Hydrock

Rectory Farm (Thrapston) Landfill (EPR/BT9879IY)

Hydrogeological Risk Assessment Review

For Mick George (Haulage) Limited

Date: *23 August 2022*

Doc ref: *23880-HYD-XX-XX-RP-GE-0003*

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1. INTRODUCTION

1.1 Regulatory Context

In June 2022, on behalf of the Operator, Hydrock prepared and submitted to the local Environment Agency (EA) office (Kettering) a Closure Report for the Rectory Farm Landfill, Thrapston. The full reference for the report is:

Hydrock, June 2022. Rectory Farm (Thrapston) Landfill (EPR/BT9879IY). Closure Report.

In response, Hydrock was advised that the EA required a Hydrogeological Risk Assessment Review (HRAR) to provide the basis for presenting proposals for the monitoring regime required when the site goes into aftercare. This requirement was confirmed with the EA at a meeting on 19 July 2022 at which compliance with EA guidance as below was confirmed.

On the basis that the landfill is considered to be an inert site, it was agreed that the HRAR would be qualitative in nature.

1.2 Objective

The objective of this report is to provide the findings of a qualitative Hydrogeological Risk Assessment Review (HRAR) in accordance with guidance reference:

https://www.gov.uk/guidance/landfill-operators-environmental-permits/review-your-hydrogeological-risk-assessment

The document is intended to support an application to modify the permit in order to put the site into Closure and Aftercare, with a monitoring regime in place that is applicable to site conditions identified in this 2022 HRAR. Differences in interpretation compared to the previous 2009 HRAR are highlighted.

1.3 Note on Development Proposals

It may be noted that when a future application to surrender is accepted by the EA, it is intended that the Rectory Farm Landfill will, in conjunction with land to the east and north-east of it, become part of a logistical warehousing development. This will involve full recovery of all of the waste under a Waste Recovery Plan and, following excavation, sorting and treatment of the waste as necessary, re-use of the material on the development site under a bespoke Deposit for Recovery permit.

1.4 Site Details

The site is:

Rectory Farm Quarry, Titchmarsh Road, Thrapston, Northamptonshire, NN14 4NJ.

Permit number: EP3837LU

1.5 Operator Details

The operator is:

Mick George (Haulage) Limited, 23 Crow Lane, Northampton NN3 9BX.

Contact: Paul Ayres (Head of SHEQ): paul.ayres@mickgeorge.co.uk.

1.6 Agent Details

For issues associated with site closure the Operator's Agent is:

Hydrock Consultants

4, Lakeside, Festival Park, Stoke on Trent, ST1 5RY.

Contact: Eric Cooper (ericcooper@hydrock.com)

1.7 2009 Hydrogeological Risk Assessment Review

The most recent HRA Review is

MWS Environmental, November 2009. Mick George Ltd. Rectory Farm Landfill Site. Permit number PP3233XK. Hydrogeological Risk Assessment Review.

1.8 Site Development Summary

A December 2000 Planning Application (granted) was for the extraction of sand and gravel followed restoration to agricultural use by the import of inert waste.

The first PPC Permit for waste deposition reference BT9879 was issued in July 2004. The only significant technical variation over the years has been to the quantity of waste deposited (increased in 2008). Regulatory changes are summarised in Section 2.1 below.

The site was licensed to accept Inert Waste, and, with minor exceptions, Compliance Assessment Reports (CAR's) made available to Hydrock indicate that this requirement was complied with. Logs of boreholes drilled into the waste by Hydrock support this assessment (Section 3.5).

Records indicate that the site was lined with locally-derived boulder clay with the intention of forming a hydraulic barrier at the base and sides of the landfill and again, the Hydrock site investigation supports this assessment.

In terms of natural geology, the footprint of the landfill was considered to be variably underlain by remnant glacial deposits, Oxford Clay, Kellaways Clay and Kellaways Sand. The Hydrock 2022 interpretation based on more extensive site investigation indicates that the presence of Oxford Clay beneath the landfill is questionable but other natural clay layers are present.

The site ceased accepting waste in July 2015 and by the end of 2016 it had been fully decommissioned and restored. It is now in agricultural use.

2. CURRENT PERMIT DETAILS

2.1 Permitting History

The permitting history is summarised in Table 2.1 below:

Table 2.1: Permitting History

Date	Activity
April 2003	Application for an authorisation (PPC Permit) submitted by Mick George.
July 2004	PPC permit issued to Mick George reference BT8789.
October 2006	Permit varied by the EA due to legislative change and re-issued as EP3837LU.
August 2007	Permit varied by EA in response to an application by Mick George to increase annual waste input.
January 2008	Variation Notice number PP3233XK issued by the EA for the increased input.
April 2008	PPC Permit became an Environmental Permit (EP) with no change to PPC Permit conditions. The EP reference is EPR/BT9879IY.

2.2 Current Permit Reference Details

Based on the above table, it is the wording of PPC Permit Number EP3837LU Variation Notice Number PP3233XK dated April 2008 that continues to specify compliance requirements.

The permit is reproduced herein at Appendix A.

2.3 Summary of Improvement Conditions

Improvement conditions are listed in Table S1.3 of the permit. The current status of each is summarised in Table 2.2 below.

Table 2.2: Summary of Improvement Conditions

Improvement Condition (IC) Reference	Requirement	Status
IC1	Requirement for permitted installation Closure Plan	Not enforced by the regulator but requirements superseded by the content of the Hydrock June 2022 Closure Report.
IC2	Requirement for permitted installation post closure aftercare and restoration plan	Not enforced by the regulator but covered by local authority acceptance of the restoration works, the content of the Hydrock June 2022. Closure Report, and the content of this report.
IC3	Permitted installation decommissioning plan	Site now fully decommissioned.
IC4	Proposals for the location of additional in-waste boreholes.	Installed in 2018 and undergoing monitoring to the satisfaction of the regulator.
IC5	Drawing showing pre-settlement levels of landfill	Understood to have been complied with.

3. DATA AVAILABILITY

3.1 General

This section provides a statement on the availability of data relevant to this 2022 Hydrogeological Risk Assessment Review.

3.2 2009 HRA Review

This is the most recent HRA pertaining to the landfill. The relevant report is:

MWS Environmental, November 2009. Mick George Ltd. Rectory Farm Landfill Site. Permit number PP3233XK. Hydrogeological Risk Assessment Review.

A permit requirement to update this HRA every 4 or 6 years was not enforced, despite annual CARs being issued.

3.3 Operational Records

3.3.1 Preface

Operational Records comprise waste returns, Compliance Assessment Reports, and engineering (construction) records. Whilst not all records of landfill operations have been studied in detail, the following is a reasonable summary:

3.3.2 Waste Returns

Spreadsheet-based waste returns were submitted to the EA quarterly since at least 2004. No significant departures from the permit to accept inert wastes are evident. Also, as summarised in 4.3.7.1 below, the 2009 Hydrogeological Risk Assessment Review noted no evidence of significant deposition of non-compliant wastes.

3.3.3 Compliance Assessment Reports

Compliance Assessment Reports completed by the EA following inspections indicate no significant breach issues.

3.3.4 Engineering

The 2009 HRA Review (Section 3.2 and Section 4 of this report) references a number of engineering design reports in the form of CQA Plans and Specifications for constructing the cells. These are reported to have been fully complied with.

3.4 Monitoring Data Records

3.4.1 Permit Requirements

Monitoring requirements are specified in Schedule 4 of the Permit (included herein at Appendix A). Records indicate that the permit requirements have largely been complied with since the network was established in 2009. Locations referred to in the following text are shown on the drawing RF/GEO/O2C at Appendix B.

Groundwater and Surface Water monitoring are normally reported together and the earliest spreadsheet records are dated July 2007.

3.4.2 Surface Water Monitoring

Surface water monitoring took place at locations SW1, SW2, and SW3 (see drawing RF/GEO/O2C at Appendix B). Even when the site was operational, these locations were often recorded as 'dry' and since restoration, they are always dry.

Monitoring data (when water was present for sampling) comprises:

- Monthly: check for visible oil;
- Quarterly: measurements of pH, suspended solids, ammoniacal nitrogen;
- Annually: sampling and testing for: TOC, Se, Sb, Hg, Al, Mg, SO4, Cl, Fe, Cd, Cr, Cu, Ni, Pb, Zn, Fl, BTEX, PCB, PAH, TDS, DOC

An assessment of available data is given in Section 5.

3.4.3 Groundwater Monitoring

3.4.3.1 Interpretation arising from the 2009 HRA Review

Groundwater monitoring took place at borehole locations GW1, GW2 and GW3 (Appendix B). Logs of the boreholes are presented at Appendix C.

The concept was that groundwater flowed broadly south-west to north-east such that GW1 was an 'upstream' borehole and GW2 and GW3 were 'downstream' boreholes.

The log for GW1 records that it samples a thin layer of Oxford Clay, but with the likelihood (based on the borehole record) that the sampled groundwater also includes fluid from the Glaciofluvial Sand and Gravel above. The other logs record that GW2 and GW3 sample the Blisworth Limestone and the Stamford Member below it (a silty sandstone).

GW3 was accidentally destroyed by site activity between March 2016 and 2018 and has since been replaced by the monitoring of nearby Hydrock Borehole RBH 209 (see Section 3.5 below) which is also screened in the Blisworth Limestone. This matter is discussed further in Section 7 (proposals for monitoring during closure and aftercare).

Long-term monitoring data comprises:

- Quarterly: water level, pH, ammoniacal nitrogen, cadmium, nickel, and chloride;
- Annually: as above plus sampling and testing for EC, TON, TOC, Ca, Mg, Na, K, Total alkalinity, SO4, Fe, Mn, Cr, Cu, Pb, Zn.

An assessment of available data is given in Section 5.

3.4.3.2 Updated Interpretation

It may be noted that the updated hydrogeological interpretation (by Hydrock) presented in Sections 5 and 6 of this report differs from the 2009 interpretation, particularly in respect of conditions at the base of, and immediately upstream of, the landfill.

3.5 Hydrock Site Investigation Data

3.5.1 Context

As noted in Section 1.3 above, once permit surrender has been achieved, the intention is to re-develop the landfill site and land to the east for logistical warehousing. In anticipation of that development, in 2021-2022, Hydrock undertook geotechnical and geo-environmental ground investigation with associated sampling and testing (ongoing) across the development site area. The data is available to support this HRAR and the boreholes are available to become part of the aftercare monitoring network.

3.5.2 Coverage

The coverage of the Hydrock Site Investigation is shown on Drawing 18443-HYD-XX-ZZ-DR-GE-1004 at Appendix B.

A list of works is given in Table 3.1 below:

Table 3.1: Hydrock 2021-2022 Site Investigation List of Works

Activity	Method	No.	Depth Range (m bgl)	In situ tests	Notes (e.g. installations)
Boreholes	Cable percussive	20	5.04 – 11.90	SPT	50mm wells with gas taps in 21 holes
	Rotary cored	27	3.00 – 16.00	SPT	50mm wells with gas taps in 27 holes
	Rotary open hole boring	11	2.80 – 15.00	-	50mm wells with gas taps in 11 holes
Trial pits	Machine (JCB 3CX)	166	1.10 – 4.20	Hand shear vane (HSV)	Plate Load tests undertaken at 10 locations.
	Hand-excavated	39	0.10 – 1.21	-	-
Trial Trenches	Machine (JCB 3CX)	20	1.20 – 2.50	-	-
Infiltration Tests	Hydrock in-house	3	1.90 – 2.95	Infiltration Rate testing	Gravel backfilled soakaways

3.5.3 Monitoring Facilities

Facilities for monitoring groundwater levels and to enable the sampling of groundwater were installed in 21 cable percussive boreholes and 38 of the rotary cored and rotary open hole boreholes. All such locations were installed with 50mm diameter plain and slotted pipe.

A summary of the monitoring well installations is presented in Table 3.2 below:

Table 3.2: List of Hydrock Monitoring Installations

Location	Ground level (m OD)	Screen top and base depth (m bgl)	Screen top and base elevation (m OD)	Strata targeted
CBH-101	62.98	10.00 – 10.50	52.98 - 52.48	Kellaways Sand Member
CBH-102	57.78	3.00 – 5.00	54.78 - 52.78	Kellaways Clay Member
CBH-103	62.75	4.50 – 9.50	58.25 - 53.25	Glaciofluvial Deposits
CBH-104	64.43	1.00 – 8.50	63.43 - 55.93	Landfill
CBH-105	65.47	1.00 – 2.00	64.47 - 63.47	Landfill
CBH-106	63.96	3.00 – 9.00	60.96 - 54.96	Landfill
CBH-107	61.90	1.50 – 9.50	60.40 - 52.40	Landfill
CBH-108	62.74	1.00 – 3.80	61.74 - 58.94	Glacial Till

Location	Ground level (m OD)	Screen top and base depth (m bgl)	Screen top and base elevation (m OD)	Strata targeted
CBH-109	59.53	1.00 – 4.00	58.53 - 55.53	Landfill
CBH-110	63.53	2.00 – 8.00	61.53 - 55.53	Landfill
CBH-111	62.08	2.00 – 8.00	60.08 - 54.08	Landfill
RBH-101	66.69	12.00 – 14.50	54.69 - 52.19	Cornbrash Limestone Formation
RBH-102	63.21	11.00 – 13.00	52.21 - 50.21	Cornbrash Limestone Formation
RBH-103	56.08	3.80 – 6.00	52.28 - 50.08	Cornbrash Limestone Formation
RBH-104	56.57	5.00 – 7.00	51.57 - 49.57	Cornbrash Limestone Formation
RBH-105	59.85	6.50 – 9.50	53.35 - 50.35	Cornbrash Limestone Formation
RBH-106	64.67	12.00 – 13.50	52.67 - 51.17	Cornbrash Limestone Formation
RBH-107	64.40	9.50 – 11.00	54.90 - 53.40	Cornbrash Limestone Formation
RBH-108	62.64	9.50 – 12.00	53.14 - 50.64	Cornbrash Limestone Formation.
RBH-109	49.44	9.50 – 11.00	39.94 - 38.44	Blisworth Limestone Formation
RBH-110	44.74	2.00 – 6.50	42.74 - 38.24	Head Deposits
RBH-111	51.53	5.00 – 9.00	46.53 - 42.53	Blisworth Limestone Formation
RBH-112	46.51	4.00 – 8.00	42.51 - 38.51	Blisworth Limestone Formation
RBH-113	49.45	1.00 – 2.00	48.45 - 47.45	Cornbrash Limestone Formation
RBH-114	49.38	5.00 – 9.00	44.38 - 40.38	Blisworth Limestone Formation
RBH-115	49.52	2.00 - 3.00	47.52 – 46.52	Blisworth Clay Formation
RBH-116	47.86	6.00 – 9.00	41.86 - 38.86	Blisworth Limestone Formation
RBH-117	48.31	0.50 – 2.50	47.81 - 45.81	Blisworth Clay Formation
RBH-118	51.89	6.00 – 12.00	45.89 - 39.89	Blisworth Limestone Formation
RBH-119	51.92	1.00 – 3.00	50.92 - 48.92	Cornbrash Limestone Formation
CP201	63.34	1.37 – 5.37	57.97 – 61.97	Glacial Till
CP202	59.78	1.20 – 7.20	52.58 – 58.58	Kellaways Sand
CP203	65.57	1.00 – 10.00	55.57 – 64.57	Landfill
CP204	59.28	1.00 – 8.00	51.28 – 58.28	Kellaways Sand
CP205	64.52	1.00 – 1.90	55.52 – 63.52	Landfill
CP206	63.67	1.70 – 10.60	53.07 – 61.97	Landfill
CP207	62.50	1.00 – 8.00	54.50 – 61.50	Landfill
CP208	62.00	1.00 – 9.00	53.00 – 61.00	Landfill
CP209	62.96	1.00 – 4.00	58.96 – 61.96	Glacial Till
CP210	62.59	1.00 – 8.00	54.59 – 61.59	Landfill
RBH-201	63.83	11.00 – 12.50	51.33 – 52.83	Cornbrash Limestone Formation
RBH-202	59.65	7.00 – 8.50	51.15 – 52.65	Cornbrash Limestone Formation
RBH-203	55.81	7.00 – 9.00	46.81 – 48.81	Blisworth Limestone Formation
RBH-204	52.26	4.50 – 12.00	40.26 – 47.76	Blisworth Limestone Formation
RBH-205	51.17	4.00 – 9.00	42.27 – 47.17	Blisworth Limestone Formation
RBH-206	48.58	1.00 – 8.00	40.58 – 47.58	Blisworth Limestone Formation
RBH-207	45.09	2.50 – 9.00	36.09 – 42.59	Blisworth Limestone Formation
RBH-208	47.16	1.00 – 9.00	38.16 – 46.16	Blisworth Limestone Formation
RBH-209	46.35	3.00 – 9.00	37.35 – 43.35	Blisworth Limestone Formation
RBH-210	49.95	4.00 – 9.00	40.95 – 45.95	Blisworth Limestone Formation
RBH-211	50.97	1.50 – 9.00	41.97 – 49.47	Blisworth Limestone Formation
RBH-212	49.64	4.00 – 9.00	40.64 – 45.64	Blisworth Limestone Formation
RBH-213	54.11	3.00 – 12.00	42.11 – 51.11	Blisworth Limestone Formation
RBH-214	51.29	5.00 – 12.00	39.29 – 46.29	Blisworth Limestone Formation
RBH-215	47.53	1.00 – 6.00	41.53 – 46.53	Cornbrash Limestone Formation
RBH-216	61.75	8.50 – 15.00	46.75 – 53.25	Cornbrash Limestone Formation
RBH-217	55.00	10.00 – 12.00	43.00 – 45.00	Blisworth Limestone Formation
RBH-218	53.22	8.00 – 15.00	38.22 – 45.22	Blisworth Limestone Formation

Location	Ground level (m OD)	Screen top and base depth (m bgl)	Screen top and base elevation (m OD)	Strata targeted
RBH-219	53.50	1.50 – 3.00	50.50 – 52.00	Cornbrash Limestone Formation

The above list equates to:

- 41 boreholes off-landfill of which 5 are up-hydraulic gradient of the landfill, 32 are down-hydraulic gradient and 4 are cross gradient;
- 13 boreholes in-waste;
- 5 boreholes below the waste (see section 5.7.3 for further details on below waste boreholes).

3.5.4 *Sampling and Testing*

Sampling and testing is ongoing. Currently available data is summarised in Table 3.3 and Table 3.4 below:

Table 3.3: Soils Data

Determinand Suite	Hydrock minimum suite of determinands for solids*	Hydrock Tier 2 TPH Suite $	Volatile organic compounds (VOC target list plus TIC) by HS-GC/MS	Pesticide screen
Agriculturally Disturbed Topsoil	20	3	-	5
Topsoil – Landfill	21	9	1	-
Made Ground	25	12	1	-
Landfill – Made Ground	40	12	8	-
Glacial Till	10	6	-	-
Glaciofluvial Deposits	3	-	-	-
Head deposits	4	3	-	-
Blisworth Limestone Formation	1	-	-	-
*Hydrock minimum soil suite comprises: As, B (water soluble), Be, Cd, Cr (total), Cr (VI), Cu, Hg, Ni, Pb, S (elemental), Se, V, Zn, cyanide (total), sulfide, pH, asbestos fibres, speciated polynuclear aromatic hydrocarbons (PAH, by GC-FID), total phenols and fraction of organic carbon $ Hydrock Tier 2 TPH Suite comprises: Speciated aliphatic and aromatic banding Total petroleum hydrocarbons by HS-GC/MS and GC/FID				

Table 3.4: Leachate and Groundwater Data

Determinand Suite	Ground-water	Leachate
Hydrock minimum suite of determinands for waters	33	5
Speciated aliphatic and aromatic banding Total petroleum hydrocarbons by HS-GC/MS and GC/FID (Hydrock Tier 2 TPH Suite)	24	5
Volatile organic compounds (VOC target list plus TIC) by HS-GC/MS	33	5
*Hydrock default waters analysis suite comprising: Ag, Al, As, B, Ba, Cd, Co, Cr (III), Cr(VI), Cu, Fe, Hg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Zn, V, cyanide (total), phenols (total), ammonium, bromate, chloride, fluoride, nitrate, nitrite, sulfate, PAH (speciated), pH, EC and hardness;		

3.5.5 *Relevant Data*

Critical data including key borehole logs, maps and sections are presented herein at Appendices B, C, E and F.

As sampling and testing of the Hydrock boreholes is ongoing, the interpretation presented in this report is restricted to those parameters specified in the permit for quarterly assessment. The dataset will be considered in full for the purposes of permit surrender at a later date.

3.6 Mick George In-Waste Boreholes

In 2018 the Operator installed 15 boreholes to a depth close to the base of the waste. These boreholes are mainly for gas monitoring but they will provide groundwater level (i.e., leachate level) data for the waste when monitored.

4. 2003 HRA AND 2009 REVIEW

4.1 General

This section summarises the findings of previous HRAs pertaining to the site together with a summary of key updates.

The content of this Section 4 is intended to set out the interpretations that applied in 2009 and the content of this section does not necessarily comply with the Hydrock 2022 interpretation. Significant differences identifiable from new data are highlighted in Section 6.

4.2 Original HRA

The original HRA was submitted with the PPC application documents In April 2003, as Section 2 of:

Mick George (Haulage) Ltd, Rectory Farm, Thrapston, Northamptonshire. Integrated Pollution and Prevention and Control Application. Volume II. Risk Assessment.

4.3 2009 HRA Review

4.3.1 Document References

The reference for the 2009 HRAR is:

MWS Environmental, November 2009. Mick George Ltd. Rectory Farm Landfill Site. Permit number PP3233XK. Hydrogeological Risk Assessment Review.

4.3.2 Compliance Issues

The 2009 HRAR notes that the 2003 HRA was not prepared in accordance with either:

- The EA's Application Form for the 'Landfill Sector Hydrogeological Risk Assessment' template; or
- The EA's 2003 guidance 'Hydrogeological Risk Assessment for Landfills'.

The 2009 HRAR therefore made additional reference to the content of other permit application documents such as the Site Report, the 'Conceptual Model, Working Plan, and Supporting Statement', and a series of technical reports in Volume IV of the application package.

In accordance with the 2003 guidance above, the 2009 HRAR lists issues that the review addresses as follows:

- The conceptual site model;
- Essential and technical precautions;
- Risk assessment inputs and assumptions;
- Sampling and analysis plan and data quality;
- Baseline groundwater quality;
- Landfill operations and destruction of monitoring installations;
- Standard operating procedures to monitor wells and take samples;
- The requirement for additional boreholes; and
- The requirement for increased frequency of monitoring.

- In addition, the 2009 HRA review references:
- EA 2003 guidance on 'Monitoring of Landfill Leachate, Groundwater, and Surface Water'; and
- 'the EA's 2008 fact sheet on groundwater trigger levels and minimum reporting values'.

4.3.3 *Legislative Context*

The 2009 HRAR notes legislative changes since the original 2003 HRA, in particular, the replacement of the 2002 PPC regulations (and associated Landfill Regulations) by the 2007 Environmental Permitting (EP) Regulations. Reference is also made to the link between the EP Regulations and the EU Landfill Directive of 1999. It was noted that based on EA guidance at the time, the Groundwater Regulations arising from the EU Groundwater Directive were not expected to apply to inert landfills.

4.3.4 *Additional Information*

The 2009 HRAR notes a requirement to take into account additional information acquired since issue of the original 2003 HRA, including action on improvement conditions specified in the Permit and operational activities. The following matters are listed:

- The implementation of a groundwater monitoring scheme in accordance with Schedule 4 of the Permit (three gas and groundwater monitoring boreholes);
- The development of engineering specifications and CQA requirements for the landfill, including an engineered barrier and cell construction.

There were no specified requirements for:

- Groundwater management; or
- Leachate management.

Surface water management:

- to be in accordance with Condition 2.3.1 and Schedule 1.2 of the permit (noting that Schedule 1.1 also mentions surface water discharge to controlled waters).

Monitoring:

- at the time of the 2009, monitoring data (groundwater quality, groundwater levels) was available from:
  - Long-term Gas and Groundwater Monitoring Boreholes GW1 (up-hydraulic gradient of the landfill) and GW2 and GW3 (down hydraulic gradient of the landfill);
  - Surface water monitoring points SW1, SW2, and SW3

For locations, please refer to the plan herein at Appendix B. Borehole logs were available for GW1 (Oxford Clay), GW2 (Blisworth Limestone) and GW3 (Blisworth Limestone) are included in Appendix C.

Waste Inputs:

- waste input data for 2008 and 2009 were taken into account.

Annual Reporting:

- Annual Reports on performance and activities (for 2008) were consulted.

4.3.5 Hydrogeological Setting

In a chapter (4) headed 'site hydrogeological conditions', the 2009 HRAR presents an interpretation of the site hydrogeological conditions based mainly on published maps, reports, and other data, supported by recently-acquired site investigations and monitoring data. Regional and local geological and hydrogeological conditions are reviewed in detail and there is no reported conflict with the 2003 HRA.

4.3.6 Hydrology

The 2009 HRAR provides a description of hydrological conditions and again, there is no reported conflict with the 2003 HRA interpretation.

The 2009 review quotes December 2002 baseline surface water monitoring data wherein EQS exceedances for chloride and ammoniacal nitrogen are noted under pre-tipping conditions. Winter salting and local farming activities are postulated sources.

4.3.7 Conceptual Site Model

4.3.7.1 Source Term - Wastes Accepted

Key findings of the 2009 HRAR are as follows:

- Schedule 3 of the PPC permit specifies acceptable waste types that collectively constitute an inert waste;
- An assessment of waste types actually deposited is presented based on the January 2008-September 2009 Waste Returns and the content of EA June 2008 to July 2009 Compliance Assessment Reports (CARs);
- The quantity of waste deposited was less than that permitted;
- In terms of wastes accepted (but not necessarily deposited) at the site, the CARs record selected construction and demolition wastes with low quantities of non-compliant waste, the latter deemed unlikely to be present in sufficient quantity to impact on the pollution potential of the site;
- WAC limits for inert wastes are quoted (Table 5.3) and four sets of tests carried out in 2008 demonstrated compliance with inert waste criteria;
- In addition:
  - » There was no fuel storage on the permitted site;
  - » There were no contamination/decontamination incidents reported in 2008;
  - » There were no unauthorised discharges to surface water.
- No leachate monitoring was required under the permit.

4.3.7.2 Source Term - Landfill Engineering

- Geological Barrier:
  - » The underlying Oxford Clay was deemed to have been considered to act as a natural geological barrier though it was noted that this may not be present beneath the eastern part of the site;
  - » The underlying Kellaways Clay and Kellaways Sand are both anticipated to be low permeability materials.
- Artificial basal liner:

  - » Boulder clay was placed in accordance with a CQA plan as an artificial liner to cells constructed to that time.
- Artificial side slope liner:
  - » Boulder clay was placed in accordance with a CQA plan as an artificial side-lope liner to cells constructed to that time.
- Capping
  - » No specific engineered capping was required for an inert site; but
  - » Capping of Cells 1 and 2 was undertaken in accordance with a CQA plan using boulder clay.
- Groundwater Management
  - » No active groundwater management system was in place.

4.3.7.3 Pathways

No potential pathways were identified in the original HRA and but the 2009 review presents the following interpretation:

- Unsaturated Zone: Base of landfill
  - » The original site report states that the maximum depth of working would be 9.5m;
  - » The constructed base of void (top of geological barrier) in Cells P1, C2, and C3A varied from +54.18 AOD to + 54.9 AOD.
- Unsaturated Zone: Groundwater levels in the 'minor aquifer':
  - » It is concluded that the 'minor aquifer' beneath the site (taken to be all units in the layered sequence between the Oxford Clay and the Rutland Formation) is a layered formation with 'minor aquifers' separated by low permeability clay layers;
  - » No groundwater monitoring boreholes available at the time of the original (2003) HRA;
  - » Original HRA says 'main piezometric surface' identified in the Cornbrash Limestone (in the absence of boreholes it is not clear how this was determined);
  - » When GW2 and GW3 were drilled, units above the Blisworth Limestone appeared dry so the wells were screened in the Blisworth; groundwater levels therein are considered to represent a 'water table' at these locations;
  - » In terms of impact, the minor aquifers are more likely to represent pathways rather than receptors.
- Aquifer Characteristics
  - » Original HRA suggested mainly intergranular flow in a SW>NE direction;
  - » 2009 HRA review proposes intergranular flow in the Kellaways Sand with fissure flow in the limestones.
- Groundwater/Surface Water Interaction:
  - » Not considered in the original HRA;
  - » Seasonal springs may occur where sands and limestones juxtapose against lower permeability clays either conformably or due to faulting.
- Surface water pathways:

  - » Original HRA identified surface water network to be a pathway for any contaminants present in the consented discharge that was in place when the site was operational;
  - » 2009 update confirms the above with the addition of the groundwater-surface water interaction component.
- (2009) Pathway Review:
  - » Groundwater is both a pathway and a receptor;
  - » Groundwater in the superficial deposits is not a pathway as this material has been removed (by quarrying);
  - » The 'minor aquifer' is a layered system within which, lateral flow is inhibited by the thin, low permeability nature of the individual units and vertical flow is inhibited by clay layers;
  - » Units overlying the 'saturated aquifer' (presumably the Blisworth Limestone) are the pathway for vertical contaminant migration;
  - » The Cornbrash and the Blisworth Limestone are the pathways for lateral migration.

4.3.7.4 Receptors

- Aquifer designation and groundwater vulnerability:
  - » The original HRA noted that the site was not in a Source Protection Zone of any Public Water Supply;
  - » The 2009 review concludes that in accepting GW2 and GW3 (both screened in the Blisworth Limestone) as compliance points for List I and List II substances, the EA is accepting that neither the Kellaways Sand nor the Cornbrash are 'credible' receptors for impact on groundwater.
- Groundwater Quality:
  - » No data available in original (2003) HRA;
  - » The 2009 review benefits from access to monitoring data;
  - » Test data for GW2 and GW3 are mostly within permit limits;
  - » Nickel spikes in GW2 are singularities with one recorded pre-tipping; this is not considered to be a landfill impact.
- Surface Water Quality
  - » Consistently within compliance limits.
- Abstractions:
  - » Neither the 2003 HRA nor the 2009 review report any abstractions within influential distance of the landfill.
- Unused resources:
  - » The 2009 review identifies the groundwater in the Blisworth Limestone as the only potentially unused resource.
- Sites of Ecological or Nature Conservation Significance:
  - » 2003 HRA reports no features of significance within influential distance of the site;
  - » The 2009 review considers the Titchmarsh Meadows SSSI to be a credible potential receptor (via groundwater-surface water interaction).

4.3.8 Conclusions of the 2009 CSM Review

The key conclusions of the 2009 CSM Review are:

- The waste stream disposed of at the site is consistent with the permit;
- The containment measures installed in Cells 1-4 accord with the relevant CQA plans and meet or exceed the EP regulations;
- The underlying Oxford Clay and Kellaways Formation have hydraulic properties that exceed the requirements for a natural barrier;
- The Blisworth Limestone is the 'relevant receptor' for impacts to groundwater; and
- Watercourses local to the site and Titchmarsh Meadows SSSI are also receptors.

4.3.9 2009 Updated Hydrogeological Risk Assessment

A summary of the 2009 findings is:

- The location (i.e., setting) of the landfill accords with EA requirements (e.g., not within a SPZ1);
- The groundwater Directive does not apply to inert sites but compliance points for List I and List II substances have been identified in the permit;
- A natural hydrogeological barrier is present;
- Technical precautions (engineered barrier) exceed regulatory requirements;
- Monitoring compliance points for List I and List II substances are in place;
- The receiving environment is sufficiently insensitive not to require quantitative risk assessment.

4.3.10 Comments on Monitoring

4.3.10.1 Risk-Based Monitoring

Groundwater Monitoring

Monitoring is carried out in accordance with the permit. No changes recommended to the regime in place.

Surface Water Monitoring

Monitoring is carried out in accordance with the permit. No significant changes recommended to the regime in place but it was recommended that certain parameters were removed from the monitoring schedule as they were unlikely to be generated at the site.

4.3.10.2 Trigger levels

Groundwater

Some relaxation of the trigger levels for nickel (20 µg/l > 200 µg/l) and cadmium (0.1 µg/l > 1.0 µg/l) were proposed.

Surface Water

No changes to permit conditions were proposed.

4.3.11 Overall-2009 HRA Review Conclusions

4.3.11.1 Compliance With EP Regulations

In respect surface water discharge and engineering standards the site is compliant with EP regulations.

4.3.11.2 Compliance with the Groundwater Regulations

As the site is inert it is outside the scope of the groundwater regulations but, in practice, the monitoring currently being undertaken is compliant. Monitoring would be improved with an upstream monitoring borehole.

5. 2022 UPDATED CONCEPTUAL SITE MODEL

5.1 Context

This section presents an updated Conceptual Site Model (CSM) based on an assessment of currently available data listed in Section 3 above. The availability of site investigation data for the landfill site and surrounding land from the 2021-2022 Hydrock ground investigations is of particular note. The extent to which this CSM presents a revision of the previous HRAs is summarised in Section 6.

5.2 Site Location and Referencing

The site is located to the north of the A14 on the eastern edges of Thrapston, Northamptonshire, with the National Grid Reference of the approximate centre being 501968E, 278464N. A nearby postcode for the site is NN14 4QT.

The site is a former sand and gravel quarry that has been backfilled with inert waste and restored to agricultural use. Backfilled settlement ponds are present in an eastern overhanging strip that is part of the permit area (Drawing 23880-HYD-XX-XX-DR-GE-1001 at Appendix B).

5.3 Landscape and Topography

The site cover comprises a restored agricultural field. Outwith the landfill site, the land to the north, east and south is also agricultural fields. There is a manufacturing facility present to the south-west and an industrial estate comprising distribution centres and associated hardstanding is present to the west.

A post-restoration topographical survey undertaken at the end of 2020 (reference TPN_EOY/01/2021) and provided to Hydrock by the Operator shows that the topography of the site slopes from west to east in the landfill area, from 65.50m AOD in the south-west corner to 59.00m AOD to the east of the landfill. The slope continues east/northeast-wards to 46.50m AOD at the backfilled settlement ponds. A copy of the survey drawing is included herein at Appendix D.

5.4 Hydrology and Drainage

There are few permanent surface water features potentially within influential distance of the landfill site.

A small pond is present off-site at Castle Manor Farm, 450m south-east of the backfilled settlement ponds and 430m east of the landfill area. Drainage ditches are present parallel to the eastern half of the overhang adjacent to the backfilled settlement ponds and 110m to the east of the site but these are normally dry since operations at the site ceased.

Both drainage ditches intersect 130m east of the site and drain north-east towards Thorpe Brook, which ultimately joins the River Nene 3km to the north at an elevation approximately 20m lower than the lowest point on site. Hydrology and drainage features are shown in Figure 5.1. Figure 5.9 below shows the furthest point upstream in the drainage system where water was observed during dry weather on 08 August 2022.

The 2009 HRA identifies the Titchmarsh LNR as a receptor, the LNR being 1.5km north of the site in the same surface water catchment.

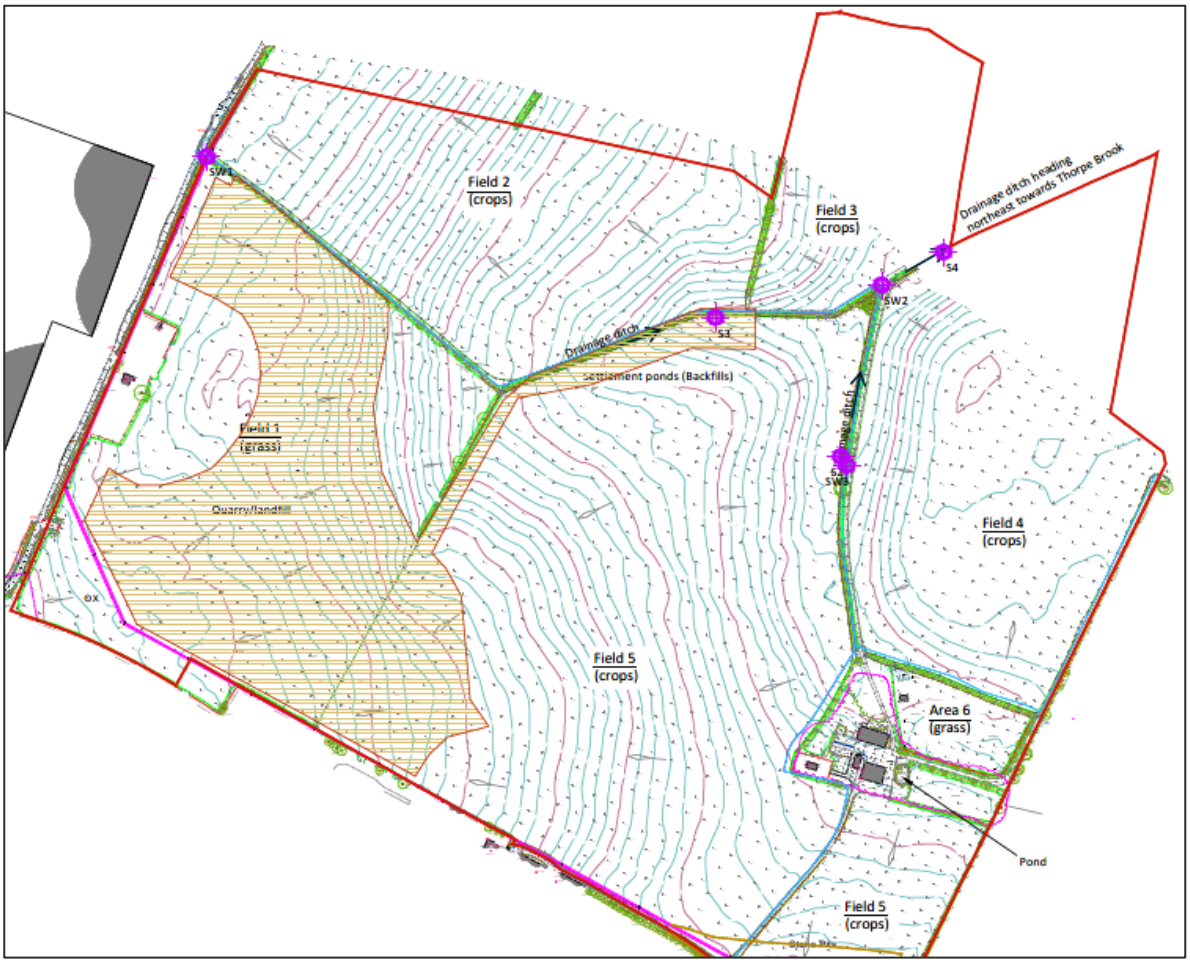


Figure 5.1: Hydrology and drainage features including surface water monitoring points (purple) (red line boundary is the future development site boundary).

5.5 Geology

5.5.1 Geological Map References

The general geology of the site area is shown on the British Geological Survey (BGS) 1:50,000 geological map of Kettering (Sheet 171) and a 1:10,000 BGS map extract, reproduced as part of a Groundsure report for a wider site (reference GS-7926027) is included at Appendix E. The information is summarised in Table 5.1. Extracts from the map of the wider site are shown in Figure 5.2 and Figure 5.3.

Geological maps and sections (based on the findings of the Hydrock investigation) are attached at Appendix F.

Table 5.1: Geology

Ref. for Figures 5.2 and 5.3	Location	Stratigraphic Name	Description
Superficial Deposits (Figure 5.2)			
1	On site	Glacial Till - Oadby Member	Grey weathering brown clay with subordinate lenses of sand and gravel with chalk and flint fragments.
2		Glaciofluvial Deposits	Sand and gravels.
Solid Geology (Figure 5.3)			

Ref. for Figures 5.2 and 5.3	Location	Stratigraphic Name	Description
5	On site	Oxford Clay Formation	Silicate mudstone, grey with sporadic beds of limestone.
4		Kellaways Sand Member	Silicate sandstone and siltstone, pale grey with interbeds of sandy and silty mudstone (typically 3 to 5m within the East Midlands).
9		Kellaways Clay Member	Grey mudstone (typically 2 to 3m within the East Midlands).
8		Cornbrash Formation	Medium to fine grained, blueish grey, weathering olive or yellowish-brown limestone (up to 10.50m thick but generally 2-4m).
6		Blisworth Clay Formation	Silicate mudstone, grey with frequent fossils, rootlets and ironstone nodules (typically 2-4m thick).
1		Blisworth Limestone Formation	Pale grey or off-white yellowish limestone (typically 2-4m thick).

Landfill waste is also present over majority of the site, with other (non-waste) Made Ground in the eastern overhang associated with the backfill of the settlement ponds and in the west, placed to create areas of hardstanding.

A minor fault line is shown to the north of the site, trending east to west with downthrow to the north (see Figure 5.3).

Figure 5.2: Superficial deposits

(red line boundary is the future development site boundary)
(Reproduced with permission from Groundsure)

Figure 5.3: Solid geology

(red line boundary is the future development site boundary)
(Reproduced with permission from Groundsure)

5.5.2 Stratigraphy (Geological Sequence)

The geological sequence of the solid geology as defined by the BGS Lexicon of Named Rock Units is presented in Table 5.2.

Table 5.2: Stratigraphy

Age (Jurassic)		Strata	
Oxfordian - Callovian	Youngest	Oxford Clay Formation	
Callovian		Kellaways Sand Member	Kellaways Formation
		Kellaways Clay Member	
Callovian - Bathonian		Cornbrash Formation	
Bathonian		Blisworth Clay Formation	
		Blisworth Limestone Formation	
Bathonian - Bajocian	Oldest	Rutland Formation	

The mapping indicates that Oxford Clay Formation is locally overlain by the superficial deposits (see also 5.5.3.6 below). The 2021 Hydrock investigation found the Glacial Till overlying the Glaciofluvial Deposits, with majority of the latter having mostly been removed during historical sand and gravel extraction work.

5.5.3 Lithology

5.5.3.1 Source of Information

Lithological descriptions are based on the 2021 Hydrock investigation where available.

5.5.3.2 Made Ground

In general, there are three main types of Made Ground:

- General Made Ground associated with the backfilled settlement ponds and the development of areas of hardstanding;
- Topsoil; and
- Landfill Waste.

General Made Ground comprises soft to firm, greyish brown, or orangish brown, sandy, gravelly, clay. Gravel comprises subangular to rounded, fine to coarse, ironstone, flint, and limestone.

Topsoil comprises a soft to firm, dark to light brown, slightly sandy, slightly gravelly, clay, with frequent rootlets. Gravels comprise angular to subrounded, fine to coarse, brick, chalk, flint, limestone, sandstone and ash.

Landfill Waste – comprises soft to firm grey, yellowish brown, brown and orangish brown, slightly sandy, gravelly, clay. Gravels generally comprised angular to subrounded, fine to coarse, flint, sandstone, ironstone, chalk, limestone and gravel sized fragments of brick.

Waste characteristics are described in detail in Section 5.7 below.

5.5.3.3 Head Deposits

Head deposits were encountered in the eastern overhang of the site and comprised firm to stiff reddish brown, light brown or greenish grey, slightly gravelly, sandy, clay. Gravels comprise subangular to rounded, fine to coarse, flint, limestone, chalk, and fossilised material.

5.5.3.4 Glacial Till

Glacial Till was typically encountered underlying topsoil and beneath the landfill where the landfill cuts through the Glacial Till as part of the sand and gravel extraction works. The Glacial Till generally consisted of stiff to very stiff, grey and greyish brown, slightly sandy, slightly gravelly, clay. Gravels comprise subangular to rounded, fine to coarse, flint, sandstone, limestone, and chalk.

5.5.3.5 Glaciofluvial Deposits

Glaciofluvial Deposits were encountered at the landfill area of the site, typically underlying the Glacial Till. Glaciofluvial Deposits have mostly been removed as part of gravel extraction works, to be replaced by landfill.

Glaciofluvial Deposits generally comprises dense to very dense, orange brown, greyish brown, and reddish-brown, gravelly, sand and localised firm, orange brown, and bluish grey, sandy, clay. Gravels comprise subangular to rounded, fine to coarse, limestone, flint, sandstone and ironstone.

5.5.3.6 Oxford Clay Formation

Although shown locally on maps (see above), the Oxford Clay Formation was not recognised during the Hydrock 2021 investigation (suggesting that the geological mapping on the south west corner of the site is incorrect).

5.5.3.7 Kellaways Sand Member

The Kellaways Sand Member was encountered at the landfill area of the site, underlying the Glaciofluvial Deposits/Glacial Till or beneath the landfill where superficial deposits have been removed as part of gravel extraction works.

The Kellaways Sand Member comprised yellowish brown and orangish brown, clayey, slightly gravelly, sand. Gravels comprised subangular to rounded, fine to coarse, sandstone, limestone, ironstone and siltstone.

5.5.3.8 Kellaways Clay Member

The Kellaways Clay Member was encountered at the landfill area of the site, either underlying the Kellaways Sand Member or directly beneath the waste.

The Kellaways Clay Member generally comprises firm to stuff bluish grey, light grey or dark grey, sandy, slightly gravelly, clay. Gravels comprised subangular to subrounded, fine to coarse, sandstone, with rare shell fragments.

5.5.3.9 Cornbrash Limestone Formation

The Cornbrash Limestone Formation was encountered underlying the Kellaways Clay Member across the majority of the landfill site except for the eastern half of the eastern overhang. As indicated on the geological sections A-A' and C-C' (Appendix F) there is an area beneath the centre of the landfill where both the Kellaways Sand and the Kellaways Clay are missing, such that the Cornbrash directly underlies the basal seal to deposited waste.

The Cornbrash Limestone Formation generally consisted of extremely weak to strong, grey to light brown, occasionally shelly, limestone.

5.5.3.10 Blisworth Clay Formation

The Blisworth Clay Formation was encountered underlying the Made Ground or Head Deposits in the eastern half of the eastern overhang, and underlying the Cornbrash Limestone Formation across the rest of the site outwith the permitted landfill area.

The Blisworth Clay Formation generally comprises firm to very stiff, light grey, bluish grey, and dark grey, occasionally fissured, slightly gravelly, clay. Gravels comprised subangular to subrounded, fine to coarse, limestone and chert.

5.5.3.11 Blisworth Limestone Formation

The Blisworth Limestone Formation was encountered underlying Made Ground or Head Deposits in the eastern part of the overhang, and underlying the Blisworth Clay Formation across the rest of the site.

The Blisworth Limestone comprises weak to strong, grey, limestone.

5.5.3.12 Rutland Formation

The Rutland Formation was not encountered on the site.

The Rutland Formation encountered from 82m to the east of the site comprised stiff bluish grey clay with frequent shell fragments and weak dark grey siltstone.

5.5.4 Structure

5.5.4.1 Cross Sections

Cross sections produced for the landfill area and the wider site (Hydrock drawing 18443-HYD-XX-ZZ-DR-GE-1014) are included in Appendix F.

5.5.4.2 Superficial Deposits

Agriculturally disturbed topsoil was encountered in the eastern overhang of the landfill site and south-east corner of the landfill between up to 0.49m thick. General Made Ground was encountered in the eastern overhang of the site underlying agriculturally disturbed topsoil, associated with the backfilled settlement ponds up to 1.50m thick. Head deposits were encountered underlying the agriculturally disturbed topsoil or the General Made Ground at thicknesses up to 1.75m in the eastern overhang.

In the landfill area, topsoil was encountered up to 0.90m thick with the thickest Topsoil Made Ground encountered in the south-east of the site. Landfill waste was encountered underlying the topsoil up to >11.60m thick, with the thickest waste deposition encountered across the centre and centre south of the landfill area.

Glacial Till was encountered around the edges of the landfill area up to 4.40m thick, generally underlying topsoil but occasionally underlying Made Ground. Glacial Till was thickest in the south-west of the site.

Glaciofluvial Deposits were encountered beneath the western part of the landfill area, up to >5.50m thick underlying the Glacial Till or Made Ground with the thickest deposit encountered in the north.

5.5.4.3 Bedrock

The concept is of a conformable sequence of sub-horizontal Jurassic strata underlying the site and the land to the east.

The Kellaways Sand Member was encountered in the landfill area up to 4.10m thick, occasionally underlying Glaciofluvial Deposits but generally underlying landfill waste with the thickest Kellaways Sand encountered in the southern part of the site.

The Kellaways Clay Member was also encountered in the landfill area up to 2.80m thick, underlying the Kellaways Sand Member or landfill waste, with the unit thickening eastwards of the landfill area.

The Cornbrash Limestone was encountered in the landfill area up to 2.30m thick, underlying either the landfill waste, Glaciofluvial Deposits or the Kellaways Formation.

The Blisworth Clay was encountered across the central and eastern half of the landfill site underlying the Cornbrash Limestone and in the eastern overhang, up to >5.00m thick. The depth to the top of the Blisworth Clay was greater in the eastern overhang compared to the landfill area.

The Blisworth Limestone was encountered in the eastern overhang up to >5.60m thick (partial penetration). Long term monitoring boreholes GW2 and GW3 penetrated the full thickness of Blisworth Limestone which ranged from 5.9m to 7.2m.

The depth to the top of the Blisworth Limestone ranged from 47.24 to 45.40 mAOD.

As noted previously, a fault line is shown to the north of the site, trending east to west with downthrow to the north (see Figure 5.3).

5.6 Hydrogeology

5.6.1 Aquifer Designations

Based on the inferred geological sequence presented in Section 5.5 and the Environment Agency's interactive aquifer designation map, the aquifer system presented in Table 5.3 applies.

Aquifer designations as defined by the Environment Agency are as follows:

- Unproductive - largely unable to provide usable water supplies and are unlikely to have surface water and wetland ecosystems dependant on them.
- Secondary undifferentiated - an aquifer where it is not possible to apply either a Secondary A or B definition because of the variable characteristics of the rock type.
- Secondary A Aquifer - permeable layers that can support local water supplies, and may form an important source of base flow to rivers.
- Principal Aquifer - able to provide significant quantities of drinking water and water for business needs. They may also support rivers, lakes and wetlands.

Table 5.3: Aquifer system

Stratum	Aquifer Designation	Comments
Made Ground	Unclassified / unproductive	Artificial Ground not included in the classification system, but is present across the site mainly as landfill waste, backfilled settlement ponds and topsoil. Likely to be moderate to high porosity because of unconsolidated nature, but permeability is likely to be constrained to low, or low to moderate because of poor sorting and clay content.
Superficial Deposits		
Glaciofluvial Sand & Gravel	Secondary A Aquifer	Intergranular permeability. Dominated by moderate to high permeability layers of sand and occasional gravel, interbedded with

Stratum	Aquifer Designation	Comments
		low permeability clay. Groundwater flow is likely to be variable and discontinuous as water migrates around low permeability areas.
Glacial Till	Secondary undifferentiated Aquifer	Dominated by low permeability clay, which is interbedded with moderate to high permeability layers of sand with occasional gravel. Likely to be anisotropic in nature.
Solid Geology		
Oxford Clay	Unproductive	Dominated by low permeability clay
Kellaways Sand Member	Secondary A Aquifer	Moderate to high porosity, but permeability likely to be constrained to low or low to moderate because of poor sorting and fines content. Not used for groundwater supply within influential distance of the site
Kellaways Clay Member	Unproductive	Dominated by low permeability clay and unable to provide useable water supplies.
Cornbrash Limestone Formation	Secondary A Aquifer	High permeability due to fractured limestone, but limited thickness and weathering of unit. Not used for groundwater supply within influential distance of the site
Blisworth Clay Formation	Unproductive	Dominated by low permeability clay, which are usually unable to provide useable water supplies. Likely to be anisotropic.
Blisworth Limestone Formation	Principal Aquifer	High permeability due to fractured limestone but interbedded with layers of clay. Not used for groundwater supply within influential distance of the site

5.6.2 *Groundwater Utilisation*

There are no active or historical licensed groundwater abstractions within 1km of the site.

The site is not within a groundwater Source Protection Zone (SPZ).

5.6.3 *Aquifer System*

Additional information on the hydraulic characteristics of the geological units has been abstracted from Allen et al (1997) and Jones et al (2000).

Regionally, the Kellaways Sand yields small supplies of groundwater. However, hydraulic conductivity values are very low, partly due to high fines content of the sands. On a regional scale, hydraulic heads in the Kellaways Sand are generally above the underlying Blisworth Limestone, indicating a downwards hydraulic gradient from the sand to the Limestone (Mather et al., 1998 as referenced by Jones at al., 2000).

However, on a local scale the low permeability Kellaways Clay Member and the Blisworth Clay would be expected to act as aquicludes between the Kellaways Sand Member and underlying units.

Regionally (but not locally), the Cornbrash provides small, intermittent groundwater supplies which tend to dry out during drought episodes, especially if hydraulically separate from the Blisworth Limestone. In the East Midlands, the thin Cornbrash Formation is an unimportant aquifer, due to its separation from the underlying Blisworth Limestone by the Blisworth Clay. The inferred geological sequence presented in Section 5.5 indicates that these conditions (that is, unit thinness and separation from the underlying Blisworth Limestone by the Blisworth Clay) apply locally to the site.

While a high permeability is expected via fracture flow within the Cornbrash Limestone, Mackay and Cooper (1996) quoted a field permeability of 7.5 x 10^{-5} m/d at Elstow, Bedford (approximately 32km south of the site).

5.6.4 Groundwater Level Data Summary

A groundwater monitoring plan (Hydrock drawing 18443-HYD-XX-ZZ-DR-GE-1019.S2.P04) in included in Appendix B. Groundwater levels recorded at the site and surrounding the site by Hydrock during 2021-2022 are presented in Table 5.4.

Table 5.4: Groundwater Elevations

Strata	Up hydraulic gradient (mAOD)	In-waste (mAOD)	Below waste (mAOD)	Cross-gradient (mAOD)	Down hydraulic gradient, east of the landfill (mAOD)
Landfill Waste	-	55.45 – 64.60	-	-	
Head Deposits	-	-	-	-	40.60 – 43.64
Glaciofluvial Sand and Gravel Member	-	-	55.49 – 55.77	-	-
Glacial Till	58.74 - 60.63	-	-	58.07 – 58.27	-
Kellaways Sand Member	-	-	55.91 – 56.26	-	-
Kellaways Clay Member	-	-	-	-	56.26 – 58.24
Cornbrash Limestone	55.40 – 55.90	-	55.26 – 56.08	46.03 – 56.95	42.88 – 60.22
Blisworth Clay Formation	-	-	-	-	46.53 – 48.26
Blisworth Limestone Formation	-	-	-	41.46 – 51.89	39.87 – 50.97

Groundwater contours are presented in section 5.6.5.2 below.

5.6.5 Recharge, Storage and Flow

5.6.5.1 Concepts

Four main hydraulic units are present beneath site: shallow, groundwater within the landfill waste and deeper groundwater bodies within the Kellaways Sand Member, the Cornbrash Limestone Formation and the Blisworth Limestone Formation. These deeper units are separated by layers deemed to be aquicludes, that is the Kellaways Clay and the Blisworth Clay.

Groundwater (leachate) in the waste is either connate, upstream groundwater inflow, or recharge through the restoration soils, all of which are expected to be quantitatively small.

Whilst groundwater has been encountered in the Glaciofluvial Deposits, the Glacial Till and the Kellaways Clay, recharge to these units is expected to be limited because of the low permeability conditions.

Recharge to the Kellaways Sand Member is expected to occur locally at outcrop, but may be limited by the semi-permeable nature of the lithology. Storage is not expected to be significant enough to sustain groundwater supply locally. Groundwater flow direction for this unit is not known for certain but is expected to follow topography. In parts, the Kellaways Sand may be unsaturated.

Recharge to the Cornbrash Limestone is expected to occur at outcrop east of the landfill site. Some recharge may occur locally via the overlying Kellaways Sand Member, where the Kellaways Clay Member is absent. Storage within the Cornbrash is not expected to be significant, given the limited thickness of the unit beneath the site. Groundwater flow direction for this unit is expected to follow topography.

Recharge to the Blisworth Limestone is expected to occur at outcrops to the east of the landfill site. Recharge may also occur via high permeability overlying deposits (e.g., Head Deposits) where the Blisworth Clay Member is absent. Whilst aquifer storage might be expected to be significant given the Principal Aquifer status of the unit, this may not apply locally given the limited thickness. Groundwater flow is expected to follow topography.

5.6.5.2 Groundwater Contours

Data Availability

There are sufficient data available to estimate groundwater contours separately for the landfill waste, the Cornbrash Limestone, and the Blisworth Limestone. Contours for specified dates in 2022 are shown in Figures 4.3-4.5 below. Measured groundwater levels were reduced to groundwater elevations using site datum levels and computed as contours using Surfer.

Landfill Waste

Contours for water (leachate) levels in the waste (June 2022) are shown in Figure 4.3. The evenly distributed nature of the contours suggests a continuous body of leachate in the waste. The hydraulic gradient is generally towards the north-east and east following topographic profile. However, despite the indication of a flux towards the eastern edge of the landfill there is no recorded observation of leachate emergence. The flux is may be low enough for any discharge to be lost through evapotranspiration at the surface.

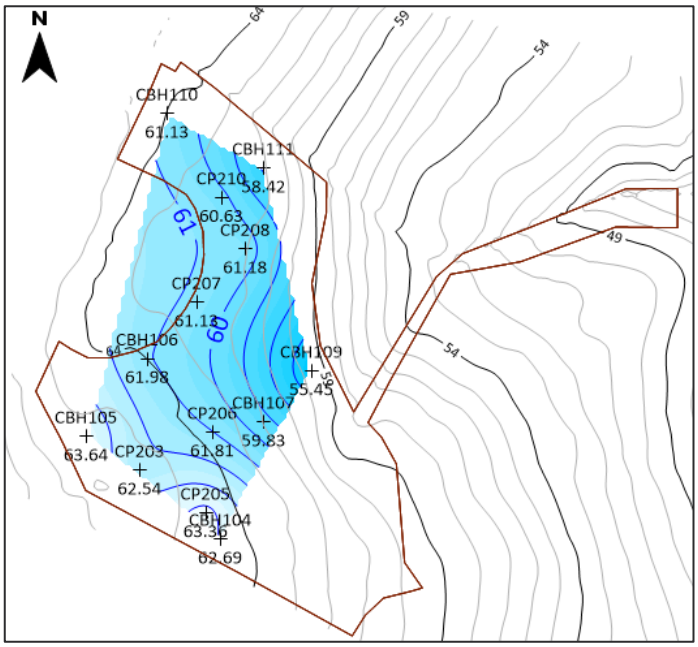


Figure 5.4: Groundwater contour plot for Landfill 21/06/2022

Cornbrash

Contours for groundwater levels in the Cornbrash Limestone Formation (July 2022) are shown in Figure 5.5. In general groundwater flow within the Cornbrash Limestone Formation is towards the east following topographic profile. Groundwater levels recorded at RBH-102 are anomalous and have been removed from the dataset.

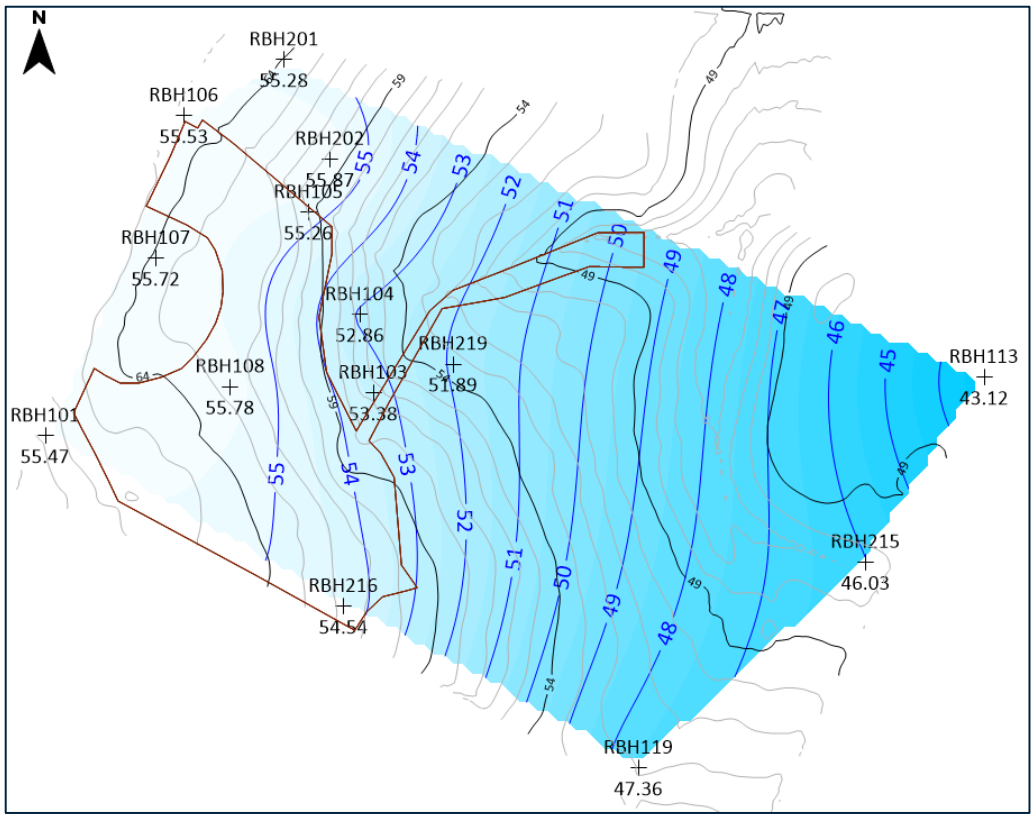


Figure 5.5: Groundwater contour plot (blue) for Cornbrash Limestone Formation 04/07/2022

5.6.5.3 Blisworth Limestone

The Blisworth Limestone Formation is separated from the Cornbrash Limestone Formation by the Blisworth Clay Formation. Groundwater flow beneath the site within the Blisworth Formation is generally towards the north east following topographic profile as shown in Figure *5.6*.

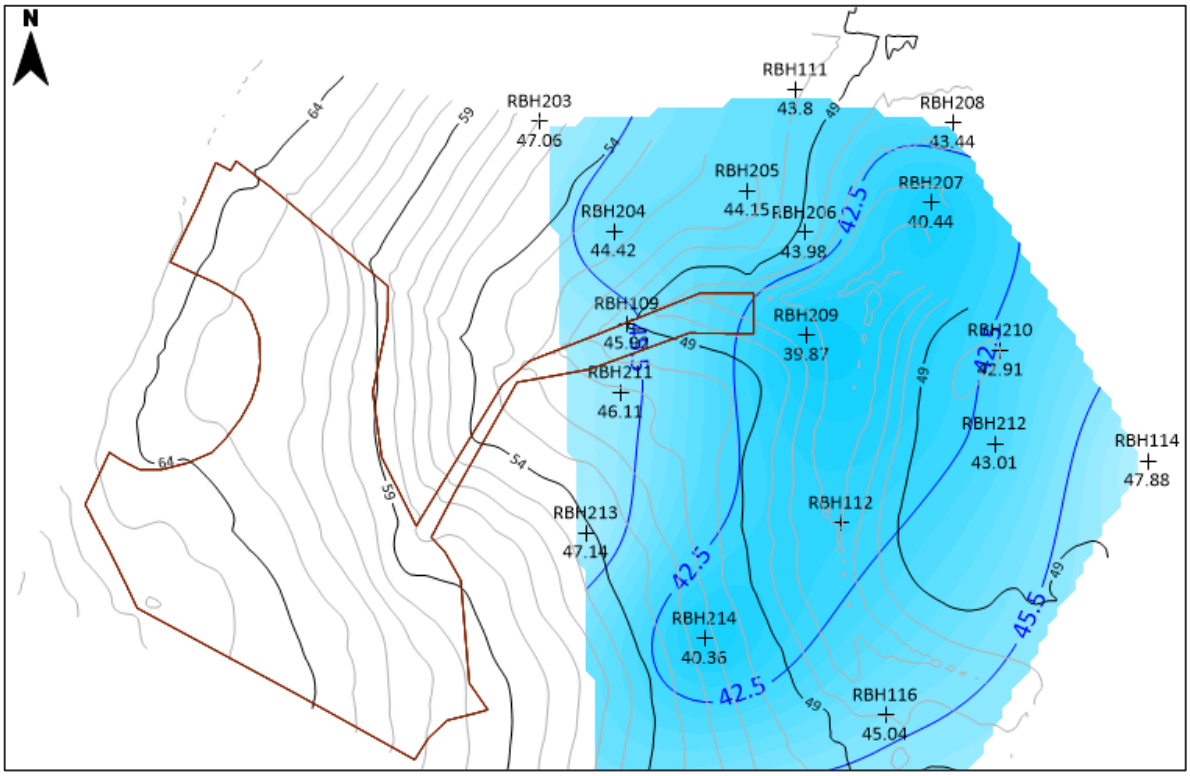


Figure 5.6: Groundwater contour plot for Blisworth Limestone Formation 04/07/2022

5.6.5.4 Westwards Flow Component

There is no evidence of any flow westwards away from the landfill.

5.6.6 Hydraulic Continuity Issues

5.6.6.1 Landfill and Natural Strata

The borehole logs at Appendix C and the geological sections at Appendix F suggest that at the base of the landfill there is the potential for hydraulic continuity between the waste and the Kellaways Sand or the waste and the Cornbrash, depending on whether or not the Kellaways Clay is present or absent.

However, this hydraulic continuity will be limited by the presence of an engineered clay layer placed at the base and sides of the excavation before tipping, evidence for which is presented in Section 5.7 below (with contemporary engineering records such as CQA plans mentioned in the 2009 HRA - see 4.3.7.2 above).

5.6.6.2 Within the Natural Geological Sequence

The three main natural hydraulic units (that is, the Kellaways Sand Member, the Cornbrash Limestone Formation and Blisworth Limestone Formation) are not expected to be in hydraulic continuity with each other given the presence of confining clay layers between each of the units.

Figure 5.7 shows that groundwater elevations within the Blisworth Limestone are consistently lower than groundwater elevations within the Cornbrash Limestone Formation, indicating two separate groundwater bodies, with no or limited hydraulic continuity between the two.

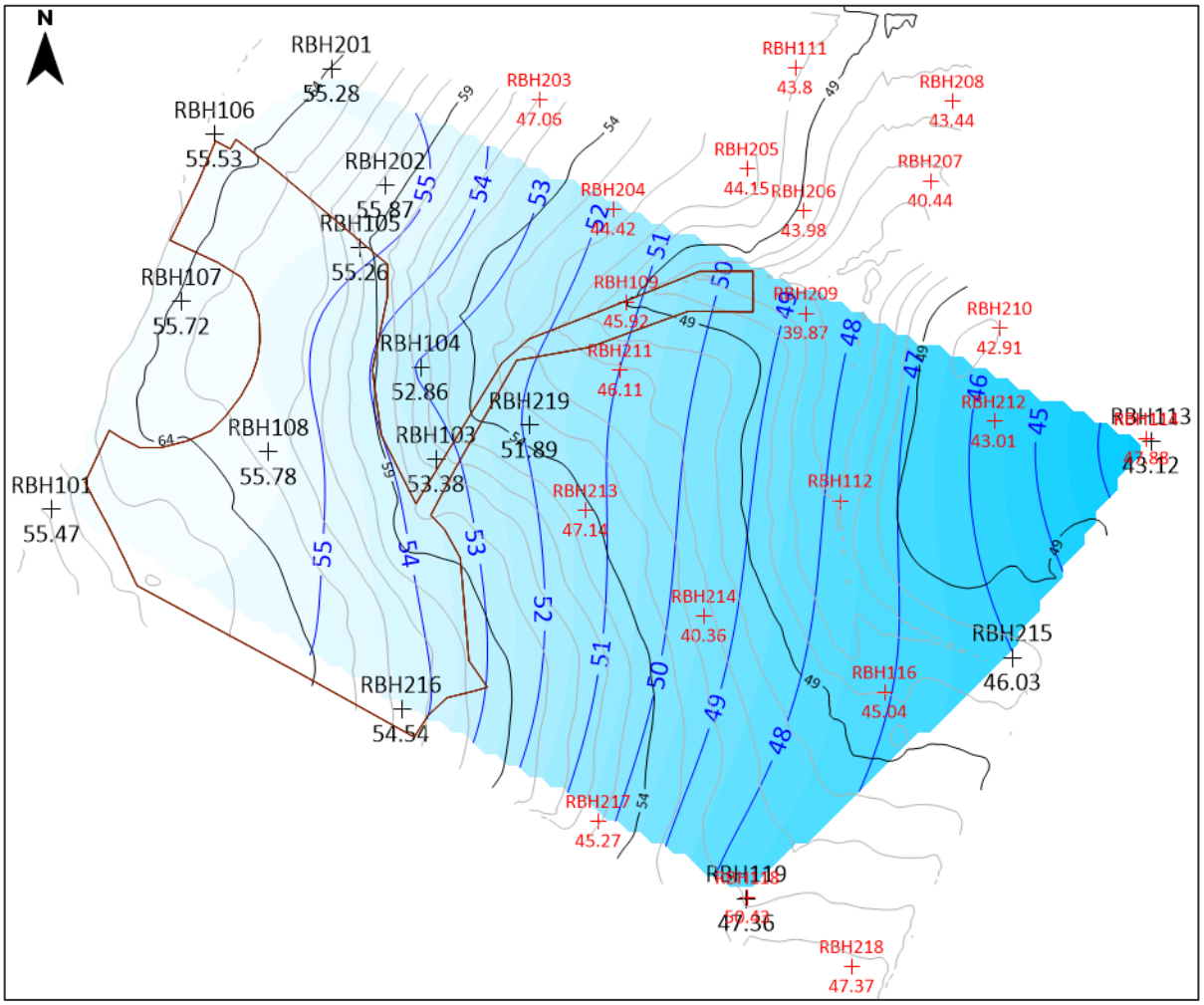


Figure 5.7: Groundwater elevations (black) and contours (blue) in the Cornbrash Limestone and groundwater elevations in the Blisworth Limestone (red) 4-5/07/2022.

5.6.6.3 *Baseflow*

The Kellaways Sand Member, Cornbrash Limestone Formation, and Blisworth Limestone Formation potentially provide baseflow to site drainage leading to Thorpe Brook and the River Nene. However, the generally dry nature of ditches downstream of the site suggest that the baseflow contribution is locally very small due to the low throughput of water.

5.6.7 *Background (Upstream) Groundwater Quality*

Upstream groundwater quality data is available from long-term groundwater monitoring borehole GW1 and Hydrock Boreholes RBH-101, RBH107, RBH 201, and RBH 202.

According to the borehole log (Appendix C) borehole GW1 terminates in the Oxford Clay which Hydrock considers to be questionable (see Section 5.5.3.5 above). Regardless, the GW1 construction configuration indicates that a groundwater sample would be dominated by groundwater from the glacio-fluvial deposits.

Up-gradient boreholes RBH-101, RBH-107, RBH-201 and RBH-202 are screened in the Cornbrash Limestone Formation. Groundwater quality results from these boreholes have been compared to the

Trigger Levels set out in Table S4.2 of the current Permit, summarised in Table 5.5. Laboratory certificates from Hydrock monitoring are included in Appendix G.

Table 5.5: Background (upstream) groundwater quality

Parameter	Trigger Level (µg/l)	GW1*	RBH-101**	RBH-107**	RBH-201***	RBH-202**
		Glaciofluvial deposits	Cornbrash Limestone			
Cadmium	0.1	<0.07 - 0.15	<0.02	<0.02	<0.02 - 0.04	-
Chloride	250,000	37,000 - 180,000	76,000	69,000	79,000 – 81,000	-
Ammoniacal Nitrogen	1,000	<10 - 1990	240	46	15 - 24	-
Nickel	20	<0.7 -11.0	7.5	2	4.8 - 5.4	-
	Note: No groundwater quality results for RBH-202.					
	Trigger level exceedances are shown in red.					

** long-term monitoring data, 2007 to date*

*** one round of sampling in 2021*

**** two rounds of sampling in 2022*

Cadmium and ammoniacal nitrogen concentrations in upstream borehole GW1 occasionally exceed the Trigger Levels set in the Permit, indicating the presence of a non-landfill upstream source.

Concentrations recorded within upgradient boreholes within the Cornbrash Limestone Formation are below the threshold of Trigger Levels set in the Permit.

There are no upgradient boreholes screened within the Blisworth Limestone Formation.

5.7 Review of Waste Characteristics and Impacts

5.7.1 Waste Thickness and Lithology

Landfilled waste is up to >11.60m.

Lithologically, from site investigation borehole records, the waste is present as a soft to firm, grey, yellowish brown, brown and orangish brown, slightly sandy, gravelly, clay. 'Gravels' generally comprised angular to sub-rounded fine to coarse flint, sandstone, ironstone, chalk, limestone, and gravel sized fragments of brick with occasional concrete.

This description is generally in line with the list of permitted wastes in Schedule 3 of the permit. Volumetrically, recorded traces of non-compliant wastes are not considered to be significant.

5.7.2 Evidence of the Engineered Clay Layer and/or Natural Barrier

Borehole logs (Appendix C) indicate that the base of the landfill is represented by some form of clay layer. This clay layer was found to comprise either:

- soft to firm, orangish brown, sandy clay, sometimes containing rootlets (inferred to be the engineered clay layer); or
- Kellaways Clay in the form of soft to very stiff grey/brown clay sometimes containing shells.

Beneath the clay, the base of the landfill is, in places, directly underlain by the Kellaways Sand Member, comprising dense to very dense, sand (in the north and south of the landfill), or the Cornbrash Limestone Formation (in the south of the landfill).

Table 5.6 summarises the strata encountered at the base of the landfill waste material during the 2021 Hydrock investigation.

Table 5.6: Landfill Basal Layer

Location	Waste Description (from borehole log)	Evidence for clay liner? (Y/N)	Does BH extend below the waste?	Thickness of clay liner (m)
CBH-101	Soft slightly sandy slightly gravelly clay with gravels including brick and ash overlying very dense brown coarse sand.	No	Yes (see section 5.7.3)	N/A
CBH-103	Soft to firm slightly sandy gravelly clay with gravels including brick overlying firm slightly silty gravelly clay (note: edge of permitted site. Waste very thin (1.1 m only) at this location).	Yes (possible side slope liner)	Yes (see section 5.7.3)	0.7
CBH-104	Firm slightly gravelly slightly sandy clay with gravels including brick and bituminous material, overlying firm sandy clay.	Yes	Yes (but backfilled with bentonite to a level above the base of the waste)	0.60
CBH-105	Soft slightly sandy slightly gravelly clay with gravels including brick and ash overlying firm slightly sandy slightly gravelly clay.	Yes	Yes (but backfilled with bentonite to a level above the base of the waste)	2.00
CBH-106	Soft slightly gravelly clay with gravels of brick, ash and furnace slag overlying firm clay.	Yes	Yes (but backfilled with bentonite to a level above the base of the waste)	0.90
CBH-107	Firm slightly sandy slightly gravelly clay with gravels including brick overlying very stiff slightly sandy clay.	Yes	No (terminated at top of natural)	0.10
CBH-109	Soft slightly sandy slightly gravelly clay with gravels including brick overlying soft becoming firm slightly gravelly clay.	Yes	Yes (but backfilled with bentonite to a level above the base of the waste)	0.60
CBH-110	Soft slightly silty slightly gravelly clay with milk hydrocarbon odour and gravels including brick overlying medium dense to dense gravelly sand.	No	Yes (but backfilled with bentonite to a level above the base of the waste)	N/A
CBH-111	Firm to stiff slightly gravelly clay with gravels including brick overlying firm to stiff gravelly clay.	Yes	Yes (but backfilled with bentonite to a level above the base of the waste)	0.95
CP203	Firm slight sandy slightly gravelly clay with gravels including brick overlying limestone.	No	No (terminated at top of natural)	N/A
CP205	Firm slightly sandy gravelly clay with gravels including brick overlying firm gravelly sandy clay.	Yes	No (terminated at top of natural and backfilled with bentonite to a level above the base of the waste)	2.00
CP206	Firm slightly sandy slightly gravelly clay with gravels including brick overlying very stiff grey clay.	Yes	Yes (but backfilled with bentonite to a level above the base of the waste)	0.50

Location	Waste Description (from borehole log)	Evidence for clay liner? (Y/N)	Does BH extend below the waste?	Thickness of clay liner (m)
CP207	Soft to firm slightly sandy gravelly clay with gravels including brick overlying firm to stiff slightly sandy gravelly clay.	Yes	Yes (but backfilled with bentonite to a level above the base of the waste)	1.00
CP208	Firm slightly sandy gravelly clay with gravels including brick overlying firm slightly sandy clay.	Yes	Yes (but backfilled with bentonite to a level above the base of the waste)	1.20
CP210	Firm gravelly clay with gravels including chalk overlying firm to stiff clay with rare rootlets.	Yes	Yes (but backfilled with bentonite to a level above the base of the waste)	2.00
RBH-102	Stiff slightly gravelly slightly sandy clay with gravels including brick (soft to firm layer at base presumed to be clay liner) overlying Kellaways Clay	Yes	Yes (see section 5.7.3)	1.00
RBH-105	Firm dark grey mottled orangish brown slightly sandy gravelly clay (note: edge of permitted site. Waste very thin (0.9m only) at this location).	Yes (possible side slope liner)	Yes (see section 5.7.3)	0.50
RBH-108	Soft slightly sandy gravelly clay with gravels including brick and plastic overlying soft very sandy clay. Becoming firm after 7.8m to base at 8.85m assumed to be clay liner)	Yes	Yes (see section 5.7.3)	1.05

It is mostly the case that evidence exists for the engineered clay liner but even where that is not proven conclusively, an alternative (often natural) clayey lithology is present. It follows that a downward flux of leachate to the natural ground would be expected to be restricted and possibly negated by this low permeability clay layer.

5.7.3 Note on Basal Clay Penetration by 2021 Drilling Works

For the purposes of the Hydrock 2021 site investigation, it was considered that there would be value in understanding the relationship between the base of the waste and the natural strata, to enable an assessment to be made of the likelihood or otherwise of the downward migration of leachate from the landfill. In addition, screening of the underlying materials would enable sampling of groundwater from the underlying strata to assess the impact of any such leakage.

It was considered that the risk of compromising the effectiveness of any liner present was low providing the appropriate drilling protocols were followed. In particular, the placement of the slotted pipe section in the completed borehole monitoring installation needed to be such that there was no hydraulic link between the waste and the underlying natural ground via the standpipe.

As per Table 5.6 above, five monitoring boreholes were constructed in this way (i.e., through the waste and screened in natural materials):

- RBH 102;
- RBH 105;
- RBH 108;

- CBH 101; and
- CBH 103.

Logs of these boreholes are presented in Appendix C and an example completion configuration is shown in Figure 5.8 below (RBH 108). Such a completion arrangement would not be expected to cause a breach of the liner or any natural seal.

