix A – i2 Analytical Report No. 21-82226, 21-82230 and 21-86165

Appendix B – Generic Quantitative Risk Assessment – Controlled Waters

Appendix C – Ground Gas Monitoring Data Sheets

Appendix D – Exploratory Hole Logs

Figures



Approximate Site Location:



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Site Name:
Blackwell Farm, East Grinstead

Drawing Name:
Site Location Plan

Client Name:
W Stirland Ltd

Project No:
2006010.002

Figure No:
1

Date:
July 2021

Scale:
NTS



Appendix A

i2 Analytical Reports

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Analytical Report Number : 21-82226

Project / Site name:	Blackwell Farm, East Grinstead	Samples received on:	21/06/2021
Your job number:	2006010 002	Samples instructed on/ Analysis started on:	21/06/2021
Your order number:		Analysis completed by:	02/07/2021
Report Issue Number:	1	Report issued on:	02/07/2021
Samples Analysed:	5 soil samples - 2 water samples		

Signed: *Karolina Marek*

Karolina Marek
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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

Analytical Report Number: 21-82226

Project / Site name: Blackwell Farm, East Grinstead

Lab Sample Number				1910714	1910715	1910716	1910717	1910718
Sample Reference				HDP01	HDP02	HDP03	HDP04	HDP05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60-0.70	0.60-0.70	0.40-0.50	0.40-0.50	0.50-0.60
Date Sampled				17/06/2021	17/06/2021	17/06/2021	17/06/2021	17/06/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	9.5	10	12	14
Total mass of sample received	kg	0.001	NONE	1.6	2.0	2.0	2.0	1.8

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
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General Inorganics

Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ammoniacal Nitrogen as NH3	mg/kg	0.5	MCERTS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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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	< 0.05	< 0.05	< 0.05	0.34	0.48
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.10
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.26	1.1	1.3
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.27	1.1	1.2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.50	0.76
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.71	0.64
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.55	0.67
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.47	0.57
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.47	0.52
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.38	0.36
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	0.47	0.45

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	6.11	7.03
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	4.2	1.6	2.4	4.7	17
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	7.2	6.0	9.3	72
Barium (aqua regia extractable)	mg/kg	1	MCERTS	77	17	29	59	550
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.94	0.19	0.29	0.67	5.9
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	0.3	0.3	0.3	0.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	32	11	11	17	28
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	33	11	12	17	29
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	5.7	7.5	15	130
Lead (aqua regia extractable)	mg/kg	1	MCERTS	20	10	24	29	390
Manganese (aqua regia extractable)	mg/kg	1	MCERTS	790	140	360	550	500
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Molybdenum (aqua regia extractable)	mg/kg	0.25	MCERTS	0.45	0.35	0.30	0.97	8.7
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	4.4	5.8	13	80
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	53	21	27	51	340

Analytical Report Number: 21-82226

Project / Site name: Blackwell Farm, East Grinstead

Lab Sample Number				1910714	1910715	1910716	1910717	1910718
Sample Reference				HDP01	HDP02	HDP03	HDP04	HDP05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60-0.70	0.60-0.70	0.40-0.50	0.40-0.50	0.50-0.60
Date Sampled				17/06/2021	17/06/2021	17/06/2021	17/06/2021	17/06/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

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

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH C10 - C40	mg/kg	10	MCERTS	< 10	< 10	< 10	22	36

VOCs

Chloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	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
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 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
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	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
Styrene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Analytical Report Number: 21-82226

Project / Site name: Blackwell Farm, East Grinstead

Lab Sample Number				1910714	1910715	1910716	1910717	1910718
Sample Reference				HDP01	HDP02	HDP03	HDP04	HDP05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60-0.70	0.60-0.70	0.40-0.50	0.40-0.50	0.50-0.60
Date Sampled				17/06/2021	17/06/2021	17/06/2021	17/06/2021	17/06/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Tribromomethane	µg/kg	1	NONE	< 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
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Analytical Report Number: 21-82226

Project / Site name: Blackwell Farm, East Grinstead

Lab Sample Number				1910714	1910715	1910716	1910717	1910718
Sample Reference				HDP01	HDP02	HDP03	HDP04	HDP05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60-0.70	0.60-0.70	0.40-0.50	0.40-0.50	0.50-0.60
Date Sampled				17/06/2021	17/06/2021	17/06/2021	17/06/2021	17/06/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
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
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.34	0.48
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.10
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.26	1.1	1.3
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.27	1.1	1.2
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.50	0.76
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.71	0.64
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.55	0.67
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.47	0.57
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.47	0.52
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.38	0.36
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	0.47	0.45

Environmental Forensics

Hexabromobiphenyl	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
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Stockholm convention POPs list A

Mirex	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 21-82226

Project / Site name: Blackwell Farm, East Grinstead

Lab Sample Number				1910719	1910720
Sample Reference				BH01	WS12
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				17/06/2021	17/06/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH Units	N/A	ISO 17025	6.9	6.9
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	970	920
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10
Complex Cyanide	µg/l	10	ISO 17025	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10
Sulphate as SO4	µg/l	45	ISO 17025	17400	6120
Sulphide	µg/l	5	NONE	< 5.0	< 5.0
Chloride	mg/l	0.15	ISO 17025	23	16
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	7400	11000
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	28.2	30.2

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	1.29	0.35
Fluorene	µg/l	0.01	ISO 17025	0.95	0.28
Phenanthrene	µg/l	0.01	ISO 17025	0.81	0.44
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	0.39	0.54
Pyrene	µg/l	0.01	ISO 17025	0.28	0.44
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	3.72	2.05
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Analytical Report Number: 21-82226

Project / Site name: Blackwell Farm, East Grinstead

Lab Sample Number				1910719	1910720
Sample Reference				BH01	WS12
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				17/06/2021	17/06/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Boron (dissolved)	µg/l	10	ISO 17025	310	300
Calcium (dissolved)	mg/l	0.012	ISO 17025	180	200
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0
Iron (dissolved)	mg/l	0.004	ISO 17025	19	0.44
Magnesium (dissolved)	mg/l	0.005	ISO 17025	15	11
Phosphorus (dissolved)	µg/l	20	ISO 17025	< 20.0	< 20.0
Potassium (dissolved)	mg/l	0.025	ISO 17025	14	7.0
Sodium (dissolved)	mg/l	0.01	ISO 17025	47	16

Antimony (dissolved)	µg/l	0.4	ISO 17025	0.6	1.1
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.82	0.86
Barium (dissolved)	µg/l	0.06	ISO 17025	180	260
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.08
Chromium (dissolved)	µg/l	0.2	ISO 17025	1.6	1.7
Cobalt (dissolved)	µg/l	0.2	ISO 17025	3.1	3.3
Copper (dissolved)	µg/l	0.5	ISO 17025	1.3	7.9
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.4
Manganese (dissolved)	µg/l	0.05	ISO 17025	2000	1200
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05
Molybdenum (dissolved)	µg/l	0.05	ISO 17025	2.8	3.5
Nickel (dissolved)	µg/l	0.5	ISO 17025	6.3	3.3
Selenium (dissolved)	µg/l	0.6	ISO 17025	0.9	< 0.6
Tin (dissolved)	µg/l	0.2	ISO 17025	< 0.20	0.34
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	9.8	570

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0



Analytical Report Number: 21-82226

Project / Site name: Blackwell Farm, East Grinstead

Lab Sample Number				1910719	1910720
Sample Reference				BH01	WS12
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				17/06/2021	17/06/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

Petroleum Hydrocarbons

Mineral Oil (C10 - C40)	µg/l	10	NONE	< 10.0	< 10.0
Diesel Range Organics (C10 - C25)	µg/l	10	NONE	< 10	< 10

TPH1 (C10 - C40)	µg/l	10	NONE	< 10	< 10
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TPH2 (C6 - C10)	µg/l	10	ISO 17025	< 10	< 10
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TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10

