Water Eaton

PR6a : Land East of Oxford Road

Phase 2 Site Investigation

Bellway | STRATEGIC LAND

Christ Church Oxford

WE / SI / P01

SUMMARY

The site in Water Eaton, Oxfordshire, which comprises approximately 45.8ha of agricultural land, to the east of Oxford Road.

The proposed development is as follows *"Outline application (with all matters except access reserved for future consideration) for the demolition of existing buildings and the erection of up to 800 dwellings (Class C3); a two form entry primary school; a local centre (comprising: convenience retailing (not less than 350sqm and up to 500sqm (Class E(a)), business uses (Class E(g)(i))) and/or financial and professional uses (Class E(c)) up to 500sqm, café or restaurant use (Class E(b)) up to 200sqm; community building (Class E and F2); car and cycle parking); associated play areas, allotments, public open green space and landscaping; new vehicular, pedestrian and cycle access points; internal roads, paths and communal parking infrastructure; associated works, infrastructure (including Sustainable Urban Drainage, services and utilities) and ancillary development. Works to the Oxford Road in the vicinity of the site to include, pedestrian and cycle infrastructure, drainage, bus stops, landscaping and ancillary development."*

Geological records indicate the site to be underlain by Oxford Clay Formation with a small area of Wolvercote Sands and Gravels found towards the south of the site.

A desk study had already been undertaken by the client, for the wider site area, which was reviewed as part of this investigation. Some preliminary soakage testing has been recently undertaken and was reported under a separate cover (ref ODJ/JK/RP/JN1597, dated 15th September 2021).

As requested, this report brings together later phases of investigation, which were originally reported under separate cover, into a new revision. These include gas monitoring and further pesticide testing and risk assessment subsequent to the findings of this original report. This report has the relevant sections added, or amended, in the light of the additional work, and the full versions of the additional report are included within the appendices pages.

The original investigation comprised a preliminary Phase II assessment, with trial pitting for contamination assessment, some full-scale soakage testing in areas identified as having soakage potential from the recent preliminary soakage assessment and some groundwater monitoring from the well installed. No geotechnical interpretation is given in this report.

A single phase of intrusive investigation was carried out comprising twelve 3m deep windowless sampler trial holes, with installations, twenty 1-3m deep trial pits excavated by JCB and three 1.5/1.6m BRE 365 soakage tests.

The soils encountered comprised a Topsoil (GL- 0.1/0.4m) and Clay subsoil (-0.45-1.5m), over the Oxford Clay Formation (-3m+), with the latter generally found as a gravelly Clay often becoming shelly with depth. Shallow Made Ground was encountered in only two locations.

Groundwater was only encountered in one of the trial holes during the investigation, at a depth of around 2m, rising to 1.3m. During the monitoring period, some of the wells were dry, with levels recorded from 0.60 to 2.85m below ground level in the others.

No significant groundwater conditions requiring de-watering of excavations are anticipated.

The soils analysed were free from any heavy metal, PAH and asbestos impact. This concurs with the site history presented in the desk study provided and the observations made on site. However, Pendmethalin, a widely used herbicide, was recorded at generally low concentrations in the topsoil analysed. Further assessment was recommended to better assess the risk, which was undertaken and concluded that the soils on site are unlikely to pose any significant risk to human health.

The subsequent gas monitoring program recorded no significant gas risk.

The presence of contamination may affect the classification of waste soils, or the potential for their re-use.

The contamination screening values used are valid at the time of writing but may be subject to change and any such changes will have implications for the assessments based on them. Their validity should be confirmed at the time of site development.

As with any site, areas of contamination not identified during investigation works may come to light during the course of redevelopment. Accordingly, a discovery strategy must be in place during the redevelopment to ensure that any hitherto unknown contamination is identified and dealt with in an appropriate manner. Depending on the nature of any such contamination, it may prove necessary to reassess the remedial strategy for the site. The presence of contamination may affect the classification of waste soils, or the potential for their re-use.

A formal remediation strategy and verification plan should be agreed with the regulatory authorities prior to commencement of any remedial works. This should be carried out following the further assessment recommended.

The investigation was conducted and this report has been prepared for the sole internal use and reliance Bellway Homes Limited and Christ Church, Oxford. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Southern Testing Laboratories Ltd. If an unauthorised third party comes into possession of this report they rely on it at their peril and the authors owe them no duty of care and skill.

The findings and opinions conveyed via this investigation report are based on information obtained from a variety of sources as detailed within this report, and which Southern Testing Laboratories Ltd. believes are reliable. Nevertheless, Southern Testing Laboratories Ltd. cannot and does not guarantee the authenticity or reliability of the information it has obtained from others.

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For and on behalf of Southern Testing Laboratories Limited

DOCUMENT HISTORY AND STATUS

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05	27.02.23	Preliminary Phase II Site Investigation (Updated – Rev3)	ODJ/ADM	JK

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A INTRODUCTION

1 Authority

Our authority for carrying out this work is contained in an appointment email from Glanville Consultants dated 15th July 2021 and within an appointment document from the client's solicitors, Mills and Reeve.

2 Location

The site is located approximately 1.2km to the south of Oxford Parkway train station, in the fields surrounding St Frideswide's Farm. The approximate National Grid Reference of the site is SP 50500 11290. The site location is indicated on Figure 1 within Appendix A.

3 Proposed Construction

It is proposed to develop the 45.8ha site as follows:

"Outline application (with all matters except access reserved for future consideration) for the demolition of existing buildings and the erection of up to 800 dwellings (Class C3); a two form entry primary school; a local centre (comprising: convenience retailing (not less than 350sqm and up to 500sqm (Class E(a)), business uses (Class E(g)(i)) and/or financial and professional uses (Class E(c)) up to 500sqm, café or restaurant use (Class E(b))) up to 200sqm; community building (Class E and F2); car and cycle parking); associated play areas, allotments, public open green space and landscaping; new vehicular, pedestrian and cycle access points; internal roads, paths and communal parking infrastructure; associated works, infrastructure (including Sustainable Urban Drainage, services and utilities) and ancillary development. Works to the Oxford Road in the vicinity of the site to include pedestrian and cycle infrastructure, drainage, bus stops, landscaping and ancillary development."

For the purposes of the contamination risk assessment, the proposed development land use is classified as Residential with Homegrown Produce Consumption CLEA Model Ref [1] / C4SL Report Ref [2].

The gas sensitivity of the proposed development is therefore rated as High CIRIA C665 Ref [3].

4 Object

This investigation follows-on from the recent Phase 1a investigation (ref. JN1597 Phase 1a), which was a preliminary soakage assessment. The object of this investigation was to carry out a series of full-scale BRE365 soakage tests, at locations tentatively identified as having soakage potential from the recent preliminary assessment, excavate site-wide trial pits as part of a contamination assessment alongside and the installation groundwater monitoring wells.

As requested, the report also bring together results from later investigations comprising additional pesticide testing and risk assessment and land gas monitoring and risk assessment. This report has the relevant sections added or amended in the light of the additional work, and the full versions of the additional report are included within the appendices pages.

5 Scope

This report presents our exploratory hole logs and contamination test results and our interpretation of these data.

A desk study was undertaken for the wider site by the client, which was reviewed as part of this assessment.

A UXO risk assessment was not requested within our brief for the investigation.

As with any site there may be differences in soil conditions between exploratory hole positions.

This report is not an engineering design and the figures and calculations contained in the report should be used by the Engineer, taking note that variations will apply, according to variations in design loading, in techniques used, and in site conditions. Our figures therefore should not supersede the Engineer's design.

The ground/site investigation has been completed with reference to BS 5930 Ref [4] and BS 10175 Ref [5].

Geotechnical issues are not considered in this report and are to be reported separately.

Waste Classification of soils has not been included within the brief for the investigation.

The findings and opinions conveyed via this investigation report are based on information obtained from a variety of sources as detailed within this report, and which Southern Testing Laboratories Ltd. believes are reliable. Nevertheless, Southern Testing Laboratories Ltd. cannot and does not guarantee the authenticity or reliability of the information it has obtained from others.

The investigation was conducted and this report has been prepared for the sole internal use and reliance of Bellway Homes Limited and Christ Church, Oxford. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Southern Testing Laboratories Ltd. If an unauthorised third party comes into possession of this report they rely on it at their peril and the authors owe them no duty of care and skill.

The recommendations contained in this report may not be appropriate to alternative development schemes.

Detailed information on the proposed development, such as detailed final layout, loadings and serviceability limits was not provided. Accordingly, where geotechnical design advice is provided it is on the prescriptive basis allowed for by Eurocode 7: employing conventional and conservative design rules.

The contamination screening values used are valid at the time of writing but may be subject to change and any such changes will have implications for the assessments based on them. Their validity should be confirmed at the time of site development.

B DESK STUDY AND WALKOVER SURVEY

6 Desk Study

A desk study has been carried out by Glanville Consultants, a summary of the salient features presented within this investigation are discussed below.

- The British Geological Survey (BGS) records indicate that the site is underlain by Oxford Clay Formation and West Walton Formation. A slim band of the Wolvercote Sand and Gravel Member is present in the south.
- The site has a history of agricultural risk and as such no significant sources of on-site contamination risk have been identified.
- Effluent from Pipal Cottage has been identified as a possible risk to surface water from outside the site boundaries. This effluent is stated to be final and treated and so is likely of very low risk to the site.
- Overall, the contamination risk was generally considered very low and where contamination is found it was likely to be localised and from sources such as farm equipment leaks.

7 General Site Description

The site is located to the east of the A4165, Oxford Road to the north of Oxford. The northern boundary adjoins Oxford Parkway Park and Ride site. To the east, the site boundary crosses an open field, then follows field boundaries around St. Frideswide's Farm to the south, where the southern boundary adjoins Cutteslowe Park, Banbury Road North Sports Ground, and an adjacent field. The land to the south of the site boundary is within the administrative area of Oxford City Council (OCC).

Vehicular access to the site is currently available from two points on Oxford Road. The northern point provides access to Water Eaton and the southern point provides access to St. Frideswide's Farm. The southern point of access also forms part of the public right of way (PRoW) which crosses the site in an east-west direction (Route 229/9/30), continuing eastwards towards the River Cherwell and westwards through Site PR6b. A second PRoW crosses the application sites in a northeast-southwest in the southern part of the site, ending at the Oxford City boundary. A permissive footpath also runs along the southern boundary of the application site, located within Cutteslowe Park.

The site is irregular in shape and mainly consists of agricultural land, used as arable fields. Pipal Barns are also located within the site and are accessed from, and with a frontage onto, the A4165 in the north-west of the site. Pipal Cottage is located just outside the site boundary adjacent to Pipal Barns and the A4165, and St Frideswide's Farmhouse and farm buildings are located just outside the eastern site boundary.

The site generally falls away from two main high points. The first is located in the centre of the site along the western boundary with the A4165, with land falling to the north, and to the east towards St Frideswide's Farm. The second high point is located along the southern boundary, with land falling from this point to the east towards the River Cherwell, and to the north towards St Frideswide's Farm.

Across the site, field ditches and the topography allow surface water to drain in an easterly direction. These connect with a network of drainage ditches that ultimately discharge into the River Cherwell. The Cherwell River flows in a southerly direction to join the River Thames south of Oxford City. The EA Flood Map for Planning indicates that the entire site is located within Flood Zone 1, land at the lowest risk of flooding (<1 in 1,000 year return period), with an area of land adjacent to the south-east site boundary within a mixture of Flood Zone 2 (between 1 in 100 year and 1 in 1,000 year return period) and Flood Zone 3 (> 1 in 100 year return period).

The nearest designated heritage assets to the site are the Grade II* listed St Frideswide's Farmhouse and associated Grade II listed garden wall. The Oxfordshire Historic Environment Records (HER) show four non-designated heritage assets within the site boundary, including the remains of two Bronze Age barrows, possible Roman 'ridgeway', and a milestone. The two Bronze Age barrows present on site are to be retained in situ.

The field boundaries within the Site are delineated by mature, native hedgerows of variable species composition and structure, with some sections of post and wire fencing. The majority of the hedgerows are relatively species rich and regularly managed (c.1.5 m high). A small number of species-poor hedgerows are present, alongside the track leading to the Water Eaton estate, and along the southern and eastern boundaries of the south-western field.

Two small areas of broad-leaved woodland are present within the western edge of the site alongside Oxford Road, and there are sparsely scattered hedgerow trees.

The area surrounding the site includes the Oxford Parkway Park & Ride site (including the Oxford Parkway railway station) to the north. Immediately to the south is a parcel of land within Oxford City which is the subject of full planning permission for 134 dwellings (OCC Ref. 21/01449/FUL) and also land which is in sports and recreation use (including land at Oxford Hawks Hockey Club and land at Cuttleslowe Park). To the west of the site is land currently occupied by North Oxford Golf Club and which is allocated for residential development in the adopted Local Plan (Site PR6b). To the east is open countryside and which is in agricultural use.

C GROUND INVESTIGATION

8 Strategy and Method

The strategy adopted for the intrusive investigation comprised the following:

Activity / Method	Purpose	Max Depth Range (mbgl)	Installations / Notes
WLS201 – WLS212	Boreholes to investigate the shallow ground conditions within external areas. Installation of shallow land gas and groundwater monitoring wells.	3.00	38mm groundwater monitoring wells installed within all boreholes to full depth.
TP101 – TP120	Trial pits to investigate the shallow ground conditions and allow for the collection of samples mainly for contamination testing.	1.00 – 3.00	
SA101 – SA103	Trial pits to investigate the shallow ground conditions and allow for assessment of soakage potential using the BRE365 method.	1.5 / 1.6	Gravel filled with 10mm shingle to 0.10mBGL

The location of exploratory holes were chosen for a number of different reasons. The well installations were stipulated by the Client's Engineer to provide the best general coverage for groundwater monitoring points. The trial pit locations were designed to provide general coverage of the proposed development area and the soakaway test locations were chosen to target areas of potential drainage highlighted from the previous investigation. The locations of all positions are shown on Figure 2 in Appendix A.

In-situ test and sampling methods descriptions employed are given in Appendix B together with the test results.

9 Weather Conditions

The fieldwork was carried out between Tuesday 21st September 2021 and Friday 24th September 2021, at which time the weather was generally clear and dry.

10 Soils as Found

The soils encountered are described in detail on the attached exploratory hole logs (Appendix A), but in general comprised a covering of topsoil and subsoil over weathered Oxford Clay Formation over undisturbed Oxford Clay Formation. A summary is given below.

Depth (m)	Thickness (m)	Soil Type	Description
GL – 0.25/0.30m	0.25 – 0.30m	MADE GROUND	MADE GROUND composed of brown silty gravelly CLAY with rootlets, flint, limestone gravel and concrete fragments. (Only encountered in WLS201 and WLS205)
GL – 0.10/0.40m	0.10 – 0.40m	TOPSOIL	Brown to dark brown clayey silty sandy gravelly occasionally cobbly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
– 0.45/1.50m	0.10 – 1.25m	SUBSOIL (CLAY)	Orange-brown to brown silty sandy gravelly CLAY subsoil. Gravels comprise fine to coarse well-rounded to sub-angular flint and occasional calcareous gravel in the north of the site.
– 1.00/3.00m	0.30 – 1.90m	CLAY	Orange-brown / grey mottled silty occasionally slightly sandy gravelly occasionally shelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint.
– 0.80/1.30m	0.45 – 0.90m	CLAY	Greenish-grey occasionally sandy gravelly CLAY.
– 1.50/3.20m+	0.70 – 2.10m+	CLAY	Grey to dark grey / blue-grey silty occasionally sandy gravelly shelly CLAY with lithorelic structure, calcareous nodules and occasional ancient rootlets. Gravels comprise fine to coarse well-rounded to sub-rounded flint.

Generally, the soils are in accordance with those mapped and expected on-site. Some local granular deposits were noted within the south in the areas of the mapped Wolvercote Sand and Gravel Member. Moving from south to north, the deeper undisturbed Oxford Clay Formation often become more shelly and calcareous. Towards the north of the site the shallower Oxford Clay Formation clay often had a greenish-grey tint before transitioning into the grey and blue-grey clay seen at depth.

10.1 Visual and Olfactory Evidence of Contamination

No visual or olfactory evidence of significant contamination was seen during the fieldwork, which concurs with the desk study provided. At two locations, shallow Made Ground was encountered (WLS201 and WLS205), although only concrete fragments were noted.

11 Groundwater Observations

Groundwater was only encountered within WLS211 during the investigation. Within this water was struck at 1.90m and rose to 1.40m after 20 minutes. This level was monitored approximately 24hours later during the subsequent day of fieldwork and had risen to 1.30m. Trial holes WLS210 and WLS212 were also monitored during this for local comparisons despite both being dry upon completion on the day of the investigation.

WLS212 remained dry and WLS210 had a water level of 0.56mBGL.

The results of the ground water monitoring are presented below.

D DISCUSSION OF GEOTECHNICAL TEST RESULTS AND RECOMMENDATIONS

12 Groundwater Levels

Groundwater levels vary considerably from season to season and year to year, often rising close to the ground surface in wet or winter weather, and falling in periods of drought. Long term monitoring standpipes have been installed across 12 locations on the site to help assess the ground water regime on site. To date, four monitoring visits have been completed. A summary of these results is presented below. The monitoring data is presented in full in Appendix F.

Location	Groundwater Level (mBGL)				
	13/10/2021	09/11/2021	08/12/2021	10/01/2022	10/02/2022
WLS201	1.26	1.20	1.10	1.00	0.90
WLS202	2.75	2.68	1.50	1.40	1.29
WLS203	0.86	0.80	0.33	0.30	0.27
WLS204	1.24	1.18	0.80	0.80	0.73
WLS205	DRY	DRY	1.05	0.90	0.90
WLS206	DRY	DRY	0.75	0.50	0.50
WLS207	0.65	0.60	0.60	0.60	0.60
WLS208	DRY	DRY	0.45	0.40	0.40
WLS209	2.85	2.80	0.35	0.35	0.35
WLS210	1.21	1.15	0.80	0.70	0.70
WLS211	1.35	1.30	1.30	1.30	1.30
WLS212	DRY	DRY	DRY	DRY	DRY

12.1 Water Level and Groundwater Flow

From the monitoring visits completed to date, groundwater levels have been recorded in the range of 0.30 to 2.85m below ground level. At this stage, it is not possible to determine any long-term trends within the water level or establish a standard strata groundwater is found within.

Existing groundwater and surface water drainage solutions were noted during the intrusive investigations, which took the form of underground clay pipes, gravel filled French drains and ditches around the field boundaries, although it is not clear where the ditches then direct water. In addition to the agricultural land drainage, overland flow is likely to play an important part in the hydrology of the site, with the direction of water flow largely dictated by the natural topography of the site and surrounding area, which dips towards the east.

13 Soakaways

Soakage testing was carried out in trial pits SA01, SA02 and SA03. The test locations were chosen under the guidance of the client following the results of the preliminary assessment in Phase 1A.

The preliminary assessment included BH permeability tests across the site; these concluded that soakage may only be feasible in certain areas towards the south of the site. SA01, SA02 and SA03 were therefore positioned within this area to further investigation the soakage potential.

13.1 Soakage Test Results

The BRE paper DG365, Ref [6] describes a method for site testing to determine soil infiltration rates at the proposed site of a soakaway. The in-situ test method is described in Appendix B.

A total of three soakage tests were carried out across the site, at the locations shown on the attached site plan Figure 2, Appendix A. The full results of the soakage tests are presented within Appendix B.

All test pit positions were gravel filled with 10mm shingle.

The DG365 Ref [6], states that each pit should be allowed to drain three times to near empty, with filling on the same or consecutive days.

The infiltration rate from each trial hole is summarised in the table below. The soakage rate in this report in expressed as ℓ/m²/minute, which is a convenient rate to use. The BRE use a unit of m/sec, which is the value in l/m²/minute divided by 60,000.

Test ID	Test Depth (mbgl)	Design Infiltration Rate		Notes
		ℓ/m²/minute	m/sec	
SA01	0.70	2.02	3.37×10^{-5}	Empty pit.
	0.70	1.01	1.69×10^{-5}	Nearly empty pit.
	0.70	**0.92**	**1.53×10^{-5}**	**Nearly empty pit.**
SA02	0.60	0.85	1.41×10^{-5}	Nearly empty pit.
	0.60	**0.48**	**7.94×10^{-6}**	**Nearly empty pit.**
	0.60	0.50	8.37×10^{-6}	Nearly empty pit.
SA03	0.60	1.98	3.31×10^{-5}	Nearly empty pit.
	0.60	1.12	1.87×10^{-5}	Nearly empty pit.
	0.60	**0.57**	**9.58×10^{-6}**	**Nearly empty pit.**

Note: The Design Infiltration Rate is the lowest of the three tests which is marked in **bold**.

From the tests completed, soakage in all three pits was good. All test pits managed to complete the three tests. Generally, a minimum soakage rate of 0.1 ℓ/m²/minute is needed for conventional soakaway design.

At this stage, subject to long-term groundwater monitoring, we consider shallow soakaway drainage systems to be viable towards the south of the site, within the superficial River Terrace Deposits. Outside of this zone, where drainage was negligible, it should be assumed that soakaways are not viable. It should be noted that high groundwater levels could preclude the use of soakaway drainage techniques even within this area, if the required unsaturated zone below the base of the soakaways cannot be achieved.

It should be noted that whilst the site does not fall within a Source Protection Zone (SPZ), the Environment Agency and local authority should be consulted for any drainage scheme incorporating soakaways.

During the intrusive investigation, various land drain systems comprising clay pipe and a gravel lined 'French-drain' were encountered. The differing types of drainage suggest that they were not installed at the same time. At this stage, the extent of field-drain coverage is unknown.

13.2 General Guidance on Design of Soakaways

Any soakaway scheme may require the approval of the Environment Agency, Building Control and, where applicable, the adopting Highways Authority.

Soakaways are used to store the immediate surface water run-off from hard surfaced areas, such as roof or carparks, and allow for efficient infiltration into the adjacent soil. They should be designed to discharge their stored water sufficiently quickly to provide the necessary capacity to receive run-off from a subsequent storm. The time taken for discharge depends upon the soakaway shape and size, and the surrounding soil's infiltration characteristics.

Groundwater levels can vary considerably from season to season and year to year, often rising in wet or winter weather, and falling in periods of drought. As such, a high groundwater table may affect the storage capacity of soakaways. In addition, it should be noted that an unsaturated zone may be required between the base of soakaways and the groundwater table, by the Environment Agency. Longer term monitoring may be required to establish actual groundwater levels as part of the planning approval process.

Groundwater levels can vary considerably from season to season and year to year, often rising in wet or winter weather, and falling in periods of drought. As such, a high groundwater table may affect the storage capacity of soakaways. In addition it should be noted that a 1m unsaturated zone is a requirement of the OCC Local Drainage Standard, between the base of the soakaways and seasonal high groundwater table. Ten months of monitoring during the wettest periods of the year are being undertaken, which should be sufficient to establish a groundwater equilibrium level for the purposes of planning. Further testing on a tighter grid may be required at a later design stage, on a phase-by-phase basis.

Current records indicate groundwater levels to be between 0.70m and 1.30mBGL in the areas around the soakage tests. Given this, and the requirement of 1.0m minimum unsaturated zone, soakaway drainage may not be possible. Some shallow infiltration may be possible in local areas, dependant on the ongoing monitoring results.

The design of soakaways can be square, circular (conventional) or trench excavations, and may be rubble filled, perforated precast concrete ring units, plastic cells or any similar structure that collects rainwater and run-off and allow discharge directly into the ground. Depending on the geological conditions, and depth at which suitable infiltration is achieved, soakaways can also be deep bored.

Long-term maintenance and inspection must be considered during the design and construction process. Maintenance of silt traps, gully pots and interceptors will improve the long-term performance of soakaways. The use of wet well chambers within the soakaway system can further assist in pollutant trapping and extending the operating life of soakaways.

Generally, roof and surface run-off should not significantly impact on groundwater quality and, subject to appropriate approvals from the Environment Agency, could be discharged directly to soakaways. However, although again subject to approvals from the Environment Agency, paved surface run-off for larger trafficked areas should generally be passed through a suitable form of oil interception device prior to discharge to the soakaway.

Care must be taken to ensure that the discharge of large volumes of surface run-off into the soil does not disrupt the existing sub-surface drainage patterns. Similarly, in areas of sloping topography, consideration should be given to the siting of soakaways to avoid potential discharge and/or flooding of down slope areas.

Soakaways should not normally be constructed closer than 5m to buildings.

E DISCUSSION OF GEOENVIRONMENTAL TEST RESULTS AND RECOMMENDATIONS

14 Analytical Framework

There is no single methodology that covers all the various aspects of the assessment of potentially contaminated land and groundwater. Therefore, the analytical framework adopted for this investigation is made up of a number of procedures, which are outlined below. All of these are based on a Risk Assessment methodology centred on the identification and analysis of Source – Pathway – Receptor linkages.

The CLEA model Ref [1], provides a methodology for quantitative assessment of the long-term risks posed to human health by exposure to contaminated soils. Toxicological data is used to calculate a Soil Guideline Value (SGV) for an individual contaminant, based on the proposed site use; these represent minimal risk concentrations and may be used as screening values.

In the absence of any published SGVs for certain substances, Southern Testing have derived or adopted Tier 1 screening values for initial assessment of the soil, based on available current UK guidance including the LQM/CIEH S4UL's Ref [7] and CL:AIRE Soil Generic Assessment Criteria Ref [8]. In addition, in 2014, DEFRA Ref [9] published the results of a research programme to develop screening values to assist decision making under Part 2A of the Environmental Protection Act. Category 4 screening levels were published for 6 substances, with reference to human health risk only. This guidance includes revisions of the CLEA exposure parameters, presenting parameters for public open space land use scenarios, and also of the toxicological approach. The screening levels represent a low risk scenario, based on a 'Low Level of Toxicological Concern' rather than the 'Minimal Risk' of CLEA, and the analytical results of this investigation may be considered relative to these levels.

Site-specific assessments are undertaken wherever possible and/or applicable.

CLEA requires a statistical treatment of the test results to take into account the normal variations in concentration of potential contaminants in the soil and allow comparisons to be made with published guidance.

The results of any groundwater analyses are compared to relevant quality criteria, e.g. Environmental Quality Standards (EQS) or Drinking Water Standards (DWS).

Ground gases are assessed in accordance with the guidance given in CIRIA C665 Ref [3] and BS8485 Ref [10].

The contamination screening values used are valid at the time of writing but may be subject to change and any such changes will have implications for the assessments based upon them. Their validity should be confirmed at the time of site development.

15 Site Investigation – Soils

15.1 Sampling Regime

The phase I Desk Study report provided did not highlight any specific contamination risks on-site that would need targeting. As such, the number and positions of sampling was designed to provide general coverage across the site.

15.2 Testing

The potential for contamination from agricultural use was identified in the preliminary conceptual model provided (as part of the desk study). Therefore, the following tests were selected.

Test Suite	Number of Samples	Soil Tested
STC Suite 2	20	TOPSOIL, SUBSOIL
STC Suite 3	6	TOPSOIL
GC Pesticide Screen	6	TOPSOIL

The test results are presented in full in Appendix E. A summary and discussion of the significance of the results and identified contamination sources is given below.

15.3 Test Results and Identified Contamination Sources

15.3.1 General Contaminants

The results of the key contaminant tests have been analysed in accordance with the CLEA methodology. The samples have been grouped into two populations comprising Topsoil and Subsoil. For each parameter in each population the sample mean is calculated and compared to a Tier 1 screening value. If the sample mean exceeds the screening value, the soil may be regarded as contaminated and further assessment may be required. If neither the sample mean nor any single value exceeds the screening value, the soil may be regarded as not contaminated, though further confirmatory assessment may be required. Where any single parameter value exceeds the screening value but the sample mean does not, further statistical analysis may be applied to that parameter if the available data is suitable. Such analysis would include an assessment of the Normality of the distribution of the data, consideration of the presence of outliers, and the calculation of a UCL estimate of the mean.

Summary data is presented in the tables below and the laboratory analysis is included in Appendix E. The screening values and source notes are presented in Table 1 "Tier 1 Screening Values" at the front of Appendix E.

Soil Type: TOPSOIL

Contaminants	Units	No of Samples Tested	Range	Sample Mean	Residential with Homegrown Produce Consumption Tier 1 Screening Values
Arsenic (As)	mg/kg	23	11 – 25	18	37
Cadmium (Cd)	mg/kg	23	<0.2	<0.2	11
Trivalent Chromium (CrIII)*	mg/kg	23	29 – 46	35	910
Hexavalent Chromium (CrVI)	mg/kg	23	<4.0	<4.0	6
Lead (Pb)	mg/kg	23	22 – 46	30	200
Mercury (Hg)	mg/kg	23	<0.3	<0.3	7.6 – 11
Selenium (Se)	mg/kg	23	<1.0	<1.0	250
Nickel (Ni)	mg/kg	23	16 – 36	26	130
Copper (Cu)	mg/kg	23	13 – 25	18	2,400
Zinc (Zn)	mg/kg	23	58 – 110	80	3,700
Benzo(a)pyrene (BaP)	mg/kg	23	<0.05 – 0.66	0.09	1.7 – 2.4
Naphthalene	mg/kg	23	<0.05	0.05	2.3 – 13
Acidity (pH values)	pH	23	6.6 – 8.4	7.5	-
Soil Organic Matter	%	23	2.9 – 5.6	3..9	-

* Assumed as Total Cr minus CrVI

No significant contamination was reported in the 23 topsoil samples analysed, in terms of the determinants tested for. This concurs with the site history and the observations made on site.

Soil Type: Subsoil

Contaminants	Units	No of Samples Tested	Range	Sample Mean	Residential with Homegrown Produce Consumption Tier 1 Screening Values
Arsenic (As)	mg/kg	3	14 – 19	17	37
Cadmium (Cd)	mg/kg	3	<0.2	<0.2	11
Trivalent Chromium (CrIII)*	mg/kg	3	32 – 46	37	910
Hexavalent Chromium (CrVI)	mg/kg	3	<4.0	<4.0	6
Lead (Pb)	mg/kg	3	13 – 21	16	200
Mercury (Hg)	mg/kg	3	<0.3	<0.3	7.6 – 11
Selenium (Se)	mg/kg	3	<1.0	<1.0	250
Nickel (Ni)	mg/kg	3	24 – 29	26	130
Copper (Cu)	mg/kg	3	14 – 19	16	2,400
Zinc (Zn)	mg/kg	3	67 – 76	70	3,700
Benzo(a)pyrene (BaP)	mg/kg	3	<0.05	<0.05	1.7 – 2.4
Naphthalene	mg/kg	3	<0.05	<0.05	2.3 – 13
Acidity (pH values)	pH	3	7.9	7.9	-
Soil Organic Matter	%	3	0.9 – 2.4	1.6	-

* Assumed as Total Cr minus CrVI

No significant contamination was reported in the 3 subsoil samples analysed, in terms of the determinants tested for. This concurs with the site history, the observations made on site and the results for the topsoil analysed.

15.3.2 Asbestos Containing Materials

No asbestos containing materials were detected in the samples analysed and none were observed in the exploratory holes. However, it should be noted that the exploratory holes are of small size relative to the area investigated. Therefore, the samples obtained may not reflect the full composition of the soils on the site, and there is always the potential for pockets of asbestos or for asbestos containing materials to be present, which have not been detected in the sampling.

A careful watch should be kept for any areas of Fill/backfilling or tracks where asbestos might be encountered.

15.3.3 Organic Contaminants

The following table/s summarise/s the results of the analysis for BTEX & TPH

Hydrocarbon Substance or Fraction	Measured Concentrations in mg/kg (µg/kg)					
	TP102 0.15m	TP104 0.15m	TP105 0.15m	TP110 0.15m	TP113 0.15m	TP117 0.15m
BTEX						
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MTBE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Aliphatics						
EC5-EC6	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
>EC6-EC8	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
>EC8-EC10	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
>EC10-EC12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
>EC12-EC16	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
>EC16-EC21	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
>EC21-EC35	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Aromatics						
EC5-EC7 (Benzene)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
>EC7-EC8 (Toluene)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
>EC8-EC10	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
>EC10-EC12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
>EC12-EC16	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
>EC16-EC21	<10	<10	<10	<10	<10	<10
>EC21-EC35	<10	<10	<10	<10	<10	<10

No TPH or BTEX impact was recorded in any of the six samples analysed, with all fractions below detection limit. This concurs with the site history and observations made on site.

15.3.4 Herbicides & Pesticides

As part of the initial investigation six topsoil samples recovered from the exploratory holes were screened for a wide range of herbicides and pesticides, due to the long association with agricultural land. For the majority of the compounds tested, concentrations within the samples were below the laboratory limit of detection.