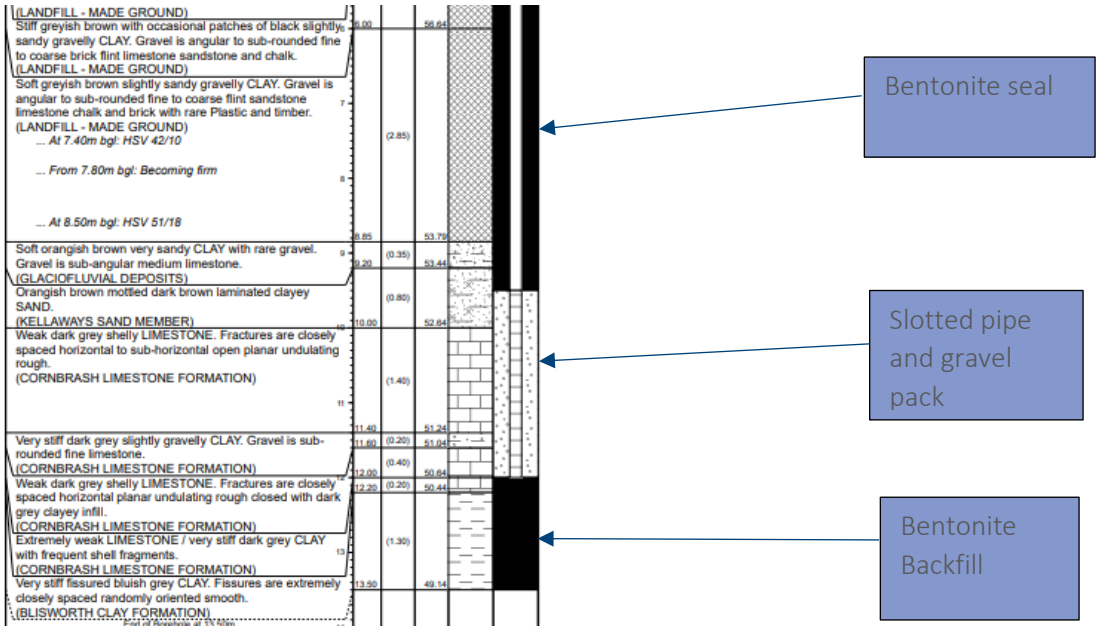


Figure 5.8: RBH-108 Completion Details

This interpretation is also supported by Groundwater Quality Data: the data presented in Table 5.8 below shows no evidence of significant downward leakage from the landfill to the natural strata.

The following boreholes were drilled below the waste to confirm the geology but were backfilled with bentonite to a level above the base of the waste or a clay layer below it, thereby ensuring no downward leakage:

- CBH 104, CBH 105, CBH 106, CBH 109, CBH 110, CBH 111, CP 206, CP207, CP208, CP 210

The following boreholes reached the base of the waste and terminated in the top of the natural material below:

- CBH 107, CP 203, CP 205, CP 210.

Evidence therefore indicates that the 2021-22 site investigation carried out by Hydrock has not compromised the effectiveness of the clay base to the landfill.

5.7.4 Leachate Levels

As indicted by the discussion in Section 5.6.5.2 above, leachate levels in the landfill waste are higher than groundwater levels in the Cornbrash, so the potential for a downward flow exists. However, the quantity of fluid transfer will be restricted (and possibly negated) by the clay layer at the base of the waste.

5.7.5 Leachate Quality

Leachate quality data from the landfill waste have been compared to Trigger Levels set out in in Table S4.2 of the current Permit, as summarised in Table 5.7.

Table 5.7: Leachate quality

Parameter	Trigger Level (µg/l)	In-waste Monitoring Boreholes (Hydrock)				
		CBH-104	CBH-106	CBH-107	CBH-110	CBH-111
Cadmium	0.1	0.02	<0.02 – 0.04	<0.02 – 0.06	<0.02	<0.02
Chloride	250,000	71,000	220,000 – 230,000	41,000 – 59,000	270,000	270,000
Ammoniacal Nitrogen	1,000	2,100	5,500 – 6,700	1,100 – 7,500	2,800	4,500
Nickel	20	11	11 - 23	5.4 - 11	8.6	8.1
Note: Exceeding concentrations are highlighted in red.						

Ammoniacal Nitrogen concentrations exceed the trigger level in all samples. Chloride concentrations also marginally exceed trigger levels in CBH-110 and CBH-111 in the northern of the landfill. Nickel concentrations marginally exceeded trigger levels in CBH-106 in the western part of the landfill.

5.7.6 Impacts on Surrounding Water Environment

5.7.6.1 Groundwater

Groundwater quality results for boreholes installed beneath the landfill and down-gradient of the landfill have been compared to the Trigger Levels set out in in Table S4.2 of the current Permit for quarterly monitoring. These are summarised in Table 5.8 and Table 5.9 below.

Laboratory certificates for the Hydrock monitoring are included in Appendix G and the monitoring borehole locations are shown on Drawing 18443-HYD-XX-ZZ-DR GE- 1019 at Appendix B.

Table 5.8: Below landfill groundwater quality

Borehole	Screened Strata	Cadmium	Chloride	Ammoniacal Nitrogen	Nickel
		0.1 µg/l**	250,000 µg/l**	1,000 µg/l**	20 µg/l**
CBH-101*	Kellaways Sand Member	0.04	93,000	1,500	16
CBH-103*	Glaciofluvial Deposits	<0.02	56,000	39	2.6
RBH-102*	Cornbrash Limestone Formation	<0.02	70,000	760	3.6
RBH-105*		0.20	18,000	33	8
RBH-108*		<0.02	72,000	260	3.6
	Note: Concentrations exceeding the tigger level** are highlighted in red.				

**one round of sampling in 2021*

Bearing in mind the upstream ammoniacal nitrogen exceedance in GW1 (Table 5.5), the results in Table 5.7 indicate very little (if any) impact on natural strata below the landfill.

Table 5.9: Down-gradient groundwater quality

Borehole	Screened Strata	Cadmium	Chloride	Ammoniacal Nitrogen	Nickel
		0.1 µg/l	250,000 µg/l	1,000 µg/l	20 µg/l
GW2*	Blisworth Limestone Formation	<0.07- 0.084	17,000 - 95,000	<10 - 2900	<0.08 - 24
GW3*		<0.07 - <0.03	18,000 - 110,000	<10-3500	<0.7 - 13
CBH-102**	Kellaways Clay Member	0.04	93,000	110	16
RBH-103**	Cornbrash Limestone Formation	<0.02	60,000	650	15
RBH-104**		<0.02	68,000	1,200	4.9
RBH-109**	Blisworth Limestone Formation	0.04	47,000	140	5.9
RBH-110**	Head Deposits	<0.02	130,000	34	1.4
RBH-112**	Blisworth Limestone Formation	<0.02	110,000	250	5.8
RBH-113**	Cornbrash Limestone Formation	<0.02	63,000	30	4.4
RBH-116**	Blisworth Limestone Formation	<0.02	82,000	180	4
RBH-117**	Blisworth Clay Formation	<0.02	70,000	1,100	6.1
RBH-119**	Cornbrash Limestone Formation	<0.02	61,000	570	3.6
RBH-207***	Blisworth Limestone Formation	<0.02	18,000 – 19,000	15 - 25	3.2 – 4
RBH-211***		0.04	34,000 - 38,000	180 - 200	36 - 40
RBH-214***		<0.02 - 0.05	29,000 - 31,000	310 – 760	10 - 19
RBH-216***	Cornbrash Limestone Formation	<0.02 – 0.03	72,000 - 75,000	340 - 460	4.2 – 5.6
RBH-219***		<0.02	40,000	15 - 30	5.8 - 6.8
Note: Exceeding concentrations are highlighted in red.					

**long-term monitoring date, 2007 to date*

***one round of sampling in 2021*

****two rounds of sampling in 2022*

Ammoniacal nitrogen concentrations exceeded trigger levels at RBH-104 in the Cornbrash Limestone Formation. The exceedance is relatively minor and does not indicate a significant flux of leachate from the landfill to surrounding natural strata.

GW2 and GW3 have monitored monitor groundwater in the Blisworth Limestone Formation down-gradient of the landfill since 2007. During that time the trigger level for ammoniacal nitrogen has only been breached three times in GW2 and once in GW3. It is suggested that the landfill is not the source of these exceedances because other non-landfill sources of ammoniacal nitrogen are present in the area including:

- Farming activities from the neighbouring agricultural fields.
- Stone pits to the south-east of the site: groundwater samples taken here indicate a source of ammoniacal nitrogen from this location.

With respect to agricultural use, the same argument might apply to the RBH-104 Cornbrash data.

Nickel concentrations also marginally exceeded the trigger levels on two occasions at GW2. Given the lack of nickel in the intervening strata it is unlikely that the landfill is the source of the nickel exceedances.

Regarding other exceedances:

- RBH 117: the minor exceedance of the ammoniacal nitrogen trigger level probably relates to the location of this borehole in the Rectory Farm buildings area;
- RBH 211: The nickel exceedances are unlikely to be related to the landfill as there is no evidence of nickel contamination in the intervening strata.

Overall, data suggest that the impact of the landfill on groundwater quality in natural strata, if any, is not significant.

5.7.6.2 Surface Water

Surface water sample monitoring data from the ditches near site and from the River Nene have been compared to limits set out in Table S4.1 of the current permit, summarised in Table 5.10. The sampling location plans (Hydrock drawing 18443-HYD-XX-ZZ-DR-GE-1019.S2.P04 and Mick George drawing RF/GEO/O2C) are included in Appendix B. Laboratory certificates from Hydrock monitoring are included in Appendix G.

Table 5.10: Surface water quality

Parameter	Limit	Long term operator monitoring			Hydrock Monitoring			
		SW1	SW2	SW3	S2 (Ditch)*	S3 (Ditch)*	S4 (Ditch)*	S5 (River Nene)*
pH	6 – 9	Dry	7.7 – 8.2	7.7 – 8.3	8.1	8.2	8.2	8
Suspended solids	40 mg/l		11 - 60	24 - 35	-	-	-	-
Visible oils	None visible		None	None	-	-	-	-
Ammoniacal Nitrogen	1 mg/l		<0.01 - 0.15	<0.01 – 0.042	<0.015	<0.015	<0.015	0.05
*suspended solids and visible oils not measured.								

Given that the surface water sampling locations (with the exception of S5) are often dry, it is likely that (with the exception of the River Nene sample) run-off from rainfall dominates the water that was sampled on the few occasions when there was flow.

Long-term monitoring points SW1-3 were marked as decommissioned in 2020. Between 2009 at the start of surface water monitoring until decommission, monitoring point SW1 recorded dry. During the same period, SW2 contained sufficient water for sampling on six occasions and SW3 on five occasions.

There was one exceedance of suspended solids in SW2 in March 2012 which occurred when the site was operational and not since.

It is concluded that the landfill site currently has no effect on the surface water environment.

5.8 Conceptual Risk Model

5.8.1 Sources of Contamination

The following source of contamination has been identified at the site:

- Contaminants potentially present in wastes deposited in the landfill;

5.8.2 Pathways

The following potential pathway(s) have been identified at the site:

- Infiltration of rainfall through the waste and leaching of contaminants;
- Upstream groundwater inflow and leaching of contaminants;
- Downward migration of leachate to underlying natural strata;
- Outward migration of leachate to natural strata;
- Transfer of contaminated groundwater between aquifers;
- Onward transmission of contaminated groundwater to surface waters.

5.8.3 Receptors

The following receptors have been identified for the site:

- Groundwater in natural strata below and to the east of the landfill waste: Secondary A Aquifer status of the Kellaways Sand Member and Cornbrash Limestone, and the Principal Aquifer status of the Blisworth Limestone.
- Surface water: regarded under current conditions to be restricted to Thorpe Brook and the River Nene.

5.9 Qualitative Risk Assessment

5.9.1 General

A qualitative assessment of the risk posed by the landfill has been undertaken in Table 5.11 to determine the critical receptors for the site.

Table 5.11: Qualitative risk assessment

Receptor	Risk from Landfill	Justification
Glacial Till	Low	1. Relatively little groundwater present in the unit. 2. Low permeability expected. 3. Flux of water is likely to be very small.
Glaciofluvial deposits	Low	1. Extent of this strata is expected to be limited due to historical quarrying activities. 2. Known to contain ammoniacal nitrogen in excess of Trigger Level upstream of the landfill

Receptor	Risk from Landfill	Justification
Kellaways Sand Member below the landfill	Low to Moderate	1. Most vulnerable where present below the base of the landfill. 2. Ammoniacal nitrogen concentration marginally in exceedance of Trigger Level below the landfill. 3. No other trigger level exceedances for other contaminants.
Kellaways Sand off site to east	Low	1. No quality data but appears to be unsaturated east of the site 2. Inferred to be in hydraulic continuity with Kellaways Sand beneath the landfill
Kellaways Clay Member	Low	1. Low permeability expected. 2. Flux of water is likely to be very small. 3. Classified as unproductive strata.
Cornbrash Limestone Formation **(below the site and to the east)**	Low to Moderate	1. Most vulnerable where present below the base of the landfill. 2. Similarly, vulnerable where it is present directly underlying the Kellaways Sand Member i.e., where the Kellaways Clay Member is absent. 3. Ammoniacal nitrogen concentration in exceedance of Trigger Level below the landfill and off-site at RBH 104 (both relatively minor and no contamination by other contaminants).
Blisworth Clay Formation	Low	1. Low permeability expected. 2. Flux of water is likely to be very small.
Blisworth Limestone Formation	Low	1. Overlain by a thick layer of low permeability Blisworth Clay, so unlikely to receive any contaminated groundwater from the Cornbrash Limestone Formation. 2. Occasional ammoniacal nitrogen concentration in exceedance of Trigger Level in GW2 and GW3 most probably from a non-landfill source
Thorpe Brook and River Nene	Low	1. Theoretically in receipt of baseflow from the Cornbrash Limestone Formation and the Blisworth Limestone Formation but no evidence of issues within influential distance of site (all ditches and watercourses are now dry since site operations ceased) 2. First permanent water 'downstream' of the landfill site subject to other water quality influences (such as agricultural activity) which compromises the effectiveness of long-term monitoring. 3. No evidence of exceedance of trigger levels since site operations ceased.

5.9.2 Critical Receptor

Based on the qualitative risk assessment, the critical receptor for the site is the Cornbrash Limestone Formation, which should be the focus of attention in aftercare monitoring, with one precautionary 'sentinel' borehole in the Blisworth Limestone because of its status as a Principal Aquifer.

Other units are not critical receptors for the following reasons:

- Glacial Till: low permeability;
- Glaciofluvial deposits: remnant presence only;
- Kellaways Sand: thin and unsaturated;
- Kellaways Clay: low permeability;
- Blisworth Clay: low permeability.

The surface water environment downstream of the landfill is probably not a critical receptor as the base flow contribution from the site and units connected with it is considered to be too small.

As per Figure *5.9* below, the first permanent water 'downstream' of the landfill site is subject to other water quality influences (such as agricultural activity). Whilst this potential extraneous effect compromises the effectiveness of any long-term monitoring, for precautionary reasons, it is proposed to include this location in the post closure monitoring regime.

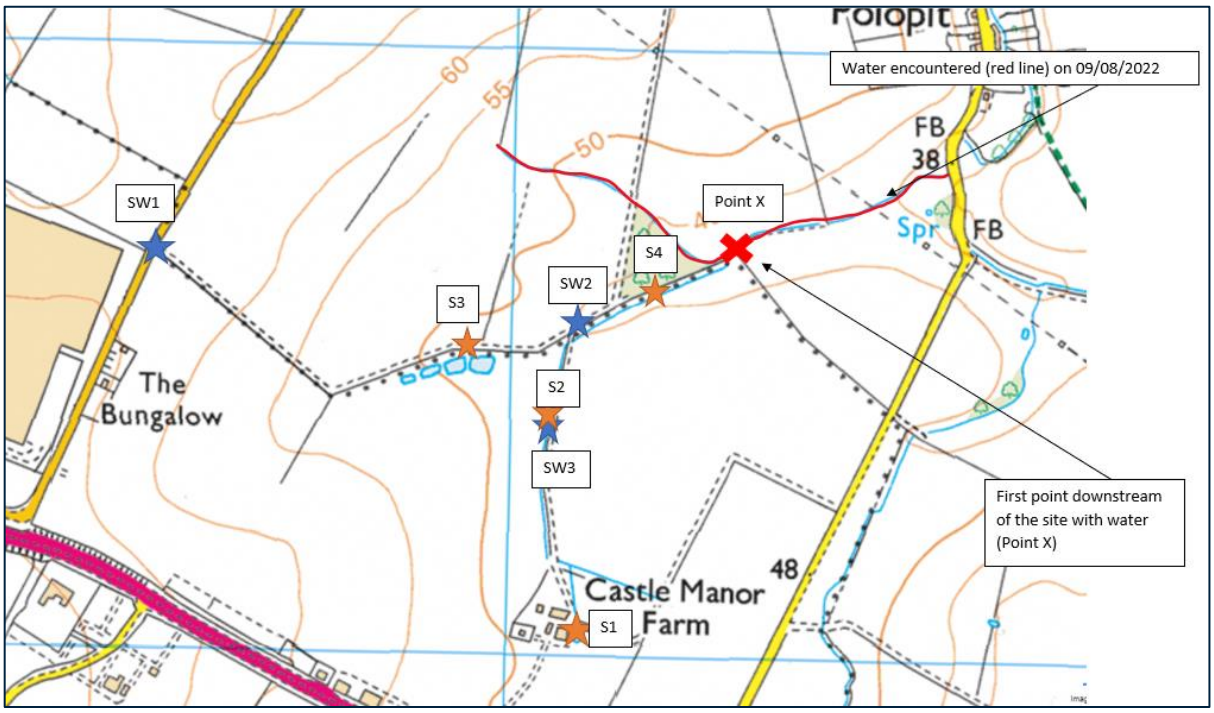


Figure 5.9*: Surface Water Monitoring Points*

6. 2022 HRA REVIEW

6.1 Objective

The purpose of this section is to provide an update to the 2009 HRA review as required by the permit. The basis of the update is the findings of the Conceptual Model described in Section 5.

6.2 2022 Update summary

Key points of the update are presented in Table 6.1 below. The comparison should take into account the following factors:

- The 2009 HRA was prepared when the site was operational and only partly filled, whereas the 2022 HRA is prepared after all operations have ceased and the site decommissioned and restored; and
- The 2022 assessment has the benefit of 13 years additional long-term monitoring as required by the permit and the findings of an extensive 2021-22 programme of site investigation and testing carried out by Hydrock.

Table 6.1: 2009 and 2022 HRA Comparison

Ref	Issue	2009 HRA Review	2022 HRA Review
1	Wastes accepted	Generally, in accordance with the permit. Non-compliant inclusions not significant.	Agreed, and supported by borehole investigations into waste. Chemical test data indicate that any non-compliant inclusions have no effect on leachate quality.
2	Geological Barrier	Oxford clay a natural barrier.	No evidence that this unit is actually present beneath the landfill (but other clay materials are).
3		Kellaways Clay and Kellaways Sand are low permeability materials.	Agreed.
4		Engineered base and side slope liner.	Generally supported by borehole investigations into waste.
6	Pathways	General configuration of layered sequence of aquifers/aquicludes	Generally supported by borehole investigations and monitoring.
7		Minor aquifers are pathways more than receptors.	Generally agreed but Cornbrash is regarded as a receptor.
8		Surface water receptors recognised.	Probably not applicable, particularly since operations ceased.
9	Receptors	Kellaways sand not a critical receptor.	Generally agreed as groundwater not sensitive and very limited baseflow contribution.
10		Cornbrash not a critical receptor.	Disagree; Cornbrash is critical receptor for this landfill.
11		Titchmarsh Meadows (surface water) is a critical receptor.	Disagree; the surface water system downstream of the site is unaffected.
12		The Blisworth Limestone is the critical receptor.	Disagree because of the effectiveness of the Blisworth Clay aquiclude above it.
13	Compliance with the permit	Site is generally compliant with the requirements of the 2008 permit.	Agreed.

7. MONITORING PROPOSALS

7.1 General

This section presents monitoring proposals that will apply when the site goes into aftercare. The proposals are based on the findings of the 2022 HRA review, key points being:

- The critical receptor is the Cornbrash formation below and east of the landfill;
- Although the Blisworth Limestone is not a critical receptor its Principal Aquifer status is such that the monitoring of a single 'sentinel' borehole east of the landfill is advisable;
- The inclusion of a single upstream (i.e., west of the landfill) monitoring borehole in the Cornbrash is advisable;
- There is limited value in continuing to monitor surface water because the nearest 'wet' location is likely to be affected by other anthropogenic sources. However, some precautionary surface water monitoring is anticipated to be required by the EA and so is included in the proposals.

7.2 Current Monitoring Arrangements

7.2.1 Current Monitoring Network

Current arrangements and recommendations are summarised in Table 7.1.

Table 7.1: Current Monitoring Arrangements

Location	Function	Comment	Recommendation
Groundwater			
GW1	Long-term monitoring of upstream groundwater quality	Limited value because not installed in critical receptor (Cornbrash)	• Discontinue • Replace with Hydrock Borehole RBH 101
GW2	Long term monitoring of groundwater quality in Blisworth Limestone	On edge of landfill waste	• Discontinue
GW3		Destroyed	• Replace with RBH 209
Surface Water			
SW1	Downstream Surface Water Monitoring	All locations permanently dry since site operations ceased	• Discontinue attempted monitoring
SW2			
SW3			

7.2.2 Current Monitoring Scope and Frequency

7.2.2.1 Groundwater

Current arrangements are as Section 3.4.3.1 above

- Quarterly: water level, pH, ammoniacal nitrogen, cadmium, nickel, and chloride;
- Annually: as above plus sampling and testing for EC, TON, TOC, Ca, Mg, Na, K, Total alkalinity, SO4, Fe, Mn, Cr, Cu, Pb, Zn.

7.2.2.2 Surface Water

Current requirements are as Section 3.4.2:

- Monthly: check for visible oil;

- Quarterly: measurements of pH, suspended solids, ammoniacal nitrogen;
- Annually: sampling and testing for: TOC, Se, Sb, Hg, Al, Mg, SO4, Cl, Fe, Cd, Cr, Cu, Ni, Pb, Zn, Fl, BTEX, PCB, PAH, TDS, DOC

7.3 Proposals for Post-Closure (Aftercare) Monitoring

7.3.1 Proposed Network (Groundwater Only)

The proposed post-closure network is presented in Table 7.2 below. The locations are shown on Drawing 23880-HYD-XX-ZZ-DR-GE-1002 at Appendix B.

Table 7.2: Proposed post-closure monitoring network

Propose Location	Status	Monitoring Function
RBH 107	Hydrock borehole installed in Cornbrash upgradient from the waste	Upstream groundwater quality in the critical receptor
RBH 103 RBH 104	Hydrock borehole installed in Cornbrash downgradient from the waste mass	Groundwater quality in the critical receptor immediately downgradient from the landfill
CP 204	Hydrock borehole installed in Kellaways Sand and Kellaways Clay downgradient from the waste mass	Groundwater in a unit potentially hydraulically connected to the landfill
RBH 209	Hydrock borehole in Blisworth Limestone downgradient from the waste mass	Downgradient sentinel borehole in Principal Aquifer
Point X on Drawing 1002	Closest surface water location likely to be flowing during most monitoring visits	Precautionary check on surface water quality

7.3.2 Frequency and Scope

It is proposed that the current scope and frequency applies (i.e., as per current permit):

Groundwater

- Quarterly: water level, pH, ammoniacal nitrogen, cadmium, nickel, and chloride; and
- Annually: as above plus sampling and testing for EC, TON, TOC, Ca, Mg, Na, K, Total alkalinity, SO4, Fe, Mn, Cr, Cu, Pb, Zn.

Surface Water

- Monthly: check for visible oil;
- Quarterly: measurements of pH, suspended solids, ammoniacal nitrogen;
- Annually: sampling and testing for: TOC, Se, Sb, Hg, Al, Mg, SO4, Cl, Fe, Cd, Cr, Cu, Ni, Pb, Zn, Fl, BTEX, PCB, PAH, TDS, DOC

8. CONCLUSIONS

The principal conclusions of this 2022 HRA review are:

1. The deposited waste is generally inert in nature in accordance with the permit.
2. The waste is deposited in a former quarry that involved substantial removal of the glaciofluvial deposits.
3. The waste is deposited on natural materials that are either Kellaway Sand, Kellaways Clay, or Cornbrash Formation.
4. The base of the waste is mostly represented by an engineered basal clay layer. Irrespective of any uncertainty regarding the presence of an engineered clay layer, the basal material is still clayey in nature. The overall effect is that the potential for downward transmission of leachate to natural strata beneath and outwith is restricted.
5. Youngest to oldest, the Kellaway Sand, the Kellaways Clay, and the Cornbrash Formation are followed by the Blisworth Clay and the Blisworth Limestone. This is a nearly horizontal system of relatively thin aquifers and aquicludes, with the Kellaways Clay and the Blisworth Clay separating hydraulic units in the Kellaways Sand, the Cornbrash, and the Blisworth Limestone.
6. Groundwater level data clearly indicate the separation of aquifers from each other but all show a generally eastwards flow direction. The local throughput of water and the consequent baseflow contribution are considered to be small.
7. Monitoring data indicates that whilst leachate in the landfill contains contaminants in excess of trigger levels set in the permit for receptors outwith the landfill, the effect on such receptors is very limited and the occasional exceedances are more likely to be attributable to external factors i.e., sources other than the landfill waste.
8. A post-closure (aftercare) monitoring regime has been proposed based on the following conclusions:
    a. The critical receptor is the Cornbrash;
    b. There is a need to monitor groundwater quality in the Cornbrash upstream of the waste (RBH 107); and downgradient from the waste (RBH103, RBH 104);
    c. There is value in adding CP204 to the network as it represents groundwater quality in a unit potentially hydraulically connected to the landfill (Kellaways Sand, Kellaways Clay).
    d. There is also value in continuing to monitor groundwater quality in RBH 209 as a sentinel borehole in the Principal Aquifer that is the Blisworth Limestone.
    e. It is recommended to continue surface water monitoring at one point only.

Appendix A Permit

ENVIRONMENT AGENCY

Variation Notice with introductory note

Pollution Prevention and Control (England & Wales) Regulations 2000

Rectory Farm Quarry

Mick George (Haulage) Limited
Rectory Farm Quarry
Titchmarsh Road
Thrapston
Northamptonshire
NN14 4NJ

Variation Notice Number

PP3233XK

Permit number

EP3837LU

Rectory Farm Quarry

Permit Number PP3233SK

Introductory note

This introductory note does not form a part of the permit

The following notice is issued under regulation 17 of The Pollution Prevention and Control (England and Wales) Regulations 2000 (S.I.2000 No. 1973 (as amended) (the Regulations) to vary the conditions of a permit issued under the Regulations to operate an installation. The notice comprises schedule 1 containing conditions to be deleted, schedule 2 conditions to be amended and schedule 3 conditions to be added.

The variation has been initiated at the request of the operator. The effect of this variation is to increase the annual tonnage of waste to be accepted at the installation. There are no substantial changes to the Permit as a result of this variation.

Status Log of the permit

Detail	Date	Response Date
Application BT9879IY	Duly made 28/04/03	
Additional Information received	Request dated 29/08/03	Response dated 24/09/03
	Request dated 20/10/03	Response dated 23/10/03
		Response dated 27/10/03
		Response dated 31/10/03
		Response dated 21/11/03
Permit determined	05/07/04	
Variation notice EP3837LU issued	17/10/06	
Variation notice PP3233XK issued	11/01/08	

Other existing Licences/Authorisations/Registrations relating to this site

Holder	Reference Number	Date of issue
Mick George (Haulage)Ltd	PRNNF/12740 01 (Discharge consent)	08/07/02

End of Introductory Note

Variation Notice

Permit number
BT9879IY

Variation number
PP3233XK

The Environment Agency (the Agency) in exercise of its powers under Regulation 17 of the Pollution Prevention and Control (England and Wales) Regulations 2000 (SI 2000 No 1973) hereby varies the permit held by you

Mick George (Haulage) Limited ("the operator"),

whose registered office is
Second Drove
Meadow Lane
St Ives
Cambridgeshire PE17 4YQ

company registration number 2417831

to operate an installation at
Rectory Farm Quarry
Titchmarsh Road
Thrapston
Northamptonshire NN14 4NJ

to the extent set out in schedules 1 to 3 of this variation notice.

The notice shall take effect from 11 January 2008

Signed	Date
	11/01/2008

Andy Baxendale Area Manager (Northern)

Authorised to sign on behalf of the Agency

SCHEDULE 1 – CONDITIONS TO BE DELETED

1. All conditions and schedules are deleted

SCHEDULE 2 – CONDITIONS TO BE AMENDED

2. None

SCHEDULE 3 – CONDITIONS TO BE ADDED

3. The following conditions are added to the permit

Conditions

1. Management

1.1 General management

1.1.1 The Activities shall be managed and operated:

(a) in accordance with a management system, which identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents and non-conformances and those drawn to the attention of the operator as a result of complaints; and

(b) by sufficient persons who are competent in respect of the responsibilities to be undertaken by them in connection with the operation of the Activities.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.2 Accidents that may cause pollution

1.2.1 The operator shall:

(a) maintain and implement an accident management plan;

(b) review and record at least every 4 years or as soon as practicable after an accident, (whichever is the earlier) whether changes to the plan should be made;

(c) make any appropriate changes to the plan identified by a review.

1.3 Finance

1.3.1 The financial provision for meeting the obligations under this permit set out in the agreement made between the operator and the Agency dated 5th July 2004 shall be maintained by the operator throughout the subsistence of this permit and the operator shall produce evidence of such provision whenever required by the Agency.

1.3.2 The operator shall ensure that the charges it makes for the disposal of waste in the landfill cover the cost of operating the landfill, as far as possible the cost of the financial provision required by condition 1.3.1 and thus the estimated costs for the closure and aftercare of the landfill.

1.4 Site security

1.4.1 Site security measures shall prevent unauthorised access to the site, as far as practicable.

2. Operations

Permitted activities

2.1.1 The operator is authorised to carry out the activities specified in schedule 1 table S1.1 (the "Activities").

2.2 The site

2.2.1 The Activities shall not extend beyond the Site, being the land shown edged in red on the site plan at schedule 2 to this permit.

2.3 Operating techniques

2.3.1 The Activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1 table S1.2, unless otherwise agreed in writing by the Agency.

2.4 Off-site conditions

2.4.1 The operator shall, unless otherwise agreed in writing by the Agency, undertake monitoring for the parameters, at the locations and at not less than the frequencies specified, in the following tables in schedule 4 to this permit

(a) surface water specified in table S4.5

(b) groundwater specified in table S4.2 and S4.6

(c) landfill gas specified in table S4.3

2.5 Improvement programme

2.5.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Agency.

2.6 Pre-operational conditions

There are no pre-operational conditions in this permit.

2.7 Engineering

2.7.1 No construction of any new cell shall commence until the operator has submitted construction proposals and the Agency has confirmed that it is satisfied with the construction proposals.

2.7.2 The construction of a new cell shall take place only in accordance with the approved construction proposals unless:

(a) any change to the approved construction proposals would have no impact on the performance of any element of the design; or

(b) a change has otherwise been agreed in writing by the Agency.

2.7.3 No disposal of waste shall take place in a new cell until the operator has submitted a CQA Validation Report and the Agency has confirmed that it is satisfied with the CQA Validation Report.

2.7.4 No construction of landfill Infrastructure shall commence until the operator has submitted relevant construction proposals or a written request to use previous construction proposals and the Agency has confirmed that it is satisfied with the construction proposals.

2.7.5 The construction of the Landfill Infrastructure shall take place only in accordance with the approved construction proposals unless:

(a) any change to the approved construction proposals would have no impact on the performance of any element of the design; or

(b) a change has otherwise been agreed in writing by the Agency.

2.7.6 The operator shall submit a CQA Validation Report as soon as practicable following the construction of the relevant Landfill Infrastructure.

2.7.7 Where pollution controls are immediately necessary to prevent an incident or accident, then conditions 2.7.4 and 2.7.5 do not apply and the relevant Landfill Infrastructure may be constructed, provided that the construction proposals are submitted to the Agency as soon as practicable.

2.7.8 For the purposes of conditions 2.7.1, 2.7.3 and 2.7.4, the Agency shall be deemed to be satisfied where it has not, within the period of 4 weeks from the date of receipt of the relevant construction proposals or CQA Validation Report, either:

(a) confirmed whether or not it is satisfied; or

(b) informed the operator that it requires further information.

2.8 Waste acceptance

2.8.1 Wastes shall only be accepted for disposal if:

(a) they are listed in schedule 3, and

(b) they are inert waste, and

(c) they are not liquid waste (including waste waters but excluding sludge), and

(d) all the relevant waste acceptance procedures set out in schedule 1 of the Landfill Regulations have been completed, and

(e) they fulfil the relevant waste acceptance criteria, and

(f) they have not been diluted or mixed solely to meet the relevant waste acceptance criteria, and

(g) they are wastes which have been treated, except for wastes for which treatment is not technically feasible.

2.8.2 The operator shall visually inspect:

(a) without unloading it, waste that is not in an enclosed container or enclosed vehicle on arrival at the landfill; and

(b) waste at the point of deposit;

and shall satisfy itself that it conforms to the basic characterisation documentation submitted by the holder.

2.8.3 Where the operator has taken samples to establish that the waste is in conformity with the documentation submitted by the holder then the samples taken shall be retained for at least one month and results of any analysis for at least two years.

2.8.4 The operator on accepting each delivery of waste shall provide a receipt to the person delivering it.

2.8.5 The total quantity of waste that shall be deposited in the landfill shall be limited by the pre-settlement levels shown on drawing submitted in the Improvement Programme Condition 5.

2.8.6 The quantity of waste that is deposited in the landfill in any year shall not exceed the limits in schedule 1 table S1.5.

2.8.7 The operator shall maintain and implement a system which ensures that a record is made of the quantity, characteristics, date of delivery and, where practicable, origin of any waste that is received for disposal or recovery and of the identity of the producer, or in the case of multiple collection vehicles, of the collector of such waste. Any information regarded by the operator as commercially confidential shall be clearly identified in the record.

2.9 Closure, aftercare and decommissioning

2.9.1 The operator shall maintain and operate the Activities so as to prevent or where that is not practicable, to minimise, any pollution risk on closure and decommissioning.

3. Emissions and monitoring

3.1 Emissions to water, air or land

3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 4 tables S4.1 .

3.2 Emissions to groundwater

3.2.1 There shall be no emission from the activities into groundwater of any substance in List I (as defined by the Groundwater Regulations) contrary to those Regulations.

3.2.2 There shall be no emission from the activities into groundwater of any substance in List II (as defined in the Groundwater Regulations) so as to cause pollution (as defined in those Regulations).

3.2.3 The trigger levels for emissions into groundwater for the parameter(s) and monitoring point(s) set out in schedule 4 table S4.2 of shall not be exceeded.

3.2.4 The operator shall submit to the Agency a review of the Hydrogeological Risk Assessment:

(a) between 9 and 6 months prior to the fourth anniversary of the granting of the permit, and

(b) between 9 and 6 months prior to every subsequent 4 years after the fourth anniversary of the granting of the permit.

3.3 Fugitive emissions of substances

3.3.1 Fugitive emissions of substances (excluding odour, noise and vibration) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.3.2 Litter or mud arising from the activities shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures have been used to prevent or where that is not practicable to minimise, the litter and mud.

3.3.3 Litter or mud arising from the activities shall be cleared from affected areas outside the Site as soon as practicable.

3.3.4 All liquids, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3.5 The limits for landfill gas set out in schedule 4, table S4.3, shall not be exceeded.

3.4 Odour

3.4.1 Emissions from the activities shall be free from odour at levels likely to cause annoyance outside the Site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures to prevent or where that is not practicable to minimise the odour.

3.5 Noise and vibration

3.5.1 Emissions from the Activities shall be free from noise and vibration at levels likely to cause annoyance outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures to prevent or where that is not practicable to minimise the noise and vibration.

3.6 Monitoring

3.6.1 The operator shall, unless otherwise agreed in writing by the Agency, undertake the monitoring for the parameters, specified in the following tables in schedule 4 to this permit:

(a) Point source emissions specified in tables S4.1;

(b) Groundwater specified in tables S4.2 and S4.6;

(c) Landfill gas specified in tables S4.3 and S4.4;

(d) Surface water specified in table S4.5

3.6.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.6.3 A topographical survey of the site referenced to Ordnance Datum shall be carried out:

(a) annually, and

(b) prior to the disposal of waste in any new cell or new development area of the landfill, and

(c) following closure of the landfill or part of the landfill.

The topographical survey shall be used to produce a plan of a scale adequate to show the surveyed features of the site.

3.7 Transfers off-site

3.7.1 Records of all the wastes sent off site from the activities, for either disposal or recovery, shall be maintained.

4. Information

4.1 Records

4.1.1 All records required to be made by this permit shall:

(a) be legible;

(b) be made as soon as reasonably practicable;

(c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and

(d) be retained, unless otherwise agreed in writing by the Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:

(i) the results of groundwater monitoring;

(ii) sub-surface landfill gas monitoring;

(iii) waste types and quantities;

(iv) topographical surveys; and

(v) the specification and as built drawings of the basal, sidewall and capping engineering systems

4.1.2. Any records required to be made by this permit shall be supplied to the Agency within 14 days where the records have been requested in writing by the Agency.

4.1.3. All records required to be held by this permit shall be held on the site and shall be available for inspection by the Agency at any reasonable time.

4.2 Reporting

4.2.1 A report or reports on the performance of the activities over the previous year shall be submitted to the Agency by 31 January (or other date agreed in writing by the Agency) each year. The report(s) shall include as a minimum:

(a) a review of the results of the monitoring and assessment carried out in accordance with this permit against the relevant assumptions, parameters and results in the risk assessments submitted with the Application;

(b) where the operator's management system encompasses annual improvement targets, a summary report of the previous year's progress against such targets;

(c) the annual production/treatment set out in schedule 5 table S5.2.

(d) details of any contamination or decontamination of the site which has occurred;

(e) the topographical surveys required by condition 3.6.3 other than those submitted as part of a CQA validation report;

(f) the volumetric difference (reported in cubic metres) between the most recent topographical survey and the previous annual topographical survey i.e. the additional volume of the landfill void that is occupied by waste;

(g) an assessment of the settlement behavior of the landfill body based on the difference between the most recent topographical survey and previous annual topographical survey for the areas of the landfill which did not receive waste between the surveys;

(h) a calculation of the remaining capacity (reported in cubic metres) derived from the pre-settlement contours and the most recent topographical survey;

(i) the compliance testing undertaken in the period;

4.2.2 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

(a) in respect of the parameters and emission points specified in schedule 5 table S5.1;

(b) for the reporting periods specified in schedule 5 table S5.1 and using the forms specified in schedule 5 table S5.3; and

(c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.3 A summary report of the waste types and quantities accepted and removed from the site shall be made for each quarter. It shall be submitted to the Agency within one month of the end of the quarter and shall be in the format required by the Agency.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding 4 years, submit to the Agency, within 6 months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

4.2.5 All reports and notifications required by the permit shall be sent to the Agency using the contact details supplied in writing by the Agency

4.3 Notifications

4.3.1 The Agency shall be notified without delay following the detection of:

(a) any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission which has caused, is causing or may cause significant pollution;

(b) the breach of a limit specified in the permit;

(c) any significant adverse environmental effects.

4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 6 to this permit within the time period specified in that schedule.

4.3.3. Prior written notification shall be given to the Agency of the following events and in the specified timescales:

(a) as soon as practicable prior to the permanent cessation of any of the permitted activities;

(b) as soon as practicable prior to the cessation of the landfill disposal activities, for a period likely to exceed 1 month; and

(c) at least 7 days prior to the resumption of the landfill disposal activities after a cessation notified under (b) above.

4.3.5 Where the Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Agency when the relevant monitoring is to take place. The operator shall provide this information to the Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.6 The Agency shall be notified within 7 days of any changes in technically competent management and the name of any incoming person together with evidence that such person has the required technical competence.

4.3.7 The Agency shall be provided, within 14 days of the operator or any relevant person being convicted of a relevant offence, (unless such information has already been notified to the Agency), with details of the nature of the offence, the place and date of conviction, and the sentence imposed.

4.3.8 The Agency shall be notified within 14 days of the operator and/or any relevant person lodging an appeal against a conviction for any relevant offence and of the outcome when the appeal is decided.

4.3.9 The Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

(a) any change in the operator's trading name, registered name or registered office address;

(b) any change to particulars of the operator's ultimate holding company (including details of an ultimate holding company where an operator has become a subsidiary); and

(c) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 7 shall have the meaning given in that schedule.

Schedule 1 - Operations

Table S1.1 Activities		
Activity listed in schedule 1 of the PPC Regulations	**Description of specified activity**	**Limits of specified activity**
Section 5.2 Part A (1) (b), The disposal of waste in a landfill.	Landfill for inert waste (landfill classification under the Landfill Regulations 2002)	Receipt, handling, storage and disposal of wastes, consisting of the types and quantities specified in conditions 2.8, as an integral part of landfilling.
Directly Associated Activity		
Water discharges to controlled waters.	Discharges of site drainage from the landfill.	From surface water management system to point of entry to controlled waters.

Table S1.2: Operating techniques		
Description	**Parts**	**Date Received**
Application	The response to questions 1.1-1.3, 2.1-2.12 in part B of the application form version 2 November 2000 and given in Volume I, II III and IV of the application (excluding the response to questions 1.1-1.3, 2.1-2.12 in part B of the application form version 2 November 2000 and given in Volume I,II,III and IV of the application)	28/04/2003
Response to letter dated 29/08/03	The response to letter dated 29/08/03 is given in letter dated 24/09/03 REF: DW-T2/4	24/09/2003
Response to schedule 4 Notice dated 29/08/2003	Response to questions 0.1 , 1.1.1-1.1.5, 1.1.10-1.1.15, 1.1.27-1.1.32, 1.2.28-1.2.29, 2.1.1, 2.2.1, 2.2.6, 2.2.8, 2.3.16, 2.3.34, 2.3.42, 2.3.48, 2.3.63, 2.3.67-2.3.68, 2.3.70-2.3.71, 2.3.85, 2.4.1, 2.4.4, 4.1.1-4.1.2, 4.3.4, of the schedule 4 notice dated 29/08/2003 given in appendices 1- 24 and volumes I - V replaces questions1.1- 1.3 and 2.1- 2.12 in part B of the application form version 2 November 2000 and with supporting information given in Volume I , II, III and IV .	24/09/2003
Response to letter dated 20/10/2003	The response to question 1.1.1 of the letter dated 20/10/03 ref: BT9879 given in plan reference number RF/REC/01a dated Oct 2003 replaces plan reference RF/SR/01 given in response to question 1.1.1 of the schedule 4 notice dated Sept 2003	23/10/2003
Response to letter dated 20/10/2003	Response to question 1.1.27 and 1.1.30 of the letter dated 20/10/03 ref:BT9879 given in plans referenced RF/GEO/02c Oct 2003 and RF/SR/06a Oct 2003 replaces Plans reference RF/SR/06 dated Sept 03 and RF/GEO/02a dated Sept 2003 in response to questions 1.1.27 and 1.1.30 of the schedule 4 notice dated 29/08/03	23/10/2003
Response to letter dated 20/10/2003	Response to question 1.1.31 of the letter dated 20/10/2003 ref:BT9879 given in letter dated 23/10/2003 ref:DW/SB-T2/4 supplements the response to question 1.1.31 of the schedule 4 notice dated 29/08/03 given in appendix 12 .	23/10/2003
Response to the letter dated 20/10/2003	Response to question 2.4.1 of the letter dated 20/10/2003 given in amended Appendix F of appendix 23 replaces the response to the schedule 4 notice dated 29/08/03 given in appendix F of appendix 23.	23/10/2003
Response to letter dated 20/10/2003	Response to questions 2.2.1 and 2.2.8 of the letter dated 20/10/2003 given in the document entitled Rectory Farm Waste Acceptance Criteria and Procedures-Rev A dated Oct 2003 replaces the response to questions 2.2.1 and 2.2.8 of the schedule 4 notice dated 29/08/03 given in appendix 14	27/10/2003
Response to letter dated 20/10/2003	Response to question 2.3.34 of the letter dated 20/10/2003 given in the letter dated 27/10/2003 REF: DW/JB-T2/4 supplements the response to question 2.3.34 of the schedule 4 notice dated 29/08/03.	27/10/2003

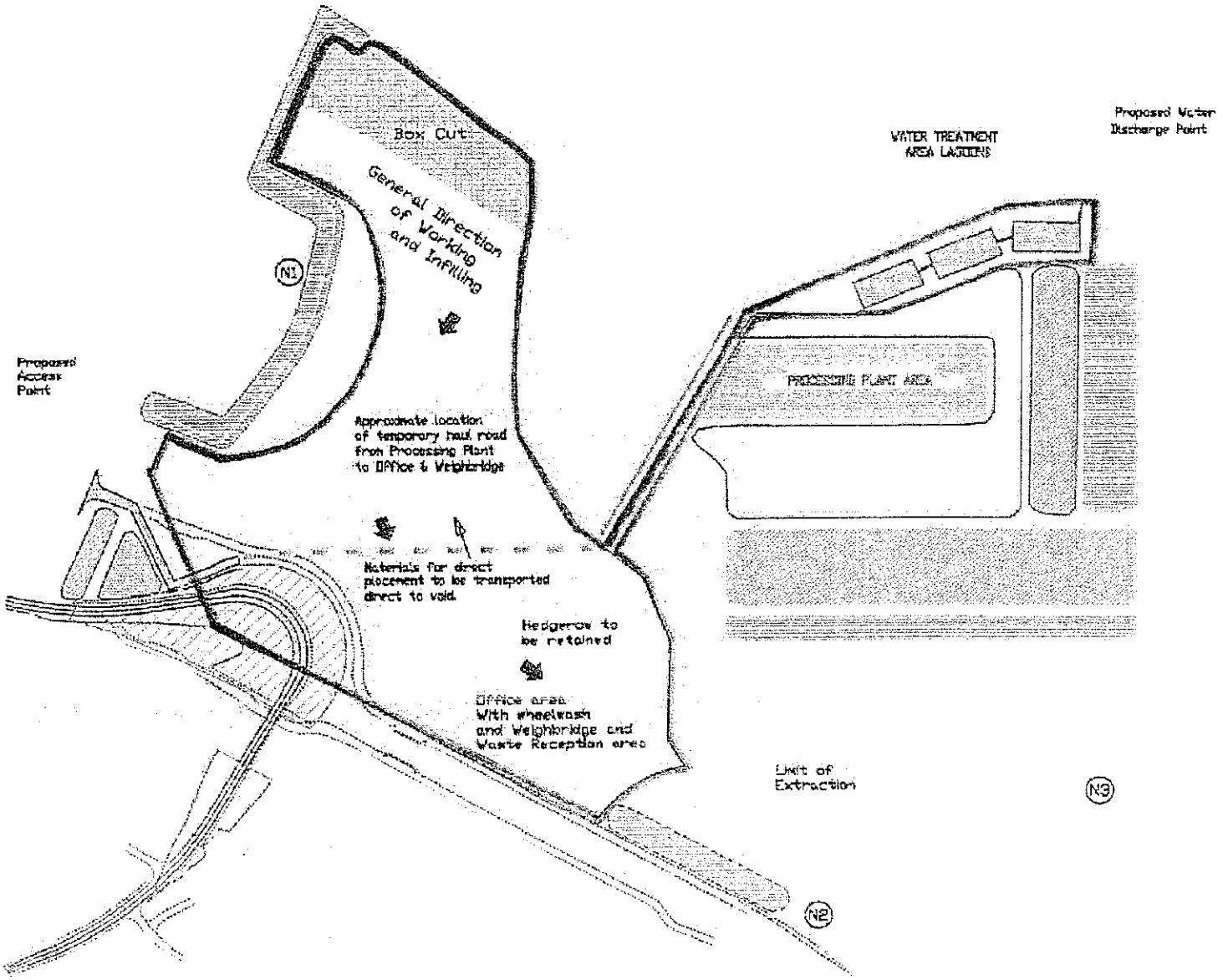
Table S1.2: Operating techniques

Description	Parts	Date Received
Response to letter dated 20/10/2003	Response to question 2.3.48 of the letter dated 20/10/2003 given in Gas Monitoring Action Plan Rev A dated Oct 2003 and the amended questions 2.3.48 and 2.3.49 of Part B of the application form replaces the response given to question 2.3.48 of the schedule 4 notice dated 29/08/03 and questions 2.3.48 and 2.3.49 of Part B of the application form submitted in response to question 0.1 of the schedule 4 notice dated 29/08/03	27/10/2003
Response to letter dated 20/10/2003	Response to question 2.4.1 of the letter dated 20/10/2003 given in the letter dated 27/10/03 Ref:DW/JB-T2/4 replaces the response given to question 2.4.1 of the schedule 4 notice dated 29/08/03 in question 2.4.1 of part B of the application form submitted in response to question 0.1 of the schedule 4 notice dated 29/08/03.	27/10/2003
Response to letter dated 20/10/2003	Response to question 1.1.12 of the letter dated 20/10/2003 given in the letter dated 31/10/2003 REF: DW/JB-T2/4 in section 1. Question 2.1.12 supplements the response given to question 1.1.12 of the schedule 4 notice dated 29/08/03 given in appendix 24 .	31/10/2003
Schedule 4 notice dated 29/08/2003	Response to question 1.1.31 of the schedule 4 notice dated 29/08/2003 given in the letter dated 21/11/03 REF: DW/JB-T2/4 supplements the response given to question 1.1.31 of the schedule 4 notice dated 29/08/03 given in appendix 12	21/11/2003
E-mail from Dan Walker Marwalk Developments Limited dated 01/03/04 ref:DW-T2/4	Information in e-mail supplements information contained in appendix 15 of the schedule 4 notice response dated 29/08/03	01/03/2004
E-mail from Dan Walker Marwalk Developments Limited dated 08/04/04	Information in e-mail on groundwater monitoring suite supplements information contained in the schedule 4 notice response dated 29/08/03	08/04/04
Application	The response to questions 2.11 in Part B of the application form version 2 November 2000 and given in volume III and volume IV of the supporting information (excluding the response given to question 2.11 in part B of the application form version 2 November 2000 and given in volume III and IV of the supporting information.)	28/04/2003
Response to Schedule 4 Notice Dated 29/08/2003	Response to question 0.1 of the schedule 4 notice dated 29/08/2003 given in appendix 2 in question 2.5 of the application form dated December 2002, restoration concept plan reference RF/WP/03a within appendix 3 and improvement conditions 1, 2 and 3 replaces the response given to questions 2.11 in part B of the application form version 2 November 2000 and given in Volume III and volume IV of the supporting information.	24/09/2003

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC 1	A permitted installation closure plan shall be produced in consultation with the Agency and in accordance with council directive 1999/31/EC on the Landfill of Waste (26 April 1999). It shall specify the detailed procedure the operator proposes to implement upon the closure of the permitted landfill. The closure plan will be subject to approval by the Agency in writing and shall not be considered accepted or acceptable until such approval is given.	31/03/09
IC 2	A permitted installation post-closure aftercare and restoration plan shall be produced in consultation with the Agency in accordance with council directive 1999/31/EC on the landfill of waste (26 April 1999). It shall specify the detailed procedures the operator proposes to implement upon the permitted landfill being considered by the Agency to be in post closure and after care phase of its operations. The plan will be subject to approval by the Agency in writing and shall not be considered accepted or acceptable until such approval is given.	31/03/09
IC 3	A permitted installation decommissioning plan prior to surrender shall be produced in consultation with the Agency and in accordance with council directive 1999/31/EC on the landfill of waste (26 April 1999). It shall specify the detailed procedures the operator proposes to implement upon the Permitted installation being considered by the Agency to be suitable to decommission prior to surrender. The plan will be subject to approval by the Agency in writing and shall not be considered accepted or acceptable until such approval is given.	31/03/09
IC 4	Proposals for the location of the additional in waste boreholes for the monitoring of landfill gas to be retrofitted shall be submitted to the Agency and will be subjected to approval by the Agency in writing and shall not be considered accepted or acceptable until such approval is given.	1 month after each phase completion
IC 5	A drawing showing the pre-settlement levels of the landfill shall be submitted to the Agency for approval. The total quantity of waste that shall be deposited in the landfill shall be limited by the pre-settlement levels shown in the drawing as required in Condition 2.8.5.	31/12/06

Table S1.5 Annual Waste Input Limits	
Category	**Limit Tonnes/ Year**
Inert Waste	300 000

Schedule 2 - Site plan



Schedule 3 - List of permitted wastes

Wastes that may be accepted without testing at a landfill for inert waste

EWC Code	Description	Restrictions
17 01 01	Concrete	Selected C&D waste only[(a)]
17 01 02	Bricks	Selected C&D waste only[(a)]
17 01 03	Tiles and ceramics	Selected C&D waste only[(a)]
17 01 07	Mixtures of concrete, bricks, tiles and ceramics	Selected C&D waste only[(a)]
17 05 04	Soil and stones	Excluding topsoil, peat; excluding soil and stones from contaminated sites

(a) Selected construction and demolition waste (C & D waste): with low contents of other types of materials (like metals, plastic, organics, wood, rubber, etc). The origin of the waste must be known.

No C & D waste from constructions, polluted with inorganic or organic dangerous substances, e.g. because of production processes in the construction, soil pollution, storage and usage of pesticides or other dangerous substances, etc., unless it is made clear that the demolished construction was not significantly polluted.

No C & D waste from constructions, treated, covered or painted with materials, containing dangerous substances in significant amounts.

Schedule 4 – Emissions and monitoring

Table S4.1 Point source emissions to water (other than sewer) – emission limits and monitoring requirements

Emission point Ref. & Location	Parameter	Source	Limit (incl unit)	Reference Period	Monitoring Frequency	Monitoring Standard or Method
Proposed water discharge Point (consent number PRNNF/12740 01) located on drawing number RF/SR/06a as Proposed water discharge point.	pH	Surface water	6-9		Quarterly	In accordance with Agency Guidance LFTGN02 - 'Monitoring of Landfill Leachate, Groundwater and Surface Water'
	Suspended Solids		40 mg/l		Quarterly	
	Visible Oils		None visible		Monthly	
	Ammonium N		1 mg/l		Quarterly	

Table S4.2 Trigger levels for emissions into groundwater and monitoring requirements

Monitoring point reference(1)	Parameter	Limit (including unit)	Reference Period	Monitoring frequency	Monitoring standard or method
GW2	Cadmium	0.1 ug/l		Quarterly	In accordance with Agency Guidance LFTGN02 - 'Monitoring of Landfill Leachate, Groundwater and Surface Water'
GW3(2)	Chloride	250 mg/l			
	Ammonium N	1 mg/l			
	Nickel	20 ug/l			

(1) Identified on drawing number RF/Geo/02c dated Oct 2003

(2) Off-site monitoring point

Table S4.3 Landfill gas in external monitoring boreholes – limits and monitoring requirements

Monitoring point Ref. /description(1)	Parameter	Limit (including units)	Monitoring frequency	Monitoring standard or method
GW1	Methane	1 %v/v	Quarterly	In accordance with Agency Guidance LFTGN03 – 'Guidance on the Management of Landfill Gas'
GW2	Carbon Dioxide	1.5 %v/v		
GW3(2)	Oxygen	no limit		
	Atmospheric pressure	no limit		
	Temperature	no limit		
	Meteorological data	no limit		

(1) Identified on drawing number RF/Geo/02c dated Oct 2003

(2) Off-site monitoring point

Table S4.4 Landfill gas – other monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
In waste monitoring borehole GAS1	Methane Carbon Dioxide Oxygen Atmospheric pressure Differential pressure (Note 1) Temperature Meteorological Data.	Quarterly	In accordance with Agency Guidance LFTGN03 – 'Guidance on the Management of Landfill Gas'	

Note 1 Differential pressure monitoring only to be undertaken in the event of methane and/or carbon dioxide trigger level breaches.

Table S4.5 Surface water – other monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**

Table S4.5 Surface water – other monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
SW1 SW2(1) SW3(1)	pH Suspended solids Ammonium N	Quarterly	In accordance with Agency Guidance LFTGN02 - 'Monitoring of Landfill Leachate, Groundwater and Surface Water'	
	Visible oil/grease	Monthly		
	TOC Se Sb Hg Al Mg SO4 Cl Fe Cd Cr Cu Ni Pb Zn Fluorides BTEX PCBs PAHs TDS DOC	Annually		
Lagoons Water storage area	pH Suspended solids Visible oil/grease Ammonium N	Annually	In accordance with Agency Guidance LFTGN02 - 'Monitoring of Landfill Leachate, Groundwater and Surface Water'	

(1) Off-site monitoring point

Table S4.6 Groundwater – other monitoring requirements

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
GW1	Water level	Quarterly	In accordance with Agency Guidance LFTGN02 - 'Monitoring of Landfill Leachate, Groundwater and Surface Water'	
	pH			
	Ammonium N			
	Cl			
	Cd			
	Ni			
	Electrical Conductivity	Annually		
	TON			
	TOC			
	Ca			
	Mg			
	Na			
	K			
	Total alkalinity			
	SO4			
	Fe			
	Mn			
	Cr			
	Cu			
	Pb			
	Zn			
GW2	Water level	Quarterly	In accordance with Agency Guidance LFTGN02 - 'Monitoring of Landfill Leachate, Groundwater and Surface Water'	
GW3(1)	pH			
	Electrical Conductivity	Annually		
	TON			
	TOC			
	Ca			
	Mg			
	Na			
	K			
	Total alkalinity			
	SO4			
	Fe			
	Mn			
	Cr			
	Cu			
	Pb			
	Zn			

(1) Off-site monitoring point

Schedule 5 - Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Table S5.1 Reporting of monitoring data

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to water Parameters as required by condition 3.6.1	Proposed water discharge Point (consent number PRNNF/1274001) located on drawing number RF/SR/06a as Proposed water discharge point.	Every 3 months	05/07/04
Groundwater Parameters as required by condition 3.6.1	GW1, GW2, GW3	Every 3 Months	05/07/04
Landfill gas lateral migration Parameters as required by condition 3.6.1	GW1, GW2, GW3	Every 3 months	05/07/04
Other Landfill gas monitoring Parameters as required by condition 3.6.1	In waste monitoring borehole GAS1	Every 3 months	1 month after each phase completion
Other surface water monitoring Parameters as required by condition 3.6.1	SW1, SW2, SW3, lagoons, water storage area	Every 3 months	05/07/04

Table S5.2: Annual production/treatment

Surface water and/ or groundwater: **Disposed of off site;** **Disposed of to any onsite effluent treatment plant.**	**Cubic metres/year**

Table S5.3 Reporting forms

Media/parameter	Reporting Format	Date of Form
Controlled water	Form water 1 or other reporting format to be agreed in writing with the Agency	
Groundwater	Form groundwater 1 or other reporting format to be agreed in writing with the Agency	
Landfill gas	Form Gas 1 or other reporting format to be agreed in writing with the Agency	
Waste Return	Waste Return Form RATS2E	
Landfill topographical surveys and interpretation	Reporting format to be agreed in writing with the Agency	

Schedule 6 - Notification

This page outlines the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the PPC Regulations.

Part A

Permit Number	
Name of operator	
Location of Installation	
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
Date and Time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B to be supplied as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the installation in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of Mick George (Haulage) Limited

Schedule 7 - Interpretation

"*Accident*" means an accident that may result in pollution.
"*Annually*" means once every Year.
"*Application*" means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under schedule 4 to the PPC Regulations
"*Authorised Officer*" means any person authorised by the Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in Section 108(4) of that Act.
"*Background concentration*" means such concentration of that substance as is present in:

- For emissions to surface water, the surface water quality up-gradient of the site; or
- For emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge.
- For emissions of landfill gas, the ground or air outside the site and not attributable to the site

"*Construction Proposals*" means written information, at a level of detail appropriate to the complexity and pollution risk, on the design, specifications of materials selected, stability assessment (where relevant) and the construction quality assurance (CQA) programme in relation to the new cell or Landfill Infrastructure.
"*CQA Validation Report*" means the final "as built" construction and engineering details of the new cell or of the Landfill Infrastructure. It must provide a comprehensive record of the construction and must include, where relevant:

- The results of all testing required by the CQA programme - this must include the records of any failed tests with a written explanation, details of the remedial action taken, referenced to the appropriate secondary testing;
- Plans showing the location of all tests;
- "As-built" plans and sections of the works;
- Copies of the site engineer's daily records;
- Records of any problems or non-compliances and the solution applied;
- Any other site specific information considered relevant to proving the integrity of the new cell or Landfill Infrastructure;
- Validation by a qualified person that all of the construction has been carried out in accordance with the construction proposals.

"*Fugitive emission*" means an emission to air, water or land from the Activities which is not controlled by an emission or background concentration limit.
"*Groundwater Regulations*" means the Groundwater Regulations SI 1998 No. 2746, and words and expressions used in this permit which are also used in the Regulations shall have the same meanings as in those Regulations.
"*Landfill Infrastructure*" means any specified element of the:

- permanent capping;
- temporary capping (i.e. engineered temporary caps not cover materials);
- leachate abstraction systems;
- leachate transfer, treatment and storage systems;
- surface water drainage systems;
- leachate monitoring wells;
- groundwater monitoring boreholes;
- landfill gas monitoring boreholes;
- landfill gas management systems;

within the Site.
"*Landfill Regulations*" means the Landfill (England and Wales) Regulations SI 2002 No. 1559, and words and expressions used in this permit which are also used in the Regulations shall have the same meanings as in those Regulations.
"*Land Protection Guidance*" means Agency guidance "H7 - Guidance on the protection of land under the PPC Regime: Application site report and site protection monitoring programme".
"*Liquids*" means any liquid other than leachate within the engineered landfill containment system.
"*LFTGN 05*" means Environment Agency Guidance for monitoring enclosed landfill gas flares, September 2004.
"*LFTGN 08*" means Environment Agency Guidance for monitoring landfill gas engines, September 2004.
"*New Cell*" means any new cell, part of a cell or other similar new area of the Site where waste

deposit is to commence after issue of this permit and can comprise:

- groundwater under-drainage system;
- permanent geophysical leak location system;
- leak detection layer;
- sub-grade;
- barriers;
- liners;
- leachate collection system;
- leachate abstraction system;
- separation bund/layer;
- cell or area surface water drainage system;
- side wall subgrade and containment systems;

for the new cell.

"*No impact*" means that the change made to the construction process will not alter the agreed design criteria, specification or performance.

"notify without delay" or "notified without delay" means that a telephone call can be used, whereas all other reports and notifications must be supplied in writing, either electronically or on paper.

"*PPC Regulations*" means the Pollution, Prevention and Control (England and Wales) Regulations SI 2000 No.1973 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

"*Quarter*" means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

"*Relevant person*" and "*relevant conviction*" shall have the meanings given to them in the Environmental Protection Act 1990

"*Review of the Hydrogeological Risk Assessment*" means a written review of the hydrogeological risk assessment included in the Application, together with any other parts of the Application that addressed the requirements of the Groundwater Regulations. The review shall assess whether the activities of disposal or tipping for the purpose of disposal of waste authorised by the permit continue to meet the requirements of the Groundwater Regulations

"*Site Protection and Monitoring Programme*" means a document which meets the requirements for Site Protection and Monitoring Programmes described in the Land Protection Guidance.

"*Technically competent management*" and "*technical competence*" shall have the meanings given to them in the Environmental Protection Act 1990.

"Waste code" means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

"*Year*" means calendar year ending 31 December.

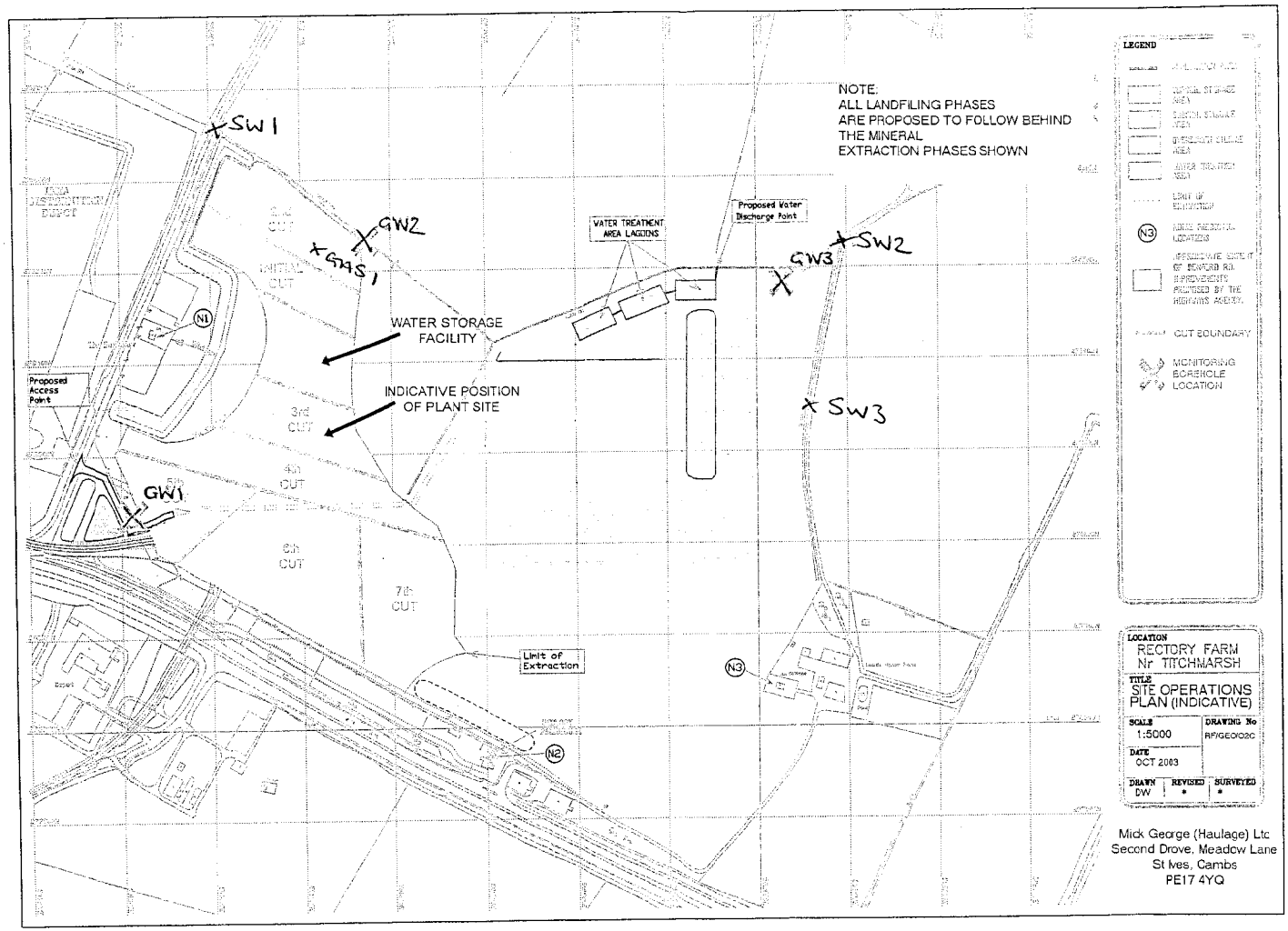
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means the standards included in Environment Agency Guidance for Monitoring Enclosed Landfill Gas Flares LFTGN 05 or Guidance for Monitoring Landfill Gas Engine Emissions LFTGN 08.

END OF PERMIT

Appendix B Plans and Drawings

Mick George Monitoring Location Plan



Mick George (Haulage) Ltd
Second Drove, Meadow Lane
St Ives, Cambs
PE17 4YQ

Hydrock Site Investigation Plan

OS NORTH

BUILDING POSITIONS SKETCHED FROM AERIAL IMAGE TO PROVIDE REFERENCE ONLY FOR BUILDING HEIGHTS

CELL 1
CELL 3A
CELL 3B
CELL 4
CELL 5
CELL 6
CELL 7
CELL 7A
CELL 7B
CELL 8

TP201 RB201 TP202 RB203 TP205 HP-101 HP-102 HP-104 TP214 CP201 TP203 TP204 TP215 TP-118 CP202 TP213 RB202 TP212 PLT/TP311 RB205 RB204 HP-103 RBH-106 TP218 CBH-103 TP217 TP219 TP-119 CBH-111 TP-114 CBH-110 TP216 RBH-105 TP220 TP-115 CP210 TP239 TP-120 TP221 TP222 TP242 TP241 TP-121 CBH-108 TP240 TP243 TP238 TP245 TP-110 CP208 TP244 TP-116 RBH-104 TP-117 TP260 TP261 CP209 TP246 CP207 RBH-107 TP-108 TT201 TP259 TP-111 TP-113 TP247 RB219 TP248 TP262 TP-105 TP263 CBH-106 TP258 RBH-108 TP-112 RBH-103 CBH-109 TP249 HP-129 PLT/TP316 PLT/TP315 TP278 TP-106 TP264 TP265 TP266 TT202 CBH-102 TP257 HP-127 RB213 PLT/TP317 RBH-101 CBH107 CBH-105 CP206 TP280 TP277 TP-109 TP267 TP-101 CP203 TP-104 TP279 TP-107 TT203 PLT/TP318 TP283 TP284 TP285 TP268 TP282 CP205 TP102 TP286 CBH-104 CBH-101 RBH-102 TP287 TP-103 TP289 TP290 TT204 RB214 TP269 TP276 TP292 CP204 RB216 TP291 HP-126 TP294 TP295 TP297 TP298 PLT/TP319 TP293 RB217 TP296 TT209 TP299 HP-123 TP307 TP305 TP306 TP304 RBH118 RBH119 HP-124 TP308 HP-122 TP309 RB218 TP310 HP-121 TP303 TP300 TP301 TP302 HP-120 HP-136 HP-135 RBH117 HP-119 HP-118 RBH115 HP-117 HP-116 RBH116 HP-115 HP-114 TP275 HP-113 HP-111 HP-112 HP-110 RB215 HP-137 TP274 TP278 HP-138 TP252 RBH-113 RBH-114 RB212 HP-108 PLT/TP314 TP250 TT207 TP251 RBH-112 TP254 TP253 PLT/TP320 HP-109 TP270 TT208 TP271 TP272 TP256 HP-128 TP255 TP223 HP-130 TP237 RB211 TP236 TP233 TP224 TP234 HP131 TP235 TP232 RBH-109 HP-132 TP225 HP-134 TP226 RB209 TP227 TP231 TP230 TP211 TP210 TP208 TP228 HP-107 TP229 TP209 RBH-110 TT206 TP207 PLT/TP312 RB206 TP313 TP311 TP312 RB210 PLT/TP313 RBH-111 HP-106 RB208 TP/SA202 TP206 TP/SA201 TP/SA203 HP105 RB207

Initial Site Investigation (June/July 2021)

- TPXX Trial Pit
- BHXX Cable Percussion Borehole
- RBHXX Rotary Percussion / Core Borehole
- HP## Hand Dug Excavation Pit
- Made Ground encountered

- No Access
- Hydrock welfare compound
- Mick George Landfill Cell Boundaries

Detailed Site Investigation November/December 2021

- CP## Cable Percussion Borehole
- RB## Rotary Borehole
- PLT/TP## Trial Pit
- TP/SA## Soakaway
- TT## Trial Trench

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.
3. This drawing has been based on the following drawings and information:
3. This drawing has been based on the Stafsurv Drawing. 'Huntingdon Road, Thrapston. Topographic Survey'. Ref: 11521a-0, dated 10/03/21.
4. Locations subject to change following walkover and subject to discussions and agreement..
5. Nolocations shown at the farm building and yard areas. Subject to discussions and agreement.
6. No known archaeological, ecological or arbricultural restrictions.
7. Permit boundaries derived from Permit EP3837LU

REV						
P07	Permit boundary included					
	LH	09/08/22	EC	09/08/22	EC	09/08/22
P06	SI LOCATIONS UPDATED FOLLOWING SURVEY					
	SD	24/01/22	NT	24/01/22	AB	24/01/01/22
P05	CLIENT DETAILS UPDATED					
	NT	15/12/21	NT	15/12/21	AB	15/12/21
P04	SITE BOUNDARY UPDATED					
	SD	08/11/21	NT	08/11/21	AB	08/11/22
P3	UPDATED POST SI					
	NT	27/07/21	AB	27/07/21	AB	27/07/21
P2	UPDATED POST WALKOVER					
	SD	14/06/21	AB	14/06/21	AB	14/06/21
P1	FIRST ISSUE - PRE WALKOVER					
	SD	20/05/21	AB	20/05/21	AB	20/05/21
	REVISION NOTES/COMMENTS	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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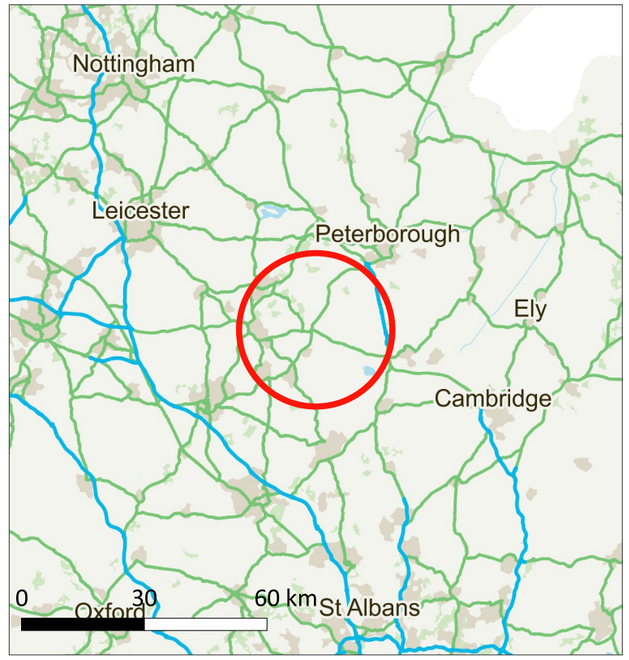
CLIENT
EQUITES NEWLANDS (THRAPSTON EAST) LTD

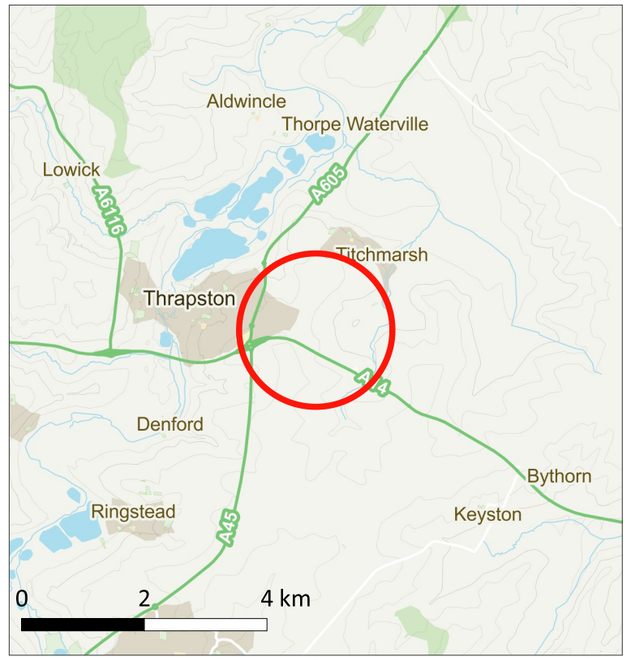
PROJECT
LAND ADJACENT HALDEN PARKWAY THRAPSTON

TITLE
EXPLORATORY HOLE LOCATION PLAN

HYDROCK PROJECT NO. C-18443	SCALE @ A0 1:1500
PURPOSE OF ISSUE SUITABLE FOR INFORMATION	STATUS S2
DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 18443-HYD-XX-ZZ-DR-GE-1004	REVISION P07

Site Location Plan





KEY PLAN

Landfill Boundary

NOTES

1. Contains OS data © Crown copyright and database right (2022)

REVISIONS

REV.	DRAWN BY INITIALS	CHECKED BY INITIALS	DATE	REVISION NOTES/COMMENTS
P01	LH	EC	17/06/22	First issue

Hydrock

TITLE: SITE LOCATION PLAN

HYDROCK PROJECT NO.: 23880

SCALE @ A3: 1:10,000

CLIENT: Mick George Ltd

PURPOSE OF ISSUE: SUITABLE FOR INFORMATION

STATUS: S2

PROJECT: Thrapston Landfill Permit Surrender

DRAWING NO.: 23880-HYD-XX-XX-DR-GE-1001

REVISION: P01

Hydrock Groundwater and Surface Water Monitoring Plan

OS NORTH

S5 located to North/North West of site approximately 2.1 miles (3.8 kilometres)

RBH-201
RBH-203
RBH-111
RBH-208
CP201
CP202
RBH-205
RBH-207
RBH-106
CBH-103
RBH-202
RBH-204
RBH-206
S4
CELL 2
CBH-110
CBH-111
RBH-105
RBH-110
CELL 1
CP210
S3
RBH-109
CBH-108
RBH-209
CP208
RBH-210
CELL 3B
CELL 4
RBH-104
CP209
RBH-211
CP207
RBH-107
CELL 3A
RBH-219
S2
RBH-212
RBH-113
RBH-114
CBH-106
RBH-108
RBH-103
CBH-109
CELL 7A
CELL 7
RBH-101
CBH-102
RBH-213
RBH-112
CBH-105
CBH107
CP206
CELL 5
CP203
CELL 7B
CELL 6
CP205
CELL 8
CBH-101
RBH-102
RBH-214
CBH-104
CP204
RBH-215
RBH-216
RBH-116
RBH-115
S1
RBH-117
RBH-217
RBH-118
RBH-119
Stone Pits
RBH-218

KEY

Site Investigation Boreholes (June/July 2021)

- BHXX Cable Percussion Borehole
- RBHXX Rotary Percussion / Core Borehole

Detailed Site Investigation

- CP## Cable Percussion Borehole
- RB## Rotary Borehole
- S# Water sample location

- Site Boundary (approximate)
- Mick George Landfill Cell Boundaries
- Approximate Landfill Extents
- GPR: Area of disturbed ground/assumed stone pits

Borehole Installed Strata Key

- Landfill - Made Ground
- Kellaways Sand Member
- Kellaways Clay Member
- Superficial Deposits
- Cornbrash Limestone Formation
- Blisworth Limestone Formation
- Blisworth Clay Formation

NOTES

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3. This drawing has been based on the Stafsurv Drawing. 'Huntingdon Road, Thrapston. Topographic Survey'. Ref: 11521a-0, dated 10/03/21.
4. Locations subject to change following walkover and subject to discussions and agreement..
5. Nolocations shown at the farm building and yard areas. Subject to discussions and agreement.
6. No known archaeological, ecological or arbiricultural restrictions.
7. Cell boundaries taken from image derived from Mick George Cell location plan. Drawing number: MG310/51 dated: 25/11/2014.