VOCs

Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0



Analytical Report Number: 21-82226

Project / Site name: Blackwell Farm, East Grinstead

Lab Sample Number				1910719	1910720
Sample Reference				BH01	WS12
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				17/06/2021	17/06/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0

SVOCs

Aniline	µg/l	0.05	NONE	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05



Analytical Report Number: 21-82226
Project / Site name: Blackwell Farm, East Grinstead

Lab Sample Number				1910719	1910720
Sample Reference				BH01	WS12
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				17/06/2021	17/06/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	1.3	0.35
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	0.95	0.28
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	0.81	0.44
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	0.39	0.54
Pyrene	µg/l	0.01	ISO 17025	0.28	0.44
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
3&4-Methylphenol	µg/l	0.1	NONE	< 0.10	< 0.10

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

Analytical Report Number : 21-82226

Project / Site name: Blackwell Farm, East Grinstead

* 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 *
1910714	HDP01	None Supplied	0.60-0.70	Brown clay with vegetation.
1910715	HDP02	None Supplied	0.60-0.70	Brown clay and sand with vegetation.
1910716	HDP03	None Supplied	0.40-0.50	Brown clay and sand with vegetation.
1910717	HDP04	None Supplied	0.40-0.50	Brown clay and sand with vegetation.
1910718	HDP05	None Supplied	0.50-0.60	Brown loam and clay with gravel and clinker

Analytical Report Number : 21-82226

Project / Site name: Blackwell Farm, East Grinstead

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Complex cyanide in water	Determination of complex cyanide by calculation. Accredited matrices SW, PW, GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Electrical conductivity at 20oC of water	Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW	In-house method	L031-PL	W	ISO 17025
Free cyanide in water	Determination of free cyanide by distillation followed by colorimetry.Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Mineral Oil (Waters) C10 - C40	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
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
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025

Analytical Report Number : 21-82226

Project / Site name: Blackwell Farm, East Grinstead

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
PRO (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
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
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS.	In-house method based on USEPA 8270	L102B-PL	W	NONE
TPH1 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE
TPH2 (Waters)	Determination of hydrocarbons C6-C10 by headspace GC-MS. Accredited Matrices SW, PW, GW.	In-house method based on USEPA8260	L088-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total organic carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser. Accredited matrices: SW PW GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
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
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonia as NH3 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS

Analytical Report Number : 21-82226

Project / Site name: Blackwell Farm, East Grinstead

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonium as NH ₄ in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
DRO (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS
EF - Hexabromobiphenyl in soil by GC-Q	Hexabromobiphenyl by GC-Q	In-house method	UK	W	NONE
EF - Annex A POPs	Annex A POPs	In house method - Annex A POPs	UK	W	NONE
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Chloride in water	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025

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.

Sample Deviation Report



Analytical Report Number : 21-82226

Project / Site name: Blackwell Farm, East Grinstead

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH01	None Supplied	W	1910719	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH01	None Supplied	W	1910719	c	Ammonium as NH4 in water	L082-PL	c
BH01	None Supplied	W	1910719	c	Electrical conductivity at 20oC of water	L031-PL	c
BH01	None Supplied	W	1910719	c	pH at 20oC in water (automated)	L099-PL	c
WS12	None Supplied	W	1910720	c	Ammoniacal Nitrogen as N in water	L082-PL	c
WS12	None Supplied	W	1910720	c	Ammonium as NH4 in water	L082-PL	c
WS12	None Supplied	W	1910720	c	Electrical conductivity at 20oC of water	L031-PL	c
WS12	None Supplied	W	1910720	c	pH at 20oC in water (automated)	L099-PL	c



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Analytical Report Number : 21-82230

Project / Site name:	Blackwell Farm, East Grinstead	Samples received on:	21/06/2021
Your job number:	2006010 002	Samples instructed on/ Analysis started on:	21/06/2021
Your order number:		Analysis completed by:	02/07/2021
Report Issue Number:	1	Report issued on:	02/07/2021
Samples Analysed:	5 10:1 WAC samples		

Signed:

Joanna Wawrzeczko
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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Waste Acceptance Criteria Analytical Results							
Report No:	21-82230						
					Client: TWEEDIE		
Location	Blackwell Farm, East Grinstead						
Lab Reference (Sample Number)	1910738 / 1910739				Landfill Waste Acceptance Criteria		
					Limits		
Sampling Date	17/06/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	HDP01						
Depth (m)	0.60-0.70						
Solid Waste Analysis							
TOC (%)**	0.5				3%	5%	6%
Loss on Ignition (%) **	4.1				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	6.9				--	>6	--
Acid Neutralisation Capacity (mol / kg)	-0.91				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.0010			< 0.0100	0.5	2	25
Barium *	0.0037			0.0293	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0004			< 0.0040	0.5	10	70
Copper *	0.0072			0.057	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0007			0.0052	0.5	10	30
Nickel *	0.0028			0.022	0.4	10	40
Lead *	0.0015			0.012	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0095			0.076	4	50	200
Chloride *	1.9			15	800	15000	25000
Fluoride	0.15			1.2	10	150	500
Sulphate *	2.9			23	1000	20000	50000
TDS*	21			170	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	13.3			106	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.6						
Dry Matter (%)	87						
Moisture (%)	13						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.					** = UKAS accredited (liquid eluate analysis only)		
Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation					** = MCFETS accredited		

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

* = UKAS accredited (liquid eluate analysis only)

Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation

** = MCERTS accredited

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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Waste Acceptance Criteria Analytical Results							
Report No:	21-82230						
					Client: TWEEDIE		
Location	Blackwell Farm, East Grinstead						
Lab Reference (Sample Number)	1910742 / 1910743				Landfill Waste Acceptance Criteria		
					Limits		
Sampling Date	17/06/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	HDP03						
Depth (m)	0.40-0.50						
Solid Waste Analysis							
TOC (%)**	0.3				3%	5%	6%
Loss on Ignition (%) **	2.0				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	7.2				--	>6	--
Acid Neutralisation Capacity (mol / kg)	0.22				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.0010			< 0.0100	0.5	2	25
Barium *	0.0059			0.0514	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0010			0.0087	0.5	10	70
Copper *	0.0044			0.038	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	< 0.0004			< 0.0040	0.5	10	30
Nickel *	0.0021			0.018	0.4	10	40
Lead *	0.0015			0.013	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0068			0.059	4	50	200
Chloride *	2.1			19	800	15000	25000
Fluoride	0.36			3.2	10	150	500
Sulphate *	2.5			22	1000	20000	50000
TDS*	37			320	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	13.4			116	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2.0						
Dry Matter (%)	90						
Moisture (%)	10						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.					** = UKAS accredited (liquid eluate analysis only)		
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation					** = MCFETS accredited		

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

* = UKAS accredited (liquid eluate analysis only)

Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation

** = MCERTS accredited

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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Waste Acceptance Criteria Analytical Results									
Report No:		21-82230							
						Client: TWEEDIE			
Location		Blackwell Farm, East Grinstead							
Lab Reference (Sample Number)		1910744 / 1910745				Landfill Waste Acceptance Criteria			
						Limits			
Sampling Date		17/06/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID		HDP04							
Depth (m)		0.40-0.50							
Solid Waste Analysis									
TOC (%)**		0.3				3%	5%	6%	
Loss on Ignition (%) **		2.1				--	--	10%	
BTEX (µg/kg) **		< 10				6000	--	--	
Sum of PCBs (mg/kg) **		< 0.007				1	--	--	
Mineral Oil (mg/kg)		< 10				500	--	--	
Total PAH (WAC-17) (mg/kg)		7.29				100	--	--	
pH (units)**		7.0				--	>6	--	
Acid Neutralisation Capacity (mol / kg)		0.00				--	To be evaluated	To be evaluated	
Eluate Analysis		10:1			10:1	Limit values for compliance leaching test			
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)		mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)			
Arsenic *		< 0.0010			< 0.0100	0.5	2	25	
Barium *		0.0071			0.0600	20	100	300	
Cadmium *		< 0.0001			< 0.0008	0.04	1	5	
Chromium *		< 0.0004			< 0.0040	0.5	10	70	
Copper *		0.0035			0.030	2	50	100	
Mercury *		< 0.0005			< 0.0050	0.01	0.2	2	
Molybdenum *		0.0004			< 0.0040	0.5	10	30	
Nickel *		0.0021			0.018	0.4	10	40	
Lead *		0.0021			0.017	0.5	10	50	
Antimony *		< 0.0017			< 0.017	0.06	0.7	5	
Selenium *		< 0.0040			< 0.040	0.1	0.5	7	
Zinc *		0.0088			0.074	4	50	200	
Chloride *		1.8			15	800	15000	25000	
Fluoride		0.54			4.5	10	150	500	
Sulphate *		2.8			23	1000	20000	50000	
TDS*		41			350	4000	60000	100000	
Phenol Index (Monohydric Phenols) *		< 0.010			< 0.10	1	-	-	
DOC		10.2			85.5	500	800	1000	
Leach Test Information									
Stone Content (%)		< 0.1							
Sample Mass (kg)		2.0							
Dry Matter (%)		88							
Moisture (%)		12							
Results are expressed on a dry weight basis, after correction for moisture content where applicable.						** = UKAS accredited (liquid eluate analysis only)			
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation						** = MCFBTS accredited			

* = UKAS accredited (liquid eluate analysis only)

** = MCERTS accredited

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.

This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Analytical Report Number : 21-82230

Project / Site name: Blackwell Farm, East Grinstead

* 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 *
1910738	HDP01	None Supplied	0.60-0.70	Brown clay with vegetation.
1910740	HDP02	None Supplied	0.60-0.70	Brown clay and sand with vegetation.
1910742	HDP03	None Supplied	0.40-0.50	Brown clay and sand with vegetation.
1910744	HDP04	None Supplied	0.40-0.50	Brown clay and sand with vegetation.
1910746	HDP05	None Supplied	0.50-0.60	Brown loam and clay with gravel and clinker

Analytical Report Number : 21-82230

Project / Site name: Blackwell Farm, East Grinstead

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance""	L046-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated WAC-17 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. MCERTS accredited except Coronene.	L064-PL	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH at 20oC in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Total BTEX in soil (Poland)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073-PL	W	MCERTS
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by EC probe using a factor of 0.6.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	ISO 17025

Analytical Report Number : 21-82230

Project / Site name: Blackwell Farm, East Grinstead

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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



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Analytical Report Number : 21-86165

Project / Site name:	Blackwell Farm, East Grinstead	Samples received on:	12/07/2021
Your job number:	2006010.002	Samples instructed on/ Analysis started on:	12/07/2021
Your order number:		Analysis completed by:	19/07/2021
Report Issue Number:	1	Report issued on:	19/07/2021
Samples Analysed:	2 water samples		

Signed:

Joanna Wawrzeczko
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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



Analytical Report Number: 21-86165

Project / Site name: Blackwell Farm, East Grinstead

Lab Sample Number				1933686	1933687
Sample Reference				BH01	WS12
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				08/07/2021	08/07/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)				Units	Limit of detection Accreditation Status

General Inorganics

pH	pH Units	N/A	ISO 17025	6.7	6.8
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	980	840
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10
Complex Cyanide	µg/l	10	ISO 17025	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10
Sulphate as SO4	µg/l	45	ISO 17025	17700	1390
Sulphide	µg/l	5	NONE	< 5.0	< 5.0
Chloride	mg/l	0.15	ISO 17025	13	14
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	17000	9400
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	11.9	5.53

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	3.58	< 0.01
Fluorene	µg/l	0.01	ISO 17025	2.79	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	3.94	< 0.01
Anthracene	µg/l	0.01	ISO 17025	0.52	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	0.88	< 0.01
Pyrene	µg/l	0.01	ISO 17025	0.57	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	12.3	< 0.16
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Analytical Report Number: 21-86165

Project / Site name: Blackwell Farm, East Grinstead

Lab Sample Number				1933686	1933687
Sample Reference				BH01	WS12
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				08/07/2021	08/07/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Boron (dissolved)	µg/l	10	ISO 17025	360	290
Calcium (dissolved)	mg/l	0.012	ISO 17025	190	200
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0
Iron (dissolved)	mg/l	0.004	ISO 17025	1.1	0.57
Magnesium (dissolved)	mg/l	0.005	ISO 17025	14	9.9
Phosphorus (dissolved)	µg/l	20	ISO 17025	22.0	< 20.0
Potassium (dissolved)	mg/l	0.025	ISO 17025	9.6	7.0
Sodium (dissolved)	mg/l	0.01	ISO 17025	45	14

Antimony (dissolved)	µg/l	0.4	ISO 17025	0.7	0.4
Arsenic (dissolved)	µg/l	0.15	ISO 17025	6.77	0.49
Barium (dissolved)	µg/l	0.06	ISO 17025	380	330
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	12	8.5
Cobalt (dissolved)	µg/l	0.2	ISO 17025	5.9	1.1
Copper (dissolved)	µg/l	0.5	ISO 17025	1.1	4.0
Lead (dissolved)	µg/l	0.2	ISO 17025	0.3	1.1
Manganese (dissolved)	µg/l	0.05	ISO 17025	1800	1100
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05
Molybdenum (dissolved)	µg/l	0.05	ISO 17025	4.5	3.8
Nickel (dissolved)	µg/l	0.5	ISO 17025	11	3.1
Selenium (dissolved)	µg/l	0.6	ISO 17025	0.8	< 0.6
Tin (dissolved)	µg/l	0.2	ISO 17025	0.38	< 0.20
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	15	9.9

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0



Analytical Report Number: 21-86165

Project / Site name: Blackwell Farm, East Grinstead

Lab Sample Number				1933686	1933687
Sample Reference				BH01	WS12
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				08/07/2021	08/07/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

Petroleum Hydrocarbons

Mineral Oil (C10 - C40)	µg/l	10	NONE	< 10.0	< 10.0
Diesel Range Organics (C10 - C25)	µg/l	10	NONE	12	< 10

TPH1 (C10 - C40)	µg/l	10	NONE	12	< 10
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TPH2 (C6 - C10)	µg/l	10	ISO 17025	< 10	< 10
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TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10

VOCs

Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0



Analytical Report Number: 21-86165

Project / Site name: Blackwell Farm, East Grinstead

Lab Sample Number				1933686	1933687
Sample Reference				BH01	WS12
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				08/07/2021	08/07/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0

SVOCs

Aniline	µg/l	0.05	NONE	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05



Analytical Report Number: 21-86165
Project / Site name: Blackwell Farm, East Grinstead

Lab Sample Number				1933686	1933687
Sample Reference				BH01	WS12
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				08/07/2021	08/07/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	3.6	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	1.7	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	2.8	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	3.9	< 0.01
Anthracene	µg/l	0.01	ISO 17025	0.52	< 0.01
Carbazole	µg/l	0.05	NONE	1.2	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	0.88	< 0.01
Pyrene	µg/l	0.01	ISO 17025	0.57	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
3&4-Methylphenol	µg/l	0.1	NONE	< 0.10	< 0.10

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

Analytical Report Number : 21-86165

Project / Site name: Blackwell Farm, East Grinstead

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 *for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Complex cyanide in water	Determination of complex cyanide by calculation. Accredited matrices SW, PW, GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 dphenylcarbazine followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Electrical conductivity at 20oC of water	Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW	In-house method	L031-PL	W	ISO 17025
Free cyanide in water	Determination of free cyanide by distillation followed by colorimetry.Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Mineral Oil (Waters) C10 - C40	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS.	In-house method based on USEPA 8270	L102B-PL	W	NONE
TPH1 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE
TPH2 (Waters)	Determination of hydrocarbons C6-C10 by headspace GC-MS. Accredited Matrices SW, PW. GW.	In-house method based on USEPA8260	L088-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025



Analytical Report Number : 21-86165

Project / Site name: Blackwell Farm, East Grinstead

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total organic carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser. Accredited matrices: SW PW GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonium as NH ₄ in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
DRO (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
Chloride in water	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025

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.