However, five of the six samples screened reported generally minor concentrations of Pendimethalin, a widely used herbicide, certainly historically. The concentration range was <10 – 240µg/kg (0.010 – 0.240mg/kg).

Whilst there does not appear to be a set soil screening value for Pendimethalin, an EFSA Journal on Pendimethalin (10/2903/j.efsa.2016.4420), dated March 2016, indicates an acceptable daily intake of 125µg/kg (0.125mg/kg). EPA factsheets also cite that Pendimethalin has generally been shown to have low acute toxicity in humans, is essentially immobile in soils and does not represent a high risk to other flora and fauna below the proposed screening value.

On this basis, a mean concentration of 83.833µg/kg suggests that the Pendimethalin impact recorded is generally not significant across site.

However, samples from TP108 and TP115 reported values of 140µg/kg and 240µg/kg respectively, both of which are slightly above the screening value of 125µg/kg.

The initial report recommended additional screening around these hotspot localities to confirm reported concentrations. This work was undertaken in the summer of 2022, and reported separately. The full report is presented in Appendix F for full details. In summary, however, the additional testing and risk assessment confirmed that the soils on the site are not likely to pose any significant risk to human health, and no remediation or further work is considered necessary.

F SITE INVESTIGATION – GROUND GAS

A ground gas investigation was undertaken subsequently to the initial report during the summer of 2022. This report is now attached in Appendix E.

Based upon the work, no significant gas contamination was identified. The gas monitoring and risk assessment places the site in Characteristic Situation 1 (CS1). As such, gas protection measures are not required for the proposed development on site.

16 Summary of Identified Contamination

From the investigation and testing to date, the soils on site are generally not impacted with the range of contaminants listed in the conceptual model. Some minor Pendimethalin impact was recorded in the topsoil samples analysed, although this is not thought to be significant. Further assessment is considered necessary in this regard, however.

This concurs with the site history.

16.1 Revised Conceptual Model

A revised conceptual model has been designed in light of the findings of this investigation and is summarised below.

Metals	Petroleum Hydrocarbons	Pendimethalin	Asbestos	Pathways	Receptors
N	N	N	N	Ingestion and inhalation of contaminated soil and dust	Human Health
N	N	N	n/a	Dermal contact with contaminated soil and dust	
N	N	n/a	n/a	Inhalation of vapours or gases	
N	N	N	n/a	Uptake into edible fruit and vegetables	
N	N	n/a	n/a	Surface water run-off into surface water features	Water Environment
N	N	n/a	n/a	Migration through ground into surface water or groundwater	
N	N	n/a	n/a	Off-site migration of contaminated groundwater	
N	N	N	n/a	Vegetation on site growing in contaminated soil	Flora and Fauna
N	N	n/a	n/a	Aquatic life in affected waters	
N	N	N	n/a	Contact with contaminated soils	Building materials / buried services
N	N	n/a	N	Fire or explosion	

Key:			
Y	Pollutant linkage likely	P	Pollutant linkage possible
N	Pollutant linkage not likely	n/a	Pathway not applicable to contaminant

16.2 Re-use of Soils

It is anticipated that the arisings from groundworks on this site will comprise topsoil and natural soils.

Clean natural arisings from groundworks may be re-used on site without further testing (in areas where no contamination was discovered), where there is a definite use for such materials, e.g. raising levels or construction of landscaping layers or bunds as set out in the approved plans for the development.

Treated contaminated soils may be reused on site under an appropriate Materials Management Plan, where certain criteria are met, in accordance with the CL:AIRE Definition of Waste Code of Practice, Ref [11].

16.3 Disposal of Soils

Any soils that are not to be re-used on site will require removal and disposal to suitably licensed landfills. Different guidelines and charges will apply to different waste classifications. As waste producers, the Developer holds responsibilities under the various governing regulations, particularly the Waste Duty of Care Code of Practice under the Environmental Protection Act 1990, Ref [12].

The chemical analyses appended to this report can be used to inform the initial classification of the soils as either Hazardous or Non-Hazardous, and derive the appropriate EWC code, for offsite disposal or transfer. Waste Acceptance Criteria (WAC) testing may be needed for confirmation of the material's classification, and will be required to demonstrate an inert classification.

There are strict requirements in place for the accurate description of wastes using EWC codes and, therefore, it is essential that materials that would be given different descriptions (e.g. blacktop, made ground and natural soils), as well as those with different classifications, are carefully segregated during excavation and storage on site. This will also ensure the most cost effective disposal. Mixing these materials can give rise to significant difficulties in disposal and also substantially increase costs.

Soil arising's may be transferred to other development sites under a Materials Management Plan, where certain criteria are met, in accordance with the CL:AIRE Definition of Waste Code of Practice Ref [11].

All soils leaving site will need to be pre-treated. Waste minimisation by selective excavation is a recognised form of pre-treatment.

17 Discussion and Conclusions

Generally, the site is free from significant contamination, which concurs with the site history and the observations made during the investigation.

The results of the additional Pendimethalin investigation confirmed that the soils on the site are not likely to pose any significant risk to human health, and no remediation or further work is considered necessary.

Similarly, the gas risk assessment has not identified a gas risk and no protection measures are necessary in the new build.

As with any site, areas of contamination not identified during site investigation works may come to light in the course of redevelopment. Accordingly, a discovery strategy must be in place during the redevelopment to ensure that any hitherto unknown contamination is identified and dealt with in an appropriate manner. Depending on the nature of any such contamination, it may prove necessary to reassess the remedial strategy for the site.

A formal remediation strategy and verification plan should be agreed with the regulatory authorities prior to commencement of any remedial works.

18 General Guidance

Allowance should be made for experienced verification of any remedial works.

It may be that specific local requirements apply to this site, of which we are not aware at this time.

In general terms, the workforce and general public should be protected from contact with contaminated material. There is a range of relevant documents published by the Health and Safety Executive, and organisations such as CIRIA, and the BRE.

REFERENCES

[1] Environment Agency, “Updated technical background to the CLEA model,” 2009.

[2] Contaminated Land: Applications in Real Environments (CL:AIRE), “Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination,” 2014.

[3] CIRIA, “C665 Assessing risks posed by hazardous ground gases to buildings,” 2007.

[4] BSI Standards, “BS 5930 Code of practice for ground investigations,” 2015.

[5] BSI Standards, “BS10175 Investigation of potentially contaminated sites – Code of practice,” 2013.

[6] Building Research Establishment (BRE), “DG365 Soakaway Design,” 2016.

[7] C. Nathanail, C. McCaffrey, A. Gillett and R. &. N. J. Ogden, “The LQM/CIEH S4ULs for Human Health Risk Assessment,” Land Quality Press, Nottingham, 2015.

[8] EIC/AGS/CL:AIRE, “Soil Generic Assessment Criteria for Human Health Risk Assessment,” 2010.

[9] DEFRA, “SP1010 Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination,” 2014.

[10] BSI Standards, “BS 8485 Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings,” 2015.

[11] CL:AIRE, “CL:AIRE Definition of Waste Code of Practice,” [Online]. Available: http://www.claire.co.uk/projects-and-initiatives/dow-cop.

[12] Environment Agency, “Waste duty of care code of practice,” [Online]. Available: https://www.gov.uk/government/publications/waste-duty-of-care-code-of-practice.

[13] BSI Standards, “BS 3882:2015 Specification for Topsoil,” 2015.

[14] CIRIA, “C574 Engineering in Chalk,” 2002.

[15] R. N. Mortimore, Logging the Chalk, 2014.

[16] BSI Standards, “BS EN ISO 22476-3:2005+A1:2011 Geotechnical investigation and testing. Field testing. Standard penetration test,” 2011.

[17] BSI Standards, “BS 1377-9:1990 Methods for test for soils for civil engineering purposes. In-situ tests,” 1990.

[18] BSI Standards, “BS EN ISO 22475-1:2006 Geotechnical investigation and testing. Sampling methods and groundwater measurements. Technical principles for execution.,” 2006.

[19] BSI Standards, “BS ISO 18400-100:2017 Soil quality. Sampling. Guidance on the selection of sampling standards,” 2017.

[20] BSI Standards, “BS ISO 18400-101:2017 Soil quality. Sampling. Framework for the preparation and application of a sampling plan,” 2017.

[21] BSI Standards, “BS ISO 18400-103:2017 Soil quality. Sampling. Safety,” 2017.

[22] BSI Standards, “BS ISO 18400-105:2017 Soil quality. Sampling. Packaging, transport, storage and preservation of samples,” 2017.

[23] BSI Standards, “BS ISO 18400-107:2017 Soil quality. Sampling. Recording and reporting,” 2017.

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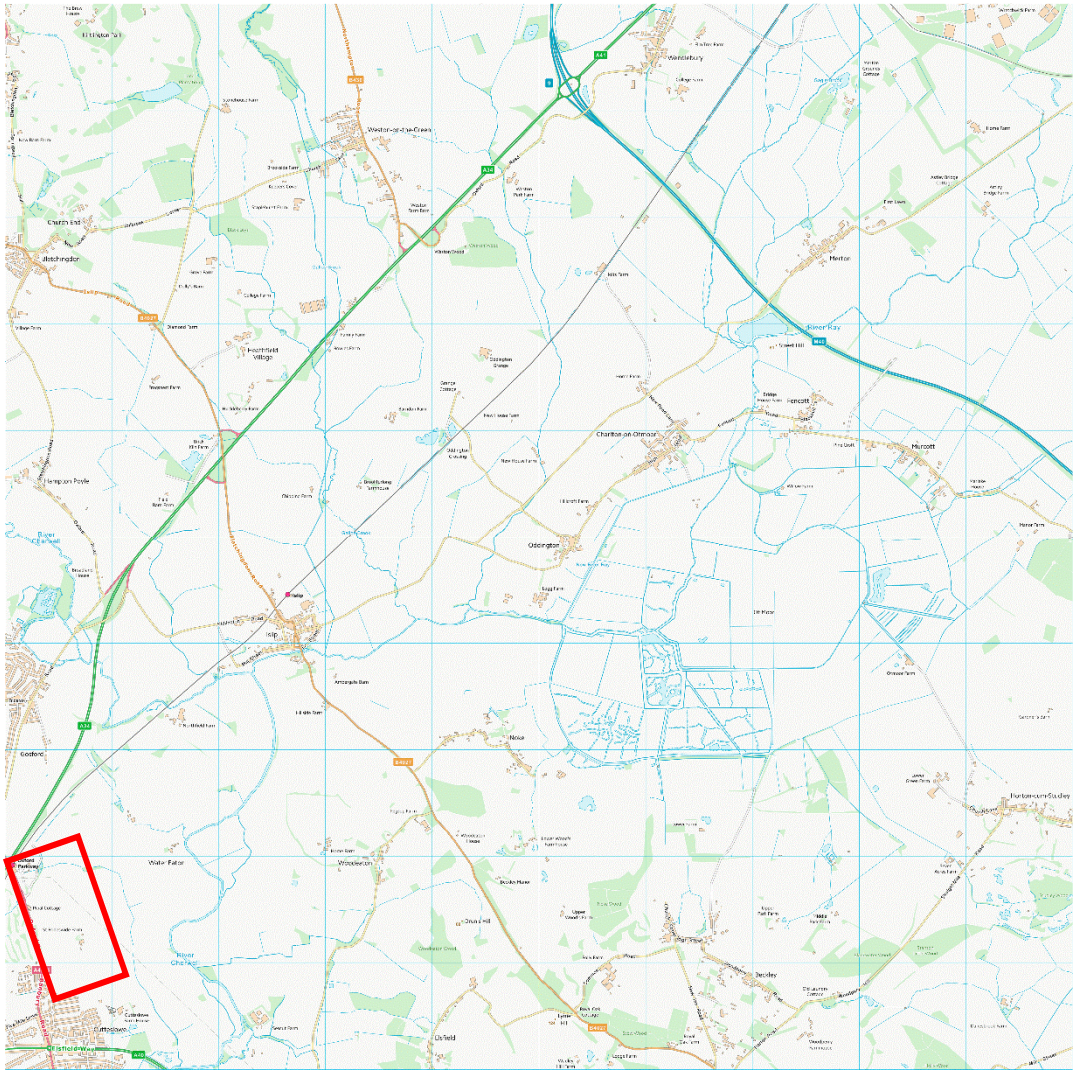
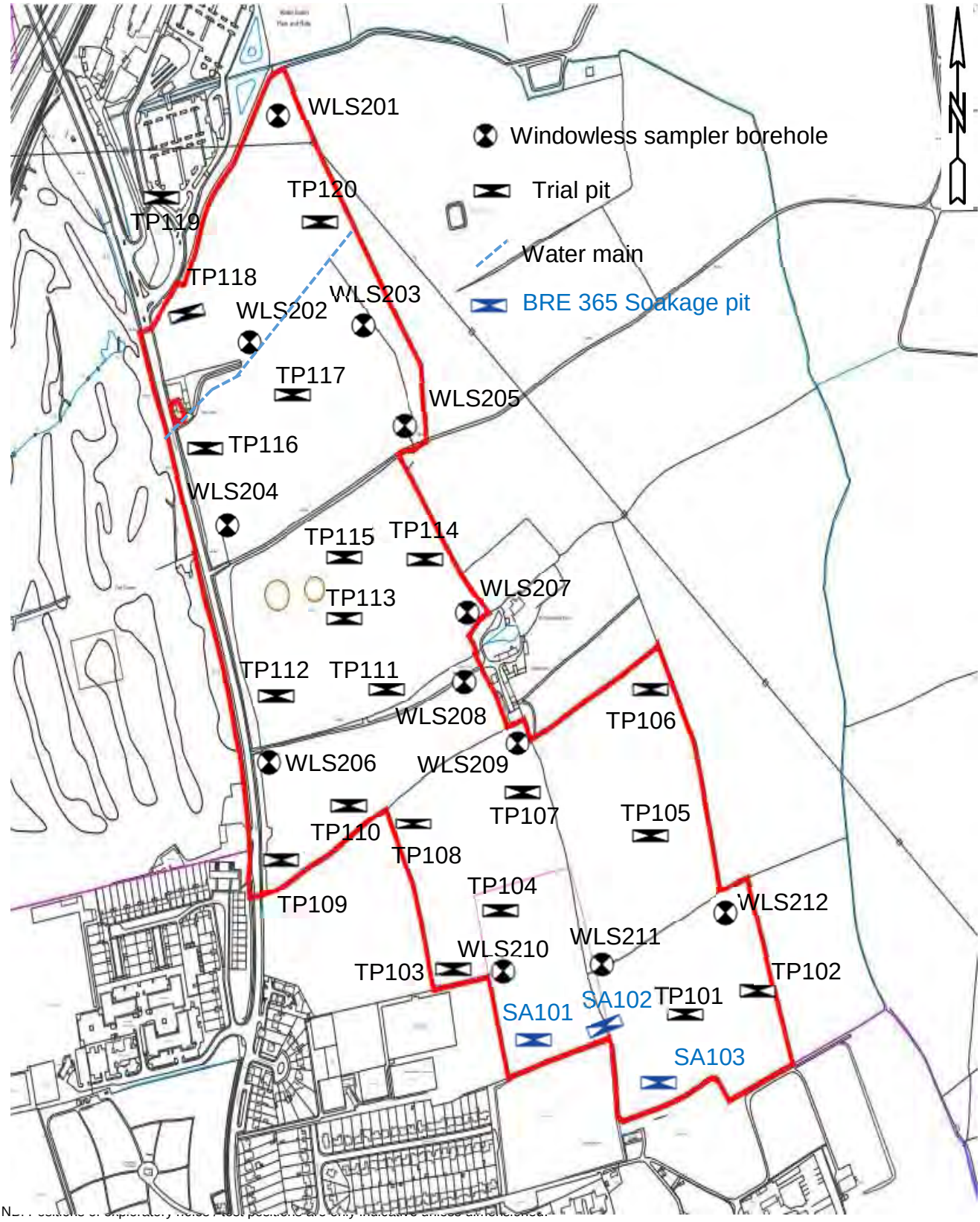
APPENDIX A

Site Plans and Exploratory Hole Logs

A



Site:	Land East of Oxford Road, Water Eaton	Project ID	JN1507
Figure 1	Site Location Plan	Date:	25/10/2021



Site:	PR6a Land East of Oxford Road	Project ID	JN1597
Figure 2	Proposed Site Investigation Layout Plan	Date:	16/01/2023

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Key to Exploratory Hole Logs, Plans and Sections

Backfill Symbols		Pipe Symbols		Principal Soil Types		Principal Rock Types		Drilling Records	
Arisings		Plain Pipe		Topsoil		Mudstone		Water Strike	
Concrete		Slotted Pipe		Made Ground		Claystone		Depth Water Rose	
Blacktop		Piezometer		Clay		Siltstone		Total Core Recovery (%) [TCR]	
Bentonite		Piezometer Tip		Silt		Sandstone		Solid Core Recovery (%) [SCR]	
Gravel Filter		Filter Tip		Sand		Limestone		Rock Quality Index (%) RQD]	
Sand Filter		Extensometer		Gravel		Chalk		Fracture Index (fractures / m) [FI]	
		Inclinometers		Peat					

All soil and rock descriptions are in general accordance with BS5930 2015, BS EN ISO 14688-1:2002+A1:2013 and BS EN ISO 14689-1:2003. Chalk descriptions are also based on CIRIA C574 and "Logging the Chalk – R.N. Mortimer 2015". The Geology Code is only provided where a positive identification of the sample strata has been made.

Location / Method Identifiers	
BH	Borehole (undefined)
CP	Cable Percussive
RC	Rotary Core
RO	Rotary Open Hole
ODC	Rotary Odex/Symmetrix drilling cased
CP+RC	Cable Percussive to Rotary Core
SNC	Sonic
CFA	Continuous Flight Auger
FA	Flight Auger
VC	Vibro Core
WLS+RC	Windowless (Dynamic) Sampler to Rotary Core
WLS	Windowless Sampler
WS	Window Sampler
HA	Hand Auger
C	Road / Pavement Core
IP	Inspection Pit (Hand Excavation)
TP	Trial Pit (Machine Excavated)
OP	Observation Pit (Supported Excavation Hand or Machine)

In-situ Test Location / Method	
DP	Dynamic Probe
CPT	Cone Penetration Test
CBR	In-situ CBR Test
DCP	CBR using Dynamic Cone Penetrometer
CBRT	CBR using TRL Probe
PB	Plate Bearing Test
SPT (S)	Standard Penetration Test (Split Barrel Sampler)
SPT (C)	Standard Penetration Test (Solid Cone)
N	SPT Result
-/-	Blows/Penetration (mm) after seating drive
-*/-	Total Blows / Penetration (mm)
( )	Extrapolated Value
PPT	Perth Penetration (In-House Method - Equivalent N Value)
HP / UCS	Strength from Hand Penetrometer (kN/m^2)
IVN	Strength from Hand Vane ((kN/m^2) P = peak, R = residual
PID	Photo Ionisation Detector (ppm)
MEXE	Mexi-Cone CBR (%)

Samples / Test Type	
B	Bulk Sample
BLK	Block Sample
C	Core Sample
CBRS	CBR Mould Sample
D	Small Disturbed Sample
ES	Environmental Sample (Soil)
EW	Environmental Sample (Water)
GS	Environmental Sample (Gas)

Samples / Test Type	
SPTLS	Standard Penetration Test Split Barrel Sample
TW	Thin Wall Push In Sample (e.g. Shelby Sampler)
U	Undisturbed Open Drive Sample (blows to take)
UT	Thin Wall Undisturbed Open Drive Sample (blows to take)
W	Water Sample (Geotechnical)
SP	Sample from Stockpile
P	Piston Sample
AMAL	Amalgamated Sample

Southern Testing ST Consult	Start - End Date:	Project ID:	Machine Type:	SA101
www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020	21/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
					ODJ
Location:	Water Eaton	Stable in the short-term.			
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.30)		0.30	Brown clayey silty sandy gravelly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
0.50	B			(0.35)		0.65	Orange-brown silty sandy gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint.
							Pit terminated at 0.65m.

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:	0.50		
Length:	2.00		
Depth:	0.65		

Southern Testing ST Consult	Start - End Date:	Project ID:	Machine Type:	SA102
www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020	21/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
Location:	Water Eaton	Stable in the short-term.			ODJ
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.30)		0.30	Brown silty clayey sandy gravelly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
0.50	B			(0.30)		0.60	Orange-brown silty sandy gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint. Land drain - pit terminated and re-dug. Pit terminated at 0.60m.

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:	0.50		
Length:	2.20		
Depth:	0.60		

Southern Testing ST Consult	Start - End Date:	Project ID:	Machine Type:	SA103
www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020	21/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
Location:	Water Eaton	Stable in the short-term.			ODJ
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.30)		0.30	Brown clayey silty sandy gravelly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
0.50	B			(0.40)		0.70	Orange-brown silty sandy slightly gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint.
							Pit terminated at 0.70m.

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:	0.50		
Length:	2.20		
Depth:	0.70		

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Start - End Date:	Project ID:	Machine Type:	TP101
21/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
					ODJ
Location:	Water Eaton	Stable in the short-term.			
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.30)		0.30	Brown silty clayey sandy gravelly cobbly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
				(0.20)		0.50	Orange-brown silty sandy slightly gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint.
				(0.80)		1.30	Grey-brown gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and chalk.
2.00	B			(1.70)		3.00	Blue-grey slightly gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and calcareous nodules.
							Pit terminated at 3.00m.

1 2 3 4

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	3.00		

Southern Testing ST Consult	Start - End Date:	Project ID:	Machine Type:	TP102
www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020	21/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
Location:	Water Eaton	Stable in the short-term.			ODJ
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.25)		0.25	Brown clayey silty sandy gravelly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
1.00	ES			(1.25)		1.50	Orange-brown very sandy slightly gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint.
							Pit terminated at 1.50m.

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	1.50		

Southern Testing ST Consult	Start - End Date:	Project ID:	Machine Type:	TP103
www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020	21/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
Location:	Water Eaton	Stable in the short term.			ODJ
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.35)		0.35	Brown clayey silty sandy gravelly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
				(0.65)		1.00	Orange-brown sandy slightly gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint.
							Pit terminated at 1.00m.

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	1.00		

Southern Testing ST Consult	Start - End Date:	Project ID:	Machine Type:	TP104
www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020	21/09/2021	JN1597		Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
Location:	Water Eaton	Stable in the short term.			
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.35)			Brown clayey silty sandy gravelly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
						0.35	
0.50	HP	UCS(kPa)=250		(0.35)			Orange-brown sandy slightly gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint.
0.60	D					0.70	
				(0.50)			Off-white clayey gravelly SAND. Gravels comprise fine to coarse well-rounded to sub-rounded flint.
				(0.10)		1.20	Grey/brown mottled gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint.
						1.30	Pit terminated at 1.30m.

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			Wet SAND from 0.70m
Length:			
Depth:			

Southern Testing ST Consult	Start - End Date:	Project ID:	Machine Type:	TP105
www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020	21/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
Location:	Water Eaton	Stable in the short term.			ODJ
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.35)			Brown clayey silty sandy gravelly cobbly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
				(0.15)		0.35	Orange-brown sandy slightly gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint.
1.00	D			(1.00)		0.50	Orange-brown/grey mottled slightly sandy slightly gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and rare chalk.
						1.50	Pit terminated at 1.50m.

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	1.50		

Southern Testing ST Consult	Start - End Date:	Project ID:	Machine Type:	TP106
www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020	21/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
Location:	Water Eaton	Stable in the short term.			ODJ
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.40)		0.40	Brown clayey silty sandy gravelly cobbly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
				(0.20)		0.60	Orange-brown sandy slightly gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint.
				(0.40)		1.00	Orange-brown/light grey mottled slightly sandy slightly gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint.
							Pit terminated at 1.00m.

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	1.00		

Southern Testing ST Consult	Start - End Date:	Project ID:	Machine Type:	TP107
www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020	21/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
Location:	Water Eaton	Stable in the short term.			ODJ
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.35)			Brown clayey silty sandy gravelly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
0.40	ES					0.35	Orange-brown sandy slightly gravelly CLAY. Gravels comprise fine well-rounded to sub-angular flint.
				(0.65)			
						1.00	Pit terminated at 1.00m.

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	1.00		

Southern Testing ST Consult	Start - End Date:	Project ID:	Machine Type:	TP108
www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020	21/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
Location:	Water Eaton	Stable in the short term.			ODJ
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.40)		0.40	Brown clayey silty sandy gravelly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
				(0.60)		1.00	Orange-brown sandy slightly gravelly CLAY. Gravels comprise fine well-rounded to sub-angular flint.
							Pit terminated at 1.00m.

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4

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	0.65		

Southern Testing ST Consult	Start - End Date:	Project ID:	Machine Type:	TP109
www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020	21/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
Location:	Water Eaton	Stable in the short term.			ODJ
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.40)		0.40	Grey-brown clayey silty sandy gravelly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
0.50	HP	UCS(kPa)=210		(0.30)		0.70	Brown silty sandy gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint.
0.80	HP	UCS(kPa)=230		(0.50)		1.20	Grey/brown mottled gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and rare calcareous gravel.
							Pit terminated at 1.20m.

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4

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	1.20		

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Start - End Date:	Project ID:	Machine Type:	TP110
21/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
					ODJ
Location:	Water Eaton	Stable in the short term.			
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.35)			Grey-brown clayey silty sandy gravelly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
						0.35	
0.50	D						Orange-brown silty sandy gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint.
0.70	HP	UCS(kPa)=210		(1.15)			
						1.50	
1.75	HP	UCS(kPa)=280					Grey/brown mottled gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and rare chalk.
1.80	D						
				(1.50)			
2.50	HP	UCS(kPa)=280					
2.75	D						
						3.00	Pit terminated at 3.00m.

1 2 3 4

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	3.00		

Southern Testing ST Consult	Start - End Date:	Project ID:	Machine Type:	TP111
www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020	24/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
Location:	Water Eaton	Stable in the short term.			ODJ
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.30)		0.30	Brown clayey silty sandy gravelly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint and quartzite.
0.45	ES			(0.70)		1.00	Orange-brown very sandy slightly gravelly CLAY with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
1.25	HP	UCS(kPa)=140		(0.50)		1.50	Grey-brown mottled silty gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and calcareous gravel.
							Pit terminated at 1.50m.

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	1.50		

Southern Testing ST Consult	Start - End Date:	Project ID:	Machine Type:	TP112
www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020	24/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
					ODJ
Location:	Water Eaton	Stable in the short term.			
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.30)			Brown clayey silty sandy gravelly cobbly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint and quartzite.
						0.30	
0.40	D			(0.35)			Orange-brown sandy slightly gravelly CLAY. Gravels comprise fine well-rounded to sub-angular flint.
						0.65	
				(0.45)			greenish-grey gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and clacerous gravel
1.00	HP	UCS(kPa)=200					
						1.10	
1.50	HP	UCS(kPa)=350					Blue-grey gravelly shelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and calcareous nodules.
2.00	D			(1.90)			Orange sandy horizon.
2.50	D						
						3.00	Pit terminated at 3.00m.

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	2.00		

Southern Testing ST Consult	Start - End Date:	Project ID:	Machine Type:	TP113
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Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
Location:	Water Eaton	Stable in the short term.			ODJ
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.40)		0.40	Brown clayey silty sandy gravelly cobbly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint and quartzite.
				(0.80)		1.20	Orange-brown sandy gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint.
1.50	HP	UCS(kPa)=350		(0.80)		2.00	Grey/orange-brown mottled silty gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and chalk.
							Pit terminated at 2.00m.

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	2.00		

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Start - End Date:	Project ID:	Machine Type:	TP114
24/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
					ODJ
Location:	Water Eaton	Stable in the short term.			
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.30)			Brown clayey silty sandy gravelly cobbly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint and quartzite.
						0.30	
				(0.50)			Greenish-grey gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and chalky gravel.
							Orange sand horizon.
						0.80	
				(0.60)			Grey silty gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and chalky gravel
1.40	D					1.40	
1.60	HP	UCS(kPa)=300					Blue-grey gravelly shelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and calcareous nodules.
							Land drain
2.25	D			(1.60)			
2.75	HP	UCS(kPa)=350					
						3.00	Pit terminated at 3.00m.

1 2 3 4

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	3.00		

Southern Testing ST Consult	Start - End Date:	Project ID:	Machine Type:	TP115
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Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
Location:	Water Eaton	Stable in the short term.			ODJ
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.30)		0.30	Brown clayey silty sandy gravelly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
0.50	HP	UCS(kPa)=250		(0.50)		0.80	Greenish-grey slightly sandy gravelly CLAY. Gravels comprise fine to coarse sub-rounded to sub-angular flint and chalk.
				(0.70)		1.50	Blue-grey silty gravelly CLAY. Fine to coarse chalky gravel.
							Pit terminated at 1.50m.

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	1.50		

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Start - End Date:	Project ID:	Machine Type:	TP116
24/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
					ODJ
Location:	Water Eaton	Stable in the short term.			
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description	
Depth (m)	Type	Results						
0.15	ES			(0.25)			Brown clayey silty sandy gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and chalk.	
				(0.10)		0.25 0.35	Orange-brown sandy slightly gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and chalk.	
				(0.55)			Greenish-grey slightly sandy gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and chalk.	
1.00 1.10	D HP	UCS(kPa)=200				0.90	Grey silty gravelly shelly CLAY. Gravels comprise fine to coarse welll-rounded to sub-angular flint and chalk.	1
2.00	D HP	UCS(kPa)=200		(2.10)				2
2.80	HP	UCS(kPa)=240				3.00	Pit terminated at 3.00m.	3
								4

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	3.00		

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Start - End Date:	Project ID:	Machine Type:	TP117
24/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
					ODJ
Location:	Water Eaton	Stable in the short term.			
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	D			(0.30)		0.30	Brown clayey silty sandy gravelly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint.
0.50	D			(0.50)		0.80	Brownish-grey slightly sandy gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and chalk.
0.70	HP	UCS(kPa)=170					
1.00	HP	UCS(kPa)=200		(0.70)		1.50	Grey slightly gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and chalk.
							Pit terminated at 1.50m.

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	1.50		

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Start - End Date:	Project ID:	Machine Type:	TP118
24/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
					ODJ
Location:	Water Eaton	Stable in the short term.			
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.40)		0.40	Brown clayey gravelly cobbly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded to sub-angular flint and quartzite.
				(0.20)		0.60	Orange sandy gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint.
0.65	HP	UCS(kPa)=180					Grey gravelly shelly CLAY with lithorelic structure. Gravels comprise fine to coarse well-rounded to sub-angular flint and chalk.
1.10	HP	UCS(kPa)=200		(0.90)		1.50	Pit terminated at 1.50m.

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	1.50		

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Start - End Date:	Project ID:	Machine Type:	TP119
24/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
					ODJ
Location:	Water Eaton	Stable in the short term.			
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.20)		0.20	Brown clayey gravelly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded flint and chalk.
0.75 0.80	D HP	UCS(kPa)=110		(0.90)			Greenish-grey gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and chalk.
1.50	D HP	UCS(kPa)=140		(0.90)		1.10	Grey very gravelly CLAY. Gravels comprise chalk with occasional flint.
2.20	HP	UCS(kPa)=120				2.00	Dark grey chalky very shelly CLAY with lithorelic structure.
2.50	D ES			(1.00)		3.00	Pit terminated at 3.00m.

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	3.00		

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Start - End Date:	Project ID:	Machine Type:	TP120
24/09/2021	JN1597	JCB 3CX	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level (m AOD):	Logger:
					ODJ
Location:	Water Eaton	Stable in the short term.			
Client:	Glanville				

Samples and Insitu Testing			Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			(0.30)		0.30	Brown clayey gravelly TOPSOIL with rootlets. Gravels comprise fine to coarse well-rounded flint and chalk.
				(0.15)		0.45	Orange sandy gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint.
1.00	HP	UCS(kPa)=200		(0.85)		1.30	Greenish-grey gravelly CLAY. Gravels comprise fine to coarse well-rounded to sub-angular flint and chalk.
2.00	HP	UCS(kPa)=200		(1.70)		3.00	Grey sandy shelly CLAY with lithorelic structure and calcareous nodules. Darkening slightly with depth.
2.60	HP	UCS(kPa)=220					Pit terminated at 3.00m.