REV						
P05	Permit boundary and strata amended.					
	LH	09/08/22	EC	09/08/22	EC	09/08/22
P04	GROUNDWATER SAMPLE LOCATIONS ADDED AND TITLE CHANGE					
	SD	30/03/22	NT	30/03/22	AB	30/03/22
P03	CLIENT DETAILS AMMENDED					
	NT	15/12/21	AB	15/12/21	AB	15/12/21
P02	SITE BOUNDARY UPDATED					
	SD	08/11/21	NT	08/11/21	AB	08/11/21
P01	FIRST ISSUE					
	SD	25/10/21	NT	25/10/21	AB	25/10/21
REV	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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CLIENT
EQUITES NEWLANDS (THRAPSTON EAST) LTD

PROJECT
LAND ADJACENT HALDENS PARKWAY THRAPSTON

TITLE
Borehole Installed and Groundwater Sample Plan

HYDROCK PROJECT NO.	SCALE @ A0
C-18443	1:1500
PURPOSE OF ISSUE: SUITABLE FOR INFORMATION	STATUS: S2
DRAWING NO. (PROJECT-CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER): 18443-HYD-XX-ZZ-DR-GE-1019	REVISION: P05

Proposed Post-Closure (Aftercare) Plan

GS NORTH

Point X

CELL 1

CELL 2

CELL 3B

CELL 4

CELL 3A

CELL 7A

CELL 7

CELL 5

CELL 7B

CELL 6

CELL 8

RBH-107

RBH-104

RBH-103

RBH-209

CP204

Stone Pits

KEY

Detailed Site Investigation

CP## Cable Percussion Borehole

RB## Rotary Borehole

Monitoring Point

Surface Water Point X

Future development boundary (approximate)

Permit boundary

GPR: Area of disturbed ground/assumed stone pits

Borehole Installed Strata Key

Kellaways Sand Member

Cornbrash Limestone Formation

Blisworth Limestone Formation

NOTES

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.

2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.

3. This drawing has been based on the following drawings and information:

3. This drawing has been based on the Stafsurv Drawing. 'Huntingdon Road, Thrapston. Topographic Survey'. Ref: 11521a-D, dated 10/03/21.

4. Locations subject to change following walkover and subject to discussions and agreement..

5. Nolocations shown at the farm building and yard areas. Subject to discussions and agreement.

6. No known archaeological, ecological or arbinicultural restrictions.

7. Permit boundary derived from Permit EP3837LU

REV.	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
P01	FIRST ISSUE					
	LH	09/08/22	EC	09/08/22	EC	09/08/22
P02	Updated proposed monitoring					
	LW	23/08/22	EC	23/08/2022	EC	23/08/2022

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CLIENT

Mick George Ltd.

PROJECT

Thrapston Landfill Permit Surrender

TITLE

Proposed post-closure (aftercare) monitoring plan

HYDROCK PROJECT NO.	SCALE @ A0
23880	1:1500

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT-CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
23880-HYD-XX-ZZ-DR-GE-1002	P02

Appendix C Borehole Logs

Mick George Borehole Logs

LOCATION	Thrapston			SITE REF	T2/4
METHOD	Borehole using Rotary Flush Rig			NUMBER	GW1
DATE	21st August 2003			SHEET	1/1
CASING	LEGEND	LITHOLOGY	DEPTH	THICKNESS	SAMPLE
		Dry Brown Topsoil/ Clayey Sub**SOIL**	0.6m	0.6m	
		Firm to stiff Brown Slightly Grey **CHALK**, and flinty stoney clay, becoming stiffer and darker in colour from 3m down **(TILL (OADBY MEMBER))**	3.6m	3.0m	
		Hardstone/ **ROCK** Layer **(TILL (OADBY MEMBER))**	3.9m	0.3m	
		Firm to stiff Brown Slightly Grey **CHALK**, and flinty stoney clay, becoming stiffer and darker in colour from 3m down **(TILL (OADBY MEMBER))**	6.0m	2.1m	
		Stiff Brown **CLAY (TILL (LOWER TILL))** 6.2m		0.2m	
		Broken sand and Gritty **GRAVEL** **(GLACIOFLUVIAL SAND AND GRAVEL)**			Groundwater
			10.1m	3.9m	Struck @ 9.5m End of Casing
		Grey **ROCK (OXFORD CLAY)**	10.5m	~~10.4m~~ **0.4m**	End of Hole

LOCATION	Thrapston			SITE REF	T2/4
METHOD	Borehole using Rotary Flush Rig			NUMBER	GW2
DATE	10th September 2003			SHEET	2/2

CASING	LEGEND	LITHOLOGY	DEPTH	THICKNESS	COMMENTS
		Grey **LIMESTONE,** with occasional thin bands of clay **(BLISWORTH LIMESTONE)**	18.6m	7.2m	Gravel Filter from 24-12m
		Weak Fine Grained Silty Grey **SANDSTONE** **(STAMFORD MEMBER)**			


24.0m
5.4m
End of Hole

LOCATION	Thrapston			SITE REF	T2/4
METHOD	Borehole using Rotary Flush Rig			NUMBER	GW2
DATE	10th September 2003			SHEET	1/2
CASING	LEGEND	LITHOLOGY	DEPTH	THICKNESS	COMMENTS
		Previously Drilled and Cased using a shell + Auger rig			Bentonite seal from 0-2m Backfill from 12-2m
			7.3m	7.3m	
		Strong Grey **LIMESTONE,** with occasional thin bands of clay **(CORNBRASH LIMESTONE)**	~~9.6m~~ **8.9m**	1.6m	
		Grey **CLAY** **(BLISWORTH CLAY)**			Bentonite seal from ~~12-10m~~
			11.7m	2.8m	

LOCATION	Thrapston			SITE REF	T2/4
METHOD	Borehole using Rotary Flush Rig			NUMBER	GW3
DATE	10th September 2003			SHEET	1/2
CASING	LEGEND	LITHOLOGY	DEPTH	THICKNESS	COMMENTS
		Brown **TOPSOIL** Yellowish Brown **CLAY** **(KELLAWAYS CLAY)**	0.2m 1.3m	0.2m 1.1m	 Casing to 1.5m
		Grey **LIMESTONE** **(CORNBRASH LIMESTONE)**	 2.1m	 0.8m	
		Brownish Grey **CLAY (BLISWORTH CLAY)**	2.5m	0.4m	
		Creamy Yellow-Grey **LIMESTONE** **(BLISWORTH LIMESTONE)**	 5.7m	 3.2m	
		Strong Grey **LIMESTONE** with occasional Grey Cley Bands **(BLISWORTH LIMESTONE)**	 8.4m	 ~~5.7m~~ **2.7m**	Installation: screened section / gravel filter pack from 6.0m to 12.0m
		Slightly Sandy Grey **CLAY** **(RUTLAND FORMATION)**	8.9m	0.5m	
		Weak fine grained light Grey, Silty, **SANDSTONE** **(STAMFORD MEMBER)**	 12.0m	 3.1m	 Water at 12m

Hydrock Borehole Logs

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CBH-101 Page No. 1 of 2

Method: Cable Percussion	Date(s): 22/06/2021	Logged By: NT	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501554.83, 278145.92	Checked By: CV	Flush:
Hydrock Project No: C-18443-C	Ground Level: 62.98m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.30 - 1.10	B			Soft dark brown slightly sandy slightly gravelly CLAY with frequent rootlets. Gravel is fine to coarse, sub-angular to sub-rounded brick, quartz, sandstone and limestone. One piece of yellow plastic. (TOPSOIL - MADE GROUND)	0.30	(0.30)	62.68		
1.20	SPT	N=6 (1,1,1,1,2,2)		Soft light greyish and orangish brown slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is fine to coarse, angular to sub-angular brick, concrete, flint, limestone, igneous rock and asphalt and occasional (LANDFILL - MADE GROUND)	1	(1.40)			
1.20 - 1.65	D								
1.20 - 10.50	AMAL				1.70		61.28		
2.00	SPT	N=8 (1,1,1,2,2,3)		Soft greenish grey and yellowish brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse, sub-angular to angular, chalk, limestone and rare fine brick and ash. (LANDFILL - MADE GROUND)	2				
2.00	ES								
2.00 - 2.45	D								
3.00	SPT	N=6 (1,1,1,1,2,2)			3				
3.00 - 3.45	D								
4.00	SPT	N=6 (0,1,1,1,2,2)			4				
4.00	ES								
4.00 - 4.45	D								
5.00	SPT	N=8 (2,2,2,2,2,2)			5				
5.00 - 5.45	D					(8.10)			
6.00	D				6				
6.50	SPT	N=11 (2,2,2,3,3,3)							
6.50 - 6.95	D								
7.00	ES				7				
7.50	D								
8.00	SPT	N=11 (2,2,2,3,3,3)			8				
8.00 - 8.45	D								
9.00	D				9				
9.50	SPT	N=40 (3,3,6,8,12,14)							
9.50 - 9.95	D				9.80		53.18		
9.80 - 10.50	B			Very dense brown coarse SAND.	10				

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Borehole terminated on SPT refusal at 10.70m bgl on limestone. 3) Gas and groundwater monitoring pipe installed to 10.50m bgl. Response zone between 10.0m bgl and 10.50m bgl. 4) ER = 62%.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CBH-101 Page No. 2 of 2

Method: Cable Percussion	Date(s): 22/06/2021	Logged By: NT	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501554.83, 278145.92	Checked By: CV	Flush:
Hydrock Project No: C-18443-C	Ground Level: 62.98m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
				Very dense brown coarse SAND. (KELLAWAYS SAND MEMBER)	10.50	(0.70)	52.48		
10.60	SPT	50/40mm (25,50)		Firm grey thinly laminated CLAY. (KELLAWAYS CLAY MEMBER)	10.60	(0.10)	52.38		
10.60 - 10.70	D			Grey LIMESTONE. (CORNBRASH LIMESTONE FORMATION)	10.70	(0.10)	52.28		
				End of Borehole at 10.70m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Borehole terminated on SPT refusal at 10.70m bgl on limestone. 3) Gas and groundwater monitoring pipe installed to 10.50m bgl. Response zone between 10.0m bgl and 10.50m bgl. 4) ER = 62%.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
CBH-102
Page No. 1 of 1

Method: Cable Percussion	Date(s): 24/06/2021	Logged By: JM	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501624.68, 278272.72	Checked By: CV	Flush:
Hydrock Project No: C-18443-C	Ground Level: 57.78m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.40 - 1.00	B			Soft dark brown slightly sandy slightly gravelly CLAY with frequent rootlets. Gravel is fine to coarse, sub-angular to sub-rounded brick, quartz, sandstone and limestone. (TOPSOIL - MADE GROUND)	0.40	(0.40)	57.38		
1.20	SPT	N=7 (1,1,1,2,2,2)		Loose to medium dense orangish brown slightly clayey slightly gravelly SAND with occasional rootlets. Gravel is fine to coarse, angular to sub-rounded sandstone, and mudstone. (KELLAWAYS SAND MEMBER)					
1.20 - 1.65	D								
1.20 - 2.00	B					(2.60)			
2.00	SPT	N=12 (1,2,2,3,3,4)							
2.00 - 2.45	D								
3.00	SPT	N=11 (1,2,2,2,3,4)		Firm closely fissured bluish grey slightly silty CLAY with occasional fine shell fragments. (KELLAWAYS CLAY MEMBER)	3.00		54.78		
3.00 - 3.45	D								
3.00 - 4.00	B								
4.00	SPT	N=15 (2,2,3,4,4,4)				(2.00)			
4.00 - 4.45	D								
5.00	SPT	50/15mm (25,50)		Grey LIMESTONE. (CORNBRASH LIMESTONE FORMATION)	5.00	(0.04)	52.78		
5.00 - 5.04	D			End of Borehole at 5.04m	5.04		52.74		

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Borehole terminated on SPT refusal at 5.04m bgl on limestone. 3) Gas and groundwater monitoring pipe installed to 5.00m bgl. Response zone between 3.00m bgl to 5.00m bgl. 4) ER = 62%.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CBH-103 Page No. 1 of 1

Method: Cable Percussion	Date(s): 06/07/2021	Logged By: JM	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501499.71, 278589.48	Checked By: CV	Flush:
Hydrock Project No: C-18443-C	Ground Level: 62.75m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.20 - 1.00	B			Firm to stiff brown slightly gravelly CLAY with frequent rootlets. Gravel is fine to coarse, sub-angular to sub-rounded flint, quartz, limestone and chalk. (TOPSOIL - MADE GROUND)	0.20	(0.20)	62.55		
				Soft to firm dark grey brown, slightly sandy gravelly CLAY with occasional rootles. Gravel is fine to coarse, sub-angular to sub-rounded limestone, flint, brick, sandstone and chalk. (LANDFILL - MADE GROUND)	1	(1.10)			
1.20	SPT	N=7 (1,1,1,2,2,2)			1.30		61.45		
1.20 - 1.65 1.30 1.30 - 2.00	D ES B			Firm dark brown and grey slightly silty gravelly CLAY. Gravel is fine to coarse, sub-angular to sub-rounded, chalk, flint and sandstone. Occasional gravel sized shell fragments. (Possible side slope liner). (GLACIAL TILL)		(0.70)			
2.00	SPT	N=8 (1,1,1,2,2,3)			2.00		60.75		
2.00 - 2.45 2.00 - 3.00	D B			Firm becoming stiff bluish grey slightly silty CLAY with occasional relict rootlets and coarse sand sized selenite crystals. (GLACIAL TILL)		(1.60)			
3.00 - 3.45	U	(79,100%)							
3.60	ES				3.60		59.15		
				Stiff bluish grey slightly gravelly CLAY. Gravel is fine to medium, sub-angular to rounded flint and quartz. (GLACIAL TILL)	4	(0.40)			
4.00	SPT	N=35 (1,2,6,9,9,11)			4.00		58.75		
4.00 - 4.45 4.30 - 5.00 4.30 - 6.00	D B AMAL			Dense to very dense orange brown gravelly SAND. Gravel is fine to coarse, sub-angular to sub-rounded limestone, flint, sandstone and ironstone. Sand is medium. (GLACIOFLUVIAL DEPOSITS)					
5.00	SPT	50/135mm (9,12,25,25)			5	(2.00)			
5.00 - 5.50	B								
5.50 5.50 - 6.00	ES B								
6.00 - 6.50	B				6.00		56.75		
				Very dense to medium dense orange brown SAND and GRAVEL. Gravel is fine to coarse, sub-angular to sub-rounded flint, ironstone, siltstone and shell fragments. (GLACIOFLUVIAL DEPOSITS)					
6.50	SPT	50/170mm (5,10,16,24,10)							
6.50 - 7.00	B								
7.00	ES				7				
7.50 - 8.00	B								
						(3.50)			
8.00	SPT	N=22 (5,6,5,5,5,7)			8				
9.00	D				9				
9.50	SPT	50/10mm (24,50)			9.50		53.25		
9.50	D			Grey LIMESTONE. (CORNBRASH LIMESTONE FORMATION)	9.55	(0.05)	53.20		
				End of Borehole at 9.50m	10				

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Borehole terminated on SPT refusal at 9.55m bgl on limestone. 3) Gas and groundwater monitoring pipe installed to 9.50m bgl. 2) Response zone between 4.50m bgl and 9.50m bgl. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
CBH-104
Page No. 1 of 2

Method: Cable Percussion	Date(s): 23/06/2021	Logged By: SP	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501485.56, 278134.83	Checked By: CV	Flush:
Hydrock Project No: C-18443-C	Ground Level: 64.43m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.10	ES			Soft brown slightly sandy slightly gravelly CLAY with frequent rootlets. Gravel is fine to coarse, sub-angular to sub-rounded chalk and rare flint. (TOPSOIL - MADE GROUND)	0.20	(0.20)	64.23		
0.50 - 1.00	B			Soft orange brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse, sub-rounded to rounded flint and chalk. (LANDFILL - MADE GROUND)	0.50	(0.30)	63.93		
0.70	ES			Firm grey locally black mottled sandy slightly gravelly CLAY. Gravel is fine to coarse, sub-angular to sub-rounded chalk, rare limestone and rare fine brick. (LANDFILL - MADE GROUND)	1.00	(0.50)	63.43		
1.00	D			Orange brown sandy slightly gravelly CLAY. Gravel is fine to coarse, sub-rounded to rounded flint and sandstone. (LANDFILL - MADE GROUND)	1.30	(0.30)	63.13		
1.20	SPT	N=10 (3,3,2,3,2,3)		Firm brown mottled dark brown slightly gravelly slightly sandy CLAY. Gravel is fine to medium, angular to sub-angular flint, brick, sandstone and bituminous material. (LANDFILL - MADE GROUND)					
1.20	ES								
1.20 - 1.65	D								
1.30 - 2.00	B								
2.00	SPT	N=7 (1,1,1,2,2,2)							
2.00 - 2.45	D								
3.00	SPT	N=7 (0,1,1,2,2,2)							
3.00 - 3.45	D								
3.45	D								
4.00	SPT	N=9 (1,1,2,2,2,3)							
4.00 - 4.45	D								
5.00	SPT	N=11 (2,2,2,3,3,3)				(7.60)			
5.00 - 5.45	D								
6.00	D								
6.50	SPT	N=14 (2,2,3,3,4,4)							
6.50 - 6.95	D								
7.00	ES								
7.00 - 8.00	B								
8.00	SPT	N=20 (3,3,4,5,5,6)							
8.00 - 8.45	D								
9.00 - 9.50	B			Firm orange brown and bluish grey sandy CLAY. (KELLAWAYS SAND MEMBER)	8.90	(0.60)	55.53		
9.50	SPT	N=16 (3,3,4,4,4,4)		Medium dense orange clayey SAND. (KELLAWAYS SAND MEMBER)	9.50	(1.00)	54.93		
9.50 - 9.95	D								

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Borehole terminated on SPT refusal at 11.10m bgl on limestone. 3) Gas and groundwater monitoring pipe installed to 8.50m bgl. Response zone between 1.00m bgl and 8.50m bgl. 4) ER = 62%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CBH-104 Page No. 2 of 2

Method: Cable Percussion	Date(s): 23/06/2021	Logged By: SP	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501485.56, 278134.83	Checked By: CV	Flush:
Hydrock Project No: C-18443-C	Ground Level: 64.43m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
				Medium dense orange clayey SAND. (KELLAWAYS SAND MEMBER)					
10.50 - 11.00	B				10.50		53.93		
				Very stiff dark grey CLAY. (KELLAWAYS CLAY MEMBER)		(0.50)			
11.00	SPT	50/30mm (25,50)			11.00		53.43		
11.00 - 11.10	D			Grey LIMESTONE. (CORNBRASH LIMESTONE FORMATION)	11.10	(0.10)	53.33		
				End of Borehole at 11.10m					

Progress and Observations									Chiselling		
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Borehole terminated on SPT refusal at 11.10m bgl on limestone. 3) Gas and groundwater monitoring pipe installed to 8.50m bgl. Response zone between 1.00m bgl and 8.50m bgl. 4) ER = 62%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
CBH-105
Page No. 1 of 2

Method: Cable Percussion	Date(s): 21/06/2021	Logged By: JM	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501343.72, 278243.36	Checked By: CV	Flush:
Hydrock Project No: C-18443-C	Ground Level: 65.47m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.30 - 0.80	B			Soft dark brown slightly sandy slightly gravelly CLAY with frequent rootlets. Gravel is fine to coarse, sub-angular to rounded quartz, flint, brick and sandstone. (TOPSOIL - MADE GROUND)	0.30	(0.30)	65.17		
1.20	SPT	N=10 (0,0,0,1,1,8)		Stiff mottled light brown slightly sandy slightly gravelly CLAY with some roots. Gravel is fine to coarse, sub-angular to rounded chalk, brick, sandstone and limestone. Low cobble content of brick. (LANDFILL - MADE GROUND)	1.20	(0.90)	64.27		
1.20 - 1.65	D			Soft yellow and grey brown slightly sandy slightly gravelly CLAY. Gravel is fine to medium. sub-angular to sub-rounded chalk, brick and ash. (LANDFILL - MADE GROUND)	2.10	(0.90)	63.37		
2.00	SPT	N=17 (2,2,3,4,5,5)		Firm light greyish and orangish brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse, sub-angular to sub-rounded flint, chalk and sandstone. (GLACIAL TILL)	4.10	(2.00)	61.37		
2.00 - 2.45	D								
3.00	SPT	N=9 (1,2,2,2,2,3)							
3.00 - 3.45	D								
4.00	SPT	N=14 (2,2,2,3,4,5)							
4.00 - 4.45	D								
4.10 - 5.00	B			Firm grey slightly gravelly CLAY with occasional sand sized selenite crystals, shell fragments and purple relict rootlets. Gravel is fine to medium, angular to rounded flint, quartz, chalk , sandstone and mudstone. (GLACIAL TILL)	6.50	(2.40)	58.97		
5.00	SPT	N=24 (3,4,5,6,6,7)							
5.00 - 5.45	D								
6.00	D								
6.50	SPT	50/220mm (6,13,13,17,20)		Dense to very dense orangish brown gravelly SAND. Gravel is fine to coarse, angular to sub-rounded sandstone and siltstone. (KELLAWAYS SAND MEMBER)		(4.10)			
6.50 - 6.87	D								
7.00 - 8.00	B								
8.00	SPT	N=44 (4,6,8,10,12,14)							
9.00	D								
9.50	SPT	50/210mm (7,11,13,20,17)							

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Borehole terminated on SPT refusal at 11.26m bgl on limestone. 3) Gas and groundwater monitoring pipe installed to 2.00m bgl. Response zone between 1.00m bgl and 2.00m bgl. 4) ER = 62%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CBH-105 Page No. 2 of 2

Method: Cable Percussion	Date(s): 21/06/2021	Logged By: JM	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501343.72, 278243.36	Checked By: CV	Flush:
Hydrock Project No: C-18443-C	Ground Level: 65.47m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
10.50	D			Dense to very dense orangish brown gravelly SAND. Gravel is fine to coarse, angular to sub-rounded sandstone and siltstone. (KELLAWAYS SAND MEMBER)	10.60		54.87		
11.00 - 11.20	U	(100,0%)		Brown becoming grey thinly laminated slightly sandy CLAY. (KELLAWAYS CLAY MEMBER)		(0.60)			
11.20	SPT	50/10mm (25,50)			11.20		54.27		
11.20	D			Grey LIMESTONE. (CORNBRASH LIMESTONE FORMATION)	11.26	(0.06)	54.21		
				End of Borehole at 11.26m					

Progress and Observations									Chiselling		
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Borehole terminated on SPT refusal at 11.26m bgl on limestone. 3) Gas and groundwater monitoring pipe installed to 2.00m bgl. Response zone between 1.00m bgl and 2.00m bgl. 4) ER = 62%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
CBH-106
Page No. 1 of 2

Method: Cable Percussion	Date(s): 05/07/2021	Logged By: JM	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501408.26, 278325.57	Checked By: CV	Flush:
Hydrock Project No: C-18443-C	Ground Level: 63.96m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.10	ES			Soft brown sandy slightly gravelly CLAY. Gravel is fine to coarse, sub-angular to angular flint, quartz, sandstone and rare fine brick. (TOPSOIL - MADE GROUND)	0.30	(0.30)	63.66		
0.30 - 1.00	B			Firm brown sandy slightly gravelly CLAY. Gravel is fine to coarse sub-rounded to angular flint, sandstone, ironstone and rare brick. (LANDFILL - MADE GROUND)	1.20	(0.90)	62.76		
0.70	ES								
1.20	SPT	N=26 (1,4,5,7,7,7)		Medium dense red brown slightly clayey gravelly SAND. Gravel is fine to coarse, sub-angular to sub-rounded sandstone and siltstone. (LANDFILL - MADE GROUND)	2.50	(1.30)	61.46		
1.20 - 1.65	D								
1.20 - 2.00	B								
2.00	SPT	N=26 (3,5,7,7,6,6)							
2.20	D								
2.20	ES								
2.50 - 3.00	B			Soft dark greenish grey and dark brown slightly gravelly CLAY with occasional rootlets. Gravel is fine to coarse, angular to rounded quartz, brick, ash and limestone. (LANDFILL - MADE GROUND)					
3.00	SPT	N=12 (1,2,3,3,3,3)							
3.00 - 3.45	D								
4.00	SPT	N=19 (8,4,5,5,4,5)							
4.00 - 4.45	D								
5.00	SPT	N=8 (1,2,2,2,2,2)							
5.00	ES								
5.00 - 5.45	D								
6.00	D					(7.10)			
6.50	SPT	N=16 (1,3,5,5,3,3)							
6.50 - 6.95	D								
7.50	D			*... At 7.50m bgl: Gravel of furnace slag with sulphurous odour encountered.*					
7.50	ES								
8.00	SPT	N=9 (1,2,3,1,2,3)							
8.00 - 8.45	D								
9.00	D								
9.00	ES								
9.50	SPT	N=15 (3,3,3,4,4,4)			9.60		54.36		
9.50 - 9.95	D			Firm dark brown and grey CLAY. (KELLAWAYS CLAY MEMBER)					
9.60 - 10.50	B								

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Borehole terminated on SPT refusal at 10.56m bgl on limestone. 3) Gas and groundwater monitoring pipe installed to 9.00m bgl. Response zone between 3.00m bgl and 9.00m bgl. 4) ER = 62%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CBH-106 Page No. 2 of 2

Method: Cable Percussion	Date(s): 05/07/2021	Logged By: JM	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501408.26, 278325.57	Checked By: CV	Flush:
Hydrock Project No: C-18443-C	Ground Level: 63.96m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
				Firm dark brown and grey CLAY. (KELLAWAYS CLAY MEMBER)		(0.90)			
10.50	SPT	50/10mm (25,50)			10.50		53.46		
10.50 - 10.56	D			Grey LIMESTONE. (CORNBRASH LIMESTONE FORMATION)	10.56	(0.06)	53.40		
				End of Borehole at 10.56m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Borehole terminated on SPT refusal at 10.56m bgl on limestone. 3) Gas and groundwater monitoring pipe installed to 9.00m bgl. Response zone between 3.00m bgl and 9.00m bgl. 4) ER = 62%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CBH-107 Page No. 1 of 1

Method: Cable Percussion	Date(s): 24/06/2021	Logged By: SP	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501531.33, 278258.74	Checked By: CV	Flush:
Hydrock Project No: C-18443-C	Ground Level: 61.90m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.30	ES			Soft light greyish brown slightly gravelly CLAY with many rootlets. Gravel is fine to coarse, sub-angular to angular flint, chalk sandstone and brick. (TOPSOIL - MADE GROUND)	0.30	(0.30)	61.60		
0.40	D			Soft orange brown sandy slightly gravelly CLAY. Gravel is fine to medium, angular to sub-angular flint, chalk, sandstone and brick. (LANDFILL - MADE GROUND)	0.70	(0.40)	61.20		
0.50 - 1.00	B			Soft grey and brown mottled light grey and dark brown slightly sandy slightly gravelly CLAY. Gravel is fine to medium, rounded to sub-angular flint and chalk. (LANDFILL - MADE GROUND)					
1.00	ES								
1.20	SPT	N=9 (2,2,2,2,2,3)							
1.20 - 1.65	D								
2.00	SPT	N=4 (0,0,0,1,1,2)							
2.00 - 2.45	D								
3.00	SPT	N=7 (2,1,1,1,2,3)		... At 3.0m bgl: Timber.		(4.30)			
3.00 - 3.45	D								
5.00	SPT	N=11 (3,2,1,2,3,5)		Firm light brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse, angular chalk and brick. (LANDFILL - MADE GROUND)	5.00		56.90		
5.00 - 5.45	D								
6.00	D								
6.50	SPT	N=12 (3,3,3,3,3,3)		... At 6.50m bgl: Brown and blue grey.					
6.50 - 6.95	D								
7.50	D			... At 7.50m bgl: Soft.		(4.40)			
8.00	SPT	N=9 (1,1,1,2,3,3)							
8.00 - 8.45	D								
8.50 - 9.40	B								
9.40	D				9.40		52.50		
9.50	SPT	50/10mm (25,50)		Very stiff dark grey slightly sandy CLAY with frequent shells. (KELLAWAYS CLAY MEMBER)	9.50	(0.10)	52.40		
9.50 - 9.53	D			Grey LIMESTONE. (CORNBRASH LIMESTONE FORMATION)	9.54	(0.04)	52.36		
				End of Borehole at 9.53m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Borehole terminated on SPT refusal at 9.53m bgl on limestone. 3) Gas and groundwater monitoring pipe installed to 9.50m bgl. Response zone between 1.50m bgl and 9.50m bgl. 4) ER = 62%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CBH-108 Page No. 1 of 1

Method: Cable Percussion	Date(s): 08/07/2021	Logged By: JM	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501418.18, 278468.21	Checked By: CV	Flush:
Hydrock Project No: C-18443-C	Ground Level: 62.74m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.00	ES			Soft dark brown slightly sandy slightly gravelly CLAY with frequent rootlets. Gravel is fine to coarse, sub-angular to sub-rounded limestone, flint and quartz. (TOPSOIL - MADE GROUND)	0.20	(0.20)	62.54		
0.20	D			Brown slightly clayey gravelly SAND. Gravel is fine to coarse, sub-angular to sub-rounded limestone. (MADE GROUND)	0.40	(0.20)	62.34		
0.40 - 1.00	B			Soft to firm grey and orange brown slightly gravelly CLAY. Gravel is fine to medium, sub-rounded limestone, quartz, flint and brick. (MADE GROUND)	1				
1.20	SPT	N=7 (1,1,1,2,2,2)				(1.60)			
1.20 - 1.65	D								
2.00	SPT	N=10 (1,2,3,2,3,2)			2.00		60.74		
2.00	ES			Firm brown becoming grey slightly gravelly CLAY. Gravel is fine to coarse, subangular to rounded sandstone, quartz, flint and chalk, with occasional shell fragments. (GLACIAL TILL)					
2.00 - 2.45	D								
3.00 - 3.45	D				3	(1.80)			
3.40	SPT	N=14 (3,4,4,3,3,4)			3.80		58.94		
4.00	SPT	N=22 (2,3,4,5,6,7)		Medium dense to very dense orange brown slightly clayey, gravelly SAND. Gravel is fine to coarse, sub-angular to sub-rounded flint. (GLACIOFLUVIAL DEPOSITS)	4				
4.00 - 4.45	D								
4.00 - 5.00	B								
5.00	SPT	50/125mm (9,15,27,23)			5	(2.20)			
5.10	D								
6.00	D				6.00		56.74		
6.50	SPT	50/135mm (7,13,25,25)		Very dense to dense light brown and mottled dark grey, gravelly SAND. Gravel is fine to coarse, sub-angular limestone, sandstone and ironstone. (KELLAWAYS SAND MEMBER)					
7.00	ES				7				
7.50	D					(3.30)			
8.00	SPT	N=37 (7,12,12,8,8,9)			8				
8.00	ES								
					9				
9.30	SPT	50/0mm (25)			9.30		53.44		
				Grey LIMESTONE. (CORNBRASH LIMESTONE FORMATION)	9.31	(0.01)	53.43		
				End of Borehole at 9.31m	10				

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Borehole terminated on SPT refusal at 9.31m bgl on limestone. 3) Gas and groundwater monitoring pipe installed to 4.00m bgl. Response zone between 1.00m bgl and 4.00m bgl. 4) ER = 62%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CBH-109 Page No. 1 of 1

Method: Cable Percussion	Date(s): 05/07/2021	Logged By: JM	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501581.82, 278312.47	Checked By: CV	Flush:
Hydrock Project No: C-18443-C	Ground Level: 59.53m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.40 - 1.00	B			Soft light brown slightly sandy slightly gravelly CLAY with frequent rootlets. Gravel is fine to coarse, angular to sub-rounded brick, flint and chalk. (TOPSOIL - MADE GROUND)	0.40	(0.40)	59.13		
1.00	D			Firm dark brown slightly sandy gravelly CLAY with occasional rootlets. Gravel is fine to coarse, angular to sub-rounded quartz, limestone, sandstone and chalk. (LANDFILL - MADE GROUND)	1.00	(0.60)	58.53		
1.20	SPT	N=7 (1,0,1,2,2,2)		Soft to firm orange brown sandy slightly gravelly CLAY with occasional pockets of brown and grey clay with occasional roots. Gravel is fine to coarse, sub-angular to sub-rounded flint, limestone, brick and sandstone. (LANDFILL - MADE GROUND)					
1.20	ES								
1.20 - 1.65	D								
1.20 - 2.00	B								
2.00	SPT	N=4 (0,1,1,1,1,1)				(2.90)			
2.00	ES								
2.00 - 2.45	D				3.90		55.63		
3.00	SPT	N=10 (1,1,1,2,3,4)							
3.00	ES								
3.00 - 3.45	D								
4.00	SPT	N=8 (2,2,2,2,2,2)		Soft dark grey and light orange brown slightly sandy slightly gravelly CLAY with occasional fine sand sized selenite crystals in dark grey pockets and medium sand sized shell fragments. Gravel is fine to coarse, sub-angular to sub-rounded brick, sandstone, limestone and quartz. One fragment of wood. (LANDFILL - MADE GROUND)	4.40	(0.50)	55.13		
4.00 - 4.45	D								
4.40 - 5.00	B			Soft becoming firm grey brown becoming firm slightly gravelly CLAY. Gravel is fine to coarse, sub-angular sandstone. (KELLAWAYS CLAY MEMBER)	5.00	(0.60)	54.53		
5.00	SPT	N=14 (2,2,3,3,4,4)		Stiff dark grey slightly silty, slightly gravelly CLAY with occasional medium sand sized shell fragments. Gravel is fine to medium. sub-angular pyritic sandstone. (KELLAWAYS CLAY MEMBER)					
5.00	ES								
5.00 - 5.45	D								
5.00 - 5.50	B								
5.50 - 6.00	B					(1.50)			
6.00 - 6.50	B				6.50		53.03		
6.50	SPT	50/5mm (25,50)		Grey LIMESTONE. (CORNBRASH LIMESTONE FORMATION)	6.54	(0.04)	52.99		
6.50 - 6.54	D			End of Borehole at 6.54m					

Progress and Observations									Chiselling		
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Borehole terminated on SPT refusal at 9.31m bgl. 3) Gas and groundwater monitoring pipe installed to 4.00m bgl. Response zone between 1.00m bgl and 4.00m bgl. 4) ER = 62%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
CBH-110
Page No. 1 of 1

Method: Cable Percussion	Date(s): 07/07/2021	Logged By: JM	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501430.73, 278540.62	Checked By: CV	Flush:
Hydrock Project No: C-18443-C	Ground Level: 63.53m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.00	ES			Soft dark brown slightly gravelly CLAY with frequent rootlets. Gravel is fine to coarse, angular to sub-rounded flint, brick, ironstone and limestone. (TOPSOIL - MADE GROUND)	0.30	(0.30)	63.23		
0.27	ES			Soft to firm dark brown and orange brown sandy slightly gravelly CLAY. Gravel is fine to coarse, sub-angular to sub-rounded limestone and chalk with occasional shell fragments. (LANDFILL - MADE GROUND)	1.20	(0.90)	62.33		
0.30	D								
0.70 - 1.20	B								
1.20	SPT	N=9 (1,1,2,2,2,3)		Firm brown and grey slightly gravelly CLAY. Gravel is fine to coarse, angular to sub-rounded flint, brick, ironstone and chalk. (LANDFILL - MADE GROUND)					
1.20 - 1.65	D								
1.20 - 2.00	B								
2.00	SPT	N=8 (0,1,2,2,2,2)							
2.00 - 2.45	D								
3.00	SPT	N=12 (1,2,3,2,4,3)				(2.80)			
3.00	ES								
3.00 - 3.45	D								
4.00	SPT	N=4 (0,0,1,1,1,1)		Soft bluish grey and orange brown slightly silty slightly gravelly CLAY. Gravel is fine to coarse, angular to sub-angular limestone, brick and glass. (LANDFILL - MADE GROUND)	4.00		59.53		
4.00 - 4.45	D								
5.00	SPT	N=5 (1,1,1,1,1,2)							
5.00	ES					(2.50)			
5.00 - 5.45	D								
6.00	D								
6.50	SPT	N=4 (1,3,1,1,1,1)			6.50		57.03		
6.50	ES			Soft grey and brown slightly silty slightly gravelly CLAY with mild hydrocarbon odour and occasional specks of selenite. Gravel is fine to coarse, angular brick and chalk. (LANDFILL - MADE GROUND)					
6.50 - 6.95	D								
7.50	D					(1.80)			
8.00	SPT	N=20 (3,3,5,5,5,5)							
8.00 - 8.45	D				8.30		55.23		
8.50 - 9.50	B			Medium dense to dense orangish brown gravelly SAND. Gravel is fine to coarse, angular to sub-rounded sandstone and siltstone. (KELLAWAYS SAND MEMBER)	8.50	(0.20)	55.03		
				Stiff mottled greyish brown and blueish grey slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded sandstone, chalk, ironstone and limestone. (KELLAWAYS CLAY MEMBER)		(1.00)			
9.50	SPT	50/20mm (25,50)			9.50		54.03		
9.50 - 9.59	D			Grey LIMESTONE. (CORNBRASH LIMESTONE FORMATION)	9.59	(0.09)	53.94		
				End of Borehole at 9.59m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Borehole terminated on SPT refusal at 9.59m bgl. 3) Gas and groundwater monitoring pipe installed to 8.00m bgl. Response zone between 2.00m bgl and 8.00m bgl. 4) ER = 62%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CBH-111 Page No. 1 of 1

Method: Cable Percussion	Date(s): 06/07/2021	Logged By: JM	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501531.33, 278527.19	Checked By: CV	Flush:
Hydrock Project No: C-18443-C	Ground Level: 62.08m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.20	ES			Soft dark brown slightly gravelly CLAY with frequent rootlets. Gravel is fine to coarse, sub-angular to sub-rounded quartz, flint and brick. (TOPSOIL - MADE GROUND)	0.20	(0.20)	61.88		
				Soft dark greyish brown slightly sandy gravelly CLAY with occasional roots. Gravel is fine to coarse angular to rounded brick, quartz, ironstone, chalk, flint, limestone and sandstone. (LANDFILL - MADE GROUND)	1	(1.10)			
1.20	SPT	N=7 (1,1,2,2,1,2)			1.30		60.78		
1.20 - 1.65 1.30 - 2.00	D B			Soft to firm dark brownish grey and locally greenish grey slightly silty slightly sandy slightly gravelly CLAY. Gravel is fine to coarse angular to sub-rounded brick, limestone, ash, flint, sandstone, ironstone, concrete, plastic and timber. (LANDFILL - MADE GROUND)	2				
2.00	SPT	N=18 (2,2,4,4,5,5)							
2.00 - 2.45	D								
3.00	SPT	N=14 (2,2,5,5,2,2)			3				
3.00 - 3.45 3.10 3.10 - 4.00	D ES B			*... Between 3.10m and 4.00m bgl: Potential Asbestos Containing Material (fibres).*					
4.00	SPT	N=5 (2,4,1,1,1,2)			4	(5.65)			
4.00 - 4.45	D								
5.00	SPT	N=8 (1,2,2,2,2,2)			5				
5.00 - 5.45	D								
6.00 6.00	D ES				6				
6.50	SPT	N=8 (2,2,2,2,2,2)							
6.50 - 6.95	D				6.95		55.13		
				Firm to stiff blueish grey and in parts brown slightly gravelly CLAY with rare coarse gravel sized shell fragments. Gravel is fine to medium sub-angular to rounded quartz, brick, flint and sandstone. (LANDFILL - MADE GROUND)	7	(0.55)			
7.50	D				7.50		54.58		
				Firm to stiff blueish grey gravelly CLAY with occasional carbonaceous material. Gravel is fine to coarse sub-angular to sub-rounded quartz, flint, siltstone and sandstone. (LANDFILL - MADE GROUND)	8	(0.95)			
7.90 - 8.40 8.00	B SPT	N=23 (7,4,4,5,7,7)							
8.00 - 8.45 8.40 8.40 - 9.20	D ES B				8.45		53.63		
				Stiff blueish grey CLAY with frequent shell fragments. (KELLAWAYS CLAY MEMBER)	9	(0.78)			
9.20	SPT	50/5mm (25,50)		*... Between 9.20m and 9.23m bgl: Very limited recovery*	9.23	(0.01)	52.85		
9.20 - 9.23	D			Grey LIMESTONE. (CORNBRASH LIMESTONE FORMATION)	9.23		52.85		
				End of Borehole at 9.23m	10				

Progress and Observations									Chiselling		
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Borehole terminated on SPT refusal at 9.23m bgl. 3) Gas and groundwater monitoring pipe installed to 8.00m bgl. Response zone between 2.00m bgl and 8.00m bgl. 4) ER = 62%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CP201 Page No. 1 of 1

Method: Cable Percussion	Date(s): 22/11/2021	Logged By: TB	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501522.17, 278652.92	Checked By: CV	Flush: N/A
Hydrock Project No: C-18443-C	Ground Level: 63.34m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.20 0.30 - 1.00	ES B			Firm dark brown slightly gravelly sandy CLAY with occasional roots up to 1mm diameter. Gravel is angular to rounded fine to coarse of flint and chalk. Sand is fine to medium. (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	63.04		
1.20	SPT	N=16 (2,2,3,4,4,5)		Stiff grey brown slightly sandy slightly gravelly CLAY. Gravel is angular to rounded fine to coarse of chalk and flint. Sand is fine to medium. (GLACIAL TILL)					
1.20 1.20 - 1.65 1.20 - 2.00	ES D B					(2.60)			
2.00	SPT	N=23 (3,3,4,5,6,8)			2.90		60.44		
2.00 - 2.45 2.20	D ES								
3.00	SPT	N=27 (2,3,5,7,7,8)		Stiff grey brown and dark grey CLAY with rare shell fragments. (GLACIAL TILL)					
3.00 - 3.45 3.00 - 4.00	D B								
4.00	SPT	N=37 (3,5,7,10,10,10)		*... Becoming very stiff below 4.00m*		(2.47)			
4.00 - 4.45	D								
5.00	SPT	50/225mm (5,7,11,14,25)			5.37		57.97		
5.00 - 5.37	D			End of Borehole at 5.37m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Dando 2000	22/11	0800	5.37	2.00	150		N/A	

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Hand dug pit to 1.20m. 2. Reached refusal (SPT n=50) at 5.37m, borehole terminated on suspected flint boulder. 3. Gas and groundwater monitoring well installed. 4. Response zone from 1.00m to 5.37m. 5. Er = 62%.

Groundwater: No Groundwater seepages observed

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CP202 Page No. 1 of 1

Method: Cable Percussion	Date(s): 23/11/2021	Logged By: TB	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501617.49, 278632.47	Checked By: CV	Flush: N/A
Hydrock Project No: C-18443-C	Ground Level: 59.78m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.20	ES			Firm dark brown slightly gravelly sandy CLAY with occasional roots up to 1mm diameter. Gravel is angular to rounded fine to coarse of flint and chalk. Sand is fine to medium. (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	59.48		
0.30 - 1.00	B			Firm dark grey slightly gravelly CLAY. Gravel is angular to rounded fine to medium of flint and chalk (GLACIAL TILL)					
0.30 - 1.00	B								
1.20	SPT	N=11 (1,2,2,3,3,3)				(1.70)			
1.20 - 1.65	D								
1.20 - 2.00	B								
1.20 - 2.20	B								
2.00	SPT	N=38 (1,3,5,11,11,11)		Very stiff dark grey and orange brown CLAY with occasional gravel sized silt and sand patches. (KELLAWAYS SAND MEMBER)	2.00		57.78		
2.00 - 2.45	D					(0.90)			
3.00	SPT	N=29 (3,4,7,7,7,8)		Stiff grey sandy CLAY. (KELLAWAYS SAND MEMBER)	2.90		56.88		
3.00 - 3.45	D								
3.00 - 4.00	B								
3.00 - 4.00	B								
4.00	SPT	N=40 (3,5,9,10,10,11)		*... Becoming very stiff below 4.00m*		(2.00)			
4.00 - 4.45	D				4.90		54.88		
5.00	SPT	N=20 (3,4,4,5,5,6)		Stiff grey CLAY with occasional shell fragments. (KELLAWAYS CLAY MEMBER)					
5.00	ES								
5.00 - 5.45	D								
5.00 - 6.00	B								
5.00 - 6.00	B					(2.25)			
6.50	SPT	N=50 (4,6,8,10,15,17)		*... Becoming very stiff below 6.50m*					
6.50 - 6.95	D								
7.00	D				7.15		52.63		
7.00	D				7.20	(0.05)	52.58		
7.20	SPT	50/10mm (25,50)		LIMESTONE. (CORNBRASH LIMESTONE FORMATION) End of Borehole at 7.20m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Dando 2000	23/11	0800	7.20	2.00	150		N/A	

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Hand dug pit to 1.20m. 2. Reached refusal (SPT n=50) at 7.20m, borehole terminated. 3. Gas and groundwater monitoring well installed 4. Response zone from 1.20m to 7.20m. 5. Er = 62%.

Groundwater: No Groundwater seepages observed

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CP203 Page No. 1 of 2

Method: Cable Percussion	Date(s): 16/11/2021	Logged By: TB	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501400.40, 278207.49	Checked By: CV	Flush: N/A
Hydrock Project No: C-18443-C	Ground Level: 65.57m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
				Firm brown gravelly CLAY with occasional rootlets (TOPSOIL - MADE GROUND)	0.30	(0.30)	65.27		
0.30	ES			Orangish brown very clayey gravelly SAND. Gravel is angular to sub angular fine to coarse of brick and limestone. (LANDFILL - MADE GROUND)	0.60	(0.30)	64.97		
0.30 - 0.60	B			Firm greenish grey slightly sandy gravelly CLAY. Gravel is sub angular to sub rounded fine to coarse of chalk, brick and limestone. (LANDFILL - MADE GROUND)	1.00	(0.40)	64.57		
0.60 - 1.00	B			Firm blackish grey mottled grey slightly sandy gravelly CLAY. Gravel is sub angular to sub rounded fine to coarse of chalk, flint, brick and limestone. (LANDFILL - MADE GROUND)					
1.00	ES								
1.20	SPT	N=10 (2,2,2,2,3,3)							
1.20 - 1.65	D								
1.20 - 2.00	B								
2.00	SPT	N=10 (1,2,2,2,3,3)							
2.00	ES								
2.00 - 2.45	D								
2.00 - 3.00	B								
3.00	SPT	N=9 (4,2,2,2,2,3)							
3.00	ES								
3.00 - 3.45	D								
3.00 - 4.00	B								
3.00 - 6.00	B								
4.00	SPT	N=11 (1,2,3,2,3,3)							
4.00	ES								
4.00 - 4.45	D								
4.00 - 5.00	B								
5.00	SPT	N=15 (1,2,3,3,4,5)							
5.00	ES								
5.00 - 5.45	D								
5.00 - 6.00	B								
6.00	ES								
6.50	SPT	N=15 (2,2,3,4,3,5)				(10.90)			
6.50 - 6.95	D								
7.00 - 8.00	B								
7.00 - 9.50	B								
8.00	SPT	N=20 (4,4,5,5,5,5)							
8.00	ES								
8.00 - 8.45	D								
8.00 - 9.00	B								
9.00 - 9.50	B								
9.50	SPT	N=17 (2,3,4,4,4,5)							
9.50 - 9.95	D								
10.00 - 11.00	B								

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Dando 2000	16/11	0800	11.96	8.00	150		N/A	

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Hand dug pit to 1.20m. 2. Reached refusal (SPT n=50) at 11.9m, borehole terminated. 3. No groundwater entries noted during drilling. 4. Gas and groundwater monitoring well installed, response zone from 1.00m to 10.00m. 5. Er = 62%.

Groundwater: No Groundwater seepages observed

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CP203 Page No. 2 of 2

Method: Cable Percussion	Date(s): 16/11/2021	Logged By: TB	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501400.40, 278207.49	Checked By: CV	Flush: N/A
Hydrock Project No: C-18443-C	Ground Level: 65.57m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
				Firm blackish grey mottled grey slightly sandy gravelly CLAY. Gravel is sub angular to sub rounded fine to coarse of chalk, flint, brick and limestone. (LANDFILL - MADE GROUND)					
11.00	SPT	N=18 (3,3,4,4,5,5)							
11.00 - 11.45	D								
11.00 - 11.90	B								
11.90	SPT	50/10mm (25,50)			11.90		53.67		
				LIMESTONE. (CORNBRASH LIMESTONE FORMATION)	11.96	(0.06)	53.61		
				End of Borehole at 11.90m					

Progress and Observations									Chiselling		
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Hand dug pit to 1.20m. 2. Reached refusal (SPT n=50) at 11.9m, borehole terminated. 3. No groundwater entries noted during drilling. 4. Gas and groundwater monitoring well installed, response zone from 1.00m to 10.00m. 5. Er = 62%.

Groundwater: No Groundwater seepages observed

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CP204 Page No. 1 of 1

Method: Cable Percussion	Date(s): 23/11/2021	Logged By: TB	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501699.41, 278124.65	Checked By: CV	Flush: N/A
Hydrock Project No: C-18443-C	Ground Level: 59.28m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.10	ES			Firm dark brown slightly gravelly sandy CLAY with occasional roots up to 1mm diameter. Gravel is angular to rounded fine to coarse of flint and chalk. Sand is fine to medium. (AGRICULTURALLY DISTURBED TOPSOIL)	0.40	(0.40)	58.88		
0.40 - 1.00	B			Firm brown slightly sandy CLAY with occasional roots up to 1mm diameter. Sand is fine. (KELLAWAYS SAND MEMBER)					
1.00	SPT	N=12 (2,3,3,3,3,3)			1	(1.10)			
1.00 - 1.45	D								
1.50 - 2.00	B				1.50		57.78		
1.50 - 2.00	B			Stiff brown grey, light brown and orange brown slightly sandy silty CLAY. Sand is fine. (KELLAWAYS SAND MEMBER)					
2.00	SPT	N=19 (2,3,5,4,5,5)			2	(1.50)			
3.00	SPT	N=24 (1,2,3,5,7,9)			3				
3.00 - 3.45	D				3.00		56.28		
3.00 - 4.00	B			Stiff grey silty CLAY. (KELLAWAYS SAND MEMBER)					
3.00 - 4.00	B								
4.00	SPT	50/235mm (3,5,9,12,20,9)		*... Becoming very stiff below 4.00m*	4	(2.00)			
4.00 - 4.45	D								
4.00 - 4.50	B								
4.00 - 6.00	B								
4.50 - 5.00	B								
5.00	SPT	N=38 (3,5,7,9,11,11)			5				
5.00 - 5.45	D				5.00		54.28		
5.00 - 6.00	B			Very stiff grey CLAY with occasional shell fragments. (KELLAWAYS CLAY MEMBER)					
6.00	D				6				
6.00	D								
6.50	SPT	N=40 (5,7,9,9,11,11)				(2.95)			
6.50 - 6.95	D				7				
7.50	D								
8.00	SPT	50/10mm (25,50)			7.95		51.33		
8.00	D			LIMESTONE. (CORNBRASH LIMESTONE FORMATION)	8.00	(0.05)	51.28		
8.00	D			End of Borehole at 8.00m	8				
8.00	ES								
					9				
					10				

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Dando 2000	23/11	0800	8.00	2.00	150		N/A	

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Hand dug pit to 1.20m. 2. Reached refusal (SPT n=50) at 8.00m, borehole terminated. 3. Gas and groundwater monitoring well installed. 4. Response zone from 1.00m to 8.00m. 5. Er = 62%.

Groundwater: No Groundwater seepages observed

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CP205 Page No. 1 of 2

Method: Cable Percussion	Date(s): 15/11/2021	Logged By: TB	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501474.22, 278161.36	Checked By: CV	Flush: N/A
Hydrock Project No: C-18443-C	Ground Level: 64.52m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
				Firm brown gravelly CLAY with occasional rootlets (TOPSOIL - MADE GROUND)	0.20	(0.20)	64.32		
				Firm to stiff brown slightly sandy gravelly CLAY. Gravel is angular to sub angular fine to coarse of brick and limestone. (LANDFILL - MADE GROUND)	1	(1.00)			
1.20	SPT	N=8 (1,1,2,2,2,2)			1.20		63.32		
				Firm greenish grey blackish grey and grey slightly sandy gravelly CLAY. Gravel is sub angular to sub rounded fine to coarse of chalk, brick and limestone (LANDFILL - MADE GROUND)	2				
2.00	SPT	N=9 (1,2,2,2,2,3)							
3.00	SPT	N=8 (1,2,1,2,2,3)			3				
4.00	SPT	N=15 (3,3,3,4,4,4)			4				
5.00	SPT	N=11 (2,2,2,3,3,3)			5	(7.80)			
					6				
6.50	SPT	N=11 (2,2,2,3,3,3)			7				
8.00	SPT	N=12 (2,2,3,3,3,3)			8				
					9.00		55.52		
				Firm yellowish brown, grey and brown mottled slightly gravelly sandy CLAY. Gravel is sub angular fine to coarse of flint. (LANDFILL - MADE GROUND)	9				
9.50	SPT	N=14 (2,2,3,3,4,4)			10	(2.00)			

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Dando 2000	15/11	0800	11.06	9.00	150		N/A	

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Hand dug pit to 1.20m. 2. Reached refusal (SPT n=50) at 11.06m, borehole terminated. 3. No groundwater entries noted during drilling. 4. Gas and groundwater monitoring well installed, response zone from 1.00m to 9.00m. 5. Er = 62%.

Groundwater: No Groundwater seepages observed

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CP205 Page No. 2 of 2

Method: Cable Percussion	Date(s): 15/11/2021	Logged By: TB	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501474.22, 278161.36	Checked By: CV	Flush: N/A
Hydrock Project No: C-18443-C	Ground Level: 64.52m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
				Firm yellowish brown, grey and brown mottled slightly gravelly sandy CLAY. Gravel is sub angular fine to coarse of flint. (LANDFILL - MADE GROUND)					
11.00	SPT	50/10mm (25,50)		Stiff grey gravelly CLAY. Gravel is angular to sub angular fine to medium of mudstone. (KELLAWAYS CLAY MEMBER)	11.00	(0.05)	53.52		
				LIMESTONE. (CORNBRASH LIMESTONE FORMATION)	11.06	(0.01)	53.46		
				End of Borehole at 11.06m					

Progress and Observations									Chiselling		
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Hand dug pit to 1.20m. 2. Reached refusal (SPT n=50) at 11.06m, borehole terminated. 3. No groundwater entries noted during drilling. 4. Gas and groundwater monitoring well installed, response zone from 1.00m to 9.00m. 5. Er = 62%.

Groundwater: No Groundwater seepages observed

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CP206 Page No. 1 of 2

Method: Cable Percussion	Date(s): 23/11/2021	Logged By: TB	Drilled By:
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501477.07, 278247.79	Checked By: CV	Flush: N/A
Hydrock Project No: C-18443-C	Ground Level: 63.67m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.10	ES			Firm dark brown slightly gravelly sandy CLAY with occasional roots up to 2mm diameter. Gravel is angular to rounded fine to coarse of flint and chalk. Sand is fine to medium. (TOPSOIL - MADE GROUND)	0.30	(0.30)	63.37		
0.30	ES			Stiff grey brown slightly gravelly CLAY. Gravel is angular to rounded fine to coarse of chalk and flint. (LANDFILL - MADE GROUND)	1.20	(0.90)	62.47		
0.30 - 1.00	B			Stiff dark brown and dark grey slightly gravelly sandy CLAY. Gravel is angular to rounded fine to coarse of chalk, flint and brick. (LANDFILL - MADE GROUND)	4.00	(2.80)	59.67		
0.30 - 1.00	B			Stiff grey brown and dark grey slightly gravelly sandy CLAY. Gravel is angular to rounded fine to coarse of chalk, flint and brick. Sand is fine to medium. (LANDFILL - MADE GROUND)	7.00	(3.00)	56.67		
0.60	ES			Firm grey brown and dark grey slighlty sandy slightly gravelly CLAY. Gravel is angular to rounded fine to coarse of chalk, flint and brick. Sand is fine. (LANDFILL - MADE GROUND)	10.00	(3.00)	53.67		
1.20	SPT	N=12 (2,2,3,3,3,3)							
1.20 - 1.65	D								
1.20 - 2.00	B								
1.60	ES								
2.00	SPT	N=8 (1,2,2,2,2,2)							
2.00	ES								
2.00 - 2.45	D								
2.00 - 3.00	B								
2.00 - 3.00	B								
2.60	ES								
3.00	SPT	N=12 (1,2,3,3,3,3)							
3.00	ES								
3.00 - 3.45	D								
3.00 - 4.00	B								
3.00 - 4.00	B								
3.60	ES								
4.00	SPT	N=17 (1,2,3,3,4,7)							
4.00	ES								
4.00 - 4.45	D								
4.00 - 5.00	B								
4.00 - 5.00	B								
4.60	ES								
5.00	SPT	N=9 (1,2,2,2,2,3)							
5.00 - 5.45	D								
5.50	ES								
5.50 - 6.50	B								
5.50 - 6.50	B								
5.60	ES								
6.50	SPT	N=8 (1,2,2,2,2,2)							
6.50 - 6.95	D								
6.60	ES								
7.00	ES								
7.00 - 8.00	B								
7.00 - 8.00	B								
7.60	ES								
8.00	SPT	N=8 (1,1,2,2,2,2)							
8.00 - 8.45	D								
8.50 - 9.50	B								
8.60	ES								
9.50	SPT	N=13 (1,1,2,3,4,4)							
9.50	ES								
9.50 - 10.50	B								
9.50 - 10.50	B								

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Dando 2000	23/11	0000	10.60	9.00	150		N/A	

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Hand dug pit to 1.20m. 2. Reached refusal (SPT n=50) at 10.60m, borehole terminated. 3. Gas and groundwater monitoring well installed, 4. Response zone from 1.00m to 10.00m. 5. Er = 62%.

Groundwater: No Groundwater seepages observed

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CP206 Page No. 2 of 2

Method: Cable Percussion	Date(s): 23/11/2021	Logged By: TB	Drilled By:
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501477.07, 278247.79	Checked By: CV	Flush: N/A
Hydrock Project No: C-18443-C	Ground Level: 63.67m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
9.50 - 9.95 9.60	D ES			Very stiff grey CLAY. (KELLAWAYS CLAY MEMBER)	10.50	(0.50)	53.17		
10.60	SPT	50/5mm (25,50)		LIMESTONE. (CORNBRASH LIMESTONE FORMATION) End of Borehole at 10.60m	10.60	(0.10)	53.07		

Progress and Observations									Chiselling		
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Hand dug pit to 1.20m. 2. Reached refusal (SPT n=50) at 10.60m, borehole terminated. 3. Gas and groundwater monitoring well installed, 4. Response zone from 1.00m to 10.00m. 5. Er = 62%.

Groundwater: No Groundwater seepages observed

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CP207 Page No. 1 of 1

Method: Cable Percussion	Date(s): 19/11/2021	Logged By: TB	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501457.14, 278387.20	Checked By: CV	Flush: N/A
Hydrock Project No: C-18443-C	Ground Level: 62.50m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.30 - 1.00	B			Soft to firm brown slightly sandy gravelly CLAY with occasional rootlets. Gravel is angular to sub angular fine to coarse of limestone and flint (TOPSOIL - MADE GROUND)	0.30	(0.30)	62.20		
1.00	ES			Firm brown gravelly CLAY. Gravel is angular to sub rounded fine to coarse of flint, bricks and limestone. (LANDFILL - MADE GROUND)	1	(0.90)			
1.20	SPT	N=5 (1,1,1,1,1,2)			1.20		61.30		
1.20	ES			Firm to stiff grey and brown mottled gravelly CLAY. Gravel is angular to rounded fine to coarse of flint, bricks and chalk (LANDFILL - MADE GROUND)		(0.80)			
1.20 - 1.65	D								
1.20 - 2.00	B				2				
2.00	SPT	N=11 (1,1,2,3,3,3)			2.00		60.50		
2.00	ES			Soft to firm blackish grey, grey and brown mottled slightly sandy gravelly CLAY with occasional rootlets and partially decomposed organic material. Gravel is angular to sub angular fine to coarse of sandstone, chalk, limestone and bricks (LANDFILL - MADE GROUND)					
2.00 - 2.45	D								
2.00 - 3.00	B								
2.00 - 3.00	B								
3.00	SPT	N=8 (2,2,2,2,2,2)			3				
3.00	ES								
3.00 - 3.45	D								
3.00 - 4.00	B								
3.00 - 4.00	B								
4.00	SPT	N=8 (2,2,2,2,2,2)			4				
4.00	ES								
4.00 - 4.45	D								
4.00 - 5.00	B								
5.00	SPT	N=10 (1,1,2,2,3,3)			5	(6.00)			
5.00	ES								
5.00 - 5.45	D								
5.00 - 6.00	B								
					6				
6.50	SPT	N=11 (1,1,2,2,3,4)							
6.50	ES								
6.50 - 6.95	D				7				
6.50 - 7.50	B								
6.50 - 7.50	B								
8.00	SPT	N=13 (2,2,2,3,4,4)			8.00		54.50		
8.00	ES			Firm to stiff brown mottled grey slightly sandy gravelly CLAY. Gravel is sub angular to rounded fine to coarse of chalk, flint and limestone. (LANDFILL - MADE GROUND)		(1.00)			
8.00 - 8.45	D								
8.00 - 9.00	B								
8.00 - 9.00	B				9				
					9.00		53.50		
				Weak grey LIMESTONE. Recovered in (angular) coarse gravel sized fragments. (CORNBRASH LIMESTONE FORMATION)		(0.40)			
9.40	SPT	50/50mm (25,50)			9.40		53.10		
9.40	D			End of Borehole at 9.40m					
					10				

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Dando 2000	19/11	0800	9.40	8.00	150		N/A	

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Hand dug pit to 1.20m. 2. Reached refusal (SPT n=50) at 9.40m, borehole terminated. 3. No groundwater entries noted during drilling. 4. Gas and groundwater monitoring well installed, response zone from 1.00m to 8.00m. 5. Er = 62%.

Groundwater: No Groundwater seepages observed

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CP208 Page No. 1 of 1

Method: Cable Percussion	Date(s): 18/11/2021	Logged By: TB	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501511.81, 278441.64	Checked By: CV	Flush: N/A
Hydrock Project No: C-18443-C	Ground Level: 62.00m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.30	ES			Soft to firm brown slightly sandy gravelly CLAY with occasional rootlets. Gravel is angular to sub angular fine to coarse of limestone and flint. (TOPSOIL - MADE GROUND)	0.30	(0.30)	61.70		
0.30 - 1.00	B			Firm brown gravelly CLAY. Gravel is angular to sub rounded fine to coarse of flint and limestone. (LANDFILL - MADE GROUND)	1.00	(0.70)	61.00		
1.00	ES			Firm to stiff grey and brown mottled gravelly CLAY. Gravel is angular to rounded fine to coarse of flint and chalk (LANDFILL - MADE GROUND)					
1.20	SPT	N=6 (1,1,1,1,2,2)							
1.20 - 1.65	D								
1.20 - 2.00	B								
2.00	SPT	N=8 (1,1,1,2,2,3)				(2.00)			
2.00	ES								
2.00 - 2.45	D								
2.00 - 3.00	B				3.00		59.00		
3.00	SPT	N=11 (3,5,5,2,2,2)		Soft to firm blackish grey, grey and brown mottled slightly sandy gravelly CLAY with occasional rootlets and partially decomposed organic material. Gravel is angular to sub angular fine to coarse of sandstone, chalk, limestone (LANDFILL - MADE GROUND)					
3.00	ES								
3.00 - 3.45	D								
3.00 - 4.00	B								
4.00	SPT	N=9 (1,1,2,2,2,3)				(2.00)			
4.00	ES								
4.00 - 4.45	D								
4.00 - 5.00	B				5.00		57.00		
5.00	SPT	N=9 (1,2,2,3,2,2)		Firm blackish grey mottled grey slightly sandy gravelly CLAY with low cobble content. Gravel is sub angular to sub rounded fine to coarse of chalk, flint bricks and limestone. Cobbles are angular of limestone. (LANDFILL - MADE GROUND)					
5.00	ES								
5.00 - 5.45	D								
5.00 - 6.00	B					(1.80)			
6.50	SPT	N=25 (14,7,9,7,7,2)							
6.50 - 6.95	D								
7.00 - 8.00	B				6.80		55.20		
				Firm orange brown slightly sandy clay. (KELLAWAYS SAND MEMBER)		(1.20)			
8.00	SPT	N=19 (5,5,4,5,5,5)			8.00		54.00		
8.00 - 8.45	D			Firm grey CLAY. (KELLAWAYS CLAY MEMBER)					
8.00 - 9.00	B					(0.85)			
					8.85		53.15		
9.00	SPT	50/50mm (13,12,50)		LIMESTONE (CORNBRASH LIMESTONE FORMATION)	9.00	(0.15)	53.00		
				End of Borehole at 9.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Dando 2000	18/11	0800	9.00	6.00	150		N/A	

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Hand dug pit to 1.20m. 2. Reached refusal (SPT n=50) at 9.00m, borehole terminated. 3. No groundwater entries noted during drilling. 4. Gas and groundwater monitoring well installed, response zone from 1.00m to 6.00m. 5. Er = 62%.

Groundwater: No Groundwater seepages observed

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
CP209
Page No. 1 of 1

Method: Cable Percussion	Date(s): 17/11/2021	Logged By: TB	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501393.06, 278402.11	Checked By: CV	Flush: N/A
Hydrock Project No: C-18443-C	Ground Level: 62.96m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.30	ES			Firm brown gravelly CLAY with occasional rootlets (TOPSOIL - MADE GROUND)	0.30	(0.30)	62.66		
0.30 - 1.00	B			Firm brown slightly sandy gravelly CLAY. Gravel is angular to sub rounded fine to coarse of chalk, brick, limestone and flint. (MADE GROUND)	1.00	(0.70)	61.96		
1.00	ES			Firm grey gravelly CLAY. Gravel is sub angular fine to medium of chalk. (GLACIAL TILL)					
1.20	SPT	N=13 (2,2,3,3,3,4)							
1.20 - 1.65	D								
1.20 - 2.00	B								
1.20 - 4.00	B								
2.00	SPT	N=10 (1,1,2,2,3,3)				(2.00)			
2.00	ES								
2.00 - 2.45	D								
2.00 - 3.00	B								
3.00	SPT	N=19 (2,2,3,4,6,6)			3.00		59.96		
3.00	ES			Firm to stiff grey gravelly CLAY with rare medium sized selenite crystals and occasional shell fossils. Gravel is angular to sub rounded fine to coarse of flint (GLACIAL TILL)		(1.00)			
3.00 - 3.45	D								
3.00 - 4.00	B								
4.00	SPT	N=48 (6,8,9,11,12,16)			4.00		58.96		
4.00	ES			Dense orangish brown gravelly fine to coarse SAND. Gravel is sub angular to rounded fine to coarse of flint. (GLACIOFLUVIAL DEPOSITS)					
4.00 - 4.45	D								
4.00 - 4.45	D								
4.00 - 5.00	B								
4.00 - 8.00	B								
5.00	SPT	N=42 (7,8,9,11,10,12)				(2.00)			
5.00	ES								
5.00 - 6.00	B				6.00		56.96		
6.50	SPT	N=32 (1,3,5,7,9,11)		Dense brown very gravelly medium to coarse SAND. Gravel is angular to sub angular fine to coarse of limestone and flint (GLACIOFLUVIAL DEPOSITS)					
7.00 - 8.00	B					(2.00)			
8.00	SPT	54/275mm (5,9,11,12,14,17)			8.00		54.96		
8.00	D			LIMESTONE (CORNBRASH LIMESTONE FORMATION)	8.28	(0.28)	54.68		
8.00	D			End of Borehole at 8.28m					
8.00	ES								

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Dando 2000	17/11	0800	9.10	4.00	150		N/A	

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Hand dug pit to 1.20m. 2. Reached refusal (SPT n=50) at 8.275m, borehole terminated. 3. No groundwater entries noted during drilling. 4. Gas and groundwater monitoring well installed, response zone from 1.00m to 4.00m. 5. Er = 62%.

Groundwater: No Groundwater seepages observed

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No CP210 Page No. 1 of 1

Method: Cable Percussion	Date(s): 18/11/2021	Logged By: TB	Drilled By: RP Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501486.70, 278496.13	Checked By: CV	Flush: N/A
Hydrock Project No: C-18443-C	Ground Level: 62.59m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.10	ES			Soft to firm brown slightly sandy gravelly CLAY with occasional rootlets. Gravel is angular to sub angular fine to coarse of limestone and flint (TOPSOIL - MADE GROUND)	0.30	(0.30)	62.29		
0.30 - 1.00	B			Firm brown gravelly CLAY. Gravel is angular to sub rounded fine to coarse of flint and limestone. (LANDFILL - MADE GROUND)					
1.20	SPT	N=7 (1,1,1,1,2,3)			2.00	(1.70)	60.59		
1.20	ES								
1.20 - 1.65	D								
1.20 - 2.00	B								
2.00	SPT	N=22 (2,4,5,6,7,4)		Firm to stiff grey mottled brown gravelly CLAY. Gravel is angular to rounded fine to coarse of flint and chalk. (LANDFILL - MADE GROUND)					
2.00	ES								
2.00 - 2.45	D								
2.00 - 3.00	B								
3.00	SPT	N=7 (1,1,1,2,2,2)			4.00	(2.00)	58.59		
3.00	ES								
3.00 - 3.45	D								
3.00 - 4.00	B								
4.00	SPT	N=12 (1,2,3,3,3,3)		Firm grey mottled light brown gravelly CLAY with occasional rootlets and rare bands of blackish grey organic clay. Gravel is sub angular to rounded fine to coarse of chalk and flint. (LANDFILL - MADE GROUND)					
4.00	ES								
4.00 - 4.45	D								
4.00 - 5.00	B								
5.00	SPT	N=10 (1,1,2,2,3,3)			6.00	(2.00)	56.59		
5.00 - 5.45	D								
5.50	ES								
5.50 - 6.50	B								
6.50	SPT	N=13 (2,2,3,3,3,4)		Firm to stiff brown mottled grey gravelly CLAY with rare rootlets. Gravel is sub angular to rounded fine to coarse of chalk, flint and limestone. (LANDFILL - MADE GROUND)					
6.50 - 6.95	D								
7.00	ES				8.00	(2.00)	54.59		
7.00 - 8.00	B								
8.00	SPT	N=18 (4,4,4,5,5,4)		Medium dense brown sandy GRAVEL. Sand is coarse. Gravel is sub angular to sub rounded fine to coarse of limestone and flint. (GLACIOFLUVIAL DEPOSITS)					
8.00	ES								
8.00 - 8.45	D								
8.00 - 9.00	B								
9.00	SPT	50/95mm (8,11,28,22)			9.00	(1.00)	53.59		
9.00	ES			LIMESTONE (CORNBRASH LIMESTONE FORMATION)	9.10	(0.10)	53.50		
				End of Borehole at 9.10m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Dando 2000	18/11	0800	9.10	9.10	7		N/A	

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Hand dug pit to 1.20m. 2. Reached refusal (SPT n=50) at 9.10m, borehole terminated. 3. No groundwater entries noted during drilling. 4. Gas and groundwater monitoring well installed, response zone from 1.00m to 8.00m. 5. Er = 62%.