Sample Deviation Report



Analytical Report Number : 21-86165

Project / Site name: Blackwell Farm, East Grinstead

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
BH01	None Supplied	W	1933686	c	Ammoniacal Nitrogen as N in water	L082-PL	c
BH01	None Supplied	W	1933686	c	Ammonium as NH4 in water	L082-PL	c
BH01	None Supplied	W	1933686	c	Electrical conductivity at 20oC of water	L031-PL	c
BH01	None Supplied	W	1933686	c	pH at 20oC in water (automated)	L099-PL	c
WS12	None Supplied	W	1933687	c	Ammoniacal Nitrogen as N in water	L082-PL	c
WS12	None Supplied	W	1933687	c	Ammonium as NH4 in water	L082-PL	c
WS12	None Supplied	W	1933687	c	Electrical conductivity at 20oC of water	L031-PL	c
WS12	None Supplied	W	1933687	c	pH at 20oC in water (automated)	L099-PL	c

Appendix B

Generic Quantitative Risk Assessment – Controlled Waters

Blackwell Farm, East Grinstead
Generic Quantitative Risk Assessment: Controlled Waters – Groundwater Analysis



Contaminant	BH01					WS12				
	Max (µg/l)	Min (µg/l)	No. of Tests	GAC (µg/l)	No. of Exceedances	Max (µg/l)	Min (µg/l)	No. of Tests	GAC (µg/l)	No. of Exceedances
pH	6.9	6.7	2	-	-	6.9	6.8	2	-	-
Cyanide (Total)	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	5 ⁽²⁾	0	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	5 ⁽²⁾	0
Sulphate as SO ₄	17700	17400	2	400000 ⁽¹⁾	0	6120	1390	2	400000 ⁽¹⁾	0
Ammoniacal Nitrogen (NH ₄)	17000	7400	2	500 ⁽⁶⁾	2	11000	9400	2	500 ⁽⁶⁾	2
Total Phenols	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	46 ⁽²⁾	0	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	46 ⁽²⁾	0
Naphthalene	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	130 ⁽²⁾	0	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	130 ⁽²⁾	0
Acenaphthylene	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	-	-	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	-	-
Acenaphthene	3.58	1.29	2	-	-	0.35	<0.01 ⁽¹⁰⁾	2	-	-
Fluorene	2.79	0.95	2	-	-	0.28	<0.01 ⁽¹⁰⁾	2	-	-
Phenanthrene	3.94	0.81	2	-	-	0.44	<0.01 ⁽¹⁰⁾	2	-	-
Anthracene	0.52	<0.01 ⁽¹⁰⁾	2	0.1 ⁽²⁾	1	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	0.1 ⁽²⁾	0
Fluoranthene	0.88	0.39	2	0.12 ⁽³⁾	2	0.54	<0.01 ⁽¹⁰⁾	2	0.12 ⁽³⁾	1
Pyrene	0.57	0.28	2	-	-	0.44	<0.01 ⁽¹⁰⁾	2	-	-
Benzo(a)anthracene	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	-	-	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	-	-
Chrysene	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	-	-	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	-	-
Benzo(b)fluoranthene	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	0.017 ⁽²⁾	0	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	0.017 ⁽²⁾	0
Benzo(k)fluoranthene	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	0.017 ⁽²⁾	0	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	0.017 ⁽²⁾	0
Benzo(a)pyrene	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	0.27 ⁽²⁾	0	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	0.27 ⁽²⁾	0
Indeno(1,2,3-cd)pyrene	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	-	-	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	-	-
Dibenz(a,h)anthracene	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	-	-	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	-	-
Benzo(g,h,i)perylene	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	0.0082 ⁽²⁾	-	<0.01 ⁽¹⁰⁾	<0.01 ⁽¹⁰⁾	2	0.0082 ⁽²⁾	-
Arsenic	6.77	0.82	2	50 ⁽¹⁾	0	0.86	0.49	2	50 ⁽¹⁾	0
Boron	360	310	2	2000 ⁽¹⁾	0	300	290	2	2000 ⁽¹⁾	0
Cadmium	<0.02 ⁽¹⁰⁾	<0.02 ⁽¹⁰⁾	2	0.6 ⁽³⁾	0	0.08	<0.02 ⁽¹⁰⁾	2	0.6 ⁽³⁾	0
Chromium	12	1.6	2	32 ⁽²⁾	0	8.5	1.7	2	32 ⁽²⁾	0
Copper	1.3	1.1	2	1 ⁽⁴⁾ /33.7 ⁽⁵⁾	2 / 0	7.9	4.0	2	1 ⁽⁴⁾ /33.7 ⁽⁵⁾	2 / 0
Lead	0.3	<0.2 ⁽¹⁰⁾	2	1.2 ⁽⁴⁾	0	1.1	0.4	2	1.2 ⁽⁴⁾	0
Mercury	<0.05 ⁽¹⁰⁾	<0.05 ⁽¹⁰⁾	2	0.07 ⁽²⁾	0	<0.05 ⁽¹⁰⁾	<0.05 ⁽¹⁰⁾	2	0.07 ⁽²⁾	0
Nickel	11	6.3	2	34 ⁽²⁾	0	3.3	3.1	2	34 ⁽²⁾	0
Selenium	0.9	0.8	2	10 ⁽¹⁰⁾	0	<0.6 ⁽¹⁰⁾	<0.6 ⁽¹⁰⁾	2	10 ⁽¹⁰⁾	0
Zinc	15	9.8	2	10.9 ⁽⁴⁾ /47.2 ⁽⁵⁾	1 / 0	570	9.9	2	10.9 ⁽⁴⁾ /47.2 ⁽⁵⁾	1 / 0
Beryllium	<0.1 ⁽¹⁰⁾	<0.1 ⁽¹⁰⁾	2	-	-	<0.1 ⁽¹⁰⁾	<0.1 ⁽¹⁰⁾	2	-	-
Vanadium	<0.2 ⁽¹⁰⁾	<0.2 ⁽¹⁰⁾	2	20 ⁽³⁾	0	<0.2 ⁽¹⁰⁾	<0.2 ⁽¹⁰⁾	2	20 ⁽³⁾	0
Barium	380	180	2	700 ⁽¹⁰⁾	0	330	260	2	700 ⁽¹⁰⁾	0
Diesel Range Organics (C10 – C25)	12	<10 ⁽¹⁰⁾	2	-	-	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	-	-
TPH Aliphatic C5-C6	<1.0 ⁽¹⁰⁾	<1.0 ⁽¹⁰⁾	2	15000 ⁽¹⁰⁾	0	<1.0 ⁽¹⁰⁾	<1.0 ⁽¹⁰⁾	2	15000 ⁽¹⁰⁾	0
TPH Aliphatic C6-C8	<1.0 ⁽¹⁰⁾	<1.0 ⁽¹⁰⁾	2	15000 ⁽¹⁰⁾	0	<1.0 ⁽¹⁰⁾	<1.0 ⁽¹⁰⁾	2	15000 ⁽¹⁰⁾	0
TPH Aliphatic C8-C10	<1.0 ⁽¹⁰⁾	<1.0 ⁽¹⁰⁾	2	300 ⁽¹⁰⁾	0	<1.0 ⁽¹⁰⁾	<1.0 ⁽¹⁰⁾	2	300 ⁽¹⁰⁾	0
TPH Aliphatic C10-C12	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	300 ⁽¹⁰⁾	0	<1.0 ⁽¹⁰⁾	<1.0 ⁽¹⁰⁾	2	300 ⁽¹⁰⁾	0
TPH Aliphatic C12-C16	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	300 ⁽¹⁰⁾	0	<1.0 ⁽¹⁰⁾	<1.0 ⁽¹⁰⁾	2	300 ⁽¹⁰⁾	0
TPH Aliphatic C16-C21	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	300 ^(8,9)	0	<1.0 ⁽¹⁰⁾	<1.0 ⁽¹⁰⁾	2	300 ^(8,9)	0
TPH Aliphatic C21-C35	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	300 ^(8,9)	0	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	300 ^(8,9)	0
TPH Aliphatic (C5-C35)	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	-	-	<1.0 ⁽¹⁰⁾	<1.0 ⁽¹⁰⁾	2	-	-