1 2 3 4

Pit Dimension (m)		Pit Stability:	Water Strikes:
Width:			
Length:			
Depth:	3.00		

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Start - End Date	Project ID:	Hole Type:	WLS201
23/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 3.0m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.30)		0.30	MADE GROUND composed of brown, silty, gravelly CLAY, with rootlets flint and limestone gravel.
						(0.60)		0.90	Orange-brown, silty, slightly sandy CLAY.
						(0.30)		1.20	Brown mottled orange, slightly silty CLAY.
						(0.90)		2.10	Grey mottled orange-brown, silty CLAY, with shells from 1.8m.
						(0.90)		3.00	Dark grey/ brown, silty CLAY, with ancient rootlets.
									End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS202
23/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 3.0m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.20)		0.20	Brown, silty clayey TOPSOIL, with rootlets and flint and limestone gravel.
						(0.80)		1.00	Buff/ light brown mottled orange, slightly silty CLAY, with occasional rootlets.
						(1.00)		2.00	Grey-bue mottled orange, silty CLAY.
						(1.00)		3.00	Mid grey, silty CLAY, with veins of selenite and ancient rootlets.
									End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS203
23/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 2.9m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.60)		0.60	Brown, silty, slightly gravelly CLAY, with rootlets and occasional flint gravel.
						(0.80)		1.40	Brown-grey veined orange-red, silty CLAY.
						(1.20)		2.60	Grey mottled orange, silty CLAY, with frequent shells and veins of selenite. *Sandy band.*
						(0.40)		3.00	Mid grey, silty CLAY, with frequent shells. End of Borehole at 3.00m

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS204
23/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 3.0m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.30)		0.30	Brown, clayey TOPSOIL, with rootlets.
						(1.40)		1.70	Grey-brown mottled orange, silty CLAY.
						(1.30)		3.00	Mid-grey veined orange, silty CLAY, with selenite veins and ancient rootlets.
									End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

Southern Testing ST Consult

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Start - End Date	Project ID:	Hole Type:	WLS205
23/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 2.9m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.25)		0.25	MADE GROUND composed of brown, silty, slightly gravelly CLAY, with flint gravel and concrete fragments.
						(0.95)		1.20	Buff-brown, silty, CLAY, withoccasional calcareous nodules.
						(1.80)		3.00	Grey-blue mottled orange, silty, CLAY, with occasional ancient rootlets and viens of selenite.
									End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS206
21/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 3.0m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.15)		0.15	Brown, sandy, clayey TOPSOIL, with rootlets and flint gravel.
						(1.35)			Buff brown, silty, slightly gravelly CLAY. Gravels consist of fine to coarse, subrounded flint. Mottled orange and sandy from 1.0m.
						(1.50)		1.50	Blue-grey mottled oragen, silty CLAY, with ancient rootelts.
								3.00	End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

Southern Testing ST Consult

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Start - End Date	Project ID:	Hole Type:	WLS207
21/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 2.8m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.10)		0.10	Brown, silty, sandy clayey TOPSOIL, with rootlets.
						(1.40)			Brown, silty CLAY, with rootlets. Mottled orange and sandy from 0.6m (damp).
						(1.30)		1.50	Light blue-grey mottled orange, silty CLAY.
								2.80	End of Borehole at 2.80m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS208
21/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 3.0m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.15)		0.15	Brown, clayey sandy TOPSOIL, with flint gravel and rootlets.
						(0.95)		1.10	Brown-buff, fissured, silty, slightly gravelly CLAY, with rootlets. Gravels consist of fine to medium, subrounded flint.
						(1.90)		3.00	Grey mottled orange, silty CLAY, with ancient rootlets and veins of selenite.
									End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

Southern Testing ST Consult

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Start - End Date	Project ID:	Hole Type:	WLS209
21/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 3.0m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.15)		0.15	Brown, silty, slightly gravelly, clayey TOPSOIL, with rootlets and flint gravel.
						(0.75)			Buff-brown, silty, slightly sandy, slightly gravelly CLAY, with fine calcareous nodules. Gravels consist of fine to medium, subrounded, flint and sandstone.
						(0.10)		0.90	Orange-brown, silty, sandy CLAY.
								1.00	Blue-grey mottled orange, silty CLAY, with ancient rootlets and initally calcareous nodules
						(2.00)			
								3.00	End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

Southern Testing ST Consult

www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020

Start - End Date	Project ID:	Hole Type:	WLS210
21/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 3.0m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.15)		0.15	Brown, silty, sandy, clayey TOPSOIL, with flint gravel and rootlets.
						(1.05)			Orange-brown, silty sandy, slightly gravelly CLAY, with occasional rootlets. Gravels consist of fine, subangular sandstone.
								1.20	Brown, silty, very sandy CLAY (damp).
						(0.70)			
						(0.10)		1.90 2.00	Orange, silty, gravelly sandy CLAY. Gravels consist of fine to medium, subangular flint.
						(1.00)			Blue-grey mottled orange-brown, silty CLAY.
								3.00	End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS211
21/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 2.35m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.10)		0.10	Brown, silty, sandy, clayey TOPSOIL, with flint gravel and rootlets.
						(0.90)		1.00	Buff-brown, silty, very sandy, slightly gravelly CLAY, with occasional rootlets. Gravels consist of fine to medium subrounded, flint and limestone.
						(0.90)		1.90	Brown, silty, slightly gravelly CLAY. Gravels consist of fine to medium, subangular flint and sandstone.
						(1.05)		2.95	Orange-brown, slightly gravelly fine to coarse SAND. Gravels consist of fine to medium, subangular flint and sandstone.
						(0.05)		3.00	Grey-blue mottled orange, silty CLAY.
									End of Borehole at 3.00m

Hole Details		Casing Details		Waterstrike (m bgl)					Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks
					1.90			1.40	20 0				

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Start - End Date	Project ID:	Hole Type:	WLS212
21/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 2.9m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.10)		0.10	Brown, clayey TOPSOIL, with rootlets and flint gravel.
						(1.00)			Buff/ pale brown, silty CLAY, with rootlets and fine calcareous nodules.
								1.10	Blue-grey mottled orange, silty CLAY, with ancient rootlets.
						(0.90)		2.00	Pale grey mottled orange silty CLAY, with veins of selenite.
						(1.00)		3.00	End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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APPENDIX B

Field Sampling and In-Situ Test Methods and Results

B

Soil and Rock Descriptions

All soil and rock descriptions are in general accordance with BS5930 Ref [4].

Anthropogenic soils ('made ground' or 'fill') describe materials which have been placed by man and can be divided into those composed of reworked natural soils and those composed of or containing man-made materials. 'Fill' is used to describe material placed in a controlled manner and 'made ground' is used to describe materials placed without strict engineering control.

The classification of materials such as topsoil is based on visual description only and should not be interpreted to mean that the material complies with criteria used in BS 3882 Ref [13].

Chalk descriptions are based on CIRIA C574 Ref [14] and Mortimore Ref [15].

The geology code is only provided on logs where a positive identification of the sample strata has been made.

Inspection Pit

Inspection pits are hand excavated from the surface (maximum depth 1.2 – 1.5m) using appropriate tools to locate and avoid existing buried services at exploratory hole positions. They are also regularly used as part of investigations on existing structures to expose and determine foundation detail.

Trial Pits and Trenches

Trial pits and trenches are unsupported excavations, mechanically excavated by machine to the required depth to enable visual examination, in situ testing and sampling as required from outside the excavation.

Dynamic Sampling - Window or Windowless

Window sampling is carried out by driving hollow steel tubes incorporating a longitudinal access slot (window) and a cutting shoe into the ground using a percussive 'breaker'. This enables recovery of a continuous soil sample for examination and sub-sampling.

Windowless samplers are designed for taking disturbed, continuous soil samples to depths up to 10 metres (depending on ground conditions). The samplers comprise steel tubes of about 50-100mm diameter with a rigid plastic liner (no window) and are driven into the ground with a sliding hammer mounted on a tracked purpose-designed soil sampling rig. After driving and extracting the sampler from the ground, the plastic liner is extracted together with the enclosed soil sample. The sample can then either be extracted, split and sub-sampled or plastic end caps may be fitted, the tube labelled and transported for future examination and sub-sampling.

Soil samples are disturbed by the driving process with both techniques and can be regarded as being between Class 5 up to Class 3 samples at best (in favourable ground).

The major advantage of using windowless samplers is that the plastic liner greatly reduces the possibility of cross-contamination between successive samples.

An equivalent in-situ test to the Standard Penetration Test can be carried out with the windowless sampler rig.

Standard Penetration Test (SPT)

The Standard Penetration Test (SPT) is specified in BS EN ISO 22476-3 Ref [16]. In this test, an open-ended tube is driven into the ground by blows from a free-falling hammer (with specified sizes, weights and distances).

The tube is seated by driving to a penetration of 150mm, or by 25 blows, whichever occurs first. It is then driven for a maximum of a further 300mm and the number of blows is termed the penetration resistance (N). If 300mm penetration cannot be achieved in 50 blows, the test drive is terminated and penetration depth is recorded.

When testing in gravels, a conical end piece is attached to the tube. The test is then called an SPT(C).

A classification of relative density descriptions as used on borehole logs, based upon uncorrected SPT N values, is given within BS5930 Ref [4] and set out as follows:

Classification based on uncorrected SPT N Value		Term
0 - 4		Very Loose
4 - 10		Loose
10 – 30		Medium Dense
30 – 50		Dense
Over 50		Very Dense

Hand Penetrometer Test

The handheld soil penetrometer consists of a spring loaded and calibrated plunger which is forced into cohesive soil. A reading of unconfined compression strength (equal to twice cohesion) is given on a calibrated scale. The average of a set of three readings shall be recorded.

In common with other hand methods of strength assessment it does not give an accurate indication of bearing capacity in stiff or fissured soils, because of the small test area.

In Situ California Bearing Ratio (CBR) Test

This test is specified within BS 1377-9 Ref [17], and is generally undertaken off the rear of a loaded Land Rover type vehicle. In the test, a cylindrical plunger is forced into the soil at a uniform rate (rates and sizes specified). The CBR value is the ratio of the force required to cause a standard penetration divided by the force required to cause the same penetration in a standard material (Californian limestone) expressed as a percentage. This value is used in pavement design.

Disturbed Samples

Disturbed samples were taken from exploratory holes in general accordance with BS 5930 [4] and BS EN ISO 22475-1 Ref [18] as required and stored in appropriately labelled containers. Details of the type, size and depth of sample will be recorded within the exploratory hole record. Such samples can be regarded as being between Class 5 up to Class 3 quality depending upon their method of sampling.

Environmental Samples

Environmental samples were taken from the boreholes at regular intervals in the made ground and natural soils as indicated on the exploratory hole logs. The sampling strategy was in general accordance with BS10175 Ref [5] and BS ISO 18400 Refs [19], [20], [21], [22] & [23].

These samples were collected and stored in glass jars or plastic pots and transferred to the laboratory in cool boxes as appropriate to the proposed laboratory testing.

Monitoring Well

A groundwater and/or ground gas monitoring well consists of a perforated pipe, which is installed in the ground. The standpipe is typically 50mm nominal in diameter and is installed in a lined borehole. It is perforated from the base with a sand/gravel surround through the soil horizon of interest to an appropriate depth below ground level. Above this there is a bentonite seal with solid pipework and is provided with an end cap or a gas valve at the top as appropriate.

Gas monitoring is carried out via the gas tap. Water sampling/purging can be undertaken by removing the gas tap and bung.

The well is usually completed at the surface with a flush cast iron cover or raised lockable cover.

Groundwater Monitoring – Dip Meter

The dip meter is used to measure standing water levels within boreholes. The probe is lowered into the borehole until the meter detects the groundwater with an audible 'beep'. The level is then read from the tape.

Groundwater Monitoring – Digital Level Loggers

Digital loggers placed within borehole standpipes measuring water pressure, barometric pressure and temperature were used to record data over the monitoring period. The data was processed, using proprietary software, to determine temperature and barometric pressure compensated water levels.

The equipment can record parameters at pre-determined time intervals and has a capacity of many thousands of readings and is therefore suitable for monitoring over extended periods of time.

Soakage Tests (after BRE DG365 2016)

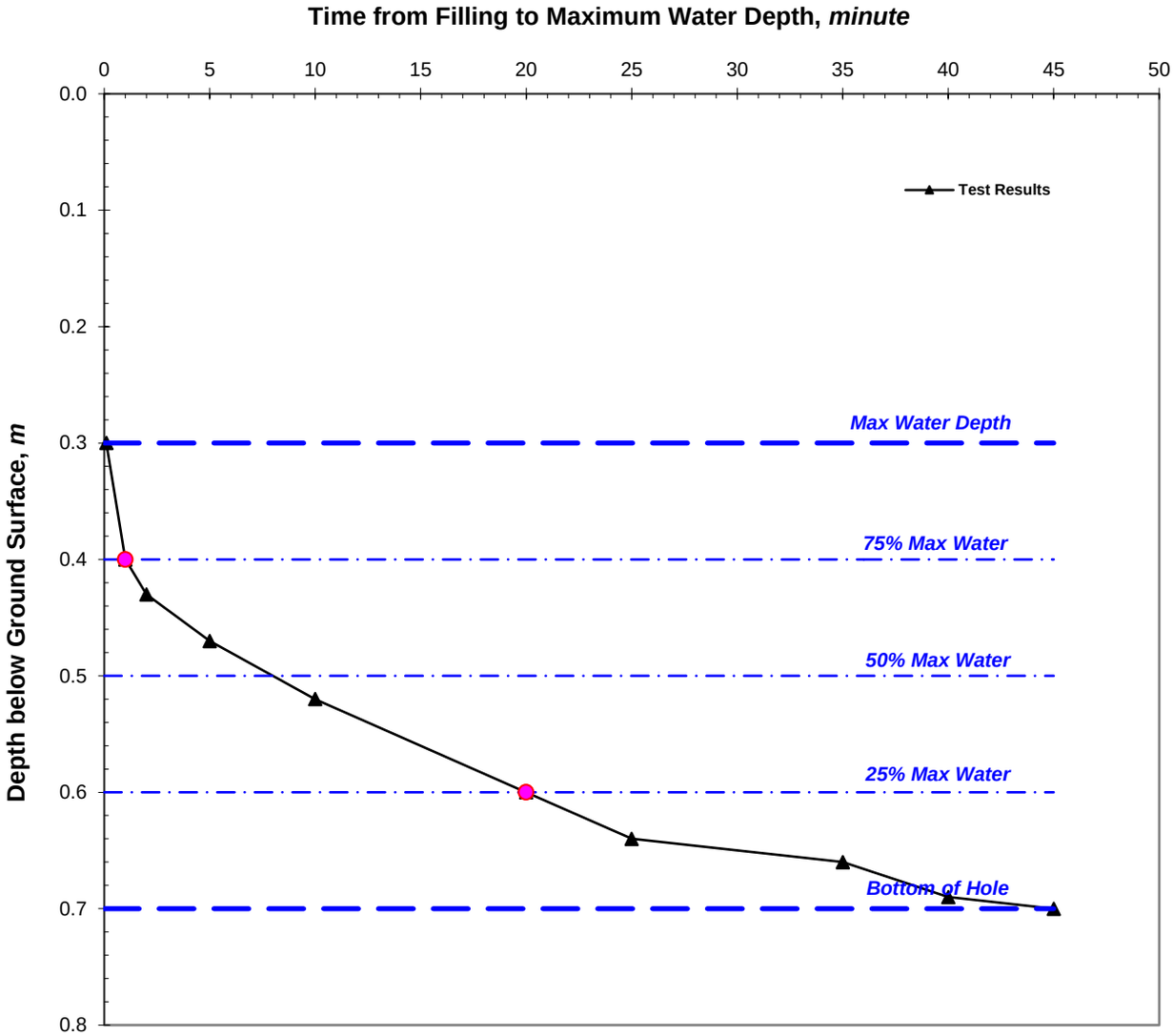
The BRE DG365 Ref [6] paper on soakaway design allows for the design of trench soakaways as well as traditional square and circular soakaways.

The test to measure the soil infiltration rate is carried out in pits which are excavated to the full depth of the proposed soakaway. The trial pits are filled and allowed to drain to empty or near empty, three times, on the same day or on consecutive days. Water levels are recorded against time. Where the sides are unstable the pit should be filled with granular material to provide stability during the test.

Calculated soakage rates are expressed as l/m²/minute, which is a convenient rate to use. The BRE use a unit of m/sec, which is the value in l/m²/minute divided by 60,000.

BRE Digest DG365 Soakage Test

Test Hole No: SA101
Test No: Test No 1 (Initial)



Pit Length, m	2.100	Depth to Water at Start of Test, *m*	0.300
Pit Width, m	0.450	Max Water Dropdown during Test, *m*	0.400
Depth to Pit Base, m	0.700	Total Soakage Test Time, *min*	45.0
Depth to Top of Permeable Soils, *m*	0.300	Mean Internal Discharge Area, m^2	1.965
Depth to Groundwater Surface, *m*		Discharge Rate, *litre/min*	3.979
Depth to Top of Granular Fill, *m*	0.100	Soakage Rate, *litre/m^2/min*	**2.02**
Voids Assumed for Granular Fill, %	40%	BRE Soil Infiltration Rate, *m/sec*	**3.37E-05**

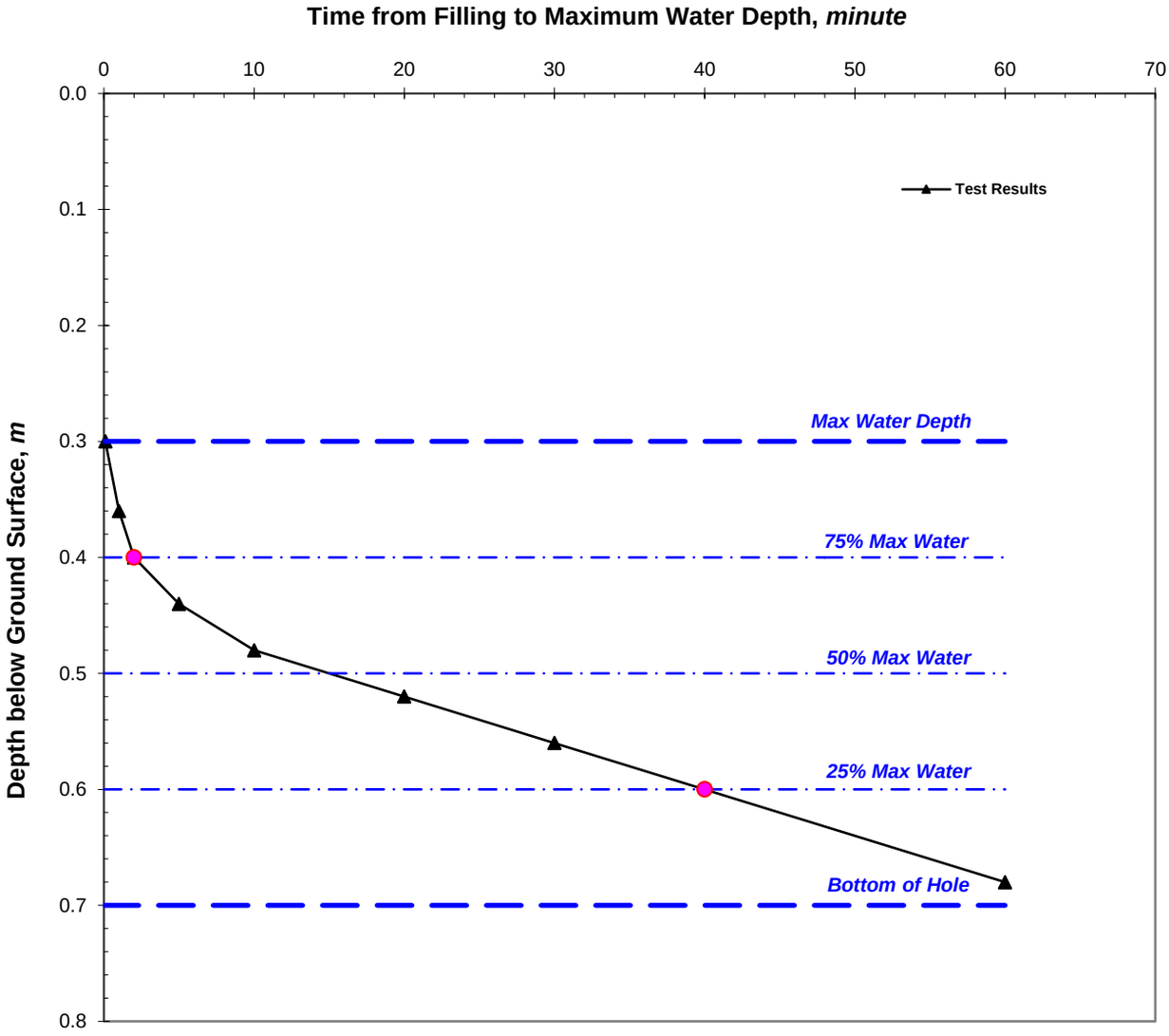
Comments:

Pit was emptied at finish of test.

Client:	Glanville Consultants Limited	**Job No:**	JN1597	**Test Date:**	23/Sep/2021		
Site:	Land East of Oxford Road	**Tested By:**	DR	**Engineer:**	OJ	**Fig.**	**S1**

BRE Digest DG365 Soakage Test

Test Hole No: SA101
Test No: Test No 2 (Repeated)



Pit Length, m	2.100	Depth to Water at Start of Test, *m*	0.300
Pit Width, m	0.450	Max Water Dropdown during Test, *m*	0.380
Depth to Pit Base, m	0.700	Total Soakage Test Time, *min*	60.0
Depth to Top of Permeable Soils, *m*	0.300	Mean Internal Discharge Area, m^2	1.965
Depth to Groundwater Surface, *m*		Discharge Rate, *litre/min*	1.989
Depth to Top of Granular Fill, *m*	0.100	Soakage Rate, *litre/m^2/min*	**1.01**
Voids Assumed for Granular Fill, %	40%	BRE Soil Infiltration Rate, *m/sec*	**1.69E-05**

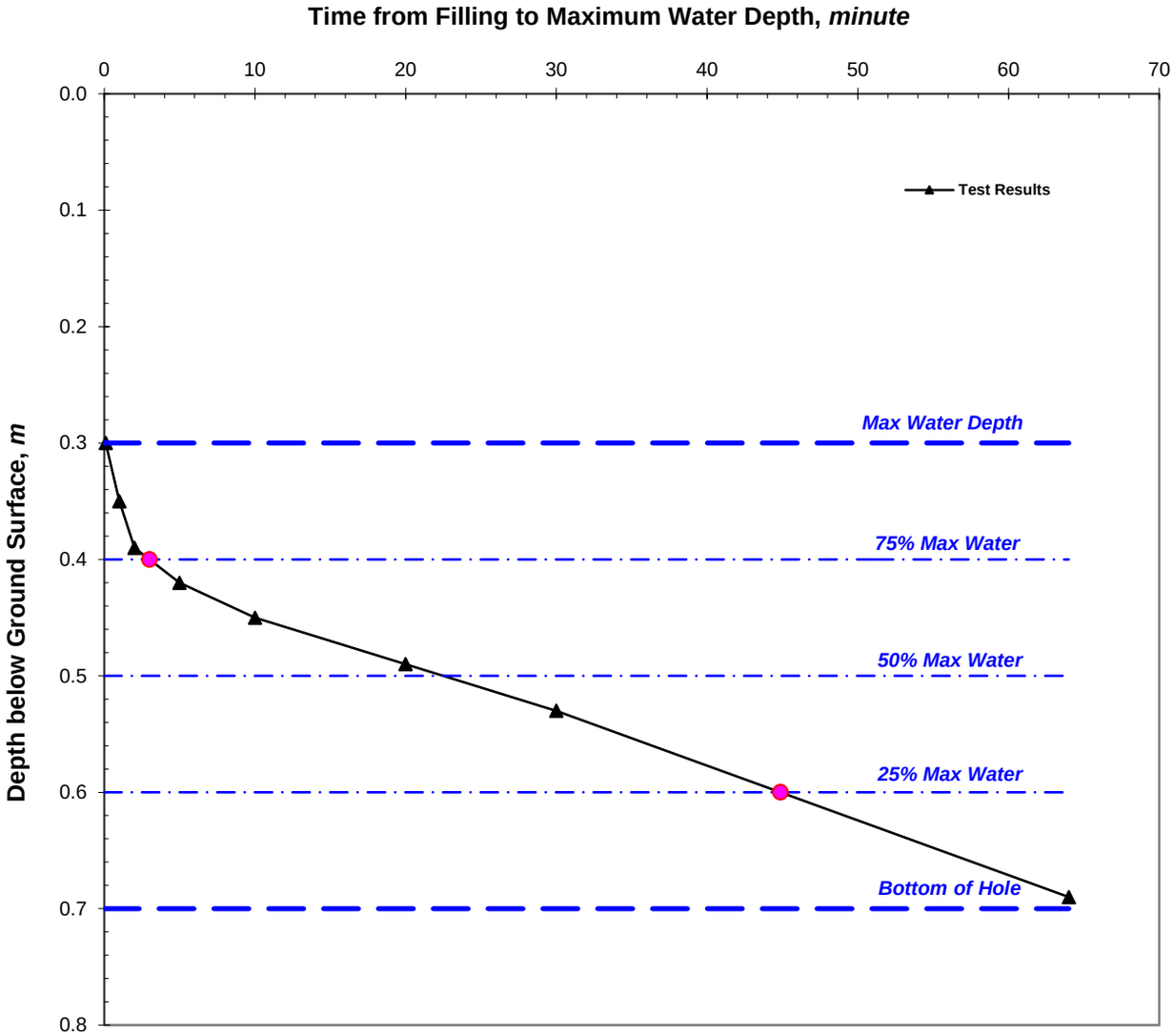
Comments:

Pit was nearly emptied at finish of test.

Client:	Glanville Consultants Limited	**Job No:**	JN1597	**Test Date:**	23/Sep/2021		
Site:	Land East of Oxford Road	**Tested By:**	DR	**Engineer:**	OJ	**Fig.**	**S2**

BRE Digest DG365 Soakage Test

Test Hole No: SA101
Test No: Test No 3 (Repeated)



Pit Length, m	2.100	Depth to Water at Start of Test, *m*	0.300
Pit Width, m	0.450	Max Water Dropdown during Test, *m*	0.390
Depth to Pit Base, m	0.700	Total Soakage Test Time, *min*	64.0
Depth to Top of Permeable Soils, *m*	0.300	Mean Internal Discharge Area, m^2	1.965
Depth to Groundwater Surface, *m*		Discharge Rate, *litre/min*	1.805
Depth to Top of Granular Fill, *m*	0.100	Soakage Rate, $litre/m^2/min$	**0.919**
Voids Assumed for Granular Fill, %	40%	BRE Soil Infiltration Rate, *m/sec*	**1.53E-05**

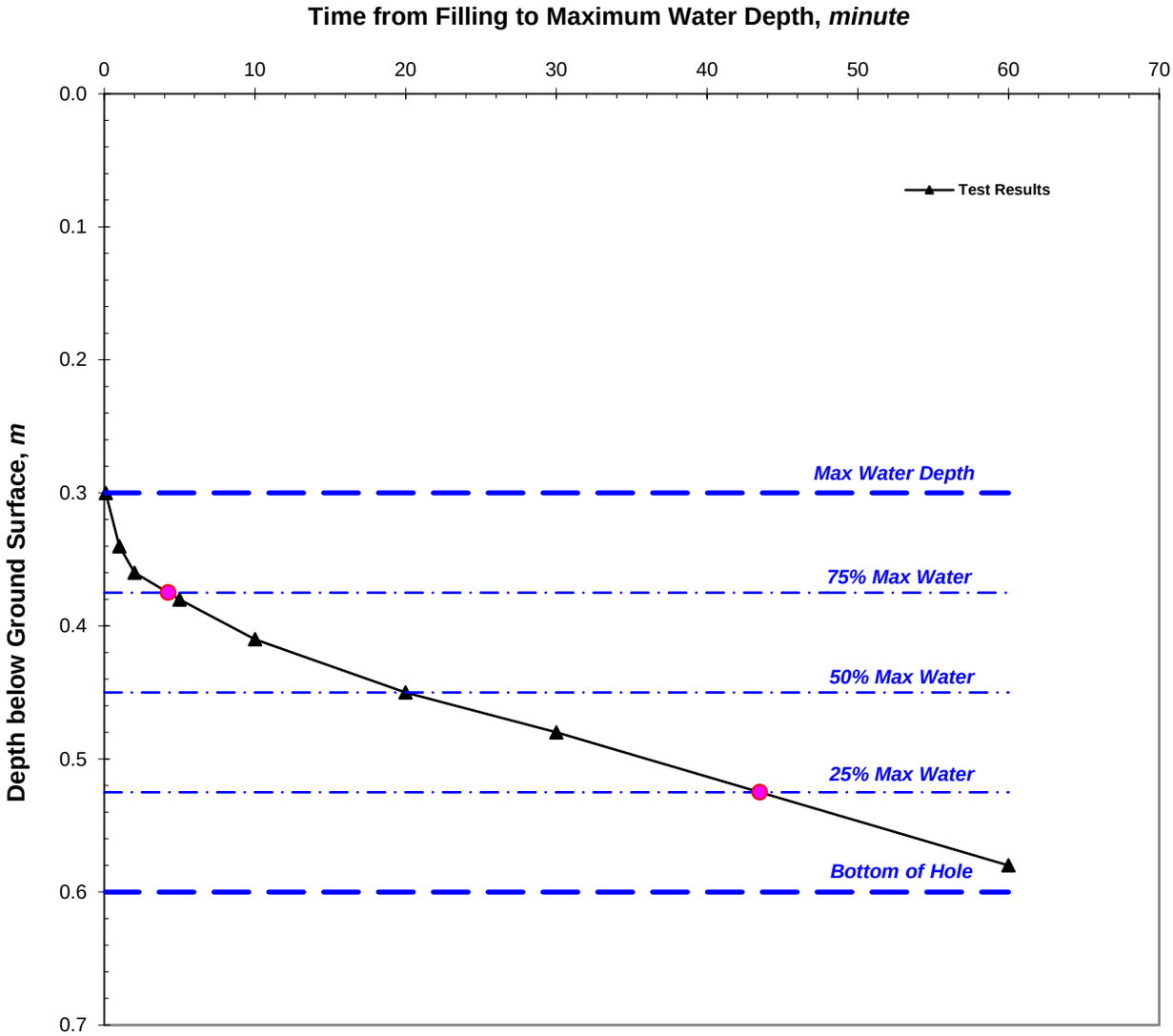
Comments:

Pit was nearly emptied at finish of test.

Client:	Glanville Consultants Limited	**Job No:**	JN1597	**Test Date:**	23/Sep/2021		
Site:	Land East of Oxford Road	**Tested By:**	DR	**Engineer:**	OJ	**Fig.**	**S3**

BRE Digest DG365 Soakage Test

Test Hole No: SA102
Test No: Test No 1 (Initial)



Pit Length, m	2.200	Depth to Water at Start of Test, *m*	0.300
Pit Width, m	0.450	Max Water Dropdown during Test, *m*	0.280
Depth to Pit Base, m	0.600	Total Soakage Test Time, *min*	60.0
Depth to Top of Permeable Soils, *m*	0.300	Mean Internal Discharge Area, m^2	1.785
Depth to Groundwater Surface, *m*		Discharge Rate, *litre/min*	1.513
Depth to Top of Granular Fill, *m*	0.100	Soakage Rate, $litre/m^2/min$	**0.848**
Voids Assumed for Granular Fill, %	40%	BRE Soil Infiltration Rate, *m/sec*	**1.41E-05**

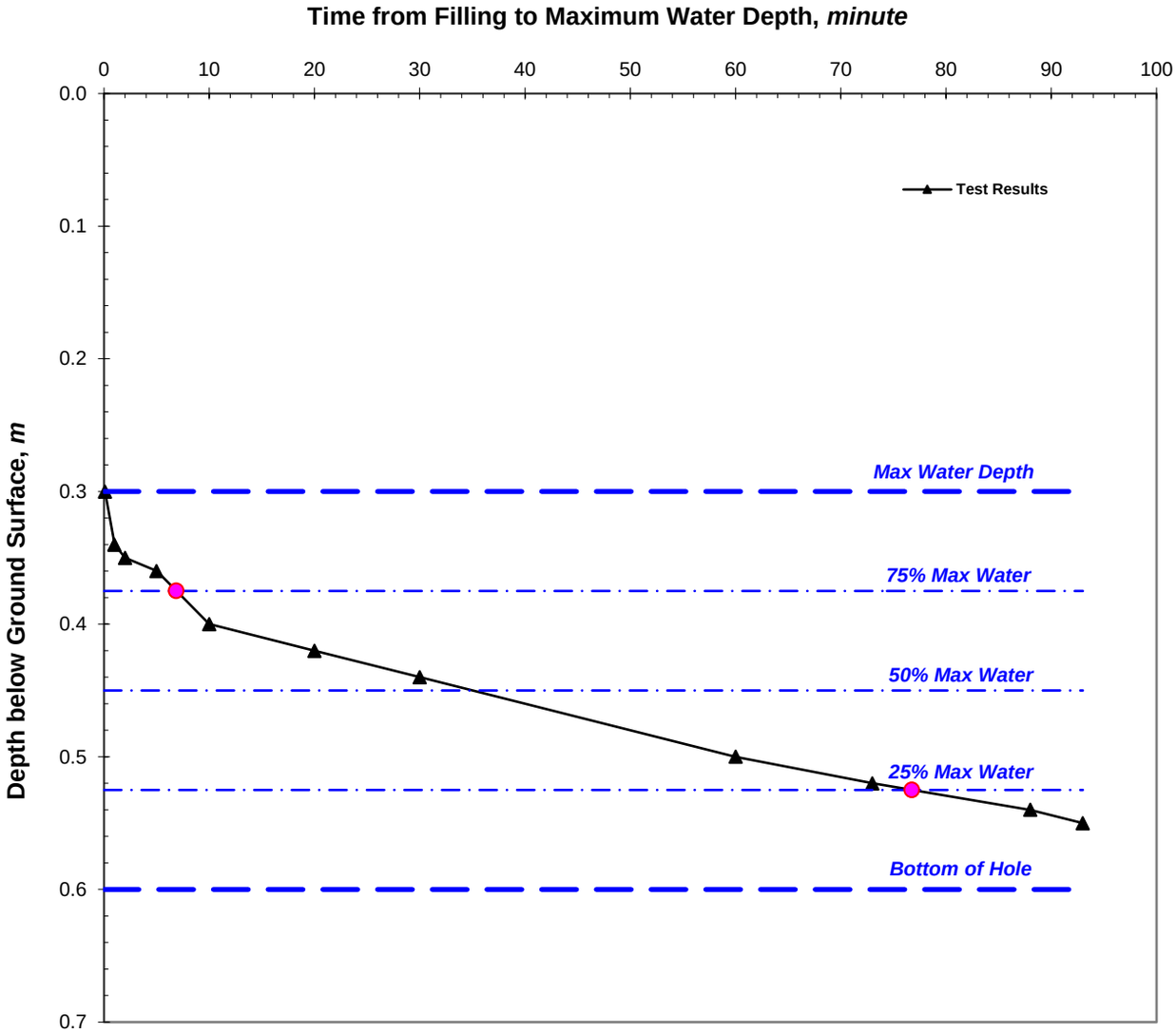
Comments:

Pit was nearly emptied at finish of test.