Groundwater: No Groundwater seepages observed

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
RBH-101
Page No. 1 of 2

Method: Dynamic Sampled & Rotary Cored	Date(s): 22/06/2021 - 24/06/2021	Logged By: NT	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501256.75, 278263.43	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 66.69m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
	1.50	SPT	N=19 (2,2,3,4,5,7)						Firm light brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse, sub-angular to sub-rounded flint and chalk (TOPSOIL - MADE GROUND)	0.30	(0.30)	66.39		
	1.50	HSV	86kPa						Stiff greyish brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse, sub-angular to sub-rounded flint and chalk. (GLACIAL TILL)	1.00	(0.70)	65.69		
									Stiff grey slightly sandy slightly gravelly CLAY. Gravel is fine to coarse, sub-angular to sub-rounded flint and chalk. (GLACIAL TILL)					
									... Between 1.95m bgl and 2.75m bgl: Occasional silt sized selenite crystals.					
	2.80	HSV	140kPa						*... From 2.80m bgl: Becoming very stiff.*		(3.80)			
	3.00	SPT	N=30 (2,4,6,6,8,10)											
	3.41	C												
	3.50	HSV	108kPa											
	4.00	SPT	N=43 (5,5,5,8,13,17)							4.80		61.89		
	4.65 - 4.77	C							Soft grey slightly gravelly sandy CLAY. Gravel is fine to coarse, sub-angular to sub-rounded chalk. (GLACIAL TILL)		(0.70)			
	4.70	HSV	140kPa							5.50		61.19		
	4.77	C							Stiff grey slightly gravelly CLAY. Gravel is fine to coarse, sub-angular to sub-rounded sandstone, siltstone and shell fragments. (GLACIAL TILL)					
	5.50	SPT	N=40 (3,5,8,10,10,12)						*... At 6.24m bgl: Coarse gravel sized selenite crystal.*		(2.80)			
	6.60 - 6.80	C												
	6.80	C												
	7.00	SPT	50/295mm (4,5,9,12,14,15)							8.30		58.39		
	8.50	SPT	50/145mm (4,8,17,33)						Coarse SAND & GRAVEL (drillers description due to no recovery). (GLACIOFLUVIAL DEPOSITS)					

Continued on Next Sheet

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commacio 305							Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 3.00m bgl then rotary cored to 16.00m bgl. 3) Gas and groundwater monitoring pipe installed to 12.00m bgl. Response zone between 12.00m bgl and 14.50m bgl. 4) ER = 59%.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
RBH-101
Page No. 2 of 2

Method: Dynamic Sampled & Rotary Cored	Date(s): 22/06/2021 - 24/06/2021	Logged By: NT	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501256.75, 278263.43	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 66.69m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests: Depth (m)	Type	Results	Mechanical Log: TCR	SCR	RQD	If: Min Mean Max	Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	10.00	SPT	50/160mm (2,5,9,21,20)						Coarse SAND & GRAVEL (drillers description due to no recovery). (GLACIOFLUVIAL DEPOSITS)	12.10	(3.80)	54.59		
12.37 - 12.50				13	0	0			Stiff slightly sandy slightly gravelly CLAY. Gravel is fine to coarse, sub-angular to sub-rounded sandstone. (KELLAWAYS CLAY MEMBER)	12.40	(0.30)	54.29		
12.50 - 13.50				85	49	11			Non intact medium strong light grey LIMESTONE. (CORNBRASH LIMESTONE FORMATION)	12.80	(0.40)	53.89		
									Strong to very strong light grey LIMESTONE. Fractures are closely to medium spaced, rough, moderately open to wide. (CORNBRASH LIMESTONE FORMATION)	13.60	(0.80)	53.09		
13.50 - 14.50				100	100	100			Very stiff to hard blueish grey CLAY with abundant shell fragments. (CORNBRASH LIMESTONE FORMATION)	13.95	(0.35)	52.74		
									Strong to very strong light grey LIMESTONE. Fractures are closely to medium spaced, rough, moderately open to wide. (CORNBRASH LIMESTONE FORMATION)	14.20	(0.25)	52.49		
14.50 - 16.00	14.90 - 15.20	C		100					Very stiff to hard blueish grey CLAY with abundant shell fragments. (BLISWORTH CLAY FORMATION)	16.00	(1.80)	50.69		
									End of Borehole at 16.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 3.00m bgl then rotary cored to 16.00m bgl. 3) Gas and groundwater monitoring pipe installed to 12.00m bgl. Response zone between 12.00m bgl and 14.50m bgl. 4) ER = 59%.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-102 Page No. 1 of 2

Method: Dynamic Sampled & Rotary Cored	Date(s): 24/06/2021 - 25/06/2021	Logged By: SP	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501549.66, 278135.91	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 63.21m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests: Depth (m)	Type	Results	Mechanical Log: TCR	SCR	RQD	If: Min Mean Max	Water Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
									Stiff light brown slightly gravelly slightly sandy CLAY. Gravel is fine to coarse bricks. (LANDFILL - MADE GROUND)		(1.20)			
1.20 - 3.00										1.20		62.01		
	1.50	SPT	N=13 (2,2,2,3,3,5)						Soft dark brown sandy slightly gravelly CLAY. Gravel is fine to coarse angular flint, brick, sandstone and concrete. (LANDFILL - MADE GROUND)	1.40	(0.20)	61.81		
				100					Stiff light brown mottled brown and grey slightly gravelly slightly sandy CLAY. Gravel is fine to coarse angular to sub-rounded flint, chalk and brick. (LANDFILL - MADE GROUND)		(1.00)			
										2.40		60.81		
									Very soft brown sandy slightly gravelly CLAY with decomposing plant odour. Gravel is fine to medium angular flint. (LANDFILL - MADE GROUND)					
3.00 - 5.00									*... From 3.0m to 3.7m bgl: No recovery.*		(1.30)			
										3.70		59.51		
				45					Stiff light brown mottled dark brown slightly gravelly slightly sandy CLAY. Gravel is fine to coarse angular to sub-rounded flint, chalk and bricks. (LANDFILL - MADE GROUND)					
	4.50	SPT	N=0 (0,0,0,0,0,0)											
5.00 - 7.00									*... Becoming slightly sandy and firm from 5.0m bgl.* *... From 5.00m to 7.00m: Becoming soft to firm.*					
	6.00	SPT	N=0 (0,0,0,0,0,0)	88					*... At 6.00m bgl: becoming soft and sandy with angular to subrounded fine to coarse flint and brick.*		(5.90)			
7.00 - 9.00														
	7.50	SPT	N=7 (1,2,1,2,2,2)	86										
9.00 - 11.00	9.00	SPT	N=14 (3,6,4,3,4,3)						*... From 9.00m - 10.00m bgl: Becoming soft to firm (possible clay liner).*					
										9.60		53.61		
									Very stiff dark grey CLAY with abundant sand sized shells. (KELLAWAYS CLAY FORMATION)					
									Continued on Next Sheet					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
							Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 3.00m bgl then rotary cored to 9.00m bgl. 3) Gas and groundwater monitoring pipe installed to 13.00m bgl. Response zone between 11.00m bgl and 13.00m bgl. 4) ER = 59%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-102 Page No. 2 of 2

Method: Dynamic Sampled & Rotary Cored	Date(s): 24/06/2021 - 25/06/2021	Logged By: SP	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501549.66, 278135.91	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 63.21m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrum-entation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
	10.50	SPT	50/50mm (2,7,50)	73					Very stiff dark grey CLAY with abundant sand sized shells. (KELLAWAYS CLAY FORMATION)		(1.60)			
11.00 - 12.00				95	36	13				11.20		52.01		
									Strong grey LIMESTONE. Fractures are horizontal, planar with no infill. (CORNBRASH LIMESTONE FORMATION)	11.50	(0.30)	51.71		
									Very to extremely stiff grey CLAY with abundant shells. (CORNBRASH LIMESTONE FORMATION)	11.60	(0.10)	51.61		
12.00 - 13.50				94	87	37			Strong grey LIMESTONE. Fractures are horizontal, planar with no infill. (CORNBRASH LIMESTONE FORMATION)	11.92	(0.32)	51.29		
									Very to extremely stiff grey CLAY with abundant shells. (BLISWORTH CLAY FORMATION)	12.35	(0.43)	50.86		
13.50 - 14.50				100					Very stiff dark green CLAY with medium gravel sized pyritic sandstone with shells. (BLISWORTH CLAY FORMATION)		(2.15)			
									... From 13.50m bgl: Dark grey and dark green.					
	14.50	SPT	50/200mm (7,10,14,20,16)						End of Borehole at 14.50m	14.50		48.71		

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 3.00m bgl then rotary cored to 9.00m bgl. 3) Gas and groundwater monitoring pipe installed to 13.00m bgl. Response zone between 11.00m bgl and 13.00m bgl. 4) ER = 59%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-103 Page No. 1 of 1

Method: Dynamic Sampled & Rotary Cored	Date(s): 28/06/2021	Logged By: MA	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501646.73, 278314.31	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 56.08m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
									Firm orangish brown mottled grey slightly sandy CLAY with frequent rootlets. Sand is fine. (TOPSOIL - MADE GROUND)	0.40	(0.40)	55.68		
	1.20 - 1.40	B							Firm orangish brown mottled grey slightly sandy CLAY. Sand is fine. (KELLAWAYS SAND MEMBER)					
	1.20 - 1.40	B												
	1.40 - 1.50	B									(1.50)			
	1.50	SPT	N=7 (1,1,1,2,2,2)							1.90		54.18		
	1.50 - 1.90	B							Firm thinly laminated fissured dark grey mottled orange CLAY. Fissures are non planar randomly orientated extremely closely spaced smooth. (KELLAWAYS CLAY MEMBER)					
	1.90 - 3.00	B							*... At 1.90m bgl: Pockets of white silt.*		(1.10)			
	1.90 - 3.00	B								3.00		53.08		
	3.00	SPT	N=11 (1,2,3,2,3,3)						Firm fissured dark grey CLAY. Fissures are non planar randomly orientated extremely closely spaced smooth. (KELLAWAYS CLAY MEMBER)					
	3.00 - 3.75	B							*... At 3.00m bgl: HSV 97/24*		(0.75)			
	3.00 - 3.75	B							*... At 3.60m bgl: HSV 64/4*	3.75		52.33		
3.80 - 5.30	3.75 - 3.80	D					Nl		Extremely weak grey shelly LIMESTONE. Fractures are horizontal to sub-vertical open undulating rough. (CORNBRASH LIMESTONE FORMATION)					
	3.80 - 5.30	C		100	53	45	Nl 11 40				(1.45)			
									... Between 4.92m and 5.07m: Dark grey and very shelly.	5.20		50.88		
5.30 - 6.70	5.30 - 5.50	B							Firm fissured greenish grey CLAY. Fissures are extremely closely spaced randomly orientated smooth. (BLISWORTH CLAY FORMATION)	5.50	(0.30)	50.58		
	5.30 - 5.90	C							Stiff fissured dark grey CLAY with frequent shell fragments. Fissures are extremely closely spaced randomly orientated smooth and polished. (BLISWORTH CLAY FORMATION)					
	5.50 - 5.90	B												
	5.50 - 5.90	B		100	0	0					(1.20)			
										6.70		49.38		
									End of Borehole at 6.70m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
	28/06	1155					Water	
	28/06	1335	6.70	3.00	168	0.60	Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 3.80m bgl. Rotary core to 6.70. 3) Gas and groundwater monitoring pipe installed to 6.00m bgl. Response zone between 3.80m bgl to 6.00m bgl. 4) ER = 59%.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-104 Page No. 1 of 1
Method: Dynamic Sampled & Rotary Cored	Date(s): 28/06/2021	Logged By: MA	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501630.83, 278407.65	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 56.57m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests: Depth (m)	Type	Results	Mechanical Log: TCR	SCR	RQD	If: Min Mean Max	Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	0.20	ES							Soft dark brown slightly sandy CLAY with occasional rootlets . (TOPSOIL - MADE GROUND)	0.45	(0.45)	56.12		
	0.40	ES												
	0.40 - 1.20	B							Fine and medium reddish brown gravelly SAND. Gravel is sub-angular fine of sandstone. (GLACIOFLUVIAL DEPOSITS)	1.80	(1.35)	54.77		
	1.20	SPT	N=8 (1,2,2,2,2,2)											
	1.20 - 1.80	B												
	1.20 - 1.80	B												
	1.80 - 2.20	B							Fine and medium yellowish brown clayey sandy GRAVEL. Gravel is sub-angular to angular of limestone. (GLACIOFLUVIAL DEPOSITS)	2.20	(0.40)	54.37		
	2.00	SPT	N=9 (1,1,2,2,2,3)						Firm brown slightly gravelly sandy CLAY. Gravel is sub-angular fine and medium sandstone. (GLACIOFLUVIAL DEPOSITS)	2.40	(0.20)	54.17		
	2.20 - 2.40	B							Greyish brown sandy angular to sub-angular fine and medium GRAVEL of flint sandstone and ironstone. (GLACIOFLUVIAL DEPOSITS)	2.80	(0.40)	53.77		
	2.40 - 2.80	B							Firm light grey mottled orange CLAY. (KELLAWAYS CLAY MEMBER)	3.50	(0.70)	53.07		
	2.80 - 3.50	B												
3.50 - 4.50	3.50	SPT	50/150mm (1,3,15,35)	100	35	0	NI 4 5 8 NI 3 8		Very weak grey LIMESTONE with orange weathering surfaces and occasional shells. Fractures are closely spaced horizontal to sub-vertical open undulating rough . (CORNBRASH LIMESTONE FORMATION) *... Between 4.02m and 4.10m: Firm dark grey sandy clay with frequent shell fragments.*	4.45	(0.95)	52.12		
4.50 - 6.00	4.50	SPT	50/75mm (3,4,50)	53	25	25	12 NI NI NI 12 24 28		Firm brownish grey sandy CLAY. (CORNBRASH LIMESTONE FORMATION)	4.50	(0.05)	52.07		
									Brown fine to coarse slightly gravelly SAND. Gravel is sub-angular to sub-rounded fine to coarse sandstone and limestone. (CORNBRASH LIMESTONE FORMATION)	5.30	(0.80)	51.27		
									Firm bluish grey slightly gravelly sandy CLAY. Gravel is sub-angular to sub-rounded fine limestone. (CORNBRASH LIMESTONE FORMATION)	5.65	(0.35)	50.92		
									Medium strong grey shelly LIMESTONE. Fractures are closely spaced horizontal open undulating rough. (CORNBRASH LIMESTONE FORMATION)	6.00	(0.35)	50.57		
6.00 - 7.20				100					Stiff fissured bluish grey CLAY. Fissures are extremely closely spaced randomly oriented smooth. (BLISWORTH CLAY FORMATION)	7.00	(1.00)	49.57		
									Brown fine to coarse slightly gravelly SAND. Gravel is sub-angular to sub-rounded fine to coarse sandstone and limestone. (BLISWORTH CLAY FORMATION)	7.20	(0.20)	49.37		
									Firm dark grey slightly gravelly sandy CLAY with frequent shell fragments. Gravel is sub-angular to sub-rounded fine to coarse limestone. (BLISWORTH CLAY FORMATION)	7.23	(0.03)	49.34		
									End of Borehole at 7.23m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
	28/06 28/06	1330 2300	7.20	2.50	152	4.00	Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 3.75m bgl. Rotary core to 7.20. 3) Gas and groundwater monitoring pipe installed to 6.00m bgl. Response zone between 3.00m bgl to 5.00m bgl. 4) ER = 73%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-105 Page No. 1 of 1
Method: Dynamic Sampled & Rotary Cored	Date(s): 29/06/2021	Logged By: MA	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501569.83, 278529.10	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 59.85m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests: Depth (m)	Type	Results	Mechanical Log: TCR	SCR	RQD	If: Min Mean Max	Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	0.20	ES							Firm slightly sandy slightly gravelly CLAY with frequent rootlets. Gravel is sub-angular to sub-rounded fine and medium sandstone and flint . (TOPSOIL - MADE GROUND)	0.30	(0.30)	59.55		
	0.30 - 0.80	B							Orangish brown slightly clayey gravelly SAND. Gravel is angular to sub-rounded limestone flint sandstone and brick . (LANDFILL - MADE GROUND)	0.70	(0.40)	59.15		
	0.40	ES							Firm dark grey mottled orangish brown slightly sandy gravelly CLAY. Gravel is angular to sub-rounded fine to coarse chalk limestone sandstone and brick. (Possible side slope liner). (LANDFILL - MADE GROUND)	1.20	(0.50)	58.65		
	0.80	D							Firm orangish brown sandy slightly gravelly CLAY. Gravel is sub-angular to sub-rounded fine to coarse flint chalk and limestone. (GLACIOFLUVIAL DEPOSITS)	1.50	(0.30)	58.35		
	1.20	SPT	N=10 (1,1,2,2,3,3)						Orangish brown slightly clayey gravelly SAND. Gravel is sub-rounded fine and medium sandstone. (KELLAWAYS SAND MEMBER)	2.50	(1.00)	57.35		
	1.30	D							Orangish brown SAND with rare gravels. Gravel is sub-rounded fine sandstone. (KELLAWAYS SAND MEMBER)	4.10	(1.60)	55.75		
	1.60	D							Firm orangish brown sandy CLAY. (KELLAWAYS CLAY MEMBER)	4.35	(0.25)	55.50		
	2.00	SPT	N=19 (1,1,2,4,6,7)						Firm grey slightly sandy CLAY. (KELLAWAYS CLAY MEMBER)	4.60	(0.25)	55.25		
	2.20	D							*... At 4.50m bgl: HSV 71/22*					
	2.50	SPT	N=33 (3,7,7,7,10,9)						Firm light grey very sandy CLAY. (KELLAWAYS CLAY MEMBER)	5.70	(1.10)	54.15		
	3.00 - 4.00	B							Stiff fissured dark grey CLAY with occasional shell fragments. Fissure are extremely closely spaced randomly oriented smooth. (KELLAWAYS CLAY MEMBER)	6.90	(1.20)	52.95		
	4.00	SPT	N=11 (1,2,2,3,3,3)						Weak grey Shelly LIMESTONE. Fractures are extremely closely spaced horizontal open planar rough. (CORNBRASH LIMESTONE FORMATION)					
	4.20	D							*... At 7.45m bgl: Orange weathering present.*					
	4.40	D								9.20	(2.30)	50.65		
	5.00	D							Stiff dark grey CLAY with frequent shell fragments. (BLISWORTH CLAY FORMATION)	9.70	(0.50)	50.15		
5.50 - 7.00	5.50	SPT	N=26 (1,3,3,6,6,11)						Firm greenish grey CLAY. (BLISWORTH CLAY FORMATION)	10.00	(0.30)	49.85		
	5.50 - 7.00	C							End of Borehole at 10.00m					
	5.60	D		67	7	7								
	6.40	D												
	6.50 - 7.00	B												
7.00 - 8.50	7.00	SPT	50/0mm (25)	100	27	27	NI 5 15 NI 26 26							
8.50 - 10.00							26							
	9.20 - 9.70	B		100										

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
	29/06 29/06	0905 1415	10.00	2.50	152	3.00	Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 4.0m bgl. Rotary core to 10.0m bgl. 3) Gas and groundwater monitoring pipe installed to 9.50m bgl. Response zone between 6.50m bgl to 9.50m bgl. 4) ER = 73%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-106 Page No. 1 of 2

Method: Dynamic Sampled & Rotary Cored	Date(s): 01/07/2021	Logged By: MA	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501396.07, 278584.79	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 64.67m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests: Depth (m)	Type	Results	Mechanical Log: TCR	SCR	RQD	If: Min Mean Max	Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	0.20	ES							Firm brown slightly sandy gravelly CLAY. Gravel is sub-angular to sub-rounded fine to coarse flint and sandstone. (TOPSOIL - MADE GROUND)	0.40	(0.40)	64.27		
	0.70	D							Firm yellowish brown mottled grey slightly gravelly CLAY. Gravel is sub-angular to sub-rounded fine to coarse flint and chalk. (GLACIAL TILL)					
1.20 - 1.50 100mm 100% rec	1.20 - 1.50	C												
	1.20 - 1.50	L												
	1.50	SPT	N=22 (1,2,2,6,6,8)											
	1.80	D									(3.10)			
	2.60 - 2.90	B							*... At 2.40m bgl: HSV 99/15* *... At 2.50m bgl: Becoming stiff.*					
	2.90	D							*... At 2.90m bgl: Coarse sand sized selenite crystals.*					
	3.00	SPT	N=38 (4,5,7,10,10,11)							3.50		61.17		
	3.50 - 4.50	B							Stiff fissured grey slightly gravelly CLAY. Gravel is sub-rounded fine and medium chalk and limestone. Fissures are extremely closely spaced randomly oriented smooth. (GLACIAL TILL)					
	4.50	SPT	N=26 (2,3,4,6,7,9)											
	4.50 - 6.00	B									(2.95)			
	6.00	SPT	90/260mm (4,4,48,11,19,12)											
	6.20	D								6.45		58.22		
	6.70	D							Very dense brown coarse SAND. (KELLAWAYS SAND MEMBER)					
	7.50	SPT	50/135mm (4,17,26,24)								(4.55)			
									Continued on Next Sheet					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
	01/07	1135						
	01/07	2305	13.50	10.50	168	0.50	Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 3.0m bgl. Rotary core to 15.0m bgl. 3) Gas and groundwater monitoring pipe installed to 13.50m bgl. Response zone between 12.00m bgl to 13.50m bgl. 4) ER = 59%.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-106 Page No. 2 of 2
Method: Dynamic Sampled & Rotary Cored	Date(s): 01/07/2021	Logged By: MA	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501396.07, 278584.79	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 64.67m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests: Depth (m)	Type	Results	Mechanical Log: TCR	SCR	RQD	If: Min Mean Max	Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
									Very dense brown coarse SAND. (KELLAWAYS SAND MEMBER)					
11.00 - 12.50				80	63	46			Moderately strong light grey LIMESTONE. Fractures are medium spaced open no infill 2mm aperture. (CORNBRASH LIMESTONE FORMATION)	11.00	(1.50)	53.67		
									... Hard grey thinly laminated CLAY.					
12.50 - 14.00									Stiff blueish grey locally thinly bedded CLAY. 1 fissure at 45 degrees with frequent fossils. (BLISWORTH CLAY FORMATION)	12.50		52.17		
	13.20	HSV	130kPa	100					*... At 13.20m bgl: HSV 130*					
	13.80 - 14.00	C							*... At 13.80m bgl: HSV 98*		(2.50)			
14.00 - 15.00	13.80	HSV	98kPa	100										
									End of Borehole at 15.00m	15.00		49.67		

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 3.0m bgl. Rotary core to 15.0m bgl. 3) Gas and groundwater monitoring pipe installed to 13.50m bgl. Response zone between 12.00m bgl to 13.50m bgl. 4) ER = 59%.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
RBH-107

Method: Dynamic Sampled & Rotary Cored	Date(s): 01/07/2021 - 06/07/2021	Logged By: MA	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501330.63, 278359.16	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 64.40m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
	0.20	ES							Stiff brown slightly gravelly CLAY. Gravel is angular to sub-rounded fine to coarse flint sandstone and limestone. (TOPSOIL - MADE GROUND)	0.40	(0.40)	64.00		
	0.70	D							Stiff orangish brown slightly gravelly CLAY. Gravel is angular to sub-rounded fine to coarse flint and chalk. (GLACIAL TILL)					
	1.20	SPT	N=13 (1,3,2,3,3,5)											
	1.50	D												
	1.80 - 2.00	B									(2.60)			
	2.00	SPT	N=21 (2,4,4,5,5,7)											
	2.50	D												
	3.00 - 3.50	B								3.00		61.40		
	3.50	SPT	N=27 (1,3,4,6,8,9)						Very stiff grey slightly gravelly CLAY. Gravel is sub-angular to sub-rounded fine to coarse chalk limestone and sandstone. (GLACIAL TILL)		(0.80)			
	4.00	D								3.80		60.60		
									Very stiff grey slightly gravelly CLAY. Gravel is sub-rounded to well rounded fine and medium mudstone and limestone. (GLACIAL TILL)					
	5.20	D									(2.70)			
	5.50 - 6.50	B												
	6.50	SPT	48/225mm (4,12,13,18,17)							6.50		57.90		
									Very dense brown coarse SAND. (KELLAWAYS SAND MEMBER)					
	8.00	SPT	50/150mm (7,16,22,28)								(3.50)			
										10.00		54.40		

Continued on Next Sheet

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
	01/07 01/07	1420 2215	12.00	10.00	152	2.00	Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 2.0m bgl. Rotary core to 12.0m bgl. 3) Gas and groundwater monitoring pipe installed to 11.00m bgl. Response zone between 9.50m bgl to 11.00m bgl. 4) ER = 73%.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-107 Page No. 2 of 2

Method: Dynamic Sampled & Rotary Cored	Date(s): 01/07/2021 - 06/07/2021	Logged By: MA	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501330.63, 278359.16	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 64.40m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrum-entation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
									Strong light grey LIMESTONE. Fractures are medium spaced open wavy 2mm aperture. (CORNBRASH LIMESTONE FORMATION)		(1.50)			
										11.50		52.90		
									Very stiff to hard blueish grey CLAY with abundant shell fragments. (BLISWORTH CLAY FORMATION)		(0.50)			
										12.00		52.40		
									End of Borehole at 12.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 2.0m bgl. Rotary core to 12.0m bgl. 3) Gas and groundwater monitoring pipe installed to 11.00m bgl. Response zone between 9.50m bgl to 11.00m bgl. 4) ER = 73%.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-108 Page No. 1 of 2

Method: Dynamic Sampled & Rotary Cored	Date(s): 29/06/2021 - 30/06/2021	Logged By: MA	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501476.72, 278321.77	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 62.64m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests Depth (m)	Type	Results	Mechanical Log TCR	SCR	RQD	If: Min Mean Max	Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	0.20	ES							Firm dark brown slightly sandy slightly gravelly CLAY. Gravel is sub-angular to sub-rounded fine and medium brick flint and sandstone. (TOPSOIL - MADE GROUND)	0.40	(0.40)	62.24		
	0.50	ES							Firm orangish brown slightly sandy gravelly CLAY. Gravel is angular to sub-rounded fine to coarse flint limestone and brick. (LANDFILL - MADE GROUND)	0.80	(0.40)	61.84		
1.20 - 1.50 100mm 100% rec	1.20 - 1.50	L							Stiff brownish grey gravelly CLAY. Gravel is angular to sub-rounded fine to coarse limestone flint chalk and brick. (LANDFILL - MADE GROUND)					
	1.50	SPT	N=14 (1,1,2,2,7,3)						*... From 1.50m bgl: Becoming firm*					
	1.50 - 2.50	B									(2.20)			
	3.00	SPT	N=25 (1,1,2,2,7,14)							3.00		59.64		
	3.20	D							Stiff orangish brown mottled dark grey slightly sandy gravelly CLAY. Gravel is angular fine to coarse sandstone and flint. (LANDFILL - MADE GROUND)	3.45	(0.45)	59.19		
	3.60	ES							Soft grey and black mottled slightly gravelly slightly sandy CLAY. Gravel is angular to sub-rounded fine and medium flint and chalk. (LANDFILL - MADE GROUND)	3.70	(0.25)	58.94		
	3.80	D								4.00	(0.30)	58.64		
	4.20	D							Stiff brownish grey slightly gravelly CLAY. Gravel is angular to sub-rounded fine to coarse flint chalk sandstone and brick. (LANDFILL - MADE GROUND)	4.50	(0.50)	58.14		
	4.50	SPT	N=17 (2,1,3,3,6,5)						Stiff brownish grey gravelly CLAY. Gravel is angular to sub-rounded fine to coarse limestone flint chalk and brick. (LANDFILL - MADE GROUND)					
									Stiff greyish brown with occasional patches of black slightly sandy gravelly CLAY. Gravel is angular to sub-rounded fine to coarse brick flint limestone sandstone and chalk. (LANDFILL - MADE GROUND)		(1.50)			
5.50 - 5.70 100mm 100% rec	5.50 - 5.70	C								6.00		56.64		
	5.50 - 5.70	L							Soft greyish brown slightly sandy gravelly CLAY. Gravel is angular to sub-rounded fine to coarse flint sandstone limestone chalk and brick with rare Plastic and timber. (LANDFILL - MADE GROUND)					
	5.90	D												
	6.00	SPT	N=7 (2,1,1,1,2,3)											
	6.50	D												
	7.50	SPT	N=15 (2,4,3,2,5,5)						*... At 7.40m bgl: HSV 42/10*		(2.85)			
									... From 7.80m bgl: Becoming firm					
	8.00	D							*... At 8.50m bgl: HSV 51/18*	8.85		53.79		
	8.90	D							Soft orangish brown very sandy CLAY with rare gravel. Gravel is sub-angular medium limestone. (GLACIOFLUVIAL DEPOSITS)	9.20	(0.35)	53.44		
	9.00	SPT	N=26 (5,8,6,4,7,9)						Orangish brown mottled dark brown laminated clayey SAND. (KELLAWAYS SAND MEMBER)					
	9.40	D									(0.80)			
9.50 - 10.50	9.50 - 10.50	C					NI			10.00		52.64		
	9.50 - 10.50	C												

Continued on Next Sheet

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
	29/06	0845						
	29/06	1245	13.00	9.00	168	4.00	Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 9.0m bgl. Rotary core to 13.5m bgl. 3) Gas and groundwater monitoring pipe installed to 12.50m bgl. Response zone between 9.50m bgl to 12.00m bgl. 4) ER = 59%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-108 Page No. 2 of 2

Method: Dynamic Sampled & Rotary Cored	Date(s): 29/06/2021 - 30/06/2021	Logged By: MA	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501476.72, 278321.77	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 62.64m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests: Depth (m)	Type	Results	Mechanical Log: TCR	SCR	RQD	If: Min Mean Max	Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
10.50 - 12.00				40	31	10	2 4 10		Weak dark grey shelly LIMESTONE. Fractures are closely spaced horizontal to sub-horizontal open planar undulating rough. (CORNBRASH LIMESTONE FORMATION)					
							NI				(1.40)			
				100	57	36	NI 7 47			11				
							NI			11.40		51.24		
							NI 12 24		Very stiff dark grey slightly gravelly CLAY. Gravel is sub-rounded fine limestone. (CORNBRASH LIMESTONE FORMATION)	11.60	(0.20)	51.04		
12.00 - 13.50									Weak dark grey shelly LIMESTONE. Fractures are closely spaced horizontal planar undulating rough closed with dark grey clayey infill. (CORNBRASH LIMESTONE FORMATION)	12.00	(0.40)	50.64		
	12.20 - 13.20	B		100					Extremely weak LIMESTONE / very stiff dark grey CLAY with frequent shell fragments. (CORNBRASH LIMESTONE FORMATION)	12.20	(0.20)	50.44		
	13.00	SPT	50/240mm (5,8,11,14,20,5)						Very stiff fissured bluish grey CLAY. Fissures are extremely closely spaced randomly oriented smooth. (BLISWORTH CLAY FORMATION)	13	(1.30)			
13.20 - 13.50 100mm 100% rec	13.20 - 13.50	L								13.50		49.14		
									End of Borehole at 13.50m	14				
										15				
										16				
										17				
										18				
										19				
										20				

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 9.0m bgl. Rotary core to 13.5m bgl. 3) Gas and groundwater monitoring pipe installed to 12.50m bgl. Response zone between 9.50m bgl to 12.00m bgl. 4) ER = 59%. 5) Clean drilling undertaken with bentonite seal at base of landfill prior to extending into natural soils.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
RBH-109
Page No. 1 of 1

Method: Dynamic Sampled & Rotary Cored	Date(s): 06/07/2021 - 07/07/2021	Logged By: NT	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501840.12, 278474.19	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 49.44m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests Depth (m)	Type	Results	Mechanical Log TCR	SCR	RQD	If: Min Mean Max	Water Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	0.10	ES							Soft dark brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to angular flint and occasional brick and concrete. (AGRICULTURALLY DISTURBED TOPSOIL)	0.15	(0.15)	49.29		
	1.00	SPT	N=10 (1,1,2,2,4,2)						Firm light brown sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to angular limestone and chalk. (HEAD DEPOSITS)	1.00	(0.85)	48.44		
	1.50 - 1.60	B							Stiff greenish grey slightly sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to angular chalk limestone and fossilized material. (HEAD DEPOSITS)		(0.90)			
	1.60 - 1.90	C								1.90		47.54		
	1.90	HSV	82kPa						Firm orange brown with grey veining sandy CLAY. Locally iron stained. (BLISWORTH CLAY FORMATION)		(0.60)			
	2.00	SPT	50/220mm (5,3,4,4,42)							2.50		46.94		
2.50 - 3.50				96	96	89			Very weak light grey MUDSTONE. (BLISWORTH CLAY FORMATION)	2.55	(0.05)	46.89		
									Strong light grey occasionally dark grey LIMESTONE. Fractures are closely spaced open no infill wavy. (BLISWORTH CLAY FORMATION)		(0.85)			
3.50 - 5.00				89	87	65			Very weak dark grey MUDSTONE with abundant fossilised material. (BLISWORTH LIMESTONE FORMATION)	3.40		46.04		
5.00 - 6.00				94	88	56					(3.80)			
6.00 - 7.50				94	91	73				7.20		42.24		
7.50 - 9.00				97	95	95			Strong grey LIMESTONE. Fractures are medium spaced open 2-3mm aperture smooth to wavy. (BLISWORTH LIMESTONE FORMATION) *... From 7.80m to 7.85m: Very hard grey clay bands.* *... From 8.60m to 8.90m: Very hard grey clay bands.*		(1.80)			
									End of Borehole at 9.00m	9.00		40.44		

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
							Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 2.37m bgl then rotary cored to 9.00m bgl. 3) Gas and groundwater monitoring pipe installed to 11.00m bgl. Response zone between 9.50m bgl and 11.00m bgl. 4) ER = 73%.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-110 Page No. 1 of 1

Method: Dynamic Sampled & Rotary Cored	Date(s): 06/07/2021 - 07/07/2021	Logged By: NT	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 502115.96, 278547.57	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 44.74m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
									Light brown slightly clayey sandy fine to coarse sub-angular to angular limestone mudstone and asphalt GRAVEL. (MADE GROUND)	0.15	(0.15)	44.59		
									Yellow brown sandy fine to coarse sub-angular to angular limestone GRAVEL. (MADE GROUND)	0.40	(0.25)	44.34		
	1.50	SPT	N=25 (1,2,2,5,7,11)						Soft brown locally iron stained slightly sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded flint and limestone. (ALLUVIUM)	1.70	(1.30)	43.04		
	1.50	D							Brown gravelly SAND. Gravel is sub-angular to rounded flint and chalk. (ALLUVIUM)	2.80	(1.10)	41.94		
	2.00	B												
	2.90	HSV	56kPa						Firm dark grey brown and blue sandy CLAY with occasional patches of black carbonaceous material. (ALLUVIUM)	2.90	(0.10)	41.84		
	3.00	SPT	N=23 (1,3,2,6,6,9)						Greenish grey fine SAND with occasional orange red staining. (HEAD DEPOSITS) *... From 2.90m to 3.50m: Greenish grey.*	5.00	(2.10)	39.74		
	3.60	D												
	4.00	B												
	4.50	SPT	50/240mm (2,6,5,12,24,9)						No Recovery (Sand within flush). (HEAD DEPOSITS)	7.00	(2.00)	37.74		
									End of Borehole at 7.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
							Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 4.89m bgl then rotary cored to 7.00m bgl. 3) Gas and groundwater monitoring pipe installed to 6.50m bgl. Response zone between 2.00m bgl and 6.50m bgl. 4) ER = 59%

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-111 Page No. 1 of 1

Method: Dynamic Sampled & Rotary Cored	Date(s): 05/07/2021 - 06/07/2021	Logged By: NT	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 502011.17, 278711.60	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 51.53m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
	1.10	HSV	52kPa						Soft light brown slightly gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded limestone and calcareous nodules. (AGRICULTURALLY DISTURBED TOPSOIL)	0.20	(0.20)	51.33		
	1.50	SPT	N=17 (2,2,3,3,5,6)						Firm yellowish brown slightly gravelly CLAY. Gravel is fine to coarse sub-angular to angular limestone and fossilized material. (CORNBRASH LIMESTONE FORMATION)	0.80	(0.60)	50.73		
	1.60 - 1.80	C							Firm grey closely fissured CLAY with occasional yellow sand. (BLISWORTH CLAY FORMATION)	1.50	(0.70)	50.03		
	1.90	HSV	102kPa						Stiff grey and yellow sandy CLAY. (BLISWORTH CLAY FORMATION)					
	2.00 - 2.80	B								3.50	(2.00)	48.03		
	3.00	SPT	50/290mm (3,3,6,5,7,32)						Very stiff thinly laminated grey and yellow CLAY with frequent shell fragments. (BLISWORTH CLAY FORMATION) *... From 3.50m to 4.50m: Weak MUDSTONE in patches.*	4.50	(1.00)	47.03		
	3.00 - 3.50	B												
	3.20	HSV	115kPa											
	3.50 - 3.75	C												
	3.50 - 3.75	U												
4.50 - 5.50				58	32	23			Moderately strong grey LIMESTONE. Fractures are closely spaced wavy open thin. (BLISWORTH LIMESTONE FORMATION)	4.90	(0.40)	46.63		
									Moderately strong grey LIMESTONE. Fractures are closely spaced wavy open thin. (BLISWORTH LIMESTONE FORMATION)	5.60	(0.70)	45.93		
5.50 - 6.00				96	86	60			Strong grey LIMESTONE with inclusions of up to 9cm orange sandstone. Fractures are closely to medium spaced open or sand filled wavy 1 to 2mm. (BLISWORTH LIMESTONE FORMATION)					
6.00 - 7.00				85	80	65				7.00	(1.40)	44.53		
7.00 - 8.00				100	100	100			Strong grey locally dark grey LIMESTONE. Fractures are closed to widely spaced open wavy. (BLISWORTH LIMESTONE FORMATION)					
8.00 - 9.00				100	100	100				9.00	(2.00)	42.53		
									End of Borehole at 9.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
							Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 3.00m bgl then rotary cored to 9.00m bgl. 3) Gas and groundwater monitoring pipe installed to 9.00m bgl. Response zone between 5.00m bgl and 9.00m bgl. 4) ER = 59%.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-112 Page No. 1 of 1

Method: Dynamic Sampled & Rotary Cored	Date(s): 08/07/2021 - 09/07/2021	Logged By: NT	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 502057.22, 278272.31	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 46.51m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
	0.10	ES							Brown clayey slightly gravelly SAND. Gravel is fine to coarse sub-angular to angular limestone. (MADE GROUND)	0.10	(0.10)	46.41		
	0.50	ES							Yellow GRAVEL. Gravel is fine to coarse sub-angular to angular limestone. (MADE GROUND)	0.40	(0.30)	46.11		
	1.20	SPT	N=11 (1,1,2,3,2,4)						Firm orange brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to angular limestone and rare mudstone. (HEAD DEPOSITS)		(1.70)			
	1.30 - 1.60	B							*... From 1.70m bgl: Fine chalk gravel is present.*					
	2.00	D								2.10		44.41		
	2.50	SPT	N=18 (1,2,5,4,5,4)						Orange brown slightly sandy GRAVEL. Gravel is fine to coarse sub-angular to angular flint. (HEAD DEPOSITS)	2.40	(0.30)	44.11		
									Yellow brown clayey GRAVEL. Gravel is fine to coarse sub-angular to angular shells. (HEAD DEPOSITS) *... Between 2.50m and 2.90m bgl: Very clayey and wet.*	2.90	(0.50)	43.61		
									Moderately strong yellow brown to grey LIMESTONE. Fractures are closely to widely spaced, open with no infill and up to 3cm wide. (BLISWORTH LIMESTONE FORMATION) *... Between 3.60m and 3.80m bgl: Soft clay.*		(1.10)			
4.00 - 5.00				98	98	69			Strong grey LIMESTONE. Fractures are medium to widely spaced, open with no infill, wavy, up to 4cm wide. (BLISWORTH LIMESTONE FORMATION)	4.00		42.51		
5.00 - 6.50				91	91	80					(2.60)			
6.50 - 8.00	6.50 - 8.00	C								6.60		39.91		
	6.80	HSV	140kPa	100					Stiff blueish grey CLAY with frequent shell fragments and carbonaceous wood. (RUTLAND FORMATION) *... From 7.40m to 7.45m bgl: MUDSTONE.*		(1.40)			
	7.90	HSV	140kPa							8.00		38.51		
									End of Borehole at 8.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
							Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 2.50m bgl then rotary cored to 8.00m bgl. 3) Gas and groundwater monitoring pipe installed to 8.00m bgl. Response zone between 4.00m bgl and 8.00m bgl. 4) ER = 73%.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
RBH-113
Page No. 1 of 1

Method: Dynamic Sampled & Rotary Cored	Date(s): 13/07/2021	Logged By: NT	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 502372.86, 278333.16	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 49.45m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests: Depth (m)	Type	Results	Mechanical Log: TCR	SCR	RQD	If: Min Mean Max	Water Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
									CONCRETE with plastic sheet at base. (MADE GROUND)	0.20	(0.20)	49.25		
									Pinkish grey slightly sandy GRAVEL. Gravel is fine to coarse sub-angular to angular granite. (MADE GROUND)	0.35	(0.15)	49.10		
									Yellow brown clayey GRAVEL with fine to coarse sub-angular to angular limestone lithorelicts. (CORNBRASH LIMESTONE FORMATION)	0.60	(0.25)	48.85		
									Grey weathered yellow brown GRAVEL with fine to coarse sub-angular to angular limestone lithorelicts. (CORNBRASH LIMESTONE FORMATION)	1.20	(0.60)	48.25		
									Yellowish brown slightly gravelly clayey SAND. Gravel is fine to coarse sub-angular to sub-rounded flint, mudstone and limestone. (CORNBRASH LIMESTONE FORMATION)	2.30	(1.10)	47.15		
									Firm blueish grey and orange mottled thinly laminated CLAY. (BLISWORTH CLAY FORMATION)	3.00	(0.70)	46.45		
									End of Borehole at 3.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
							Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Undartaken adjacent to RBH-114, log desscriptions from RBH-114 applied. 3) Rotary open hole drilling from 1.20m to 3.00m bgl. 4) Gas and groundwater monitoring pipe installed to 2.00m bgl. Response zone between 1.00m bgl and 2.00m bgl.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-114 Page No. 1 of 1	
Method: Dynamic Sampled & Rotary Cored	Date(s): 12/07/2021 - 13/07/2021	Logged By: NT	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 502367.94, 278335.23	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 49.38m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
	0.40	ES							CONCRETE with plastic sheet at base. (MADE GROUND)	0.20	(0.20)	49.18		
									Pinkish grey slightly sandy GRAVEL. Gravel is fine to coarse sub-angular to angular granite. (MADE GROUND)	0.35	(0.15)	49.03		
									Yellow brown clayey GRAVEL with fine to coarse sub-angular to angular limestone lithorelicts. (CORNBRASH LIMESTONE FORMATION)	0.60	(0.25)	48.78		
									Grey weathered yellow brown GRAVEL with fine to coarse sub-angular to angular limestone lithorelicts. (CORNBRASH LIMESTONE FORMATION)	1.20	(0.60)	48.18		
	2.00	SPT	N=12 (1,1,3,4,2,3)						Yellowish brown slightly gravelly clayey SAND. Gravel is fine to coarse sub-angular to sub-rounded flint, mudstone and limestone. (CORNBRASH LIMESTONE FORMATION) *... Between 1.20m and 2.50m bgl: no recovery.*	2.30	(1.10)	47.08		
	2.60 - 2.90	B							Firm blueish grey and orange mottled thinly laminated CLAY. (BLISWORTH CLAY FORMATION)					
	2.70 - 3.00	B												
	2.70	HSV	66kPa											
	3.20 - 3.40	C												
	3.20	HSV	88kPa											
	3.50	SPT	N=23 (1,3,4,5,6,8)								(2.50)			
	4.00 - 4.80	B												
	4.60 - 4.80	B												
	4.70	HSV	96kPa							4.80		44.58		
5.00 - 6.50				100	81	81			Strong blueish grey and brownish grey LIMESTONE. Fractures are medium spaced, wavy, open and infilled with orange sand and are 1mm wide. (BLISWORTH LIMESTONE FORMATION) *... Between 4.80m and 5.00m bgl: Limestone band.* *... Between 5.35m and 5.60m bgl: Half of the core is orange brown SANDSTONE.*					
6.50 - 7.50				80	72	63			*... Between 6.70m and 6.75m bgl: Weak orange fine SANDSTONE.*		(4.20)			
7.50 - 9.00				100	93	80								
									... From 8.90m bgl: Yellow brown clayey LIMESTONE.	9.00		40.38		
									End of Borehole at 9.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
							Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Rotary cored to 2.00m then dynamic sampled to 3.50m bgl then rotary cored to 9.00m bgl. 3) Gas and groundwater monitoring pipe installed to 9.00m bgl. Response zone between 5.00m bgl and 9.00m bgl. 4) ER = 73%.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-115 Page No. 1 of 1

Method: Dynamic Sampled & Rotary Cored	Date(s): 13/07/2021	Logged By: NT	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 502037.51, 278059.41	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 49.52m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
	0.20	ES							Brown slightly clayey slightly gravelly SAND with frequent rootlets. Gravel is fine to coarse sub-angular to angular limestone, jet, brick and concrete. (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	49.22		
									Brown slightly clayey slightly gravelly SAND. Gravel is fine to coarse sub-angular to angular brick and limestone. (MADE GROUND)	0.50	(0.20)	49.02		
									Firm to stiff orange brown sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to angular limestone, flint and sandstone. (HEAD DEPOSITS)	1	(1.00)			
	1.50 - 2.00	B								1.50		48.02		
	2.50	HSV	88kPa						Stiff blueish grey and brown mottled CLAY. (BLISWORTH CLAY FORMATION)	2	(1.50)			
										3.00		46.52		
									End of Borehole at 3.00m	3				
										4				
										5				
										6				
										7				
										8				
										9				
										10				

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
							Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Rotary cored from 1.20m to 3.00m bgl. 3) Gas and groundwater monitoring pipe installed to 3.00m bgl. Response zone between 1.00m bgl and 3.00m bgl.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-116 Page No. 1 of 1

Method: Dynamic Sampled & Rotary Cored	Date(s): 09/07/2021 - 12/07/2021	Logged By: NT	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 502102.16, 278077.78	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 47.86m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
	0.10	ES							Soft dark brown slightly sandy slightly gravelly CLAY with frequent rootlets. Gravel is fine to coarse sub-angular to angular brick and limestone. (AGRICULTURALLY DISTURBED TOPSOIL)	0.70	(0.70)	47.16		
	0.80	ES							Firm light brown and orange brown slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is fine to coarse sub-angular to angular limestone, chalk and flint. (HEAD DEPOSITS)	1.60	(0.90)	46.26		
	1.20	SPT	N=9 (1,1,2,2,2,3)											
	1.20	HSV	102kPa											
	1.80 - 2.10	C							Firm blueish grey and mottled brown CLAY. (BLISWORTH CLAY FORMATION)	2.60	(1.00)	45.26		
	2.00	HSV	86kPa						*... Between 2.25m and 2.35m bgl: Orange fine sand.*					
	2.40	HSV	78kPa											
2.50 - 4.00	2.50	SPT	50/0mm (4,21)	99	76	63			Moderately strong light grey LIMESTONE. Fractures are closely spaced, open with no infill, wavy, from 1-3cm wide. (BLISWORTH LIMESTONE FORMATION) *... Between 2.70m and 2.75m bgl: Non intact LIMESTONE.* *... Between 3.20m and 3.35m bgl: Stiff dark grey clay.*	3.50	(0.90)	44.36		
4.00 - 5.50				93	92	82			Strong light grey fossiliferous LIMESTONE. Fractures are closely to widely spaced, wavy, open with no infill and are 1-5cm wide. (BLISWORTH LIMESTONE FORMATION)	6.70	(3.20)	41.16		
5.50 - 7.00				100	98	94			Weak dark grey fossiliferous MUDSTONE. (BLISWORTH LIMESTONE FORMATION)	7.00	(0.30)	40.86		
7.00 - 8.00				100	100	100			Strong grey laminated LIMESTONE. Fractures are widely spaced, planar, no infill and closed. (BLISWORTH LIMESTONE FORMATION)	8.30	(1.30)	39.56		
8.00 - 9.00				100	100	100			Weak dark grey SILTSTONE. (RUTLAND FORMATION)	9.00	(0.70)	38.86		
									End of Borehole at 9.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
							Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Dynamic sampled to 2.50m bgl then rotary cored to 9.00m bgl. 3) Gas and groundwater monitoring pipe installed to 9.00m bgl. Response zone between 6.00m bgl and 9.00m bgl. 4) ER = 73%.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-117 Page No. 1 of 1

Method: Dynamic Sampled & Rotary Cored	Date(s): 13/07/2021	Logged By: NT	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 502106.50, 278027.18	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 48.31m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests: Depth (m)	Type	Results	Mechanical Log: TCR	SCR	RQD	If: Min Mean Max	Water Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
									CONCRETE.	0.16	(0.16)	48.15		
									(MADE GROUND)					
									Pink sandy GRAVEL. Gravel is fine to coarse sub-angular to angular granite.	0.40	(0.24)	47.91		
									(MADE GROUND)					
									Greenish grey sandy clayey GRAVEL. Gravel is fine to coarse sub-angular to angular sandstone, limestone and concrete.	0.70	(0.30)	47.61		
									(MADE GROUND)					
									Firm bluish grey CLAY.					
									(BLISWORTH CLAY FORMATION)					
									... Hand pit terminated at 0.70m on Coal crossing pit.					
											(2.30)			
									End of Borehole at 3.00m	3.00		45.31		

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
							Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Rotary open hole drilling from 0.70m to 3.00m bgl. 3) Gas and groundwater monitoring pipe installed to 2.50m bgl. Response zone between 0.50m bgl and 2.50m bgl.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-118 Page No. 1 of 2

Method: Dynamic Sampled & Rotary Cored	Date(s): 07/07/2021	Logged By: NT	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501963.01, 277869.60	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 51.89m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
	0.20	ES							Brown clayey slightly gravelly SAND. Gravel is fine to coarse sub-angular grey limestone. (AGRICULTURALLY DISTURBED TOPSOIL)	0.25	(0.25)	51.64		
	0.70	ES							Orange brown clayey GRAVEL. Gravel is fine to coarse sub-angular to angular yellow brown limestone. (MADE GROUND)	0.55	(0.30)	51.34		
									Firm orange brown slightly gravelly CLAY. Gravel is fine to coarse sub-angular to angular limestone. (MADE GROUND)	1.10	(0.55)	50.79		
1.20 - 2.00				100	100	100			Moderately strong yellow brown becoming grey non intact LIMESTONE. (CORNBRASH LIMESTONE FORMATION) *... Between 1.20m and 1.40m bgl: Very clayey.*					
2.00 - 3.50				30					*... Between 2.10m and 2.80m bgl: No recovery, sand in flush.*	2.80	(1.70)	49.09		
	2.90 2.90	D HSV	88kPa						Stiff blueish grey CLAY. (BLISWORTH CLAY FORMATION) *... Between 3.00m and 4.10m bgl: No recovery.*					
3.50 - 5.00														
	4.10 - 4.20 4.20 4.60 - 4.80	C HSV C	92kPa	60							(3.00)			
5.00 - 6.00	5.00	HSV	90kPa	100						5.80		46.09		
6.00 - 7.50				97	97	88			Strong grey becoming light grey LIMESTONE. Fractures are widely to medium close spaced, open or mudstone infill , up to 4mm, wavy. (BLISWORTH LIMESTONE FORMATION) *... At 6.20m bgl: Occasional siltstone beds.*					
7.50 - 9.00				99	98	91					(6.20)			
9.00 - 10.50				100	99	99			*... Between 9.40m bgl and 9.50m bgl: Clay.*					

Continued on Next Sheet

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
							Water	

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Rotary drilling from 1.20m bgl. 3) Gas and groundwater monitoring pipe installed to 12.00m bgl. Response zone between 6.00m bgl and 12.00m bgl.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-118 Page No. 2 of 2
Method: Dynamic Sampled & Rotary Cored	Date(s): 07/07/2021	Logged By: NT	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501963.01, 277869.60	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 51.89m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrum-entation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
10.50 - 11.00									Strong grey becoming light grey LIMESTONE. Fractures are widely to medium close spaced, open or mudstone infill , up to 4mm, wavy. (BLISWORTH LIMESTONE FORMATION)					
10.50 - 12.00				100	100	100			*... Between 10.70m bgl and 11.00m bgl: Clay.*					
				100	100	100								
									End of Borehole at 12.00m	12.00		39.89		

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

General Remarks:
1) Inspection pit dug to 1.20m bgl. 2) Rotary drilling from 1.20m bgl. 3) Gas and groundwater monitoring pipe installed to 12.00m bgl. Response zone between 6.00m bgl and 12.00m bgl.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-119 Page No. 1 of 1

Method: Rotary Open	Date(s): 07/07/2021	Logged By: NT	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501961.97, 277868.51	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 51.92m OD		Scale: 1:100

Run (m)	Samples / Tests			Drilling Record			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	Weight (Kg)	Mins	Secs							
								Brown clayey slightly gravelly SAND. Gravel is fine to coarse sub-angular grey limestone. (AGRICULTURALLY DISTURBED TOPSOIL)	0.25	(0.25)	51.67		
								Orange brown clayey GRAVEL. Gravel is fine to coarse sub-angular to angular yellow brown limestone. (MADE GROUND)	0.55	(0.30)	51.37		
								Firm orange brown slightly gravelly CLAY. Gravel is fine to coarse sub-angular to angular limestone. (MADE GROUND)	1.10	(0.55)	50.82		
								Moderately strong yellow brown becoming grey non intact LIMESTONE. (CORNBRASH LIMESTONE FORMATION)	2.80	(1.70)	49.12		
								End of Borehole at 2.80m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
							Water	

General Remarks:
1) Inspection pit dug tp 1.20m bgl 2) Undertaken to 2.80 bgl using open hole drilling techniques. Description from RBH-118 applied. 3) Gas and groundwater monitoring pipe installed to 3.00m bgl. Response zone between 1.00m bgl and 3.50m bgl.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-201 Page No. 1 of 2

Method: Dynamic Sampled & Rotary Cored	Date(s): 29/11/2021	Logged By: TB	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501540.80, 278710.61	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 63.83m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
0.00 - 11.00							NI 0 0		Soft to firm brown slightly sandy gravelly CLAY with occasional rootlets. Gravel is angular to subangular fine to coarse of limestone and flint. (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	63.53		
									Firm reddish brown slightly gravelly sandy CLAY. Gravel is subangular to rounded fine to coarse of flint. (GLACIAL TILL)	0.80	(0.50)	63.03		
	1.00	D							Light grey and orangish brown mottled clayey SILT. (GLACIAL TILL)	1.00	(0.20)	62.83		
	1.10 - 1.50	B							Stiff light grey and light brown mottled gravelly CLAY. Gravel is subangular to subrounded fine to coarse of chalk. (GLACIAL TILL)	1.55	(0.55)	62.28		
	1.20	SPT	N=55 (7,13,21,11,12,11)											
	1.50	ES							Grey mottled orangish brown SILT. (GLACIAL TILL) *... Brown medium coarse sand band*	2.00	(0.45)	61.83		
	1.50 - 2.00	B												
	1.50 - 2.00	B							Stiff grey gravelly CLAY. Gravel is subangular to subrounded fine to coarse of chalk. (GLACIAL TILL)	3.65	(1.65)	60.18		
	2.00	SPT	N=46 (4,6,9,11,11,15)											
	2.30 - 3.00	B												
	3.00	SPT	N=60 (4,7,9,17,19,15)											
	3.00 - 3.75	B												
	3.70	D							Firm to stiff brown grey slightly gravelly CLAY with frequent sand sized selenite crystals and occasional plant material (GLACIAL TILL)	3.80	(0.15)	60.03		
	4.00	SPT	49/295mm (4,7,9,13,15,12)						No Recovery (GLACIAL TILL)	4.00	(0.20)	59.83		
	4.00 - 5.00	B							Firm to stiff brown grey slightly gravelly CLAY. Gravel is subangular to rounded fine to coarse of flint. (GLACIAL TILL)	5.80	(1.80)	58.03		
	5.00	SPT	N=50 (5,8,9,12,18,11)											
	5.00	ES												
	5.00 - 5.80	B												
	5.00 - 5.80	B												
	5.80 - 6.80	B							Firm to stiff bluish grey clayey SILT with frequent subangular fine to coarse mudstone lithorelicts. (KELLAWAYS SAND MEMBER)	8.30	(2.50)	55.53		
	5.80 - 6.80	B												
	6.50	SPT	48/180mm (12,12,18,18,12)											
	6.80	D												
	7.00 - 8.00	B												
	7.00 - 8.00	B												
	8.00	SPT	50/270mm (9,8,8,12,14,16)											
	8.00	D							Stiff grey CLAY with occasional shell fossils and angular to subangular fine to medium mudstone lithorelicts. (KELLAWAYS CLAY MEMBER)		(2.70)			
	8.30 - 9.00	B												
	9.00 - 10.00	B												
	9.00 - 10.00	B												
	9.50	SPT	N=41 (6,7,7,9,12,13)											

Continued on Next Sheet

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 305	29/11	0800	15.00	1.50	100		Water	

General Remarks:
1) Hand dug pit to 1.20m bgl. 2) Borehole completed at 15.00m bgl. 3) Gas and groundwater monitoring pipe installed to 15.00m bgl. 4) Response zone between 11.00m bgl and 12.50m bgl. 5) Er = 73%

Groundwater: Groundwater levels masked by use of water flush.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-201 Page No. 2 of 2
Method: Dynamic Sampled & Rotary Cored	Date(s): 29/11/2021	Logged By: TB	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501540.80, 278710.61	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 63.83m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests: Depth (m)	Type	Results	Mechanical Log: TCR	SCR	RQD	If: Min Mean Max	Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	10.00 - 11.00	B							Stiff grey CLAY with occasional shell fossils and angular to subangular fine to medium mudstone lithorelicts. (KELLAWAYS CLAY MEMBER)					
	10.00 - 11.00	B												
11.00 - 12.50	11.00	SPT	50/20mm (23,2,50)				100 300 380			11.00		52.83		
	11.00 - 11.30	C							Strong to very strong medium bedded light grey LIMESTONE interbedded with a stiff grey shelly clay band between (11.80-12.00mbgl). Discontinuities are horizontal to sub horizontal 10 degrees 12.30mbgl, undulating rough partly open to open with clay infill at 11.80bgl. (CORNBRASH LIMESTONE FORMATION)					
	11.80 - 12.10	C		100	100	100					(1.50)			
	12.50 - 12.90	B							Stiff grey CLAY with frequent shell fossils and angular to subangular fine to medium mudstone lithorelicts. (BLISWORTH CLAY FORMATION)	12.50		51.33		
	13.00	D								12.90	(0.40)	50.93		
	13.20 - 14.00	B							Firm to stiff grey CLAY. (BLISWORTH CLAY FORMATION)	13.20	(0.30)	50.63		
	14.00 - 15.00	B							Firm to stiff orange mottled greenish grey slightly sandy CLAY with frequent subangular fine mudstone lithorelicts. Sand is fine. (BLISWORTH CLAY FORMATION)		(1.80)			
									End of Borehole at 15.00m	15.00		48.83		

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

General Remarks:
1) Hand dug pit to 1.20m bgl. 2) Borehole completed at 15.00m bgl. 3) Gas and groundwater monitoring pipe installed to 15.00m bgl. 4) Response zone between 11.00m bgl and 12.50m bgl. 5) Er = 73%

Groundwater: Groundwater levels masked by use of water flush.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-202 Page No. 1 of 2
Method: Dynamic Sampled & Rotary Cored	Date(s): 01/12/2021	Logged By: TB	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501595.32, 278592.33	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 59.65m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests: Depth (m)	Type	Results	Mechanical Log: TCR	SCR	RQD	If: Min Mean Max	Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
0.00 - 1.00	0.30	ES							Soft to firm brown slightly sandy gravelly CLAY with occasional rootlets. Gravel is angular to sub angular fine to coarse of limestone and flint (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	59.35		
	0.50	D		100					Firm light grey and orangish brown mottled silty CLAY . (GLACIAL TILL)	1.00	(0.70)	58.65		
1.00 - 2.00	1.00	D							Stiff orangish brown mottled brownish grey slightly sandy gravelly CLAY. Gravel is sub angular to rounded fine to coarse of chalk flint and limestone. (GLACIAL TILL)	1.40	(0.40)	58.25		
	1.20	SPT	N=21 (3,4,4,4,6,7)						Green mottled orangish brown silty clayey fine to medium SAND. (KELLAWAYS SAND MEMBER)	1.65	(0.25)	58.00		
	1.50	D		100					Orangish brown and light grey mottled sandy SILT. Sand is fine. (KELLAWAYS SAND MEMBER)	2.00	(0.35)	57.65		
	1.50	D							Firm to stiff orangish brown mottled grey slightly sandy CLAY. Sand is fine (KELLAWAYS SAND MEMBER)	2.50	(0.50)	57.15		
	1.50	ES							Orange mottled grey sandy SILT. Sand is fine. (KELLAWAYS SAND MEMBER)	3.00	(0.50)	56.65		
	1.65 - 2.00	B							Stiff grey clayey SILT (KELLAWAYS SAND MEMBER)	5.00	(2.00)	54.65		
2.00 - 3.00	2.00	SPT	N=18 (1,2,2,2,3,11)						Firm to stiff fissured grey CLAY with occasional shell fossils. Fissures are extremely closely spaced and randomly oriented. (KELLAWAYS CLAY MEMBER)	6.50	(1.50)	53.15		
	2.00 - 2.50	B		100					Stiff grey CLAY with frequent shell fossils. (KELLAWAYS CLAY MEMBER)	7.20	(0.70)	52.45		
	2.00 - 2.50	B							Very strong light grey LIMESTONE with frequent vugs of ranging depths to 3mm deep and occasional shell fossils. Discontinuities: horizontal medium spaced undulating rough open. Sub vertical 40-45degrees (8.22-8.33mbgl) (CORNBRASH LIMESTONE FORMATION)	8.60	(1.40)	51.05		
	2.00 - 5.00	B							Stiff grey CLAY with frequent shell fossils. (BLISWORTH CLAY FORMATION)	8.82	(0.22)	50.83		
3.00 - 3.40	2.50 - 3.00	B		100					Firm to stiff fissured grey CLAY with sub angular fine to medium mudstone lithorelicts. Fissures are extremely closely spaced and randomly oriented. (BLISWORTH CLAY FORMATION)	9.50	(0.68)	50.15		
3.40 - 5.00	3.00	UT							Firm to stiff orange mottled greenish grey slightly sandy CLAY with frequent sub angular fine mudstone lithorelicts. Sand is fine					
	3.00 - 3.40	U												
	3.40 - 4.40	B												
	4.00	SPT	N=48 (7,8,10,12,11,15)	100										
5.00 - 6.50	5.00	SPT	N=23 (3,3,4,5,7,7)											
	5.00 - 6.00	B		100	0	0								
6.50 - 8.00	6.50	SPT	N=28 (3,4,5,5,9,9)											
	7.55 - 7.75	C		100	53	53								
	7.75 - 7.85	C												
8.00 - 9.50	8.00 - 8.15	C												
	8.15 - 8.30	C		86	40	40								
9.50 - 11.45														

Continued on Next Sheet

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 305	01/12	0800	12.00	3.00	100		Water	

General Remarks:
1) Hand dug pit to 1.20m bgl. 2) Borehole completed at 12.00m bgl. 3) Gas and groundwater monitoring pipe installed to 8.50m bgl. 4) Response zone between 7.00m bgl and 8.50m bgl. 5) Er = 73%

Groundwater: Groundwater levels masked by use of water flush.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-202 Page No. 2 of 2

Method: Dynamic Sampled & Rotary Cored	Date(s): 01/12/2021	Logged By: TB	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501595.32, 278592.33	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 59.65m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrum-entation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
				100	0	0			Firm to stiff orange mottled greenish grey slightly sandy CLAY with frequent sub angular fine mudstone lithorelicts. Sand is fine (BLISWORTH CLAY FORMATION)		(1.40)			
	11.00	SPT	N=50 (4,9,7,10,16,17)							10.90		48.75		
11.45 - 12.00									Firm to stiff fissured grey CLAY with sub angular fine to medium mudstone lithorelicts. Fissures are extremely closely spaced and randomly oriented. (BLISWORTH CLAY FORMATION)		(0.55)			
				100	100	100				11.45		48.20		
	11.80 - 12.00	C							Very strong light grey LIMESTONE interbedded with extremely weak green limestone. (BLISWORTH LIMESTONE FORMATION)		(0.55)			
										12.00		47.65		
									End of Borehole at 12.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

General Remarks:
1) Hand dug pit to 1.20m bgl. 2) Borehole completed at 12.00m bgl. 3) Gas and groundwater monitoring pipe installed to 8.50m bgl. 4) Response zone between 7.00m bgl and 8.50m bgl. 5) Er = 73%

Groundwater: Groundwater levels masked by use of water flush.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-203 Page No. 1 of 1

Method: Dynamic Sampled & Rotary Cored	Date(s): 29/11/2021	Logged By: TB	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501751.81, 278679.22	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 55.81m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
									Soft to firm brown slightly sandy gravelly CLAY with occasional rootlets. Gravel is angular to subangular fine to coarse of limestone and flint. (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	55.51		
									Firm reddish brown slightly gravelly sandy CLAY. Gravel is subangular to rounded fine to coarse of flint (HEAD DEPOSITS)	0.80	(0.50)	55.01		
	1.20	SPT	N=11 (1,1,2,2,3,4)						Firm light grey and orangish brown mottled silty CLAY . (HEAD DEPOSITS)	1.20	(0.40)	54.61		
	1.20 - 2.20	B							Firm to stiff fissured yellow and orangish brown mottled brownish grey CLAY with frequent sub angular fine mudstone lithorelicts . Fissures are extremely closely spaced and horizontally oriented. (KELLAWAYS CLAY MEMBER)	2.65	(1.45)	53.16		
	2.50	D												
	2.50	D												
	2.60 - 3.20	B												
	3.00 - 3.05	C												
	3.20	D												
3.30 - 4.00	3.30	SPT	50/30mm (25,50)						Firm to stiff grey CLAY. (KELLAWAYS CLAY MEMBER) *... Frequent coarse grained sand sized selenite crystals.* *... Occasional shell fossils apparent.*	3.30	(0.65)	52.51		
	3.45 - 3.55	C		88	88	70			Strong thinly to medium bedded light grey LIMESTONE. Discontinuities: sub horizontal, closely to medium spaced, undulating open and clean (CORNBRASH LIMESTONE FORMATION)	4.20	(0.90)	51.61		
4.00 - 5.00				100	25	23			Stiff grey silty CLAY with sub angular fine to medium mudstone lithorelicts. (CORNBRASH LIMESTONE FORMATION)	4.60	(0.40)	51.21		
	4.75 - 5.00	C							Strong light grey LIMESTONE band . (CORNBRASH LIMESTONE FORMATION)	4.85	(0.25)	50.96		
5.00 - 7.00	4.85	D							Firm to stiff grey CLAY with occasional shell fossils (BLISWORTH CLAY FORMATION)	5.50	(0.65)	50.31		
	5.00 - 5.50	B												
	5.70	D							Firm orangish brown mottled grey slightly sandy CLAY. Sand is fine. (BLISWORTH CLAY FORMATION)	5.90	(0.40)	49.91		
	6.00 - 7.00	B		100	0	0			Firm orange mottled greenish grey slightly sandy CLAY with frequent sub angular fine mudstone lithorelicts. Sand is fine (BLISWORTH CLAY FORMATION)	7.25	(1.35)	48.56		
7.00 - 8.00	7.00	SPT	N=36 (1,1,4,6,8,18)						Firm brown mottled green CLAY with angular to sub angular fine to coarse mudstone and limestone lithorelicts. (BLISWORTH CLAY FORMATION)	7.45	(0.20)	48.36		
				100	29	25				7.60	(0.15)	48.21		
									Strong light grey LIMESTONE band with occasional shell fossils. (BLISWORTH LIMESTONE FORMATION)	7.90	(0.30)	47.91		
8.00 - 9.00	8.00 - 8.15	C							Very weak green MUDSTONE (BLISWORTH LIMESTONE FORMATION)					
	8.20 - 8.25	C												
	8.35 - 8.65	C		100	97	75			Strong to very strong thinly to medium bedded light grey LIMESTONE with frequent shell fossils interbedded with a very weak mudston (8.68 -8.74m). Discontinuities: Horizontal to sub horizontal 5 degrees very closely to medium spaced planar open clean with clay infill between 8.72m and 8.74m. (BLISWORTH LIMESTONE FORMATION)	9.00	(1.10)	46.81		
	8.85 - 9.00	C							End of Borehole at 9.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 205	29/11	0800	9.00	2.50	100		Water	

General Remarks:
1) Hand dug pit to 1.20m bgl. 2) Borehole completed at 9.00m bgl. 3) Gas and groundwater monitoring pipe installed to 9.00m bgl. 4) Response zone between 7.00m bgl and 9.00m bgl. 5) Er = 73%.

Groundwater: Groundwater levels masked by use of water flush.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-204 Page No. 1 of 2

Method: Dynamic Sampled & Rotary Cored	Date(s): 03/12/2021	Logged By: TB	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501826.78, 278567.84	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 52.26m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
0.00 - 4.60	0.60	D							Soft to firm brown slightly sandy gravelly CLAY with occasional rootlets. Gravel is angular to subangular fine to coarse of limestone and flint. (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	51.96		
	1.20	SPT	N=22 (10,12,10,4,5,3)						Orangish brown mottled grey very sandy CLAY. Sand is fine to medium (HEAD DEPOSITS) 1	1.50	(1.20)	50.76		
	1.60	D							Limestone band. Recovered as light grey clayey sandy GRAVEL. Gravel is angular to sub angular fine to coarse of limestone. (CORNBRASH LIMESTONE FORMATION) 2	1.60	(0.10)	50.66		
	1.60	D								1.80	(0.20)	50.46		
	1.60	ES								2.00	(0.20)	50.26		
	1.70	D							Firm light brown slightly gravelly sandy CLAY. Gravel is angular to sub angular fine to coarse of limestone (CORNBRASH LIMESTONE FORMATION)					
	1.70	D							Limestone band. Recovered as light grey sandy GRAVEL. Gravel is angular to sub angular fine to coarse of limestone. (CORNBRASH LIMESTONE FORMATION)		(1.00)			
	1.90	D												
	2.00	SPT	N=9 (1,1,1,2,3,3)						No Recovery 3	3.00		49.26		
	3.00	SPT	N=19 (4,5,3,4,5,7)						Firm orangish brown mottled grey and greenish grey sandy CLAY. Sand is fine to medium. (BLISWORTH CLAY FORMATION)					
	3.00 - 4.00	B									(1.60)			
	3.00 - 4.00	B							4	4.60		47.66		
	4.00	SPT	N=23 (2,3,4,6,6,7)											
	4.00	ES												
	4.00 - 4.60	B												
4.60 - 5.00	4.00 - 4.60	B		100	50	50	60 350 680		Strong to very strong thinly to medium bedded light grey and grey LIMESTONE with rare shell fossils. Discontinuities: Horizontal closely to medium spaced undulating rough open with shell fossils within the discontinuities. (BLISWORTH LIMESTONE FORMATION) 5					
5.00 - 6.50	5.10 - 5.30	C									(1.90)			
	5.70 - 6.00	C		100	100	100			6	6.50		45.76		
	6.10 - 6.50	C												
6.50 - 8.00				100	100	100			Medium strong to strong medium bedded grey LIMESTONE with frequent shell fossils. Discontinuities: Horizontal to sub horizontal 5 to 10 degrees, undulating, rough partly open clean. Vertical, undulating rough partly open with shell fossils within the discontinuities from 6.65 -6.93mbgl. (BLISWORTH LIMESTONE FORMATION) 7		(1.35)			
										7.85		44.41		
8.00 - 9.50				100	100	100			Very strong medium to thickly bedded light grey interbedded with grey LIMESTONE with occasional shell fossils and small to medium gravel sized vugs with depths ranging from 2mm to 15mm at 7.90mbgl and 8.90mbgl. Discontinuities: Horizontal medium to widely spaced, undulating rough partly open clean. Vertical from 9.43-9.50mbgl, planar rough open clean. (BLISWORTH LIMESTONE FORMATION) 8 9		(2.80)			
9.50 - 11.00							400 830 1000		10					

Continued on Next Sheet

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 305	03/12	0800	12.00	4.20	100		Water	

General Remarks:
1) Hand dug pit to 1.20m bgl. 2) Borehole completed at 12.00m bgl. 3) Gas and groundwater monitoring pipe installed to 12.00m bgl. 4) Response zone between 4.50m bgl and 12.00m bgl. 5) Er = 73%

Groundwater: Groundwater levels masked by use of water flush.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-204 Page No. 2 of 2
Method: Dynamic Sampled & Rotary Cored	Date(s): 03/12/2021	Logged By: TB	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501826.78, 278567.84	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 52.26m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests: Depth (m)	Type	Results	Mechanical Log: TCR	SCR	RQD	If: Min Mean Max	Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
11.00 - 12.00				100	100	100			Very strong medium to thickly bedded light grey interbedded with grey LIMESTONE with occasional shell fossils and small to medium gravel sized vugs with depths ranging from 2mm to 15mm at 7.90mbgl and 8.90mbgl. Discontinuities: Horizontal medium to widely spaced, undulating rough partly open clean. Vertical from 9.43-9.50mbgl, planar rough open clean. (BLISWORTH LIMESTONE FORMATION)	10.65		41.61		
				100	100	100			Medium strong thickly bedded grey LIMESTONE. Discontinuities: Horizontal widely spaced, planar smooth open clean. Vertical curved rough open from 10.60 - 11.00mbgl. (BLISWORTH LIMESTONE FORMATION)	12.00	(1.35)	40.26		
									End of Borehole at 12.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

General Remarks:
1) Hand dug pit to 1.20m bgl. 2) Borehole completed at 12.00m bgl. 3) Gas and groundwater monitoring pipe installed to 12.00m bgl. 4) Response zone between 4.50m bgl and 12.00m bgl. 5) Er = 73%

Groundwater: Groundwater levels masked by use of water flush.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
RBH-205
Page No. 1 of 1

Method: Dynamic Sampled & Rotary Cored	Date(s): 02/12/2021	Logged By: TB	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501962.29, 278608.96	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 51.17m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests Depth (m)	Type	Results	Mechanical Log TCR	SCR	RQD	If: Min Mean Max	Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	0.10	ES							Soft to firm brown slightly sandy gravelly CLAY with occasional rootlets. Gravel is angular to subangular fine to coarse of limestone and flint. (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	50.87		
									Brown sandy clayey GRAVEL. Gravel is angular to sub angular fine to coarse of limestone (CORNBRASH LIMESTONE FORMATION)	0.60	(0.30)	50.57		
	1.20 - 1.70	U							Firm to stiff brown mottled grey CLAY. (BLISWORTH CLAY FORMATION)	1.20	(0.60)	49.97		
	1.20 - 2.00	B							Firm to stiff orangish brown mottled green slightly sandy CLAY. Sand is fine to medium. (BLISWORTH CLAY FORMATION)					
	1.20 - 2.00	B												
	2.00 - 3.00	B									(2.30)			
	3.20	SPT	N=28 (2,2,3,4,11,10)											
	3.20	D								3.50		47.67		
	3.80	D							Firm to stiff light grey mottled reddish grey CLAY (BLISWORTH CLAY FORMATION)	4.00	(0.50)	47.17		
4.00 - 5.00	4.15 - 4.30	C					NI 58 160		Very strong light grey thinly bedded light grey LIMESTONE thinly interbedded with strong light brown Limestone with occasional shell fossils. Discontinuities: Horizontal, very closely to closely spaced, undulating rough open with fractured rock fragments within the discontinuities. Vertical from 4.80-4.85mbgl, undulating, rough, open with orange brown staining. (BLISWORTH LIMESTONE FORMATION)					
	4.30 - 4.40	C		100	72	16					(1.00)			
	4.55 - 4.60	C								5.00		46.17		
5.00 - 6.00	5.15 - 5.25	C					50 142 280		Very strong thinly to medium bedded light grey LIMESTONE with rare shell fossils. Discontinuities: Horizontal, very closely to closely spaced, undulating rough open with light brown and rusty brown staining. Vertical from 5.30-5.50mbgl, undulating, rough, open with orange brown staining. (BLISWORTH LIMESTONE FORMATION)					
	5.30 - 5.40	C		100	93	71					(0.50)			
	5.50 - 5.70	C								5.50		45.67		
	5.90 - 6.00	C							Medium strong to strong thinly bedded grey LIMESTONE with frequent shell fossils. Discontinuities: Horizontal closely spaced undulating rough open with shell fossils within the discontinuities. (BLISWORTH LIMESTONE FORMATION)		(1.00)			
6.00 - 7.50	6.20 - 6.30	C					NI 76 140			6.50		44.67		
	6.70 - 6.75	C		100	90	32			Strong to very strong very thinly to thinly light brown mottled light grey LIMESTONE with occasional shell fossils. Discontinuities: Horizontal very closely to closely spaced undulating rough open with shell fossils within the discontinuities. Vertical,undulating rough with light brown discolouration within the discontinuities at 7.05 - 7.16m, 7.33 -7.42m, 7.56 -7.94m. , (BLISWORTH LIMESTONE FORMATION)		(1.50)			
	6.95 - 7.00	C												
7.50 - 9.00	7.40 - 7.50	C								8.00		43.17		
				90	76	58	60 430 520		Medium strong to strong medium bedded light grey LIMESTONE with rare shell fossils. Discontinuities: Horizontal medium spaced planar rough tight with clay infill at 8.31m. (BLISWORTH LIMESTONE FORMATION)		(1.00)			
										9.00		42.17		
									End of Borehole at 9.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 205	02/12	0800	9.00	2.50	100		Water	

General Remarks:
1) Hand dug pit to 1.20m bgl. 2) Borehole completed at 9.00m bgl. 3) Gas and groundwater monitoring pipe installed to 9.00m bgl. 4) Response zone between 5.00m bgl and 9.00m bgl. 5) Er = 73%.

Groundwater: Groundwater levels masked by use of water flush.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-206 Page No. 1 of 1

Method: Dynamic Sampled & Rotary Cored	Date(s): 03/12/2021	Logged By: TB	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 502020.14, 278566.51	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 48.58m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
0.00 - 1.20									Soft to firm brown slightly sandy gravelly CLAY with occasional rootlets. Gravel is angular to subangular fine to coarse of limestone and flint. (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	48.28		
									Soft to firm orangish brown mottled greenish grey slightly sandy CLAY. Sand is fine to coarse. (BLISWORTH CLAY FORMATION)	1.20	(0.90)	47.38		
1.20 - 1.60	1.20	SPT	N=27 (1,2,2,9,8,8)	100	0	0			Light brown very clayey gravelly SAND. Gravel is angular to sub angular fine to coarse of limestone. (BLISWORTH LIMESTONE FORMATION)	1.60	(0.40)	46.98		
	1.50 - 1.60	C												
1.60 - 2.60	1.60	SPT	50/10mm (25,50)	90	45	0	NI 92 150		Brown sub angular to sub rounded fine to coarse GRAVEL of limestone. (BLISWORTH LIMESTONE FORMATION)	1.94	(0.34)	46.64		
									LIMESTONE. Recovered as grey and brown slightly clayey sandy GRAVEL. Gravel is angular to subrounded fine to coarse of limestone. (BLISWORTH LIMESTONE FORMATION)	2.20	(0.26)	46.38		
	2.40 - 2.50	C												
2.60 - 4.00	2.75 - 2.80	C		86	86	20			Very strong light grey thinly bedded light grey LIMESTONE thinly interbedded with strong light brown Limestone with occasional shell fossils. Discontinuities: Horizontal, very closely to closely spaced, undulating rough open with fractured rock fragments within the discontinuities. (BLISWORTH LIMESTONE FORMATION)	3.05	(0.85)	45.53		
	3.10 - 3.15	C							Medium strong to strong thinly bedded grey LIMESTONE with frequent shell fossils. Discontinuities: Horizontal closely spaced undulating rough open with shell fossils within the discontinuities. (BLISWORTH LIMESTONE FORMATION)	4.24	(1.19)	44.34		
4.00 - 5.50				63	60	21			Strong to very strong very thinly to thinly bedded light brown mottled light grey LIMESTONE with occasional shell fossils. Discontinuities: Horizontal very closely to closely spaced undulating rough open with shell fossils within the discontinuities. (BLISWORTH LIMESTONE FORMATION)	5.90	(1.66)	42.68		
5.50 - 6.50	5.50 - 5.60	C		100	100	74	NI 182 360		Strong to very strong thinly to medium bedded grey LIMESTONE interbedded with stiff dark grey clay at 6.77-6.82mbgl, 7.20 - 7.28mbgl. Discontinuities: Horizontal closely to medium spaced undulating smooth open with occasional clay infill locally. (BLISWORTH LIMESTONE FORMATION)	7.65	(1.75)	40.93		
	6.10 - 6.20	C												
6.50 - 8.00	6.60 - 6.80	C		95	92	71			Extremely weak grey MUDSTONE. (RUTLAND FORMATION)	8.00	(0.35)	40.58		
	7.00 - 7.15	C							End of Borehole at 8.00m					
	7.40 - 7.60	C												

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 205	03/12	0800	8.00	1.00	100		Water	

General Remarks:
1) Hand dug pit to 1.20m bgl. 2) Borehole completed at 8.00m bgl. 3) Gas and groundwater monitoring pipe installed to 8.00m bgl. 4) Response zone between 1.00m bgl and 8.00m bgl. 5) Er = 73%.

Groundwater: Groundwater levels masked by use of water flush.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
RBH-207
Page No. 1 of 1

Method: Rotary Open	Date(s): 21/12/2021	Logged By: Marshall Drilling	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 502148.70, 278596.64	Checked By: CV	Flush: Water/Mist
Hydrock Project No: C-18443-C	Ground Level: 45.09m OD		Scale: 1:100

Run (m)	Samples / Tests			Drilling Record			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	Weight (Kg)	Mins	Secs							
								Firm to stiff brown CLAY (Drillers Description). (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	44.79		
								CLAY (Drillers Description). (HEAD DEPOSITS)		(2.20)			
									2.50		42.59		
								LIMESTONE (Drillers Description). (BLISWORTH LIMESTONE FORMATION)		(6.50)			
									9.00		36.09		
								End of Borehole at 9.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 205	07/12	0800	9.00	0.00	100		Water/Mist	

General Remarks:
1) Hand dug pit to 1.20m bgl 2) Rotary open hole to 9.0m bgl. 3) Gas and groundwater monitoring pipe installed to 9.0m bgl. 4) Response zone between 2.5m bgl and 9.0m bgl. 5) ER = 73%

Groundwater: Groundwater levels masked by use of water / mist flush.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-208 Page No. 1 of 1

Method: Dynamic Sampled & Rotary Cored	Date(s): 07/12/2021	Logged By: TB	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 502170.64, 278677.82	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 47.16m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
0.00 - 1.20									Soft to firm brown slightly sandy gravelly CLAY with occasional rootlets. Gravel is angular to sub angular fine to coarse of limestone and flint (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	46.86		
									Light brown very clayey gravelly SAND. Gravel is angular to sub angular fine to coarse of limestone. (BLISWORTH LIMESTONE FORMATION)	1.20	(0.90)	45.96		
1.20 - 2.50	1.20	SPT	50/270mm (5,6,6,10,13,21)	92	73	0	NI 20 100		Weak to medium strong thickly laminated to thinly bedded light brown LIMESTONE with frequent shell fossils from 2.80mbgl. Discontinuities. Horizontal very closely to closely spaced, planar rough open from 2.20 - 2.80mbgl. Horizontal to sub horizontal 5 degrees closely spaced undulating rough open with shell fossils within the discontinuities. (BLISWORTH LIMESTONE FORMATION)	2.30	(1.10)	44.86		
2.50 - 4.00				76	43	17	0 0 NI 0 0		Assumed Zone of Core loss (BLISWORTH LIMESTONE FORMATION)	2.50	(0.20)	44.66		
									Non Intact. Recovered as light brown slightly clayey sandy GRAVEL. Gravel is angular to sub rounded fine to coarse of limestone. (BLISWORTH LIMESTONE FORMATION)	3.00	(0.50)	44.16		
							48 100 150		Strong thinly bedded grey mottled light grey LIMESTONE with occasional shell fossils. Discontinuities. Horizontal very closely to closely spaced, planar rough open with shell fossils within the discontinuities. (BLISWORTH LIMESTONE FORMATION)	3.65	(0.65)	43.51		
							0		Assumed Zone of Core loss (BLISWORTH LIMESTONE FORMATION)	4.00	(0.35)	43.16		
4.00 - 5.50				100	95	77	20 273 380		Strong thinly bedded grey mottled light grey LIMESTONE with occasional shell fossils. Discontinuities. Horizontal very closely to closely spaced, planar rough open with shell fossils within the discontinuities. (BLISWORTH LIMESTONE FORMATION)	4.40	(0.40)	42.76		
									Strong to very strong thinly to medium bedded grey LIMESTONE interbedded with medium spaced very weak dark grey mudstone Discontinuities: Horizontal closely to medium spaced undulating smooth open with occasional clay infill locally. (BLISWORTH LIMESTONE FORMATION)	5.80	(1.40)	41.36		
5.50 - 7.00				100	83	80			Strong to very strong medium bedded grey LIMESTONE interbedded with stiff dark grey clay at 6.45 -6.60mbgl. Discontinuities: Horizontal closely to medium spaced undulating smooth open with occasional clay infill locally. (BLISWORTH LIMESTONE FORMATION)	6.63	(0.83)	40.53		
									Weak light green LIMESTONE. (BLISWORTH LIMESTONE FORMATION)	7.00	(0.37)	40.16		
7.00 - 8.00	7.00	SPT	50/160mm (7,10,15,23,12)	39	0	0			Firm to stiff light green mottled grey slightly sandy CLAY. Sand is fine to medium. (RUTLAND FORMATION)	7.39	(0.39)	39.77		
									No Recovery.	9.00	(1.61)	38.16		
8.00 - 9.00				0	0	0								
									End of Borehole at 9.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 305	07/12	0800	9.00	1.00	100		Water	

General Remarks:
1) Hand dug pit to 1.20m bgl. 2) Borehole completed at 9.00m bgl. 3) Gas and groundwater monitoring pipe installed to 9.00m bgl. 4) Response zone between 1.00m bgl and 9.00m bgl. 5) Er = 73%.