Blackwell Farm, East Grinstead
Generic Quantitative Risk Assessment: Controlled Waters – Groundwater Analysis

Contaminant	BH01					WS12				
	Max (µg/l)	Min (µg/l)	No. of Tests	GAC (µg/l)	No. of Exceedances	Max (µg/l)	Min (µg/l)	No. of Tests	GAC (µg/l)	No. of Exceedances
TPH Aromatic C5-C6 (benzene)	<1.0 ⁽¹⁰⁾	<1.0 ⁽¹⁰⁾	2	1 ⁽¹⁰⁾	0	<1.0 ⁽¹⁰⁾	<1.0 ⁽¹⁰⁾	2	1 ⁽¹⁰⁾	-
TPH Aromatic C6-C8 (toluene)	<1.0 ⁽¹⁰⁾	<1.0 ⁽¹⁰⁾	2	700 ⁽¹⁰⁾	0	<1.0 ⁽¹⁰⁾	<1.0 ⁽¹⁰⁾	2	700 ⁽¹⁰⁾	0
TPH Aromatic C8-C10 (ethylbenzene)	<1.0 ⁽¹⁰⁾	<1.0 ⁽¹⁰⁾	2	300 ⁽¹⁰⁾	0	<1.0 ⁽¹⁰⁾	<1.0 ⁽¹⁰⁾	2	300 ⁽¹⁰⁾	0
TPH Aromatic C10-C12	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	100 ⁽¹⁰⁾	0	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	100 ⁽¹⁰⁾	0
TPH Aromatic C12-C16	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	100 ⁽¹⁰⁾	0	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	100 ⁽¹⁰⁾	0
TPH Aromatic C16-C21	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	90 ⁽¹⁰⁾	0	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	90 ⁽¹⁰⁾	0
TPH Aromatic C21-C35	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	90 ⁽¹⁰⁾	0	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	90 ⁽¹⁰⁾	0
TPH Aromatic (C5 – C35)	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	-	-	<10 ⁽¹⁰⁾	<10 ⁽¹⁰⁾	2	-	-

Notes:

- 1 EQS, Annual Average (AA) – Freshwaters
- 2 EQS, Maximum Allowable Concentration (MAC) - Freshwaters
- 3 EGS – Maximum Allowable Concentration (MAC) - Freshwaters calcium carbonate Class 3 (50-<100mg/l CaCO₃) – based on Southeast Water reported hardness of 86mg/l for site area
- 4 EQS- Annual Average (AA) – Freshwaters – Bioavailable
- 5 Water Framework Directive, UK TAG, Metal Bioavailability Assessment Tool (M-BAT) – Site Specific Derived PNEC (average pH of 6.8, DOC of 15mg/l (maximum validated range for laboratory analytical results of average TOC), and Ca of 86mg/l)
- 6 Water Supply (Water Quality Regulations) 2018 - Drinking Water Standards (DWS)
- 7 World Health Organisation (WHO) Guidelines for Drinking Water Quality (2017)
- 8 WHO Petroleum Products in Drinking Water, 2008
- 9 There are no WHO guideline values for aliphatic fractions C16-C35 and therefore, guideline values for aliphatic fractions C8-C16 have been applied.
- 10 Laboratory Limit of Detection

Appendix C

Ground Gas Monitoring Data Sheets

Ground Gas Monitoring Results



Project:	Blackwell Farm, East Grinstead	Gas analyser:	GFM430	Preceding Weather Conditions		On-site weather conditions	General Site Conditions / Ground Conditions / On-site Activities
Project Number:	2006010.002	Condition:	Calibrated	Atmospheric trend:	Falling (1015mb - 995mb)	Overcast / Intermittent showers	Generally wet
Location:	East Grinstead	Well Diameter:	35mm	Temperature range:	14°C - 23°C		
Test Date:	17/06/2021	Wellhead Condition:	Good	Rainfall:	10.4mm		

GAS MONITORING TO BE UNDERTAKEN IN ACCORDANCE WITH TEC METHOD STATEMENT

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level (m)	Borehole Depth (m)	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref: WS11	0	0.0	0	0.0	0.0	20.5	0	0	0	Dry	3.95	No sample taken.
	15	0.0	0	0.0	3.1	17.0	0	0	0			
Time: 11:00	30	0.0	0	0.0	4.4	15.7	0	0	0			
	45	0.0	0	0.0	5.2	14.6	0	0	0			
Atmospheric pressure (mb) before: 996	60	0.0	0	0.0	5.5	13.9	0	0	0			
	120	0.0	0	0.0	7.1	11.9	0	0	0			
	180	0.0	0	0.0	8.3	10.4	0	0	0			
Atmospheric preassure (mb) after: 995	240			0.0	9.2	9.9	0	0	0.0			
	300			0.0	9.6	9.8	0	0	0.0			
Well Condition: Good												
Well Diameter: 35mm												

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref: WS12	0	0.0	0	0.0	0.0	19.3	0.0	0	0	1.66	3.50	Grey silt at base. Sample taken: 2 x 250ml and 2 x 60ml
	15	0.0	0	0.0	12.4	3.6	0.7	0	0			
Time: 12:10	30	0.0	0	0.0	12.7	0.4	0.8	0	0			
	45	0.0	0	0.0	12.8	0.1	0.7	0	0			
Atmospheric pressure (mb) before: 996	60	0.0	0	0.0	12.9	0.1	0.5	0	0			
	120	0.0	0	0.0	13.0	0.0	0.0	0	0			
	180	0.0	0	0.0	13.1	0.0	0.0	0	0			
Atmospheric preassure (mb) after: 997	240			0.0	13.2	0.0	0.0	0	0			
	300											
Well Condition: Good												
Well Diameter: 35mm												

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref: BH01	0	0.0	0	0.0	0.0	20.3	0.0	0	0	1.90	4.00	Grey silt at base. Sample taken: 2 x 250ml and 2 x 60ml
	15	0.0	0	0.0	10.5	8.3	0.0	0	0			
Time: 12: 40	30	0.0	0	0.0	11.8	6.3	0.0	0	0			
	45	0.0	0	0.0	12.9	4.1	0.0	0	0			
Atmospheric pressure (mb) before: 996	60	0.0	0	0.0	13.4	3.3	0.0	0	0			
	120	0.0	0	0.0	14.2	2.5	0.0	0	0			
	180	0.0	0	0.0	14.6	2.0	0.0	0	0			
Atmospheric preassure (mb) after: 997	240			0.0	14.5	2.0	0.0	0	0			
	300											
Well Condition: Good												
Well Diameter: 35mm												

Ground Gas Monitoring Results



Project:	Blackwell Farm, East Grinstead	Gas analyser:	GFM430	Preceding Weather Conditions		On-site weather conditions	General Site Conditions / Ground Conditions / On-site Activities
Project Number:	2006010.002	Condition:	Calibrated	Atmospheric trend:	Rising (1005mb - 1020mb)	Overcast / Light drizzle	Dry
Location:	East Grinstead	Well Diameter:	35mm	Temperature range:	13°C - 20°C		
Test Date:	08/07/2021	Wellhead Condition:	Good	Rainfall:	1.84mm		

GAS MONITORING TO BE UNDERTAKEN IN ACCORDANCE WITH TEC METHOD STATEMENT

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level (m)	Borehole Depth (m)	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref: WS11	0	0.1	0	0.0	0.0	20.4	0	0	0	Dry	3.95	No sample taken.
	15	0.3	0	0.0	12.6	5.1	0	0	0			
Time: 09:30	30	0.1	0	0.0	13.6	1.5	0	0	0			
	45	0.3	0	0.0	13.7	1.1	0	0	0			
Atmospheric pressure (mb) before: 1006	60	0.0	0	0.0	13.8	1.0	0	0	1			
	120	0.1	0	0.0	14.0	0.6	0	0	0			
	180	0.0	0	0.0	14.2	0.3	0	0	1			
	240			0.0	14.3	0.2	0	0	0			
Atmospheric preassure (mb) after: 1006	300			0.0	14.3	0.1	0	0	0			
Well Condition: Good												
Well Diameter: 35mm												