Client:	Glanville Consultants Limited	**Job No:**	JN1597	**Test Date:**	23/Sep/2021		
Site:	Land East of Oxford Road	**Tested By:**	DR	**Engineer:**	OJ	**Fig.**	**S4**

BRE Digest DG365 Soakage Test

Test Hole No: SA102
Test No: Test No 2 (Repeated)



Pit Length, m	2.200	Depth to Water at Start of Test, *m*	0.300
Pit Width, m	0.450	Max Water Dropdown during Test, *m*	0.250
Depth to Pit Base, m	0.600	Total Soakage Test Time, *min*	93.0
Depth to Top of Permeable Soils, *m*	0.300	Mean Internal Discharge Area, m^2	1.785
Depth to Groundwater Surface, *m*		Discharge Rate, *litre/min*	0.850
Depth to Top of Granular Fill, *m*	0.100	Soakage Rate, $litre/m^2/min$	**0.476**
Voids Assumed for Granular Fill, %	40%	BRE Soil Infiltration Rate, *m/sec*	**7.94E-06**

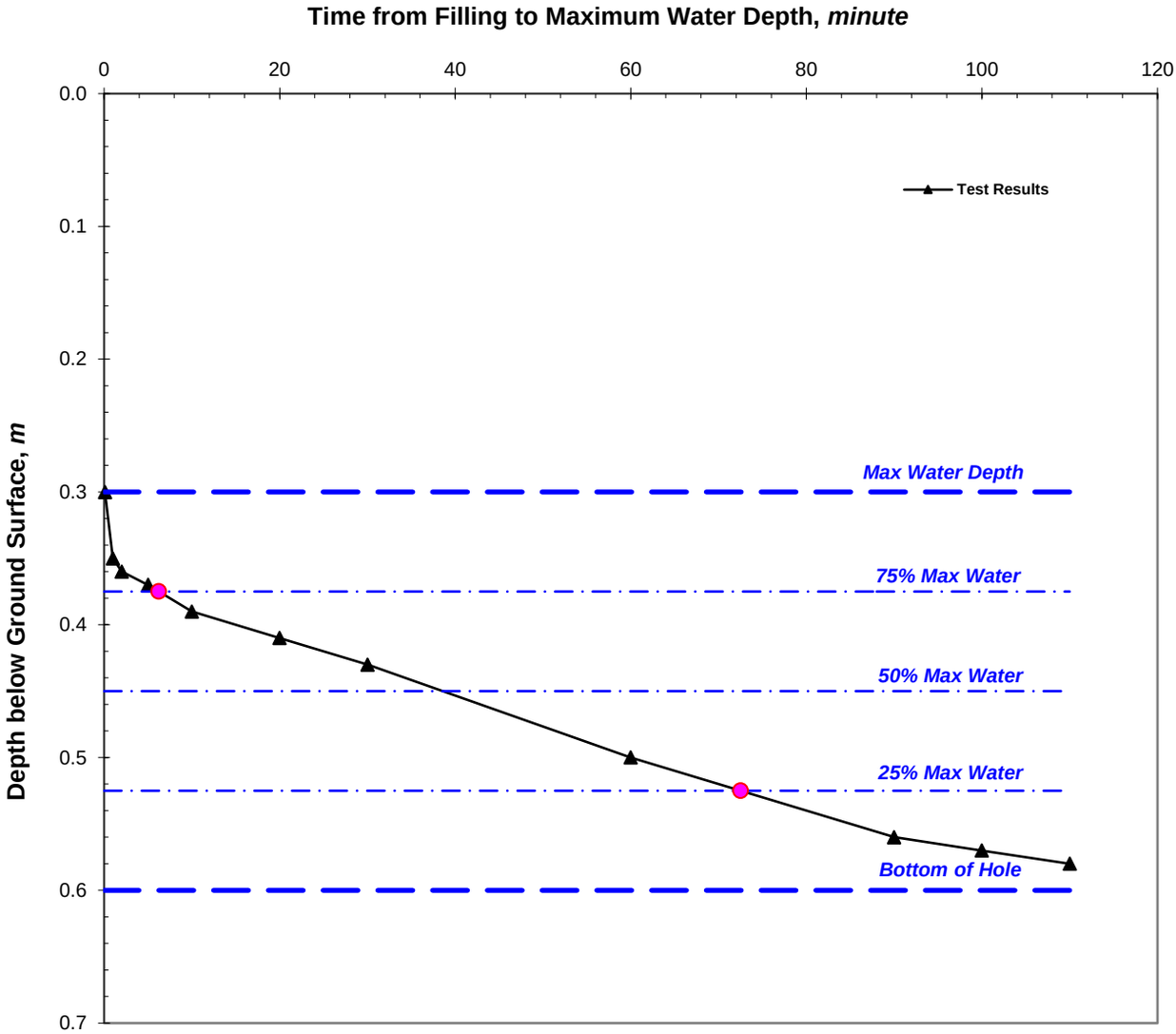
Comments:

Pit was nearly emptied at finish of test.

Client:	Glanville Consultants Limited	**Job No:**	JN1597	**Test Date:**	23/Sep/2021		
Site:	Land East of Oxford Road	**Tested By:**	DR	**Engineer:**	OJ	**Fig.**	**S5**

BRE Digest DG365 Soakage Test

Test Hole No: SA102
Test No: Test No 3 (Repeated)



Pit Length, m	2.200	Depth to Water at Start of Test, *m*	0.300
Pit Width, m	0.450	Max Water Dropdown during Test, *m*	0.280
Depth to Pit Base, m	0.600	Total Soakage Test Time, *min*	110.0
Depth to Top of Permeable Soils, *m*	0.300	Mean Internal Discharge Area, m^2	1.785
Depth to Groundwater Surface, *m*		Discharge Rate, *litre/min*	0.897
Depth to Top of Granular Fill, *m*	0.100	Soakage Rate, $litre/m^2/min$	**0.502**
Voids Assumed for Granular Fill, %	40%	BRE Soil Infiltration Rate, *m/sec*	**8.37E-06**

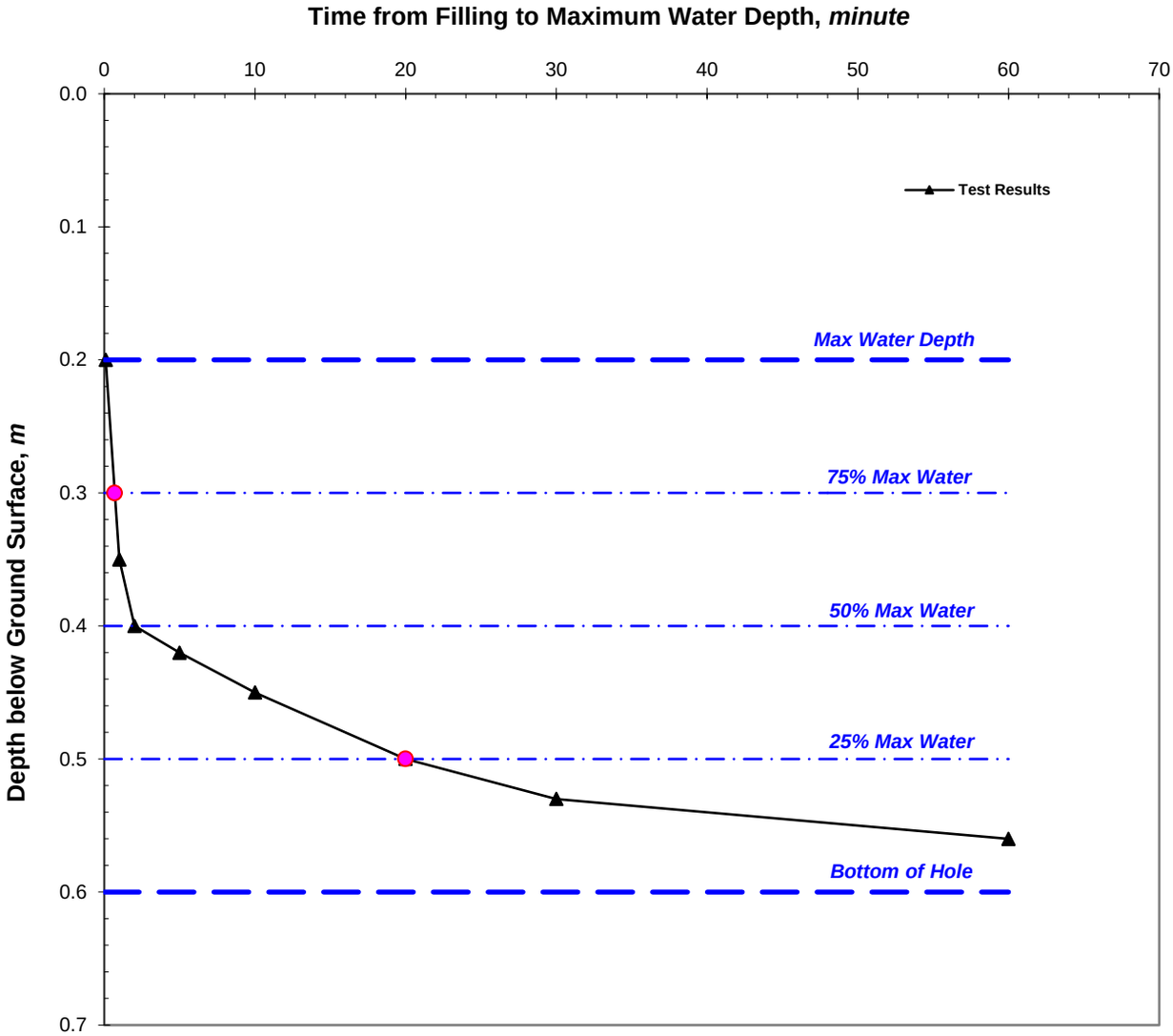
Comments:

Pit was nearly emptied at finish of test.

Client:	Glanville Consultants Limited	**Job No:**	JN1597	**Test Date:**	23/Sep/2021		
Site:	Land East of Oxford Road	**Tested By:**	DR	**Engineer:**	OJ	**Fig.**	**S6**

BRE Digest DG365 Soakage Test

Test Hole No: SA103
Test No: Test No 1 (Initial)



Pit Length, m	2.000	Depth to Water at Start of Test, *m*	0.200
Pit Width, m	0.450	Max Water Dropdown during Test, *m*	0.360
Depth to Pit Base, m	0.600	Total Soakage Test Time, *min*	60.0
Depth to Top of Permeable Soils, *m*	0.300	Mean Internal Discharge Area, m^2	1.880
Depth to Groundwater Surface, *m*		Discharge Rate, *litre/min*	3.731
Depth to Top of Granular Fill, *m*	0.100	Soakage Rate, $litre/m^2/min$	**1.98**
Voids Assumed for Granular Fill, %	40%	BRE Soil Infiltration Rate, *m/sec*	**3.31E-05**

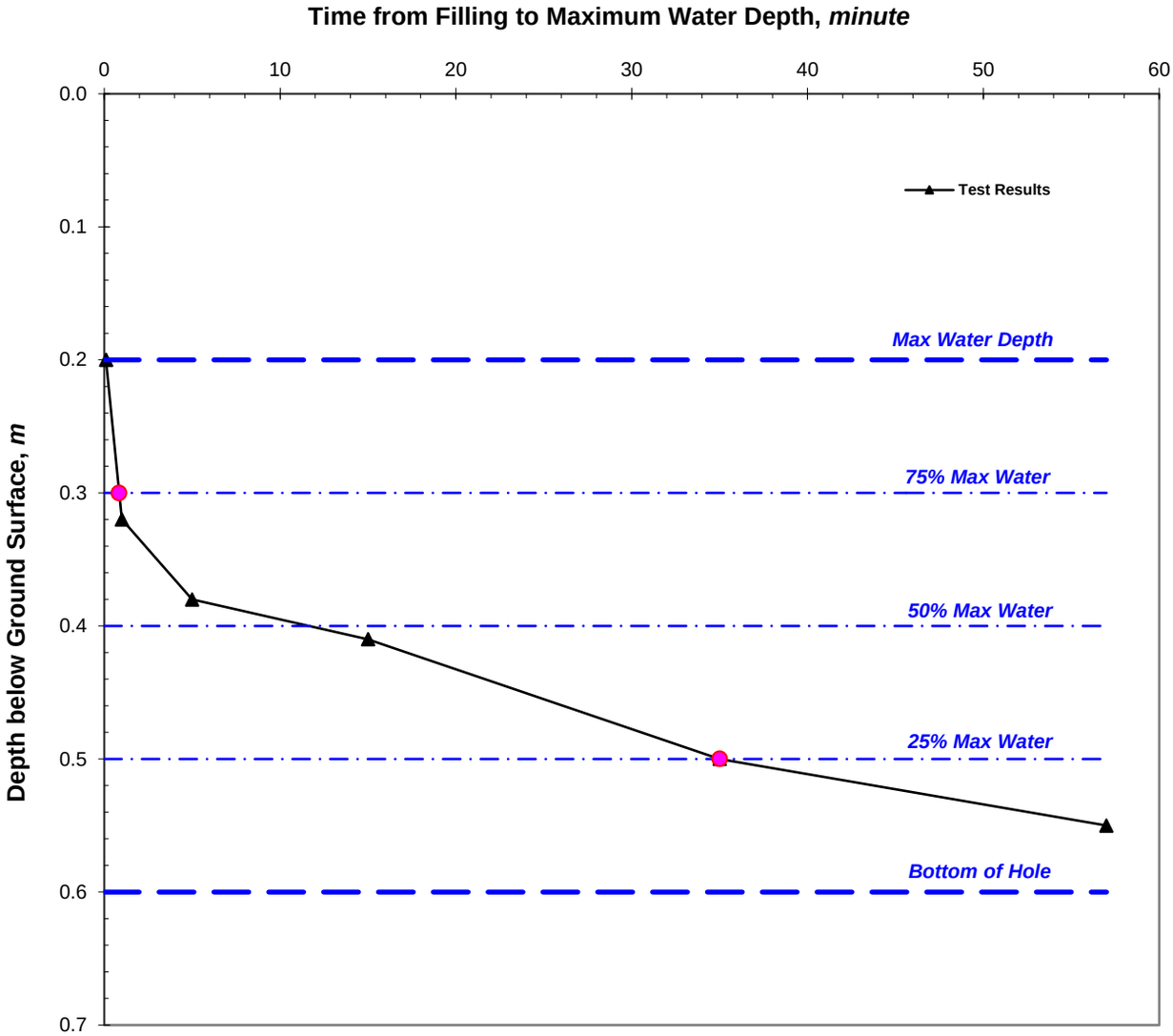
Comments:

Pit was nearly emptied at finish of test.

Client:	Glanville Consultants Limited	**Job No:**	JN1597	**Test Date:**	23/Sep/2021		
Site:	Land East of Oxford Road	**Tested By:**	DR	**Engineer:**	OJ	**Fig.**	**S7**

BRE Digest DG365 Soakage Test

Test Hole No: SA103
Test No: Test No 2 (Repeated)



Pit Length, m	2.000	Depth to Water at Start of Test, *m*	0.200
Pit Width, m	0.450	Max Water Dropdown during Test, *m*	0.350
Depth to Pit Base, m	0.600	Total Soakage Test Time, *min*	57.0
Depth to Top of Permeable Soils, *m*	0.300	Mean Internal Discharge Area, m^2	1.880
Depth to Groundwater Surface, *m*		Discharge Rate, *litre/min*	2.108
Depth to Top of Granular Fill, *m*	0.100	Soakage Rate, *litre/m^2/min*	**1.12**
Voids Assumed for Granular Fill, %	40%	BRE Soil Infiltration Rate, *m/sec*	**1.87E-05**

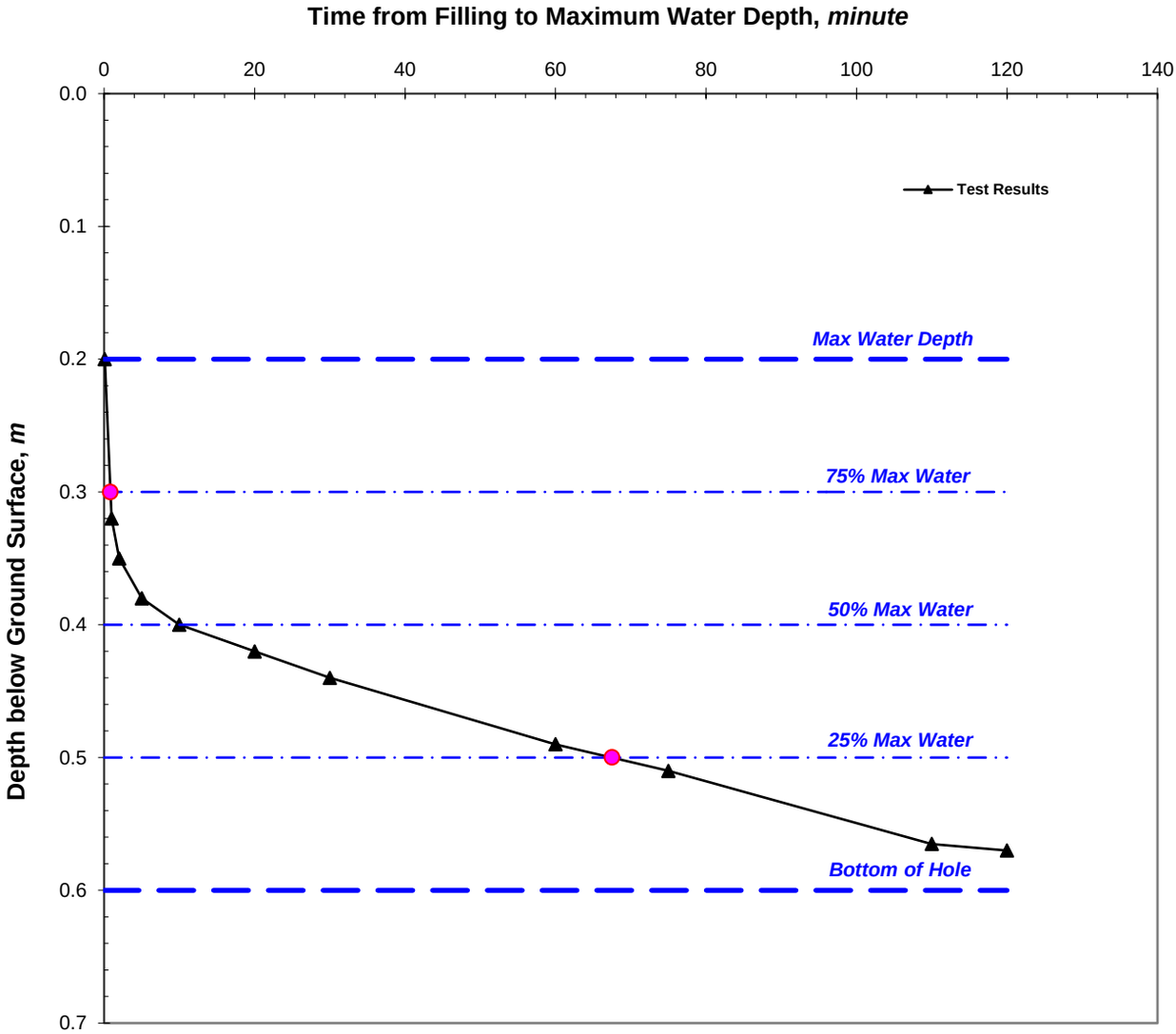
Comments:

Pit was nearly emptied at finish of test.

Client:	Glanville Consultants Limited	**Job No:**	JN1597	**Test Date:**	23/Sep/2021		
Site:	Land East of Oxford Road	**Tested By:**	DR	**Engineer:**	OJ	**Fig.**	**S8**

BRE Digest DG365 Soakage Test

Test Hole No: SA103
Test No: Test No 3 (Repeated)



Pit Length, m	2.000	Depth to Water at Start of Test, *m*	0.200
Pit Width, m	0.450	Max Water Dropdown during Test, *m*	0.370
Depth to Pit Base, m	0.600	Total Soakage Test Time, *min*	120.0
Depth to Top of Permeable Soils, *m*	0.300	Mean Internal Discharge Area, m^2	1.880
Depth to Groundwater Surface, *m*		Discharge Rate, *litre/min*	1.080
Depth to Top of Granular Fill, *m*	0.100	Soakage Rate, $litre/m^2/min$	**0.575**
Voids Assumed for Granular Fill, %	40%	BRE Soil Infiltration Rate, *m/sec*	**9.58E-06**

Comments:

Pit was nearly emptied at finish of test.

Client:	Glanville Consultants Limited	**Job No:**	JN1597	**Test Date:**	23/Sep/2021		
Site:	Land East of Oxford Road	**Tested By:**	DR	**Engineer:**	OJ	**Fig.**	**S9**

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APPENDIX C

Contamination Laboratory Test Methods and Results

C

These screening values are valid at the time of writing but may be subject to change and any such changes will have implications for the assessments based on them. Their validity should be confirmed at the time of site development.

Table 1 – Tier 1 Screening Values							
Contaminant	**Units**	**Proposed Land Use**					
		Residential with home grown produce consumption	**Residential without home grown produce consumption**	**Open Space * (Residential)**	**Open Space * (Park)**	**Allotments**	**Commercial / Industrial**
Arsenic (As) [2]	mg/kg	37	40	79	170	43	640
Cadmium (Cd) [2]	mg/kg	11	85	120	555	1.9	190
Trivalent Chromium (CrIII) [2]	mg/kg	910	910	1,500	33,000	18,000	8600
Hexavalent Chromium (CrVI) [2]	mg/kg	6	6	7.7	220	1.8	33
Lead (Pb) [3]	mg/kg	200	310	630	1300	80	2330
Mercury (Hg) [1,2,7]	mg/kg	7.6-11	9.2-15	40	68-71	6.0	29-320
Selenium (Se) [2]	mg/kg	250	430	1,100	1,800	88	12,000
Nickel (Ni) [2,4]	mg/kg	130	180	230	800	53	980
Copper (Cu) [2,4]	mg/kg	2,400	7,100	12,000	44,000	520	68,000
Zinc (Zn) [2,4]	mg/kg	3,700	40,000	81,000	170,000	620	730,000
Phenol [1,2]	mg/kg	120-380	440-1200	440-1300	440-1300	23-83	440-1300
Benzo[a]pyrene [1,5]	mg/kg	1.7-2.4	2.6	4.9	10	0.67-2.7	36
Naphthalene [1,2]	mg/kg	2.3-13	2.3-13	77-430^{+}	77-430^{+}	4.1-24	77-430^{+}
Total Cyanide (CN) [6]	mg/kg	/	/	/	/	/	/
Free Cyanide [6]	mg/kg	/	/	/	/	/	/
Complex Cyanides [6]	mg/kg	/	/	/	/	/	/
Thiocyanate [6]	mg/kg	/	/	/	/	/	/

Notes:

* Open Space levels calculated on the basis of the exposure modelling developed in the C4SL research.

+ Screening values constrained to saturation limit. Higher values may be acceptable on a site specific basis.

[1] Where ranges of values are given for organic contaminants the screening value is dependent on the Soil +Organic Matter.

[2] LQM/CIEH S4UL (2014). Copyright Land Quality Management Ltd. reproduced with permission; Publication Number S4UL 3116. All rights reserved.

[3] C4SL (DEFRA 2014).

[4] Copper, Zinc and Nickel may have phototoxic effects at the given concentrations. Alternative criteria should be adopted for importation of Topsoil or other soils for cultivation. BS3882:2015 and BS8601:2013 suggest values of 200 to 300mg/kg for Zn, 100 to 200mg/kg for Cu, and 60 to 110mg/kg for Ni, for topsoil and subsoil, depending on pH.

[5] Based on the Surrogate Marker approach and modelled using the modified exposure parameters of C4SL but retaining 'minimal risk' HCV.

[6] Screening criteria derived on a site specific basis if test results indicate.

[7] S4UL for Methyl Mercury, higher concentrations may be tolerable if inorganic mercury is the only species present. Lower concentrations apply for elemental Mercury.

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Analytical Report Number : 21-13302

Project / Site name:	Land East of Oxford Road	**Samples received on:**	29/09/2021
Your job number:	JN1597	**Samples instructed on/ Analysis started on:**	29/09/2021
Your order number:		**Analysis completed by:**	12/10/2021
Report Issue Number:	1	**Report issued on:**	12/10/2021
Samples Analysed:	26 soil samples		

Signed: [redacted]

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

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

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

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

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

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

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029730	2029731	2029732	2029733	2029734
Sample Reference				TP101	TP102	TP103	TP104	TP105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.15	0.15	0.15
Date Sampled				21/09/2021	21/09/2021	21/09/2021	21/09/2021	21/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	10	11	13	13
Total mass of sample received	kg	0.001	NONE	1.0	1.0	1.0	1.0	1.0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.3	7.0	7.3	6.8	7.4
Organic Matter (automated)	%	0.1	MCERTS	3.9	3.0	3.5	3.3	4.7
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	20	18	16	20	16
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	38	37	29	34	34
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	38	37	29	34	34
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	13	16	18	17
Lead (aqua regia extractable)	mg/kg	1	MCERTS	25	23	28	28	22
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	31	23	21	25	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	83	69	63	79	71

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029730	2029731	2029732	2029733	2029734
Sample Reference				TP101	TP102	TP103	TP104	TP105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.15	0.15	0.15
Date Sampled				21/09/2021	21/09/2021	21/09/2021	21/09/2021	21/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	-	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	-	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	-	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	-	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	-	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	-	< 10	< 10

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029730	2029731	2029732	2029733	2029734
Sample Reference				TP101	TP102	TP103	TP104	TP105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.15	0.15	0.15
Date Sampled				21/09/2021	21/09/2021	21/09/2021	21/09/2021	21/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Pesticides								
Alachlor	µg/kg	10	NONE	< 10	-	< 10	-	-
Aldrin	µg/kg	10	NONE	< 10	-	< 10	-	-
Azinphos-ethyl	µg/kg	10	NONE	< 10	-	< 10	-	-
Azinphos-methyl	µg/kg	10	NONE	< 10	-	< 10	-	-
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	< 10	-	< 10	-	-
BHC-beta	µg/kg	10	NONE	< 10	-	< 10	-	-
BHC-delta	µg/kg	10	NONE	< 10	-	< 10	-	-
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	< 10	-	< 10	-	-
Bifenthrin	µg/kg	10	NONE	< 10	-	< 10	-	-
Carbophenothion	µg/kg	10	NONE	< 10	-	< 10	-	-
Chlordane-cis	µg/kg	10	NONE	< 10	-	< 10	-	-
Chlordane-trans	µg/kg	10	NONE	< 10	-	< 10	-	-
Chlorfenvinphos	µg/kg	10	NONE	< 10	-	< 10	-	-
Chlorothalonil	µg/kg	20	NONE	< 20	-	< 20	-	-
Chlorpyrifos	µg/kg	10	NONE	< 10	-	< 10	-	-
Cyfluthrin (Sum)	µg/kg	10	NONE	< 10	-	< 10	-	-
Cyhalothrin (Lambda)	µg/kg	10	NONE	< 10	-	< 10	-	-
Cypermethrin (Sum)	µg/kg	10	NONE	< 10	-	< 10	-	-
DDD-o,p'	µg/kg	10	NONE	< 10	-	< 10	-	-
DDD-p,p'	µg/kg	10	NONE	< 10	-	< 10	-	-
DDE-o,p'	µg/kg	10	NONE	< 10	-	< 10	-	-
DDE-p,p'	µg/kg	10	NONE	< 10	-	< 10	-	-
DDT-o,p'	µg/kg	10	NONE	< 10	-	< 10	-	-
DDT-p,p'	µg/kg	10	NONE	< 10	-	< 10	-	-
Deltamethrin	µg/kg	10	NONE	< 10	-	< 10	-	-
Demeton-O	µg/kg	10	NONE	< 10	-	< 10	-	-
Demeton-S	µg/kg	10	NONE	< 10	-	< 10	-	-
Diazinon	µg/kg	10	NONE	< 10	-	< 10	-	-
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	< 10	-	< 10	-	-
Dichlorvos	µg/kg	10	NONE	< 10	-	< 10	-	-
Dieldrin	µg/kg	10	NONE	< 10	-	< 10	-	-
Dimethoate	µg/kg	10	NONE	< 10	-	< 10	-	-
Dimethylvinphos	µg/kg	10	NONE	< 10	-	< 10	-	-
Endosulfan I (alpha isomer)	µg/kg	10	NONE	< 10	-	< 10	-	-
Endosulfan II (beta isomer)	µg/kg	10	NONE	< 10	-	< 10	-	-
Endosulfan sulfate	µg/kg	10	NONE	< 10	-	< 10	-	-
Endrin	µg/kg	20	NONE	< 20	-	< 20	-	-
Endrin aldehyde	µg/kg	10	NONE	< 10	-	< 10	-	-
Endrin ketone	µg/kg	10	NONE	< 10	-	< 10	-	-
Ethion	µg/kg	10	NONE	< 10	-	< 10	-	-
Etrimfos	µg/kg	10	NONE	< 10	-	< 10	-	-
Fenitrothion	µg/kg	10	NONE	< 10	-	< 10	-	-
Fenthion	µg/kg	10	NONE	< 10	-	< 10	-	-
Fenvalerate (Sum)	µg/kg	10	NONE	< 10	-	< 10	-	-
Heptachlor	µg/kg	10	NONE	< 10	-	< 10	-	-
Heptachlor exo-epoxide	µg/kg	10	NONE	< 10	-	< 10	-	-
Hexachlorobenzene	µg/kg	10	NONE	< 10	-	< 10	-	-
Hexachlorobutadiene	µg/kg	10	NONE	< 10	-	< 10	-	-
Isodrin	µg/kg	20	NONE	< 20	-	< 20	-	-
Malathion	µg/kg	10	NONE	< 10	-	< 10	-	-
Methacrifos	µg/kg	10	NONE	< 10	-	< 10	-	-
Methoxychlor, p,p'-	µg/kg	20	NONE	< 20	-	< 20	-	-