Groundwater: Groundwater levels masked by use of water flush.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-209 Page No. 1 of 1

Method: Dynamic Sampled & Rotary Cored	Date(s): 21/12/2021	Logged By: Marshall Drilling	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 502022.22, 278462.41	Checked By: CV	Flush: Water/Mist
Hydrock Project No: C-18443-C	Ground Level: 46.35m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests: Depth (m)	Type	Results	Mechanical Log: TCR	SCR	RQD	If: Min Mean Max	Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrum-entation / Backfill
									Firm to stiff brown CLAY (Drillers Description). (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	46.05		
									CLAY (Drillers Description). (HEAD DEPOSITS)		(2.70)			
									LIMESTONE (Drillers Description). (BLISWORTH LIMESTONE FORMATION)	3.00	(6.00)	43.35		
									End of Borehole at 9.00m	9.00		37.35		

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 205	21/12	0800	9.00	0.00	100		Water/Mist	

General Remarks:
1) Hand dug pit to 1.20m bgl 2) Rotary open hole to 9.0m bgl. 3) Gas and groundwater monitoring pipe installed to 9.0m bgl. 4) Response zone between 3.0m bgl and 9.0m bgl. 5) Er = 73%.

Groundwater: Groundwater levels masked by use of water / mist flush.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
RBH-210
Page No. 1 of 1

Method: Rotary Open	Date(s): 21/12/2021	Logged By: Marshall Drilling	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 502219.04, 278447.35	Checked By: CV	Flush: Water/Mist
Hydrock Project No: C-18443-C	Ground Level: 49.95m OD		Scale: 1:100

Run (m)	Samples / Tests			Drilling Record			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	Weight (Kg)	Mins	Secs							
								Firm to stiff brown CLAY (Drillers Description). (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	49.65		
								CLAY (Drillers Description). (HEAD DEPOSITS)	0.65	(0.35)	49.30		
								Light brown gravelly sand. Gravel is angular fine to coarse limestone. Sand is fine to coarse. (CORNBRASH LIMESTONE FORMATION)	1.45	(0.80)	48.50		
								Firm blue grey and grey CLAY with rare silt sized selenite crystals. (BLISWORTH CLAY FORMATION)		(2.55)			
								LIMESTONE (Drillers Description). (BLISWORTH LIMESTONE FORMATION)	4.00	(5.00)	45.95		
								End of Borehole at 9.00m	9.00		40.95		

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 205	21/12	0800	9.00	0.00	100		Water/Mist	

General Remarks:
1) Hand dug pit to 1.20m bgl 2) Rotary open hole to 9.0m bgl. 3) Gas and groundwater monitoring pipe installed to 9.0m bgl. 4) Response zone between 4.0m bgl and 9.0m bgl. 5) Er = 73%. 6) Descriptions to 4.00m bgl based on adjacent PLT/TP313 log.

Groundwater: Groundwater levels masked by use of water / mist flush.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
RBH-211
Page No. 1 of 1

Method: Rotary Open	Date(s): 20/12/2021	Logged By: Marshall Drilling	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501832.23, 278409.15	Checked By: CV	Flush: Water/Mist
Hydrock Project No: C-18443-C	Ground Level: 50.97m OD		Scale: 1:100

Run (m)	Samples / Tests			Drilling Record			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	Weight (Kg)	Mins	Secs							
								Firm to stiff brown CLAY (Drillers Description). (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	50.67		
								Firm orange and greenish grey mottled light brown slightly sandy CLAY. Sand is fine. (HEAD DEPOSITS)	1.00	(0.70)	49.97		
								Limestone recovered as angular fine to coarse GRAVEL. (CORNBRASH LIMESTONE FORMATION)	1.50	(0.50)	49.47		
								Firm to stiff brown mottled grey CLAY with occasional sand sized selenite crystals. (BLISWORTH CLAY FORMATION)		(2.50)			
									4.00		46.97		
								LIMESTONE. (Drillers Description) (BLISWORTH LIMESTONE FORMATION)		(5.00)			
									9.00		41.97		
								End of Borehole at 9.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 205	20/12	0800	9.00	0.00	100		Water/Mist	

General Remarks:
1) Hand dug pit to 1.20m bgl 2) Rotary open hole to 9.0m bgl. 3) Gas and groundwater monitoring pipe installed to 9.0m bgl. 4) Response zone between 1.5m bgl and 9.0m bgl. 5) Er = 73%. 6) Description to 4.00m bgl based on adjacent TP236 log.

Groundwater: Groundwater levels masked by use of water / mist flush.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
RBH-212
Page No. 1 of 1

Method: Rotary Open	Date(s): 22/12/2021	Logged By: Marshall Drilling	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 502213.10, 278352.62	Checked By: CV	Flush: Water/Mist
Hydrock Project No: C-18443-C	Ground Level: 49.64m OD		Scale: 1:100

Run (m)	Samples / Tests			Drilling Record			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	Weight (Kg)	Mins	Secs							
								Firm to stiff brown CLAY (Drillers Description). (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	49.34		
								CLAY (Drillers Description). (HEAD DEPOSITS)	0.65	(0.35)	48.99		
								Light brown gravelly sand. Gravel is angular fine to coarse limestone. Sand is fine to coarse. (CORNBRASH LIMESTONE FORMATION)	1.45	(0.80)	48.19		
								Firm blue grey and grey CLAY with rare silt sized selenite crystals. (BLISWORTH CLAY FORMATION)	4.00	(2.55)	45.64		
								LIMESTONE. (Drillers Description). (BLISWORTH LIMESTONE FORMATION)	9.00	(5.00)	40.64		
								End of Borehole at 9.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 205	22/12	0800	9.00	0.00	100		Water/Mist	

General Remarks:
1) Hand dug pit to 1.20m bgl 2) Rotary open hole to 9.0m bgl. 3) Gas and groundwater monitoring pipe installed to 9.0m bgl. 4) Response zone between 4.0m bgl and 9.0m bgl. 5) Er = 73%. 6) Description to 4.00m bgl based on adjacent PLT/TP313 log.

Groundwater: Groundwater levels masked by use of water / mist flush.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
RBH-213
Page No. 1 of 2

Method: Dynamic Sampled & Rotary Cored	Date(s): 07/12/2021	Logged By: TB	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501798.49, 278262.17	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 54.11m OD		Scale: 1:50

Sample/Core Run (m)	Samples / Tests			Mechanical Log				Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Smpl. Ø (mm) Smpl. rec. %	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
0.00 - 1.00									Soft to firm brown slightly sandy gravelly CLAY with occasional rootlets. Gravel is angular to sub angular fine to coarse of limestone and flint (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	53.81		
1.00 - 2.00	1.00 - 2.00 1.20	B SPT	N=10 (1,1,1,2,3,4)	100	0	0			Firm to stiff orange and yellow mottled brownish grey slightly sandy CLAY with occasional calcareous nodules and selenite powder. Sand is fine. (KELLAWAYS CLAY MEMBER)	1	(2.50)			
2.00 - 3.00	2.00 2.00 2.00 - 2.80 2.00 - 2.80 2.80	SPT ES B B D	N=12 (1,2,2,3,3,4)	100	0	0				2				
3.00 - 4.00	3.00 3.25 - 3.50	SPT C	50/15mm (25,50)	90	90	85				2.80		51.31		
4.00 - 5.50	4.30 - 4.50	C		49	39	39			Firm to stiff brown mottled grey CLAY with frequent sub angular fine mudstone lithorelicts. (KELLAWAYS CLAY MEMBER)	3.00	(0.20)	51.11		
									Very strong thinly to medium bedded light grey LIMESTONE With occasional shell fossils interbedded with weak dark grey mudstone from 4.00 -4.15mbgl. Horizontal closely to medium spaced undulating rough open clean (CORNBRASH LIMESTONE FORMATION)	3	(1.60)			
										4				
										4.60		49.51		
									Stiff dark grey CLAY. (BLISWORTH CLAY FORMATION)	4.74	(0.14)	49.37		
									No Recovery (BLISWORTH CLAY FORMATION)	5	(0.76)			
5.50 - 7.00				100	100	100	1500 1500 1500		Very weak thickly bedded orange mottled greenish grey and grey MUDSTONE. (BLISWORTH CLAY FORMATION)	5.50		48.61		
										6	(1.50)			
7.00 - 8.50	6.90 - 7.00 7.00 8.05 - 8.25	C SPT C	50/175mm (16,9,16,20,14)	100	95	95	80 250 400			7.00		47.11		
									Stiff dark grey CLAY. (BLISWORTH CLAY FORMATION)	7.15	(0.15)	46.96		
8.50 - 10.00	8.80 - 9.00	C		100	100	91			Strong to very strong thinly to medium bedded light grey LIMESTONE with occasional shell fossils interbedded with very weak to weak mudstone band. Mudstone band is at 10.50- 10.65mbgl. Discontinuities: Horizontal closely to medium spaced undulating rough and smooth partly open to open clean with clay infill at 8.27-8.33mbgl. (BLISWORTH LIMESTONE FORMATION)	8				
										9				
							30 250 620		*... Limestone has frequent shell fossils.*		(4.85)			
										10				

Continued on Next Sheet

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 305	07/12	0800	12.00	1.50	100		Water	

General Remarks:
1) Hand dug pit to 1.20m bgl. 2) Borehole completed at 12.00m bgl. 3) Gas and groundwater monitoring pipe installed to 12.00m bgl. 4) Response zone between 3.00m bgl and 12.00m bgl. 5) Er = 73%

Groundwater: Groundwater levels masked by use of water flush.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-213 Page No. 2 of 2

Method: Dynamic Sampled & Rotary Cored	Date(s): 07/12/2021	Logged By: TB	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501798.49, 278262.17	Checked By: CV	Flush: Water
Hydrock Project No: C-18443-C	Ground Level: 54.11m OD		Scale: 1:50

Sample/Core Run (m) Smpl. Ø (mm) Smpl. rec. %	Samples / Tests			Mechanical Log				Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	TCR	SCR	RQD	If: Min Mean Max							
10.00 - 11.50	10.65 - 10.85	C		100	100	100			Strong to very strong thinly to medium bedded light grey LIMESTONE with occasional shell fossils interbedded with very weak to weak mudstone band. Mudstone band is at 10.50- 10.65mbgl. Discontinuities: Horizontal closely to medium spaced undulating rough and smooth partly open to open clean with clay infill at 8.27-8.33mbgl. (BLISWORTH LIMESTONE FORMATION)					
	11.30 - 11.50	C												
11.50 - 12.00				100	100	100			*... Limestone is very dark grey*					
	11.85 - 12.00	C												
									End of Borehole at 12.00m	12.00		42.11		

11 12 13 14 15 16 17 18 19 20

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)

General Remarks:
1) Hand dug pit to 1.20m bgl. 2) Borehole completed at 12.00m bgl. 3) Gas and groundwater monitoring pipe installed to 12.00m bgl. 4) Response zone between 3.00m bgl and 12.00m bgl. 5) Er = 73%

Groundwater: Groundwater levels masked by use of water flush.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
RBH-214
Page No. 1 of 1

Method: Rotary Open	Date(s): 17/12/2021	Logged By: Marshall Drilling	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501918.81, 278155.15	Checked By: CV	Flush: Water/Mist
Hydrock Project No: C-18443-C	Ground Level: 51.29m OD		Scale: 1:100

Run (m)	Samples / Tests			Drilling Record			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	Weight (Kg)	Mins	Secs							
								Very soft brown clayey TOPSOIL (Drillers Description). (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	50.99		
								Soft to firm orange CLAY (Drillers Description). (BLISWORTH CLAY FORMATION)		(4.70)			
								Extremely strong grey LIMESTONE (Drillers Description). (BLISWORTH LIMESTONE FORMATION)	5.00	(7.00)	46.29		
								End of Borehole at 12.00m	12.00		39.29		

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 205	17/12	0800	12.00	1.50	100		Water/Mist	

General Remarks:
1) Hand dug pit to 1.20m bgl 2) Rotary open hole to 12.0m bgl. 3) Gas and groundwater monitoring pipe installed to 12.00m bgl. 4) Response zone between 5.00m bgl and 12.00m bgl.

Groundwater: Groundwater levels masked by use of water / mist flush.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-215 Page No. 1 of 1

Method: Rotary Open	Date(s): 22/12/2021	Logged By:	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 502232.02, 278113.12	Checked By: CV	Flush: Water/Mist
Hydrock Project No: C-18443-C	Ground Level: 47.53m OD		Scale: 1:100

Run (m)	Samples / Tests			Drilling Record			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	Weight (Kg)	Mins	Secs							
								Firm to stiff brown CLAY (Drillers Description). (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	47.23		
								CLAY (Drillers Description). (BLISWORTH CLAY FORMATION)	1.00	(0.70)	46.53		
								LIMESTONE (Drillers Description). (BLISWORTH LIMESTONE FORMATION)		(5.00)			
								End of Borehole at 6.00m	6.00		41.53		

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 205	22/12	0800	6.00	0.00	100		Water/Mist	

General Remarks:
1) Hand dug pit to 1.20m bgl 2) Rotary open hole to 6.00m bgl. 3) Gas and groundwater monitoring pipe installed to 12.00m bgl. 4) Response zone between 1.00m bgl and 6.00m bgl.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
RBH-216
Page No. 1 of 1

Method: Rotary Open	Date(s): 10/12/2021	Logged By: Marshall Drilling	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501611.34, 278060.72	Checked By: CV	Flush: Water/Mist
Hydrock Project No: C-18443-C	Ground Level: 61.75m OD		Scale: 1:100

Run (m)	Samples / Tests			Drilling Record			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	Weight (Kg)	Mins	Secs							
								Very soft brown clayey TOPSOIL (Drillers Description). (AGRICULTURALLY DISTURBED TOPSOIL)	0.20	(0.20)	61.55		
								Soft yellow sandy CLAY (Drillers Description). (GLACIAL TILL)	0.50	(0.30)	61.25		
								Firm to stiff brown CLAY (Drillers Description). (GLACIAL TILL)	3.20	(2.70)	58.55		
								Dense orange SAND & GRAVEL (Drillers Description). (KELLAWAYS SAND MEMBER)	7.20	(4.00)	54.55		
								Soft to firm grey CLAY (Drillers Description). (KELLAWAYS CLAY MEMBER)	8.40	(1.20)	53.35		
								Extremely strong grey LIMESTONE (Drillers Description). (CORNBRASH LIMESTONE FORMATION)	10.00	(1.60)	51.75		
								Firm to stiff brown CLAY (Drillers Description). (BLISWORTH CLAY FORMATION)	15.00	(5.00)	46.75		
								End of Borehole at 15.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 305	10/12	0800	15.00	0.00	100		Water/Mist	

General Remarks:
1) Hand dug pit to 1.20m bgl 2) Rotary open hole to 15.0m bgl. 3) Gas and groundwater monitoring pipe installed to 12.00m bgl. 4) Response zone between 8.50m bgl and 15.00m bgl.

Groundwater: Groundwater levels masked by use of water / mist flush.

Logged in general accordance with BS5930:2015

Hydrock

Project: Land Adjacent Haldens Parkway Thrapston

Borehole No
RBH-217
Page No. 1 of 1

Method: Rotary Open	Date(s): 16/12/2021	Logged By: Marshall Drilling	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501811.46, 277946.87	Checked By: CV	Flush: Water/Mist
Hydrock Project No: C-18443-C	Ground Level: 55.00m OD		Scale: 1:100

Run (m)	Samples / Tests			Drilling Record			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	Weight (Kg)	Mins	Secs							
								Very soft brown clayey TOPSOIL (Drillers Description). (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	54.70		
								Firm to stiff orange sandy CLAY (Drillers Description). (HEAD DEPOSITS)	0.60	(0.30)	54.40		
								Orangish brown mottled light grey CLAY. (KELLAWAYS SAND MEMBER)	2.10	(1.50)	52.90		
								Firm grey brown and orange brown CLAY. (KELLAWAYS CLAY MEMBER)	6.00	(3.90)	49.00		
								LIMESTONE (Drillers Description). (CORNBRASH LIMESTONE FORMATION)	7.00	(1.00)	48.00		
								Firm to stiff orange sandy CLAY (Drillers Description). Grey water flush noted. (BLISWORTH CLAY FORMATION)	10.00	(3.00)	45.00		
								Firm to stiff brown CLAY (Drillers Description). (BLISWORTH LIMESTONE FORMATION)	12.00	(2.00)	43.00		
								End of Borehole at 12.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 305	16/12	0800	12.00	0.00	100		Water/Mist	

General Remarks:
1) Hand dug pit to 1.20m bgl 2) Rotary open hole to 12.0m bgl. 3) Gas and groundwater monitoring pipe installed to 12.00m bgl. 4) Response zone between 10.00m bgl and 12.00m bgl. Kellaways Sand & Kellaways Clay descriptions based on adjacent TP293 log.

Groundwater: Groundwater levels masked by use of water / mist flush.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-218 Page No. 1 of 1

Method: Rotary Open	Date(s): 02/12/2021	Logged By: Marshall Drilling	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 502068.63, 277799.28	Checked By: CV	Flush: Water/Mist
Hydrock Project No: C-18443-C	Ground Level: 53.22m OD		Scale: 1:100

Run (m)	Samples / Tests			Drilling Record			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	Weight (Kg)	Mins	Secs							
								Very soft brown clayey TOPSOIL (Drillers Description). (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	52.92		
								Brown to grey slightly gravelly CLAY. (MADE GROUND)					
										(3.40)			
									3.70		49.52		
								Orange sandy CLAY. (Drillers Description). (BLISWORTH CLAY FORMATION)		(4.30)			
									8.00		45.22		
								Extremely strong grey LIMESTONE (Drillers Description). (BLISWORTH LIMESTONE FORMATION)		(7.00)			
									15.00		38.22		
								End of Borehole at 15.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 305	02/12	0800	15.00	0.00	100		Water/Mist	

General Remarks:
1) Hand dug pit to 1.20m bgl 2) Rotary open hole to 15.0m bgl. 3) Gas and groundwater monitoring pipe installed to 12.00m bgl. 4) Response zone between 8.00m bgl and 15.00m bgl. 5) Made Ground description based on djacent TP309 log.

Groundwater: Groundwater levels masked by use of water / mist flush.

Logged in general accordance with BS5930:2015

Hydrock	Project: Land Adjacent Haldens Parkway Thrapston	Borehole No RBH-219 Page No. 1 of 1

Method: Rotary Open	Date(s): 20/12/2021	Logged By:	Drilled By: Marshall Drilling
Client: Equites Newlands (Thrapston East) Ltd	Co-ords: 501741.64, 278348.72	Checked By: CV	Flush: Water/Mist
Hydrock Project No: C-18443-C	Ground Level: 53.50m OD		Scale: 1:100

Run (m)	Samples / Tests			Drilling Record			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
	Depth (m)	Type	Results	Weight (Kg)	Mins	Secs							
								Firm to stiff brown CLAY (Drillers Description). (AGRICULTURALLY DISTURBED TOPSOIL)	0.30	(0.30)	53.20		
								CLAY (Drillers Description). (KELLAWAYS CLAY MEMBER)	1.50	(1.20)	52.00		
								LIMESTONE (Drillers Description). (CORNBRASH LIMESTONE FORMATION)	3.00	(1.50)	50.50		
								End of Borehole at 3.00m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Commachio 305	20/12	0800	3.00	0.00	100		Water/Mist	

General Remarks:
1) Hand dug pit to 1.20m bgl 2) Rotary open hole to 3.0m bgl. 3) Gas and groundwater monitoring pipe installed to 3.00m bgl. 4) Response zone between 1.50m bgl and 3.00m bgl.

Logged in general accordance with BS5930:2015

Appendix D Topographical Survey

Notes

Grid and levels relative to OS active GPS network

Reproduced from Ordnance Survey digital map data

KEY:

Restored Contours

OS Map

Site Boundary

Spot Levels 62.61

Rev	Date	Description

MICK GEORGE
6 LANCASTER WAY
ERMINE BUISNESS PARK
HUNTINGDON
CAMBRIDGESHIRE
PE29 6XU
Tel : 01480 498099 Fax : 01480 498077
www.mickgeorge.co.uk

Client
Mick George Limited

Project
Thrapston Landfill

Title
End Of The Year Survey

Drawn : IMS | Approved : MEG

Date : 19/01/2021 | Scale :1/1250

Drawing Number: TPN_EOY/01/2021 | Paper size: A1 | Rev:

Appendix E Groundsure

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

501767, 278467

Order Details

Date: 04/06/2021

Your ref: C-18443-_Sophie_

Our Ref: GS-7926027

Client: Hydrock Consultants Ltd

Site Details

Location: 501952 278444

Area: 71.19 ha

Authority: North Northamptonshire Council (East Northamptonshire Area)

Contact us with any questions at:
info@groundsure.com
08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	1.1	Historical industrial land uses	4	1	2	7	-
14	1.2	Historical tanks	0	0	1	3	-
15	1.3	Historical energy features	0	0	0	0	-
15	1.4	Historical petrol stations	0	0	0	0	-
15	1.5	Historical garages	0	0	0	0	-
15	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
16	2.1	Historical industrial land uses	5	2	2	9	-
17	2.2	Historical tanks	0	0	2	5	-
18	2.3	Historical energy features	0	0	0	0	-
18	2.4	Historical petrol stations	0	0	0	0	-
18	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
19	3.1	Active or recent landfill	1	0	0	0	-
20	3.2	Historical landfill (BGS records)	0	0	0	0	-
20	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
20	3.4	Historical landfill (EA/NRW records)	1	0	0	0	-
20	3.5	Historical waste sites	0	0	0	0	-
21	3.6	Licensed waste sites	1	2	0	0	-
22	3.7	Waste exemptions	4	0	28	4	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
26	4.1	Recent industrial land uses	0	0	3	-	-
27	4.2	Current or recent petrol stations	0	0	0	0	-
27	4.3	Electricity cables	0	0	0	0	-
27	4.4	Gas pipelines	0	0	0	0	-
27	4.5	Sites determined as Contaminated Land	0	0	0	0	-

27	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
28	4.7	Regulated explosive sites	0	0	0	0	-
28	**4.8**	**Hazardous substance storage/usage**	0	0	1	0	-
28	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
28	**4.10**	**Licensed industrial activities (Part A(1))**	0	5	0	0	-
29	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
30	4.12	Radioactive Substance Authorisations	0	0	0	0	-
30	**4.13**	**Licensed Discharges to controlled waters**	2	0	0	0	-
30	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
31	4.15	Pollutant release to public sewer	0	0	0	0	-
31	4.16	List 1 Dangerous Substances	0	0	0	0	-
31	**4.17**	**List 2 Dangerous Substances**	0	0	0	1	-
31	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	2	1	-
32	4.19	Pollution inventory substances	0	0	0	0	-
32	4.20	Pollution inventory waste transfers	0	0	0	0	-
32	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
33	**5.1**	**Superficial aquifer**	Identified (within 500m)				
35	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
37	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
42	**5.4**	**Groundwater vulnerability- soluble rock risk**	Identified (within 0m)				
43	5.5	Groundwater vulnerability- local information	None (within 0m)				
44	**5.6**	**Groundwater abstractions**	0	0	0	0	1
45	5.7	Surface water abstractions	0	0	0	0	0
45	5.8	Potable abstractions	0	0	0	0	0
45	5.9	Source Protection Zones	0	0	0	0	-
46	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
47	**6.1**	**Water Network (OS MasterMap)**	1	1	5	-	-

48	6.2	Surface water features	1	2	5	-	-
48	6.3	WFD Surface water body catchments	2	-	-	-	-
49	6.4	WFD Surface water bodies	0	0	0	-	-
49	6.5	WFD Groundwater bodies	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
51	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
51	7.2	Historical Flood Events	0	0	0	-	-
51	7.3	Flood Defences	0	0	0	-	-
51	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
52	7.5	Flood Storage Areas	0	0	0	-	-
53	7.6	Flood Zone 2	None (within 50m)				
53	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
54	8.1	Surface water flooding	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding					
56	9.1	Groundwater flooding	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
57	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	4
58	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	2
59	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
59	10.4	Special Protection Areas (SPA)	0	0	0	0	4
60	10.5	National Nature Reserves (NNR)	0	0	0	0	0
60	10.6	Local Nature Reserves (LNR)	0	0	0	0	1
61	10.7	Designated Ancient Woodland	0	0	0	0	0
61	10.8	Biosphere Reserves	0	0	0	0	0
61	10.9	Forest Parks	0	0	0	0	0
61	10.10	Marine Conservation Zones	0	0	0	0	0
62	10.11	Green Belt	0	0	0	0	0
62	10.12	Proposed Ramsar sites	0	0	0	0	0

62	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
62	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
62	10.15	Nitrate Sensitive Areas	0	0	0	0	0
63	**10.16**	**Nitrate Vulnerable Zones**	2	1	0	0	4
64	**10.17**	**SSSI Impact Risk Zones**	3	-	-	-	-
66	**10.18**	**SSSI Units**	0	0	0	0	4
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
69	11.1	World Heritage Sites	0	0	0	-	-
69	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
69	11.3	National Parks	0	0	0	-	-
69	11.4	Listed Buildings	0	0	0	-	-
70	11.5	Conservation Areas	0	0	0	-	-
70	11.6	Scheduled Ancient Monuments	0	0	0	-	-
70	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
71	**12.1**	**Agricultural Land Classification**	Grade 3 (within 250m)				
72	12.2	Open Access Land	0	0	0	-	-
72	12.3	Tree Felling Licences	0	0	0	-	-
73	**12.4**	**Environmental Stewardship Schemes**	1	2	0	-	-
73	**12.5**	**Countryside Stewardship Schemes**	0	2	2	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
74	13.1	Priority Habitat Inventory	0	0	0	-	-
74	13.2	Habitat Networks	0	0	0	-	-
74	13.3	Open Mosaic Habitat	0	0	0	-	-
74	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
75	**14.1**	**10k Availability**	Identified (within 500m)				
76	**14.2**	**Artificial and made ground (10k)**	2	1	0	3	-
78	**14.3**	**Superficial geology (10k)**	2	0	1	0	-

79	14.4	Landslip (10k)	0	0	0	0	-
80	14.5	Bedrock geology (10k)	8	1	3	7	-
81	14.6	Bedrock faults and other linear features (10k)	1	0	0	2	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
82	15.1	50k Availability	Identified (within 500m)				
83	15.2	Artificial and made ground (50k)	0	0	0	0	-
83	15.3	Artificial ground permeability (50k)	0	0	-	-	-
84	15.4	Superficial geology (50k)	2	0	1	0	-
85	15.5	Superficial permeability (50k)	Identified (within 50m)				
85	15.6	Landslip (50k)	0	0	0	0	-
85	15.7	Landslip permeability (50k)	None (within 50m)				
86	15.8	Bedrock geology (50k)	10	1	2	8	-
87	15.9	Bedrock permeability (50k)	Identified (within 50m)				
88	15.10	Bedrock faults and other linear features (50k)	1	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
89	16.1	BGS Boreholes	2	3	9	-	-
Page	Section	Natural ground subsidence					
91	17.1	Shrink swell clays	Moderate (within 50m)				
93	17.2	Running sands	Low (within 50m)				
95	17.3	Compressible deposits	Negligible (within 50m)				
96	17.4	Collapsible deposits	Very low (within 50m)				
97	17.5	Landslides	Very low (within 50m)				
98	17.6	Ground dissolution of soluble rocks	Very low (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
100	18.1	Natural cavities	0	0	0	0	-
101	18.2	BritPits	2	0	0	0	-
101	18.3	Surface ground workings	5	0	4	-	-
102	18.4	Underground workings	0	0	0	0	0
102	18.5	Historical Mineral Planning Areas	0	0	0	0	-

102	18.6	Non-coal mining	0	0	0	0	0
102	18.7	Mining cavities	0	0	0	0	0
103	18.8	JPB mining areas	None (within 0m)				
103	18.9	Coal mining	None (within 0m)				
103	18.10	Brine areas	None (within 0m)				
103	18.11	Gypsum areas	None (within 0m)				
103	18.12	Tin mining	None (within 0m)				
104	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
105	**19.1**	**Radon**	Less than 1% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
106	**20.1**	**BGS Estimated Background Soil Chemistry**	47	13	-	-	-
109	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
110	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-

Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
111	21.1	Underground railways (London)	0	0	0	-	-
111	21.2	Underground railways (Non-London)	0	0	0	-	-
111	21.3	Railway tunnels	0	0	0	-	-
111	21.4	Historical railway and tunnel features	0	0	0	-	-
111	21.5	Royal Mail tunnels	0	0	0	-	-
112	21.6	Historical railways	0	0	0	-	-
112	21.7	Railways	0	0	0	-	-
112	21.8	Crossrail 1	0	0	0	0	-
112	21.9	Crossrail 2	0	0	0	0	-
112	21.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 15/07/2018

Site Area: 71.19ha

Recent site history - 2016 aerial photograph

Capture Date: 08/05/2016

Site Area: 71.19ha

Recent site history - 2011 aerial photograph

Capture Date: 29/09/2011

Site Area: 71.19ha

Recent site history - 2006 aerial photograph

Capture Date: 12/07/2006

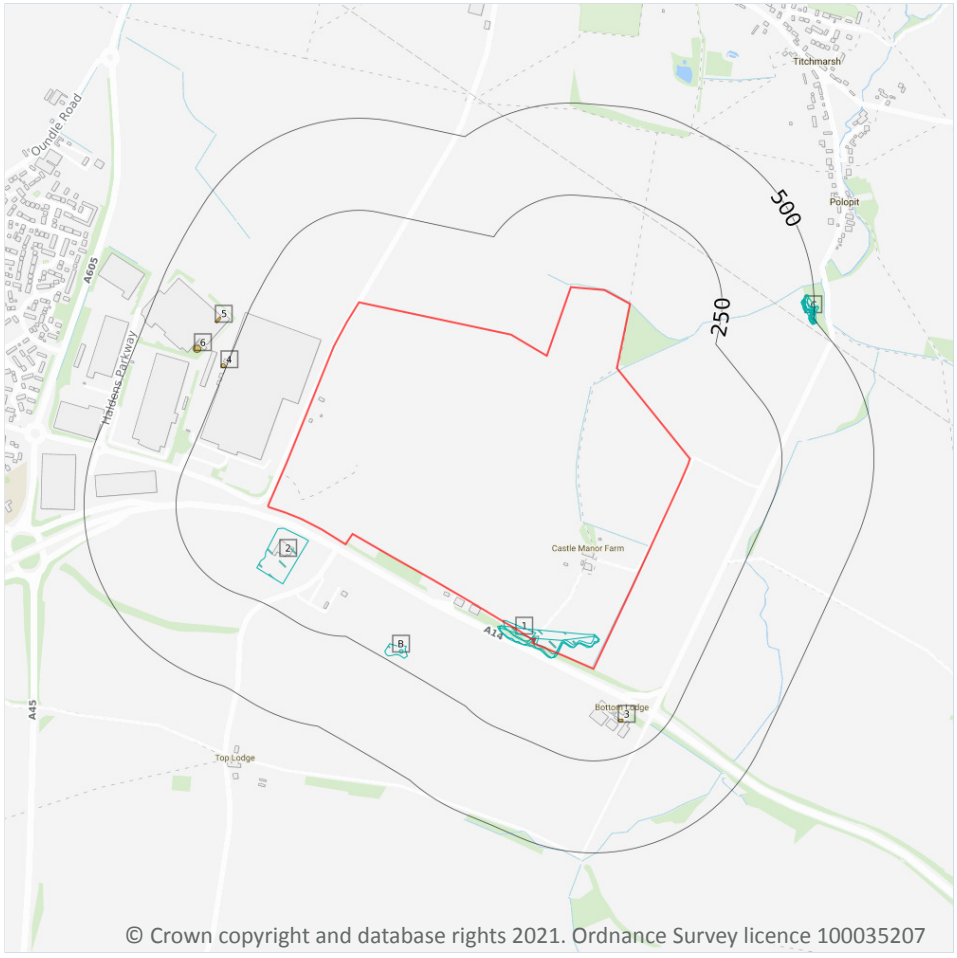
Site Area: 71.19ha

Recent site history - 1999 aerial photograph

Capture Date: 23/07/1999

Site Area: 71.19ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

1.1 Historical industrial land uses

Records within 500m	14

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
1	**On site**	**Unspecified Pit**	**1982**	**2041091**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Unspecified Ground Workings**	**1885**	**2060297**
A	**On site**	**Old Stone Pits**	**1901 - 1950**	**2078945**
A	**On site**	**Old Stone Pits**	**1951**	**2108453**
2	41m S	Unspecified Depot	1982 - 1994	2101829
B	193m SW	Disused Sewage Works	1950	2056198
B	206m SW	Unspecified Tank	1950	2044116
C	465m E	Unspecified Ground Workings	1950	2068426
C	465m E	Unspecified Ground Workings	1899	2082529
C	468m E	Unspecified Pits	1901	2072415
C	470m E	Unspecified Pits	1951	2078161
C	471m E	Unspecified Ground Workings	1887	2080493
C	474m E	Unspecified Ground Workings	1950	2072890
C	474m E	Unspecified Ground Workings	1885	2078744

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**4**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
3	154m SE	Tanks	1991 - 1993	356521
4	253m W	Unspecified Tank	1999	343631
5	314m W	Tanks	1997 - 1999	357787
6	332m W	Unspecified Tank	1997 - 1999	354092

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	0

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

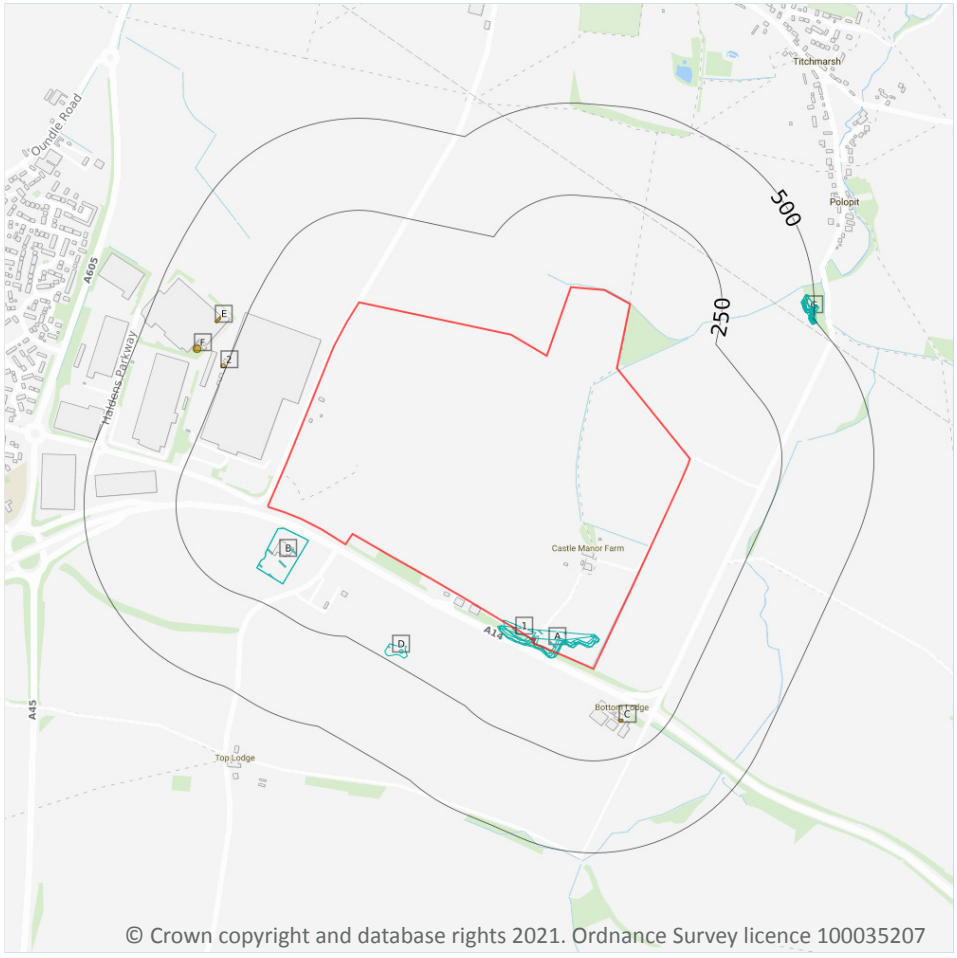
1.6 Historical military land

Records within 500m	0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.

2 Past land use - un-grouped



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

2.1 Historical industrial land uses

Records within 500m	18

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 16**

ID	Location	Land Use	Date	Group ID
1	**On site**	**Unspecified Pit**	**1982**	**2041091**
A	**On site**	**Old Stone Pits**	**1950**	**2078945**
A	**On site**	**Old Stone Pits**	**1951**	**2108453**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Unspecified Ground Workings**	**1885**	**2060297**
A	**On site**	**Old Stone Pits**	**1901**	**2078945**
B	41m S	Unspecified Depot	1994	2101829
B	41m S	Unspecified Depot	1982	2101829
D	193m SW	Disused Sewage Works	1950	2056198
D	206m SW	Unspecified Tank	1950	2044116
G	465m E	Unspecified Ground Workings	1950	2068426
G	465m E	Unspecified Ground Workings	1899	2082529
G	468m E	Unspecified Pits	1901	2072415
G	468m E	Unspecified Pits	1901	2072415
G	470m E	Unspecified Pits	1951	2078161
G	471m E	Unspecified Ground Workings	1887	2080493
G	471m E	Unspecified Ground Workings	1887	2080493
G	474m E	Unspecified Ground Workings	1950	2072890
G	474m E	Unspecified Ground Workings	1885	2078744

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m **7**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 16**

ID	Location	Land Use	Date	Group ID
C	154m SE	Tanks	1991	356521
C	154m SE	Tanks	1993	356521
2	253m W	Unspecified Tank	1999	343631
E	314m W	Tanks	1997	357787
E	314m W	Tanks	1999	357787

ID	Location	Land Use	Date	Group ID
F	332m W	Unspecified Tank	1997	354092
F	332m W	Unspecified Tank	1999	354092

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	0

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

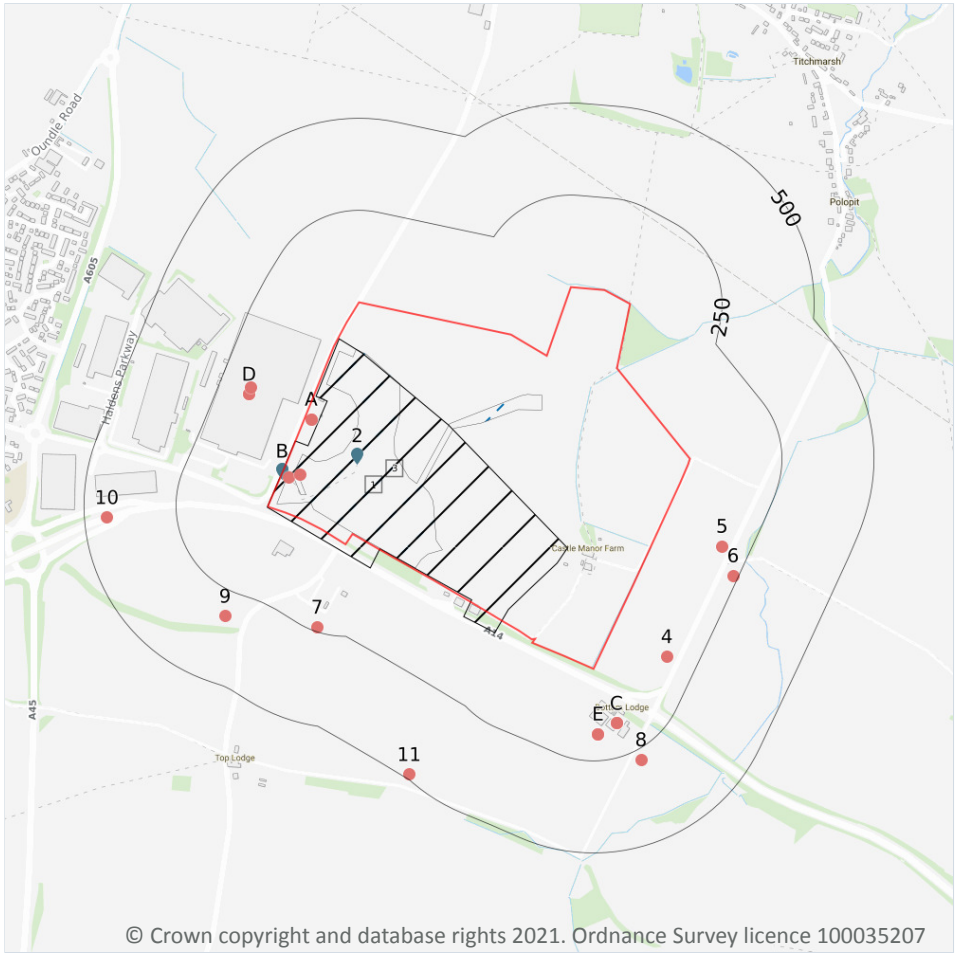
2.5 Historical garages

Records within 500m	0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Active or recent landfill

Historical landfill (EA/NRW)

Licensed waste sites

Waste exemptions

3.1 Active or recent landfill

Records within 500m	1

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

Features are displayed on the Waste and landfill map on **page 19**

ID	Location	Details	
1	**On site**	**Operator: Mick George (Haulage) Ltd** **Site Address: Titchmarsh Road, Thrapston, Northants, NN14 4NJ**	**WML Number: 73156** **EPR Reference: IPC005** **Landfill type: L05: Inert LF** **Status: Issued** **IPPC Reference: -** **EPR Number: EA/EPR/BT9879IY/V003**

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m	0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m	1

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

Features are displayed on the Waste and landfill map on **page 19**

ID	Location	Details		
3	**On site**	**Site Address: Rectory Farm Quarry, Rectory Farm, Titchmarsh Road, Thrapston, Northamptonshire** **Licence Holder Address: -**	**Waste Licence: Yes** **Site Reference: E/053, BT9879** **Waste Type: Inert** **Environmental Permitting Regulations (Waste) Reference: -** **Licence Issue: 07/06/1991** **Licence Surrender: -**	**Operator: Peter Binnie Limited** **Licence Holder: Mick George Haulage Limited** **First Recorded 01/01/1992** **Last Recorded: -**

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m	0

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m	3

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

Features are displayed on the Waste and landfill map on **page 19**

ID	Location	Details		
2	**On site**	**Site Name: Rectory Farm Quarry Site Address: Titchmarsh Road, Thrapston, Northants, NN14 4NJ Correspondence Address: -**	**Type of Site: Inert LF Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: IPC005 EPR reference: EA/EPR/BT9879IY/V003 Operator: Mick George (Haulage) Ltd Waste Management licence No: 73156 Annual Tonnage: 75000**	**Issue Date: 05/07/2004 Effective Date: - Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued**
B	1m NW	Site Name: Rectory Farm Quarry Site Address: Rectory Farm Quarry, Titchmarsh Road, Thrapston, Northants, NN14 4NJ Correspondence Address: Second Drove, Meadow Lane, St Ives, Cambridgeshire, PE17 4YQ	Type of Site: Inert LF Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: IPC005 EPR reference: EA/EPR/GP3092NZ/A001 Operator: Mick George (Haulage) Ltd Waste Management licence No: 73156 Annual Tonnage: 75000	Issue Date: 05/07/2004 Effective Date: - Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: -
B	1m NW	Site Name: Rectory Farm Quarry Site Address: Titchmarsh Road, Thrapston, Northants, NN14 4NJ Correspondence Address: -	Type of Site: Inert LF Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: IPC005 EPR reference: EA/EPR/GP3092NZ/A001 Operator: Mick George (Haulage) Ltd Waste Management licence No: 73156 Annual Tonnage: 75000	Issue Date: 05/07/2004 Effective Date: - Modified:: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m	36

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 19**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	**On site**	**RECTORY FARM, THE BUNGALOW, HUNTINGDON ROAD, THRAPSTON, KETTERING, NN14 4NJ**	**WEX122076**	**Using waste exemption**	**On a farm**	**Use of waste in construction**
A	**On site**	**RECTORY FARM, THE BUNGALOW, HUNTINGDON ROAD, THRAPSTON, KETTERING, NN14 4NJ**	**WEX097446**	**Using waste exemption**	**On a farm**	**Use of waste in construction**
B	**On site**	**TYhrapston Landfill, Rectory Farm Titchmarsh Road Northamptonshire NN14 4NJ**	**EPR/KF0309UC/A001**	**Treating waste exemption**	**Non-Agricultural Waste Only**	**Screening and blending of waste**
B	**On site**	**Thrapston Landfill Rectory Farm Quarry Thrapston nn14 4nj**	**EPR/XF0209UQ/A001**	**Treating waste exemption**	**Non-Agricultural Waste Only**	**Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising**
C	162m SE	-	WEX170003	Using waste exemption	On a farm	Use of mulch
C	162m SE	-	WEX170003	Treating waste exemption	On a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
C	162m SE	-	WEX170003	Treating waste exemption	On a farm	Preparatory treatments (baling, sorting, shredding etc)
C	162m SE	-	WEX170003	Disposing of waste exemption	On a farm	Deposit of waste from dredging of inland waters
C	162m SE	-	WEX170003	Using waste exemption	On a farm	Spreading of plant matter to confer benefit
C	162m SE	-	WEX170003	Disposing of waste exemption	On a farm	Disposal by incineration

ID	Location	Site	Reference	Category	Sub-Category	Description
C	162m SE	-	WEX170003	Treating waste exemption	On a farm	Treatment of waste in a biobed or biofilter
C	162m SE	-	WEX170003	Disposing of waste exemption	On a farm	Burning waste in the open
C	162m SE	-	WEX170003	Using waste exemption	On a farm	Use of waste in construction
C	162m SE	-	WEX170003	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
C	162m SE	-	WEX170003	Storing waste exemption	On a farm	Storage of waste in a secure place
C	162m SE	-	WEX170003	Treating waste exemption	On a farm	Recovery of scrap metal
D	164m W	HUNTINGDON ROAD, THRAPSTON, KETTERING, NN14 4QT	WEX151006	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
D	164m W	HUNTINGDON ROAD, THRAPSTON, KETTERING, NN14 4QT	WEX159801	Storing waste exemption	Not on a Farm	Storage of waste in a secure place
D	164m W	-	WEX258157	Treating waste exemption	Not on a farm	Sorting mixed waste
4	167m SE	Land at TL02307779	EPR/LE5642ED /A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of sludge
D	167m W	Primark Distribution Centre Huntingdon Road Kettering Northamptonshire NN14 4QT	EPR/KE5944EU /A001	Treating waste exemption	Non-Agricultural Waste Only	Preparatory treatments (baling, sorting, shredding etc)
5	176m SE	Land at TL0245078090	EPR/DE5848EM/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of sludge
E	179m S	Bottom Lodge Huntingdon Road T Northants NN14 4NJ	EPR/AH0376LJ /A001	Disposing of waste exemption	Both agricultural and non-agricultural waste	Burning waste in the open

ID	Location	Site	Reference	Category	Sub-Category	Description
E	179m S	Bottom Lodge Huntingdon Road T Northants NN14 4NJ	EPR/AH0376LJ /A001	Treating waste exemption	Both agricultural and non-agricultural waste	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
E	179m S	Bottom Lodge Huntingdon Road T Northants NN14 4NJ	EPR/AH0376LJ /A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of waste in construction
E	179m S	Bottom Lodge Huntingdon Road T Northants NN14 4NJ	EPR/AH0376LJ /A001	Using waste exemption	Both agricultural and non-agricultural waste	Spreading waste on agricultural land to confer benefit
E	179m S	Bottom Lodge Huntingdon Road T Northants NN14 4NJ	EPR/AH0376LJ /A001	Using waste exemption	Both agricultural and non-agricultural waste	Spreading waste on non-agricultural land to confer benefit
E	179m S	Bottom Lodge Huntingdon Road T Northants NN14 4NJ	EPR/AH0376LJ /A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of mulch
E	179m S	Bottom Lodge Huntingdon Road T Northants NN14 4NJ	EPR/AH0376LJ /A001	Using waste exemption	Both agricultural and non-agricultural waste	Spreading of plant matter to confer benefit
E	179m S	Bottom Lodge Huntingdon Road T Northants NN14 4NJ	EPR/AH0376LJ /A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of waste for a specified purpose
6	237m SE	-	WEX163617	Storing waste exemption	On a Farm	Storage of sludge
7	240m S	-	WEX124708	Storing waste exemption	On a farm	Storage of sludge
8	280m SE	-	WEX161609	Storing waste exemption	On a Farm	Storage of sludge
9	321m S	-	WEX161603	Storing waste exemption	On a Farm	Storage of sludge

ID	Location	Site	Reference	Category	Sub-Category	Description
10	439m W	A14 From M1 J19 to Thrapston SP 56118 78966 to	EPR/BE5483EC/A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste in construction
11	490m SW	-	WEX164155	Storing waste exemption	On a Farm	Storage of sludge

This data is sourced from the Environment Agency and Natural Resources Wales.

4 Current industrial land use

Site Outline

Search buffers in metres (m)

Recent industrial land uses

Hazardous substance storage/usage

Part A(1) industrial activities

Licensed Discharges to controlled waters

List 2 Dangerous Substances

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	3

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 26**

ID	Location	Company	Address	Activity	Category
B	86m S	Astwell Augers Ltd	Huntingdon Road, Thrapston, Kettering, Northamptonshire, NN14 4PT	General Purpose Machinery	Industrial Products
B	89m S	Depot	Northamptonshire, NN14	Container and Storage	Transport, Storage and Delivery
5	237m NE	Pylon	Northamptonshire, NN14	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	1

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

Features are displayed on the Current industrial land use map on **page 26**

ID	Location	Details	
4	173m W	Application reference number: 12/01559/HAZ Application status: Approved Application date: 13/09/2012 Address: DHL Excel Supply Chain, Thrapston Site, Huntingdon Road, Thrapston, East Northanptonshire District Council, England, NN14 4QT	Details: Application for hazardous substances consent: Liquefied petroleum gas storage Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m	5

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on **page 26**

ID	Location	Details	
A	17m W	Operator: MICK GEORGE HAULAGE LTD Installation Name: RECTORY FARM QUARRY Process: WASTE LANDFILLING; ANY OTHER LANDFILL TO WHICH THE 2002 LANDFILL REGULATIONS APPLY Permit Number: PP3233XK Original Permit Number: BT9879IY	EPR Reference: - Issue Date: 11/01/2008 Effective Date: 31/03/2008 Last date noted as effective: 01/04/2009 Status: REVOKED
A	17m W	Operator: MICK GEORGE (HAULAGE) LTD Installation Name: - Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE Permit Number: BT9879 Original Permit Number: BT9879	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
A	17m W	Operator: MICK GEORGE HAULAGE LTD Installation Name: RECTORY FARM QUARRY Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE Permit Number: BT9879IY Original Permit Number: BT9879IY	EPR Reference: - Issue Date: 05/07/2004 Effective Date: 05/07/2004 Last date noted as effective: 03/01/2008 Status: SUPERCEDED
A	17m W	Operator: MICK GEORGE HAULAGE LTD Installation Name: RECTORY FARM QUARRY Process: WASTE LANDFILLING; ANY OTHER LANDFILL TO WHICH THE 2002 LANDFILL REGULATIONS APPLY Permit Number: BT9879IY Original Permit Number: BT9879IY	EPR Reference: - Issue Date: 05/07/2004 Effective Date: 05/07/2004 Last date noted as effective: 25/01/2021 Status: SUPERCEDED
A	17m W	Operator: MICK GEORGE HAULAGE LTD Installation Name: RECTORY FARM QUARRY Process: WASTE LANDFILLING; >10 T/D WITH CAPACITY >25,000T EXCLUDING INERT WASTE Permit Number: EP3837LU Original Permit Number: BT9879IY	EPR Reference: - Issue Date: 17/10/2006 Effective Date: 18/10/2006 Last date noted as effective: 25/01/2021 Status: SUPERCEDED

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m	**0**

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m	2

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on **page 26**

ID	Location	Address	Details	
1	On site	CASTLE & MANOR FARM, THRAPSTON ROAD, NR TITCHMARSH, NORTHAMPTONSHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: PRNNF01825 Permit Version: 1 Receiving Water: Trib River Nene	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 20/10/1989 Effective Date: 20/10/1989 Revocation Date: 11/02/1992
2	On site	RECTORY FARM/CASTLE MANOR FARM, TITCHMARSH, THRAPSTON, NORTHAMPTONSHIRE	Effluent Type: TRADE DISCHARGES - MINERAL WORKINGS Permit Number: PRNNF12740 Permit Version: 1 Receiving Water: TRIBUTARY OF POLOPIT BROOK	Status: CONSENT REVOKED - DISCHARGE CEASED (WRA 91, SCHED 10 & 6) Issue date: 09/08/2002 Effective Date: 08/07/2002 Revocation Date: 11/12/2006

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m	1

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

Features are displayed on the Current industrial land use map on **page 26**

ID	Location	Name	Status	Receiving Water	Authorised Substances
7	448m W	Wm Morrison Produce Ltd	Not Active	Na	pH

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m	3

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on **page 26**

ID	Location	Details	
B	79m S	Incident Date: 12/07/2003 Incident Identification: 173079 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

ID	Location	Details	
3	81m SW	Incident Date: 30/10/2002 Incident Identification: 117789 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Other General Biodegradable Material or Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
6	351m NW	Incident Date: 11/10/2001 Incident Identification: 35800 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m	0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m	0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

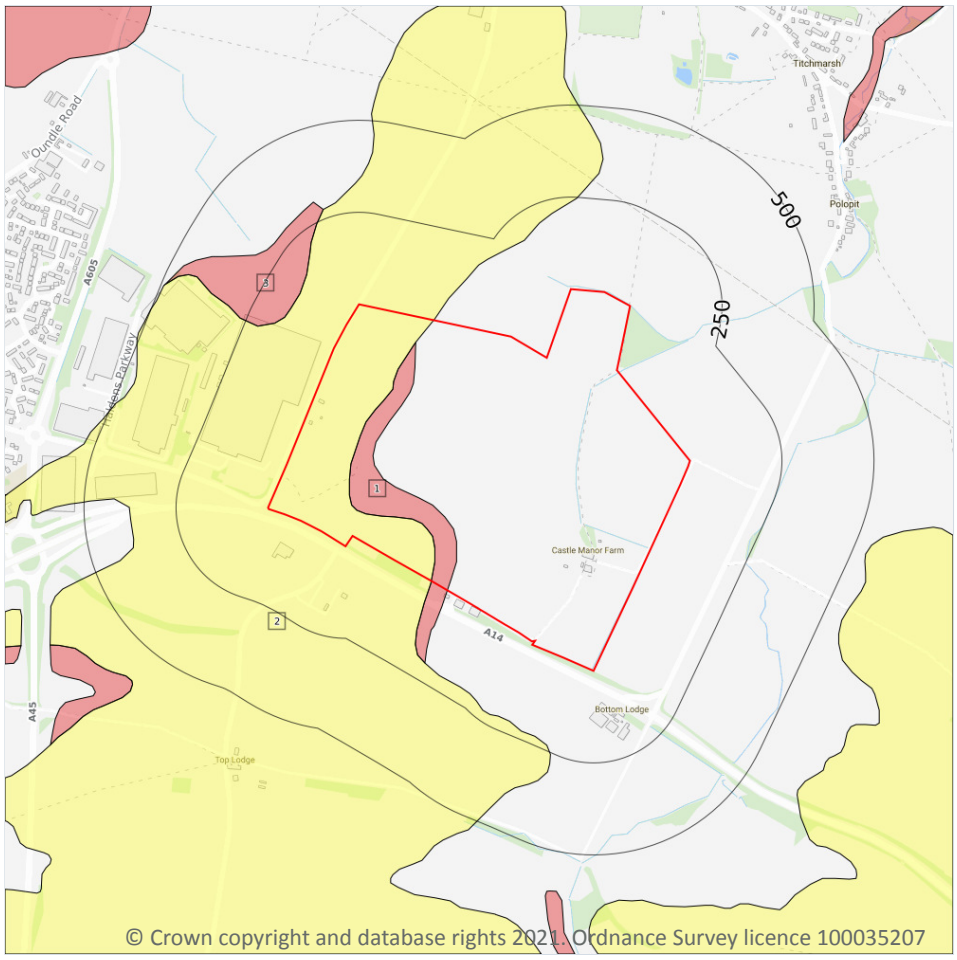
4.21 Pollution inventory radioactive waste

Records within 500m	0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive
- Unknown

5.1 Superficial aquifer

Records within 500m	3

Aquifer status of groundwater held within superficial geology.

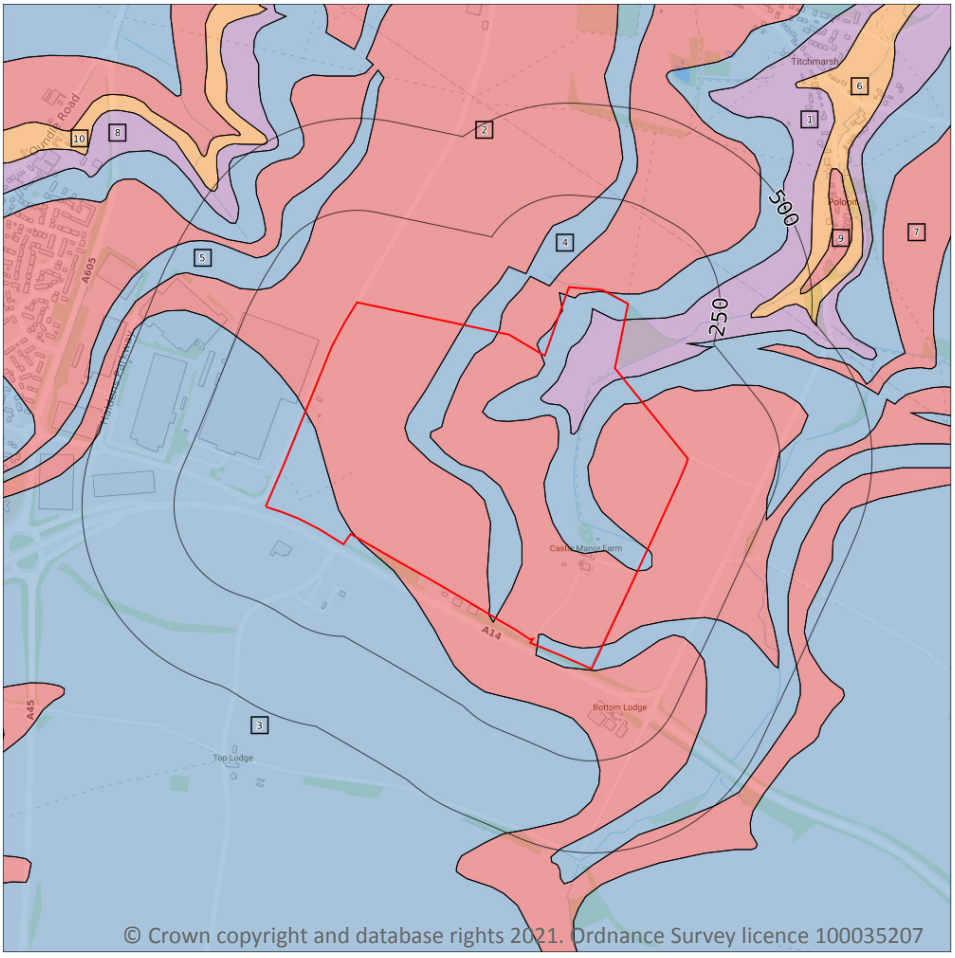
Features are displayed on the Hydrogeology map on **page 33**

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

ID	Location	Designation	Description
3	152m NW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Bedrock aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive

5.2 Bedrock aquifer

Records within 500m	10

Aquifer status of groundwater held within bedrock geology.

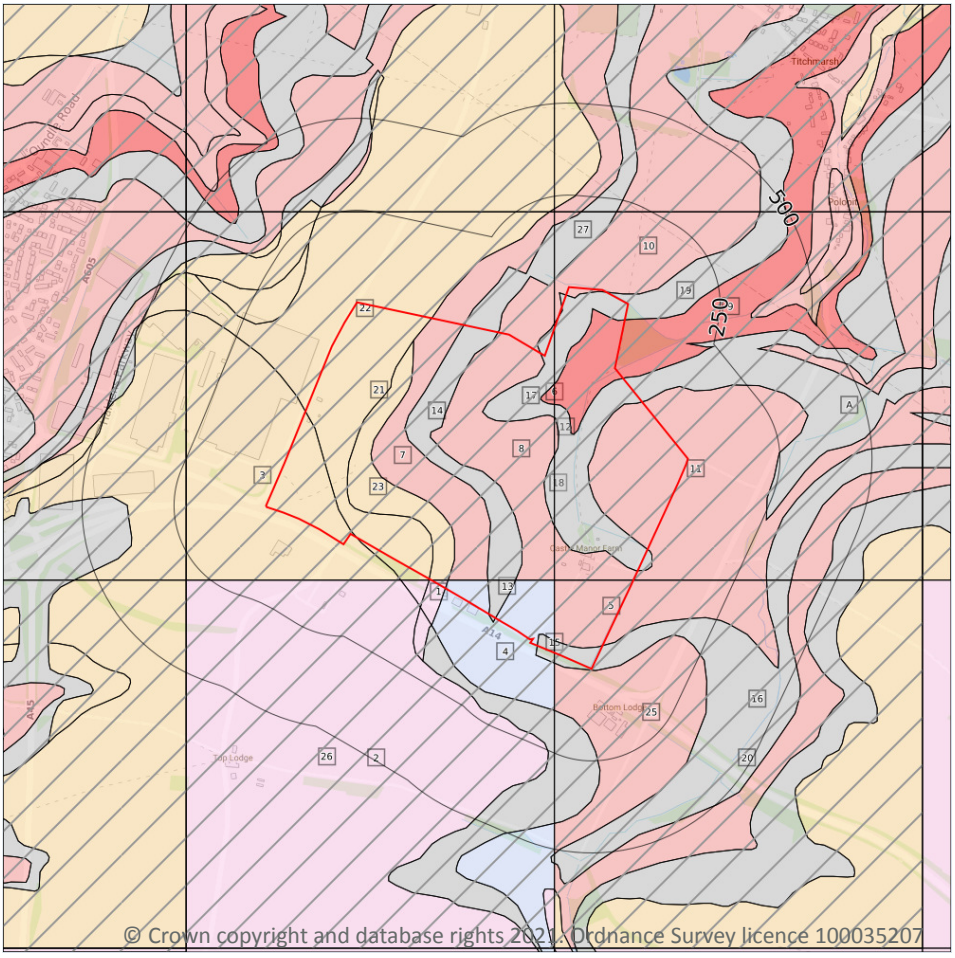
Features are displayed on the Bedrock aquifer map on **page 35**

ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

ID	Location	Designation	Description
3	**On site**	**Unproductive**	**These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow**
4	**On site**	**Unproductive**	**These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow**
5	192m NW	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
6	336m E	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers
7	337m NE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
8	394m NW	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
9	470m E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
10	491m NW	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability

- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	25

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 37**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Unproductive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Well connected fractures
4	On site	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
5	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
6	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
7	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
8	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
9	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
10	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
11	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
12	On site	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures
13	On site	Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Well connected fractures

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
14	On site	Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Well connected fractures
15	On site	Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Well connected fractures
16	On site	Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Well connected fractures
17	On site	Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Well connected fractures
18	On site	Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: Low	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Well connected fractures

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
19	**On site**	**Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, No Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: <300mm/year**	**Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Well connected fractures**
22	**On site**	**Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: High Infiltration value: 40-70% Dilution value: <300mm/year**	**Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: Low**	**Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures**
23	**On site**	**Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: High Infiltration value: 40-70% Dilution value: <300mm/year**	**Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: Low**	**Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures**
A	**On site**	**Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, No Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: <300mm/year**	**Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Well connected fractures**
24	3m SW	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
25	3m S	Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
26	40m SW	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Unproductive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40-70% Dilution value: <300mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Well connected fractures
27	42m NW	Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	**4**

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
2	**Significant soluble rocks are likely to be present. Problems unlikely except with considerable surface or subsurface water flow.**	**2.0%**
20	**Significant soluble rocks are likely to be present. Problems unlikely except with considerable surface or subsurface water flow.**	**9.0%**
21	**Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.**	**0.0%**
A	**Significant soluble rocks are likely to be present. Problems unlikely except with considerable surface or subsurface water flow.**	**54.0%**

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site	0

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones

Site Outline

Search buffers in metres (m)

- Source Protection Zone 1 — Inner catchment
- Source Protection Zone 2 — Outer catchment
- Source Protection Zone 3 — Total catchment
- Source Protection Zone 4 — Zone of Special Interest
- Source Protection Zone 1c — Inner catchment - confined aquifer
- Source Protection Zone 2c — Outer catchment - confined aquifer
- Source Protection Zone 3c — Total catchment - confined aquifer
- Drinking water abstraction licences
- Drinking water abstraction licences — Polygon features
- Drinking water abstraction licences — Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m	1

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 44**

ID	Location	Details	
-	1261m NE	Status: Historical Licence No: 5/32/09/*G/0166 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: WELL "B"AT TITCHMARSH Data Type: Point Name: R WOOD & CO Easting: 502900 Northing: 279800	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/01/1972 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m	**0**

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m	**0**

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m	**0**

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

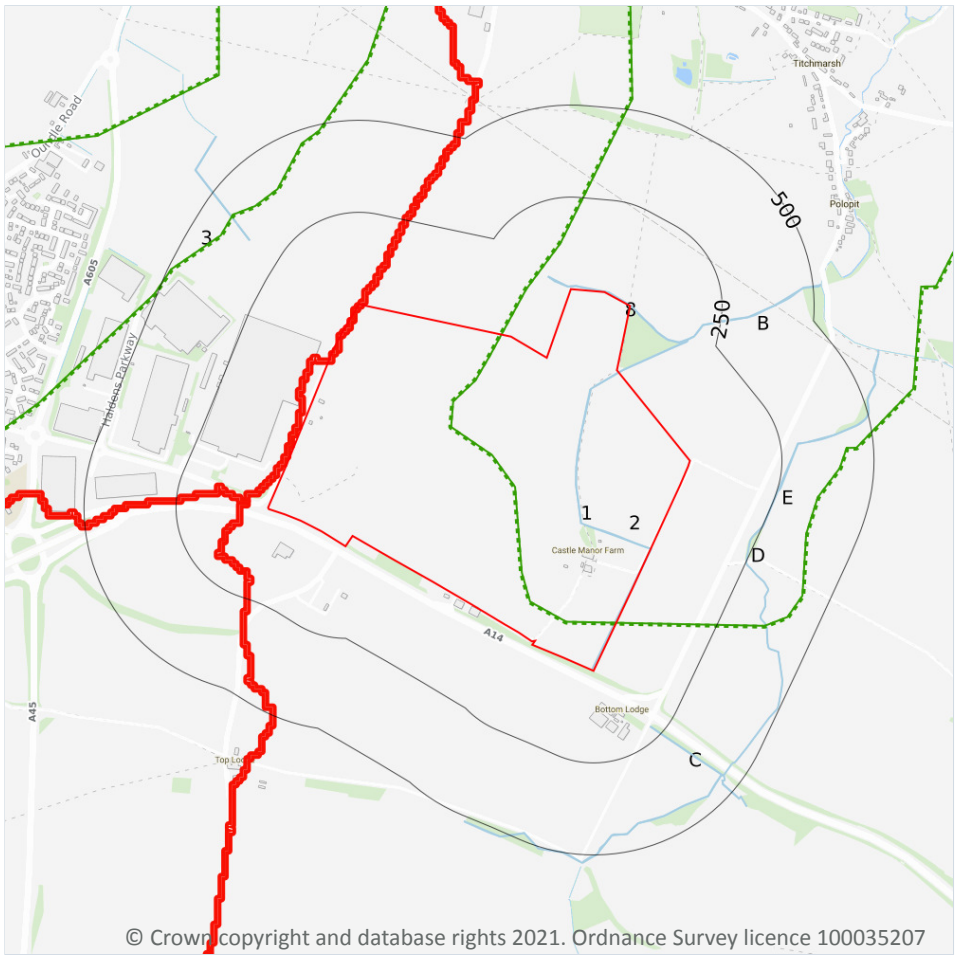
5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.

6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	**7**

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on **page 47**

ID	Location	Type of water feature	Ground level	Permanence	Name
1	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**

ID	Location	Type of water feature	Ground level	Permanence	Name
8	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
B	171m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	215m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	236m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	239m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	250m SE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	**8**

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on **page 47**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	**2**

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 47**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
2	**On site**	**River WB catchment**	**Thorpe Waterville Brook**	**GB105032045190**	**Middle Nene**	**Nene**
3	**On site**	**River WB catchment**	**Nene - Islip to tidal**	**GB105032050381**	**Middle Nene**	**Nene**

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified	**2**

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on **page 47**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1462m NW	River	Nene - Islip to tidal	GB105032050381	Moderate	Good	Moderate	2016
-	2061m N	River	Thorpe Waterville Brook	GB105032045190	Poor	Good	Poor	2016

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site	**1**

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on **page 47**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**Northampton Sands**	**GB40501G445500**	**Good**	**Good**	**Good**	**2015**

This data is sourced from the Environment Agency and Natural Resources Wales.

7 River and coastal flooding

7.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m	0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m	0

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m	0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m	0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

This data is sourced from the Environment Agency and Natural Resources Wales.

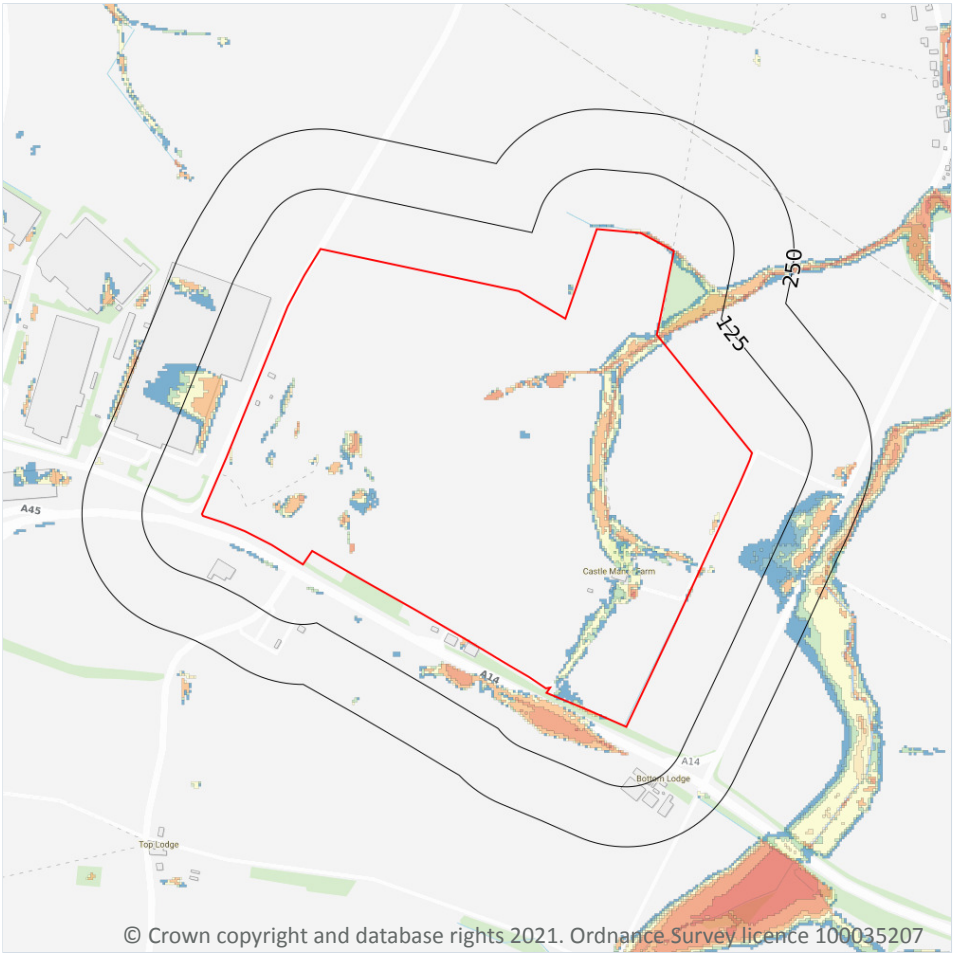
7.7 Flood Zone 3

Records within 50m	0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

8 Surface water flooding



Site Outline

Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site	**1 in 30 year, Greater than 1.0m**
Highest risk within 50m	**1 in 30 year, Greater than 1.0m**

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 54**

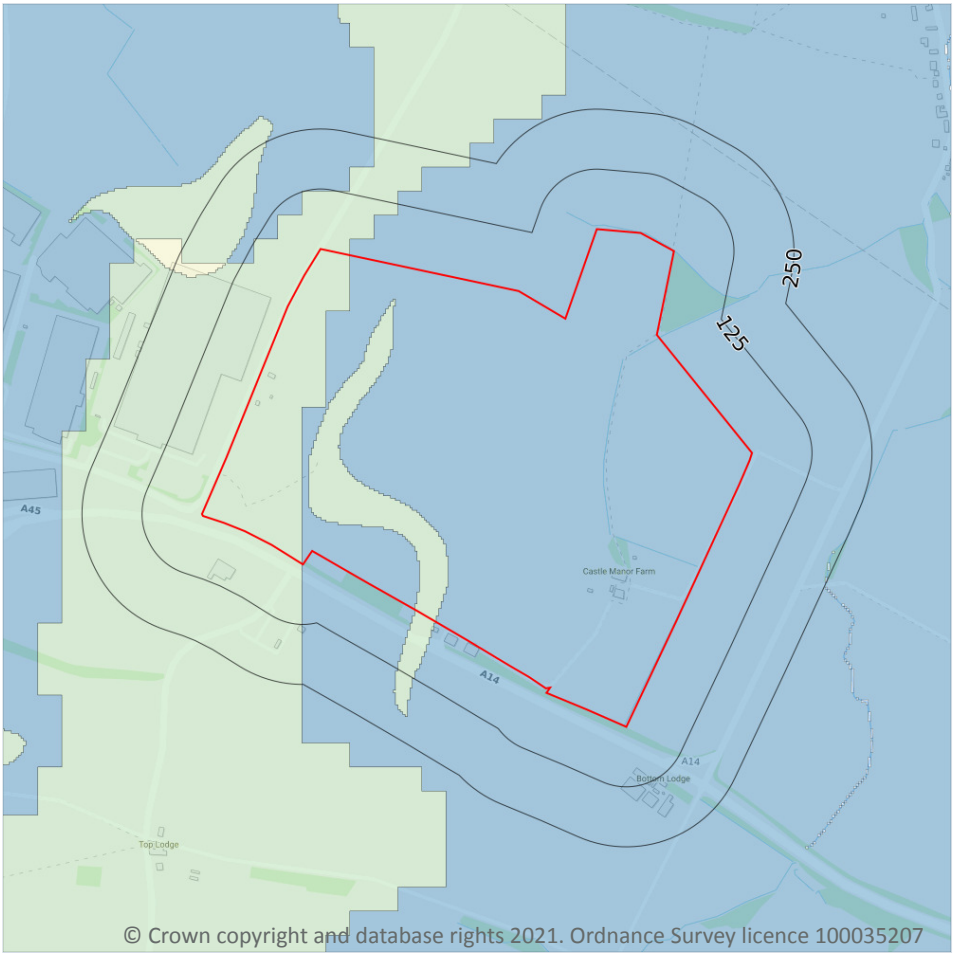
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on

a site. The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Greater than 1.0m
1 in 30 year	Greater than 1.0m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

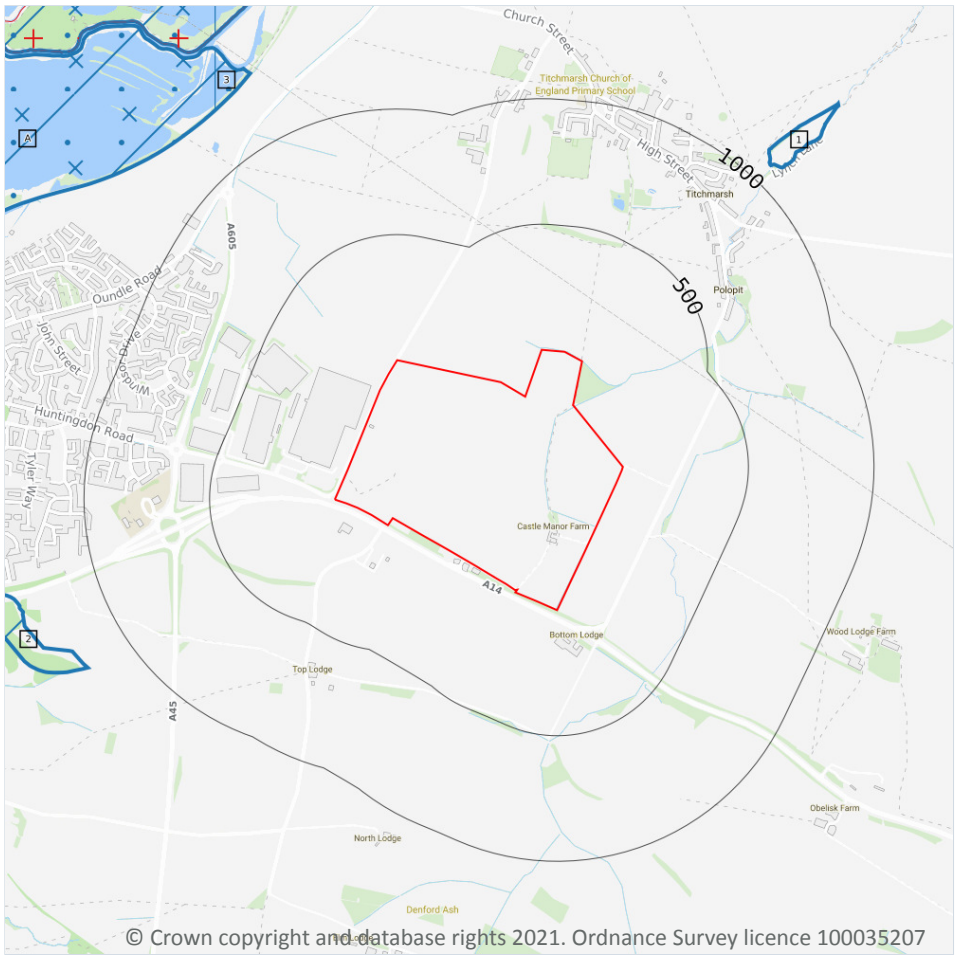
Highest risk on site	**Low**
Highest risk within 50m	**Low**

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 56**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

Sites of Special Scientific Interest (SSSI)

Conserved wetland sites (Ramsar sites)

Special Protection Areas (SPA)

Local Nature Reserves (LNR)

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	4

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

Features are displayed on the Environmental designations map on **page 57**

ID	Location	Name	Data source
1	1083m NE	Titchmarsh Meadow	Natural England

ID	Location	Name	Data source
2	1192m SW	Thrapston Station Quarry	Natural England
A	1227m NW	Upper Nene Valley Gravel Pits	Natural England
B	1470m NW	Upper Nene Valley Gravel Pits	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	**2**

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

Features are displayed on the Environmental designations map on **page 57**

ID	Location	Site	Details
A	1227m NW	Name: Upper Nene Valley Gravel Pits Site status: Listed Data source: Natural England	Overview: This chain of both active and disused sand and gravel pits form an extensive series of shallow and deep open waters which occur in association with a wide range of marginal features, such as sparsely-vegetated islands, gravel bars and shorelines and habitats including reedswamp, marsh, wet ditches, rush pasture, rough grassland and scattered scrub. This range of habitats and the varied topography of the lagoons provide valuable resting and feeding conditions for concentrations of wintering waterbirds, especially ducks and waders. Species such as golden plover Pluvialis apricaria and lapwing Vanellus vanellus also spend time feeding and roosting on surrounding agricultural land outside the Ramsar site. Ramsar criteria: -

ID	Location	Site	Details
B	1470m NW	Name: Upper Nene Valley Gravel Pits Site status: Listed Data source: Natural England	Overview: This chain of both active and disused sand and gravel pits form an extensive series of shallow and deep open waters which occur in association with a wide range of marginal features, such as sparsely-vegetated islands, gravel bars and shorelines and habitats including reedswamp, marsh, wet ditches, rush pasture, rough grassland and scattered scrub. This range of habitats and the varied topography of the lagoons provide valuable resting and feeding conditions for concentrations of wintering waterbirds, especially ducks and waders. Species such as golden plover Pluvialis apricaria and lapwing Vanellus vanellus also spend time feeding and roosting on surrounding agricultural land outside the Ramsar site. Ramsar criteria: -

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m	**0**

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m	**4**

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

Features are displayed on the Environmental designations map on **page 57**

ID	Location	Name	Species of interest	Habitat description	Data source
A	1227m NW	Upper Nene Valley Gravel Pits	Great crested grebe; Great cormorant; Great bittern; Eurasian wigeon; Gadwall; Mallard; Northern shoveler; Common pochard; Tufted duck; Common coot; European golden plover; Northern lapwing	Inland water bodies (Standing water, Running water); Bogs, Marshes, Water fringed vegetation, Fens; Broad-leaved deciduous woodland; Improved grassland	Natural England

ID	Location	Name	Species of interest	Habitat description	Data source
3	1231m NW	Upper Nene Valley Gravel Pits	Great crested grebe; Great cormorant; Great bittern; Eurasian wigeon; Gadwall; Mallard; Northern shoveler; Common pochard; Tufted duck; Common coot; European golden plover; Northern lapwing	Inland water bodies (Standing water, Running water); Bogs, Marshes, Water fringed vegetation, Fens; Broad-leaved deciduous woodland; Improved grassland	Natural England
4	1470m NW	Upper Nene Valley Gravel Pits	Great crested grebe; Great cormorant; Great bittern; Eurasian wigeon; Gadwall; Mallard; Northern shoveler; Common pochard; Tufted duck; Common coot; European golden plover; Northern lapwing	Inland water bodies (Standing water, Running water); Bogs, Marshes, Water fringed vegetation, Fens; Broad-leaved deciduous woodland; Improved grassland	Natural England
6	1486m NW	Upper Nene Valley Gravel Pits	Great crested grebe; Great cormorant; Great bittern; Eurasian wigeon; Gadwall; Mallard; Northern shoveler; Common pochard; Tufted duck; Common coot; European golden plover; Northern lapwing	Inland water bodies (Standing water, Running water); Bogs, Marshes, Water fringed vegetation, Fens; Broad-leaved deciduous woodland; Improved grassland	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m	**0**

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m	**1**

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

Features are displayed on the Environmental designations map on **page 57**

ID	Location	Name	Data source
5	1470m NW	Titchmarsh	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m	0

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m	0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m	0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m	0

Areas designated to prevent urban sprawl by keeping land permanently open.