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref: WS12	0	0.0	0	0.0	0.0	20.2	0.0	0	0	1.65	3.50	Grey silt at base. Sample taken: 2 x 250ml and 2 x 60ml
	15	0.0	0	0.5	14.0	2.4	11.9	0	1			
Time: 09:55	30	0.0	0	0.6	14.1	0.0	13.8	0	0			
	45	0.0	0	0.6	14.2	0.0	14.9	0	0			
Atmospheric pressure (mb) before: 1006	60	0.0	0	0.6	14.3	0.0	15.6	0	1			
	120	0.0	0	0.7	14.3	0.0	16.6	0	1			
	180	0.0	0	0.7	14.4	0.0	16.8	0	0			
	240			0.7	14.4	0.0	17.2	0	0			
Atmospheric preassure (mb) after: 1006	300											
Well Condition: Good												
Well Diameter: 35mm												

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref: BH01	0	0.0	0	0.0	0.0	20.2	0.0	0	0	1.91	4.00	Grey silt at base. Sample taken: 2 x 250ml and 2 x 60ml
	15	0.0	0	0.0	15.4	2.2	0.0	0	0			
Time: 10:15	30	0.0	0	0.0	15.7	0.5	0.0	0	0			
	45	0.0	0	0.0	15.9	0.3	0.0	0	0			
Atmospheric pressure (mb) before: 1006	60	0.0	0	0.0	16.0	0.2	0.0	0	0			
	120	0.0	0	0.0	16.2	0.2	0.0	0	0			
	180	0.0	0	0.0	16.1	0.2	0.0	0	0			
	240			0.0	16.0	0.2	0.0	0	0			
Atmospheric preassure (mb) after: 1005	300											
Well Condition: Good												
Well Diameter: 35mm												

Ground Gas Monitoring Results



Project:	Blackwell Farm, East Grinstead	Gas analyser:	GFM430	Preceding Weather Conditions		On-site weather conditions	General Site Conditions / Ground Conditions / On-site Activities
Project Number:	2006010.002	Condition:	Calibrated	Atmospheric trend:	Stable (1020mb - 1024mb)	Sunny, clear skies	Dry
Location:	East Grinstead	Well Diameter:	35mm	Temperature range:	16°C - 31°C		
Test Date:	20/07/2021	Wellhead Condition:	Good	Rainfall:	3mm		

GAS MONITORING TO BE UNDERTAKEN IN ACCORDANCE WITH TEC METHOD STATEMENT

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level (m)	Borehole Depth (m)	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref: WS11	0	0.0	0	0.0	0.0	20.7	0	0	0	Dry	3.95	No sample taken.
	15	0.0	0	0.0	13.2	3.5	0	0	1			
Time: 09:35	30	0.0	0	0.0	13.4	1.9	0	0	0			
	45	0.0	0	0.0	13.6	1.6	0	0	0			
Atmospheric pressure (mb) before: 1007	60	0.0	0	0.0	13.7	1.4	0	0	0			
	120	0.0	0	0.0	14.0	1.0	0	0	0			
	180	0.0	0	0.0	14.3	0.7	0	0	1			
Atmospheric preassure (mb) after: 1006	240			0.0	14.4	0.6	0	0	0			
	300			0.0	14.4	0.7	0	0	0			
Well Condition: Good												
Well Diameter: 35mm												

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref: WS12	0	0.0	0	0.0	0.0	20.4	0.0	0	0	1.69	3.50	Grey silt at base. No sample taken.
	15	0.0	0	0.2	13.5	2.5	4.4	0	0			
Time: 09:50	30	0.0	0	0.2	13.9	0.2	5.7	0	0			
	45	0.0	0	0.2	14.1	0.0	6.6	0	0			
Atmospheric pressure (mb) before: 1006	60	0.0	0	0.3	14.2	0.0	7.4	0	0			
	120	0.0	0	0.3	14.4	0.0	8.2	0	1			
	180	0.0	0	0.3	14.4	0.0	8.5	0	0			
Atmospheric preassure (mb) after: 1007	240			0.3	14.4	0.0	8.6	0	0			
	300			0.3	14.4	0.0	8.6	0	0.0			
Well Condition: Good												
Well Diameter: 35mm												

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref: BH01	0	0.0	0	0.0	0.0	20.4	0.0	0	0	1.88	4.00	Grey silt at base. No sample taken.
	15	0.0	0	0.0	15.1	3.8	0.0	0	0			
Time: 10:05	30	0.0	0	0.0	15.4	1.1	0.0	0	0			
	45	0.0	0	0.0	15.7	0.9	0.0	0	0			
Atmospheric pressure (mb) before: 1007	60	0.0	0	0.0	15.9	0.8	0.0	0	0			
	120	0.0	0	0.0	16.1	0.6	0.0	0	0			
	180	0.0	0	0.0	16.2	0.6	0.0	0	0			
Atmospheric preassure (mb) after: 1007	240			0.0	16.2	0.7	0.0	0	0			
	300											
Well Condition: Good												
Well Diameter: 35mm												

Appendix D

Exploratory Hole Logs



Trial Pit Log

Trialpit No
HDP01

Sheet 1 of 1

Project Name: Blackwell Farm, East Grinstead

Project No.
2006010.002

Co-ords: 539705.00 - 138844.00
Level: mbgl

Date
17/06/2021

Location: East Grinstead

Dimensions:
Inclination: °

0.40m

Orientation: °
Depth: 0.8m

0.40m

Scale
1:10

Logged
RK

Client: W. Stirland Ltd

Water Strike	Samples and In Situ Testing				Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results	Information					
					0.23			MADE GROUND: Brown slightly sandy slightly gravelly very silty clay. Gravel is red brick, wood, porcelain fragments, plastic and clinker. <u>Frequent rootlets to 0.14m</u>	
	0.60 - 0.70	1ES			0.75			MADE GROUND: Light brown mottled yellowish brown and brown slightly gravelly silty clay. Gravel is coal, clinker, red tile, weakly cemented silt and porcelain fragments.	
								End of pit at 0.8 m	

1

2

Remarks: Inspection pit remained dry.

Stability: Stable.





Trial Pit Log

Trialpit No
HDP02

Sheet 1 of 1

Project Name: Blackwell Farm, East Grinstead

Project No.
2006010.002

Co-ords: 539726.00 - 138826.00
Level: mbgl

Date
17/06/2021

Location: East Grinstead

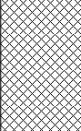
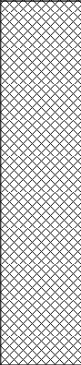
Dimensions:
Inclination: ° 0.40m

Client: W. Stirland Ltd

Orientation: °
Depth: 0.8m

Scale
1:10

Logged
RK

Water Strike	Samples and In Situ Testing				Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results	Information					
					0.18			MADE GROUND: Brown slightly gravelly slightly clayey silt. Gravel is weakly cemented silt, clinker and red brick. <i>Frequent rootlets to 0.13m</i>	
					0.27			MADE GROUND: Off-white and light brown silty gravel with medium cobble content. Gravels and cobbles are weakly cemented silt.	
					0.75			MADE GROUND: Light brown, yellowish brown and grey slightly gravelly clayey silt. Gravel is weakly cemented silt.	
	0.60 - 0.70	1ES						End of pit at 0.8 m	

1

2

Remarks: Inspection pit remained dry.

Stability: Stable.