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029730	2029731	2029732	2029733	2029734
Sample Reference				TP101	TP102	TP103	TP104	TP105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.15	0.15	0.15
Date Sampled				21/09/2021	21/09/2021	21/09/2021	21/09/2021	21/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Mevinphos, E+Z	µg/kg	10	NONE	< 10	-	< 10	-	-
Omethoate	µg/kg	20	NONE	< 20	-	< 20	-	-
Parathion	µg/kg	10	NONE	< 10	-	< 10	-	-
Parathion-methyl	µg/kg	10	NONE	< 10	-	< 10	-	-
Pendimethalin	µg/kg	10	NONE	32	-	67	-	-
Pentachlorobenzene	µg/kg	10	NONE	< 10	-	< 10	-	-
Permethrin, Cis-	µg/kg	10	NONE	< 10	-	< 10	-	-
Permethrin, Trans-	µg/kg	10	NONE	< 10	-	< 10	-	-
Phorate	µg/kg	10	NONE	< 10	-	< 10	-	-
Phosalone	µg/kg	10	NONE	< 10	-	< 10	-	-
Phosphamidon (Sum)	µg/kg	10	NONE	< 10	-	< 10	-	-
Pirimiphos-ethyl	µg/kg	10	NONE	< 10	-	< 10	-	-
Pirimiphos-methyl	µg/kg	10	NONE	< 10	-	< 10	-	-
Propetamphos	µg/kg	10	NONE	< 10	-	< 10	-	-
Propyzamide	µg/kg	10	NONE	< 10	-	< 10	-	-
Tecnazene	µg/kg	10	NONE	< 10	-	< 10	-	-
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	< 10	-	< 10	-	-
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	< 10	-	< 10	-	-
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	< 10	-	< 10	-	-
Trifluralin	µg/kg	10	NONE	< 10	-	< 10	-	-

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

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029735	2029736	2029737	2029738	2029739
Sample Reference				TP106	TP107	TP107	TP108	TP109
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.40	0.15	0.15
Date Sampled				21/09/2021	21/09/2021	21/09/2021	21/09/2021	21/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	12	10	11	19
Total mass of sample received	kg	0.001	NONE	1.0	1.0	1.0	1.0	1.0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.2	7.9	7.9	8.1	8.2
Organic Matter (automated)	%	0.1	MCERTS	5.4	4.6	1.5	3.8	4.8
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.33
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.31
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	20	19	20	23
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	36	34	34	35	36
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	36	34	34	35	36
Copper (aqua regia extractable)	mg/kg	1	MCERTS	20	20	15	17	17
Lead (aqua regia extractable)	mg/kg	1	MCERTS	29	26	15	26	44
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	29	29	29	29	26
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	86	88	76	87	89

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029735	2029736	2029737	2029738	2029739
Sample Reference				TP106	TP107	TP107	TP108	TP109
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.40	0.15	0.15
Date Sampled				21/09/2021	21/09/2021	21/09/2021	21/09/2021	21/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029735	2029736	2029737	2029738	2029739
Sample Reference				TP106	TP107	TP107	TP108	TP109
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.40	0.15	0.15
Date Sampled				21/09/2021	21/09/2021	21/09/2021	21/09/2021	21/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Pesticides								
Alachlor	µg/kg	10	NONE	-	-	-	< 10	-
Aldrin	µg/kg	10	NONE	-	-	-	< 10	-
Azinphos-ethyl	µg/kg	10	NONE	-	-	-	< 10	-
Azinphos-methyl	µg/kg	10	NONE	-	-	-	< 10	-
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	-	-	-	< 10	-
BHC-beta	µg/kg	10	NONE	-	-	-	< 10	-
BHC-delta	µg/kg	10	NONE	-	-	-	< 10	-
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	-	-	-	< 10	-
Bifenthrin	µg/kg	10	NONE	-	-	-	< 10	-
Carbophenothion	µg/kg	10	NONE	-	-	-	< 10	-
Chlordane-cis	µg/kg	10	NONE	-	-	-	< 10	-
Chlordane-trans	µg/kg	10	NONE	-	-	-	< 10	-
Chlorfenvinphos	µg/kg	10	NONE	-	-	-	< 10	-
Chlorothalonil	µg/kg	20	NONE	-	-	-	< 20	-
Chlorpyrifos	µg/kg	10	NONE	-	-	-	< 10	-
Cyfluthrin (Sum)	µg/kg	10	NONE	-	-	-	< 10	-
Cyhalothrin (Lambda)	µg/kg	10	NONE	-	-	-	< 10	-
Cypermethrin (Sum)	µg/kg	10	NONE	-	-	-	< 10	-
DDD-o,p'	µg/kg	10	NONE	-	-	-	< 10	-
DDD-p,p'	µg/kg	10	NONE	-	-	-	< 10	-
DDE-o,p'	µg/kg	10	NONE	-	-	-	< 10	-
DDE-p,p'	µg/kg	10	NONE	-	-	-	< 10	-
DDT-o,p'	µg/kg	10	NONE	-	-	-	< 10	-
DDT-p,p'	µg/kg	10	NONE	-	-	-	< 10	-
Deltamethrin	µg/kg	10	NONE	-	-	-	< 10	-
Demeton-O	µg/kg	10	NONE	-	-	-	< 10	-
Demeton-S	µg/kg	10	NONE	-	-	-	< 10	-
Diazinon	µg/kg	10	NONE	-	-	-	< 10	-
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	-	-	-	< 10	-
Dichlorvos	µg/kg	10	NONE	-	-	-	< 10	-
Dieldrin	µg/kg	10	NONE	-	-	-	< 10	-
Dimethoate	µg/kg	10	NONE	-	-	-	< 10	-
Dimethylvinphos	µg/kg	10	NONE	-	-	-	< 10	-
Endosulfan I (alpha isomer)	µg/kg	10	NONE	-	-	-	< 10	-
Endosulfan II (beta isomer)	µg/kg	10	NONE	-	-	-	< 10	-
Endosulfan sulfate	µg/kg	10	NONE	-	-	-	< 10	-
Endrin	µg/kg	20	NONE	-	-	-	< 20	-
Endrin aldehyde	µg/kg	10	NONE	-	-	-	< 10	-
Endrin ketone	µg/kg	10	NONE	-	-	-	< 10	-
Ethion	µg/kg	10	NONE	-	-	-	< 10	-
Etrimfos	µg/kg	10	NONE	-	-	-	< 10	-
Fenitrothion	µg/kg	10	NONE	-	-	-	< 10	-
Fenthion	µg/kg	10	NONE	-	-	-	< 10	-
Fenvalerate (Sum)	µg/kg	10	NONE	-	-	-	< 10	-
Heptachlor	µg/kg	10	NONE	-	-	-	< 10	-
Heptachlor exo-epoxide	µg/kg	10	NONE	-	-	-	< 10	-
Hexachlorobenzene	µg/kg	10	NONE	-	-	-	< 10	-
Hexachlorobutadiene	µg/kg	10	NONE	-	-	-	< 10	-
Isodrin	µg/kg	20	NONE	-	-	-	< 20	-
Malathion	µg/kg	10	NONE	-	-	-	< 10	-
Methacrifos	µg/kg	10	NONE	-	-	-	< 10	-
Methoxychlor, p,p'-	µg/kg	20	NONE	-	-	-	< 20	-

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029735	2029736	2029737	2029738	2029739
Sample Reference				TP106	TP107	TP107	TP108	TP109
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.40	0.15	0.15
Date Sampled				21/09/2021	21/09/2021	21/09/2021	21/09/2021	21/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Mevinphos, E+Z	µg/kg	10	NONE	-	-	-	< 10	-
Omethoate	µg/kg	20	NONE	-	-	-	< 20	-
Parathion	µg/kg	10	NONE	-	-	-	< 10	-
Parathion-methyl	µg/kg	10	NONE	-	-	-	< 10	-
Pendimethalin	µg/kg	10	NONE	-	-	-	140	-
Pentachlorobenzene	µg/kg	10	NONE	-	-	-	< 10	-
Permethrin, Cis-	µg/kg	10	NONE	-	-	-	< 10	-
Permethrin, Trans-	µg/kg	10	NONE	-	-	-	< 10	-
Phorate	µg/kg	10	NONE	-	-	-	< 10	-
Phosalone	µg/kg	10	NONE	-	-	-	< 10	-
Phosphamidon (Sum)	µg/kg	10	NONE	-	-	-	< 10	-
Pirimiphos-ethyl	µg/kg	10	NONE	-	-	-	< 10	-
Pirimiphos-methyl	µg/kg	10	NONE	-	-	-	< 10	-
Propetamphos	µg/kg	10	NONE	-	-	-	< 10	-
Propyzamide	µg/kg	10	NONE	-	-	-	< 10	-
Tecnazene	µg/kg	10	NONE	-	-	-	< 10	-
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	-	-	-	< 10	-
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	-	-	-	< 10	-
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	-	-	-	< 10	-
Trifluralin	µg/kg	10	NONE	-	-	-	< 10	-

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

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029740	2029741	2029742	2029743	2029744
Sample Reference				TP110	TP111	TP111	TP112	TP113
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.45	0.15	0.15
Date Sampled				21/09/2021	24/09/2021	24/09/2021	24/09/2021	24/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	21	14	16	11	10
Total mass of sample received	kg	0.001	NONE	1.0	1.0	1.0	1.0	1.0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	6.6	7.0	7.9	7.1	6.9
Organic Matter (automated)	%	0.1	MCERTS	5.6	3.6	2.4	2.9	3.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.32	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.51	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.49	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.33	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.48	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.41	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.25	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.43	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	3.22	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	25	22	17	20	24
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	46	34	32	31	36
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	46	34	32	31	36
Copper (aqua regia extractable)	mg/kg	1	MCERTS	25	17	14	15	17
Lead (aqua regia extractable)	mg/kg	1	MCERTS	46	33	21	28	32
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	35	28	25	23	29
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110	84	67	69	78

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029740	2029741	2029742	2029743	2029744
Sample Reference				TP110	TP111	TP111	TP112	TP113
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.45	0.15	0.15
Date Sampled				21/09/2021	24/09/2021	24/09/2021	24/09/2021	24/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	-	-	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	-	-	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	-	-	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	-	-	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	-	-	< 10

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029740	2029741	2029742	2029743	2029744
Sample Reference				TP110	TP111	TP111	TP112	TP113
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.45	0.15	0.15
Date Sampled				21/09/2021	24/09/2021	24/09/2021	24/09/2021	24/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Pesticides								
Alachlor	µg/kg	10	NONE	-	-	-	-	-
Aldrin	µg/kg	10	NONE	-	-	-	-	-
Azinphos-ethyl	µg/kg	10	NONE	-	-	-	-	-
Azinphos-methyl	µg/kg	10	NONE	-	-	-	-	-
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	-	-	-	-	-
BHC-beta	µg/kg	10	NONE	-	-	-	-	-
BHC-delta	µg/kg	10	NONE	-	-	-	-	-
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	-	-	-	-	-
Bifenthrin	µg/kg	10	NONE	-	-	-	-	-
Carbophenothion	µg/kg	10	NONE	-	-	-	-	-
Chlordane-cis	µg/kg	10	NONE	-	-	-	-	-
Chlordane-trans	µg/kg	10	NONE	-	-	-	-	-
Chlorfenvinphos	µg/kg	10	NONE	-	-	-	-	-
Chlorothalonil	µg/kg	20	NONE	-	-	-	-	-
Chlorpyrifos	µg/kg	10	NONE	-	-	-	-	-
Cyfluthrin (Sum)	µg/kg	10	NONE	-	-	-	-	-
Cyhalothrin (Lambda)	µg/kg	10	NONE	-	-	-	-	-
Cypermethrin (Sum)	µg/kg	10	NONE	-	-	-	-	-
DDD-o,p'	µg/kg	10	NONE	-	-	-	-	-
DDD-p,p'	µg/kg	10	NONE	-	-	-	-	-
DDE-o,p'	µg/kg	10	NONE	-	-	-	-	-
DDE-p,p'	µg/kg	10	NONE	-	-	-	-	-
DDT-o,p'	µg/kg	10	NONE	-	-	-	-	-
DDT-p,p'	µg/kg	10	NONE	-	-	-	-	-
Deltamethrin	µg/kg	10	NONE	-	-	-	-	-
Demeton-O	µg/kg	10	NONE	-	-	-	-	-
Demeton-S	µg/kg	10	NONE	-	-	-	-	-
Diazinon	µg/kg	10	NONE	-	-	-	-	-
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	-	-	-	-	-
Dichlorvos	µg/kg	10	NONE	-	-	-	-	-
Dieldrin	µg/kg	10	NONE	-	-	-	-	-
Dimethoate	µg/kg	10	NONE	-	-	-	-	-
Dimethylvinphos	µg/kg	10	NONE	-	-	-	-	-
Endosulfan I (alpha isomer)	µg/kg	10	NONE	-	-	-	-	-
Endosulfan II (beta isomer)	µg/kg	10	NONE	-	-	-	-	-
Endosulfan sulfate	µg/kg	10	NONE	-	-	-	-	-
Endrin	µg/kg	20	NONE	-	-	-	-	-
Endrin aldehyde	µg/kg	10	NONE	-	-	-	-	-
Endrin ketone	µg/kg	10	NONE	-	-	-	-	-
Ethion	µg/kg	10	NONE	-	-	-	-	-
Etrimfos	µg/kg	10	NONE	-	-	-	-	-
Fenitrothion	µg/kg	10	NONE	-	-	-	-	-
Fenthion	µg/kg	10	NONE	-	-	-	-	-
Fenvalerate (Sum)	µg/kg	10	NONE	-	-	-	-	-
Heptachlor	µg/kg	10	NONE	-	-	-	-	-
Heptachlor exo-epoxide	µg/kg	10	NONE	-	-	-	-	-
Hexachlorobenzene	µg/kg	10	NONE	-	-	-	-	-
Hexachlorobutadiene	µg/kg	10	NONE	-	-	-	-	-
Isodrin	µg/kg	20	NONE	-	-	-	-	-
Malathion	µg/kg	10	NONE	-	-	-	-	-
Methacrifos	µg/kg	10	NONE	-	-	-	-	-
Methoxychlor, p,p'-	µg/kg	20	NONE	-	-	-	-	-

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Project / Site name: Land East of Oxford Road

Lab Sample Number				2029740	2029741	2029742	2029743	2029744
Sample Reference				TP110	TP111	TP111	TP112	TP113
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.45	0.15	0.15
Date Sampled				21/09/2021	24/09/2021	24/09/2021	24/09/2021	24/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Mevinphos, E+Z	µg/kg	10	NONE	-	-	-	-	-
Omethoate	µg/kg	20	NONE	-	-	-	-	-
Parathion	µg/kg	10	NONE	-	-	-	-	-
Parathion-methyl	µg/kg	10	NONE	-	-	-	-	-
Pendimethalin	µg/kg	10	NONE	-	-	-	-	-
Pentachlorobenzene	µg/kg	10	NONE	-	-	-	-	-
Permethrin, Cis-	µg/kg	10	NONE	-	-	-	-	-
Permethrin, Trans-	µg/kg	10	NONE	-	-	-	-	-
Phorate	µg/kg	10	NONE	-	-	-	-	-
Phosalone	µg/kg	10	NONE	-	-	-	-	-
Phosphamidon (Sum)	µg/kg	10	NONE	-	-	-	-	-
Pirimiphos-ethyl	µg/kg	10	NONE	-	-	-	-	-
Pirimiphos-methyl	µg/kg	10	NONE	-	-	-	-	-
Propetamphos	µg/kg	10	NONE	-	-	-	-	-
Propyzamide	µg/kg	10	NONE	-	-	-	-	-
Tecnazene	µg/kg	10	NONE	-	-	-	-	-
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	-	-	-	-	-
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	-	-	-	-	-
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	-	-	-	-	-
Trifluralin	µg/kg	10	NONE	-	-	-	-	-

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

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Lab Sample Number				2029745	2029746	2029747	2029748	2029749
Sample Reference				TP114	TP115	TP116	TP117	TP117
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.15	0.15	0.50
Date Sampled				24/09/2021	24/09/2021	24/09/2021	24/09/2021	24/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	12	14	14	15	3.4
Total mass of sample received	kg	0.001	NONE	1.0	1.0	1.0	1.0	1.0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.1	7.4	8.2	7.5	7.9
Organic Matter (automated)	%	0.1	MCERTS	4.1	3.8	3.4	3.6	0.9
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	24	16	15	11	14
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	40	36	33	32	46
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	40	36	33	32	46
Copper (aqua regia extractable)	mg/kg	1	MCERTS	22	18	15	13	19
Lead (aqua regia extractable)	mg/kg	1	MCERTS	33	29	26	24	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	36	24	24	16	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	110	72	68	58	67

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Lab Sample Number				2029745	2029746	2029747	2029748	2029749
Sample Reference				TP114	TP115	TP116	TP117	TP117
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.15	0.15	0.50
Date Sampled				24/09/2021	24/09/2021	24/09/2021	24/09/2021	24/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	< 10	-

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Project / Site name: Land East of Oxford Road

Lab Sample Number				2029745	2029746	2029747	2029748	2029749
Sample Reference				TP114	TP115	TP116	TP117	TP117
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.15	0.15	0.50
Date Sampled				24/09/2021	24/09/2021	24/09/2021	24/09/2021	24/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Pesticides								
Alachlor	µg/kg	10	NONE	-	< 10	< 10	-	-
Aldrin	µg/kg	10	NONE	-	< 10	< 10	-	-
Azinphos-ethyl	µg/kg	10	NONE	-	< 10	< 10	-	-
Azinphos-methyl	µg/kg	10	NONE	-	< 10	< 10	-	-
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	-	< 10	< 10	-	-
BHC-beta	µg/kg	10	NONE	-	< 10	< 10	-	-
BHC-delta	µg/kg	10	NONE	-	< 10	< 10	-	-
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	-	< 10	< 10	-	-
Bifenthrin	µg/kg	10	NONE	-	< 10	< 10	-	-
Carbophenothion	µg/kg	10	NONE	-	< 10	< 10	-	-
Chlordane-cis	µg/kg	10	NONE	-	< 10	< 10	-	-
Chlordane-trans	µg/kg	10	NONE	-	< 10	< 10	-	-
Chlorfenvinphos	µg/kg	10	NONE	-	< 10	< 10	-	-
Chlorothalonil	µg/kg	20	NONE	-	< 20	< 20	-	-
Chlorpyrifos	µg/kg	10	NONE	-	< 10	< 10	-	-
Cyfluthrin (Sum)	µg/kg	10	NONE	-	< 10	< 10	-	-
Cyhalothrin (Lambda)	µg/kg	10	NONE	-	< 10	< 10	-	-
Cypermethrin (Sum)	µg/kg	10	NONE	-	< 10	< 10	-	-
DDD-o,p'	µg/kg	10	NONE	-	< 10	< 10	-	-
DDD-p,p'	µg/kg	10	NONE	-	< 10	< 10	-	-
DDE-o,p'	µg/kg	10	NONE	-	< 10	< 10	-	-
DDE-p,p'	µg/kg	10	NONE	-	< 10	< 10	-	-
DDT-o,p'	µg/kg	10	NONE	-	< 10	< 10	-	-
DDT-p,p'	µg/kg	10	NONE	-	< 10	< 10	-	-
Deltamethrin	µg/kg	10	NONE	-	< 10	< 10	-	-
Demeton-O	µg/kg	10	NONE	-	< 10	< 10	-	-
Demeton-S	µg/kg	10	NONE	-	< 10	< 10	-	-
Diazinon	µg/kg	10	NONE	-	< 10	< 10	-	-
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	-	< 10	< 10	-	-
Dichlorvos	µg/kg	10	NONE	-	< 10	< 10	-	-
Dieldrin	µg/kg	10	NONE	-	< 10	< 10	-	-
Dimethoate	µg/kg	10	NONE	-	< 10	< 10	-	-
Dimethylvinphos	µg/kg	10	NONE	-	< 10	< 10	-	-
Endosulfan I (alpha isomer)	µg/kg	10	NONE	-	< 10	< 10	-	-
Endosulfan II (beta isomer)	µg/kg	10	NONE	-	< 10	< 10	-	-
Endosulfan sulfate	µg/kg	10	NONE	-	< 10	< 10	-	-
Endrin	µg/kg	20	NONE	-	< 20	< 20	-	-
Endrin aldehyde	µg/kg	10	NONE	-	< 10	< 10	-	-
Endrin ketone	µg/kg	10	NONE	-	< 10	< 10	-	-
Ethion	µg/kg	10	NONE	-	< 10	< 10	-	-
Etrimfos	µg/kg	10	NONE	-	< 10	< 10	-	-
Fenitrothion	µg/kg	10	NONE	-	< 10	< 10	-	-
Fenthion	µg/kg	10	NONE	-	< 10	< 10	-	-
Fenvalerate (Sum)	µg/kg	10	NONE	-	< 10	< 10	-	-
Heptachlor	µg/kg	10	NONE	-	< 10	< 10	-	-
Heptachlor exo-epoxide	µg/kg	10	NONE	-	< 10	< 10	-	-
Hexachlorobenzene	µg/kg	10	NONE	-	< 10	< 10	-	-
Hexachlorobutadiene	µg/kg	10	NONE	-	< 10	< 10	-	-
Isodrin	µg/kg	20	NONE	-	< 20	< 20	-	-
Malathion	µg/kg	10	NONE	-	< 10	< 10	-	-
Methacrifos	µg/kg	10	NONE	-	< 10	< 10	-	-
Methoxychlor, p,p'-	µg/kg	20	NONE	-	< 20	< 20	-	-

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029745	2029746	2029747	2029748	2029749
Sample Reference				TP114	TP115	TP116	TP117	TP117
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.15	0.15	0.50
Date Sampled				24/09/2021	24/09/2021	24/09/2021	24/09/2021	24/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Mevinphos, E+Z	µg/kg	10	NONE	-	< 10	< 10	-	-
Omethoate	µg/kg	20	NONE	-	< 20	< 20	-	-
Parathion	µg/kg	10	NONE	-	< 10	< 10	-	-
Parathion-methyl	µg/kg	10	NONE	-	< 10	< 10	-	-
Pendimethalin	µg/kg	10	NONE	-	240	< 10	-	-
Pentachlorobenzene	µg/kg	10	NONE	-	< 10	< 10	-	-
Permethrin, Cis-	µg/kg	10	NONE	-	< 10	< 10	-	-
Permethrin, Trans-	µg/kg	10	NONE	-	< 10	< 10	-	-
Phorate	µg/kg	10	NONE	-	< 10	< 10	-	-
Phosalone	µg/kg	10	NONE	-	< 10	< 10	-	-
Phosphamidon (Sum)	µg/kg	10	NONE	-	< 10	< 10	-	-
Pirimiphos-ethyl	µg/kg	10	NONE	-	< 10	< 10	-	-
Pirimiphos-methyl	µg/kg	10	NONE	-	< 10	< 10	-	-
Propetamphos	µg/kg	10	NONE	-	< 10	< 10	-	-
Propyzamide	µg/kg	10	NONE	-	< 10	< 10	-	-
Tecnazene	µg/kg	10	NONE	-	< 10	< 10	-	-
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	-	< 10	< 10	-	-
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	-	< 10	< 10	-	-
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	-	< 10	< 10	-	-
Trifluralin	µg/kg	10	NONE	-	< 10	< 10	-	-

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

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029750	2029751	2029752	2029753	2029754
Sample Reference				TP118	TP119	TP120	SA101	SA102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.15	0.15	0.15
Date Sampled				24/09/2021	24/09/2021	24/09/2021	21/09/2021	21/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	17	13	8.6	14
Total mass of sample received	kg	0.001	NONE	1.0	1.0	1.0	1.0	1.0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.9	8.1	7.6	7.2	8.4
Organic Matter (automated)	%	0.1	MCERTS	3.4	2.9	4.7	3.9	4.1
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	1.1	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.28	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	1.6	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	1.3	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.84	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.54	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.63	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.36	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.66	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.30	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.41	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	8.02	< 0.80	< 0.80	< 0.80
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	15	15	19	19
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	34	32	40	30	35
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	34	32	40	30	35
Copper (aqua regia extractable)	mg/kg	1	MCERTS	18	20	22	18	18
Lead (aqua regia extractable)	mg/kg	1	MCERTS	28	41	33	30	26
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	20	22	26	27	28
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	68	87	89	77	82

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029750	2029751	2029752	2029753	2029754
Sample Reference				TP118	TP119	TP120	SA101	SA102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.15	0.15	0.15
Date Sampled				24/09/2021	24/09/2021	24/09/2021	21/09/2021	21/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029750	2029751	2029752	2029753	2029754
Sample Reference				TP118	TP119	TP120	SA101	SA102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.15	0.15	0.15
Date Sampled				24/09/2021	24/09/2021	24/09/2021	21/09/2021	21/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Pesticides								
Alachlor	µg/kg	10	NONE	-	-	< 10	-	-
Aldrin	µg/kg	10	NONE	-	-	< 10	-	-
Azinphos-ethyl	µg/kg	10	NONE	-	-	< 10	-	-
Azinphos-methyl	µg/kg	10	NONE	-	-	< 10	-	-
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	-	-	< 10	-	-
BHC-beta	µg/kg	10	NONE	-	-	< 10	-	-
BHC-delta	µg/kg	10	NONE	-	-	< 10	-	-
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	-	-	< 10	-	-
Bifenthrin	µg/kg	10	NONE	-	-	< 10	-	-
Carbophenothion	µg/kg	10	NONE	-	-	< 10	-	-
Chlordane-cis	µg/kg	10	NONE	-	-	< 10	-	-
Chlordane-trans	µg/kg	10	NONE	-	-	< 10	-	-
Chlorfenvinphos	µg/kg	10	NONE	-	-	< 10	-	-
Chlorothalonil	µg/kg	20	NONE	-	-	< 20	-	-
Chlorpyrifos	µg/kg	10	NONE	-	-	< 10	-	-
Cyfluthrin (Sum)	µg/kg	10	NONE	-	-	< 10	-	-
Cyhalothrin (Lambda)	µg/kg	10	NONE	-	-	< 10	-	-
Cypermethrin (Sum)	µg/kg	10	NONE	-	-	< 10	-	-
DDD-o,p'	µg/kg	10	NONE	-	-	< 10	-	-
DDD-p,p'	µg/kg	10	NONE	-	-	< 10	-	-
DDE-o,p'	µg/kg	10	NONE	-	-	< 10	-	-
DDE-p,p'	µg/kg	10	NONE	-	-	< 10	-	-
DDT-o,p'	µg/kg	10	NONE	-	-	< 10	-	-
DDT-p,p'	µg/kg	10	NONE	-	-	< 10	-	-
Deltamethrin	µg/kg	10	NONE	-	-	< 10	-	-
Demeton-O	µg/kg	10	NONE	-	-	< 10	-	-
Demeton-S	µg/kg	10	NONE	-	-	< 10	-	-
Diazinon	µg/kg	10	NONE	-	-	< 10	-	-
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	-	-	< 10	-	-
Dichlorvos	µg/kg	10	NONE	-	-	< 10	-	-
Dieldrin	µg/kg	10	NONE	-	-	< 10	-	-
Dimethoate	µg/kg	10	NONE	-	-	< 10	-	-
Dimethylvinphos	µg/kg	10	NONE	-	-	< 10	-	-
Endosulfan I (alpha isomer)	µg/kg	10	NONE	-	-	< 10	-	-
Endosulfan II (beta isomer)	µg/kg	10	NONE	-	-	< 10	-	-
Endosulfan sulfate	µg/kg	10	NONE	-	-	< 10	-	-
Endrin	µg/kg	20	NONE	-	-	< 20	-	-
Endrin aldehyde	µg/kg	10	NONE	-	-	< 10	-	-
Endrin ketone	µg/kg	10	NONE	-	-	< 10	-	-
Ethion	µg/kg	10	NONE	-	-	< 10	-	-
Etrimfos	µg/kg	10	NONE	-	-	< 10	-	-
Fenitrothion	µg/kg	10	NONE	-	-	< 10	-	-
Fenthion	µg/kg	10	NONE	-	-	< 10	-	-
Fenvalerate (Sum)	µg/kg	10	NONE	-	-	< 10	-	-
Heptachlor	µg/kg	10	NONE	-	-	< 10	-	-
Heptachlor exo-epoxide	µg/kg	10	NONE	-	-	< 10	-	-
Hexachlorobenzene	µg/kg	10	NONE	-	-	< 10	-	-
Hexachlorobutadiene	µg/kg	10	NONE	-	-	< 10	-	-
Isodrin	µg/kg	20	NONE	-	-	< 20	-	-
Malathion	µg/kg	10	NONE	-	-	< 10	-	-
Methacrifos	µg/kg	10	NONE	-	-	< 10	-	-
Methoxychlor, p,p'-	µg/kg	20	NONE	-	-	< 20	-	-

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029750	2029751	2029752	2029753	2029754
Sample Reference				TP118	TP119	TP120	SA101	SA102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.15	0.15	0.15
Date Sampled				24/09/2021	24/09/2021	24/09/2021	21/09/2021	21/09/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Mevinphos, E+Z	µg/kg	10	NONE	-	-	< 10	-	-
Omethoate	µg/kg	20	NONE	-	-	< 20	-	-
Parathion	µg/kg	10	NONE	-	-	< 10	-	-
Parathion-methyl	µg/kg	10	NONE	-	-	< 10	-	-
Pendimethalin	µg/kg	10	NONE	-	-	14	-	-
Pentachlorobenzene	µg/kg	10	NONE	-	-	< 10	-	-
Permethrin, Cis-	µg/kg	10	NONE	-	-	< 10	-	-
Permethrin, Trans-	µg/kg	10	NONE	-	-	< 10	-	-
Phorate	µg/kg	10	NONE	-	-	< 10	-	-
Phosalone	µg/kg	10	NONE	-	-	< 10	-	-
Phosphamidon (Sum)	µg/kg	10	NONE	-	-	< 10	-	-
Pirimiphos-ethyl	µg/kg	10	NONE	-	-	< 10	-	-
Pirimiphos-methyl	µg/kg	10	NONE	-	-	< 10	-	-
Propetamphos	µg/kg	10	NONE	-	-	< 10	-	-
Propyzamide	µg/kg	10	NONE	-	-	< 10	-	-
Tecnazene	µg/kg	10	NONE	-	-	< 10	-	-
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	-	-	< 10	-	-
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	-	-	< 10	-	-
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	-	-	< 10	-	-
Trifluralin	µg/kg	10	NONE	-	-	< 10	-	-

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

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029755
Sample Reference				SA103
Sample Number				None Supplied
Depth (m)				0.15
Date Sampled				21/09/2021
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	9.8
Total mass of sample received	kg	0.001	NONE	1.0
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected
General Inorganics				
pH - Automated	pH Units	N/A	MCERTS	7.5
Organic Matter (automated)	%	0.1	MCERTS	3.1
Speciated PAHs				
Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05
Total PAH				
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80
Heavy Metals / Metalloids				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0
Chromium (III)	mg/kg	1	NONE	31
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31
Copper (aqua regia extractable)	mg/kg	1	MCERTS	15
Lead (aqua regia extractable)	mg/kg	1	MCERTS	26
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	73

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029755
Sample Reference				SA103
Sample Number				None Supplied
Depth (m)				0.15
Date Sampled				21/09/2021
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Monoaromatics & Oxygenates				
Benzene	µg/kg	1	MCERTS	-
Toluene	µg/kg	1	MCERTS	-
Ethylbenzene	µg/kg	1	MCERTS	-
p & m-xylene	µg/kg	1	MCERTS	-
o-xylene	µg/kg	1	MCERTS	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-
Petroleum Hydrocarbons				
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029755
Sample Reference				SA103
Sample Number				None Supplied
Depth (m)				0.15
Date Sampled				21/09/2021
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Pesticides				
Alachlor	µg/kg	10	NONE	-
Aldrin	µg/kg	10	NONE	-
Azinphos-ethyl	µg/kg	10	NONE	-
Azinphos-methyl	µg/kg	10	NONE	-
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	-
BHC-beta	µg/kg	10	NONE	-
BHC-delta	µg/kg	10	NONE	-
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	-
Bifenthrin	µg/kg	10	NONE	-
Carbophenothion	µg/kg	10	NONE	-
Chlordane-cis	µg/kg	10	NONE	-
Chlordane-trans	µg/kg	10	NONE	-
Chlorfenvinphos	µg/kg	10	NONE	-
Chlorothalonil	µg/kg	20	NONE	-
Chlorpyrifos	µg/kg	10	NONE	-
Cyfluthrin (Sum)	µg/kg	10	NONE	-
Cyhalothrin (Lambda)	µg/kg	10	NONE	-
Cypermethrin (Sum)	µg/kg	10	NONE	-
DDD-o,p'	µg/kg	10	NONE	-
DDD-p,p'	µg/kg	10	NONE	-
DDE-o,p'	µg/kg	10	NONE	-
DDE-p,p'	µg/kg	10	NONE	-
DDT-o,p'	µg/kg	10	NONE	-
DDT-p,p'	µg/kg	10	NONE	-
Deltamethrin	µg/kg	10	NONE	-
Demeton-O	µg/kg	10	NONE	-
Demeton-S	µg/kg	10	NONE	-
Diazinon	µg/kg	10	NONE	-
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	-
Dichlorvos	µg/kg	10	NONE	-
Dieldrin	µg/kg	10	NONE	-
Dimethoate	µg/kg	10	NONE	-
Dimethylvinphos	µg/kg	10	NONE	-
Endosulfan I (alpha isomer)	µg/kg	10	NONE	-
Endosulfan II (beta isomer)	µg/kg	10	NONE	-
Endosulfan sulfate	µg/kg	10	NONE	-
Endrin	µg/kg	20	NONE	-
Endrin aldehyde	µg/kg	10	NONE	-
Endrin ketone	µg/kg	10	NONE	-
Ethion	µg/kg	10	NONE	-
Etrimfos	µg/kg	10	NONE	-
Fenitrothion	µg/kg	10	NONE	-
Fenthion	µg/kg	10	NONE	-
Fenvalerate (Sum)	µg/kg	10	NONE	-
Heptachlor	µg/kg	10	NONE	-
Heptachlor exo-epoxide	µg/kg	10	NONE	-
Hexachlorobenzene	µg/kg	10	NONE	-
Hexachlorobutadiene	µg/kg	10	NONE	-
Isodrin	µg/kg	20	NONE	-
Malathion	µg/kg	10	NONE	-
Methacrifos	µg/kg	10	NONE	-
Methoxychlor, p,p'-	µg/kg	20	NONE	-