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m	0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

Special Protection Areas (SPAs) are areas designated (or ‘classified’) under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas.

The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

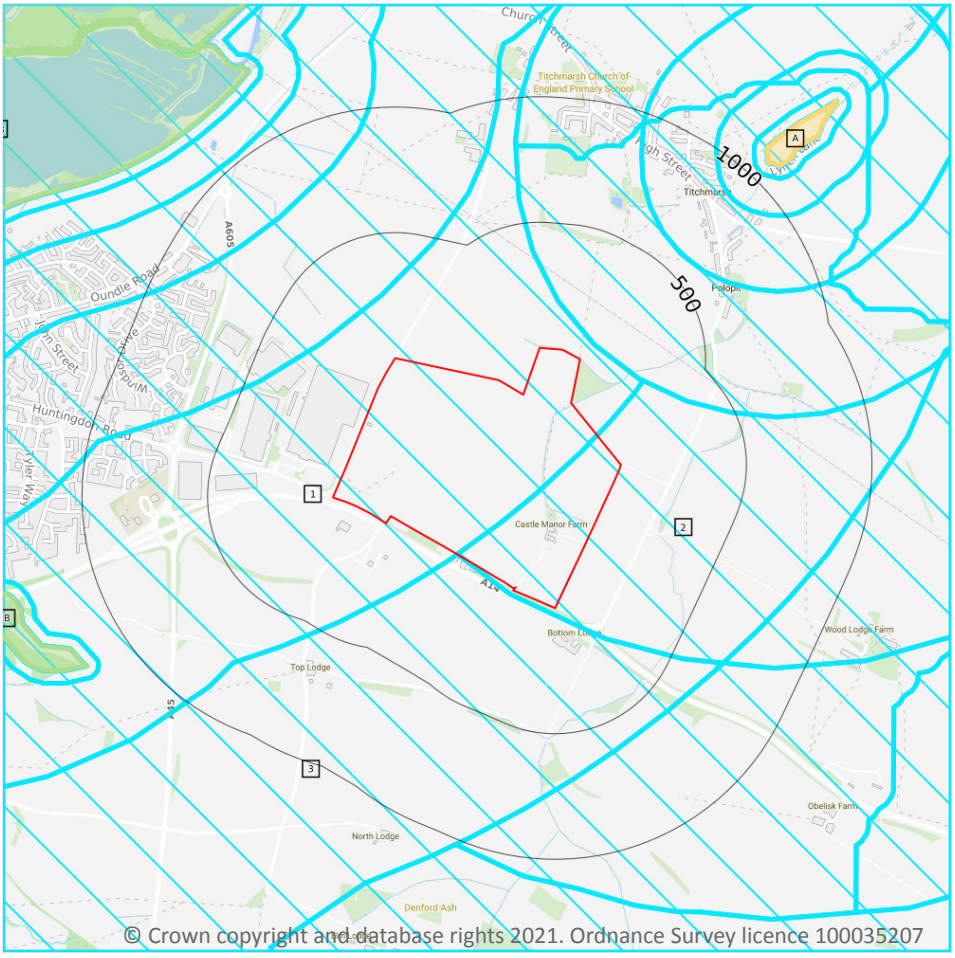
Records within 2000m	**7**

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	**River Nene NVZ**	**Surface Water**	**S382**	**Existing**
On site	**Thrapstone lake Eutrophic lake NVZ**	**Eutrophic Water**	**EL148**	**New**
49m W	Northampton Sands	Groundwater	G165	New
1653m SE	Great Ouse NVZ	Surface Water	S391	Existing
1729m NE	River Nene NVZ	Surface Water	S382	Existing
1776m SW	River Nene NVZ	Surface Water	S382	Existing
1958m S	Great Ouse NVZ	Surface Water	S391	Existing

This data is sourced from Natural England and Natural Resources Wales.

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site	3

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on **page 64**

ID	Location	Type of developments requiring consultation
1	On site	**Infrastructure - Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where net additional gross internal floorspace is > 1,000m² or footprint exceeds 0.2ha Residential - Any residential developments with a total net gain in residential units Rural residential - Any residential developments outside of existing settlements/urban areas with a total net gain in residential units Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons > 200m² & manure stores > 250t). Combustion - General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 75000 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management Discharges - Any discharge of water or liquid waste of more than 5m³/day to ground (ie to seep away) or to surface water, such as a beck or stream (NB This does not include discharges to mains sewer which are unlikely to pose a risk at this location). Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.**
2	On site	**Infrastructure - Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where footprint exceeds 1ha. Residential - Any residential developments with a total net gain in residential units Rural residential - Any residential developments outside of existing settlements/urban areas with a total net gain in residential units Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons > 200m² & manure stores > 250t). Combustion - General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 75000 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management Discharges - Any discharge of water or liquid waste of more than 5m³/day to ground (ie to seep away) or to surface water, such as a beck or stream (NB This does not include discharges to mains sewer which are unlikely to pose a risk at this location). Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.**

ID	Location	Type of developments requiring consultation
3	**On site**	**Infrastructure - Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals** **Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines** **Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction.** **Rural non-residential - Large non residential developments outside existing settlements/urban areas where footprint exceeds 1ha.** **Residential - Any residential developments with a total net gain in residential units** **Rural residential - Any residential developments outside of existing settlements/urban areas with a total net gain in residential units** **Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons > 750m² & manure stores > 3500t)** **Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion** **Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill.** **Discharges - Any discharge of water or liquid waste of more than 5m³/day to ground (ie to seep away) or to surface water, such as a beck or stream (NB This does not include discharges to mains sewer which are unlikely to pose a risk at this location).**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	**4**

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

Features are displayed on the SSSI Impact Zones and Units map on **page 64**

ID: A
Location: 1083m NE
SSSI name: Titchmarsh Meadow
Unit name: Whole Site
Broad habitat: Neutral Grassland - Lowland
Condition: Unfavourable - No change
Reportable features:

Feature name	Feature condition	Date of assessment
Basin fen (lowland)	Unfavourable - No change	27/02/2009

ID: B
Location: 1192m SW
SSSI name: Thrapston Station Quarry
Unit name: Whole Site
Broad habitat: Earth Heritage
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
ED - Bathonian	Favourable	04/01/2017

ID: 18
Location: 1227m NW
SSSI name: Upper Nene Valley Gravel Pits
Unit name: Thrapston Gravel Pits
Broad habitat: Standing Open Water And Canals
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	30/11/2009
Aggregations of breeding birds - Grey heron, Ardea cinerea	Favourable	30/11/2009
Aggregations of non-breeding birds - Bittern, Botaurus stellaris	Favourable	30/11/2009
Aggregations of non-breeding birds - Coot, Fulica atra	Favourable	30/11/2009
Aggregations of non-breeding birds - Cormorant, Phalacrocorax carbo carbo	Favourable	30/11/2009
Aggregations of non-breeding birds - Gadwall, Anas strepera	Favourable	30/11/2009
Aggregations of non-breeding birds - Golden plover, Pluvialis apricaria	Favourable	30/11/2009
Aggregations of non-breeding birds - Great crested grebe, Podiceps cristatus	Favourable	30/11/2009
Aggregations of non-breeding birds - Mute swan, Cygnus olor	Favourable	30/11/2009
Aggregations of non-breeding birds - Pochard, Aythya ferina	Favourable	30/11/2009
Aggregations of non-breeding birds - Shoveler, Anas clypeata	Favourable	30/11/2009
Aggregations of non-breeding birds - Tufted duck, Aythya fuligula	Favourable	30/11/2009
Aggregations of non-breeding birds - Wigeon, Anas penelope	Favourable	30/11/2009
Assemblages of breeding birds - Lowland open waters and their margins	Favourable	30/11/2009

ID: 24
Location: 1470m NW
SSSI name: Upper Nene Valley Gravel Pits
Unit name: Thrapston Gravel Pits
Broad habitat: Standing Open Water And Canals
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
>20,000 Non-breeding waterbirds	Favourable	30/11/2009
Aggregations of breeding birds - Grey heron, Ardea cinerea	Favourable	30/11/2009
Aggregations of non-breeding birds - Bittern, Botaurus stellaris	Favourable	30/11/2009
Aggregations of non-breeding birds - Coot, Fulica atra	Favourable	30/11/2009
Aggregations of non-breeding birds - Cormorant, Phalacrocorax carbo carbo	Favourable	30/11/2009
Aggregations of non-breeding birds - Gadwall, Anas strepera	Favourable	30/11/2009
Aggregations of non-breeding birds - Golden plover, Pluvialis apricaria	Favourable	30/11/2009
Aggregations of non-breeding birds - Great crested grebe, Podiceps cristatus	Favourable	30/11/2009
Aggregations of non-breeding birds - Mute swan, Cygnus olor	Favourable	30/11/2009
Aggregations of non-breeding birds - Pochard, Aythya ferina	Favourable	30/11/2009
Aggregations of non-breeding birds - Shoveler, Anas clypeata	Favourable	30/11/2009
Aggregations of non-breeding birds - Tufted duck, Aythya fuligula	Favourable	30/11/2009
Aggregations of non-breeding birds - Wigeon, Anas penelope	Favourable	30/11/2009
Assemblages of breeding birds - Lowland open waters and their margins	Favourable	30/11/2009

This data is sourced from Natural England and Natural Resources Wales.

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m	0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m	0

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m	0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m	0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

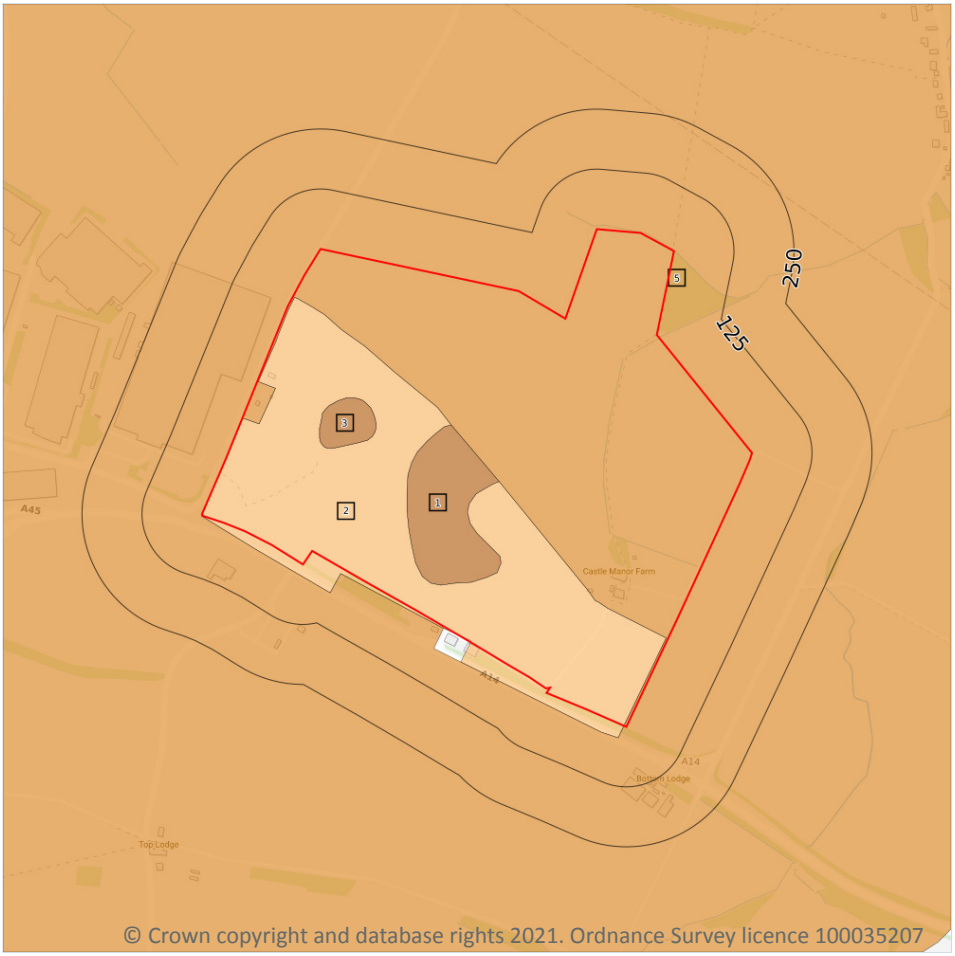
11.7 Registered Parks and Gardens

Records within 250m	0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	4

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 71**

ID	Location	Classification	Description
1	On site	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
2	On site	Grade 3a	Good quality agricultural land. Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.
3	On site	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.
5	On site	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m	0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	3

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

Location	Reference	Scheme	Start Date	End date
On site	**AG00521271**	**Entry Level Stewardship**	**01/11/2013**	**31/10/2018**
45m S	AG00521271	Entry Level Stewardship	01/11/2013	31/10/2018
47m W	AG00521271	Entry Level Stewardship	01/11/2013	31/10/2018

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	4

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

Location	Reference	Scheme	Start Date	End Date
45m S	645118	Countryside Stewardship (Middle Tier)	01/01/2019	31/12/2023
49m W	645118	Countryside Stewardship (Middle Tier)	01/01/2019	31/12/2023
88m SE	646090	Countryside Stewardship (Middle Tier)	01/01/2019	31/12/2020
215m SE	645118	Countryside Stewardship (Middle Tier)	01/01/2019	31/12/2023

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

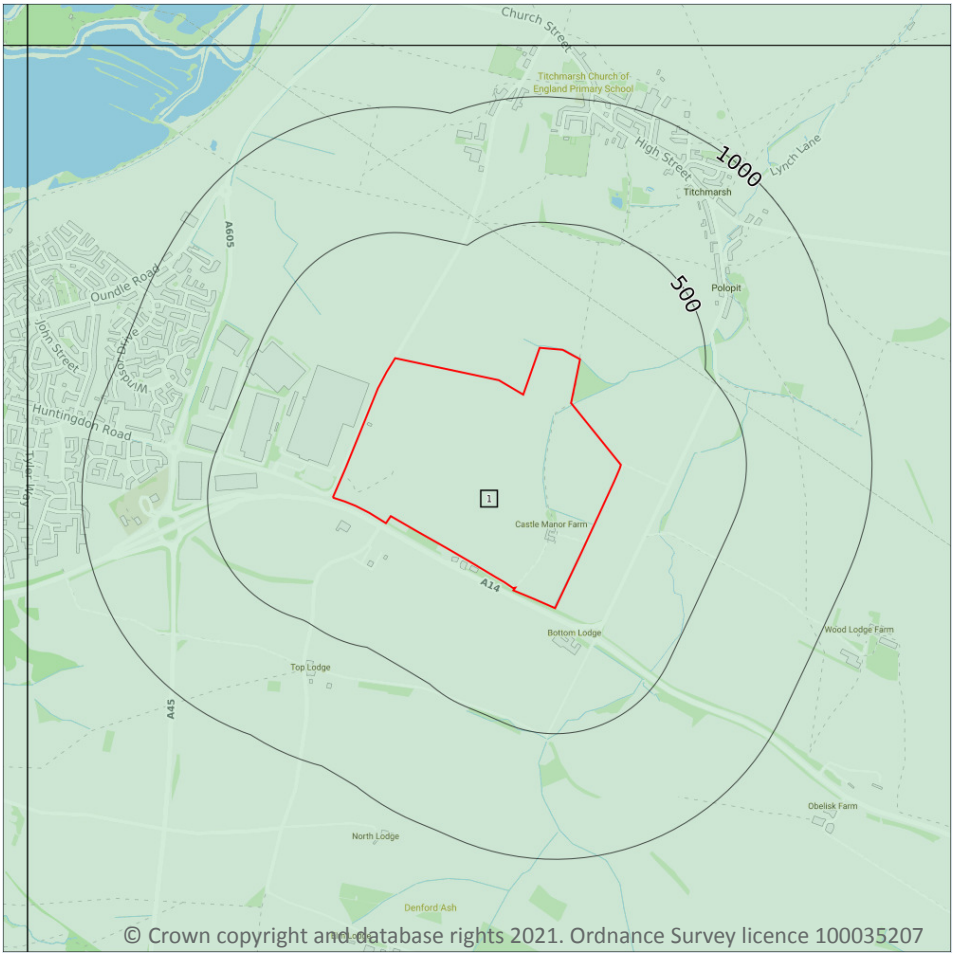
13.4 Limestone Pavement Orders

Records within 250m	0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	1

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 75**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**TL07NW**

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Artificial and made ground

Site Outline

Search buffers in metres (m)

- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m	6

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

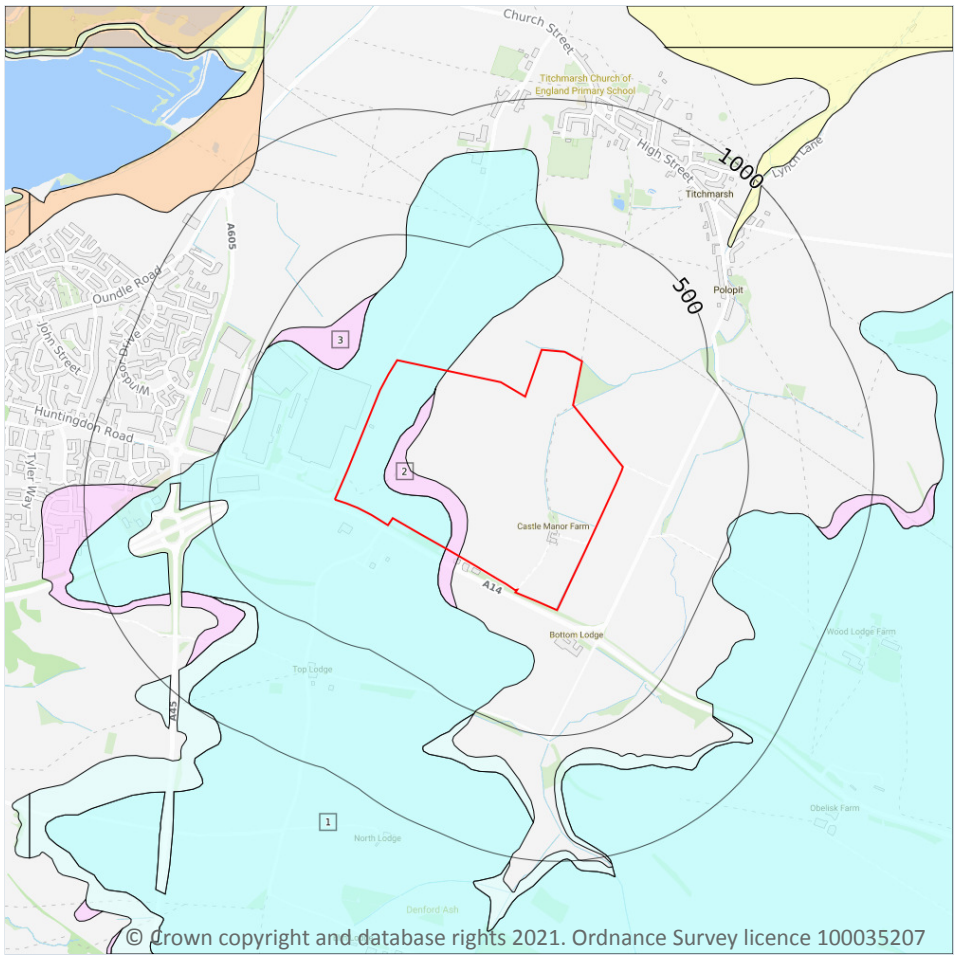
Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 76**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**WMGR-ARTDP**	**Infilled Ground**	**Artificial Deposit**
2	**On site**	**WMGR-ARTDP**	**Infilled Ground**	**Artificial Deposit**
3	7m SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	308m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

ID	Location	LEX Code	Description	Rock description
5	327m W	WGR-VOID	Worked Ground (Undivided)	Void
A	480m E	WMGR-ARTDP	Infilled Ground	Artificial Deposit

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m	3

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 78**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**ODT-DMTN**	**Oadby Member - Diamicton**	**Diamicton**
2	**On site**	**GFDU-XSV**	**Glaciofluvial Deposits - Sand And Gravel**	**Sand And Gravel**
3	153m NW	GFDU-XSV	Glaciofluvial Deposits - Sand And Gravel	Sand And Gravel

This data is sourced from the British Geological Survey.

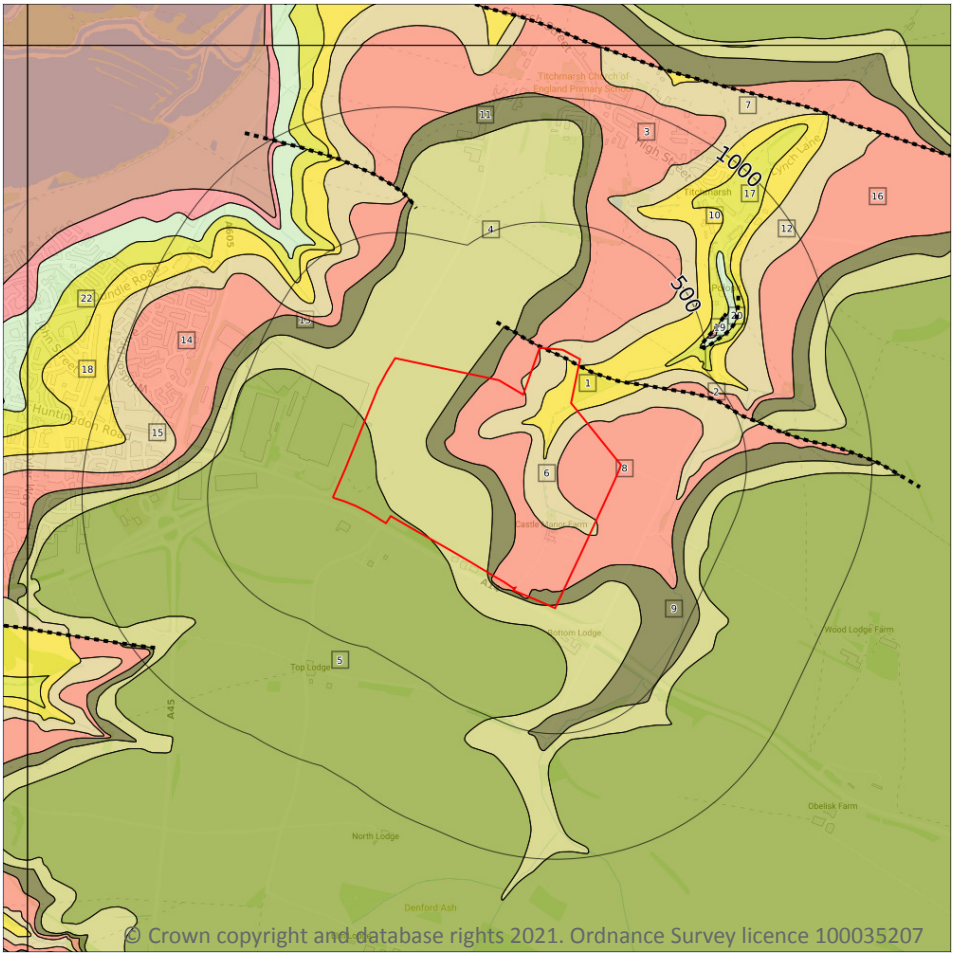
14.4 Landslip (10k)

Records within 500m	0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m **19**

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 80**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**BWL-LMST**	**Blisworth Limestone Formation - Limestone**	**Bathonian Age**
3	**On site**	**CB-LMST**	**Cornbrash Formation - Limestone**	**Callovian Age - Bathonian Age**
4	**On site**	**KLS-SDSL**	**Kellaways Sand Member - Sandstone And Siltstone, Interbedded**	**Callovian Age**

ID	Location	LEX Code	Description	Rock age
5	**On site**	**OXC-MDST**	**Oxford Clay Formation - Mudstone**	**Oxfordian Age - Callovian Age**
6	**On site**	**BWC-MDST**	**Blisworth Clay Formation - Mudstone**	**Bathonian Age**
7	**On site**	**BWC-MDST**	**Blisworth Clay Formation - Mudstone**	**Bathonian Age**
8	**On site**	**CB-LMST**	**Cornbrash Formation - Limestone**	**Callovian Age - Bathonian Age**
9	**On site**	**KLC-MDST**	**Kellaways Clay Member - Mudstone**	**Callovian Age**
10	1m E	BWL-LMST	Blisworth Limestone Formation - Limestone	Bathonian Age
11	50m NW	KLC-MDST	Kellaways Clay Member - Mudstone	Callovian Age
12	196m E	BWC-MDST	Blisworth Clay Formation - Mudstone	Bathonian Age
13	196m NW	KLC-MDST	Kellaways Clay Member - Mudstone	Callovian Age
14	265m NW	CB-LMST	Cornbrash Formation - Limestone	Callovian Age - Bathonian Age
15	313m NW	BWC-MDST	Blisworth Clay Formation - Mudstone	Bathonian Age
16	330m NE	CB-LMST	Cornbrash Formation - Limestone	Callovian Age - Bathonian Age
17	340m E	RLD-MDST	Rutland Formation - Mudstone	Bathonian Age - Bajocian Age
18	394m NW	BWL-LMST	Blisworth Limestone Formation - Limestone	Bathonian Age
20	482m E	STAM-SDSL	Stamford Member - Sandstone And Siltstone, Interbedded	Bathonian Age - Bajocian Age
22	490m NW	RLD-MDST	Rutland Formation - Mudstone	Bathonian Age - Bajocian Age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m **3**

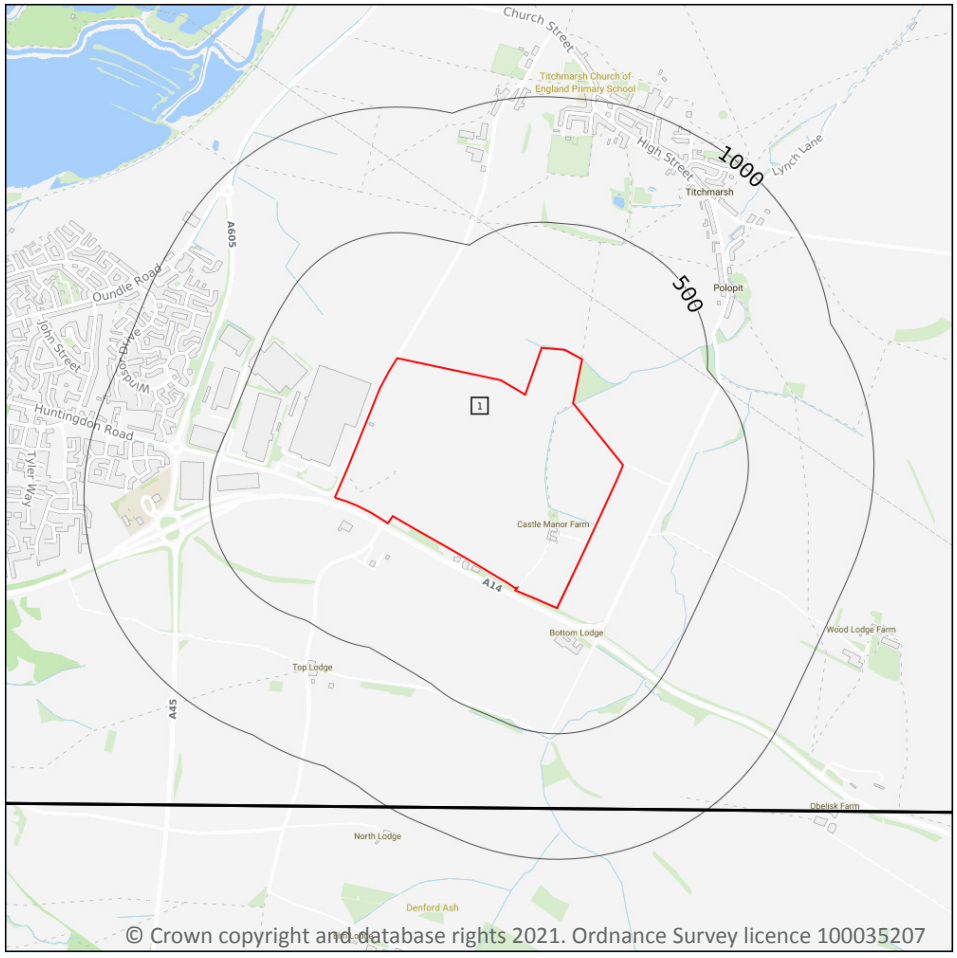
Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 80**

ID	Location	Category	Description
2	**On site**	**FAULT**	**Normal fault, inferred**
19	482m E	FAULT	Normal fault, inferred
21	489m E	FAULT	Normal fault, inferred

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 82**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW171_kettering_v4**

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Artificial and made ground

15.2 Artificial and made ground (50k)

Records within 500m	0

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

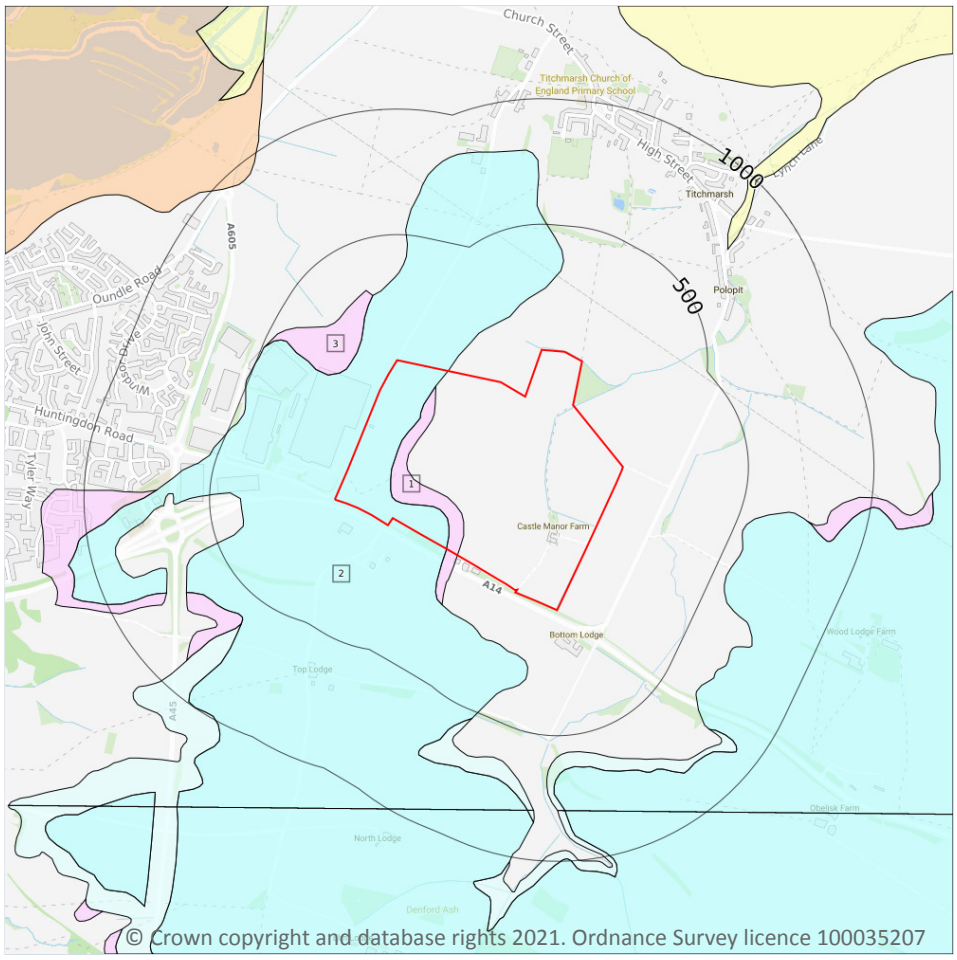
15.3 Artificial ground permeability (50k)

Records within 50m	0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m	3

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 84**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**GFDMP-XSV**	**GLACIOFLUVIAL DEPOSITS, MID PLEISTOCENE**	**SAND AND GRAVEL**
2	**On site**	**ODT-DMTN**	**OADBY MEMBER**	**DIAMICTON**
3	152m NW	GFDMP-XSV	GLACIOFLUVIAL DEPOSITS, MID PLEISTOCENE	SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	2

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Intergranular**	**Very High**	**High**
On site	**Mixed**	**Moderate**	**Low**

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

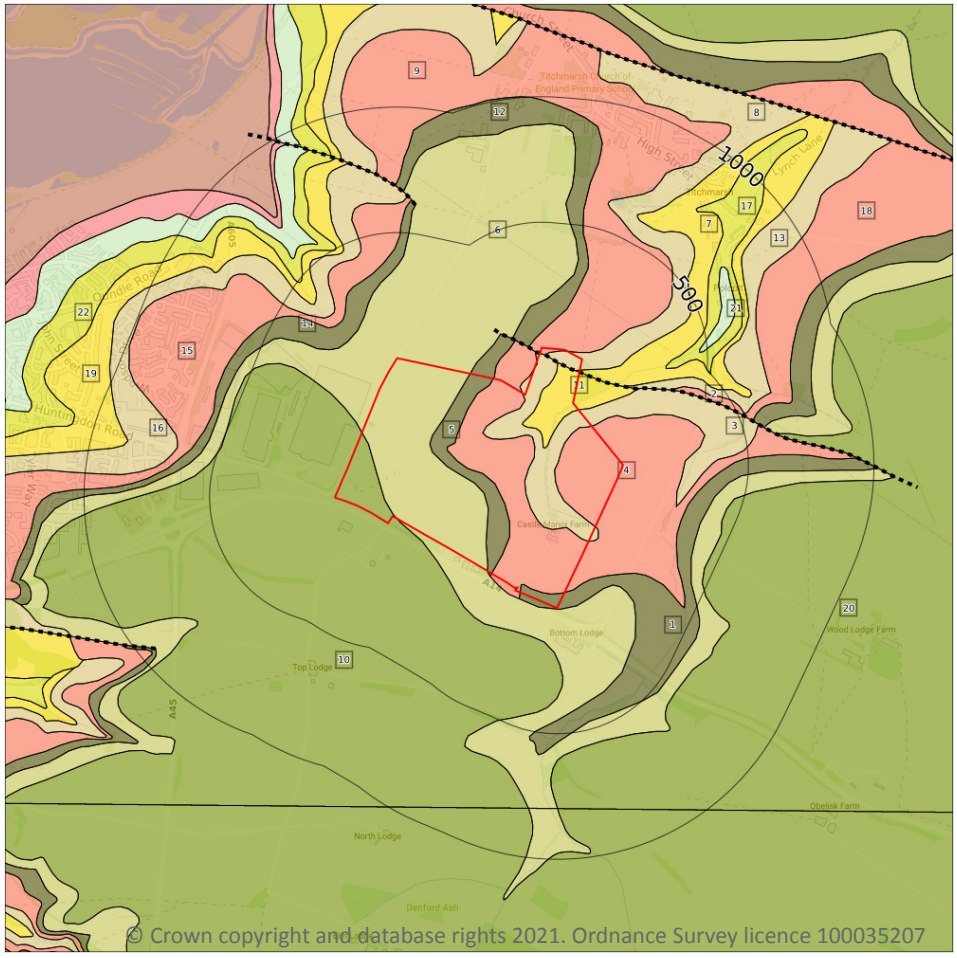
15.7 Landslip permeability (50k)

Records within 50m	0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m **21**

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 86**

ID	Location	LEX Code	Description	Rock age
1	On site	KLC-MDST	KELLAWAYS CLAY MEMBER - MUDSTONE	CALLOVIAN
3	On site	BWC-MDST	BLISWORTH CLAY FORMATION - MUDSTONE	BATHONIAN
4	On site	CB-LMST	CORNBRASH FORMATION - LIMESTONE	BATHONIAN
5	On site	KLC-MDST	KELLAWAYS CLAY MEMBER - MUDSTONE	CALLOVIAN

ID	Location	LEX Code	Description	Rock age
6	**On site**	**KLS-SDSL**	**KELLAWAYS SAND MEMBER - SANDSTONE AND SILTSTONE, INTERBEDDED**	**CALLOVIAN**
7	**On site**	**BWL-LMST**	**BLISWORTH LIMESTONE FORMATION - LIMESTONE**	**BATHONIAN**
8	**On site**	**BWC-MDST**	**BLISWORTH CLAY FORMATION - MUDSTONE**	**BATHONIAN**
9	**On site**	**CB-LMST**	**CORNBRASH FORMATION - LIMESTONE**	**BATHONIAN**
10	**On site**	**OXC-MDST**	**OXFORD CLAY FORMATION - MUDSTONE**	**CALLOVIAN**
11	**On site**	**BWL-LMST**	**BLISWORTH LIMESTONE FORMATION - LIMESTONE**	**BATHONIAN**
12	43m NW	KLC-MDST	KELLAWAYS CLAY MEMBER - MUDSTONE	CALLOVIAN
13	181m E	BWC-MDST	BLISWORTH CLAY FORMATION - MUDSTONE	BATHONIAN
14	192m NW	KLC-MDST	KELLAWAYS CLAY MEMBER - MUDSTONE	CALLOVIAN
15	265m NW	CB-LMST	CORNBRASH FORMATION - LIMESTONE	BATHONIAN
16	310m NW	BWC-MDST	BLISWORTH CLAY FORMATION - MUDSTONE	BATHONIAN
17	336m E	RLD-MDST	RUTLAND FORMATION - MUDSTONE	BAJOCIAN
18	337m NE	CB-LMST	CORNBRASH FORMATION - LIMESTONE	BATHONIAN
19	394m NW	BWL-LMST	BLISWORTH LIMESTONE FORMATION - LIMESTONE	BATHONIAN
20	448m E	OXC-MDST	OXFORD CLAY FORMATION - MUDSTONE	CALLOVIAN
21	470m E	STAM-SDSL	STAMFORD MEMBER - SANDSTONE AND SILTSTONE, INTERBEDDED	BAJOCIAN
22	491m NW	RLD-MDST	RUTLAND FORMATION - MUDSTONE	BAJOCIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m **7**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Mixed**	**Moderate**	**Moderate**
On site	**Fracture**	**Very High**	**High**
On site	**Fracture**	**Low**	**Very Low**

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**Low**	**Very Low**
On site	**Fracture**	**Low**	**Very Low**
On site	**Fracture**	**Very High**	**Very High**
On site	**Fracture**	**Low**	**Very Low**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	**1**

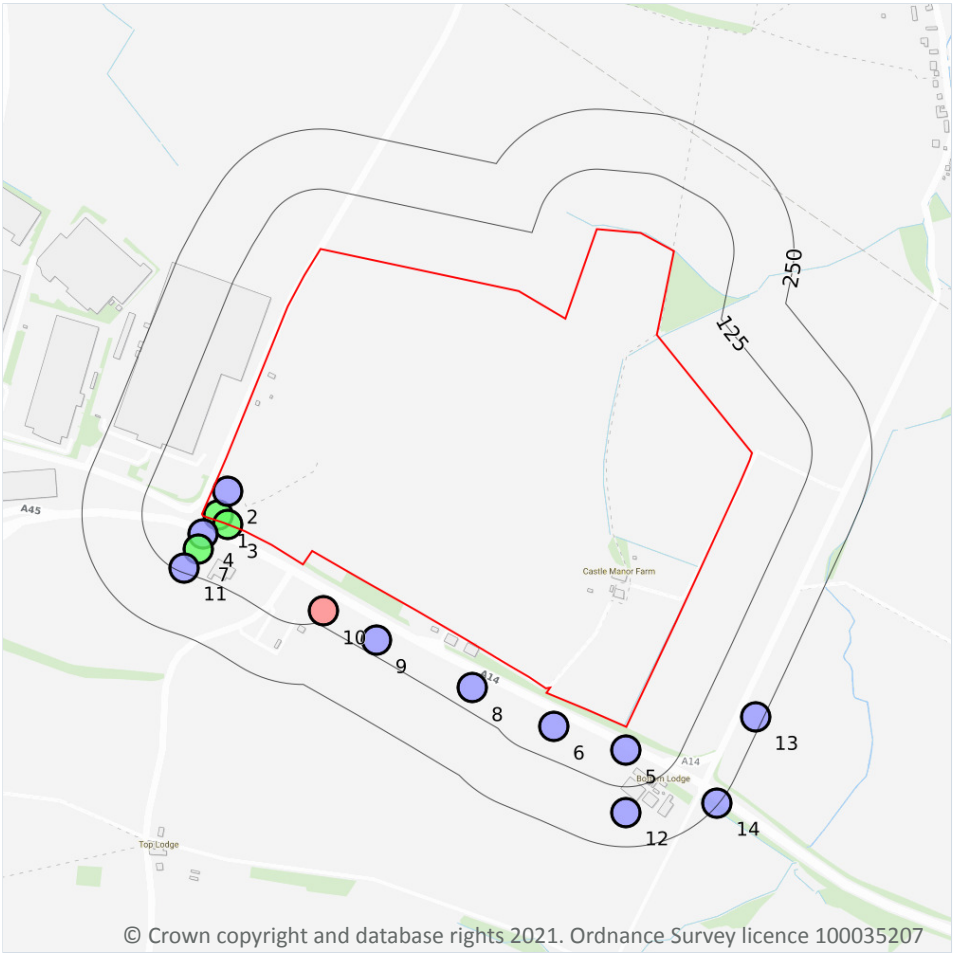
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 86**

ID	Location	Category	Description
2	**On site**	**FAULT**	**Fault, inferred**

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m	14

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

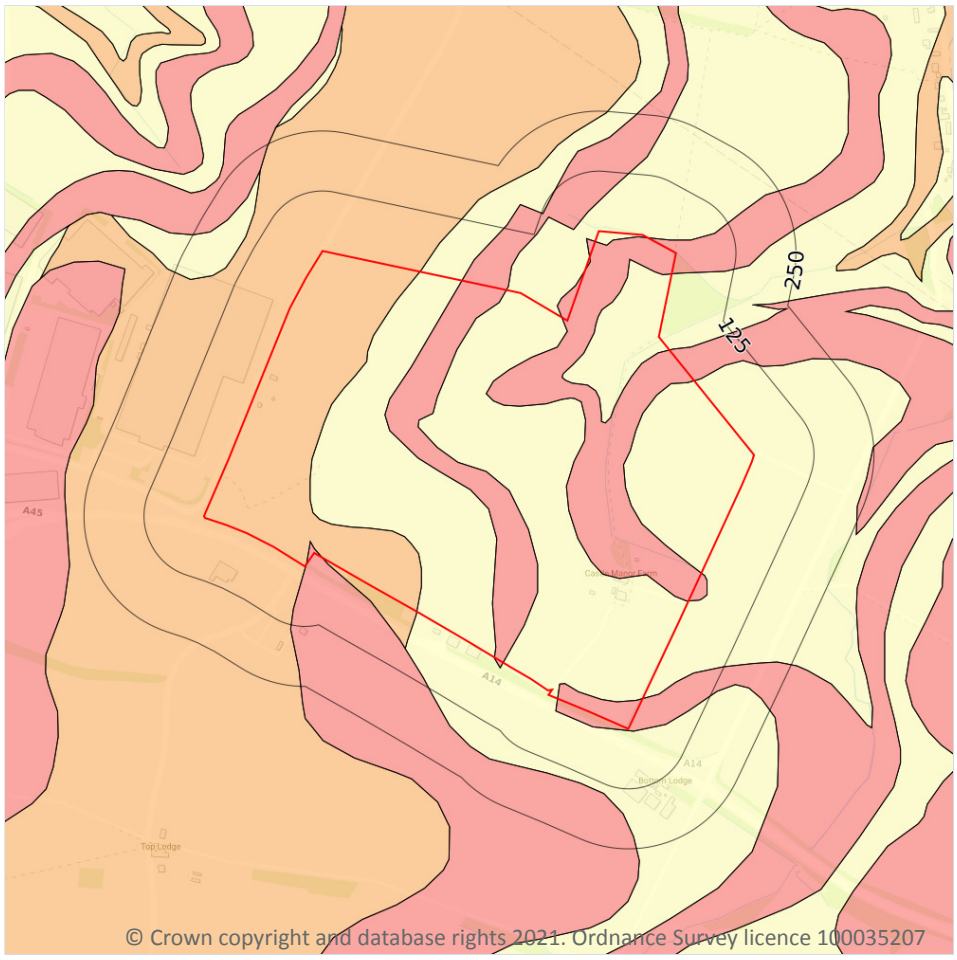
Features are displayed on the Boreholes map on **page 89**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	**On site**	**501250 278200**	**A14 THRAPSTON TO BRAMPTON GRADE SEPERATION 9853**	**13.2**	**N**	**525876**

ID	Location	Grid reference	Name	Length	Confidential	Web link
2	**On site**	**501270 278250**	**A14 THRAPSTON TO BRAMPTON GRADE SEPERATION TP9852**	**4.0**	**N**	**525875**
3	1m S	501270 278180	THRAPSTON	14.0	N	525842
4	36m S	501220 278160	A14 THRAPSTON TO BRAMPTON GRADE SEPERATION 9854	1.7	N	525877
5	49m S	502100 277710	A14 THRAPSTON TO BRAMPTON GRADE SEPERATION 9869	6.8	N	525880
6	58m S	501950 277760	A14 THRAPSTON TO BRAMPTON GRADE SEPERATION TP989	4.0	N	525858
7	68m S	501210 278130	A14 THRAPSTON TO BRAMPTON GRADE SEPERATION 9855	12.0	N	525878
8	80m SW	501780 277840	A14 THRAPSTON TO BRAMPTON GRADE SEPERATION TP9810	4.0	N	525859
9	94m SW	501580 277940	A14 THRAPSTON TO BRAMPTON GRADE SEPERATION TP9811	4.0	N	525860
10	97m SW	501470 278000	GAS COUNCIL GH14	241.74	N	525838
11	115m S	501180 278090	A14 THRAPSTON TO BRAMPTON GRADE SEPERATION TP9856	4.0	N	525879
12	179m S	502100 277580	A14 THRAPSTON TO BRAMPTON GRADE SEPERATION TP988	4.0	N	525857
13	234m SE	502370 277780	A14 THRAPSTON TO BRAMPTON GRADE SEPERATION TP981	4.0	N	525850
14	247m SE	502290 277600	M1 A1 KETTERING TO BRAMPTON TP1619	2.1	N	525908

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.1 Shrink swell clays

Records within 50m	3

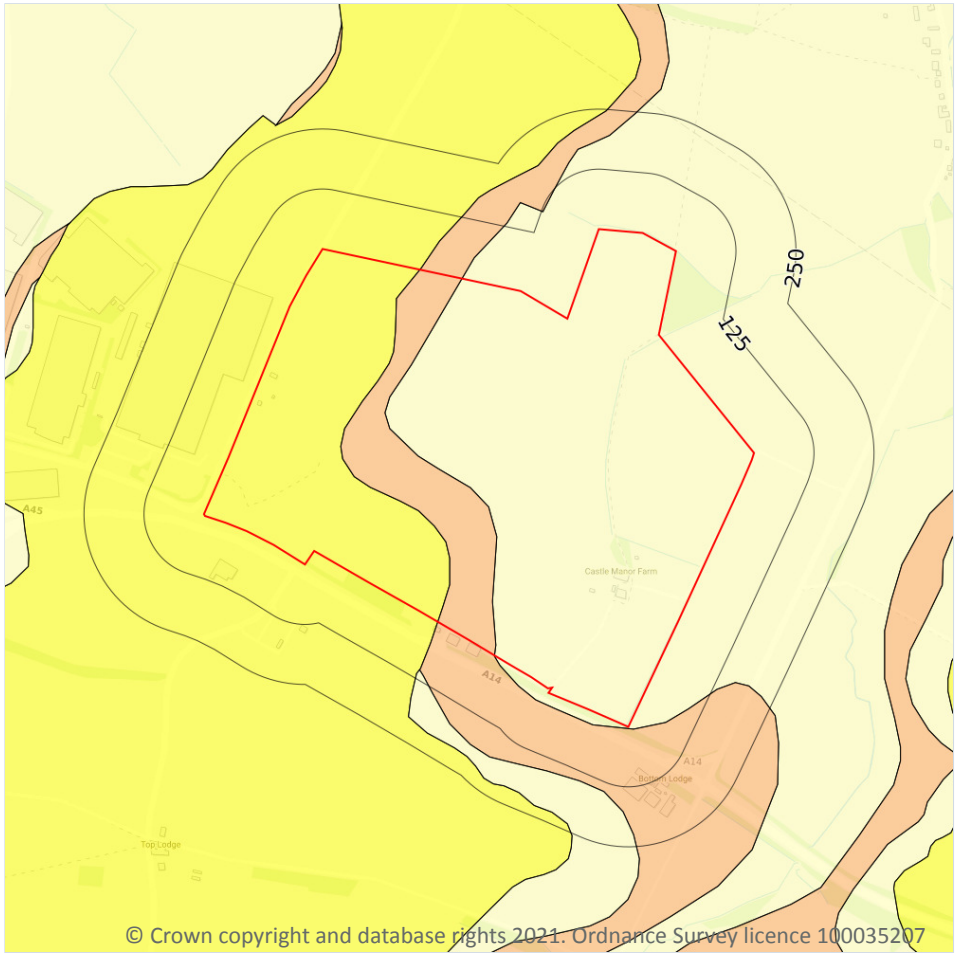
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 91**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**
On site	**Low**	**Ground conditions predominantly medium plasticity.**
On site	**Moderate**	**Ground conditions predominantly high plasticity.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.2 Running sands

Records within 50m	3

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 93**

Location	Hazard rating	Details
On site	**Negligible**	**Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.**

Location	Hazard rating	Details
On site	**Very low**	**Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.**
On site	**Low**	**Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits

Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.3 Compressible deposits

Records within 50m	1

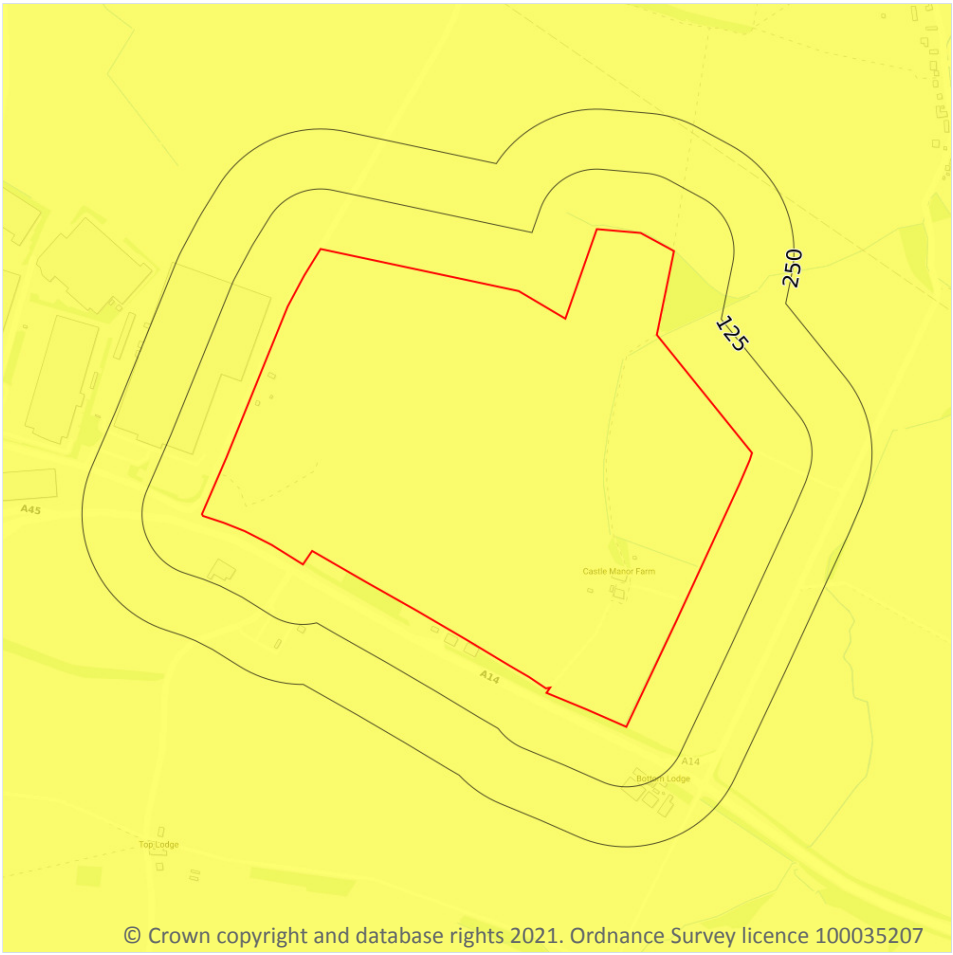
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 95**

Location	Hazard rating	Details
On site	**Negligible**	**Compressible strata are not thought to occur.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.4 Collapsible deposits

Records within 50m	1

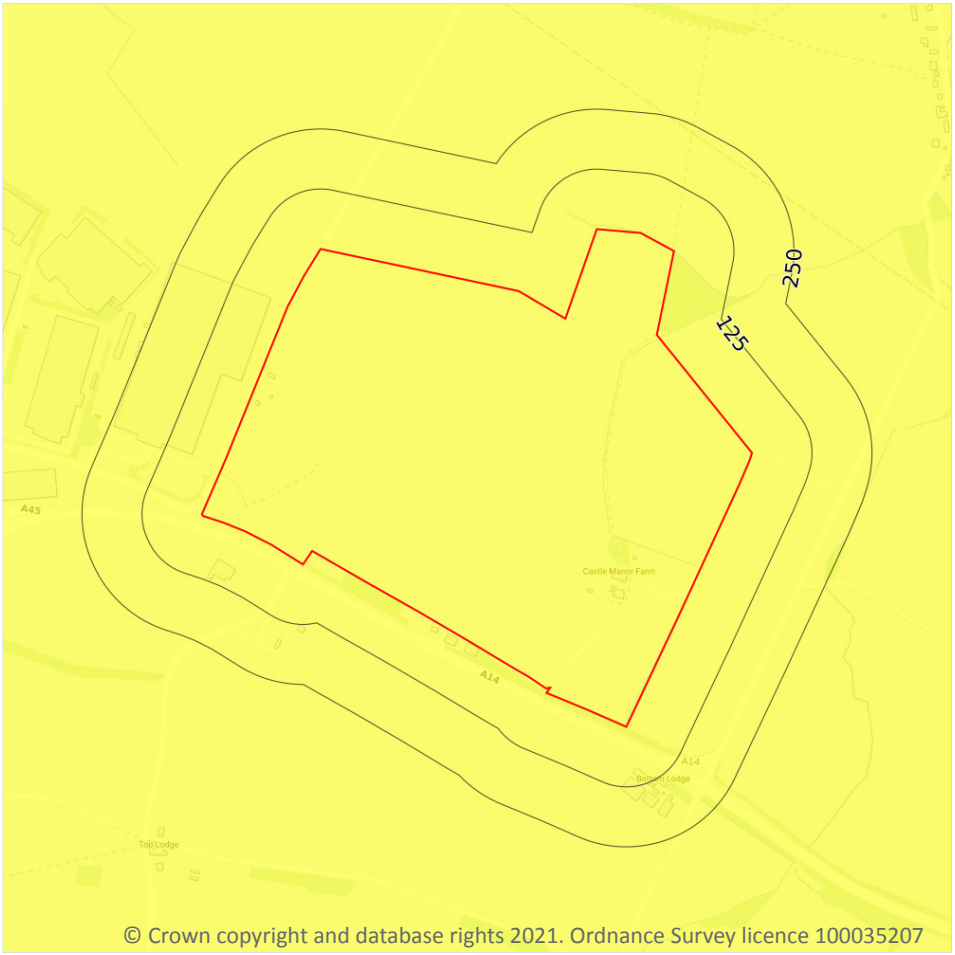
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 96**

Location	Hazard rating	Details
On site	**Very low**	**Deposits with potential to collapse when loaded and saturated are unlikely to be present.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.5 Landslides

Records within 50m	1

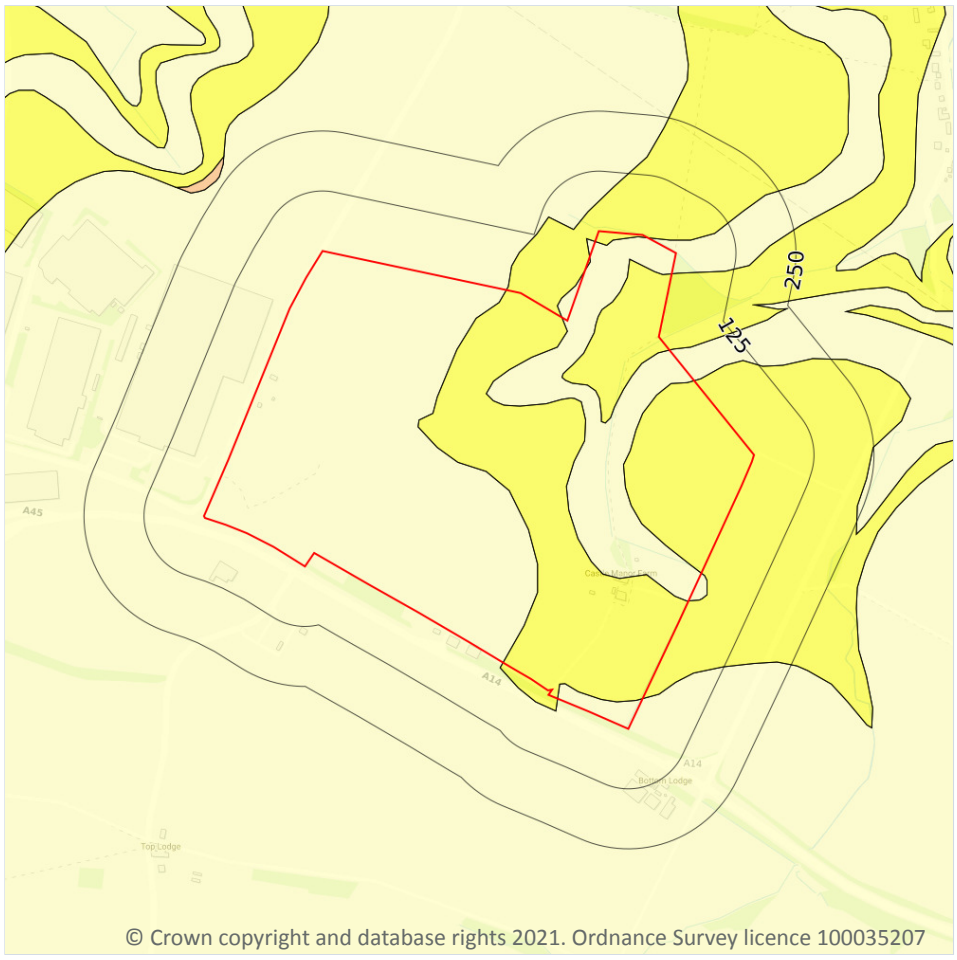
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 97**

Location	Hazard rating	Details
On site	**Very low**	**Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.6 Ground dissolution of soluble rocks

Records within 50m	2

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

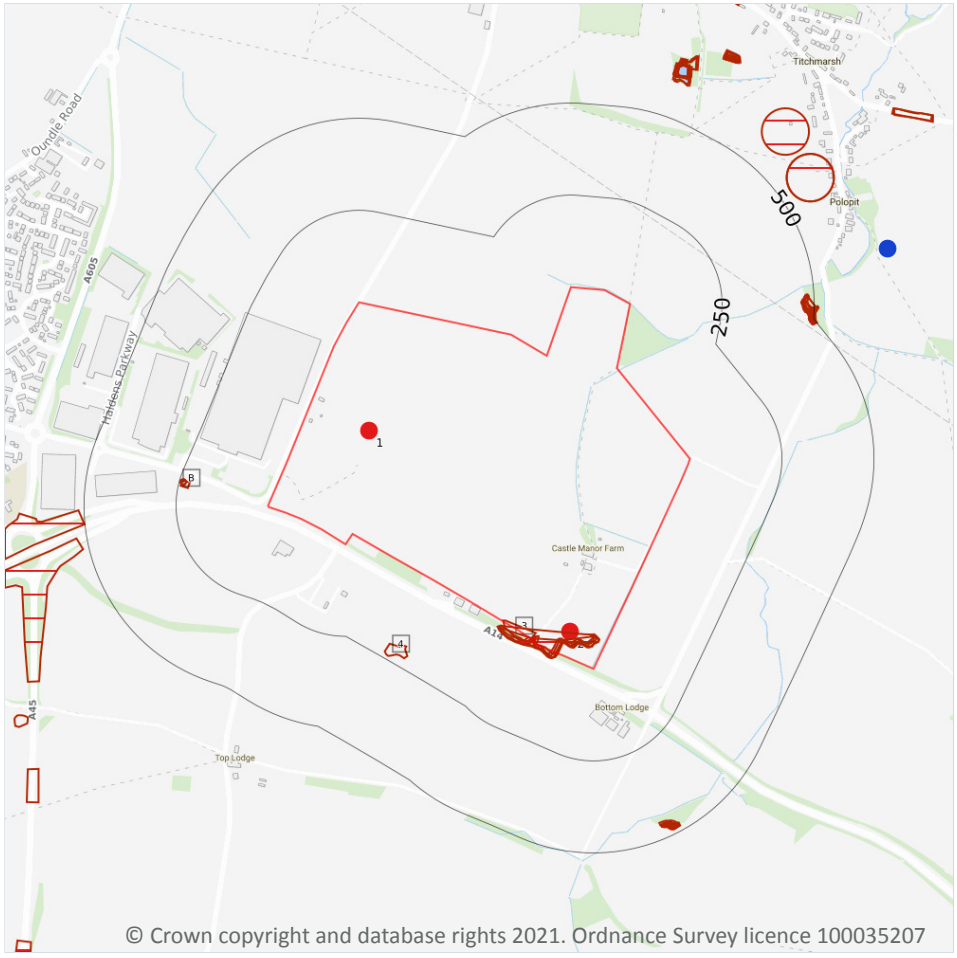
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 98**

Location	Hazard rating	Details
On site	**Negligible**	**Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.**

Location	Hazard rating	Details
On site	**Very low**	**Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered.**

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities

Non Coal Mining

- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m	0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	2

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

Features are displayed on the Mining, ground workings and natural cavities map on **page 100**

ID	Location	Details	Description
1	**On site**	**Name: Castle Manor Farm Sand and Gravel Pit Address: Thrapston, KETTERING, Northamptonshire Commodity: Sand & Gravel Status: Ceased**	**Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority**
2	**On site**	**Name: Rectory Farm Stone Pits Address: Thrapston, KETTERING, Northamptonshire Commodity: Limestone Status: Ceased**	**Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority**

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	9

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining, ground workings and natural cavities map on **page 100**

ID	Location	Land Use	Year of mapping	Mapping scale
3	**On site**	**Unspecified Pit**	**1982**	**1:10000**
A	**On site**	**Old Stone Pits**	**1951**	**1:10560**
A	**On site**	**Old Stone Pits**	**1950**	**1:10560**
A	**On site**	**Old Stone Pits**	**1901**	**1:10560**
A	**On site**	**Unspecified Ground Workings**	**1885**	**1:10560**
4	193m SW	Disused Sewage Works	1950	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
B	222m W	Reservoir	1950	1:10560
B	232m W	Covered Reservoir	1994	1:10000
B	232m W	Covered Reservoir	1982	1:10000

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	**0**

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	**0**

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	**0**

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	**0**

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.

18.13 Clay mining

Records on site	0

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Radon

Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

19.1 Radon

Records on site	1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 105**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Less than 1%**	**None****

This data is sourced from the British Geological Survey and Public Health England.

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	60

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km^2. In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km^2; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
3m SW	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
4m N	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
4m SE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
12m SW	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
26m S	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
35m N	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
35m N	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
37m E	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
38m W	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
41m S	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
43m N	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
44m N	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
44m N	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	**0**

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m	0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	0

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	0

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 ltd.

Data providers

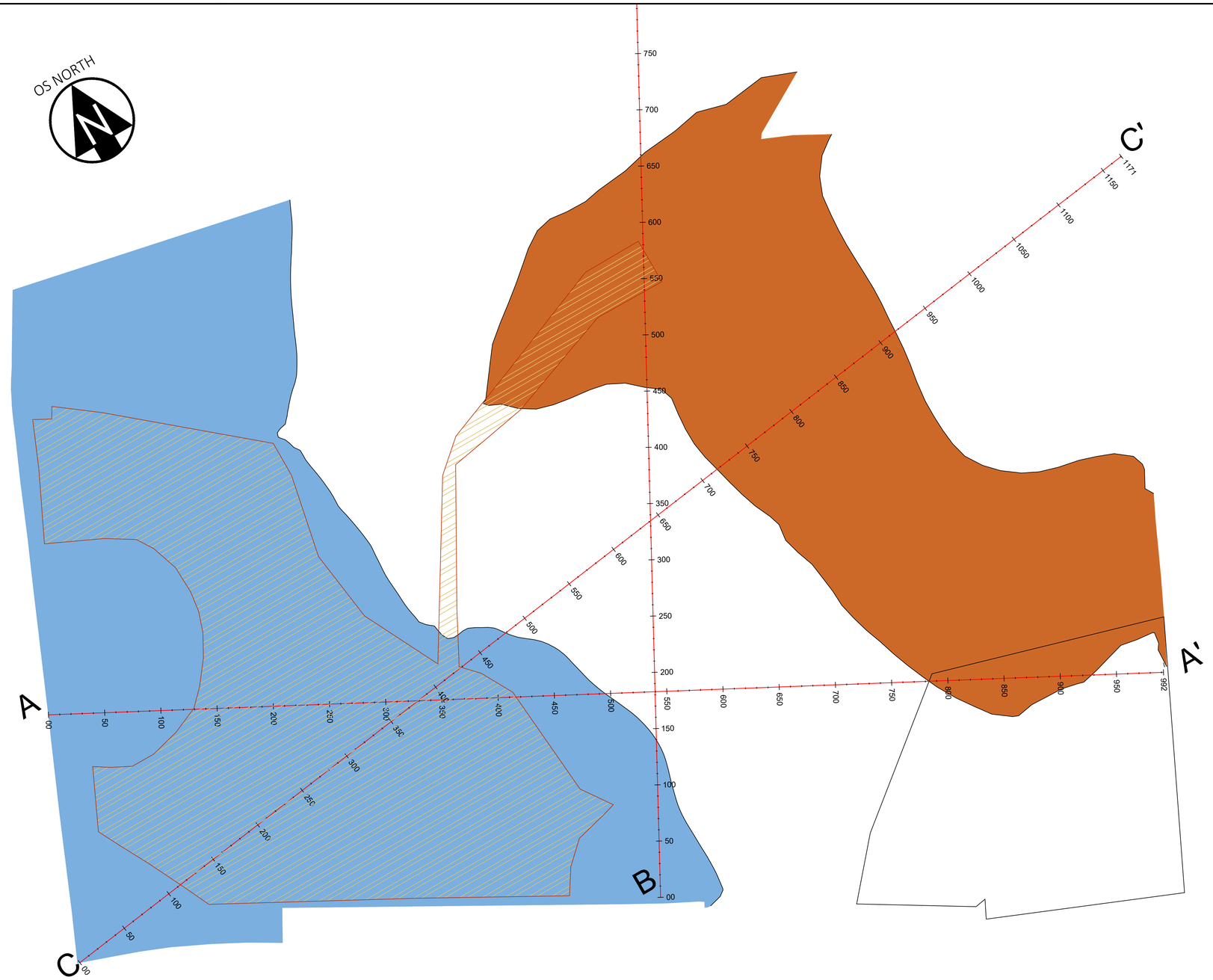
Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: https://www.groundsure.com/terms-and-conditions-jan-2020/.

Appendix F Geological Maps and Cross Sections

Superficial Geology Map



KEY

NOTES

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.

2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.

3. This drawing has been based on the following drawings and information: Stafsurv Drawing 'Huntignton Road, Thrapston. Topography Survey'. Ref: 11521a-0, dated 10/03/21

4.Surfaces have been created using Hydrock Site Investigation data (July 2021). Levels and depths are accurate at investigation locations. Between investigation locations, levels and depths have been extrapolated and are indicative only.

REV.	REVISION NOTES/COMMENTS	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
P02	Permit boundary amended	LH	09/08/22	EC	09/08/22	EC	09/08/22
P1	FIRST ISSUE	RT	06.10.21	NS/NT	06.10.21	AB	06.10.21

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CLIENT
NEWLANDS DEVELOPMENTS

PROJECT
HUNTINGDON ROAD, THRAPSTON

TITLE
SUPERFICIAL GEOLOGY

HYDROCK PROJECT NO.
C-18443

SCALE @ A1
1:2000

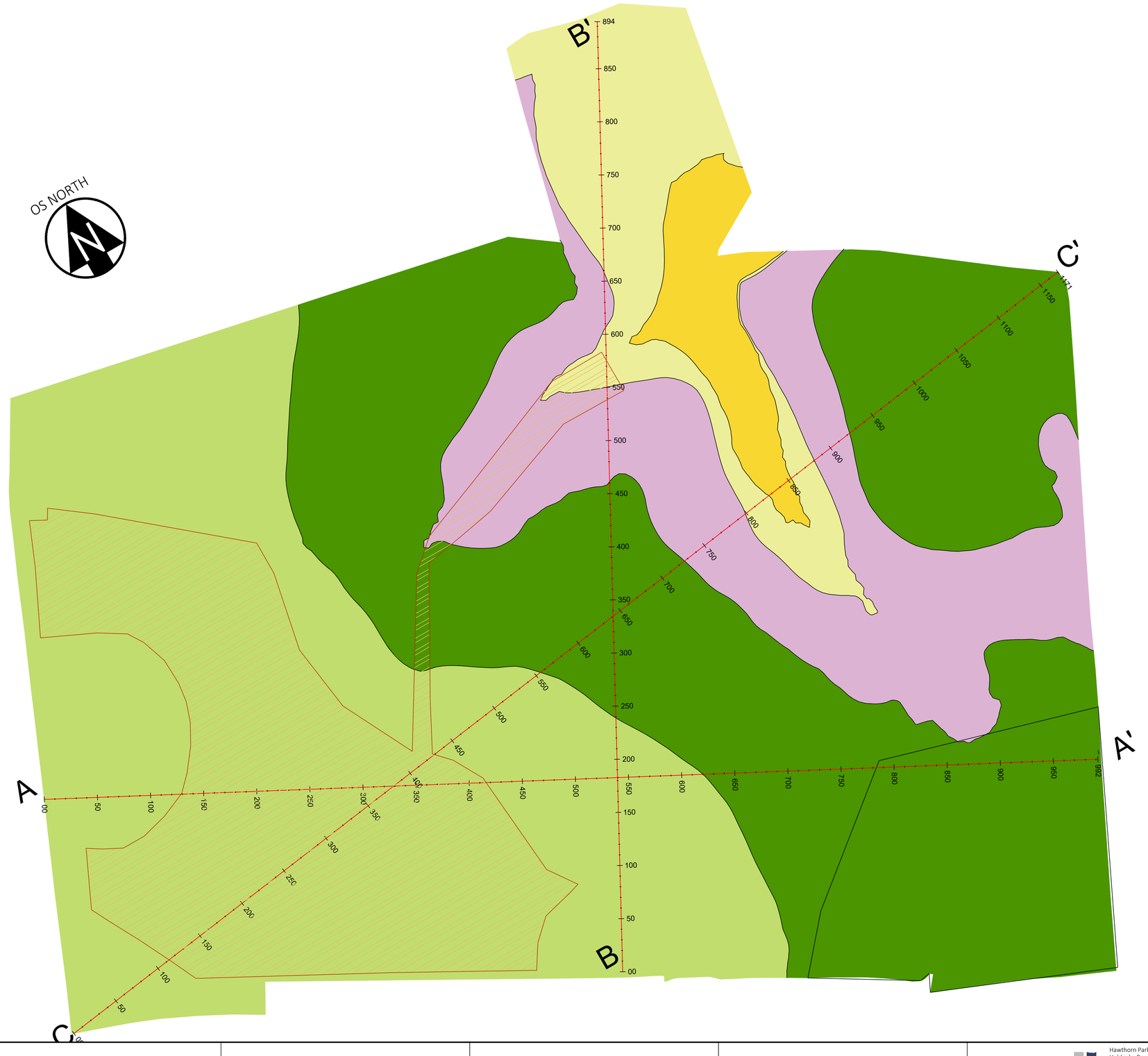
PURPOSE OF ISSUE
SUITABLE FOR INFORMATION

STATUS
S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)
18443-HYD-XX-ZZ-DR-GE-1016

REVISION
P2

Solid Geology Map



KEY

NOTES

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4.Surfaces have been created using Hydrock Site Investigation data (July 2021). Levels and depths are accurate at investigation locations. Between investigation locations, levels and depths have been extrapolated and are indicative only.