Trial Pit Log

Trialpit No
HDP03

Sheet 1 of 1

Project Name: Blackwell Farm, East Grinstead

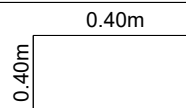
Project No.
2006010.002

Co-ords: 539739.00 - 138816.00
Level: mbgl

Date
17/06/2021

Location: East Grinstead

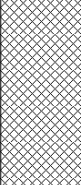
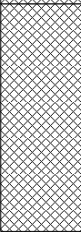
Dimensions:
Inclination: °
Orientation: °
Depth: 0.6m



Scale
1:10

Client: W. Stirland Ltd

Logged
RK

Water Strike	Samples and In Situ Testing				Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results	Information				
	0.40 - 0.50	1ES			0.25			MADE GROUND: Brown slightly gravelly clayey silt. Gravel is red tile, red brick and weakly cemented silt. <u>Frequent rootlets to 0.14m</u>
					0.55			POTENTIAL MADE GROUND: Grey mottled yellowish brown and light brown slightly clayey very gravelly silt with occasional oxidised pyrite nodules. Gravel is fine to medium subangular to rounded flint.
								End of pit at 0.6 m

1

2

Remarks: Inspection pit remained dry.

Stability: Stable.





Trial Pit Log

Trialpit No
HDP04

Sheet 1 of 1

Project Name:	Blackwell Farm, East Grinstead
---------------	--------------------------------

Project No.
2006010.002

Co-ords:	539741.00 - 138796.00
Level:	mbql

17/06/2021

Location: East Grinstead

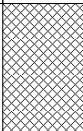
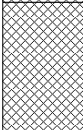
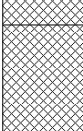
Dimensions:	0.40m
Inclination: °	30

Scale

Client: W. Stirland Ltd

Orientation: °
Depth: 0.6m

Logged
RK

Water Strike	Samples and In Situ Testing				Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results	Information				
	0.40 - 0.50	1ES			0.17			MADE GROUND: Brown slightly gravelly silty clay. Gravel is red brick, weakly cemented silt and flint.
								MADE GROUND: Brown and grey slightly sandy gravelly clay. Gravel is red brick, weakly cemented silt, flint clinker and charcoal. <u>Frequent rootlets to 0.22m</u>
								<u>Rare rootlets to 0.35m</u> MADE GROUND: Light brown, yellowish brown and brown slightly clayey gravelly silt. Gravel is concrete, clinker, weakly cemented silt and rare bone.
								
					0.55		----- End of pit at 0.6 m	

Remarks:	Inspection pit remained dry.
----------	------------------------------

Stability: Stable.





Trial Pit Log

Trialpit No
HDP05

Sheet 1 of 1

Project Name: Blackwell Farm, East Grinstead

Project No.
2006010.002

Co-ords: 539718.00 - 138781.00
Level: mbgl

Date
17/06/2021

Location: East Grinstead

Dimensions: 0.40m
Inclination: °
Orientation: °
Depth: 0.9m



Scale
1:10

Client: W. Stirland Ltd

Logged
RK

Water Strike	Samples and In Situ Testing				Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results	Information					
					0.15			MADE GROUND: Brown slightly gravelly silty clay. Gravel is flint and weakly cemented silt.	
								<i>Frequent rootlets to 0.14m</i>	
					0.48			MADE GROUND: Brownish grey, greyish brown and yellowish brown slightly gravelly silty clay. Gravel is clinker, flint and weakly cemented silt.	
	0.50 - 0.60	1ES							
					0.90			MADE GROUND: Dark grey and black gravel. Gravel is abundant clinker with rare porcelain fragments, glass and metal screws.	
								<i>Increasing porcelain and glass fragments from 0.75m</i>	
								<i>Becoming more orangish brown from 0.78m</i>	
								End of pit at 0.9 m	

1

2

Remarks: Inspection pit remained dry.

Stability: Stable.





Borehole Log

Borehole No.

BH01

Sheet 1 of 2

Project Name: Blackwell Farm

Project No.
2060010.001

Co-ords: -

Hole Type
CP

Location: East Grinstead

Level: mbgl

Scale
1:50

Client: W Stirland Ltd

Dates: 21/10/2020 - 22/10/2020

Logged By
GM

Well	Water Strikes	Samples and In Situ Testing				Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results	Information					
						0.10			MADE GROUND: Brown to dark brown sandy very silty CLAY. MADE GROUND: Brown to dark brown sandy gravelly clay. Gravel of flint, clinker, concrete, red brick and sandstone.	
		1.20	S	N=2 (1,1/1,0,0,1)					PID at 1.6mbgl = 32.4ppm	1
		2.10	S	N=2 (2,1/1,1,0,0)					PID at 2.1mbgl = 54.8ppm	2
		3.00	S	N=4 (1,1/1,1,1,1)						3
		4.00	S	N=29 (3,3/5,6,7,11)		3.20			POTENTIAL MADE GROUND: brown to dark blue grey silty very clayey fine sand with decayed roots and localised pockets of peat. A faint hydrocarbon odour and black staining were recorded between 3.2mbgl and 4.00mbgl.	4
		5.00	S	N=27 (2,4/5,6,8,8)		4.20			POTENTIAL MADE GROUND: dark blue grey very silty clay with localised pockets of peat.	5
		6.50	S	N=32 (3,5/6,8,8,10)		5.50			Medium dense becoming dense light brown to grey brown silty gravelly very clayey fine to medium SAND. Gravel of fine to medium subrounded flint.	6
		8.00	S	50 (7,12/50 for 175mm)		7.50			Stiff dark grey slightly sandy clayey SILT.	8
		9.50	S	N=44 (5,6/8,12,12,12)						9
										10

Continued on next sheet

Remarks

No groundwater was recorded during drilling. Borehole terminated at 10.8mbgl due to effective refusal.





Borehole Log

Borehole No.

BH01

Sheet 2 of 2

Project Name: Blackwell Farm

Project No.
2060010.001

Co-ords: -

Hole Type
CP

Location: East Grinstead

Level: mbgl

Scale
1:50

Client: W Stirland Ltd

Dates: 21/10/2020 - 22/10/2020

Logged By
GM

Well	Water Strikes	Samples and In Situ Testing				Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results	Information					
		10.50	S	50 (6,7/50 for 205mm)		10.80				
									End of borehole at 10.8 m	11
										12
										13
										14
										15
										16
										17
										18
										19
										20

Remarks

No groundwater was recorded during drilling. Borehole terminated at 10.8mbgl due to effective refusal.





Borehole Log

Borehole No.

BH02

Sheet 1 of 2

Project Name: Blackwell Farm

Project No.
2060010.001

Co-ords: -

Hole Type
CP

Location: East Grinstead

Level: mbgl

Scale
1:50

Client: W Stirland Ltd

Dates: 22/10/2020 - 23/10/2020

Logged By
GM

Well	Water Strikes	Samples and In Situ Testing				Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results	Information					
						0.10			MADE GROUND: Brown to dark brown silty very sandy clay with roots and rootlets.	
						0.50			MADE GROUND: Brown to dark brown silty very gravelly clay. Gravel of flint and red brick.	
		1.20	S	N=6 (2,2/2,1,1,2)					MADE GROUND: Brown to orange brown slightly silty gravelly very sandy clay. Gravel of flint, concrete and red brick.	1
		2.10	S	N=5 (3,2/2,1,1,1)		2.10			POTENTIAL MADE GROUND: dark brown to dark blue grey silty very clayey sand. A strong organic odour was recorded.	2
		3.00	S	N=2 (1,1/0,0,1,1)						3
		4.00	S	N=14 (1,2/2,2,3,7)						4
		5.00	C	N=50 (3,8/50 for 235mm)	Casing=5.00m	4.50			Very dense light grey to green grey silty clayey very gravelly fine to coarse SAND. Gravel of fine to coarse subangular to rounded flint.	5
		6.50	C	50 (25 for 115mm/50 for 175mm)	Casing=6.50m					6
		7.80	S	50 (8,16/50 for 160mm)		7.00			Stiff greenish brown sandy silty CLAY with rare fine gravel of subangular flint.	7
		8.50	S	N=30 (3,4/5,7,9,9)						8
						9.00			Dense light grey to dark grey very silty fine to coarse SAND and fine to coarse subangular to subrounded flint and sandstone GRAVEL.	9
										10

Continued on next sheet

Remarks

No groundwater was recorded during drilling. Borehole was terminated at a depth of 11.5mbgl due to effective refusal.