Analytical Report Number: 21-13302
Project / Site name: Land East of Oxford Road

Lab Sample Number				2029755
Sample Reference				SA103
Sample Number				None Supplied
Depth (m)				0.15
Date Sampled				21/09/2021
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**	
Mevinphos, E+Z	µg/kg	10	NONE	-
Omethoate	µg/kg	20	NONE	-
Parathion	µg/kg	10	NONE	-
Parathion-methyl	µg/kg	10	NONE	-
Pendimethalin	µg/kg	10	NONE	-
Pentachlorobenzene	µg/kg	10	NONE	-
Permethrin, Cis-	µg/kg	10	NONE	-
Permethrin, Trans-	µg/kg	10	NONE	-
Phorate	µg/kg	10	NONE	-
Phosalone	µg/kg	10	NONE	-
Phosphamidon (Sum)	µg/kg	10	NONE	-
Pirimiphos-ethyl	µg/kg	10	NONE	-
Pirimiphos-methyl	µg/kg	10	NONE	-
Propetamphos	µg/kg	10	NONE	-
Propyzamide	µg/kg	10	NONE	-
Tecnazene	µg/kg	10	NONE	-
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	-
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	-
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	-
Trifluralin	µg/kg	10	NONE	-

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

Analytical Report Number : 21-13302
Project / Site name: Land East of Oxford Road

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2029730	TP101	None Supplied	0.15	Brown clay and loam with gravel and vegetation.
2029731	TP102	None Supplied	0.15	Brown clay and loam with gravel and vegetation.
2029732	TP103	None Supplied	0.15	Brown loam with gravel and vegetation.
2029733	TP104	None Supplied	0.15	Brown loam with gravel and vegetation.
2029734	TP105	None Supplied	0.15	Brown loam with gravel and vegetation.
2029735	TP106	None Supplied	0.15	Brown loam with gravel and vegetation.
2029736	TP107	None Supplied	0.15	Brown loam with gravel and vegetation.
2029737	TP107	None Supplied	0.4	Brown loam and clay with gravel and vegetation.
2029738	TP108	None Supplied	0.15	Brown loam and clay with gravel and vegetation.
2029739	TP109	None Supplied	0.15	Brown loam and clay with gravel and vegetation.
2029740	TP110	None Supplied	0.15	Brown loam and clay with gravel and vegetation.
2029741	TP111	None Supplied	0.15	Brown loam and clay with gravel and vegetation.
2029742	TP111	None Supplied	0.45	Brown loam and clay with gravel and vegetation.
2029743	TP112	None Supplied	0.15	Brown loam and clay with gravel and vegetation.
2029744	TP113	None Supplied	0.15	Brown loam and clay with gravel.
2029745	TP114	None Supplied	0.15	Brown loam and clay with gravel and vegetation.
2029746	TP115	None Supplied	0.15	Brown loam and clay with gravel and vegetation.
2029747	TP116	None Supplied	0.15	Brown loam and clay with gravel and vegetation.
2029748	TP117	None Supplied	0.15	Brown loam and clay with gravel and vegetation.
2029749	TP117	None Supplied	0.5	Brown clay.
2029750	TP118	None Supplied	0.15	Brown clay and loam with gravel and vegetation.
2029751	TP119	None Supplied	0.15	Brown clay and loam with gravel and vegetation.
2029752	TP120	None Supplied	0.15	Brown loam with gravel and vegetation.
2029753	SA101	None Supplied	0.15	Brown loam with gravel and vegetation.
2029754	SA102	None Supplied	0.15	Brown loam with gravel and vegetation.
2029755	SA103	None Supplied	0.15	Brown loam with gravel and vegetation.

Analytical Report Number : 21-13302
Project / Site name: Land East of Oxford Road

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Pesticides by GC-MS/MS	Detemination of Pesticides in soil by GC MS/MS	In-house method	L055B-PL	W	NONE
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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

Sample Deviation Report

Analytical Report Number : 21-13302
Project / Site name: Land East of Oxford Road

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
SA101	None Supplied	S	2029753	b	Speciated EPA-16 PAHs in soil	L064-PL	b
SA102	None Supplied	S	2029754	b	Speciated EPA-16 PAHs in soil	L064-PL	b
SA103	None Supplied	S	2029755	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP101	None Supplied	S	2029730	b	Pesticides by GC-MS/MS	L055B-PL	b
TP101	None Supplied	S	2029730	b	Pesticides extraction	L055B-PL	b
TP101	None Supplied	S	2029730	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP102	None Supplied	S	2029731	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TP102	None Supplied	S	2029731	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP102	None Supplied	S	2029731	b	TPHCWG (Soil)	L088/76-PL	b
TP103	None Supplied	S	2029732	b	Pesticides by GC-MS/MS	L055B-PL	b
TP103	None Supplied	S	2029732	b	Pesticides extraction	L055B-PL	b
TP103	None Supplied	S	2029732	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP104	None Supplied	S	2029733	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TP104	None Supplied	S	2029733	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP104	None Supplied	S	2029733	b	TPHCWG (Soil)	L088/76-PL	b
TP105	None Supplied	S	2029734	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TP105	None Supplied	S	2029734	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP105	None Supplied	S	2029734	b	TPHCWG (Soil)	L088/76-PL	b
TP106	None Supplied	S	2029735	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP107	None Supplied	S	2029736	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP107	None Supplied	S	2029737	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP108	None Supplied	S	2029738	b	Pesticides by GC-MS/MS	L055B-PL	b
TP108	None Supplied	S	2029738	b	Pesticides extraction	L055B-PL	b
TP108	None Supplied	S	2029738	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP109	None Supplied	S	2029739	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP110	None Supplied	S	2029740	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TP110	None Supplied	S	2029740	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP110	None Supplied	S	2029740	b	TPHCWG (Soil)	L088/76-PL	b
TP111	None Supplied	S	2029741	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP111	None Supplied	S	2029742	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP112	None Supplied	S	2029743	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP113	None Supplied	S	2029744	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TP113	None Supplied	S	2029744	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP113	None Supplied	S	2029744	b	TPHCWG (Soil)	L088/76-PL	b
TP114	None Supplied	S	2029745	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP115	None Supplied	S	2029746	b	Pesticides by GC-MS/MS	L055B-PL	b
TP115	None Supplied	S	2029746	b	Pesticides extraction	L055B-PL	b
TP115	None Supplied	S	2029746	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP116	None Supplied	S	2029747	b	Pesticides by GC-MS/MS	L055B-PL	b
TP116	None Supplied	S	2029747	b	Pesticides extraction	L055B-PL	b
TP116	None Supplied	S	2029747	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP117	None Supplied	S	2029748	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TP117	None Supplied	S	2029748	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP117	None Supplied	S	2029748	b	TPHCWG (Soil)	L088/76-PL	b
TP117	None Supplied	S	2029749	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP118	None Supplied	S	2029750	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP119	None Supplied	S	2029751	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP120	None Supplied	S	2029752	b	Pesticides by GC-MS/MS	L055B-PL	b
TP120	None Supplied	S	2029752	b	Pesticides extraction	L055B-PL	b
TP120	None Supplied	S	2029752	b	Speciated EPA-16 PAHs in soil	L064-PL	b

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APPENDIX D

Groundwater Monitoring Data

D

Groundwater Monitoring Sheet

Project Name	Land East of oxford Road, Water Eaton	**Project Engineer**	ODJ	**Project No.**	JN1597
Client	Glanville Consultants Limited	**Date of Visit**	13/10/2021	**Tested By**	PO
BH ID	**Time of Measurement**	**Standing Water Level (m below cover level)**	**Cover Height (m above GL)**	**Total Well Depth (m below cover level)**	**Standing Water Level (m below ground level)**
WLS201	11:30	1.67	0.41	3.42	1.26
WLS202	11:45	3.20	0.45	3.22	2.75
WLS203	11:15	1.33	0.47	3.43	0.86
WLS204	12:00	1.75	0.51	3.49	1.24
WLS205	11:00	DRY	0.47	3.39	DRY
WLS206	10:30	DRY	0.47	3.42	DRY
WLS207	10:45	1.05	0.40	3.2	0.65
WLS208	10:15	DRY	0.46	3.46	DRY
WLS209	09:20	3.35	0.50	3.60	2.85
WLS210	10:00	1.66	0.45	3.40	1.21
WLS211	09:45	1.80	0.45	2.80	1.35
WLS212	09:30	DRY	0.45	3.30	DRY

Groundwater Monitoring Sheet

Project Name	Land East of oxford Road, Water Eaton	**Project Engineer**	ODJ	**Project No.**	JN1597
Client	Glanville Consultants Limited	**Date of Visit**	09/11/2021	**Tested By**	PO
BH ID	**Time of Measurement**	**Standing Water Level (m below cover level)**	**Cover Height (m above GL)**	**Total Well Depth (m below cover level)**	**Standing Water Level (m below ground level)**
WLS201	13:10	1.61	0.41	3.42	1.20
WLS202	13:25	3.13	0.45	3.22	2.68
WLS203	12:55	1.27	0.47	3.43	0.80
WLS204	13:35	1.69	0.51	3.49	1.18
WLS205	12:35	DRY	0.47	3.39	DRY
WLS206	12:15	DRY	0.47	3.42	DRY
WLS207	12:25	1.00	0.40	3.2	0.60
WLS208	12:10	DRY	0.46	3.46	DRY
WLS209	11:30	3.30	0.50	3.60	2.80
WLS210	12:00	1.60	0.45	3.40	1.15
WLS211	11:50	1.75	0.45	2.80	1.30
WLS212	11:40	DRY	0.45	3.30	DRY

Groundwater Monitoring Sheet

Project Name	Land East of oxford Road, Water Eaton	**Project Engineer**	ODJ	**Project No.**	JN1597
Client	Glanville Consultants Limited	**Date of Visit**	08/12/2021	**Tested By**	PO
BH ID	**Time of Measurement**	**Standing Water Level (m below cover level)**	**Cover Height (m above GL)**	**Total Well Depth (m below cover level)**	**Standing Water Level (m below ground level)**
WLS201	11:20	1.51	0.41	3.42	1.10
WLS202	11:30	1.95	0.45	3.22	1.50
WLS203	11:10	0.80	0.47	3.43	0.33
WLS204	11:40	1.31	0.51	3.49	0.80
WLS205	11:05	1.52	0.47	3.39	1.05
WLS206	10:55	1.22	0.47	3.42	0.75
WLS207	10:50	1.00	0.40	3.2	0.60
WLS208	10:40	0.91	0.46	3.46	0.45
WLS209	10:15	0.85	0.50	3.60	0.35
WLS210	10:20	1.25	0.45	3.40	0.80
WLS211	10:25	1.75	0.45	2.80	1.30
WLS212	10:30	DRY	0.45	3.30	DRY

Groundwater Monitoring Sheet

Project Name	Land East of oxford Road, Water Eaton	**Project Engineer**	ODJ	**Project No.**	JN1597
Client	Glanville Consultants Limited	**Date of Visit**	10/01/2022	**Tested By**	PO
BH ID	**Time of Measurement**	**Standing Water Level (m below cover level)**	**Cover Height (m above GL)**	**Total Well Depth (m below cover level)**	**Standing Water Level (m below ground level)**
WLS201	--	1.41	0.41	3.42	1.00
WLS202	--	1.85	0.45	3.22	1.40
WLS203	--	0.77	0.47	3.43	0.30
WLS204	--	1.31	0.51	3.49	0.80
WLS205	--	1.52	0.47	3.39	0.90
WLS206	12:35	1.22	0.47	3.42	0.50
WLS207	12:45	1.00	0.40	3.2	0.60
WLS208	12:30	0.86	0.46	3.46	0.40
WLS209	12:00	0.85	0.50	3.60	0.35
WLS210	12:10	1.15	0.45	3.40	0.70
WLS211	12:15	1.75	0.45	2.80	1.30
WLS212	12:20	DRY	0.45	3.30	DRY

Groundwater Monitoring Sheet

Project Name	Land East of oxford Road, Water Eaton	**Project Engineer**	ODJ	**Project No.**	JN1597
Client	Glanville Consultants Limited	**Date of Visit**	10/02/2022	**Tested By**	PO
BH ID	**Time of Measurement**	**Standing Water Level (m below cover level)**	**Cover Height (m above GL)**	**Total Well Depth (m below cover level)**	**Standing Water Level (m below ground level)**
WLS201	--	1.31	0.41	3.42	0.90
WLS202	--	1.74	0.45	3.22	1.29
WLS203	--	0.74	0.47	3.43	0.27
WLS204	--	1.24	0.51	3.49	0.73
WLS205	--	1.37	0.47	3.39	0.90
WLS206	12:35	0.97	0.47	3.42	0.50
WLS207	12:45	1.00	0.40	3.2	0.60
WLS208	12:30	0.86	0.46	3.46	0.40
WLS209	12:00	0.85	0.50	3.60	0.35
WLS210	12:10	1.15	0.45	3.40	0.70
WLS211	12:15	1.75	0.45	2.80	1.30
WLS212	12:20	DRY	0.45	3.30	DRY

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APPENDIX E

Ground Gas Report (JN1683GG)

E

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Ground Gas Investigation Report

Project Name: Land off Oxford Road

Location: Water Eaton

Client: Glanville Consultants

Project ID: JN1683-GG

Report Date: 03 August 2022

Report Issue: 1

SUMMARY

The site, which extends to 48ha comprises arable farmland and it is proposed to redevelop the site as a mixed-use development, comprising c. 800 residential dwellings, a primary school, local centre, and will include formal and informal open space

This investigation forms part of a wider investigation being reported under the reference JN1683. The site has been subject to a previous investigation; Phase 1 Desk Study by Glanville Consultants ref. 005_8210440, dated Sept 21, and a Preliminary Phase II Site Investigation, by ST Consult ref JN1597 to which the reader is referred for full details.

The object of this investigation was to assess the likely nature and extent of any ground gas contamination on the site.

In summary, no significant ground gas contamination was discovered on-site. This was not unexpected given the lack of a direct source during intrusive investigation and innocuous site history identified by the desk studies.

The screening values used are valid at the time of writing but may be subject to change and any such changes will have implications for the assessments based on them. Their validity should be confirmed at the time of site development.

Author	O J DE JONG BSc MSc FGS	[redacted]
Check / Review	A MOFFATT BSc MSc FGS	

For and on behalf of Southern Testing Laboratories Limited

DOCUMENT HISTORY AND STATUS

Issue No.	Date	Purpose or Status	Author	Check / Review
01	03.08.22	Ground Gas Investigation Report	OD	AM

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A INTRODUCTION

1 Authority

Our authority for carrying out this work is contained in a project order form completed by John Hanlon of Glanville Consultants. Dated 10th May 2022 (ref. Q220631 rev1).

2 Location

The site is located approximately 1.2km to the south of Oxford Parkway Train Station, in the fields surrounding St. Frideswide Farm. The approximate National Grid Reference of the site is SP 50500 11290. The site location is indicated on Figure 1 within Appendix A.

3 Proposed Construction

It is proposed to develop the 48ha site as a mixed-use development, comprising c. 800 residential dwellings, a primary school, local centre, and will include formal and informal open space.

The gas sensitivity of the proposed development is therefore rated as High CIRIA C665 Ref [1].

4 Object

This investigation forms part of a wider investigation being reported under the reference JN1683. The object of this investigation was to assess the likely nature and extent of any ground gas contamination on the site.

5 Scope

This report presents our monitoring data and our interpretation of this data.

This report is not an engineering design and the figures and calculations contained in the report should be used by the Engineer, taking note that variations will apply, according to variations in design loading, in techniques used, and in site conditions. Our figures therefore should not supersede the Engineer's design.

The ground/site investigation has been completed with reference to BS 5930 Ref [2] and BS 10175 Ref [3].

Wider Contamination and Geotechnical issues are not considered in this report.

The findings and opinions conveyed via this investigation report are based on information obtained from a variety of sources as detailed within this report, and which Southern Testing Laboratories Ltd. believes are reliable. Nevertheless, Southern Testing Laboratories Ltd. cannot and does not guarantee the authenticity or reliability of the information it has obtained from others.

The investigation was conducted and this report has been prepared for the sole internal use and reliance of Glanville Consultants and their appointed Engineers. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Southern Testing Laboratories Ltd. If an unauthorised third party comes into possession of this report they rely on it at their peril and the authors owe them no duty of care and skill.

The recommendations contained in this report may not be appropriate to alternative development schemes.

Detailed information on the proposed development, such as detailed final layout, loadings and serviceability limits was not provided. Accordingly, where geotechnical design advice is provided it is on the prescriptive basis allowed for by Eurocode 7: employing conventional and conservative design rules.

B SITE INVESTIGATION - GAS

6 Sampling Strategy

The wells used for this investigation had been previously installed during our JN1597 investigation as part of a groundwater monitoring programme. The well locations were stipulated by the Client and were designed to provide good general coverage of the site. Gas taps were then installed as part of this investigation. The relevant logs for these exploratory holes are included within Appendix A.

The locations of the monitoring wells are shown on the attached Figure 2 within Appendix A.

7 Monitoring Programme and Results

The sensitivity of the proposed development is rated as high and, therefore, six gas monitoring visits were completed over a period of two months (CIRIA C665 Ref [1], Table 5.5). The results of the monitoring programme are given in full in Appendix B and are summarised below.

Borehole Gas Monitoring Results				
Monitoring well	WLS201	WLS202	WLS203	WLS204
Response zone / Stratum	1 – 3.0mBGL Oxford Clay Formation	1 – 3.0mBGL Oxford Clay Formation	1 – 3.0mBGL Oxford Clay Formation	1 – 3.0mBGL Oxford Clay Formation
Evidence of contamination	None	None	None	None
No. of Monitoring Events	6	6	6	6
Methane range CH_4 (%)	<0.1	<0.1	<0.1 – 0.1	<0.1
Carbon dioxide range CO_2 (%)	0.1 – 1.8	0 – 2.8	1.2 – 3.3	0 – 2.3
Oxygen range O_2 (%)	19.4 – 21.0	18.1 – 21.0	17.6 – 19.7	19.7 – 21.0
Flow rate range l/hr	- 0.1 – 0.0	-0.1 – 0.1	-0.5 – 0.1	-0.2 – 0.0
PID measurement (ppm)	0.2 – 0.5	0.3 – 1.2	0.0 – 0.5	0.0 – 1.0
Water level (mbgl)	0.9 – 1.45m	1.99 – 2.17m	1.17 – 1.43m	0.47 – 0.91m
Atmospheric pressure during monitoring (mb)	1003 – 1027	1001 – 1020	1005 – 1020	1007 – 1019

Borehole Gas Monitoring Results				
Monitoring well	WLS205	WLS206	WLS207	WLS208
Response zone / Stratum	1 – 3.0mBGL Oxford Clay Formation	1 – 3.0mBGL Oxford Clay Formation	1 – 3.0mBGL Oxford Clay Formation	1 – 3.0mBGL Oxford Clay Formation
Evidence of contamination	None	None	None	None
No. of Monitoring Events	6	6	6	6
Methane range CH_4 (%)	<0.1 – 0.1	<0.1	<0.1 – 0.1	<0.1 – 0.1
Carbon dioxide range CO_2 (%)	0.2 – 1.9	1.4 – 3.0	0.6 – 2.5	2.4 – 3.7
Oxygen range O_2 (%)	18.9 – 20.9	18.1 – 20.1	18.5 – 20.7	17.6 – 19.4
Flow rate range l/hr	0.0 – 0.2	0.0 – 0.8	-0.2 – 0.1	-0.2 – 0.2
PID measurement (ppm)	0.2 – 0.5	0.2 – 0.5	0.2 – 11	0.3 – 0.4
Water level (mbgl)	Dry	0.92 – 1.26m	0.78 – 1.16m	1.23 – 1.69m

Borehole Gas Monitoring Results				
Atmospheric pressure during monitoring (mb)	1004 – 1019	1000 – 1022	1001 - 1026	1001 - 1027

Borehole Gas Monitoring Results				
Monitoring well	WLS209	WLS210	WLS211	WLS212
Response zone / Stratum	1 – 3.0mBGL Oxford Clay Formation	1 – 3.0mBGL Oxford Clay Formation	1 – 3.0mBGL Oxford Clay Formation	1 – 3.0mBGL Oxford Clay Formation
Evidence of contamination	None	None	None	None
No. of Monitoring Events	6	6	6	6
Methane range CH_4 (%)	<0.1	<0.1 – 0.1	<0.1	<0.1 – 0.1
Carbon dioxide range CO_2 (%)	<0.1 – 2.4	0.1 – 2.2	1.0 – 1.7	0.3 – 1.1
Oxygen range O_2 (%)	19.3 – 23.2	19.3 – 21.2	19.4 – 20.4	19.4 – 20.8
Flow rate range l/hr	0.0 – 0.1	-0.2 – 0.1	-0.1 – 0.2	-0.1 – 0.6
PID measurement (ppm)	0.3 – 0.4	-	0.3 – 0.4	0.2 – 0.7
Water level (mbgl)	1.04 – 1.32m	1.09 – 1.84m	1.35 – 1.98m	Dry
Atmospheric pressure during monitoring (mb)	1000 - 1026	1004 - 1019	1000 - 1026	1000 - 1026

The monitoring period covered a reasonable range of atmospheric pressures, 1000 – 1027mb including some below average pressure periods. No significant levels of methane were detected. Carbon dioxide levels were also generally low, the highest value recorded was 3.7%. Flow levels were also generally low. The highest flow rate recorded was 0.8 l/hr although the majority were typically in the range -0.2 to 0.2 l/hr.

8 Identified Gas Regime

Gas Screening Values (GSVs) can be calculated (Ref.1) for each borehole or for the site as a whole using the worst case scenario (highest methane or carbon dioxide and highest flow encountered across the site) in order to characterise the risk of the site to the new development/proposed new occupiers of the development (Characteristic Situation, CS).

The calculated GSVs for each borehole and the site as a whole are <0.07, as little to no flow has been recorded alongside generally low carbon dioxide levels. Given these results characteristic situation CS-1 is applicable to this site. This is not unexpected given the underlying soils and site history.

9 Summary and Conclusions

Based upon the investigation to date, no significant gas contamination has been identified. The gas monitoring and risk assessment places the site in Characteristic Situation 1 (CS1) of the modified Wilson and Card classification. As such, gas protection measures are not required for the proposed development on site.

REFERENCES

[1] CIRIA, “C665 Assessing risks posed by hazardous ground gases to buildings,” 2007.

[2] BSI Standards, “BS 5930 Code of practice for ground investigations,” 2015.

[3] BSI Standards, “BS10175 Investigation of potentially contaminated sites – Code of practice,” 2013.

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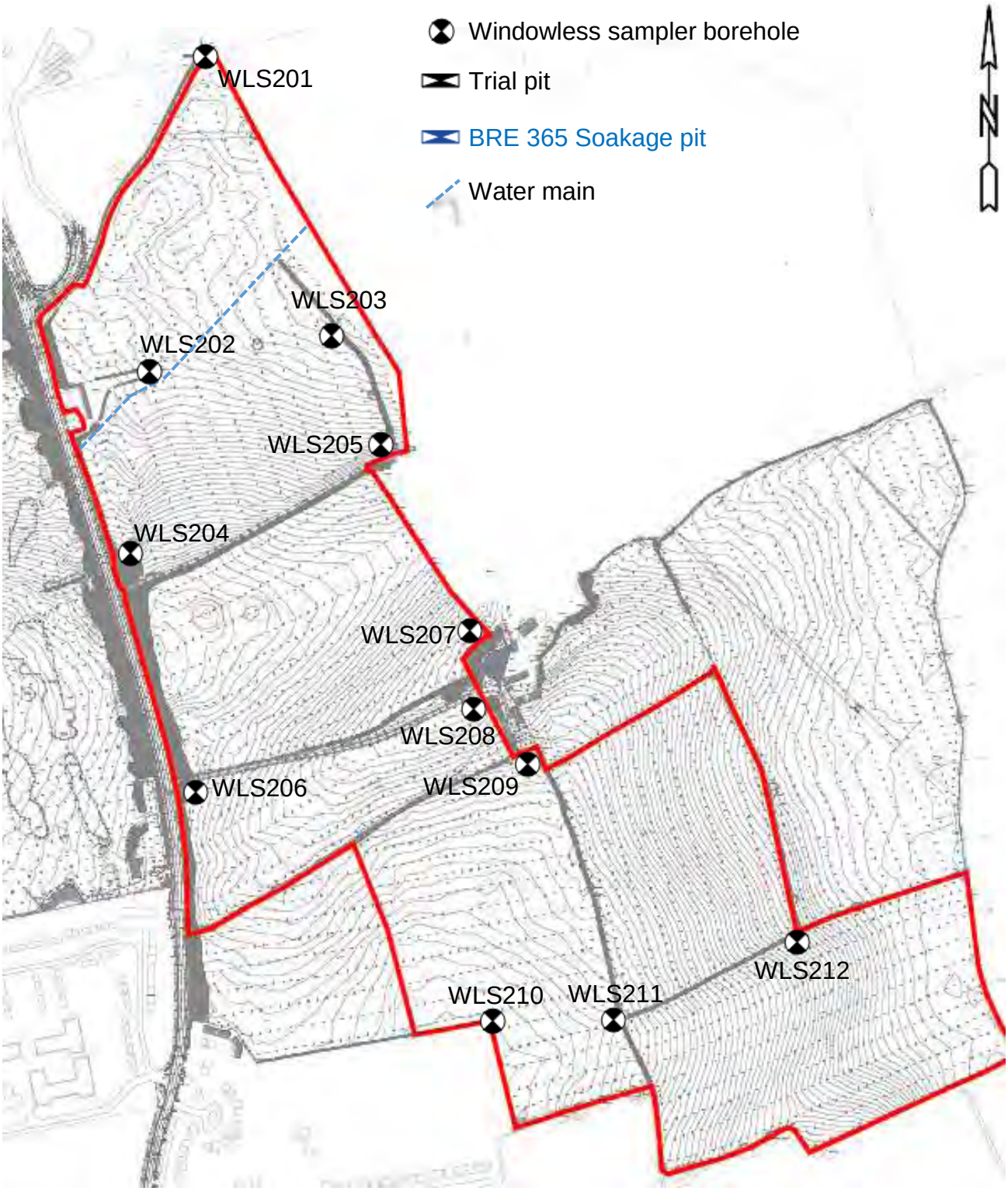
APPENDIX A

Site Plans & Logs

A

Site:	Land East of Oxford Road, Water Eaton	Project ID	JN1683
Figure 1	Site Location Plan	Date:	01/08/2022



NB: Positions of exploratory holes / test positions are only indicative unless dimensioned.