REV.						
P3	Permit boundary amended					
	LH	09/08/22	EC	09/08/22	EC	09/08/22
P2	CLIENT DETAILS AMMENDED					
	NT	15/12/21	AB	15/12/21	AB	15/12/21
P1	FIRST ISSUE					
	RT	06.10.21	NS/NT	06.10.21	AB	06.10.21
	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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CLIENT
EQUITES NEWLANDS (THRAPSTON EAST) LTD

PROJECT
LAND ADJACENT HALDENS PARKWAY THRAPSTON

TITLE
SOLID GEOLOGY SUB-CROP BELOW SUPERFICIALS

HYDROCK PROJECT NO.
C-18443

SCALE @ A1
1:2000

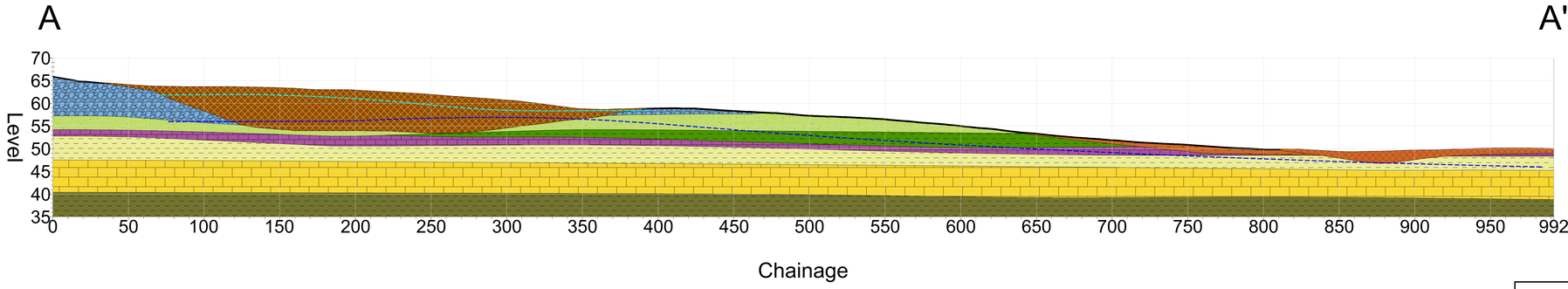
PURPOSE OF ISSUE
SUITABLE FOR INFORMATION

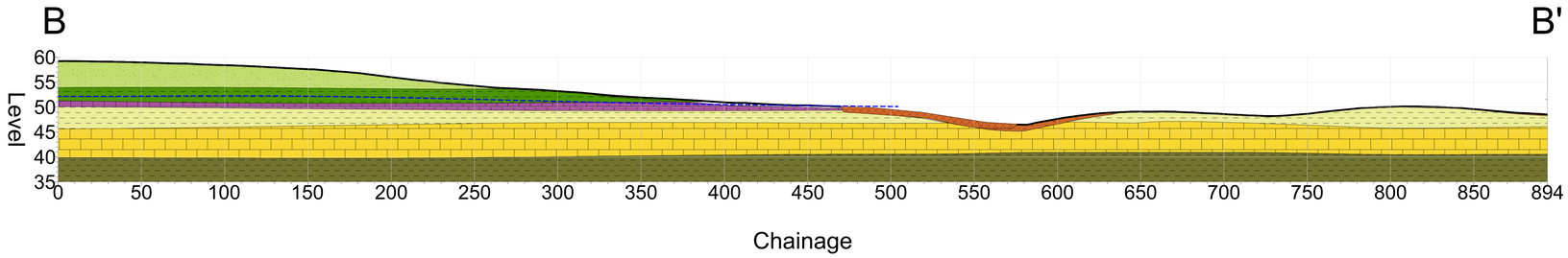
STATUS
S2

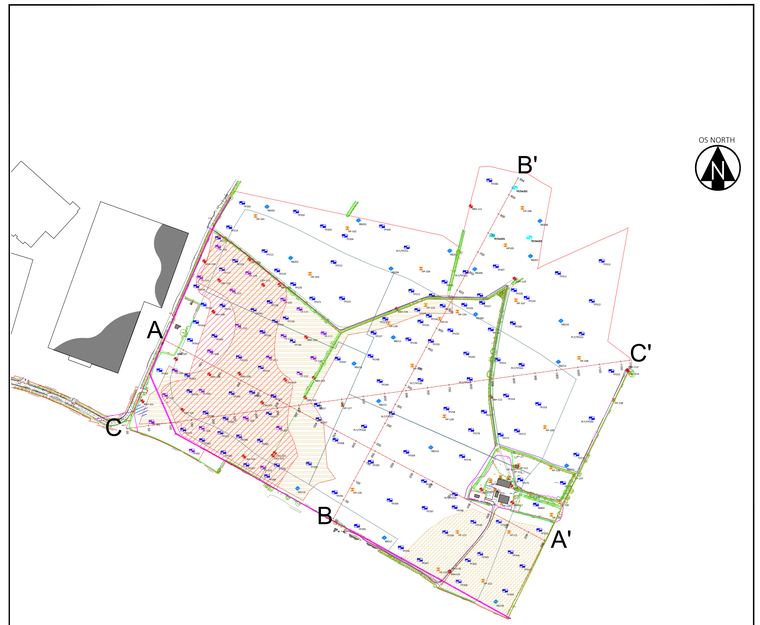
DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)
18443-HYD-XX-ZZ-DR-GE-1015

REVISION
P3

Cross Sections







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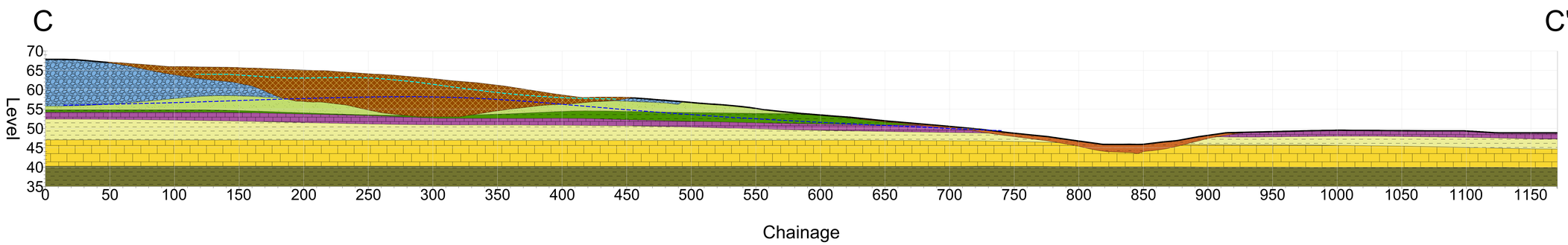

KEY

- Top Soil + Agriculturally Top Soil
- Landfill Made Ground
- Made Ground
- Head
- Glacial Till + Glaciofluvial Deposits
- Kellaways Sand Member
- Kellaways Clay Member
- Cornbrash Formation
- Blisworth Clay Formation
- Blisworth Limestone Formation
- Rutland Formation
- Ground water level from BH with the screened zone within the Landfill made ground
- Ground water level from BH with the screened zone within the Cornbrash formation
- Site Boundary (approximate)
- TPXX Trial Pit
- BHXX Cable Percussion Borehole
- RBHXX Rotary Percussion / Core Borehole
- HP## Hand Dug Excavation Pit

NOTES

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.
3. This drawing has been based on the following drawings and information:
   Stafsurv Drawing 'Huntignton Road, Thrapston. Topography Survey', Ref: 11521a-0, dated 10/03/21
4. Surfaces have been created using Hydrock Site Investigation data (July 2021 and December 2021). Levels and depths are accurate at investigation locations. Between investigation locations, levels and depths have been extrapolated and are indicative only.

REV						
P03	THIRD ISSUE (after detailed SI)					
	RT	13/04/22	NT	13/04/22	AB	13/04/22
P02	CLIENT DETAILS AMMENDED					
	NT	15/12/21	AB	15/12/21	AB	15/12/21
P01	FIRST ISSUE					
	RT	04/10/21	NS/NT	04/10/21	AB	04/10/21
REV	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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e: northampton@hydrock.com
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CLIENT: EQUITES NEWLANDS (THRAPSOTN EAST) LTD

PROJECT: LAND ADJACENT HALDENS PARKWAY THRAPSTON

TITLE: INDICATIVE CROSS SECTIONS

HYDROCK PROJECT NO.	SCALE @ A0
C-18443	1:1250 or as shown

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
18443-HYD-XX-ZZ-DR-GE-1014	P03

Appendix G Laboratory Certificates

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Hydrock Consultants Ltd
2-4 Hawthorne Park
Holdenby Road
Spratton
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NN6 8LD

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f: 01604842666
e: nathanthompson@hydrock.com

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

t: 01923 225404
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Analytical Report Number : 21-89202

Project / Site name:	Huntingdon Road, Thrapston	**Samples received on:**	26/07/2021
Your job number:	C-18443	**Samples instructed on/ Analysis started on:**	27/07/2021
Your order number:	PO08595	**Analysis completed by:**	02/08/2021
Report Issue Number:	1	**Report issued on:**	02/08/2021
Samples Analysed:	24 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: 21-89202
Project / Site name: Huntingdon Road, Thrapston

Your Order No: PO08595

Lab Sample Number				1951714	1951715	1951716	1951717	1951718
Sample Reference				CBH-101	CBH-102	CBH-103	CBH-104	CBH-106
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				7.83	2.05	8.99	2.51	2.85
Date Sampled				22/07/2021	22/07/2021	23/07/2021	22/07/2021	22/07/2021
Time Taken				1430	1420	1115	1059	1507
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.1	7.0	7.1	7.2	7.4
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	2700	780	1200	1300	1500
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sulphate as SO4	µg/l	45	ISO 17025	1360000	220000	592000	456000	529000
Chloride	mg/l	0.15	ISO 17025	93	34	56	71	220
Fluoride	µg/l	50	ISO 17025	260	120	190	260	320
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	1500	110	39	2100	5500
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	1900	130	47	2600	6700
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	2000	140	50	2700	7000
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	24.7	9.48	4.73	17.5	31.8
Nitrate as N	mg/l	0.01	ISO 17025	0.13	1.20	1.28	0.11	0.12
Nitrate as NO3	mg/l	0.05	ISO 17025	0.57	5.30	5.66	0.47	0.52
Nitrite as N	µg/l	1	ISO 17025	32	50	110	< 1.0	< 1.0
Nitrite as NO2	µg/l	5	ISO 17025	110	160	370	< 5.0	< 5.0
Hardness - Total	mgCaCO3/l	1	ISO 17025	1170	619	970	998	853
Bromate by IC	mg/l	0.002	NONE	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Total Phenols								
Total Phenols (monohydric)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
PAH Sums								
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.04	NONE	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16

Analytical Report Number: 21-89202
Project / Site name: Huntingdon Road, Thrapston

Your Order No: PO08595

Lab Sample Number				1951714	1951715	1951716	1951717	1951718
Sample Reference				CBH-101	CBH-102	CBH-103	CBH-104	CBH-106
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				7.83	2.05	8.99	2.51	2.85
Date Sampled				22/07/2021	22/07/2021	23/07/2021	22/07/2021	22/07/2021
Time Taken				1430	1420	1115	1059	1507
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Boron (dissolved)	µg/l	10	ISO 17025	120	130	110	190	160
Calcium (dissolved)	mg/l	0.012	ISO 17025	370	230	320	330	300
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	6.9	2.7	2.7	4.7	1.8
Iron (dissolved)	mg/l	0.004	ISO 17025	0.34	0.015	0.039	0.97	0.50
Iron (dissolved)	µg/l	4	ISO 17025	340	15	39	970	500
Magnesium (dissolved)	mg/l	0.005	ISO 17025	61	13	39	42	27
Sodium (dissolved)	mg/l	0.01	ISO 17025	630	22	54	74	150
Aluminium (dissolved)	µg/l	1	ISO 17025	2.5	9.7	15	2.2	2.1
Antimony (dissolved)	µg/l	0.4	ISO 17025	0.7	0.9	0.5	0.6	0.6
Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.48	0.86	0.30	5.70	3.28
Barium (dissolved)	µg/l	0.06	ISO 17025	81	59	76	160	180
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.04	0.04	< 0.02	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	6.9	2.7	2.7	4.7	1.8
Cobalt (dissolved)	µg/l	0.2	ISO 17025	22	0.5	0.7	7.3	5.8
Copper (dissolved)	µg/l	0.5	ISO 17025	6.7	3.4	2.3	1.4	1.8
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	0.2
Manganese (dissolved)	µg/l	0.05	ISO 17025	3100	20	9.0	1500	1300
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	16	3.7	2.6	11	11
Selenium (dissolved)	µg/l	0.6	ISO 17025	160	1.3	1.5	3.8	7.4
Silver (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Tin (dissolved)	µg/l	0.2	ISO 17025	0.47	0.86	0.91	0.60	< 0.20
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.6	0.4	0.3	0.4	0.5
Zinc (dissolved)	µg/l	0.5	ISO 17025	28	4.6	8.0	3.4	5.7
Monoaromatics & Oxygenates								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sum of m, p & o-Xylene	µg/l	2	ISO 17025	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

Analytical Report Number: 21-89202
Project / Site name: Huntingdon Road, Thrapston

Your Order No: PO08595

Lab Sample Number				1951714	1951715	1951716	1951717	1951718
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Depth (m)				7.83	2.05	8.99	2.51	2.85
Date Sampled				22/07/2021	22/07/2021	23/07/2021	22/07/2021	22/07/2021
Time Taken				1430	1420	1115	1059	1507
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C44)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C44)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG Total C5 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
VOCs								
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Analytical Report Number: 21-89202
Project / Site name: Huntingdon Road, Thrapston

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Lab Sample Number				1951714	1951715	1951716	1951717	1951718
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Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				7.83	2.05	8.99	2.51	2.85
Date Sampled				22/07/2021	22/07/2021	23/07/2021	22/07/2021	22/07/2021
Time Taken				1430	1420	1115	1059	1507
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Dichloromethane	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Dichlorodifluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Trihalomethanes	µg/l	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Total Trichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Total Dichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichloroethylene (TCE) + Tetrachloroethylene (PCE)	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,2-Dichloroethene	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,3-Dichloropropane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Tetrachloroethane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

U/S = Unsuitable Sample I/S = Insufficient Sample
* Analysis could not be completed due to sample matrix.

Analytical Report Number: 21-89202
Project / Site name: Huntingdon Road, Thrapston

Your Order No: PO08595

Lab Sample Number				1951719	1951720	1951721	1951722	1951723
Sample Reference				CBH-107	CBH-110	CBH-111	RBH-101	RBH-102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.94	2.33	4.03	11.05	6.27
Date Sampled				22/07/2021	23/07/2021	23/07/2021	22/07/2021	22/07/2021
Time Taken				None Supplied	1330	1400	1445	1115
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	6.9	7.7	7.9	7.4	7.5
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	1800	1800	1200	1500	1000
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	15	< 1.0	< 1.0	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sulphate as SO4	µg/l	45	ISO 17025	1490000	1140000	323000	747000	363000
Chloride	mg/l	0.15	ISO 17025	41	270	270	76	70
Fluoride	µg/l	50	ISO 17025	330	500	870	310	480
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	7500	2800	4500	240	760
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	9100	3400	5500	300	920
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	9600	3600	5800	310	980
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	21.7	25.9	39.8	7.25	7.79
Nitrate as N	mg/l	0.01	ISO 17025	0.22	0.14	0.38	1.22	3.11
Nitrate as NO3	mg/l	0.05	ISO 17025	0.99	0.62	1.66	5.40	13.8
Nitrite as N	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	220	500
Nitrite as NO2	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	720	1600
Hardness - Total	mgCaCO3/l	1	ISO 17025	2350	1330	690	861	482
Bromate by IC	mg/l	0.002	NONE	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Total Phenols								
Total Phenols (monohydric)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
PAH Sums								
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.04	NONE	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16

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Project / Site name: Huntingdon Road, Thrapston

Your Order No: PO08595

Lab Sample Number				1951719	1951720	1951721	1951722	1951723
Sample Reference				CBH-107	CBH-110	CBH-111	RBH-101	RBH-102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.94	2.33	4.03	11.05	6.27
Date Sampled				22/07/2021	23/07/2021	23/07/2021	22/07/2021	22/07/2021
Time Taken				None Supplied	1330	1400	1445	1115
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Boron (dissolved)	µg/l	10	ISO 17025	250	180	280	270	500
Calcium (dissolved)	mg/l	0.012	ISO 17025	730	500	260	260	160
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	6.9	< 1.0	1.2	1.4	1.5
Iron (dissolved)	mg/l	0.004	ISO 17025	43	0.043	0.054	0.016	0.022
Iron (dissolved)	µg/l	4	ISO 17025	43000	43	54	16	22
Magnesium (dissolved)	mg/l	0.005	ISO 17025	130	18	9.6	49	22
Sodium (dissolved)	mg/l	0.01	ISO 17025	58	170	120	180	110
Aluminium (dissolved)	µg/l	1	ISO 17025	10	11	7.6	6.9	9.5
Antimony (dissolved)	µg/l	0.4	ISO 17025	0.7	0.6	1.4	0.7	0.8
Arsenic (dissolved)	µg/l	0.15	ISO 17025	13.3	4.38	8.40	0.69	0.61
Barium (dissolved)	µg/l	0.06	ISO 17025	85	140	92	81	40
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	6.9	1.0	1.2	1.4	1.5
Cobalt (dissolved)	µg/l	0.2	ISO 17025	4.4	3.0	2.9	2.5	1.0
Copper (dissolved)	µg/l	0.5	ISO 17025	0.8	2.6	1.3	2.6	3.0
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.2	< 0.2	< 0.2	< 0.2
Manganese (dissolved)	µg/l	0.05	ISO 17025	2600	670	600	93	830
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	5.4	8.6	8.1	7.5	3.6
Selenium (dissolved)	µg/l	0.6	ISO 17025	3.5	5.0	7.3	18	18
Silver (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	2.95
Tin (dissolved)	µg/l	0.2	ISO 17025	< 0.20	0.27	1.4	0.72	0.48
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.8	1.0	2.7	0.3	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	8.3	6.8	2.9	3.6	7.8
Monoaromatics & Oxygenates								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sum of m, p & o-Xylene	µg/l	2	ISO 17025	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

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Project / Site name: Huntingdon Road, Thrapston

Your Order No: PO08595

Lab Sample Number				1951719	1951720	1951721	1951722	1951723
Sample Reference				CBH-107	CBH-110	CBH-111	RBH-101	RBH-102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.94	2.33	4.03	11.05	6.27
Date Sampled				22/07/2021	23/07/2021	23/07/2021	22/07/2021	22/07/2021
Time Taken				None Supplied	1330	1400	1445	1115
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C44)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C44)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG Total C5 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
VOCs								
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Analytical Report Number: 21-89202
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Lab Sample Number				1951719	1951720	1951721	1951722	1951723
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Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.94	2.33	4.03	11.05	6.27
Date Sampled				22/07/2021	23/07/2021	23/07/2021	22/07/2021	22/07/2021
Time Taken				None Supplied	1330	1400	1445	1115
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Dichloromethane	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Dichlorodifluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Trihalomethanes	µg/l	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Total Trichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Total Dichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichloroethylene (TCE) + Tetrachloroethylene (PCE)	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,2-Dichloroethene	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,3-Dichloropropane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Tetrachloroethane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

U/S = Unsuitable Sample I/S = Insufficient Sample
* Analysis could not be completed due to sample matrix.

Analytical Report Number: 21-89202
Project / Site name: Huntingdon Road, Thrapston

Your Order No: PO08595

Lab Sample Number				1951724	1951725	1951726	1951727	1951728
Sample Reference				RBH-103	RBH-104	RBH-105	RBH-106	RBH-107
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				3.17	4.62	4.46	8.99	9.11
Date Sampled				22/07/2021	23/07/2021	23/07/2021	23/07/2021	23/07/2021
Time Taken				None Supplied	1420	1300	1150	1115
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	6.8	7.7	7.1	7.3	7.1
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	1800	820	940	930	840
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sulphate as SO4	µg/l	45	ISO 17025	1030000	231000	305000	330000	186000
Chloride	mg/l	0.15	ISO 17025	60	68	18	33	69
Fluoride	µg/l	50	ISO 17025	460	U/S	160	210	320
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	650	1200	33	43	46
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	780	1500	40	52	56
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	830	1500	42	55	59
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	9.78	7.71	5.30	4.47	71.8
Nitrate as N	mg/l	0.01	ISO 17025	0.41	0.11	0.55	2.91	0.18
Nitrate as NO3	mg/l	0.05	ISO 17025	1.82	0.47	2.44	12.9	0.78
Nitrite as N	µg/l	1	ISO 17025	1.1	< 1.0	< 1.0	310	< 1.0
Nitrite as NO2	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	1000	< 5.0
Hardness - Total	mgCaCO3/l	1	ISO 17025	1390	284	692	625	533
Bromate by IC	mg/l	0.002	NONE	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Total Phenols								
Total Phenols (monohydric)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
PAH Sums								
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.04	NONE	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16

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Lab Sample Number				1951724	1951725	1951726	1951727	1951728
Sample Reference				RBH-103	RBH-104	RBH-105	RBH-106	RBH-107
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				3.17	4.62	4.46	8.99	9.11
Date Sampled				22/07/2021	23/07/2021	23/07/2021	23/07/2021	23/07/2021
Time Taken				None Supplied	1420	1300	1150	1115
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Boron (dissolved)	µg/l	10	ISO 17025	310	780	80	100	170
Calcium (dissolved)	mg/l	0.012	ISO 17025	510	97	250	220	190
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	3.0	1.2	2.7	1.9	1.8
Iron (dissolved)	mg/l	0.004	ISO 17025	0.022	0.22	0.012	0.025	5.1
Iron (dissolved)	µg/l	4	ISO 17025	22	220	12	25	5100
Magnesium (dissolved)	mg/l	0.005	ISO 17025	27	9.9	15	17	16
Sodium (dissolved)	mg/l	0.01	ISO 17025	61	140	15	56	71
Aluminium (dissolved)	µg/l	1	ISO 17025	9.8	7.3	4.7	9.6	4.7
Antimony (dissolved)	µg/l	0.4	ISO 17025	0.4	0.7	1.0	0.5	< 0.4
Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.10	1.17	0.45	0.27	3.44
Barium (dissolved)	µg/l	0.06	ISO 17025	48	43	45	70	96
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	0.20	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	3.0	1.2	2.7	1.9	1.8
Cobalt (dissolved)	µg/l	0.2	ISO 17025	6.3	0.9	1.5	0.9	0.6
Copper (dissolved)	µg/l	0.5	ISO 17025	0.9	4.6	5.4	1.4	0.6
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.3	0.2	< 0.2	< 0.2
Manganese (dissolved)	µg/l	0.05	ISO 17025	470	13	75	28	860
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	15	4.9	8.0	3.3	2.0
Selenium (dissolved)	µg/l	0.6	ISO 17025	0.6	1.7	0.8	3.4	< 0.6
Silver (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05	2.48	< 0.05	< 0.05
Tin (dissolved)	µg/l	0.2	ISO 17025	0.91	< 0.20	0.45	2.1	0.73
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.3	0.5	0.2	< 0.2	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	6.0	27	7.3	2.4	15
Monoaromatics & Oxygenates								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sum of m, p & o-Xylene	µg/l	2	ISO 17025	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

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Project / Site name: Huntingdon Road, Thrapston

Your Order No: PO08595

Lab Sample Number				1951724	1951725	1951726	1951727	1951728
Sample Reference				RBH-103	RBH-104	RBH-105	RBH-106	RBH-107
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				3.17	4.62	4.46	8.99	9.11
Date Sampled				22/07/2021	23/07/2021	23/07/2021	23/07/2021	23/07/2021
Time Taken				None Supplied	1420	1300	1150	1115
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C44)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C44)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG Total C5 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
VOCs								
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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Lab Sample Number				1951724	1951725	1951726	1951727	1951728
Sample Reference				RBH-103	RBH-104	RBH-105	RBH-106	RBH-107
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				3.17	4.62	4.46	8.99	9.11
Date Sampled				22/07/2021	23/07/2021	23/07/2021	23/07/2021	23/07/2021
Time Taken				None Supplied	1420	1300	1150	1115
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Dichloromethane	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Dichlorodifluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Trihalomethanes	µg/l	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Total Trichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Total Dichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichloroethylene (TCE) + Tetrachloroethylene (PCE)	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,2-Dichloroethene	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,3-Dichloropropane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Tetrachloroethane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

U/S = Unsuitable Sample I/S = Insufficient Sample
* Analysis could not be completed due to sample matrix.

Analytical Report Number: 21-89202
Project / Site name: Huntingdon Road, Thrapston

Your Order No: PO08595

Lab Sample Number				1951729	1951730	1951731	1951732	1951733
Sample Reference				RBH-108	RBH-109	RBH-110	RBH-111	RBH-112
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				8.81	4.65	3.20	6.57	3.53
Date Sampled				22/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.6	7.4	7.2	7.1	7.3
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	940	840	880	1900	920
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sulphate as SO4	µg/l	45	ISO 17025	395000	280000	85000	1300000	123000
Chloride	mg/l	0.15	ISO 17025	72	47	130	36	110
Fluoride	µg/l	50	ISO 17025	320	680	270	510	440
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	260	140	34	24	250
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	310	170	41	29	310
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	330	180	44	31	320
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	7.76	5.66	5.18	4.26	4.66
Nitrate as N	mg/l	0.01	ISO 17025	0.88	0.08	12.1	0.43	9.47
Nitrate as NO3	mg/l	0.05	ISO 17025	3.89	0.36	53.5	1.92	42.0
Nitrite as N	µg/l	1	ISO 17025	560	2.1	< 1.0	7.4	140
Nitrite as NO2	µg/l	5	ISO 17025	1800	6.9	< 5.0	24	450
Hardness - Total	mgCaCO3/l	1	ISO 17025	504	493	512	1470	491
Bromate by IC	mg/l	0.002	NONE	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Total Phenols								
Total Phenols (monohydric)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
PAH Sums								
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.04	NONE	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16

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Your Order No: PO08595

Lab Sample Number				1951729	1951730	1951731	1951732	1951733
Sample Reference				RBH-108	RBH-109	RBH-110	RBH-111	RBH-112
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				8.81	4.65	3.20	6.57	3.53
Date Sampled				22/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Boron (dissolved)	µg/l	10	ISO 17025	320	240	85	48	110
Calcium (dissolved)	mg/l	0.012	ISO 17025	170	170	190	550	180
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	< 1.0	1.7	2.5	< 1.0	< 1.0
Iron (dissolved)	mg/l	0.004	ISO 17025	0.014	0.009	0.015	0.013	0.027
Iron (dissolved)	µg/l	4	ISO 17025	14	9.1	15	13	27
Magnesium (dissolved)	mg/l	0.005	ISO 17025	17	17	8.6	23	9.2
Sodium (dissolved)	mg/l	0.01	ISO 17025	120	71	58	18	57
Aluminium (dissolved)	µg/l	1	ISO 17025	2.5	10	16	7.9	21
Antimony (dissolved)	µg/l	0.4	ISO 17025	1.1	1.1	< 0.4	0.4	0.8
Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.17	1.69	0.31	< 0.15	0.59
Barium (dissolved)	µg/l	0.06	ISO 17025	45	43	46	61	66
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.04	< 0.02	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.8	1.7	2.5	0.5	0.9
Cobalt (dissolved)	µg/l	0.2	ISO 17025	1.4	1.1	0.4	1.1	1.5
Copper (dissolved)	µg/l	0.5	ISO 17025	2.5	1.2	1.5	0.8	2.3
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Manganese (dissolved)	µg/l	0.05	ISO 17025	240	17	1.4	70	100
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	3.6	5.9	1.4	3.5	5.8
Selenium (dissolved)	µg/l	0.6	ISO 17025	12	2.0	0.7	0.7	1.0
Silver (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Tin (dissolved)	µg/l	0.2	ISO 17025	0.70	0.38	0.20	0.22	0.42
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.3	1.0	< 0.2	< 0.2	0.5
Zinc (dissolved)	µg/l	0.5	ISO 17025	2.5	5.2	2.5	3.4	3.0
Monoaromatics & Oxygenates								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sum of m, p & o-Xylene	µg/l	2	ISO 17025	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

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Lab Sample Number				1951729	1951730	1951731	1951732	1951733
Sample Reference				RBH-108	RBH-109	RBH-110	RBH-111	RBH-112
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				8.81	4.65	3.20	6.57	3.53
Date Sampled				22/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C44)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C44)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG Total C5 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
VOCs								
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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Lab Sample Number				1951729	1951730	1951731	1951732	1951733
Sample Reference				RBH-108	RBH-109	RBH-110	RBH-111	RBH-112
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				8.81	4.65	3.20	6.57	3.53
Date Sampled				22/07/2021	27/07/2021	27/07/2021	27/07/2021	27/07/2021
Time Taken				None Supplied	None Supplied	None Supplied	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	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Dichloromethane	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Dichlorodifluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Trihalomethanes	µg/l	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Total Trichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Total Dichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichloroethylene (TCE) + Tetrachloroethylene (PCE)	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,2-Dichloroethene	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,3-Dichloropropane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Tetrachloroethane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

U/S = Unsuitable Sample I/S = Insufficient Sample
* Analysis could not be completed due to sample matrix.

Analytical Report Number: 21-89202
Project / Site name: Huntingdon Road, Thrapston

Your Order No: PO08595

Lab Sample Number				1951734	1951735	1951736	1951737
Sample Reference				RBH-113	RBH-116	RBH-117	RBH-119
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				6.42	3.85	2.30	5.50
Date Sampled				27/07/2021	27/07/2021	27/07/2021	27/07/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
General Inorganics							
pH	pH Units	N/A	ISO 17025	7.3	7.6	7.4	7.4
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	1100	700	740	1300
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Sulphate as SO4	µg/l	45	ISO 17025	360000	132000	148000	512000
Chloride	mg/l	0.15	ISO 17025	63	82	70	61
Fluoride	µg/l	50	ISO 17025	530	670	U/S*	370
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	30	180	1100	570
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	36	210	1300	690
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	38	230	1400	730
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	4.22	4.70	7.56	4.05
Nitrate as N	mg/l	0.01	ISO 17025	6.83	0.26	1.02	0.32
Nitrate as NO3	mg/l	0.05	ISO 17025	30.3	1.14	4.52	1.40
Nitrite as N	µg/l	1	ISO 17025	930	200	420	8.9
Nitrite as NO2	µg/l	5	ISO 17025	3100	650	1400	29
Hardness - Total	mgCaCO3/l	1	ISO 17025	608	314	362	772
Bromate by IC	mg/l	0.002	NONE	< 0.002	< 0.002	< 0.002	< 0.002
Total Phenols							
Total Phenols (monohydric)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs							
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.68	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.29	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	3.05	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	2.71	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.37	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.22	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.27	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.55	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	1.06	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	0.51	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001	< 0.001	0.59	< 0.001
PAH Sums							
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.020	< 0.020	1.8	< 0.020
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.02	NONE	< 0.020	< 0.020	1.1	< 0.020
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.04	NONE	< 0.040	< 0.040	2.9	< 0.040
Total PAH							
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	13.3	< 0.16

Analytical Report Number: 21-89202
Project / Site name: Huntingdon Road, Thrapston

Your Order No: PO08595

Lab Sample Number				1951734	1951735	1951736	1951737
Sample Reference				RBH-113	RBH-116	RBH-117	RBH-119
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				6.42	3.85	2.30	5.50
Date Sampled				27/07/2021	27/07/2021	27/07/2021	27/07/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Heavy Metals / Metalloids							
Boron (dissolved)	µg/l	10	ISO 17025	170	150	100	770
Calcium (dissolved)	mg/l	0.012	ISO 17025	220	110	130	250
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0	1.9	< 1.0
Iron (dissolved)	mg/l	0.004	ISO 17025	0.019	0.027	0.030	0.012
Iron (dissolved)	µg/l	4	ISO 17025	19	27	30	12
Magnesium (dissolved)	mg/l	0.005	ISO 17025	15	7.8	7.2	36
Sodium (dissolved)	mg/l	0.01	ISO 17025	72	56	52	97
Aluminium (dissolved)	µg/l	1	ISO 17025	11	16	9.1	19
Antimony (dissolved)	µg/l	0.4	ISO 17025	0.8	0.9	0.7	< 0.4
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.46	0.93	1.46	1.25
Barium (dissolved)	µg/l	0.06	ISO 17025	85	54	50	32
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.9	0.5	1.9	0.9
Cobalt (dissolved)	µg/l	0.2	ISO 17025	1.3	1.1	1.3	1.4
Copper (dissolved)	µg/l	0.5	ISO 17025	1.9	1.8	5.7	2.0
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.2	< 0.2	< 0.2
Manganese (dissolved)	µg/l	0.05	ISO 17025	53	12	12	46
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	4.4	4.0	6.1	3.6
Selenium (dissolved)	µg/l	0.6	ISO 17025	5.5	0.7	1.3	7.5
Silver (dissolved)	µg/l	0.05	NONE	2.08	< 0.05	< 0.05	< 0.05
Tin (dissolved)	µg/l	0.2	ISO 17025	0.40	1.1	0.27	0.89
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.3	0.5	0.9	0.7
Zinc (dissolved)	µg/l	0.5	ISO 17025	4.4	4.2	99	8.3
Monoaromatics & Oxygenates							
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Sum of m, p & o-Xylene	µg/l	2	ISO 17025	< 2.0	< 2.0	< 2.0	< 2.0

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Lab Sample Number				1951734	1951735	1951736	1951737
Sample Reference				RBH-113	RBH-116	RBH-117	RBH-119
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				6.42	3.85	2.30	5.50
Date Sampled				27/07/2021	27/07/2021	27/07/2021	27/07/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Petroleum Hydrocarbons							
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	11	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	19	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C35	µg/l	10	NONE	< 10	< 10	19	< 10
TPH-CWG - Aliphatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	30	< 10
TPH-CWG - Aliphatic (C5 - C44)	µg/l	10	NONE	< 10	< 10	30	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C35 - C44	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C44)	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG Total C5 - C44	µg/l	10	NONE	< 10	< 10	30	< 10
VOCs							
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0

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Project / Site name: Huntingdon Road, Thrapston

Your Order No: PO08595

Lab Sample Number				1951734	1951735	1951736	1951737
Sample Reference				RBH-113	RBH-116	RBH-117	RBH-119
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				6.42	3.85	2.30	5.50
Date Sampled				27/07/2021	27/07/2021	27/07/2021	27/07/2021
Time Taken				None Supplied	None Supplied	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	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0

Dichloromethane	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0
Dichlorodifluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Total Trihalomethanes	µg/l	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0
Total Trichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0
Total Dichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0
Trichloroethylene (TCE) + Tetrachloroethylene (PCE)	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,2-Dichloroethene	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,3-Dichloropropane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0
Tetrachloroethane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0

U/S = Unsuitable Sample I/S = Insufficient Sample
* Analysis could not be completed due to sample matrix.

Analytical Report Number : 21-89202
Project / Site name: Huntingdon Road, Thrapston

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
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
Fluoride in water	Determination of fluoride in water by 1:1 ratio with a buffer solution followed by Ion Selective Electrode. Accredited matrices: SW, PW, GW.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
Monohydric phenols in water - LOW LEVEL 1 ug/l	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
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).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
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08,	L078-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
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
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE
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
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-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
Speciated EPA-16 PAHs in water (LOW LEVEL Dets)	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270 (low level)	L102B-PL	W	NONE

Analytical Report Number : 21-89202
Project / Site name: Huntingdon Road, Thrapston

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
TPH in (Water)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding.	L070-PL	W	NONE
Ammonia as NH3 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
Ammoniacal Nitrogen as N in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (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
Ammonium as NH4 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
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). 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
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
TPH Chromatogram in Water	TPH Chromatogram in Water.	In-house method	L070-PL	W	NONE
Volatile organic compounds in water extended	Determination of volatile organic compounds in water by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	NONE
Cr (III) in water	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Low level 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
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
Free cyanide (low level) 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
Bromate in Water	Determination of bromate in waters based on ion chromatography. Accredited matrices GW, PW, SW.	In house method based on Standard Methods for the Analysis of Water and Waste Water, method 4500	L008-PL	W	NONE
Specific PAH sums in water	Determination of PAH compounds in water by extraction in hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	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

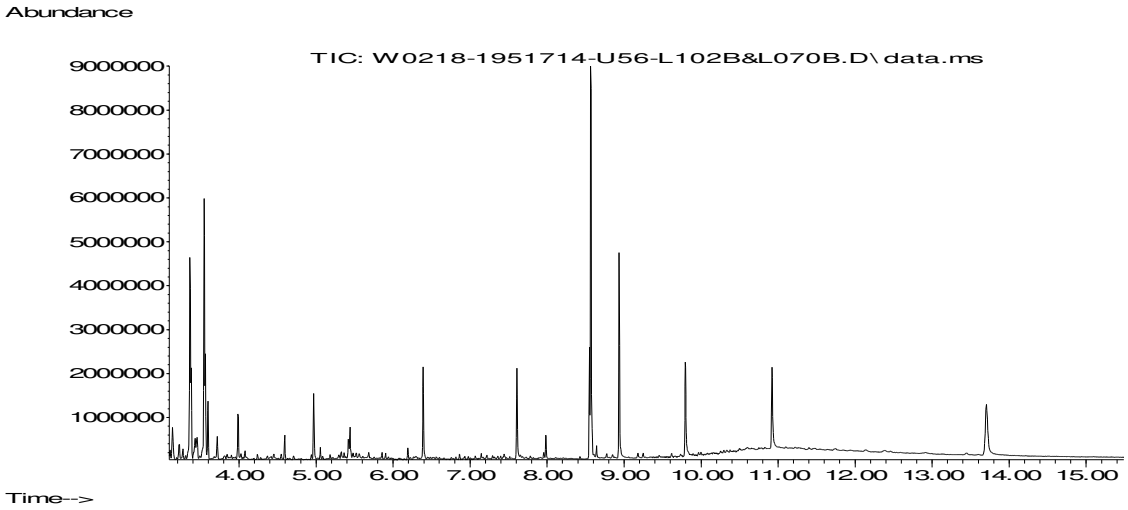
For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received 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.

Analytical Report Number : 21-89202
Project / Site name: Huntingdon Road, Thrapston

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

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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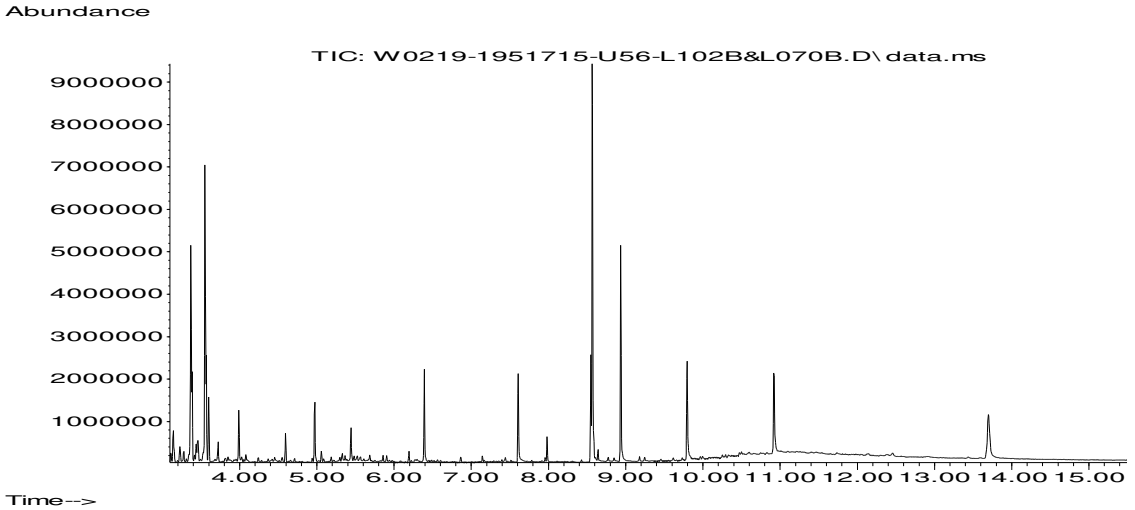
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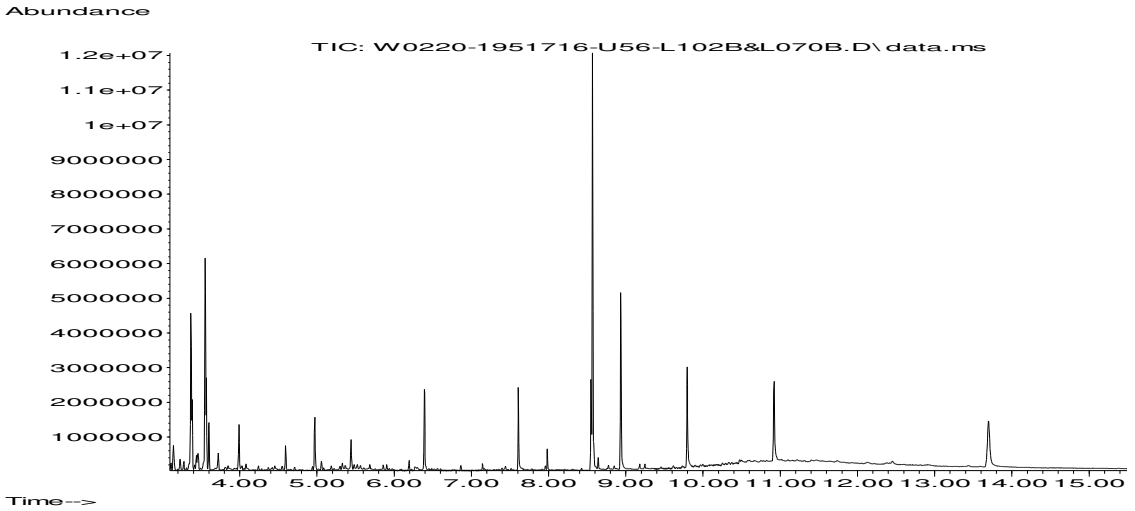
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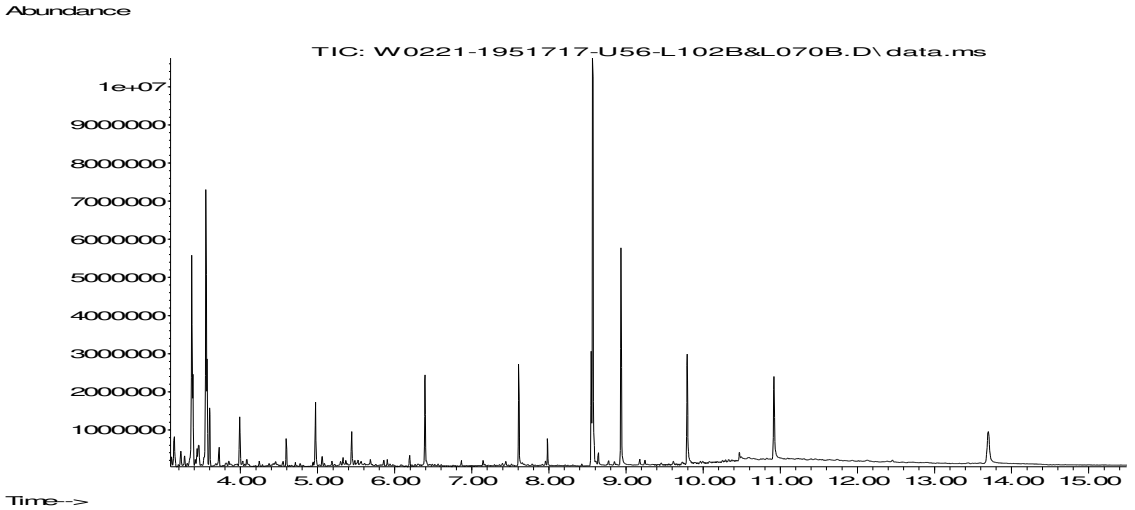
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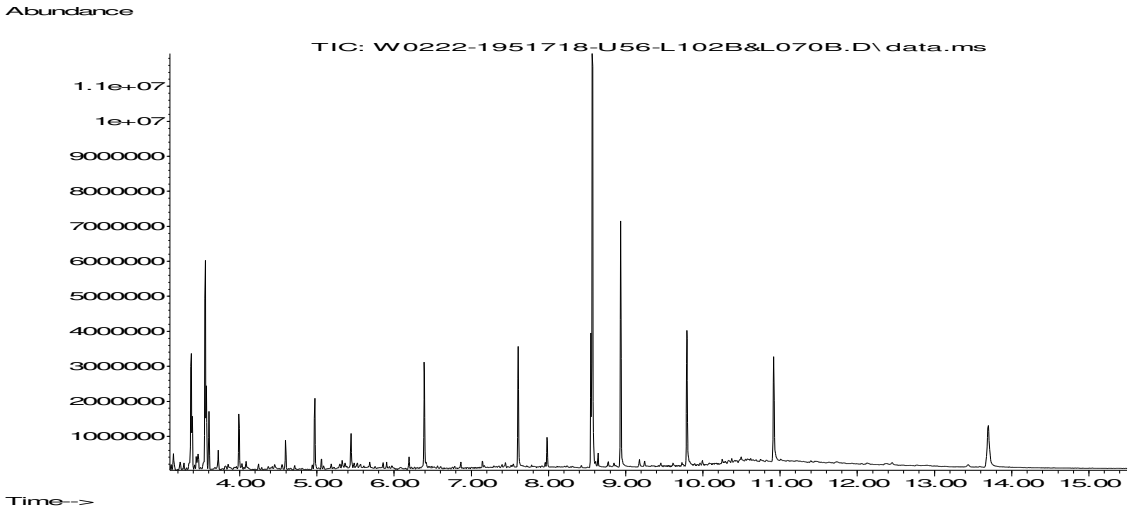
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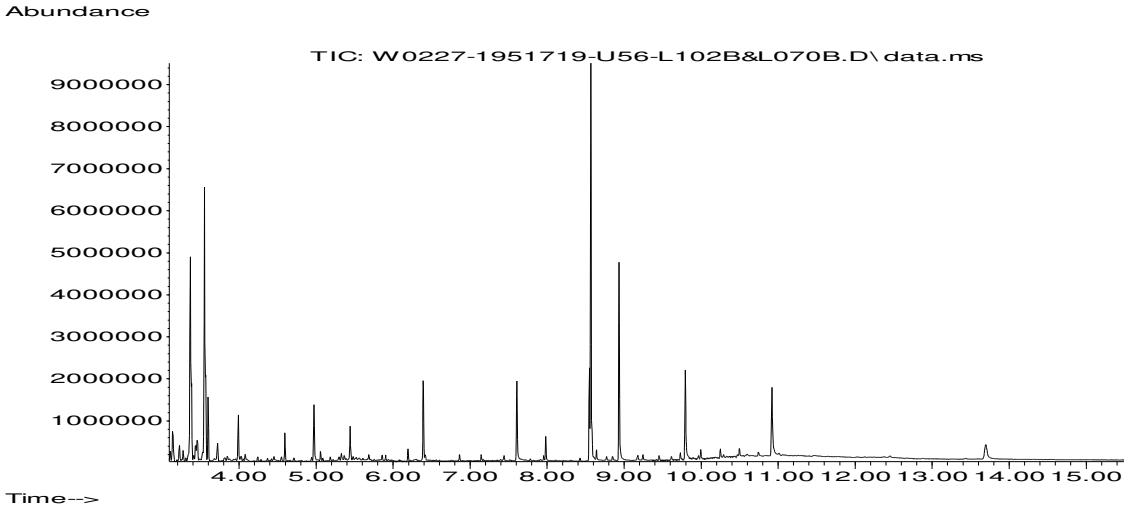
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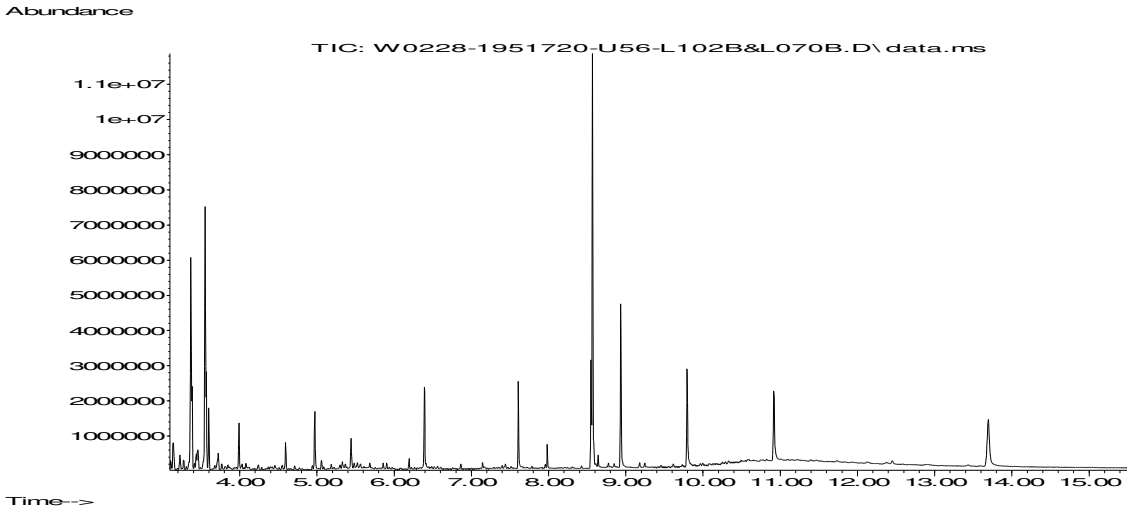
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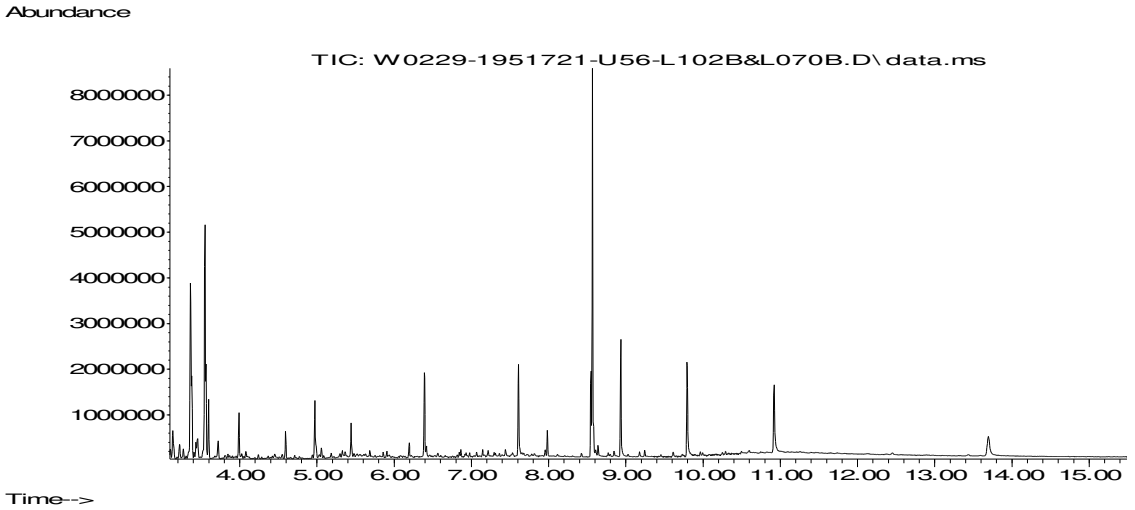
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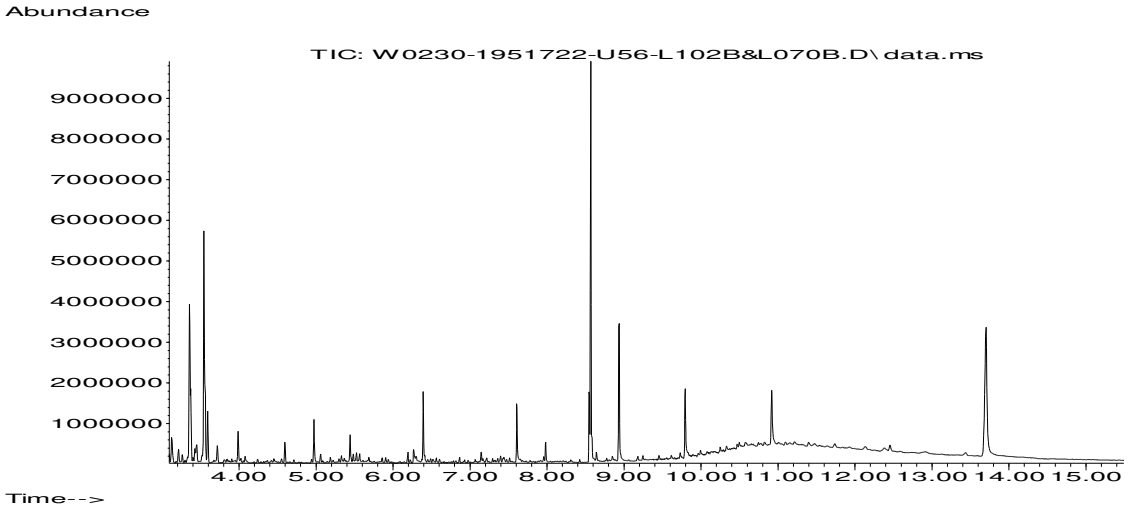
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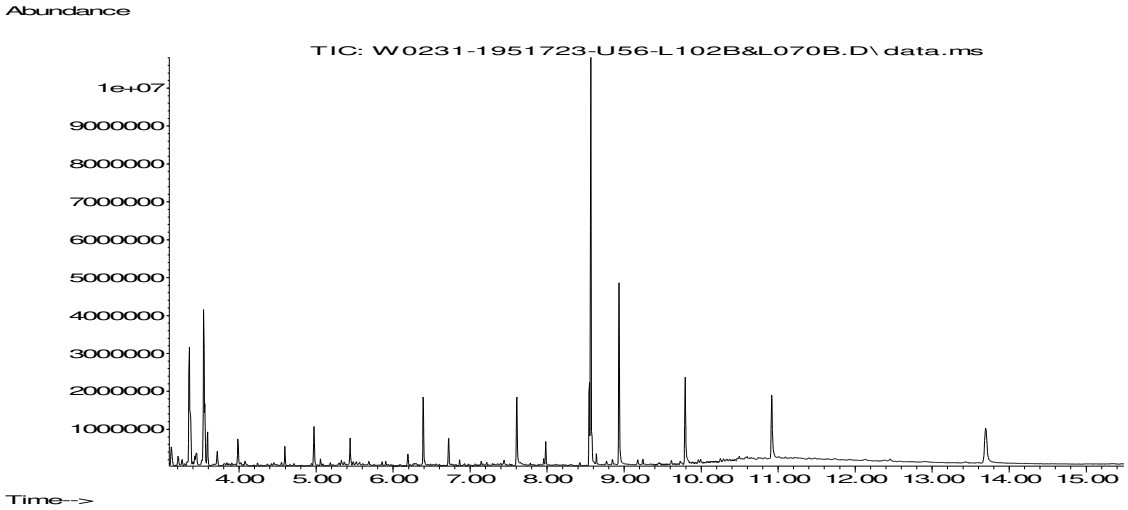
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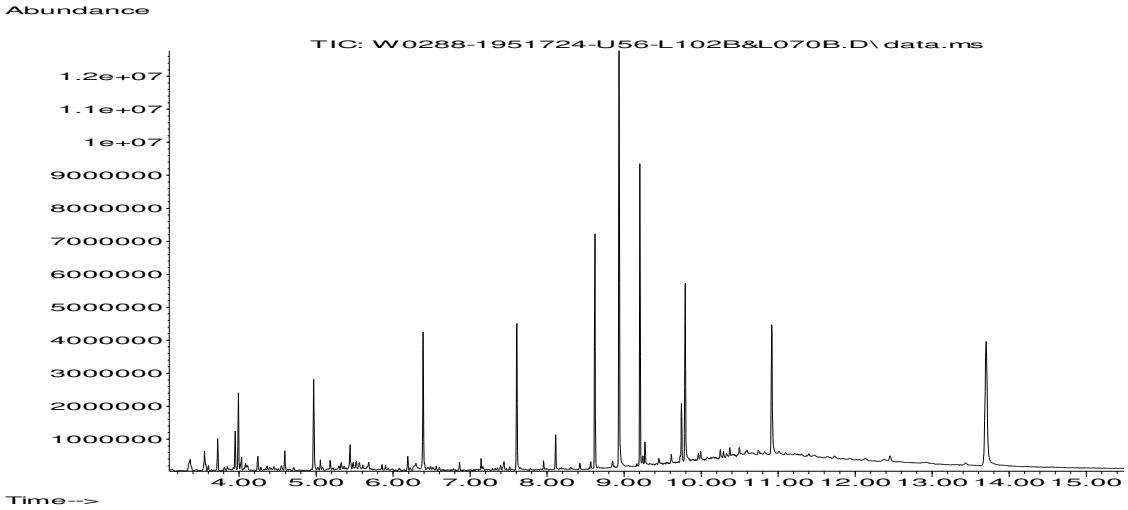
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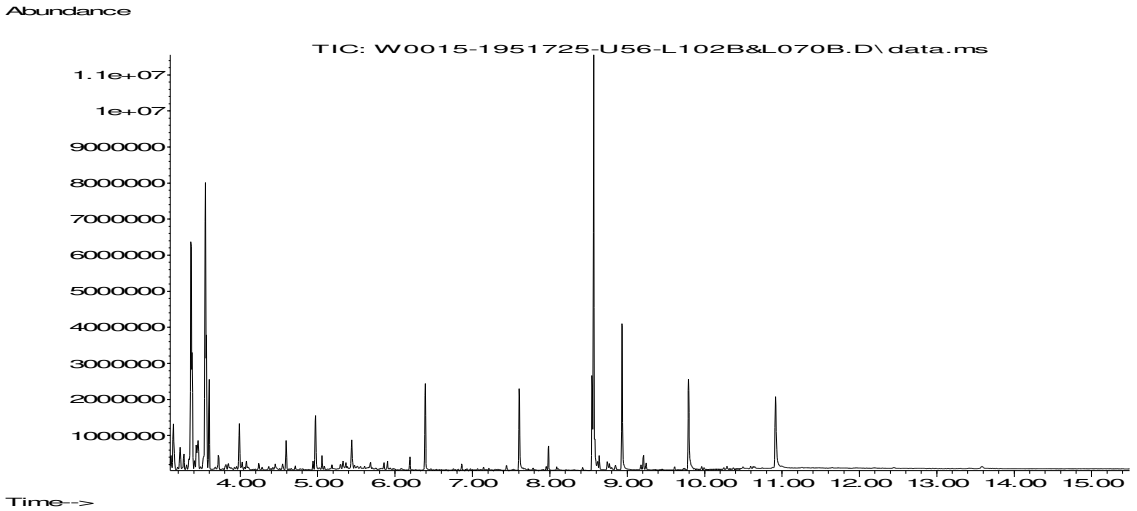
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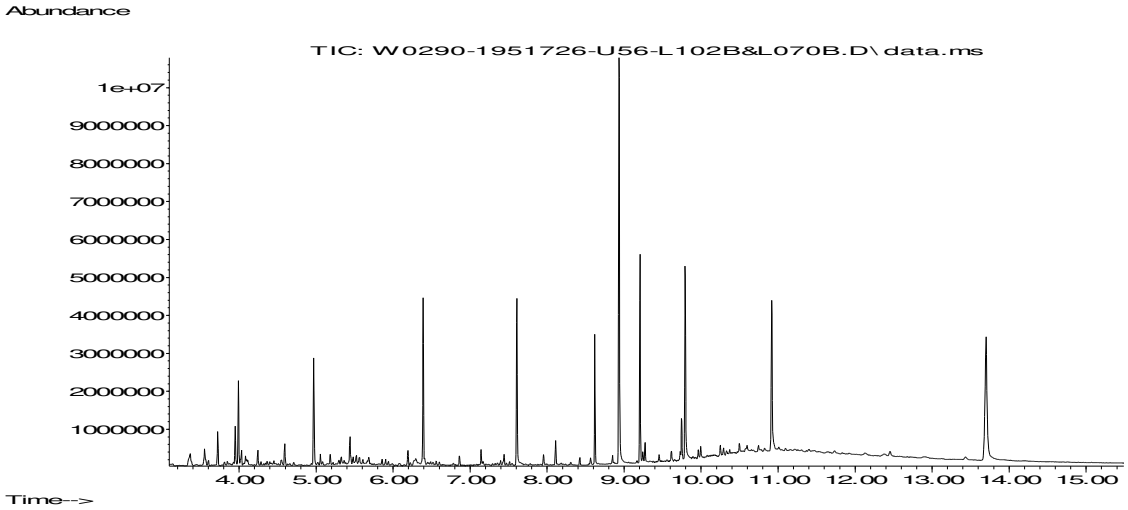
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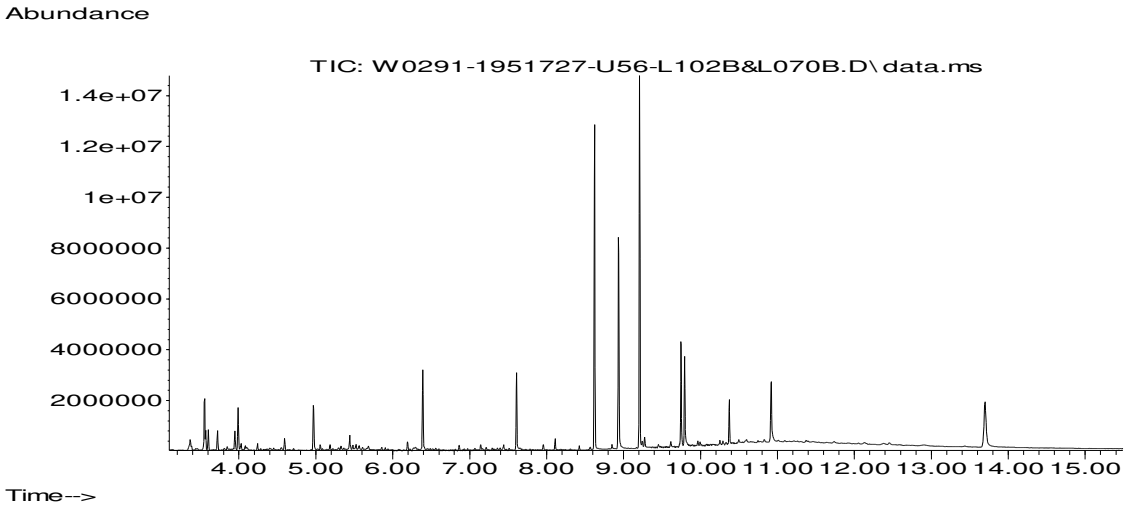
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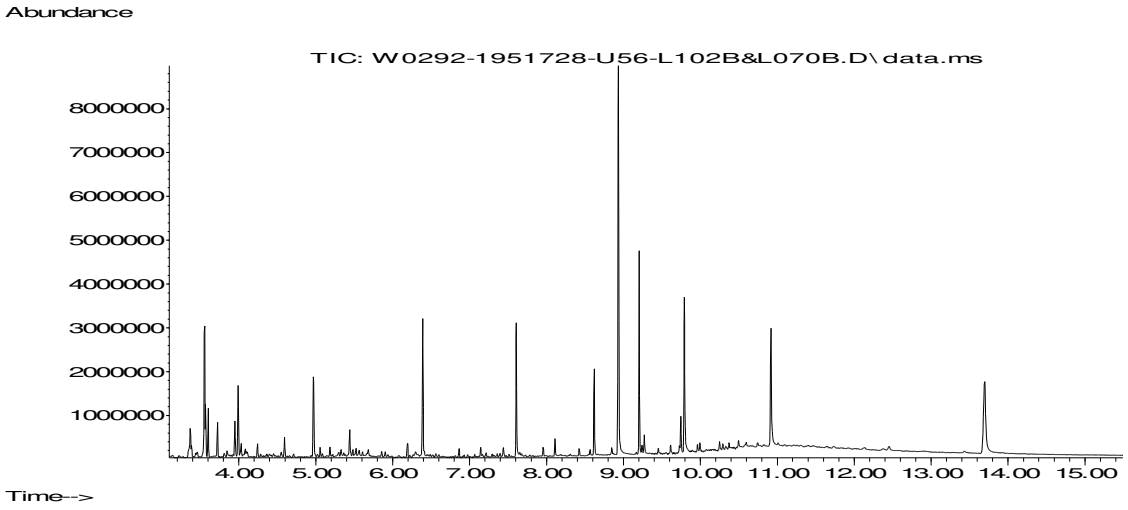
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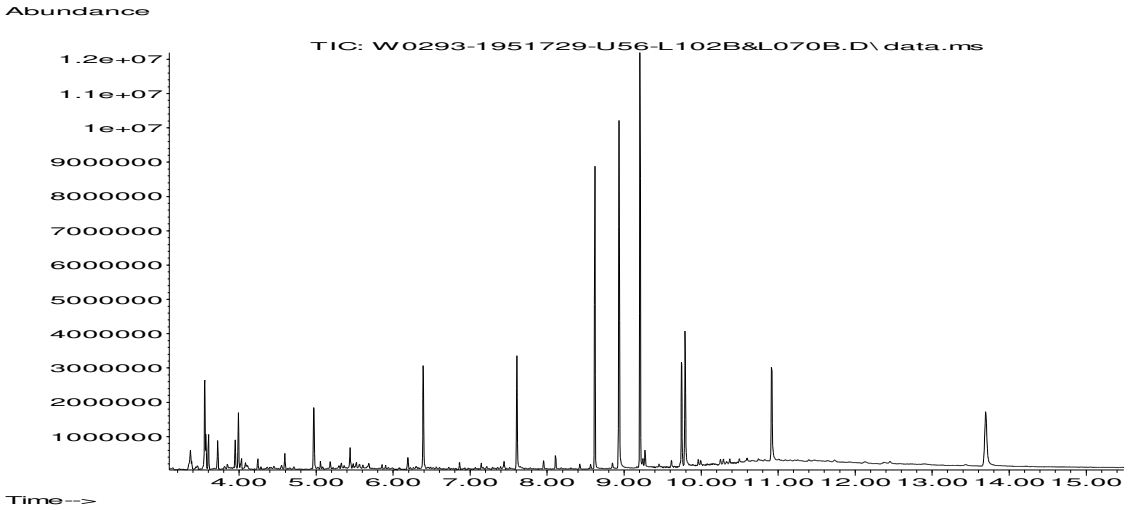
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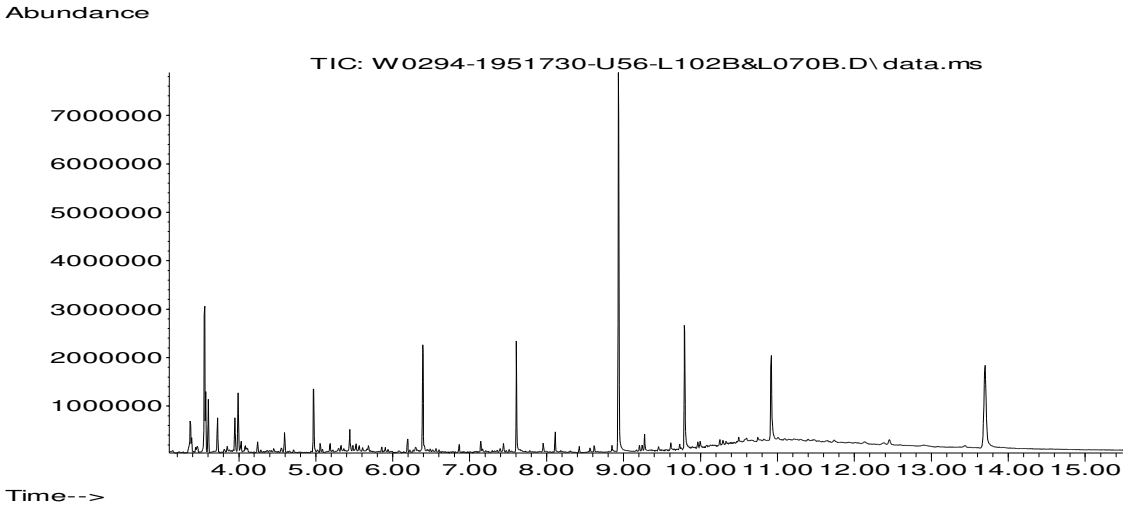
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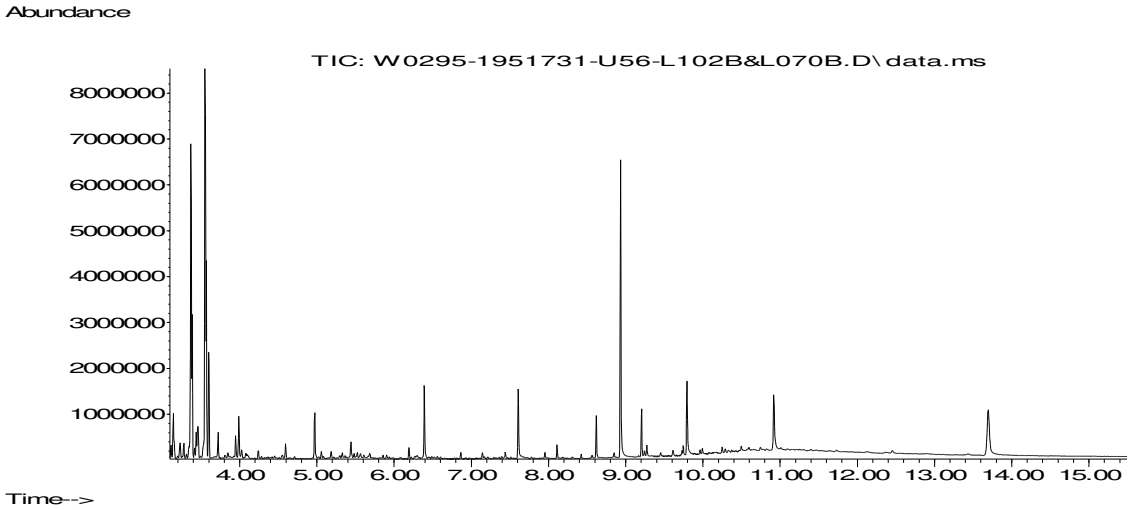
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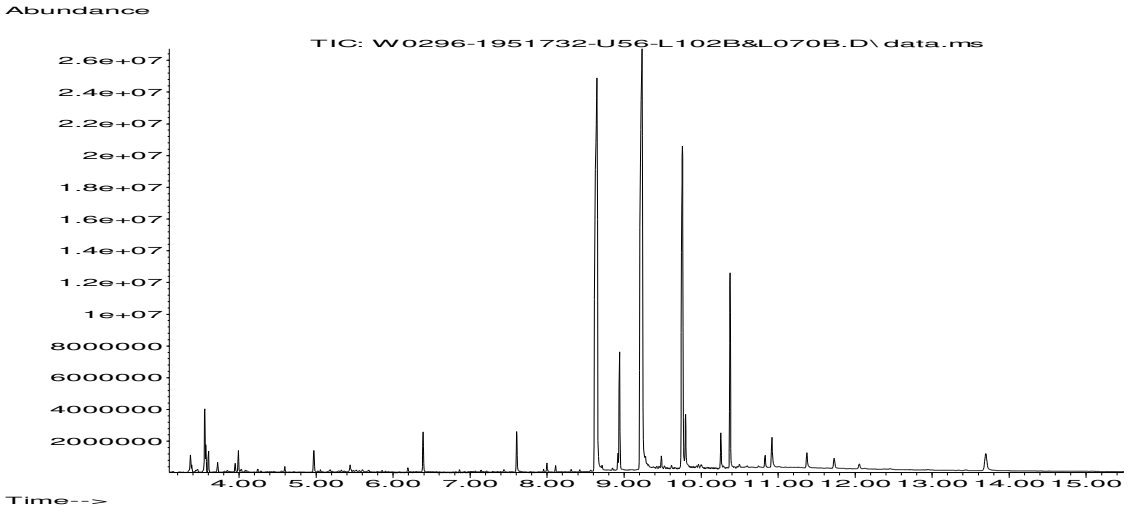
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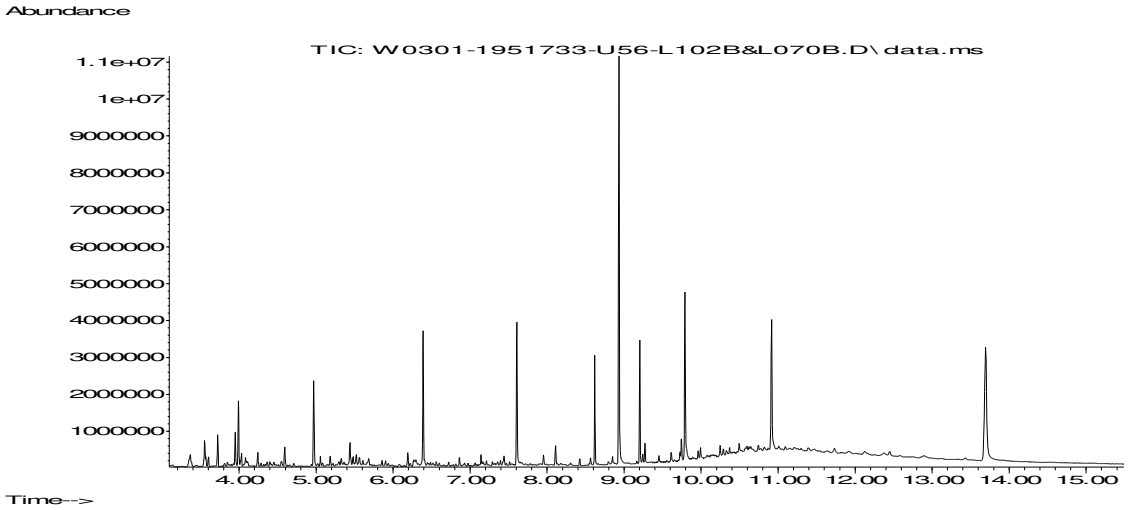
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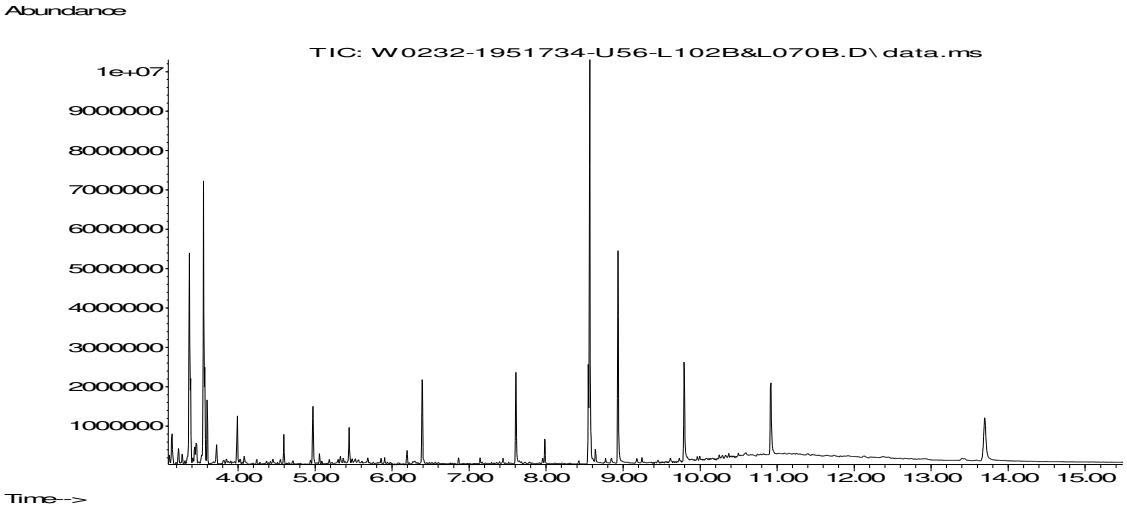
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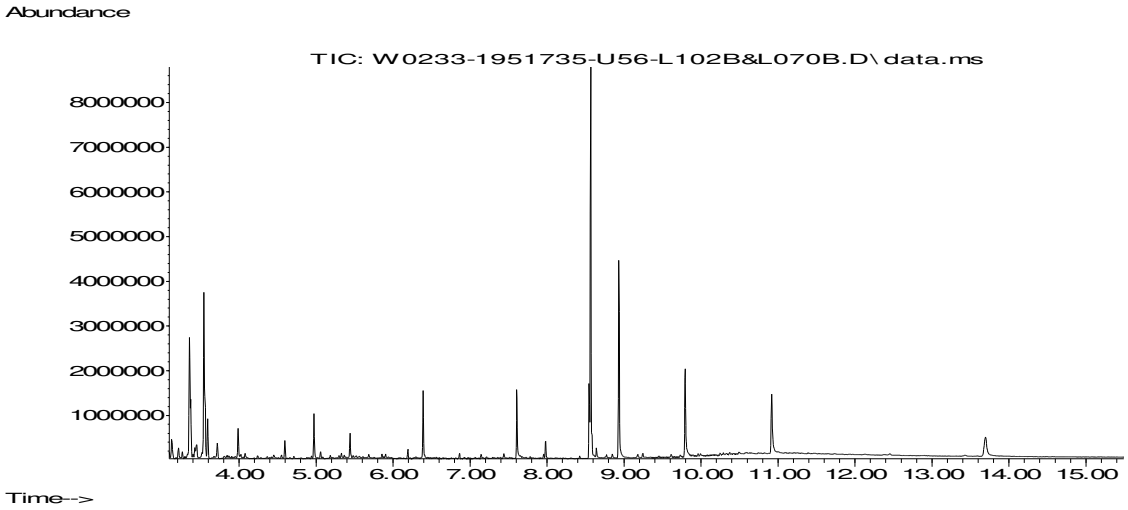
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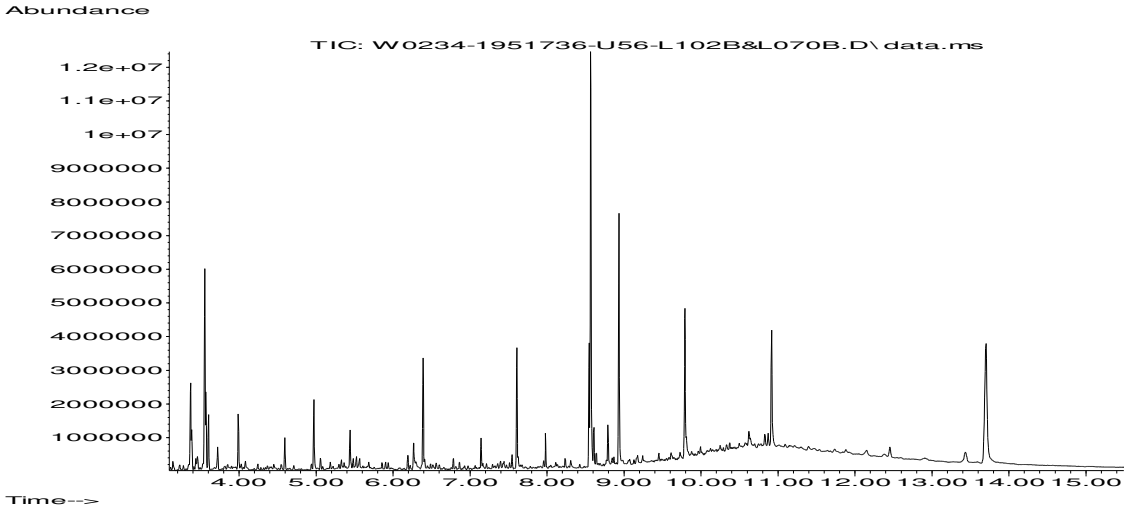
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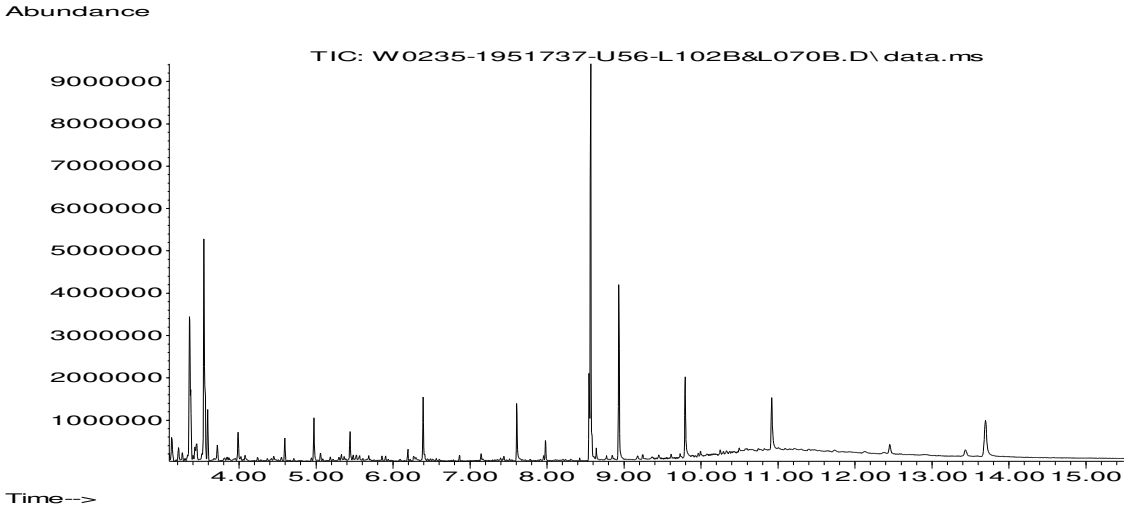
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Sample Deviation Report

Analytical Report Number : 21-89202
Project / Site name: Huntingdon Road, Thrapston

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
CBH-101	None Supplied	W	1951714	c	Ammonia as NH3 in water	L082-PL	c
CBH-101	None Supplied	W	1951714	c	Ammoniacal Nitrogen as N in water	L082-PL	c
CBH-101	None Supplied	W	1951714	c	Ammonium as NH4 in water	L082-PL	c
CBH-101	None Supplied	W	1951714	c	Electrical conductivity at 20oC of water	L031-PL	c
CBH-101	None Supplied	W	1951714	c	pH at 20oC in water (automated)	L099-PL	c
CBH-102	None Supplied	W	1951715	c	Ammonia as NH3 in water	L082-PL	c
CBH-102	None Supplied	W	1951715	c	Ammoniacal Nitrogen as N in water	L082-PL	c
CBH-102	None Supplied	W	1951715	c	Ammonium as NH4 in water	L082-PL	c
CBH-102	None Supplied	W	1951715	c	Electrical conductivity at 20oC of water	L031-PL	c
CBH-102	None Supplied	W	1951715	c	pH at 20oC in water (automated)	L099-PL	c
CBH-103	None Supplied	W	1951716	c	Ammonia as NH3 in water	L082-PL	c
CBH-103	None Supplied	W	1951716	c	Ammoniacal Nitrogen as N in water	L082-PL	c
CBH-103	None Supplied	W	1951716	c	Ammonium as NH4 in water	L082-PL	c
CBH-103	None Supplied	W	1951716	c	Electrical conductivity at 20oC of water	L031-PL	c
CBH-103	None Supplied	W	1951716	c	pH at 20oC in water (automated)	L099-PL	c
CBH-104	None Supplied	W	1951717	c	Ammonia as NH3 in water	L082-PL	c
CBH-104	None Supplied	W	1951717	c	Ammoniacal Nitrogen as N in water	L082-PL	c
CBH-104	None Supplied	W	1951717	c	Ammonium as NH4 in water	L082-PL	c
CBH-104	None Supplied	W	1951717	c	Electrical conductivity at 20oC of water	L031-PL	c
CBH-104	None Supplied	W	1951717	c	pH at 20oC in water (automated)	L099-PL	c
CBH-106	None Supplied	W	1951718	c	Ammonia as NH3 in water	L082-PL	c
CBH-106	None Supplied	W	1951718	c	Ammoniacal Nitrogen as N in water	L082-PL	c
CBH-106	None Supplied	W	1951718	c	Ammonium as NH4 in water	L082-PL	c
CBH-106	None Supplied	W	1951718	c	Electrical conductivity at 20oC of water	L031-PL	c
CBH-106	None Supplied	W	1951718	c	pH at 20oC in water (automated)	L099-PL	c
CBH-107	None Supplied	W	1951719	c	Ammonia as NH3 in water	L082-PL	c
CBH-107	None Supplied	W	1951719	c	Ammoniacal Nitrogen as N in water	L082-PL	c
CBH-107	None Supplied	W	1951719	c	Ammonium as NH4 in water	L082-PL	c
CBH-107	None Supplied	W	1951719	c	Electrical conductivity at 20oC of water	L031-PL	c
CBH-107	None Supplied	W	1951719	c	pH at 20oC in water (automated)	L099-PL	c
CBH-110	None Supplied	W	1951720	c	Ammonia as NH3 in water	L082-PL	c
CBH-110	None Supplied	W	1951720	c	Ammoniacal Nitrogen as N in water	L082-PL	c
CBH-110	None Supplied	W	1951720	c	Ammonium as NH4 in water	L082-PL	c
CBH-110	None Supplied	W	1951720	c	Electrical conductivity at 20oC of water	L031-PL	c
CBH-110	None Supplied	W	1951720	c	pH at 20oC in water (automated)	L099-PL	c
CBH-111	None Supplied	W	1951721	c	Ammonia as NH3 in water	L082-PL	c
CBH-111	None Supplied	W	1951721	c	Ammoniacal Nitrogen as N in water	L082-PL	c
CBH-111	None Supplied	W	1951721	c	Ammonium as NH4 in water	L082-PL	c
CBH-111	None Supplied	W	1951721	c	Electrical conductivity at 20oC of water	L031-PL	c
CBH-111	None Supplied	W	1951721	c	pH at 20oC in water (automated)	L099-PL	c
RBH-101	None Supplied	W	1951722	c	Ammonia as NH3 in water	L082-PL	c
RBH-101	None Supplied	W	1951722	c	Ammoniacal Nitrogen as N in water	L082-PL	c
RBH-101	None Supplied	W	1951722	c	Ammonium as NH4 in water	L082-PL	c
RBH-101	None Supplied	W	1951722	c	Electrical conductivity at 20oC of water	L031-PL	c
RBH-101	None Supplied	W	1951722	c	pH at 20oC in water (automated)	L099-PL	c
RBH-102	None Supplied	W	1951723	c	Ammonia as NH3 in water	L082-PL	c
RBH-102	None Supplied	W	1951723	c	Ammoniacal Nitrogen as N in water	L082-PL	c
RBH-102	None Supplied	W	1951723	c	Ammonium as NH4 in water	L082-PL	c
RBH-102	None Supplied	W	1951723	c	Electrical conductivity at 20oC of water	L031-PL	c
RBH-102	None Supplied	W	1951723	c	pH at 20oC in water (automated)	L099-PL	c
RBH-103	None Supplied	W	1951724	c	Ammonia as NH3 in water	L082-PL	c
RBH-103	None Supplied	W	1951724	c	Ammoniacal Nitrogen as N in water	L082-PL	c
RBH-103	None Supplied	W	1951724	c	Ammonium as NH4 in water	L082-PL	c
RBH-103	None Supplied	W	1951724	c	Electrical conductivity at 20oC of water	L031-PL	c
RBH-103	None Supplied	W	1951724	c	pH at 20oC in water (automated)	L099-PL	c
RBH-104	None Supplied	W	1951725	c	Ammonia as NH3 in water	L082-PL	c
RBH-104	None Supplied	W	1951725	c	Ammoniacal Nitrogen as N in water	L082-PL	c
RBH-104	None Supplied	W	1951725	c	Ammonium as NH4 in water	L082-PL	c
RBH-104	None Supplied	W	1951725	c	Electrical conductivity at 20oC of water	L031-PL	c
RBH-104	None Supplied	W	1951725	c	pH at 20oC in water (automated)	L099-PL	c

Sample Deviation Report

Analytical Report Number : 21-89202
Project / Site name: Huntingdon Road, Thrapston

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
CBH-101	None Supplied	W	1951714	c	Ammonia as NH3 in water	L082-PL	c
RBH-105	None Supplied	W	1951726	c	Ammonia as NH3 in water	L082-PL	c
RBH-105	None Supplied	W	1951726	c	Ammoniacal Nitrogen as N in water	L082-PL	c
RBH-105	None Supplied	W	1951726	c	Ammonium as NH4 in water	L082-PL	c
RBH-105	None Supplied	W	1951726	c	Electrical conductivity at 20oC of water	L031-PL	c
RBH-105	None Supplied	W	1951726	c	pH at 20oC in water (automated)	L099-PL	c
RBH-106	None Supplied	W	1951727	c	Ammonia as NH3 in water	L082-PL	c
RBH-106	None Supplied	W	1951727	c	Ammoniacal Nitrogen as N in water	L082-PL	c
RBH-106	None Supplied	W	1951727	c	Ammonium as NH4 in water	L082-PL	c
RBH-106	None Supplied	W	1951727	c	Electrical conductivity at 20oC of water	L031-PL	c
RBH-106	None Supplied	W	1951727	c	pH at 20oC in water (automated)	L099-PL	c
RBH-107	None Supplied	W	1951728	c	Ammonia as NH3 in water	L082-PL	c
RBH-107	None Supplied	W	1951728	c	Ammoniacal Nitrogen as N in water	L082-PL	c
RBH-107	None Supplied	W	1951728	c	Ammonium as NH4 in water	L082-PL	c
RBH-107	None Supplied	W	1951728	c	Electrical conductivity at 20oC of water	L031-PL	c
RBH-107	None Supplied	W	1951728	c	pH at 20oC in water (automated)	L099-PL	c
RBH-108	None Supplied	W	1951729	c	Ammonia as NH3 in water	L082-PL	c
RBH-108	None Supplied	W	1951729	c	Ammoniacal Nitrogen as N in water	L082-PL	c
RBH-108	None Supplied	W	1951729	c	Ammonium as NH4 in water	L082-PL	c
RBH-108	None Supplied	W	1951729	c	Electrical conductivity at 20oC of water	L031-PL	c
RBH-108	None Supplied	W	1951729	c	pH at 20oC in water (automated)	L099-PL	c

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Analytical Report Number : 22-35937

Replaces Analytical Report Number: 22-35937, issue no. 1
Client references/information amended.