Borehole Log

Borehole No.

BH02

Sheet 2 of 2

Project Name: Blackwell Farm

Project No.
2060010.001

Co-ords: -

Hole Type
CP

Location: East Grinstead

Level: mbgl

Scale
1:50

Client: W Stirland Ltd

Dates: 22/10/2020 - 23/10/2020

Logged By
GM

Well	Water Strikes	Samples and In Situ Testing				Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results	Information					
		10.00	S	N=50 (5,8/50 for 255mm)						
		11.20	S	N=51 (9,9/51 for 250mm)		11.50				11
									End of borehole at 11.5 m	12
										13
										14
										15
										16
										17
										18
										19
										20

Remarks

No groundwater was recorded during drilling. Borehole was terminated at a depth of 11.5mbgl due to effective refusal.





Borehole Log

Borehole No.

WS11

Sheet 1 of 1

Project Name: Blackwell Farm

Project No.
2060010.001

Co-ords: -

Hole Type
WS

Location: East Grinstead

Level: mbgl

Scale
1:33

Client: W Stirland Ltd

Dates: 21/10/2020 - 21/10/2020

Logged By
GM

Well	Water Strikes	Samples and In Situ Testing				Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results	Information					
		0.10				0.10			MADE GROUND: brown to dark brown silty very sandy clay with occasional roots and rootlets. MADE GROUND: brown to dark brown very silty clayey gravelly sand. Gravel of flint, red brick, ceramics and concrete. Localised pockets of peat was recorded between 1.2mbgl and 1.5mbgl.	1
		1.00	C	N=10 (2,2/2,2,2,4)	Casing=1.00m					
		2.00	C	N=2 (0,0/0,0,1,1)	Casing=2.00m	1.80			POTENTIAL MADE GROUND: light brown to brown grey silty very sandy clay. A strong organic odour was recorded.	2
		3.00	C	N=43 (4,6/9,9,11,14)	Casing=3.00m	3.00			Dense to very dense light brown silty gravelly fine to medium SAND. Gravel of subrounded to rounded fine to coarse sandstone and flint.	3
		3.70	C	50 (11,14/50 for 170mm)	Casing=3.70m	3.70			End of borehole at 3.7 m	4
										5
										6

Remarks

No groundwater was encountered during drilling. Borehole terminated at 3.7mbgl due to effective refusal.





Borehole Log

Borehole No.

WS12

Sheet 1 of 1

Project Name: Blackwell Farm

Project No.
2060010.001

Co-ords: -

Hole Type
WS

Location: East Grinstead

Level: mbgl

Scale
1:33

Client: W Stirland Ltd

Dates: 21/10/2020 - 21/10/2020

Logged By
GM

Well	Water Strikes	Samples and In Situ Testing				Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results	Information					
						0.10			MADE GROUND: Brown to dark brown silty very sandy clay with moderate roots and rootlets. MADE GROUND: Light brown to dark brown very silty, clayey gravelly sand. Gravel of flint, sandstone, red brick and concrete. Metal fragments were recorded from 1.2mbgl. A potential hydrocarbon odour and black staining were recorded from 1.2mbgl. <u>PID at 0.4mbgl = 0.4ppm</u>	1
		1.00	C	N=8 (1,1/2,2,2,2)						
		2.00	C	N=0 (0,0/0,0,0,0)					<u>PID at 2.0mbgl = 15.5ppm</u>	2
		3.00	C	N=0 (0,0/0,0,0,0)		2.80			POTENTIAL MADE GROUND: Blue grey to grey silty very sandy clay. A potential hydrocarbon odour and black staining were recorded between 2.8mbgl and 3.5mbgl. <u>PID at 3.8mbgl = 0.0ppm</u>	3
		4.00	C	N=0 (0,0/0,0,0,0)						4
						4.80			POTENTIAL MADE GROUND: black peat.	
						5.00			End of borehole at 5.0 m	5
										6

Remarks

A groundwater strike was recorded at 3.00mbgl.





Borehole Log

Borehole No.

WS13

Sheet 1 of 1

Project Name: Blackwell Farm

Project No.
2060010.001

Co-ords: -

Hole Type
WS

Location: East Grinstead

Level: mbgl

Scale
1:33

Client: W Stirland Ltd

Dates: 21/10/2020 - 21/10/2020

Logged By
GM

Well	Water Strikes	Samples and In Situ Testing				Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results	Information					
						0.10			MADE GROUND: Brown to dark brown silty very sandy clay with roots and rootlets. MADE GROUND: Light brown to dark brown very silty clayey gravelly sand. Gravel of flint, sandstone, red brick and concrete. A potential hydrocarbon odour and black staining were recorded from 1.2mbgl. <u>PID at 1.2mbgl = 7.4ppm</u> <u>PID at 2.2mbgl = 0.6ppm</u>	1 2
						2.80			POTENTIAL MADE GROUND: Blue grey to grey silty very sandy clay. A potential hydrocarbon odour and black staining were recorded between 2.8mbgl and 3.5mbgl.	3
						4.00			End of borehole at 4.0 m	4 5 6

Remarks

A groundwater strike was recorded at 3.00mbgl. Borehole terminated at 4.0mbgl due to presence of potential contamination.





Borehole Log

Borehole No.

WS14

Sheet 1 of 1

Project Name: Blackwell Farm

Project No.
2060010.001

Co-ords: -

Hole Type
WS

Location: East Grinstead

Level: mbgl

Scale
1:33

Client: W Stirland Ltd

Dates: 21/10/2020 - 21/10/2020

Logged By
GM

Well	Water Strikes	Samples and In Situ Testing				Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results	Information					
						0.10			MADE GROUND: Brown to dark brown silty very sandy clay with root and rootlets. MADE GROUND: Brown to dark brown clayey very gravelly sand. Gravel of red brick, flint and concrete.	1
		1.00	C	N=10 (1,2/1,2,3,4)		1.50				
						1.70			MADE GROUND: Light brown to dark brown gravelly silty very sandy clay. Gravel of flint and red brick. POTENTIAL MADE GROUND: blue grey to dark grey silty clay with decaying roots. Strong organic odour.	2
		2.00	C	N=14 (4,5/3,3,4,4)						
		3.00	C	N=11 (2,3/3,2,3,3)						3
		4.00	C	N=6 (1,2/2,2,1,1)						4
		4.50				5.00			Dense light brown very silty clayey gravelly fine SAND. Gravel of fine to medium sandstone and flint.	5
		5.00	C	N=43 (4,6/8,11,13,11)					End of borehole at 5.0 m	6

Remarks

No groundwater was encountered.





Borehole Log

Borehole No.

WS15

Sheet 1 of 1

Project Name: Blackwell Farm

Project No.
2060010.001

Co-ords: -

Hole Type
WS

Location: East Grinstead

Level: mbgl

Scale
1:33

Client: W Stirland Ltd

Dates: 21/10/2020 - 21/10/2020

Logged By
GM

Well	Water Strikes	Samples and In Situ Testing				Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results	Information					
									MADE GROUND: Brown to dark brown clayey very gravelly sand. Gravel of red brick, concrete, flint and ceramics. Rare glass.	1
						1.80			POTENTIAL MADE GROUND: blue grey to dark grey silty clay with decaying roots. Strong organic odour.	2
		3.00	C	N=8 (0,0/0,0,2,6)						3
		4.00		44 (7,11/14,14,16,)		3.70 4.00			Dense to very dense light brown slightly silty clayey gravelly fine SAND. Gravel is fine to coarse rounded sandstone and flint. End of borehole at 4.0 m	4
										5
										6

Remarks

No groundwater was encountered. Borehole terminated at 4.0mbgl due to effective refusal.