Site:	Land East of Oxford Road, Water Eaton	Project ID	JN1683
Figure 2	Gas Monitoring Well Layout Plan	Date:	01/08/2022

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Start - End Date	Project ID:	Hole Type:	WLS201
23/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 3.0m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.30)		0.30	MADE GROUND composed of brown, silty, gravelly CLAY, with rootlets flint and limestone gravel.
						(0.60)		0.90	Orange-brown, silty, slightly sandy CLAY.
						(0.30)		1.20	Brown mottled orange, slightly silty CLAY.
						(0.90)		2.10	Grey mottled orange-brown, silty CLAY, with shells from 1.8m.
						(0.90)		3.00	Dark grey/ brown, silty CLAY, with ancient rootlets.
									End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS202
23/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 3.0m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.20)		0.20	Brown, silty clayey TOPSOIL, with rootlets and flint and limestone gravel.
						(0.80)		1.00	Buff/ light brown mottled orange, slightly silty CLAY, with occasional rootlets.
						(1.00)		2.00	Grey-bue mottled orange, silty CLAY.
						(1.00)		3.00	Mid grey, silty CLAY, with veins of selenite and ancient rootlets.
									End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS203
23/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 2.9m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.60)		0.60	Brown, silty, slightly gravelly CLAY, with rootlets and occasional flint gravel.
						(0.80)		1.40	Brown-grey veined orange-red, silty CLAY.
						(1.20)		2.60	Grey mottled orange, silty CLAY, with frequent shells and veins of selenite. *Sandy band.*
						(0.40)		3.00	Mid grey, silty CLAY, with frequent shells. End of Borehole at 3.00m

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS204
23/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 3.0m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.30)		0.30	Brown, clayey TOPSOIL, with rootlets.
						(1.40)		1.70	Grey-brown mottled orange, silty CLAY.
						(1.30)		3.00	Mid-grey veined orange, silty CLAY, with selenite veins and ancient rootlets.
									End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS205
23/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 2.9m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.25)		0.25	MADE GROUND composed of brown, silty, slightly gravelly CLAY, with flint gravel and concrete fragments.
						(0.95)		1.20	Buff-brown, silty, CLAY, withoccasional calcareous nodules.
						(1.80)		3.00	Grey-blue mottled orange, silty, CLAY, with occasional ancient rootlets and viens of selenite.
									End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS206
21/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 3.0m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.15)		0.15	Brown, sandy, clayey TOPSOIL, with rootlets and flint gravel.
						(1.35)			Buff brown, silty, slightly gravelly CLAY. Gravels consist of fine to coarse, subrounded flint. Mottled orange and sandy from 1.0m.
						(1.50)		1.50	Blue-grey mottled oragen, silty CLAY, with ancient rootelts.
								3.00	End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS207
21/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 2.8m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.10)		0.10	Brown, silty, sandy clayey TOPSOIL, with rootlets.
						(1.40)			Brown, silty CLAY, with rootlets. Mottled orange and sandy from 0.6m (damp).
						(1.30)		1.50	Light blue-grey mottled orange, silty CLAY.
								2.80	End of Borehole at 2.80m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS208
21/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 3.0m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.15)		0.15	Brown, clayey sandy TOPSOIL, with flint gravel and rootlets.
						(0.95)		1.10	Brown-buff, fissured, silty, slightly gravelly CLAY, with rootlets. Gravels consist of fine to medium, subrounded flint.
						(1.90)		3.00	Grey mottled orange, silty CLAY, with ancient rootlets and veins of selenite.
									End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS209
21/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 3.0m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.15)		0.15	Brown, silty, slightly gravelly, clayey TOPSOIL, with rootlets and flint gravel.
						(0.75)			Buff-brown, silty, slightly sandy, slightly gravelly CLAY, with fine calcareous nodules. Gravels consist of fine to medium, subrounded, flint and sandstone.
						(0.10)		0.90	Orange-brown, silty, sandy CLAY.
								1.00	Blue-grey mottled orange, silty CLAY, with ancient rootlets and initally calcareous nodules
						(2.00)			
								3.00	End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS210
21/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 3.0m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.15)		0.15	Brown, silty, sandy, clayey TOPSOIL, with flint gravel and rootlets.
						(1.05)			Orange-brown, silty sandy, slightly gravelly CLAY, with occasional rootlets. Gravels consist of fine, subangular sandstone.
								1.20	Brown, silty, very sandy CLAY (damp).
						(0.70)			
						(0.10)		1.90 2.00	Orange, silty, gravelly sandy CLAY. Gravels consist of fine to medium, subangular flint.
						(1.00)			Blue-grey mottled orange-brown, silty CLAY.
								3.00	End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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Start - End Date	Project ID:	Hole Type:	WLS211
21/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 2.35m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.10)		0.10	Brown, silty, sandy, clayey TOPSOIL, with flint gravel and rootlets.
						(0.90)		1.00	Buff-brown, silty, very sandy, slightly gravelly CLAY, with occasional rootlets. Gravels consist of fine to medium subrounded, flint and limestone.
						(0.90)		1.90	Brown, silty, slightly gravelly CLAY. Gravels consist of fine to medium, subangular flint and sandstone.
						(1.05)		2.95	Orange-brown, slightly gravelly fine to coarse SAND. Gravels consist of fine to medium, subangular flint and sandstone.
						(0.05)		3.00	Grey-blue mottled orange, silty CLAY.
									End of Borehole at 3.00m

Hole Details		Casing Details		Waterstrike (m bgl)					Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks
					1.90			1.40	20 0				

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Start - End Date	Project ID:	Hole Type:	WLS212
21/09/2021	JN1597	WLS	Sheet 1 of 1

Project Name:	Land East of Oxford Road	Remarks:	Co-ordinates:	Level:	Logger:
					ADM
Location:	Water Eaton	Groundwater Monitoring Well - installed to 2.9m bgl.			
Client:	Glanville				

Well	Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
						(0.10)		0.10	Brown, clayey TOPSOIL, with rootlets and flint gravel.
						(1.00)			Buff/ pale brown, silty CLAY, with rootlets and fine calcareous nodules.
								1.10	Blue-grey mottled orange, silty CLAY, with ancient rootlets.
						(0.90)		2.00	Pale grey mottled orange silty CLAY, with veins of selenite.
						(1.00)		3.00	End of Borehole at 3.00m

1 2 3 4 5

Hole Details		Casing Details		Waterstrike (m bgl)						Standing/Chiselling (m bgl)			
Depth (m bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Depth Strike	Depth Casing	Depth Sealed	Rose to:	Time (mins)	From	To	Time	Remarks

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APPENDIX B

Gas Monitoring Results

B

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Project Name	Project No	Tech	Date	Equipment Used
oxford	Jn1683	pb	27 May 2022	GA2000

Well No	wls 209	**Atm Press** mb	1018	**Flow l/hr**	**Max:**	0.1	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	-0.1		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	1.40	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	21.3	21.2	21.2	21.2	21.2							
CO_2	0.0	0.0	0.0	0.0	0.0							
CH_4	0.0	0.0	0.0	0.0	0.0							

Remarks/Weather	**CO ppm**	**Max:**		**H_2S ppm**	**Max:**	
		Min:			**Min:**	

Well No	wls 211	**Atm Press** mb	1017	**Flow l/hr**	**Max:**	0.1	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	-0.1		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	1.39	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	20.2	20.2	20.1	20.1	20.0	20.1	20.1	20.2	20.3	20.3		
CO_2	1.5	1.5	1.5	1.5	1.6	1.5	1.4	1.3	1.2	1.2		
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

Remarks/Weather	**CO ppm**	**Max:**		**H_2S ppm**	**Max:**	
		Min:			**Min:**	

Well No	wls 212	**Atm Press** mb	1019	**Flow l/hr**	**Max:**	-0.1	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	-0.1		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	dry	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	19.0	18.4	18.4	18.4	18.4	18.9	19.8	20.1	20.2	20.2	20.3	
CO_2	1.4	1.4	1.5	1.5	1.4	1.3	1.0	0.9	0.8	0.8	0.8	
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Remarks/Weather	**CO ppm**	**Max:**		**H_2S ppm**	**Max:**	
		Min:			**Min:**	

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Project Name	Project No	Tech	Date	Equipment Used
oxford	Jn1683	pb	27 May 2022	GA2000

Well No	wls 210	**Atm Press** mb	1018	**Flow l/hr**	**Max:**	0.1	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	-0.1		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	1.50	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	19.5	19.3	19.3	19.3	19.3	19.3						
CO_2	2.1	2.2	2.2	2.2	2.2	2.2						
CH_4	0.0	0.0	0.0	0.0	0.0	0.0						

Remarks/Weather	**CO ppm**	**Max:**		**H_2s ppm**	**Max:**
		Min:			**Min:**

Well No	wls 208	**Atm Press** mb	1018	**Flow l/hr**	**Max:**	0.2	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	-0.1		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	1.23	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	17.9	17.8	17.7	17.6	17.5	17.9	18.3	18.5	18.8	18.9	19.1	19.1
CO_2	4.2	4.3	4.4	4.6	4.6	4.0	3.7	3.5	3.2	3.1	0.3	3.0
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	**CO ppm**	**Max:**		**H_2s ppm**	**Max:**
		Min:			**Min:**

Well No	wls 206	**Atm Press** mb	1018	**Flow l/hr**	**Max:**	0.8	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	-0.1		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	0.92	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	21.0	21.0	21.0	21.0	20.0	18.7	18.7	18.8	18.9	19.0	19.0	19.0
CO_2	0.2	0.2	0.2	0.2	1.7	2.9	2.9	2.7	2.6	2.4	2.4	2.4
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	**CO ppm**	**Max:**		**H_2s ppm**	**Max:**
		Min:			**Min:**

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Project Name	Project No	Tech	Date	Equipment Used
oxford	JN1683	pb	27 May 2022	GA2000

Well No	205	**Atm Press** mb	1018	**Flow l/hr**	**Max:**	0.2	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	-0.1		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	dry	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	21.0	20.9	20.6	20.2	20.1	20.2	20.2	20.2	20.3	20.3	20.3	20.3
CO_2	0.0	0.1	0.5	1.1	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	new lock fitted tap needed	**CO ppm**	**Max:**	**H_2s ppm**	**Max:**
			Min:		**Min:**

Well No	wls 203	**Atm Press** mb	1018	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	0.0		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	1.17	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	20.4	19.5	18.9	18.3	18.0	18.5	18.8	18.9				
CO_2	0.8	1.9	2.6	3.3	3.5	2.8	2.5	2.4				
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				

Remarks/Weather	new tap fitted	**CO ppm**	**Max:**	**H_2s ppm**	**Max:**
			Min:		**Min:**

Well No		**Atm Press** mb		**Flow l/hr**	**Max:**		**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**			**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**		**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2												
CO_2												
CH_4												

Remarks/Weather		**CO ppm**	**Max:**	**H_2s ppm**	**Max:**
			Min:		**Min:**

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Well No	WLS201	**Atm Press mb**	1009	**Flow l/hr**	**Max:**	-0.1	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	-0.1		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	1.20	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				
	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	20.2	20.9	20.9	21.0	21.0	21.0	21.0	21.0				
CO_2	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1				
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Remarks/Weather	drizzle/over cast box found open						**CO ppm**	**Max:**		**H_2S ppm**	**Max:**	
								Min:			**Min:**	

Well No	WLS202	**Atm Press mb**	1009	**Flow l/hr**	**Max:**	-0.1	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	-0.1		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	1.99	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				
	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	20.9	20.9	21.0	21.0	21.0	21.0	21.0	21.0				
CO_2	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0				
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Remarks/Weather	box found open						**CO ppm**	**Max:**		**H_2S ppm**	**Max:**	
								Min:			**Min:**	

Well No	WLS203	**Atm Press mb**	1008	**Flow l/hr**	**Max:**	-0.2	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	-0.1		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	1.18	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				
	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	19.9	19.3	18.3	17.2	17.2	17.6	17.8	17.8	18.0	18.0	18.1	18.2
CO_2	0.9	1.4	2.3	3.2	3.1	2.7	2.5	2.5	2.4	2.4	2.3	2.3
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Remarks/Weather							**CO ppm**	**Max:**		**H_2S ppm**	**Max:**	
								Min:			**Min:**	

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Well No	WLS204	**Atm Press mb**	1008	**Flow l/hr**	**Max:**	-0.2	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	-0.1		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	0.47	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	20.9	21.0	21.0	21.0	21.0	21.0	21.0					
CO_2	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0					

Remarks/Weather	box has been knocked put back in place best it will go						**CO ppm**	**Max:**		**H_2s ppm**	**Max:**	
								Min:			**Min:**	

Well No	WLS205	**Atm Press mb**	1008	**Flow l/hr**	**Max:**	-0.2	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	-0.2		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	Dry	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	20.1	20.6	20.9	20.8	20.9	20.8	20.5	20.7	20.8	20.7	20.7	20.9
CO_2	0.7	0.3	0.1	0.2	0.0	0.2	0.3	0.2	0.2	0.3	0.2	0.2
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather							**CO ppm**	**Max:**		**H_2s ppm**	**Max:**	
								Min:			**Min:**	

Well No	WLS206	**Atm Press mb**	1008	**Flow l/hr**	**Max:**	0.3	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	0.1		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	1.10	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	20.9	20.9	20.9	20.9	18.0	18.0	18.1	18.1	18.1	18.1	18.1	18.1
CO_2	0.4	0.4	0.4	0.4	2.0	2.4	2.3	2.2	2.1	2.1	2.1	2.0
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather							**CO ppm**	**Max:**		**H_2s ppm**	**Max:**	
								Min:			**Min:**	

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Well No	WLS207	**Atm Press** mb	1009	**Flow l/hr**	**Max:**	0.2	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	0.1		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	0.78	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				
	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	20.6	20.6	20.6	20.5	20.0	19.1	18.7	18.2	18.2	18.2	18.4	18.5
CO_2	0.9	0.9	0.9	1.0	1.3	1.8	1.9	2.0	2.0	2.0	2.0	1.9
CH_4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Remarks/Weather							**CO ppm**	**Max:**		**H_2s ppm**	**Max:**	
								Min:			**Min:**	

Well No	WLS208	**Atm Press** mb	1009	**Flow l/hr**	**Max:**	-0.1	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	-0.2		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	1.34	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				
	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	17.6	17.3	17.2	17.1	17.0	17.1	17.4	17.7	17.8	18.0	18.0	18.1
CO_2	3.6	4.0	4.0	4.0	4.0	3.7	3.5	3.3	3.2	3.1	3.1	3.0
CH_4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Remarks/Weather							**CO ppm**	**Max:**		**H_2s ppm**	**Max:**	
								Min:			**Min:**	

Well No	WLS209	**Atm Press** mb	1009	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	0.0		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	1.10	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				
	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	20.8	21.0	21.0	21.0	21.0	21.0	21.0					
CO_2	0.3	0.2	0.2	0.2	0.2	0.2	0.2					
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
Remarks/Weather							**CO ppm**	**Max:**		**H_2s ppm**	**Max:**	
								Min:			**Min:**	

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Well No	WLS210	**Atm Press mb**	1009	**Flow l/hr**	**Max:**	0.1	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	0.0		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	1.06	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				
	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	20.9	21.1	21.2	21.2	21.2	21.2	21.2					
CO_2	0.2	0.1	0.1	0.1	0.1	0.1	0.1					
CH_4	0.1	0.1	0.1	0.1	0.1	0.1	0.1					
Remarks/Weather							**CO ppm**	**Max:**		**H_2s ppm**	**Max:**	
								Min:			**Min:**	

Well No	Wls211	**Atm Press mb**	1008	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	0.0		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	1.35	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				
	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	19.7	19.6	19.5	19.5	19.4	19.4	19.4	19.5	19.6	19.6	19.6	19.7
CO_2	1.3	1.4	1.4	1.5	1.5	1.4	1.4	1.3	1.3	1.3	1.2	1.2
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Remarks/Weather							**CO ppm**	**Max:**		**H_2s ppm**	**Max:**	
								Min:			**Min:**	

Well No	WLS212	**Atm Press mb**	1009	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	0.0		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	Dry	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				
	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	18.7	18.6	18.6	18.6	18.6	18.9	19.2	19.3	19.3	19.4	19.4	19.4
CO_2	1.2	1.3	1.3	1.3	1.3	1.2	1.0	1.0	1.0	1.0	1.0	1.0
CH_4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
Remarks/Weather							**CO ppm**	**Max:**		**H_2s ppm**	**Max:**	
								Min:			**Min:**	

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Well No	WLS 209	Atm Press mb	1018	Flow l/hr	Max:	0.0	Diff Pressure (Pa)	Max:				
		temp	16		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.13	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				
	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	20.8	20.8	20.8	20.8	20.8	20.8						
CO_2	0.3	0.3	0.3	0.3	0.3	0.3						
CH_4	0.0	0.0	0.0	0.0	0.0	0.0						
Remarks/Weather	dry hot sunny						CO ppm	Max:		H_2S ppm	Max:	
								Min:			Min:	

Well No	WLS211	Atm Press mb	1018	Flow l/hr	Max:	0.2	Diff Pressure (Pa)	Max:				
		temp	16		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.48	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				
	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	20.0	19.8	19.8	19.7	19.6	19.7	19.8	19.9	19.9	20.0	20.0	20.0
CO_2	1.2	1.3	1.4	1.5	1.5	1.4	1.4	1.3	1.3	1.3	1.2	1.0
CH_4	0..0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Remarks/Weather							CO ppm	Max:		H_2S ppm	Max:	
								Min:			Min:	

Well No	WlS212	Atm Press mb	1019	Flow l/hr	Max:	0.1	Diff Pressure (Pa)	Max:				
		temp	16		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	DRY	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				
	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	19.6	19.5	19.4	19.4	19.4	19.6	19.8	19.8	19.9	20.0	20.0	20.2
CO_2	1.1	1.2	1.2	1.2	1.3	1.2	1.1	1.1	1.0	1.0	1.0	1.0
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Remarks/Weather							CO ppm	Max:		H_2S ppm	Max:	
								Min:			Min:	

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Well No	WLS210	Atm Press mb	1019	Flow l/hr	Max:	0.1	Diff Pressure (Pa)	Max:				
		temp	16		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.40	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				
	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	19.4	19.3	19.2	19.2	19.0	19.0	19.0	19.1	19.3	19.3	19.3	19.3
CO_2	1.8	1.8	1.9	2.0	2.2	2.3	2.3	2.2	2.2	2.2	2.1	2.1
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Remarks/Weather							CO ppm	Max:		H_2s ppm	Max:	
								Min:			Min:	

Well No	WLS208	Atm Press mb	1019	Flow l/hr	Max:	-0.1	Diff Pressure (Pa)	Max:				
		temp	16		Min:	-0.1		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.37	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				
	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	18.0	17.9	17.9	17.8	17.7	17.9	18.1	18.2	18.3	18.5	18.5	18.6
CO_2	3.9	3.9	4.0	4.0	4.1	3.8	3.6	3.5	3.2	3.3	3.3	3.2
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Remarks/Weather							CO ppm	Max:		H_2s ppm	Max:	
								Min:			Min:	

Well No	WLS207	Atm Press mb	1019	Flow l/hr	Max:	-0.2	Diff Pressure (Pa)	Max:				
		temp	16		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	0.83	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				
	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	21.3	20.3	20.4	20.5	20.4	20.5	20.5	20.5	20.4	20.1	19.8	19.8
CO_2	0.9	0.6	0.6	0.5	0.6	0.6	0.5	0.5	0.5	0.6	0.6	0.6
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Remarks/Weather							CO ppm	Max:		H_2s ppm	Max:	
								Min:			Min:	

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Well No	WLS206	Atm Press mb	1019	Flow l/hr	Max:	0.7	Diff Pressure (Pa)	Max:				
		temp	17		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.10	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	19.1	19.1	19.1	19.1	18.5	18.3	18.2	18.4	18.5	18.5	18.5	18.6
CO_2	1.4	1.4	1.4	1.4	2.8	3.1	3.1	3.1	3.0	3.0	3.0	3.0
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0

Remarks/Weather												
							CO ppm	Max:		H_2s ppm	Max:	
								Min:			Min:	

Well No	WLS205	Atm Press mb	1019	Flow l/hr	Max:		Diff Pressure (Pa)	Max:				
		temp	17		Min:			Min:				
Well Depth (m)		Groundwater level from GL (m)	DRY	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	20.4	20.1	19.7	19.6	19.5	19.5	19.6	19.6	19.6	19.6	19.6	19.6
CO_2	0.8	1.0	1.4	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
CH_4	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Remarks/Weather												
							CO ppm	Max:		H_2s ppm	Max:	
								Min:			Min:	

Well No	WLS203	Atm Press mb	1020	Flow l/hr	Max:	0.1	Diff Pressure (Pa)	Max:				
		temp	17		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.18	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	18.3	18.2	18.1	18.0	18.4	18.8	19.0	19.2	19.2	19.3	19.3	19.3
CO_2	2.9	2.9	2.9	2.9	2.4	2.1	1.8	1.7	1.6	1.6	1.5	1.5
CH_4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Remarks/Weather												
							CO ppm	Max:		H_2s ppm	Max:	
								Min:			Min:	

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Project Name	Project No	Tech	Date	Equipment Used
Oxford	Jn1683	pb	13 June 2022	GA2000

Well No	WLS204	Atm Press mb	1019	Flow l/hr	Max:	0.0	Diff Pressure (Pa)	Max:				
		temp	17		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	0.58	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	20.9	20.9	20.9	20.9	20.9							
CO_2	0.0	0.0	0.0	0.0	0.0							
CH_4	0.0	0.0	0.0	0.0	0.0							

Remarks/Weather	CO ppm	Max:		H_2S ppm	Max:	
		Min:			Min:	

Well No	WLS202	Atm Press mb	1020	Flow l/hr	Max:	0.1	Diff Pressure (Pa)	Max:				
		temp	17		Min:	0.1		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.94	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	20.7	20.6	20.6	20.6	20.6	20.6						
CO_2	0.0	0.0	0.0	0.0	0.0	0.0						
CH_4												

Remarks/Weather	CO ppm	Max:		H_2S ppm	Max:	
		Min:			Min:	

Well No	WLS201	Atm Press mb	1020	Flow l/hr	Max:	0.0	Diff Pressure (Pa)	Max:				
		temp	17		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.19	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	20.0	19.1	19.1	19.1	19.1	19.2	19.2	19.2	19.2	19.4	19.5	19.4
CO_2	1.0	1.8	1.8	1.9	1.9	1.9	1.8	1.7	1.7	1.7	1.7	1.7
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	CO ppm	Max:		H_2S ppm	Max:	
		Min:			Min:	

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Project Name	Project No	Tech	Date	Equipment Used
Oxford	JN1683	SS	01 July 2022	GFM436/Tiger PiD

Well No	WLS201	**Atm Press mb**	1009	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0
		temp	18°C		**Min:**	0.0		**Min:**	0
Well Depth (m)	2.91	**Groundwater level from GL (m)**	1.31	**VOC ppm**	**Max:**	0.2	**LEL %**	**Max:**	0.0
					Min:	0.2		**Min:**	0.0

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	18.2	18.9	19.9	19.4	19.7	19.4	19.1	19.1	19.1	19.1	19.1	19.4
CO_2	2.1	2.1	2.2	2.2	2.3	2.0	2.0	1.7	1.7	1.7	1.7	1.7
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	9:48 Dry, cloudy. No lock. Cover height 0.24m	**CO ppm**	**Max:**	10	**H_2S ppm**	**Max:**	0
			Min:	0		**Min:**	0

Well No	WLS202	**Atm Press mb**	1007	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0
		temp	18°C		**Min:**	0.0		**Min:**	0
Well Depth (m)	2.76	**Groundwater level from GL (m)**	2.10	**VOC ppm**	**Max:**	0.3	**LEL %**	**Max:**	0.0
					Min:	0.3		**Min:**	0.0

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	19.3	19.1	19.1	19.0	19.0	19.2	19.3	19.4	19.5	19.7	19.5	19.5
CO_2	0.0	0.0	0.0	0.2	0.4	0.7	0.8	0.8	0.8	0.9	0.9	0.9
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	10:13 Dry, cloudy. Cover height 0.2m	**CO ppm**	**Max:**	0	**H_2S ppm**	**Max:**	0
			Min:	0		**Min:**	0

Well No	WLS203	**Atm Press mb**	1009	**Flow l/hr**	**Max:**	-0.5	**Diff Pressure (Pa)**	**Max:**	-8
		temp	17°C		**Min:**	0.0		**Min:**	0
Well Depth (m)	2.92	**Groundwater level from GL (m)**	1.32	**VOC ppm**	**Max:**	0.3	**LEL %**	**Max:**	0.0
					Min:	0.3		**Min:**	0.0

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	18.1	18.1	18.1	18.4	18.6	19.2	19.3	19.5	19.6	19.6	19.7	19.7
CO_2	2.3	2.3	2.3	2.2	2.1	1.7	1.5	1.4	1.3	1.3	1.3	1.2
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	9:26 Dry, cloudy. No lock. Cover height 0.27m Flow peaked quickly then to zero after 2/3 seconds.	**CO ppm**	**Max:**		**H_2S ppm**	**Max:**	
			Min:			**Min:**	

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Oxford	JN1683	SS	01 July 2022	GFM436/Tiger PiD

Well No	WLS204	**Atm Press mb**	1007	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0
		temp	18°C		**Min:**	0.0		**Min:**	0
Well Depth (m)	3.02	**Groundwater level from GL (m)**	0.85	**VOC ppm**	**Max:**	0.3	**LEL %**	**Max:**	0.0
					Min:	0.3		**Min:**	0.0

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	21.0	21.0	20.9	20.2	19.1	19.0	19.1	19.3	19.3	19.3	19.3	19.3
CO_2	0.0	0.0	0.0	1.3	1.5	2.3	2.3	2.2	2.3	2.3	2.3	2.3
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	10:37 Dry, cloudy. Cover height 0.15m	**CO ppm**	**Max:**	0	**H_2s ppm**	**Max:**	0
			Min:	0		**Min:**	0

Well No	WLS205	**Atm Press mb**	1009	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0
		temp	17°C		**Min:**	0.0		**Min:**	0
Well Depth (m)	2.91	**Groundwater level from GL (m)**	Dry	**VOC ppm**	**Max:**	0.1	**LEL %**	**Max:**	0.0
					Min:	0.1		**Min:**	0.0

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	19.8	19.7	19.8	20.0	20.0	20.0	19.9	20.0	20.0	20.0	20.0	20.2
CO_2	1.3	1.3	1.1	1.0	1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.0
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	9:09 Dry, cloudy height of cover 0.25m	**CO ppm**	**Max:**	0	**H_2s ppm**	**Max:**	0
			Min:	0		**Min:**	0

Well No	WLS206	**Atm Press mb**	1005	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0
		temp	18°C		**Min:**	0.0		**Min:**	0
Well Depth (m)	2.92	**Groundwater level from GL (m)**	1.17	**VOC ppm**	**Max:**	0.2	**LEL %**	**Max:**	0.0
					Min:	0.2		**Min:**	0.0

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	20.4	20.1	19.6	19.6	19.4	19.6	19.3	19.6	19.7	19.6	19.6	19.3
CO_2	1.5	1.4	1.8	1.9	2.1	2.1	2.1	2.0	2.0	2.2	2.0	2.0
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	11:35 Dry, cloudy. Cover height 0.34m. CO peaked at -39, but stable at 0.	**CO ppm**	**Max:**	-39	**H_2s ppm**	**Max:**	0
			Min:	0		**Min:**	0

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Oxford	JN1683	SS	01 July 2022	GFM436/Tiger PiD

Well No	WLS207	**Atm Press mb**	1006	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0
		temp	19°C		**Min:**	0.0		**Min:**	0
Well Depth (m)	2.74	**Groundwater level from GL (m)**	0.98	**VOC ppm**	**Max:**	0.2	**LEL %**	**Max:**	>>>>
					Min:	0.2		**Min:**	<<<<

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	22.0	21.6	20.5	20.5	22.5	19.4	18.1	19.5	19.4	19.8	19.8	19.9
CO_2	1.8	1.9	1.4	2.1	1.8	3.0	2.4	1.9	1.7	1.7	1.6	1.6
CH_4	-0.4	0.0	-0.5	0.0	0.0	-0.4	-0.1	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	11:13 Dry, cloudy/ height of cover 0.3m. Stablised around 6 minutes.	**CO ppm**	**Max:**	-100 / 52	**H_2s ppm**	**Max:**	0
			Min:	0		**Min:**	0

Well No	WLS208	**Atm Press mb**	1006	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0
		temp	19°C		**Min:**	0.0		**Min:**	0
Well Depth (m)	2.96	**Groundwater level from GL (m)**	1.61	**VOC ppm**	**Max:**	0.3	**LEL %**	**Max:**	0.0
					Min:	0.2		**Min:**	0.0

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	19.6	19.5	18.9	19.9	18.8	18.6	18.0	22.4	19.3	19.3	19.2	19.4
CO_2	3.5	3.3	3.2	3.9	3.2	3.0	3.7	2.4	2.4	2.3	2.4	2.4
CH_4	-0.2	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	12:45 Dry, cloudy, just had a rain shower. Height of cover 0.35m. Stablised about 7 minutes. Fitted new filters.	**CO ppm**	**Max:**	0	**H_2s ppm**	**Max:**	0
			Min:	0		**Min:**	0

Well No	WLS209	**Atm Press mb**	1004	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0
		temp	19°C		**Min:**	0.0		**Min:**	0
Well Depth (m)	3.02	**Groundwater level from GL (m)**	1.24	**VOC ppm**	**Max:**	0.3	**LEL %**	**Max:**	49.0
					Min:	0.3		**Min:**	0.0

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	24.9	22.3	20.2	18.3	20.1	20.3	20.4	21.4	21.3	19.3	25.2	23.2
CO_2	1.4	0.9	1.2	0.9	1.4	1.3	1.2	1.1	0.8	1.4	0.8	0.6
CH_4	-0.5	-0.9	-1.7	-1.5	-0.5	-0.1	-0.1	-0.1	-0.1	0.0	1.3	0.0

Remarks/Weather	13:17 Dry, cloudy. Height cover 0.48m Gases not stable after 10 minutes. CO fluctuating between -100 and 43, but 0 was the most stable reading. H2S peaked on occasion to -25, but	**CO ppm**	**Max:**	0	**H_2s ppm**	**Max:**	0
			Min:	0		**Min:**	0

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Oxford	JN1683	SS	01 July 2022	GFM436/Tiger PiD

Well No	WLS210	**Atm Press mb**	1004	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0			
		temp	20°C		**Min:**	0.0		**Min:**	0			
Well Depth (m)	2.98	**Groundwater level from GL (m)**	1.69	**VOC ppm**	**Max:**	0.5	**LEL %**	**Max:**	0.0			
					Min:	0.5		**Min:**	0.0			

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	19.7	19.2	19.2	19.2	19.1	19.2	19.2	19.3	19.3	19.5	19.7	19.7
CO_2	1.9	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.8	1.7	1.7	1.6
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	13:48 Dry, cloudy. Cover height 0.44m	**CO ppm**	**Max:**	0	**H_2S ppm**	**Max:**	0
			Min:	0		**Min:**	0

Well No	Wls211	**Atm Press mb**	1004	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0			
		temp	20°C		**Min:**	0.0		**Min:**	0			
Well Depth (m)	2.35	**Groundwater level from GL (m)**	1.72	**VOC ppm**	**Max:**	0.4	**LEL %**	**Max:**	0.0			
					Min:	0.4		**Min:**	0.0			

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	20.1	19.9	20.0	20.1	20.2	20.2	20.0	20.1	20.4	20.2	20.3	20.4
CO_2	1.3	1.4	1.5	1.6	1.7	1.3	1.4	1.3	1.3	1.3	1.2	1.2
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	14:35 Dry, cloudy. Cover height 0.25m	**CO ppm**	**Max:**	0	**H_2S ppm**	**Max:**	0
			Min:	0		**Min:**	0

Well No	WLS212	**Atm Press mb**	1006	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0			
		temp	20°C		**Min:**	0.0		**Min:**	0			
Well Depth (m)	2.94	**Groundwater level from GL (m)**	Dry	**VOC ppm**	**Max:**	0.7	**LEL %**	**Max:**	0.0			
					Min:	0.5		**Min:**	0.0			

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	20.8	20.7	20.7	20.6	21.2	20.7	20.9	21.1	21.3	21.4	21.2	21.0
CO_2	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	14:15 Dry, cloudy. Cover height 0.26m	**CO ppm**	**Max:**	0	**H_2S ppm**	**Max:**	0
			Min:	0		**Min:**	0

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Oxford	JN1683	SS	23 June 2022	GFM436/Tiger PiD

Well No	WLS201	**Atm Press mb**	1003	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0			
		temp	18°C		**Min:**	0.0		**Min:**	0			
Well Depth (m)	2.91	**Groundwater level from GL (m)**	1.24	**VOC ppm**	**Max:**	0.5	**LEL %**	**Max:**	0.0			
					Min:	0.4		**Min:**	0.0			

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	19.1	19.1	19.0	18.9	19.0	19.1	19.1	19.3	19.4	19.4	19.5	19.5
CO_2	2.3	2.3	2.3	2.3	2.3	2.2	2.1	2.0	1.9	1.9	1.8	1.8
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	10:19 Dry, cloudy. Height of cover 0.24m. No lock	**CO ppm**	**Max:**	0	**H_2s ppm**	**Max:**	0			
			Min:	0		**Min:**	0			

Well No	WLS202	**Atm Press mb**	1001	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0	
		temp	18°C		**Min:**	0.0		**Min:**	0	
Well Depth (m)	2.76	**Groundwater level from GL (m)**	2.08	**VOC ppm**	**Max:**	1.2	**LEL %**	**Max:**	0.0	
					Min:	1.1		**Min:**	0.0	

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	18.9	18.8	18.7	18.8	18.8	19.4	19.7	20.0	19.9	20.0	20.0	20.0
CO_2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.3	0.3
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	10:46 Dry, cloudy. Height of cover 0.2m	**CO ppm**	**Max:**	-20	**H_2s ppm**	**Max:**	-30			
			Min:	0		**Min:**	0			

Well No	WLS203	**Atm Press mb**	1005	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0	
		temp	18°C		**Min:**	0.0		**Min:**	0	
Well Depth (m)	2.93	**Groundwater level from GL (m)**	1.28	**VOC ppm**	**Max:**	0.5	**LEL %**	**Max:**	0.0	
					Min:	0.5		**Min:**	0.0	

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	16.4	16.2	16.2	16.0	16.1	16.5	17.2	16.5	17.4	17.4	17.5	17.6
CO_2	4.0	4.1	4.1	4.2	4.0	3.7	3.5	3.4	3.3	3.3	3.3	3.3
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	9:55 Dry, cloudy. Height of cover 0.27m No lock	**CO ppm**	**Max:**	0	**H_2s ppm**	**Max:**	0			
			Min:	0		**Min:**	0			

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Project Name	Project No	Tech	Date	Equipment Used
Oxford	JN1683	SS	23 June 2022	GFM436/Tiger PiD

Well No	WLS204	**Atm Press mb**	1001	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0			
		temp	18°C		**Min:**	0.0		**Min:**	0			
Well Depth (m)	3.01	**Groundwater level from GL (m)**	0.75	**VOC ppm**	**Max:**	1.0	**LEL %**	**Max:**	0.0			
					Min:	1.0		**Min:**	0.0			

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	21.2	20.9	20.9	20.8	18.6	19.0	19.4	19.6	19.7	19.7	19.6	19.7
CO_2	0.1	0.1	0.2	0.2	1.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	11:09 Very fine drizzle. Height of cover 0.15m	**CO ppm**	**Max:**	0	**H_2s ppm**	**Max:**	0
			Min:	0		**Min:**	0

Well No	WLS205	**Atm Press mb**	1004	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0			
		temp	18°C		**Min:**	0.0		**Min:**	0			
Well Depth (m)	2.80	**Groundwater level from GL (m)**	Dry	**VOC ppm**	**Max:**	0.3	**LEL %**	**Max:**	0.0			
					Min:	0.3		**Min:**	0.0			

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	19.3	19.2	19.2	19.2	19.1	19.2	19.2	19.2	19.2	19.3	19.2	19.2
CO_2	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.8	1.9	1.9
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	9:35 Dry, cloudy. Height of cover 0.25m.	**CO ppm**	**Max:**	0	**H_2s ppm**	**Max:**	0
			Min:	0		**Min:**	0

Well No	WLS206	**Atm Press mb**	1000	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0			
		temp	22°C		**Min:**	0.0		**Min:**	0			
Well Depth (m)	2.96	**Groundwater level from GL (m)**	1.18	**VOC ppm**	**Max:**	0.5	**LEL %**	**Max:**	0.0			
					Min:	0.4		**Min:**	0.0			

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	19.6	19.3	19.1	19.1	19.1	19.1	19.0	19.0	19.0	19.1	19.4	19.3
CO_2	2.2	2.3	2.3	2.3	2.5	2.7	2.7	2.7	2.6	2.6	2.5	2.5
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	14:57 Dry warm cloudy. Height of cover 0.47m	**CO ppm**	**Max:**	0	**H_2s ppm**	**Max:**	0
			Min:	0		**Min:**	0