Project / Site name:	Thrapston	**Samples received on:**	27/01/2022
Your job number:	C-18443	**Samples instructed on/ Analysis started on:**	27/01/2022
Your order number:	PO13483	**Analysis completed by:**	03/02/2022
Report Issue Number:	2	**Report issued on:**	17/03/2022
Samples Analysed:	9 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: 22-35937
Project / Site name: Thrapston

Your Order No: PO13483

Lab Sample Number				2152614	2152615	2152616	2152617	2152618
Sample Reference				CBH-106	CBH-107	RBH-201	RBH-207	RBH-211
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.10	3.57	9.60	6.00	6.32
Date Sampled				26/01/2022	26/01/2022	26/01/2022	26/01/2022	26/01/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.7	7.4	8	7.8	7.7
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	1400	1400	950	610	1200
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sulphate as SO4	mg/l	0.045	ISO 17025	315	948	368	125	1090
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	0.15	ISO 17025	220	44	79	18	38
Fluoride	µg/l	50	ISO 17025	360	270	430	160	250
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	6700	5000	24	25	200
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	8100	6100	29	31	240
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	8600	6500	31	33	250
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	43.3	18	5.76	3.26	2.66
Nitrate as N	mg/l	0.01	ISO 17025	0.39	0.48	0.26	22.7	4.16
Nitrate as NO3	mg/l	0.05	ISO 17025	1.72	2.13	1.14	100	18.4
Nitrite as N	µg/l	1	ISO 17025	< 1.0	8.9	3.4	1.2	1500
Nitrite as NO2	µg/l	5	ISO 17025	< 5.0	29	11	< 5.0	4900
Alkalinity as CaCO3	mg/l	3	ISO 17025	380	690	170	230	250
Hardness - Total	mgCaCO3/l	1	ISO 17025	729	1670	355	405	1870
Redox Potential	mV	-800	NONE	69.4	85.3	62.5	36.8	81.4
Bromate by IC	mg/l	0.002	ISO 17025	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Total Phenols								
Total Phenols (monohydric)	µg/l	1	ISO 17025	2.5	2.1	1.9	2.1	2.4

Analytical Report Number: 22-35937
Project / Site name: Thrapston

Your Order No: PO13483

Lab Sample Number				2152614	2152615	2152616	2152617	2152618
Sample Reference				CBH-106	CBH-107	RBH-201	RBH-207	RBH-211
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.10	3.57	9.60	6.00	6.32
Date Sampled				26/01/2022	26/01/2022	26/01/2022	26/01/2022	26/01/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
PAH Sums								
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benz	µg/l	0.04	NONE	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16

Analytical Report Number: 22-35937
Project / Site name: Thrapston

Your Order No: PO13483

Lab Sample Number				2152614	2152615	2152616	2152617	2152618
Sample Reference				CBH-106	CBH-107	RBH-201	RBH-207	RBH-211
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.10	3.57	9.60	6.00	6.32
Date Sampled				26/01/2022	26/01/2022	26/01/2022	26/01/2022	26/01/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Boron (dissolved)	µg/l	10	ISO 17025	260	180	280	96	740
Calcium (dissolved)	mg/l	0.012	ISO 17025	240	530	120	150	620
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Iron (dissolved)	mg/l	0.004	ISO 17025	0.31	0.13	0.009	0.17	0.017
Iron (dissolved)	µg/l	4	ISO 17025	310	130	9.3	170	17
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Magnesium (dissolved)	mg/l	0.005	ISO 17025	35	80	16	8.4	78
Mn (II)	mg/l	0.02	NONE	0.78	0.77	0.1	< 0.02	0.08
Mn (IV)	mg/l	0.02	NONE	3.36	1.53	< 0.02	< 0.02	< 0.02
Sodium (dissolved)	mg/l	0.01	ISO 17025	120	63	140	13	46
Aluminium (dissolved)	µg/l	1	ISO 17025	8.7	17	51	4.8	2.8
Antimony (dissolved)	µg/l	0.4	ISO 17025	0.6	0.6	0.8	1.3	0.7
Arsenic (dissolved)	µg/l	0.15	ISO 17025	3.26	1.45	1.09	< 0.15	0.82
Barium (dissolved)	µg/l	0.06	ISO 17025	190	62	44	22	22
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.04	< 0.02	0.04	< 0.02	0.04
Chromium (dissolved)	µg/l	0.2	ISO 17025	2.5	4.9	1.4	2.2	1.7
Cobalt (dissolved)	µg/l	0.2	ISO 17025	17	3.6	1.5	0.8	8.1
Copper (dissolved)	µg/l	0.5	ISO 17025	5	2.9	5.6	2.8	2.3
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	0.6	0.3	< 0.2
Manganese (dissolved)	µg/l	0.05	ISO 17025	4100	2200	150	6.9	88
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	22	9.5	5.4	3.2	40
Selenium (dissolved)	µg/l	0.6	ISO 17025	11	4.5	3.6	1.3	1.4
Silver (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Tin (dissolved)	µg/l	0.2	ISO 17025	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Vanadium (dissolved)	µg/l	0.2	ISO 17025	1.2	0.4	0.5	< 0.2	0.3
Zinc (dissolved)	µg/l	0.5	ISO 17025	7.1	9.7	8.3	7.6	27
Monoaromatics & Oxygenates								
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sum of m, p & o-Xylene	µg/l	2	ISO 17025	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

Analytical Report Number: 22-35937
Project / Site name: Thrapston

Your Order No: PO13483

Lab Sample Number				2152614	2152615	2152616	2152617	2152618
Sample Reference				CBH-106	CBH-107	RBH-201	RBH-207	RBH-211
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.10	3.57	9.60	6.00	6.32
Date Sampled				26/01/2022	26/01/2022	26/01/2022	26/01/2022	26/01/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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Lab Sample Number				2152614	2152615	2152616	2152617	2152618
Sample Reference				CBH-106	CBH-107	RBH-201	RBH-207	RBH-211
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.10	3.57	9.60	6.00	6.32
Date Sampled				26/01/2022	26/01/2022	26/01/2022	26/01/2022	26/01/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Dichlorodifluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Trihalomethanes	µg/l	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Total Trichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Total Dichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichloroethylene (TCE) + Tetrachloroethylene (PCE)	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,2-Dichloroethene	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,3-Dichloropropane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Tetrachloroethane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	ND	ND	ND	ND	ND

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Lab Sample Number				2152614	2152615	2152616	2152617	2152618
Sample Reference				CBH-106	CBH-107	RBH-201	RBH-207	RBH-211
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.10	3.57	9.60	6.00	6.32
Date Sampled				26/01/2022	26/01/2022	26/01/2022	26/01/2022	26/01/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

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Lab Sample Number				2152614	2152615	2152616	2152617	2152618
Sample Reference				CBH-106	CBH-107	RBH-201	RBH-207	RBH-211
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.10	3.57	9.60	6.00	6.32
Date Sampled				26/01/2022	26/01/2022	26/01/2022	26/01/2022	26/01/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
3&4-Methylphenol	µg/l	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	ND	ND	ND	ND	ND

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

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Lab Sample Number				2152619	2152620	2152621	2152622
Sample Reference				RBH-214	RBH-216	RBH-218	RBH-219
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				11.90	6.29	8.57	2.46
Date Sampled				26/01/2022	26/01/2022	26/01/2022	26/01/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
General Inorganics							
pH	pH Units	N/A	ISO 17025	7.3	8.1	7.3	7.5
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	1300	670	1300	810
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	4.6	< 1.0	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Sulphate as SO4	mg/l	0.045	ISO 17025	1220	152	979	385
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	0.15	ISO 17025	31	75	130	40
Fluoride	µg/l	50	ISO 17025	320	580	410	270
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	760	460	400	30
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	920	560	480	36
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	970	590	510	38
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	2.56	3.23	6.77	2.19
Nitrate as N	mg/l	0.01	ISO 17025	0.72	2.66	0.58	2.09
Nitrate as NO3	mg/l	0.05	ISO 17025	3.17	11.8	2.55	9.26
Nitrite as N	µg/l	1	ISO 17025	37	260	370	130
Nitrite as NO2	µg/l	5	ISO 17025	120	840	1200	440
Alkalinity as CaCO3	mg/l	3	ISO 17025	280	170	350	230
Hardness - Total	mgCaCO3/l	1	ISO 17025	1990	264	1710	629
Redox Potential	mV	-800	NONE	97.1	74.2	99.8	91
Bromate by IC	mg/l	0.002	ISO 17025	< 0.002	< 0.002	< 0.002	< 0.002
Total Phenols							
Total Phenols (monohydric)	µg/l	1	ISO 17025	4	2.6	2	2

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Lab Sample Number				2152619	2152620	2152621	2152622
Sample Reference				RBH-214	RBH-216	RBH-218	RBH-219
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				11.90	6.29	8.57	2.46
Date Sampled				26/01/2022	26/01/2022	26/01/2022	26/01/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Speciated PAHs							
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001
PAH Sums							
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benz	µg/l	0.04	NONE	< 0.040	< 0.040	< 0.040	< 0.040
Total PAH							
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16

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Lab Sample Number				2152619	2152620	2152621	2152622
Sample Reference				RBH-214	RBH-216	RBH-218	RBH-219
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				11.90	6.29	8.57	2.46
Date Sampled				26/01/2022	26/01/2022	26/01/2022	26/01/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Heavy Metals / Metalloids							
Boron (dissolved)	µg/l	10	ISO 17025	1700	780	500	120
Calcium (dissolved)	mg/l	0.012	ISO 17025	650	78	590	230
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Iron (dissolved)	mg/l	0.004	ISO 17025	0.076	0.085	< 0.004	< 0.004
Iron (dissolved)	µg/l	4	ISO 17025	76	85	< 4.0	< 4.0
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	< 0.20
Magnesium (dissolved)	mg/l	0.005	ISO 17025	89	17	55	15
Mn (II)	mg/l	0.02	NONE	0.09	< 0.02	0.27	0.03
Mn (IV)	mg/l	0.02	NONE	< 0.02	< 0.02	0.05	< 0.02
Sodium (dissolved)	mg/l	0.01	ISO 17025	52	63	82	44
Aluminium (dissolved)	µg/l	1	ISO 17025	10	30	5	2
Antimony (dissolved)	µg/l	0.4	ISO 17025	0.7	1.7	0.6	1.2
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.54	1.31	1.33	0.46
Barium (dissolved)	µg/l	0.06	ISO 17025	18	40	19	19
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.05	0.02	0.06	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	2.8	2.1	2.7	2.1
Cobalt (dissolved)	µg/l	0.2	ISO 17025	11	1	17	2.8
Copper (dissolved)	µg/l	0.5	ISO 17025	2.3	1.7	3.4	1.3
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2
Manganese (dissolved)	µg/l	0.05	ISO 17025	110	24	370	52
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	19	4.2	26	6.8
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.2	8.4	2.1	3.4
Silver (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Tin (dissolved)	µg/l	0.2	ISO 17025	< 0.20	< 0.20	< 0.20	< 0.20
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.3	0.7	0.6	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	13	7.5	12	6.4
Monoaromatics & Oxygenates							
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Sum of m, p & o-Xylene	µg/l	2	ISO 17025	< 2.0	< 2.0	< 2.0	< 2.0

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Lab Sample Number				2152619	2152620	2152621	2152622
Sample Reference				RBH-214	RBH-216	RBH-218	RBH-219
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				11.90	6.29	8.57	2.46
Date Sampled				26/01/2022	26/01/2022	26/01/2022	26/01/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
VOCs							
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0

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Lab Sample Number				2152619	2152620	2152621	2152622
Sample Reference				RBH-214	RBH-216	RBH-218	RBH-219
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				11.90	6.29	8.57	2.46
Date Sampled				26/01/2022	26/01/2022	26/01/2022	26/01/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0
Dichlorodifluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
Total Trihalomethanes	µg/l	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0
Total Trichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0
Total Dichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0
Trichloroethylene (TCE) + Tetrachloroethylene (PCE)	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,2-Dichloroethene	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,3-Dichloropropane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0
Tetrachloroethane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	ND	ND	ND	ND

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Project / Site name: Thrapston

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Lab Sample Number				2152619	2152620	2152621	2152622
Sample Reference				RBH-214	RBH-216	RBH-218	RBH-219
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				11.90	6.29	8.57	2.46
Date Sampled				26/01/2022	26/01/2022	26/01/2022	26/01/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
SVOCs							
Aniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01

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Lab Sample Number				2152619	2152620	2152621	2152622
Sample Reference				RBH-214	RBH-216	RBH-218	RBH-219
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				11.90	6.29	8.57	2.46
Date Sampled				26/01/2022	26/01/2022	26/01/2022	26/01/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
3&4-Methylphenol	µg/l	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	ND	ND	ND	ND

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

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in 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
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
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Fluoride in water	Determination of fluoride in water by 1:1 ratio with a buffer solution followed by Ion Selective Electrode. Accredited matrices: SW, PW, GW.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
Monohydric phenols in water - LOW LEVEL 1 ug/l	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
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).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
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08,	L078-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
Redox Potential of waters	Determination of redox potential in water by electrometric measurement versus Ag/AgCl electrode.	In house method.	L084-PL	W	NONE
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 after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	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	ISO 17025
Tentatively identified compounds (SVOC) in water	Determination of semi-volatile organic compounds total ion count in water by extraction with hexane followed by GC-MS followed by a full library scan.	In-house method based on USEPA 8270	L070-PL	W	NONE

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
Tentatively identified compounds (VOC) in water	Determination of volatile organic compounds total ion count in water by headspace GC-MS followed by a full library scan.	In-house method based on USEPA8260	L073B-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-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
Speciated EPA-16 PAHs in water (LOW LEVEL Dets)	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270 (low level)	L102B-PL	W	NONE
Ammonia as NH3 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
Ammoniacal Nitrogen as N in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (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
Ammonium as NH4 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
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). 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
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Volatile organic compounds in water extended	Determination of volatile organic compounds in water by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	NONE
Cr (III) in water	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Low level 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
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
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Free cyanide (low level) 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
Bromate in Water	Determination of bromate in waters based on ion chromatography. Accredited matrices GW, PW, SW.	In house method based on Standard Methods for the Analysis of Water and Waste Water, method 4500	L008-PL	W	ISO 17025

Analytical Report Number : 22-35937
Project / Site name: Thrapston

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Specific PAH sums in water	Determination of PAH compounds in water by extraction in hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE
Chloride in water	Determination of Chloride (diissolved) colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025
Alkalinity in Water (by discreet analyser)	Determination of Alkalinity by discreet analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	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.

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Analytical Report Number : 22-41895

Replaces Analytical Report Number: 22-41895, issue no. 1
Additional analysis undertaken.

Project / Site name:	Thrapston	**Samples received on:**	24/02/2022
Your job number:	C-18443	**Samples instructed on/ Analysis started on:**	24/02/2022
Your order number:	PO14235	**Analysis completed by:**	22/03/2022
Report Issue Number:	2	**Report issued on:**	23/03/2022
Samples Analysed:	13 water samples		

Signed:

Adam Fenwick
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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

Analytical Report Number: 22-41895
Project / Site name: Thrapston

Your Order No: PO14235

Lab Sample Number				2185340	2185341	2185342	2185343	2185344	2185345
Sample Reference				CBH-106	CBH-107	RBH-201	RBH-207	RBH-211	RBH-214
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.10	3.60	9.60	6.00	6.30	11.20
Date Sampled				23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
General Inorganics									
pH	pH Units	N/A	ISO 17025	7.2	7.2	7.6	7.4	7.2	7.0
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	1400	1000	1200	690	1400	1400
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	3.3	< 1.0	< 1.0	2.7	< 1.0	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sulphate as SO4	µg/l	45	ISO 17025	369000	312000	510000	125000	1190000	1420000
Sulphate as SO4	mg/l	0.045	ISO 17025	369	312	510	125	1190	1420
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	0.15	ISO 17025	230	59	81	19	34	29
Fluoride	µg/l	50	ISO 17025	300	240	430	160	300	340
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	6700	1100	< 15	< 15	180	310
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	8100	1400	< 15	< 15	210	370
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	8600	1400	< 15	< 15	230	390
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	48.5	19.5	10.7	11.3	9.53	9.66
Nitrate as N	mg/l	0.01	ISO 17025	0.34	0.27	0.13	20.9	5.35	1.45
Nitrate as NO3	mg/l	0.05	ISO 17025	1.5	1.19	0.57	92.7	23.7	6.42
Nitrite as N	µg/l	1	ISO 17025	< 1.0	5	< 1.0	2.6	800	20
Nitrite as NO2	µg/l	5	ISO 17025	< 5.0	17	< 5.0	8.5	2600	66
Alkalinity as CaCO3	mg/l	3	ISO 17025	380	490	180	250	280	330
Hardness - Total	mgCaCO3/l	1	ISO 17025	822	803	618	479	1760	2030
Redox Potential	mV	-800	NONE	173.7	168.4	155.2	156.6	172.7	180.8
Bromate by IC	mg/l	0.002	ISO 17025	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Total Phenols									
Total Phenols (monohydric)	µg/l	1	ISO 17025	2.5	2.4	2.3	2.5	2.5	2.6
Speciated PAHs									
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAH Sums									
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benz	µg/l	0.04	NONE	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
Total PAH									

Analytical Report Number: 22-41895
Project / Site name: Thrapston

Your Order No: PO14235

Lab Sample Number				2185340	2185341	2185342	2185343	2185344	2185345
Sample Reference				CBH-106	CBH-107	RBH-201	RBH-207	RBH-211	RBH-214
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.10	3.60	9.60	6.00	6.30	11.20
Date Sampled				23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
Heavy Metals / Metalloids									
Boron (dissolved)	µg/l	10	ISO 17025	280	150	290	79	850	2000
Calcium (dissolved)	mg/l	0.012	ISO 17025	260	290	220	180	540	620
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Iron (dissolved)	mg/l	0.004	ISO 17025	0.056	0.03	0.017	0.014	0.011	0.029
Iron (dissolved)	µg/l	4	ISO 17025	56	30	17	14	11	29
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Magnesium (dissolved)	mg/l	0.005	ISO 17025	39	18	19	8	99	120
Mn (II)	mg/l	0.02	NONE	0.43	0.43	0.14	0.02	0.04	0.06
Mn (IV)	mg/l	0.02	NONE	4.28	0.47	< 0.02	< 0.02	0.03	< 0.02
Sodium (dissolved)	mg/l	0.01	ISO 17025	170	150	240	16	59	80
Aluminium (dissolved)	µg/l	1	ISO 17025	7.2	31	24	23	32	2.9
Antimony (dissolved)	µg/l	0.4	ISO 17025	0.5	0.6	0.6	0.4	0.6	0.5
Arsenic (dissolved)	µg/l	0.15	ISO 17025	3.04	1.01	1	0.21	0.78	0.36
Barium (dissolved)	µg/l	0.06	ISO 17025	150	68	43	30	27	22
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.06	< 0.02	< 0.02	0.04	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	3.7	4.4	1.6	2.6	2.8	2.4
Cobalt (dissolved)	µg/l	0.2	ISO 17025	19	4.2	1.3	1.2	6.3	4.3
Copper (dissolved)	µg/l	0.5	ISO 17025	3.9	6.8	2.1	3	1.6	2.5
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Manganese (dissolved)	µg/l	0.05	ISO 17025	4700	900	140	22	77	65
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	23	11	4.8	4	36	10
Selenium (dissolved)	µg/l	0.6	ISO 17025	13	5.1	5.7	1.2	1.5	0.9
Silver (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Tin (dissolved)	µg/l	0.2	ISO 17025	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Vanadium (dissolved)	µg/l	0.2	ISO 17025	1.3	1.2	0.5	< 0.2	0.6	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	5.8	6.5	8.4	6.4	26	7.5

Analytical Report Number: 22-41895
Project / Site name: Thrapston

Your Order No: PO14235

Lab Sample Number				2185340	2185341	2185342	2185343	2185344	2185345
Sample Reference				CBH-106	CBH-107	RBH-201	RBH-207	RBH-211	RBH-214
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.10	3.60	9.60	6.00	6.30	11.20
Date Sampled				23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
Monoaromatics & Oxygenates									
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sum of m, p & o-Xylene	µg/l	2	ISO 17025	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Petroleum Hydrocarbons									
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C35 - C44 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C44) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C35 - C44 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C44) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG Total C5 - C44 $_{EH+HS\_1D\_TOTAL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10

Analytical Report Number: 22-41895
Project / Site name: Thrapston

Your Order No: PO14235

Lab Sample Number				2185340	2185341	2185342	2185343	2185344	2185345
Sample Reference				CBH-106	CBH-107	RBH-201	RBH-207	RBH-211	RBH-214
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.10	3.60	9.60	6.00	6.30	11.20
Date Sampled				23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
VOCs									
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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Lab Sample Number				2185340	2185341	2185342	2185343	2185344	2185345
Sample Reference				CBH-106	CBH-107	RBH-201	RBH-207	RBH-211	RBH-214
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.10	3.60	9.60	6.00	6.30	11.20
Date Sampled				23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Dichlorodifluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Trihalomethanes	µg/l	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Total Trichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Total Dichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichloroethylene (TCE) + Tetrachloroethylene (PCE)	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,2-Dichloroethene	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,3-Dichloropropane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Tetrachloroethane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	None Detected	None Detected	None Detected	None Detected	None Detected	None Detected

Analytical Report Number: 22-41895
Project / Site name: Thrapston

Your Order No: PO14235

Lab Sample Number				2185340	2185341	2185342	2185343	2185344	2185345
Sample Reference				CBH-106	CBH-107	RBH-201	RBH-207	RBH-211	RBH-214
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.10	3.60	9.60	6.00	6.30	11.20
Date Sampled				23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
SVOCs									
Aniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

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Your Order No: PO14235

Lab Sample Number				2185340	2185341	2185342	2185343	2185344	2185345
Sample Reference				CBH-106	CBH-107	RBH-201	RBH-207	RBH-211	RBH-214
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.10	3.60	9.60	6.00	6.30	11.20
Date Sampled				23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3&4-Methylphenol	µg/l	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	None Detected	None Detected	None Detected	None Detected	None Detected	None Detected

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

Analytical Report Number: 22-41895
Project / Site name: Thrapston

Your Order No: PO14235

Lab Sample Number				2185346	2185347	2185348	2185349	2185350	2185351
Sample Reference				RBH-216	RBH-218	RBH-219	S1	S2	S3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				8.30	8.50	2.50	None Supplied	None Supplied	None Supplied
Date Sampled				23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
General Inorganics									
pH	pH Units	N/A	ISO 17025	7.7	6.8	7.3	8	8.1	8.2
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	790	1400	870	930	760	660
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sulphate as SO4	µg/l	45	ISO 17025	351000	901000	443000	361000	163000	216000
Sulphate as SO4	mg/l	0.045	ISO 17025	351	901	443	361	163	216
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	0.15	ISO 17025	72	120	40	41	79	19
Fluoride	µg/l	50	ISO 17025	570	410	330	360	230	220
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	340	500	< 15	< 15	< 15	< 15
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	410	610	< 15	< 15	< 15	< 15
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	430	640	< 15	< 15	< 15	< 15
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	10.2	21.2	8.98	10.6	10.3	6.56
Nitrate as N	mg/l	0.01	ISO 17025	1.61	0.14	2.54	21.3	18.4	16.4
Nitrate as NO3	mg/l	0.05	ISO 17025	7.14	0.62	11.2	94.2	81.3	72.5
Nitrite as N	µg/l	1	ISO 17025	150	12	< 1.0	48	4.8	1.9
Nitrite as NO2	µg/l	5	ISO 17025	500	41	< 5.0	160	16	6.1
Alkalinity as CaCO3	mg/l	3	ISO 17025	210	410	210	320	240	240
Hardness - Total	mgCaCO3/l	1	ISO 17025	516	1600	728	836	541	606
Redox Potential	mV	-800	NONE	162.6	185.3	172.2	161.1	159.1	157.3
Bromate by IC	mg/l	0.002	ISO 17025	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Total Phenols									
Total Phenols (monohydric)	µg/l	1	ISO 17025	2.6	2.3	2.6	2.8	3.7	3.8
Speciated PAHs									
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAH Sums									
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.02	NONE	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benz	µg/l	0.04	NONE	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
Total PAH									

Analytical Report Number: 22-41895
Project / Site name: Thrapston

Your Order No: PO14235

Lab Sample Number				2185346	2185347	2185348	2185349	2185350	2185351
Sample Reference				RBH-216	RBH-218	RBH-219	S1	S2	S3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				8.30	8.50	2.50	None Supplied	None Supplied	None Supplied
Date Sampled				23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
Heavy Metals / Metalloids									
Boron (dissolved)	µg/l	10	ISO 17025	930	440	77	92	59	71
Calcium (dissolved)	mg/l	0.012	ISO 17025	170	540	270	300	200	230
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Iron (dissolved)	mg/l	0.004	ISO 17025	0.02	0.019	0.02	0.007	0.009	0.019
Iron (dissolved)	µg/l	4	ISO 17025	20	19	20	6.6	9.1	19
Fe2+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Fe3+	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Magnesium (dissolved)	mg/l	0.005	ISO 17025	22	59	14	19	12	9.1
Mn (II)	mg/l	0.02	NONE	0.03	0.52	< 0.02	< 0.02	< 0.02	< 0.02
Mn (IV)	mg/l	0.02	NONE	< 0.02	0.02	< 0.02	< 0.02	< 0.02	< 0.02
Sodium (dissolved)	mg/l	0.01	ISO 17025	120	75	60	40	54	15
Aluminium (dissolved)	µg/l	1	ISO 17025	34	93	9.5	1.4	3.7	14
Antimony (dissolved)	µg/l	0.4	ISO 17025	1	< 0.4	0.6	0.6	0.6	< 0.4
Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.25	0.99	0.42	0.76	0.66	0.36
Barium (dissolved)	µg/l	0.06	ISO 17025	38	19	21	40	34	28
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.03	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	1.9	4.1	2.3	2.8	1.9	2.2
Cobalt (dissolved)	µg/l	0.2	ISO 17025	1.5	11	1.2	0.8	0.6	0.6
Copper (dissolved)	µg/l	0.5	ISO 17025	2.1	2.6	0.9	4.3	4.3	2.2
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Manganese (dissolved)	µg/l	0.05	ISO 17025	37	540	17	13	1.1	0.53
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	5.6	15	5.8	4	3	2.6
Selenium (dissolved)	µg/l	0.6	ISO 17025	11	1.8	3.9	1.5	1.2	1.9
Silver (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Tin (dissolved)	µg/l	0.2	ISO 17025	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.6	0.5	0.3	0.4	0.4	< 0.2
Zinc (dissolved)	µg/l	0.5	ISO 17025	3.9	8	2	8.7	3.3	0.8

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Lab Sample Number				2185346	2185347	2185348	2185349	2185350	2185351
Sample Reference				RBH-216	RBH-218	RBH-219	S1	S2	S3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				8.30	8.50	2.50	None Supplied	None Supplied	None Supplied
Date Sampled				23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
Monoaromatics & Oxygenates									
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sum of m, p & o-Xylene	µg/l	2	ISO 17025	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Petroleum Hydrocarbons									
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C35 - C44 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C44) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C35 - C44 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C44) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG Total C5 - C44 $_{EH+HS\_1D\_TOTAL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10	< 10

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Lab Sample Number				2185346	2185347	2185348	2185349	2185350	2185351
Sample Reference				RBH-216	RBH-218	RBH-219	S1	S2	S3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				8.30	8.50	2.50	None Supplied	None Supplied	None Supplied
Date Sampled				23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
VOCs									
Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

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Lab Sample Number				2185346	2185347	2185348	2185349	2185350	2185351
Sample Reference				RBH-216	RBH-218	RBH-219	S1	S2	S3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				8.30	8.50	2.50	None Supplied	None Supplied	None Supplied
Date Sampled				23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichloromethane	µg/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Dichlorodifluoromethane	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Trihalomethanes	µg/l	4	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Total Trichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Total Dichlorobenzenes	ug/l	3	NONE	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
Trichloroethylene (TCE) + Tetrachloroethylene (PCE)	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,2-Dichloroethene	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total 1,3-Dichloropropane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Tetrachloroethane	ug/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	None Detected	None Detected	None Detected	None Detected	None Detected	None Detected

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Lab Sample Number				2185346	2185347	2185348	2185349	2185350	2185351
Sample Reference				RBH-216	RBH-218	RBH-219	S1	S2	S3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				8.30	8.50	2.50	None Supplied	None Supplied	None Supplied
Date Sampled				23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
SVOCs									
Aniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

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Lab Sample Number				2185346	2185347	2185348	2185349	2185350	2185351
Sample Reference				RBH-216	RBH-218	RBH-219	S1	S2	S3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				8.30	8.50	2.50	None Supplied	None Supplied	None Supplied
Date Sampled				23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022	23/02/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**						
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3&4-Methylphenol	µg/l	0.1	NONE	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	None Detected	None Detected	None Detected	None Detected	None Detected	None Detected

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

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Your Order No: PO14235

Lab Sample Number				2185352
Sample Reference				S4
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				23/02/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
General Inorganics				
pH	pH Units	N/A	ISO 17025	8.2
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	710
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0
Sulphate as SO4	µg/l	45	ISO 17025	160000
Sulphate as SO4	mg/l	0.045	ISO 17025	160
Sulphide	µg/l	5	NONE	< 5.0
Chloride	mg/l	0.15	ISO 17025	69
Fluoride	µg/l	50	ISO 17025	270
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	< 15
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	< 15
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	< 15
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	5.01
Nitrate as N	mg/l	0.01	ISO 17025	18
Nitrate as NO3	mg/l	0.05	ISO 17025	79.7
Nitrite as N	µg/l	1	ISO 17025	8.5
Nitrite as NO2	µg/l	5	ISO 17025	28
Alkalinity as CaCO3	mg/l	3	ISO 17025	240
Hardness - Total	mgCaCO3/l	1	ISO 17025	548
Redox Potential	mV	-800	NONE	158.3
Bromate by IC	mg/l	0.002	ISO 17025	< 0.002
Total Phenols				
Total Phenols (monohydric)	µg/l	1	ISO 17025	3
Speciated PAHs				
Naphthalene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.001	NONE	< 0.001
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01
PAH Sums				
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.020
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.02	NONE	< 0.020
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benz	µg/l	0.04	NONE	< 0.040
Total PAH				

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Lab Sample Number				2185352
Sample Reference				S4
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				23/02/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16

Heavy Metals / Metalloids

Boron (dissolved)	µg/l	10	ISO 17025	58
Calcium (dissolved)	mg/l	0.012	ISO 17025	200
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0
Iron (dissolved)	mg/l	0.004	ISO 17025	0.011
Iron (dissolved)	µg/l	4	ISO 17025	11
Fe2+	mg/l	0.2	NONE	< 0.20
Fe3+	mg/l	0.2	NONE	< 0.20
Magnesium (dissolved)	mg/l	0.005	ISO 17025	11
Mn (II)	mg/l	0.02	NONE	< 0.02
Mn (IV)	mg/l	0.02	NONE	< 0.02
Sodium (dissolved)	mg/l	0.01	ISO 17025	49

Aluminium (dissolved)	µg/l	1	ISO 17025	3.4
Antimony (dissolved)	µg/l	0.4	ISO 17025	0.4
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.82
Barium (dissolved)	µg/l	0.06	ISO 17025	33
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	2.1
Cobalt (dissolved)	µg/l	0.2	ISO 17025	0.6
Copper (dissolved)	µg/l	0.5	ISO 17025	4.4
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2
Manganese (dissolved)	µg/l	0.05	ISO 17025	1.5
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	2.7
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.3
Silver (dissolved)	µg/l	0.05	NONE	< 0.05
Tin (dissolved)	µg/l	0.2	ISO 17025	0.25
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.5
Zinc (dissolved)	µg/l	0.5	ISO 17025	3.9

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Lab Sample Number				2185352
Sample Reference				S4
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				23/02/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Monoaromatics & Oxygenates				
Benzene	µg/l	1	ISO 17025	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0
Sum of m, p & o-Xylene	µg/l	2	ISO 17025	< 2.0
Petroleum Hydrocarbons				
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C16 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C35 - C44 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic (C5 - C44) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C35 - C44 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic (C5 - C44) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG Total C5 - C44 $_{EH+HS\_1D\_TOTAL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10

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Lab Sample Number				2185352
Sample Reference				S4
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				23/02/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
VOCs				
Chloromethane	µg/l	1	ISO 17025	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0

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Lab Sample Number				2185352
Sample Reference				S4
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				23/02/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0
Dichloromethane	µg/l	3	NONE	< 3.0
Dichlorodifluoromethane	µg/l	1	NONE	< 1.0
Total Trihalomethanes	µg/l	4	NONE	< 4.0
Total Trichlorobenzenes	ug/l	3	NONE	< 3.0
Total Dichlorobenzenes	ug/l	3	NONE	< 3.0
Trichloroethylene (TCE) + Tetrachloroethylene (PCE)	ug/l	2	NONE	< 2.0
Total 1,2-Dichloroethene	ug/l	2	NONE	< 2.0
Total 1,3-Dichloropropane	ug/l	2	NONE	< 2.0
Tetrachloroethane	ug/l	2	NONE	< 2.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	None Detected

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Lab Sample Number				2185352
Sample Reference				S4
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				23/02/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
SVOCs				
Aniline	µg/l	0.05	NONE	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01

Analytical Report Number: 22-41895
Project / Site name: Thrapston

Your Order No: PO14235

Lab Sample Number				2185352
Sample Reference				S4
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				23/02/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01
3&4-Methylphenol	µg/l	0.1	NONE	< 0.10

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	None Detected

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

Analytical Report Number : 22-41895
Project / Site name: Thrapston

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in 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
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
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
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Fluoride in water	Determination of fluoride in water by 1:1 ratio with a buffer solution followed by Ion Selective Electrode. Accredited matrices: SW, PW, GW.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
Monohydric phenols in water - LOW LEVEL 1 ug/l	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
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).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
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08,	L078-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
Redox Potential of waters	Determination of redox potential in water by electrometric measurement versus Ag/AgCl electrode.	In house method.	L084-PL	W	NONE
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 after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	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	ISO 17025
Tentatively identified compounds (SVOC) in water	Determination of semi-volatile organic compounds total ion count in water by extraction with hexane followed by GC-MS followed by a full library scan.	In-house method based on USEPA 8270	L070-PL	W	NONE

Analytical Report Number : 22-41895
Project / Site name: Thrapston

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-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
Tentatively identified compounds (VOC) in water	Determination of volatile organic compounds total ion count in water by headspace GC-MS followed by a full library scan.	In-house method based on USEPA8260	L073B-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-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
Speciated EPA-16 PAHs in water (LOW LEVEL Dets)	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270 (low level)	L102B-PL	W	NONE
TPH in (Water)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding.	L070-PL	W	NONE
Ammonia as NH3 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
Ammoniacal Nitrogen as N in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (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
Ammonium as NH4 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
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). 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
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
TPH Chromatogram in Water	TPH Chromatogram in Water.	In-house method	L070-PL	W	NONE
Volatile organic compounds in water extended	Determination of volatile organic compounds in water by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	NONE
Cr (III) in water	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Low level 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
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

Analytical Report Number : 22-41895
Project / Site name: Thrapston

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Free cyanide (low level) 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
Bromate in Water	Determination of bromate in waters based on ion chromatography. Accredited matrices GW, PW, SW.	In house method based on Standard Methods for the Analysis of Water and Waste Water, method 4500	L008-PL	W	ISO 17025
Specific PAH sums in water	Determination of PAH compounds in water by extraction in hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE
Chloride in water	Determination of Chloride (diissolved) colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025
Alkalinity in Water (by discreet analyser)	Determination of Alkalinity by discreet analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025

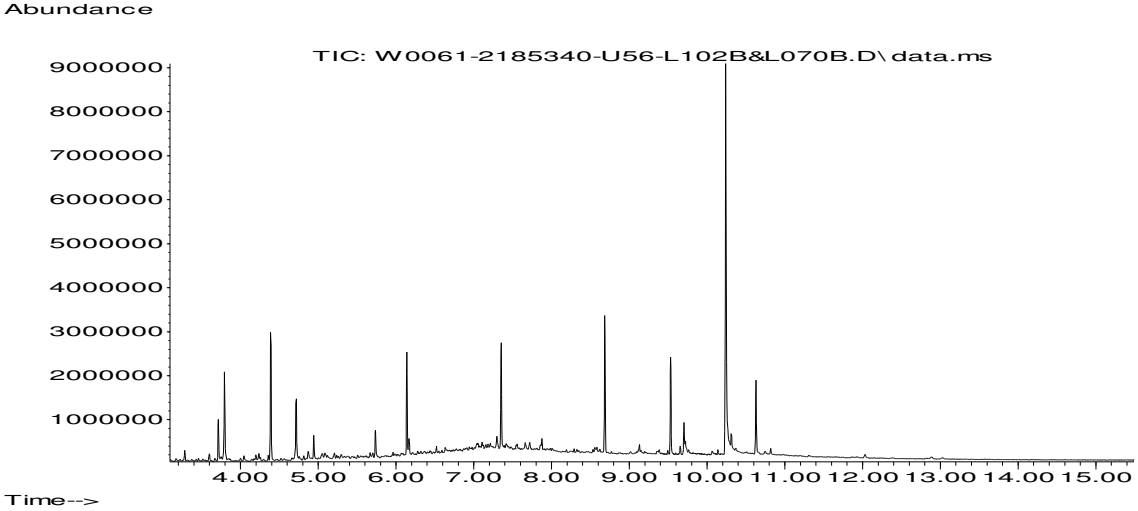
For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received 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.

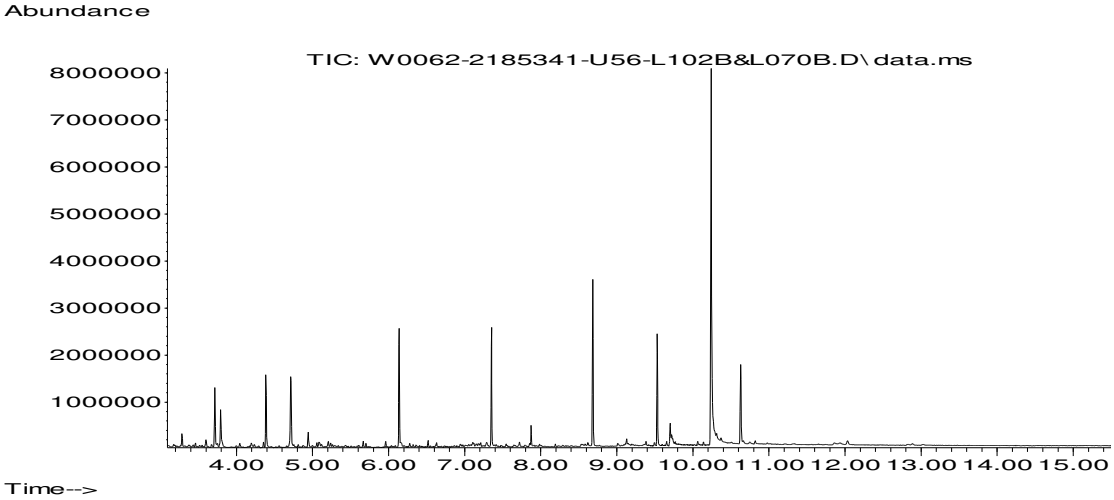
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

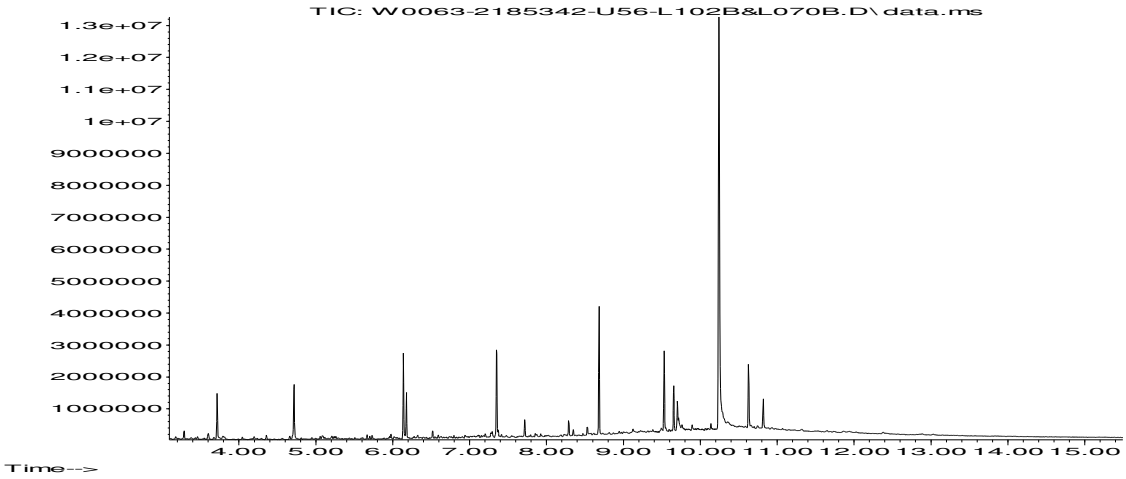
Information in Support of Analytical Results

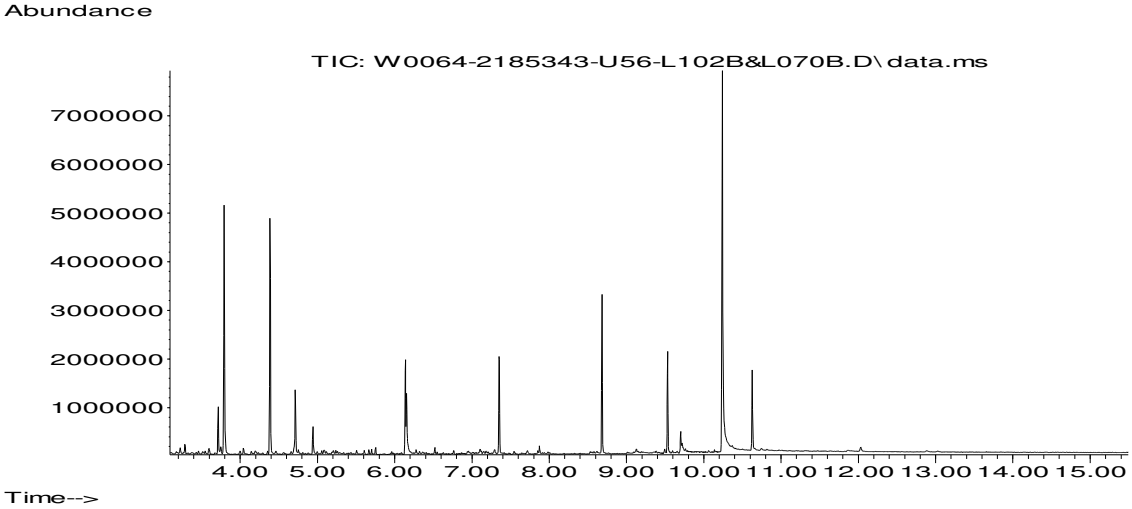
List of HWOL Acronyms and Operators

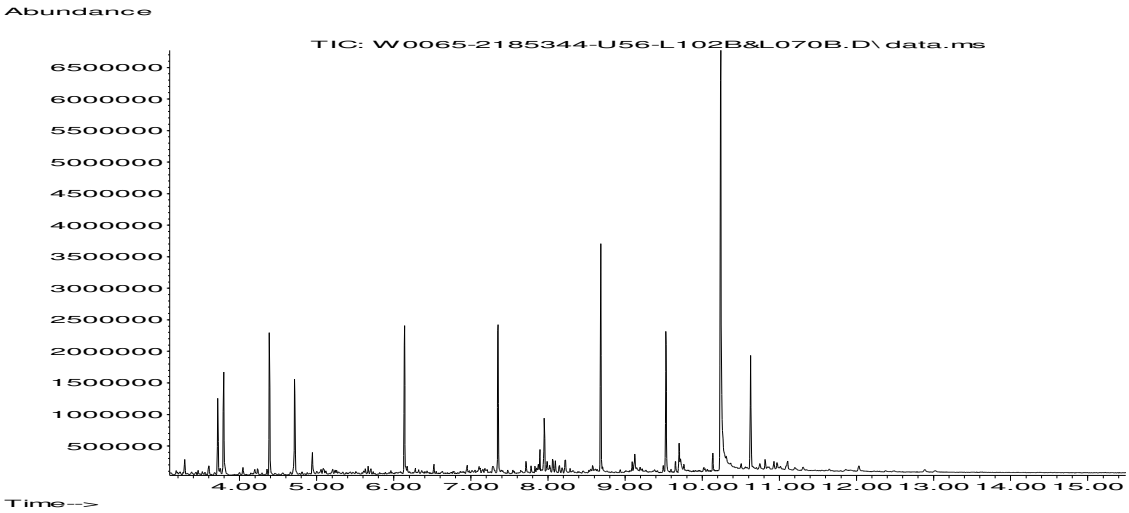
Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column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

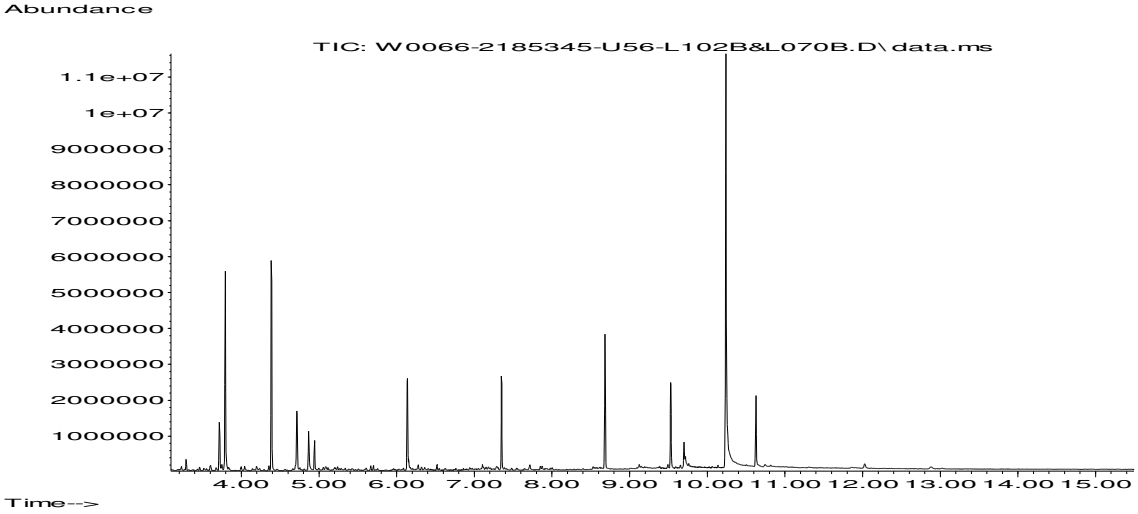


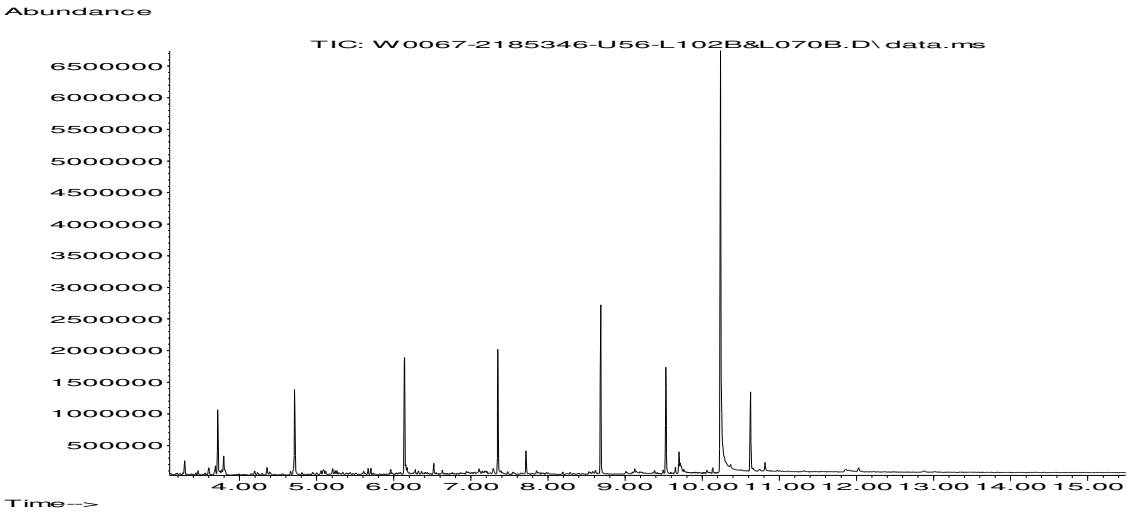


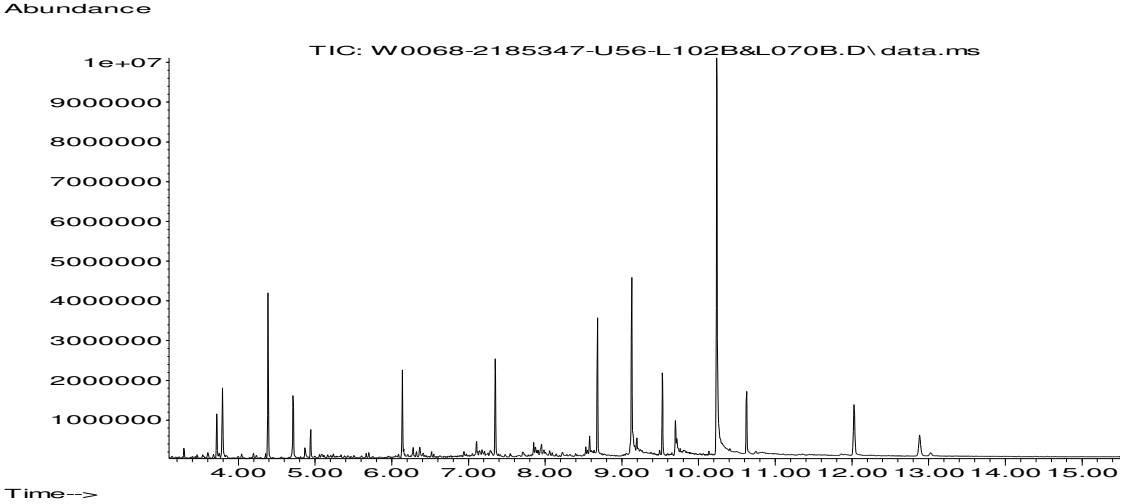


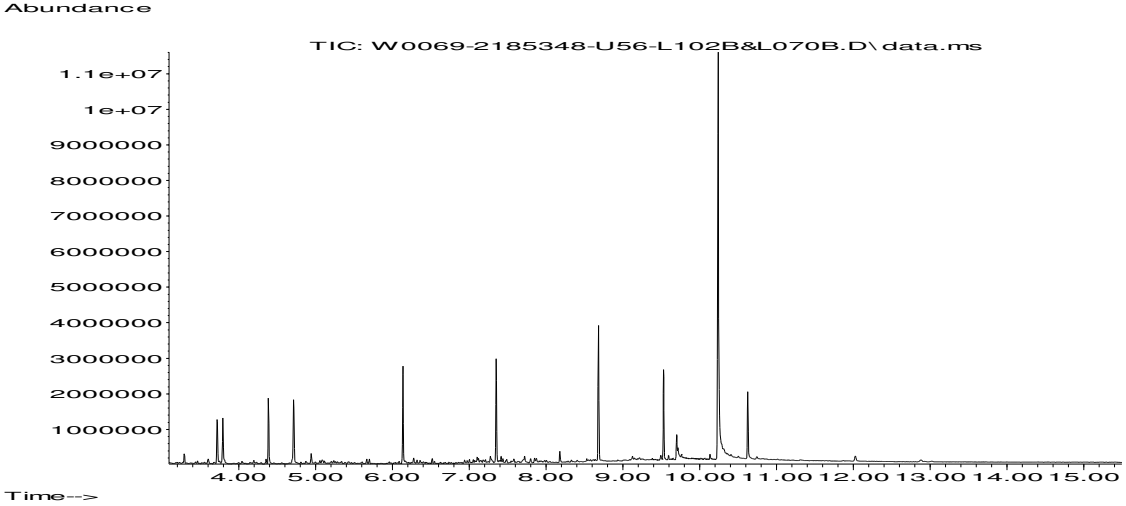


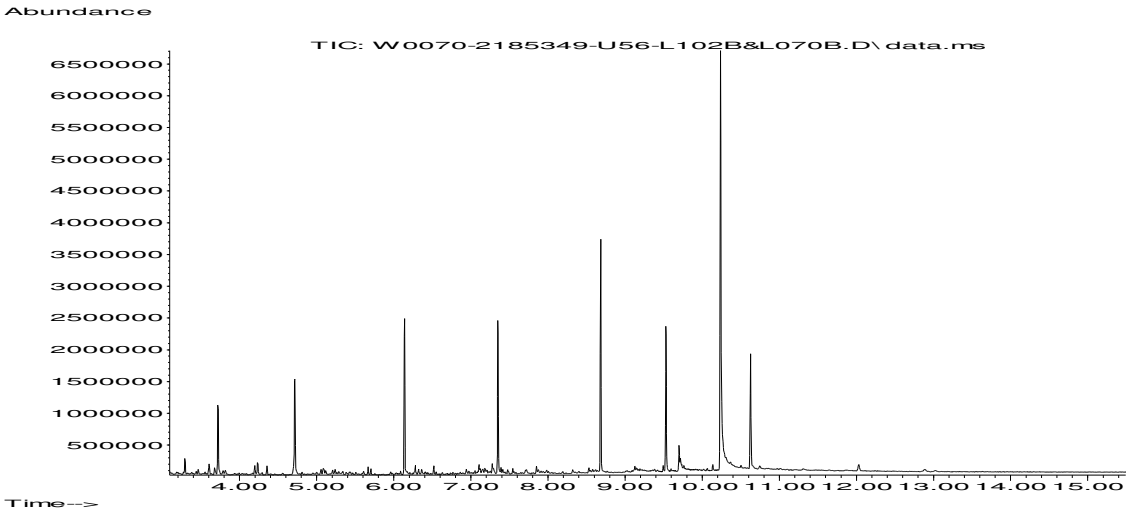


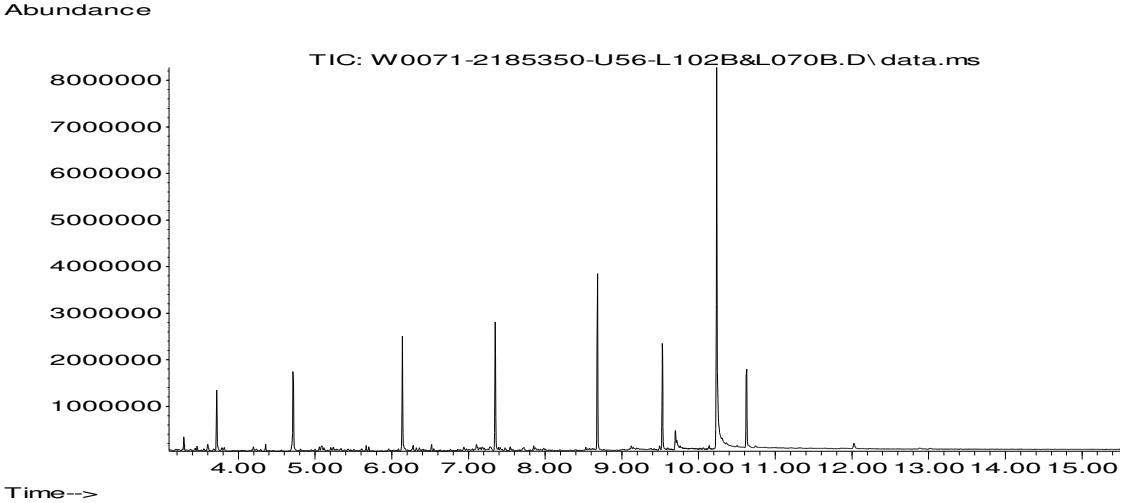


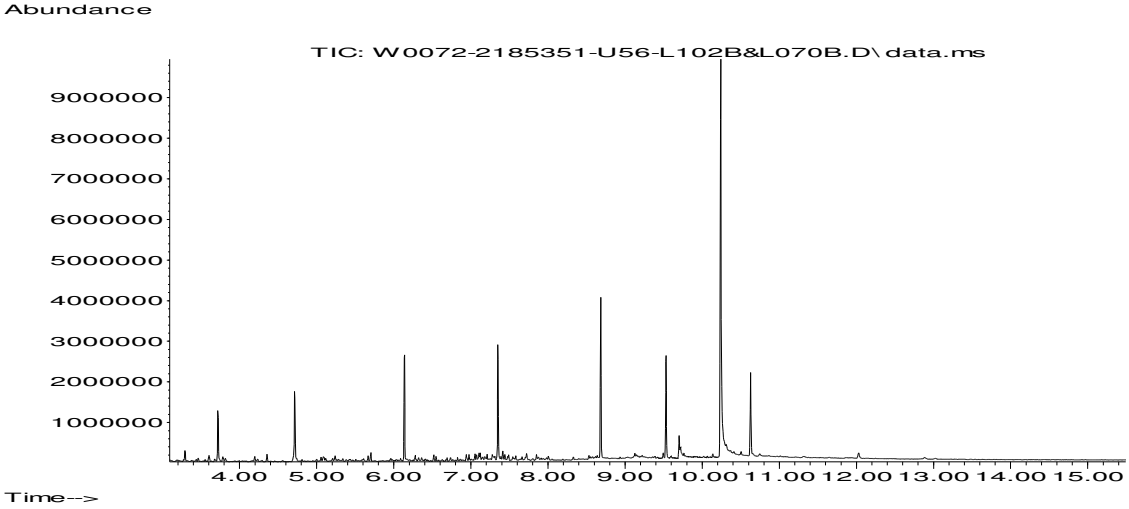


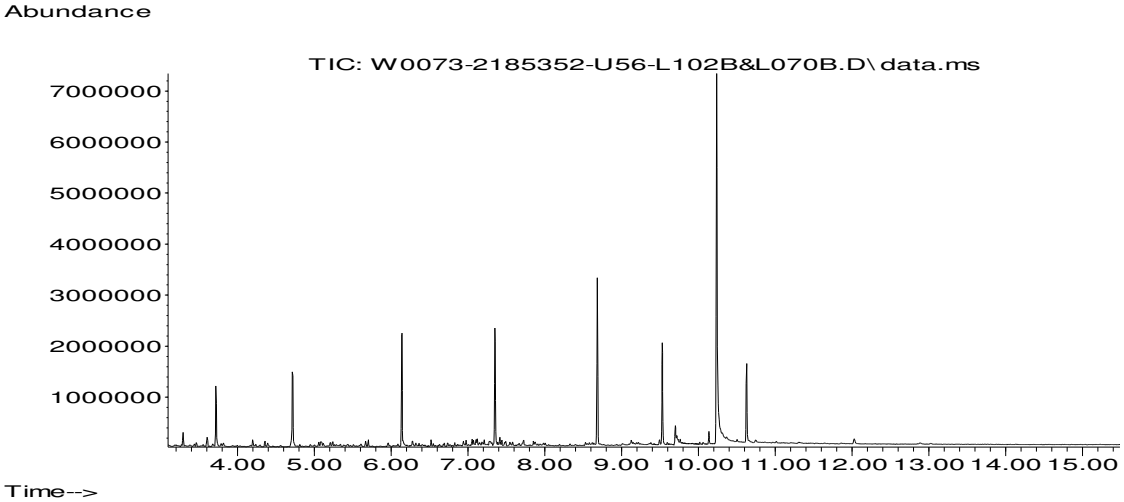












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Analytical Report Number : 22-47495

Project / Site name:	Thrapston	**Samples received on:**	23/03/2022
Your job number:	C 18443	**Samples instructed on/ Analysis started on:**	24/03/2022
Your order number:	PO015005	**Analysis completed by:**	29/03/2022
Report Issue Number:	1	**Report issued on:**	29/03/2022
Samples Analysed:	1 water sample		

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: 22-47495
Project / Site name: Thrapston

Your Order No: PO015005

Lab Sample Number				2215032
Sample Reference				S5
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				24/03/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
General Inorganics				
pH	pH Units	N/A	ISO 17025	8
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	710
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0
Free Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0
Sulphate as SO4	mg/l	0.045	ISO 17025	93.5
Sulphide	µg/l	5	NONE	< 5.0
Chloride	mg/l	0.15	ISO 17025	47
Fluoride	µg/l	50	ISO 17025	230
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	41
Ammoniacal Nitrogen as NH3	µg/l	15	ISO 17025	50
Ammoniacal Nitrogen as NH4	µg/l	15	ISO 17025	53
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	5.67
Nitrate as N	mg/l	0.01	ISO 17025	8.32
Nitrate as NO3	mg/l	0.05	ISO 17025	36.8
Nitrite as N	µg/l	1	ISO 17025	100
Nitrite as NO2	µg/l	5	ISO 17025	330
Alkalinity as CaCO3	mg/l	3	ISO 17025	190
Hardness - Total	mgCaCO3/l	1	ISO 17025	278
Redox Potential	mV	-800	NONE	265.6
Bromate by IC	mg/l	0.002	ISO 17025	< 0.002
Total Phenols				
Total Phenols (monohydric)	µg/l	1	ISO 17025	< 1.0
Speciated PAHs				
Naphthalene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001
PAH Sums				
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.020
Sum of Benzo(ghi)perylene & Indeno(1,2,3-cd)pyrene	µg/l	0.02	NONE	< 0.020
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benz	µg/l	0.04	NONE	< 0.040

Analytical Report Number: 22-47495
Project / Site name: Thrapston

Your Order No: PO015005

Lab Sample Number				2215032
Sample Reference				S5
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				24/03/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Total PAH				
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16
Heavy Metals / Metalloids				
Boron (dissolved)	µg/l	10	ISO 17025	71
Calcium (dissolved)	mg/l	0.012	ISO 17025	99
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0
Chromium (III)	µg/l	5	NONE	< 5.0
Iron (dissolved)	mg/l	0.004	ISO 17025	0.02
Iron (dissolved)	µg/l	4	ISO 17025	21
Fe2+	mg/l	0.2	NONE	< 0.20
Fe3+	mg/l	0.2	NONE	< 0.20
Magnesium (dissolved)	mg/l	0.005	ISO 17025	7.9
Mn (II)	mg/l	0.02	NONE	< 0.02
Mn (IV)	mg/l	0.02	NONE	< 0.02
Sodium (dissolved)	mg/l	0.01	ISO 17025	39
Aluminium (dissolved)	µg/l	1	ISO 17025	6
Antimony (dissolved)	µg/l	0.4	ISO 17025	0.5
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.92
Barium (dissolved)	µg/l	0.06	ISO 17025	19
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.16
Chromium (dissolved)	µg/l	0.2	ISO 17025	1.8
Cobalt (dissolved)	µg/l	0.2	ISO 17025	0.5
Copper (dissolved)	µg/l	0.5	ISO 17025	5.3
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2
Manganese (dissolved)	µg/l	0.05	ISO 17025	1.8
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	3.5
Selenium (dissolved)	µg/l	0.6	ISO 17025	0.9
Silver (dissolved)	µg/l	0.05	NONE	< 0.05
Tin (dissolved)	µg/l	0.2	ISO 17025	0.28
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.8
Zinc (dissolved)	µg/l	0.5	ISO 17025	4.7
Monoaromatics & Oxygenates				
Benzene	µg/l	1	ISO 17025	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0
Sum of m, p & o-Xylene	µg/l	2	ISO 17025	< 2.0

Analytical Report Number: 22-47495
Project / Site name: Thrapston

Your Order No: PO015005

Lab Sample Number				2215032
Sample Reference				S5
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				24/03/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Petroleum Hydrocarbons				
TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C16 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C35 - C44 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic (C5 - C44) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic >C35 - C44 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG - Aromatic (C5 - C44) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
TPH-CWG Total C5 - C44 $_{EH+HS\_1D\_TOTAL\_\#1\_\#2\_MS}$	µg/l	10	NONE	< 10
VOCs				
Chloromethane	µg/l	1	ISO 17025	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0

Analytical Report Number: 22-47495
Project / Site name: Thrapston

Your Order No: PO015005

Lab Sample Number				2215032
Sample Reference				S5
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				24/03/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0
Butylbenzene	µg/l	1	ISO 17025	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0

Dichloromethane	µg/l	3	NONE	< 3.0
Dichlorodifluoromethane	µg/l	1	NONE	< 1.0
Total Trihalomethanes	µg/l	4	NONE	< 4.0
Total Trichlorobenzenes	ug/l	3	NONE	< 3.0
Total Dichlorobenzenes	ug/l	3	NONE	< 3.0
Trichloroethylene (TCE) + Tetrachloroethylene (PCE)	ug/l	2	NONE	< 2.0
Total 1,2-Dichloroethene	ug/l	2	NONE	< 2.0
Total 1,3-Dichloropropane	ug/l	2	NONE	< 2.0
Tetrachloroethane	ug/l	2	NONE	< 2.0

VOCs TICs

VOCs TICs Compound Name		N/A	NONE	ND

Analytical Report Number: 22-47495
Project / Site name: Thrapston

Your Order No: PO015005

Lab Sample Number				2215032
Sample Reference				S5
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				24/03/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
SVOCs				
Aniline	µg/l	0.05	NONE	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01

Analytical Report Number: 22-47495
Project / Site name: Thrapston

Your Order No: PO015005

Lab Sample Number				2215032
Sample Reference				S5
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				24/03/2022
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01

3&4-Methylphenol	µg/l	0.1	NONE	< 0.10

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	ND

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

Analytical Report Number : 22-47495
Project / Site name: Thrapston

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in 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
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
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Fluoride in water	Determination of fluoride in water by 1:1 ratio with a buffer solution followed by Ion Selective Electrode. Accredited matrices: SW, PW, GW.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
Monohydric phenols in water - LOW LEVEL 1 ug/l	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
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).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
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08,	L078-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
Redox Potential of waters	Determination of redox potential in water by electrometric measurement versus Ag/AgCl electrode.	In house method.	L084-PL	W	NONE
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 after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	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	ISO 17025
Tentatively identified compounds (SVOC) in water	Determination of semi-volatile organic compounds total ion count in water by extraction with hexane followed by GC-MS followed by a full library scan.	In-house method based on USEPA 8270	L070-PL	W	NONE

Analytical Report Number : 22-47495
Project / Site name: Thrapston

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-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
Tentatively identified compounds (VOC) in water	Determination of volatile organic compounds total ion count in water by headspace GC-MS followed by a full library scan.	In-house method based on USEPA8260	L036-UK	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-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
Speciated EPA-16 PAHs in water (LOW LEVEL Dets)	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270 (low level)	L102B-PL	W	NONE
TPH in (Water)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding.	L070-PL	W	NONE
Ammonia as NH3 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
Ammoniacal Nitrogen as N in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (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
Ammonium as NH4 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
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). 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
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
TPH Chromatogram in Water	TPH Chromatogram in Water.	In-house method	L070-PL	W	NONE
Volatile organic compounds in water extended	Determination of volatile organic compounds in water by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	NONE
Cr (III) in water	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Low level 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
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

Analytical Report Number : 22-47495
Project / Site name: Thrapston

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Free cyanide (low level) 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
Bromate in Water	Determination of bromate in waters based on ion chromatography. Accredited matrices GW, PW, SW.	In house method based on Standard Methods for the Analysis of Water and Waste Water, method 4500	L008-PL	W	ISO 17025
Specific PAH sums in water	Determination of PAH compounds in water by extraction in hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE
Chloride in water	Determination of Chloride (diissolved) colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025
Alkalinity in Water (by discreet analyser)	Determination of Alkalinity by discreet analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025

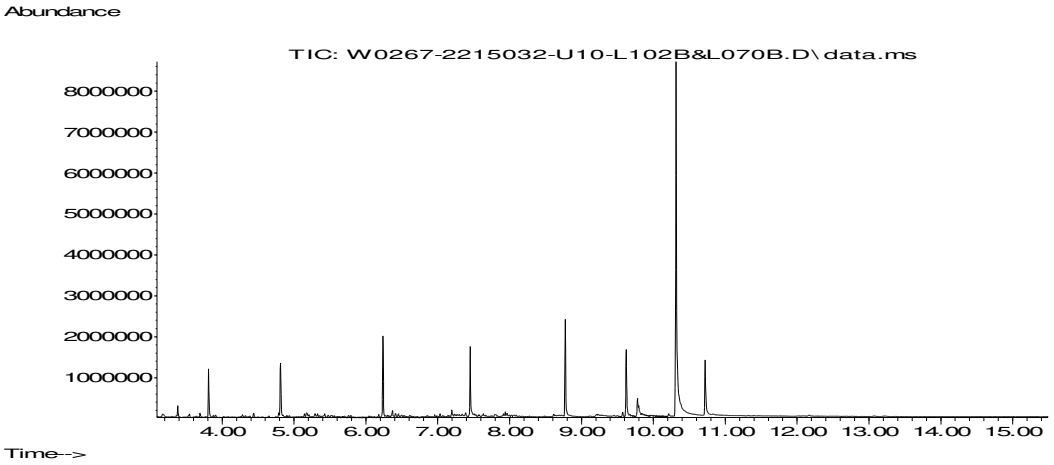
For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received 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.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

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