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Oxford	JN1683	SS	23 June 2022	GFM436/Tiger PiD

Well No	WLS207	**Atm Press mb**	1001	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0
		temp	22°C		**Min:**	0.0		**Min:**	0
Well Depth (m)	2.79	**Groundwater level from GL (m)**	0.95	**VOC ppm**	**Max:**	0.3	**LEL %**	**Max:**	0.0
					Min:	0.2		**Min:**	0.0

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	19.2	18.0	17.9	17.9	18.0	17.9	18.2	18.7	8.9	19.0	19.3	19.4
CO_2	2.5	2.7	2.8	2.8	3.0	2.9	3.0	2.8	2.7	2.6	2.5	2.5
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	12:10 Dry, cloudy, muggy. Cover height 0.25m	**CO ppm**	**Max:**	11	**H_2S ppm**	**Max:**	0
			Min:	0		**Min:**	0

Well No	WLS208	**Atm Press mb**	1001	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0
		temp	22°C		**Min:**	0.0		**Min:**	0
Well Depth (m)	2.86	**Groundwater level from GL (m)**	1.54	**VOC ppm**	**Max:**	0.4	**LEL %**	**Max:**	0.0
					Min:	0.4		**Min:**	0.0

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	17.6	17.2	17.2	17.2	17.2	173.0	17.5	17.7	17.6	17.7	17.6	17.6
CO_2	4.0	4.2	4.2	4.2	4.2	4.1	4.0	3.9	3.8	3.8	3.7	3.7
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	12:49 Dry, cloudy. Cover height 0.35m	**CO ppm**	**Max:**	0	**H_2S ppm**	**Max:**	0
			Min:	0		**Min:**	0

Well No	WLS209	**Atm Press mb**	1000	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0
		temp	22°C		**Min:**	0.0		**Min:**	0
Well Depth (m)		**Groundwater level from GL (m)**		**VOC ppm**	**Max:**	0.4	**LEL %**	**Max:**	0.0
					Min:	0.4		**Min:**	0.0

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	19.3	19.1	18.8	19.0	19.1	19.0	19.0	19.0	19.0	19.2	19.3	19.3
CO_2	2.2	2.3	2.4	2.5	2.6	2.6	2.4	2.4	2.4	2.4	2.4	2.4
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	13:00 adjusted stuck bung. 14:23 Dry, warm cloudy. 2 min CO peaked to 120, at 3min peaked at 10, 4 min peaked at 0, 5 min peaked at 3. CO was fluctuating	**CO ppm**	**Max:**	120	**H_2S ppm**	**Max:**	40
			Min:	0		**Min:**	0

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Oxford	JN1683	SS	23 June 2022	GFM436/Tiger PiD

Well No	WLS210	**Atm Press mb**		**Flow l/hr**	**Max:**		**Diff Pressure (Pa)**	**Max:**				
		temp	22°C		**Min:**			**Min:**				
Well Depth (m)	2.96	**Groundwater level from GL (m)**	1.53	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				
	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2												
CO_2												
CH_4												
Remarks/Weather	14:10 Dry, cloudy. No bung,new bung installed. Cover height is 0.46m				**CO ppm**	**Max:**		**H_2S ppm**	**Max:**			
						Min:			**Min:**			

Well No	WLS211	**Atm Press mb**	100	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**	0			
		temp	22°C		**Min:**	0.0		**Min:**	0			
Well Depth (m)	2.34	**Groundwater level from GL (m)**	1.63	**VOC ppm**	**Max:**	0.3	**LEL %**	**Max:**	0.0			
					Min:	0.3		**Min:**	0.0			
	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	19.3	19.2	19.2	19.2	19.2	19.2	19.3	19.4	19.4	19.5	19.5	19.5
CO_2	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.6	1.6	1.7
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Remarks/Weather	13:21 Dry, warm, cloudy. Cover height 0.25m Small amount of web in the bung.				**CO ppm**	**Max:**	0	**H_2S ppm**	**Max:**	0		
						Min:	0		**Min:**	0		

Well No	WLS212	**Atm Press mb**	1001	**Flow l/hr**	**Max:**	0.6	**Diff Pressure (Pa)**	**Max:**	3			
		temp	22°C		**Min:**	0.0		**Min:**	0			
Well Depth (m)	2.94	**Groundwater level from GL (m)**	Dry	**VOC ppm**	**Max:**	0.2	**LEL %**	**Max:**	0.0			
					Min:	0.2		**Min:**	0.0			
	Time (Seconds)											
	30	**60**	**1.2**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	19.7	1.2	1.3	19.6	19.6	19.7	19.7	19.6	19.7	19.7	19.7	19.7
CO_2	1.2	1.2	1.2	1.3	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Remarks/Weather	13:44 Dry, warm, cloudy. Height of cover 0.25m Small amount of web in the bung.				**CO ppm**	**Max:**		**H_2S ppm**	**Max:**			
						Min:			**Min:**			

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oxford	JN1683	pb	08 July 2022	GA2000

Well No	209	Atm Press mb	1026	Flow l/hr	Max:	0.1	Diff Pressure (Pa)	Max:				
		temp	23		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.27	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	19.9	19.8	19.8	19.6	19.6	19.6	19.5	19.6	19.8			
CO_2	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.2			
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

Remarks/Weather	CO ppm	Max:		H_2s ppm	Max:	
		Min:			Min:	

Well No	211	Atm Press mb	1026	Flow l/hr	Max:	0.0	Diff Pressure (Pa)	Max:				
		temp	23		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.67	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	18.9	18.8	18.8	18.7	18.8	18.9	19.0	19.1	19.2	19.4		
CO_2	1.2	1.3	1.3	1.4	1.4	1.3	1.2	1.2	1.1	1.1		
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

Remarks/Weather	CO ppm	Max:		H_2s ppm	Max:	
		Min:			Min:	

Well No	212	Atm Press mb	1026	Flow l/hr	Max:	0.1	Diff Pressure (Pa)	Max:				
		temp	23		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	Dry	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	19.9	19.9	20.0	20.1	20.3	20.1	20.4	20.4	20.4	20.4		
CO_2	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3		
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1		

Remarks/Weather	CO ppm	Max:		H_2s ppm	Max:	
		Min:			Min:	

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oxford	JN1683	pb	08 July 2022	GA2000

Well No	210	Atm Press mb	1026	Flow l/hr	Max:	-0.2	Diff Pressure (Pa)	Max:				
		temp	26		Min:	-0.1		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.76	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	19.3	19.3	19.3	19.3	19.3	19.5	19.6	19.7	20.0	19.9	19.8	20.2
CO_2	1.5	1.5	1.5	1.5	1.6	1.5	1.4	1.3	1.2	1.2	1.2	1.0
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	CO ppm	Max:		H_2s ppm	Max:	
		Min:			Min:	

Well No	208	Atm Press mb	1027	Flow l/hr	Max:	0.0	Diff Pressure (Pa)	Max:				
		temp	26		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.64	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	18.5	18.6	18.4	18.4	18.4	18.5	18.6	18.6	18.6	18.7		
CO_2	2.6	2.6	2.7	2.7	2.6	2.5	2.5	2.4	2.4	2.3		
CH_4	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0		

Remarks/Weather	CO ppm	Max:		H_2s ppm	Max:	
		Min:			Min:	

Well No	207	Atm Press mb		Flow l/hr	Max:	-0.2	Diff Pressure (Pa)	Max:				
		temp			Min:	-0.2		Min:				
Well Depth (m)		Groundwater level from GL (m)		VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	19.7	19.7	19.6	19.6	19.6	19.6	19.7	19.8	20.0	20.3	20.3	20.4
CO_2	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.7	1.5	1.2	1.2	1.2
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	CO ppm	Max:		H_2s ppm	Max:	
		Min:			Min:	

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oxford	jn1683	pb	08 July 2022	GA2000

Well No	204	Atm Press mb	1027	Flow l/hr	Max:	0.0	Diff Pressure (Pa)	Max:				
		temp	23		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	0.88	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	21.1	21.0	20.2	20.0	20.1	20.1	20.1	20.2	20.2			
CO_2	0.0	0.1	0.6	1.0	0.9	0.8	0.9	0.9	0.9			
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

Remarks/Weather	CO ppm	Max:		H_2s ppm	Max:
		Min:			Min:

Well No	202	Atm Press mb		Flow l/hr	Max:	0.1	Diff Pressure (Pa)	Max:				
		temp			Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	2.13	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	18.7	18.7	18.6	18.5	18.4	18.4	18.4	18.4	18.4	18.3	18.3	18.3
CO_2	0.5	0.6	0.6	0.7	1.0	1.2	1.3	1.3	1.5	1.5	1.5	1.5
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	0	0	Max: 0	H_2s ppm	Max:
			Min:		Min:

Well No	201	Atm Press mb		Flow l/hr	Max:	0.0	Diff Pressure (Pa)	Max:				
		temp			Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.44	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	19.0	19.2	19.2	19.3	19.3	19.5	19.8	19.9	19.9	20.0	20.0	20.0
CO_2	1.6	1.6	1.6	1.6	1.6	1.4	1.3	1.1	1.1	1.1	1.0	1.0
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	CO ppm	Max:		H_2s ppm	Max:
		Min:			Min:

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oxford	jn1683	pb	08 July 2022	GA2000

Well No	206	Atm Press mb	1027	Flow l/hr	Max:	0.0	Diff Pressure (Pa)	Max:				
		temp	26		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.23	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	19.7	19.6	19.5	19.5	19.3	19.3	19.3	19.3	19.4	19.6		
CO_2	1.6	1.6	1.7	1.7	1.9	1.9	1.8	1.7	1.7	1.7		
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

Remarks/Weather	CO ppm	Max:		H_2s ppm	Max:	
		Min:			Min:	

Well No	203	Atm Press mb		Flow l/hr	Max:	0.0	Diff Pressure (Pa)	Max:				
		temp			Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.38	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	17.2	17.2	17.3	17.4	17.6	17.9	18.2	18.4	18.5	18.6		
CO_2	1.9	1.9	1.9	1.9	1.8	1.7	1.6	1.5	1.4	1.4		
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

Remarks/Weather	CO ppm	Max:		H_2s ppm	Max:	
		Min:			Min:	

Well No	205	Atm Press mb		Flow l/hr	Max:	0.1	Diff Pressure (Pa)	Max:				
		temp			Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	dry	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	19.7	19.8	19.9	20.0	20.2	20.2	20.2	20.2				
CO_2	0.5	0.5	0.4	0.3	0.4	0.4	0.5	0.4				
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				

Remarks/Weather	CO ppm	Max:		H_2s ppm	Max:	
		Min:			Min:	

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Project Name	Project No	Tech	Date	Equipment Used
Oxford	Jn1683	pb	14 July 2022	GA2000

Well No	209	**Atm Press mb**	1016	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**				
		temp	17		**Min:**	0.0		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	1.32	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	20.2	20.2	20.2	20.1	20.1	20.1	20.1	20.1	20.1	20.1		
CO_2	1.8	1.8	1.8	1.9	1.9	1.8	1.8	1.7	1.7	1.7		
CH_4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

Remarks/Weather	sunny with small breeze	**CO ppm**	**Max:**		**H_2s ppm**	**Max:**
			Min:			**Min:**

Well No	211	**Atm Press mb**	1016	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	-0.1		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	1.71	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	20.1	20.0	19.8	19.6	19.6	19.7	19.8	19.9	20.0	20.0	20.1	20.1
CO_2	1.4	1.5	1.6	1.8	1.8	1.7	1.6	1.6	1.5	1.5	1.4	1.4
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather		**CO ppm**	**Max:**		**H_2s ppm**	**Max:**
			Min:			**Min:**

Well No	212	**Atm Press mb**	1017	**Flow l/hr**	**Max:**	0.0	**Diff Pressure (Pa)**	**Max:**				
		temp			**Min:**	0.0		**Min:**				
Well Depth (m)		**Groundwater level from GL (m)**	Dry	**VOC ppm**	**Max:**		**LEL %**	**Max:**				
					Min:			**Min:**				

	Time (Seconds)											
	30	**60**	**90**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
O_2	21.0	21.0	21.0	21.0	20.9	20.9	20.9	20.8	20.8	20.8		
CO_2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

Remarks/Weather		**CO ppm**	**Max:**		**H_2s ppm**	**Max:**
			Min:			**Min:**

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Project Name	Project No	Tech	Date	Equipment Used
oxford	jn1683	pb	14 July 2022	GA2000

Well No	210	Atm Press mb	1015	Flow l/hr	Max:	0.0	Diff Pressure (Pa)	Max:				
		temp			Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.84	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				
	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	19.7	19.6	19.6	19.6	19.7	19.8	19.9	20.0	20.2	20.3	20.4	20.4
CO_2	1.7	1.7	1.7	1.7	1.7	1.5	1.4	1.4	1.2	1.1	1.0	1.0
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Remarks/Weather							CO ppm Max:		H_2s ppm Max:			
							Min:		Min:			

Well No	208	Atm Press mb	1016	Flow l/hr	Max:	0.2	Diff Pressure (Pa)	Max:				
		temp			Min:	0.1		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.69	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				
	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	18.6	18.6	18.6	18.6	18.6	18.6	18.7	18.7	18.7	18.8	18.8	18.8
CO_2	3.1	3.2	3.2	3.2	3.2	3.1	3.0	3.0	3.0	3.0	2.9	2.9
CH_4	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Remarks/Weather							CO ppm Max:		H_2s ppm Max:			
							Min:		Min:			

Well No	207	Atm Press mb	1016	Flow l/hr	Max:	-0.2	Diff Pressure (Pa)	Max:				
		temp			Min:	-0.1		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.16	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				
	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	19.7	19.8	19.8	19.8	19.8	19.9	20.3	20.4	20.5	20.6	20.6	20.7
CO_2	2.1	2.1	2.1	2.1	2.1	2.1	1.7	1.5	1.4	1.3	1.3	1.2
CH_4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Remarks/Weather							CO ppm Max:		H_2s ppm Max:			
							Min:		Min:			

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Project Name	Project No	Tech	Date	Equipment Used
oxford	jn1683	pb	14 July 2022	GA2000

Well No	206	Atm Press mb	1015	Flow l/hr	Max:	0.0	Diff Pressure (Pa)	Max:				
		temp	18		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.26	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	20.1	20.0	19.9	19.9	19.8	19.8	19.8	19.9	19.9	19.9	19.9	20.1
CO_2	1.7	1.8	1.8	1.8	1.9	1.9	1.8	1.6	1.6	1.5	1.5	1.4
CH_4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	CO ppm	Max:		H_2s ppm	Max:	
		Min:			Min:	

Well No	205	Atm Press mb	1016	Flow l/hr	Max:	0.0	Diff Pressure (Pa)	Max:				
		temp			Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	dry	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	20.5	20.5	20.6	20.6	20.6	20.6	20.6	20.8	20.8	20.8	20.7	20.8
CO_2	0.7	0.6	0.6	0.5	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7
CH_4	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1

Remarks/Weather	CO ppm	Max:		H_2s ppm	Max:	
		Min:			Min:	

Well No	203	Atm Press mb	1016	Flow l/hr	Max:	0.0	Diff Pressure (Pa)	Max:				
		temp			Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.43	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				

	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	17.1	17.1	17.2	17.3	17.5	17.7	17.9	18.0	18.0	18.0	18.0	17.9
CO_2	2.6	2.6	2.6	2.5	2.4	2.4	2.3	2.2	2.2	2.2	2.3	2.3
CH_4	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Remarks/Weather	CO ppm	Max:		H_2s ppm	Max:	
		Min:			Min:	

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Project Name	Project No	Tech	Date	Equipment Used
oxford	jn1683	pb	14 July 2022	GA2000

Well No	204	Atm Press mb	1017	Flow l/hr	Max:	0.0	Diff Pressure (Pa)	Max:				
		temp	22		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	0.91	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				
	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	20.2	20.2	20.3	20.3	20.3	20.3	20.3	20.3	20.4	20.4	20.3	20.4
CO_2	1.1	1.2	1.1	1.1	1.2	1.1	1.0	1.0	0.9	0.9	0.8	0.8
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Remarks/Weather							CO ppm	Max:		H_2s ppm	Max:	
								Min:			Min:	

Well No	202	Atm Press mb	1017	Flow l/hr	Max:	0.0	Diff Pressure (Pa)	Max:				
		temp	22		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	2.17	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				
	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	18.7	18.5	18.4	18.3	18.2	18.2	18.2	18.2	18.3	18.3	18.3	18.1
CO_2	2.1	2.1	2.3	2.4	2.6	2.7	2.7	2.8	2.8	2.8	2.8	2.8
CH_4	0.0	0.0	0.0	0.0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Remarks/Weather							CO ppm	Max:		H_2s ppm	Max:	
								Min:			Min:	

Well No	201	Atm Press mb	1017	Flow l/hr	Max:	0.0	Diff Pressure (Pa)	Max:				
		temp	22		Min:	0.0		Min:				
Well Depth (m)		Groundwater level from GL (m)	1.45	VOC ppm	Max:		LEL %	Max:				
					Min:			Min:				
	Time (Seconds)											
	30	60	90	120	180	240	300	360	420	480	540	600
O_2	19.7	19.6	19.6	19.7	19.9	20.1	20.2	20.3	20.3	20.3	20.3	20.3
CO_2	1.9	1.9	1.9	2.0	1.9	1.7	1.5	1.4	1.3	1.3	1.2	1.2
CH_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Remarks/Weather							CO ppm	Max:		H_2s ppm	Max:	
								Min:			Min:	

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APPENDIX F

Pendimethaline Letter

F

Our Ref: OD/JK/RP/JN1683Rev1
Your Ref:

Wednesday 27 July 2022

ST Consult
Environmental & Geotechnical

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Joint Managing Director Dr J Kelly BSc PhD DIC

Thomas Wolsey Property Limited
C/O Glanville Consultant's
Cornerstone House
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Didcot
Oxfordshire
OX11 7AD

For the attention of John Hanlon

Dear Sir,

Re: Additional Herbicide Contamination Assessment at: Land East of Oxford Road, Water Eaton
National Grid Reference: SP 50500 11290
Geology: Wolvercote Sand and Gravel Member & Alluvium over Oxford Clay Formation

1 Authority

Our authority for carrying out this work is contained in a project order form completed by John Hanlon of Glanville Consultants. Dated 10th May 2022 (ref. Q220631 rev1).

2 Background and Objectives

This investigation and report has been conducted and prepared as an addendum report to a previous investigation completed on this site in March 2022 (ref. JN1597 Phase 2 Rev1), to which the reader is referred. The previous investigation recorded, what were considered, slightly elevated Pendimethalin concentrations 140µg/kg and 240µg/kg at TP108 and TP115 respectively.

In the absence of generic assessment criteria for Pendimethalin for human health in the UK, the results were initially compared with the European Food Safety Authority (EFSA) acceptable daily intake value of 125µg/kg within the JN1597 report. Based on the adopted screening value of 125µg/kg, which is a very conservative value, the recorded concentrations of 140µg/kg and 240µg/kg were initially considered both a potential risk to human health and possible hotspots.

The object of this investigation was to undertake delineation sampling around the two possible hotspot areas, with an additional 10 samples across the wider site and a more detailed review of the available toxicity data to fully assess the potential risk.

3 Hot-spot Analysis

To assess the extent of the potential Pendimenthalin hotspot contamination discussed above, a delineation exercise was carried out comprising 4No shallow sampling around each location.

Eight delineation samples labelled HA108a - HA108d and HA115a – HA115d were taken around TP108 and TP115 respectively.

The results of the delineation sampling at each of the locations are presented in the tables below:

Location	Measured Concentration µg/kg)
TP108 (original location)	140
HA108a	76
HA108b	130
HA108c	95
HA108d	54
TP115 (original location)	240
HA115a	38
HA115b	31
HA115c	25
HA115d	32

The results of the delineation sampling show that the measured concentrations of the additional samples around both hotspot areas were generally less than the original concentrations. Around TP115, in particular, the measured concentrations were well below the potential hotspot identified.

4 Site-wide Analysis

To better assess whether the possible contamination risk was limited to the two locations identified in the initial investigation, 10 additional tests were undertaken across the site to increase the general data coverage. Of the 10 tests, Pendimethalin was recorded in 8 locations above the laboratory detection limit of 10µg/kg.

A summary of the samples recording concentrations above the laboratory detection limit is presented in the table below.

Location	Measured Concentration µg/kg)
TP01	21
TP13	15
TP19	21
TP24	22
TP26	110
TP34	120
TP39	13
TP50	35

5 Screening Value

As discussed, there are currently no generic assessment criteria for Pendimethalin for human health in the UK. Using the CLEA UK model (software version 1.071), a number of Site Specific Assessment Criteria (SSAC) for Pendimethalin were derived, some of which are sensitivity analysis to provide confidence in our decision. Data regarding the physical and chemical properties of this contaminant were taken from various sources including European Food Safety Authority (EFSA Journal 2016;14(3):4420)') - 'Peer review of the pesticide risk assessment of the active substance pendimethalin' and 'Proposed EQS for Water Framework Directive Annex VIII substances: Pendimethalin (2012)'.

The European Food Safety Authority (EFSA derived an **acceptable daily intake (ADI) of Pendimethalin as 0.125 mg/kg bw per day**, based on the NOAEL of 12.5 mg/kg bw per day for hepatotoxicity observed in the 2-year toxicity study in dogs. The acute reference dose (ARfD) is 0.3 mg/kg bw, based on the NOAEL of 30 mg/kg bw per day for developmental toxicity observed in developmental toxicity study in rabbits.

Consumer risk assessment performed with the EFSA Pesticides Residues Intake Model (PRIMo rev 2A) indicates that there were no chronic or acute intake concerns identified, with theoretical maximum daily intake (TMDI) given as 1.4% of ADI and international short term intake (IESTI) given as 5.7% of the ARfD.

For this assessment, the **TMDI of 1.4% ADI** (1.75 µg/kg mg/kg bw per day) has been used in the CLEA model.

5.1 Site specific Modelling

The site is proposed to be developed for residential purposes with private gardens. The analysed soils comprised topsoil and sandy clay loamy subsoil. The soil types have been modelled as sandy Clay loam in the CLEA model.

Organic matter was recorded ranging between 2.9% and 5.6% with an average value of 3.9% therefore used in the model. An average pH value of 7 was also used in the model, again based on site-specific analysis. As a conservative measure, we have also modelled the risk assuming 1% SOM.

Derived Site Specific Assessment Criteria (SSAC)

SSAC (mg/kg)	SOM (%)	Oral HCV (µg/kg)	Comments
582	1	62.5	HCV based on 50% of Acceptable Daily Intake value of 125 µg/kg body weight/day
1735	3.9	62.5	

Sensitivity Analysis

By way of sensitivity analysis, ST Consult used the value of 12.5 µg/kg (10% of ADI) in the CLEA model as the oral HCV and the resultant output is presented in the table below.

SSAC (mg/kg)	SOM (%)	Oral HCV (µg/kg)	Comments
116	1	12.5	HCV based on 10% of Acceptable Daily Intake value of 125 µg/kg body weight/day
345	3.9	12.5	

Further sensitivity analysis was carried out using the following Oral HCV values:

SSAC (mg/kg)	SOM (%)	Oral HCV (µg/kg)	Comments
57	1	6.25	HCV based on 5% of Acceptable Daily Intake value of 125 µg/kg body weight/day
171	3.9	6.25	

6 Risk Assessment & Conclusions

Pendimethalin is a selective herbicide used to control broadleaf weeds and grassy weed species in a number of crop and non-crop areas and on residential lawns and ornamentals. It has low water solubility, and the residues are tightly bound to soil and sediment particles, and the degree of sorption is dependent on the presence of organic matter.

The EPA factsheet also cited that Pendimethalin generally has been shown to be of low acute toxicity in humans, is essentially immobile in soil and is practically non-toxic by the dermal and inhalation routes.

The measured Pendimethalin concentrations above the laboratory detection limit ranged between 13 and 240 µg/kg (0.013 and 0.240 mg/kg) across the site, which are several orders of magnitude below all the derived site-specific assessment criteria listed above.

Given the site history, it is not uncommon for trace levels of Pendimethalin, and/or other pesticides/herbicides to be present of sites such as this.

Based on the above, the recorded Pendimethalin in the soils at the site are not considered likely to pose any significant risk to human health. On this basis, no remediation or further work is considered necessary.

If you have any queries or we can be of further assistance, please do not hesitate to contact us

Yours faithfully,

Oliver de Jong BSc MSc FGS
For and on behalf of
Southern Testing Laboratories Limited
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Analytical Report Number : 22-62311

Project / Site name:	Land East of Oxford Road	**Samples received on:**	01/06/2022
Your job number:	JN1683	**Samples instructed on/ Analysis started on:**	01/06/2022
Your order number:		**Analysis completed by:**	06/06/2022
Report Issue Number:	1	**Report issued on:**	09/06/2022
Samples Analysed:	4 soil samples		

Signed: [redacted]

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: 22-62311
Project / Site name: Land East of Oxford Road

Lab Sample Number				2298678	2298679	2298680	2298681
Sample Reference				HA108a	HA108b	HA108c	HA108d
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.15	0.15	0.10
Date Sampled				30/05/2022	30/05/2022	30/05/2022	30/05/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	2.5	6.4	3.3	1.3
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2

Pesticides

Alachlor	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Aldrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Azinphos-ethyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Azinphos-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
BHC-beta	µg/kg	10	NONE	< 10	< 10	< 10	< 10
BHC-delta	µg/kg	10	NONE	< 10	< 10	< 10	< 10
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Bifenthrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Carbophenothion	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Chlordane-cis	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Chlordane-trans	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Chlorfenvinphos	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Chlorothalonil	µg/kg	20	NONE	< 20	< 20	< 20	< 20
Chlorpyrifos	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Cyfluthrin (Sum)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Cyhalothrin (Lambda)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Cypermethrin (Sum)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
DDD-o,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10
DDD-p,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10
DDE-o,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10
DDE-p,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10
DDT-o,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10
DDT-p,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Deltamethrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Demeton-O	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Demeton-S	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Diazinon	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Dichlorvos	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Dieldrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Dimethoate	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Dimethylvinphos	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Endosulfan I (alpha isomer)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Endosulfan II (beta isomer)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Endosulfan sulfate	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Endrin	µg/kg	20	NONE	< 20	< 20	< 20	< 20
Endrin aldehyde	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Endrin ketone	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Ethion	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Etrimfos	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Fenitrothion	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Fenthion	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Fenvalerate (Sum)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Heptachlor	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Heptachlor exo-epoxide	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Hexachlorobenzene	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Hexachlorobutadiene	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Isodrin	µg/kg	20	NONE	< 20	< 20	< 20	< 20
Malathion	µg/kg	10	NONE	< 10	< 10	< 10	< 10

Analytical Report Number: 22-62311
Project / Site name: Land East of Oxford Road

Lab Sample Number				2298678	2298679	2298680	2298681
Sample Reference				HA108a	HA108b	HA108c	HA108d
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.15	0.15	0.10
Date Sampled				30/05/2022	30/05/2022	30/05/2022	30/05/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Methacrifos	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Methoxychlor, p,p'-	µg/kg	20	NONE	< 20	< 20	< 20	< 20
Mevinphos, E+Z	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Omethoate	µg/kg	20	NONE	< 20	< 20	< 20	< 20
Parathion	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Parathion-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Pendimethalin	µg/kg	10	NONE	76	130	95	54
Pentachlorobenzene	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Permethrin, Cis-	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Permethrin, Trans-	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Phorate	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Phosalone	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Phosphamidon (Sum)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Pirimiphos-ethyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Pirimiphos-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Propetamphos	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Propyzamide	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Tecnazene	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Trifluralin	µg/kg	10	NONE	< 10	< 10	< 10	< 10

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

Analytical Report Number : 22-62311
Project / Site name: Land East of Oxford Road

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2298678	HA108a	None Supplied	0.1	Brown clay and loam with gravel and vegetation.
2298679	HA108b	None Supplied	0.15	Brown clay and loam with gravel and vegetation.
2298680	HA108c	None Supplied	0.15	Brown clay and loam with gravel and vegetation.
2298681	HA108d	None Supplied	0.1	Brown clay and loam with gravel and vegetation.

Analytical Report Number : 22-62311
Project / Site name: Land East of Oxford Road

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Pesticides by GC-MS/MS	Detemination of Pesticides in soil by GC MS/MS	In-house method	L055B-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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

Sample Deviation Report

Analytical Report Number : 22-62311
Project / Site name: Land East of Oxford Road

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

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
HA108a	None Supplied	S	2298678	b	Pesticides by GC-MS/MS	L055B-PL	b
HA108a	None Supplied	S	2298678	b	Pesticides extraction	L055B-PL	b
HA108b	None Supplied	S	2298679	b	Pesticides by GC-MS/MS	L055B-PL	b
HA108b	None Supplied	S	2298679	b	Pesticides extraction	L055B-PL	b
HA108c	None Supplied	S	2298680	b	Pesticides by GC-MS/MS	L055B-PL	b
HA108c	None Supplied	S	2298680	b	Pesticides extraction	L055B-PL	b
HA108d	None Supplied	S	2298681	b	Pesticides by GC-MS/MS	L055B-PL	b
HA108d	None Supplied	S	2298681	b	Pesticides extraction	L055B-PL	b

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Analytical Report Number : 22-62317

Project / Site name:	Land East of Oxford Road	**Samples received on:**	01/06/2022
Your job number:		**Samples instructed on/ Analysis started on:**	01/06/2022
Your order number:	JN1683	**Analysis completed by:**	08/06/2022
Report Issue Number:	1	**Report issued on:**	09/06/2022
Samples Analysed:	14 soil samples		

Signed: [redacted]

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: 22-62317
Project / Site name: Land East of Oxford Road
Your Order No: JN1683

Lab Sample Number				2298692	2298693	2298694	2298695	2298696
Sample Reference				TP01	TP12	TP13	TP19	TP24
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.15	0.15	0.20
Date Sampled				20/05/2022	20/05/2022	20/05/2022	23/05/2022	23/05/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	21	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	13	10	9.7	12
Total mass of sample received	kg	0.001	NONE	1	1	1	1	1

Pesticides

Alachlor	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Aldrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Azinphos-ethyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Azinphos-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
BHC-beta	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
BHC-delta	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Bifenthrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Carbophenothion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Chlordane-cis	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Chlordane-trans	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Chlorfenvinphos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Chlorothalonil	µg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Chlorpyrifos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Cyfluthrin (Sum)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Cyhalothrin (Lambda)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Cypermethrin (Sum)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
DDD-o,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
DDD-p,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
DDE-o,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
DDE-p,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
DDT-o,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
DDT-p,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Deltamethrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Demeton-O	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Demeton-S	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Diazinon	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Dichlorvos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Dieldrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Dimethoate	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Dimethylvinphos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Endosulfan I (alpha isomer)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Endosulfan II (beta isomer)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Endosulfan sulfate	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Endrin	µg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Endrin aldehyde	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Endrin ketone	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Ethion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Etrimfos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Fenitrothion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Fenthion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Fenvalerate (Sum)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Heptachlor	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Heptachlor exo-epoxide	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Hexachlorobenzene	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Hexachlorobutadiene	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Isodrin	µg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Malathion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10

Analytical Report Number: 22-62317
Project / Site name: Land East of Oxford Road
Your Order No: JN1683

Lab Sample Number				2298692	2298693	2298694	2298695	2298696
Sample Reference				TP01	TP12	TP13	TP19	TP24
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.15	0.15	0.20
Date Sampled				20/05/2022	20/05/2022	20/05/2022	23/05/2022	23/05/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Methacrifos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Methoxychlor, p,p'-	µg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Mevinphos, E+Z	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Omethoate	µg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Parathion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Parathion-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Pendimethalin	µg/kg	10	NONE	21	< 10	15	21	22
Pentachlorobenzene	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Permethrin, Cis-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Permethrin, Trans-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Phorate	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Phosalone	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Phosphamidon (Sum)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Pirimiphos-ethyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Pirimiphos-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Propetamphos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Propyzamide	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Tecnazene	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Trifluralin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10

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

Analytical Report Number: 22-62317
Project / Site name: Land East of Oxford Road
Your Order No: JN1683

Lab Sample Number				2298697	2298698	2298699	2298700	2298701
Sample Reference				TP26	TP39	TP34	TP47	TP50
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.15	0.15	0.15
Date Sampled				19/05/2022	25/05/2022	25/05/2022	25/05/2022	25/05/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	21	13	< 0.1
Moisture Content	%	0.01	NONE	15	7.8	12	8.4	11
Total mass of sample received	kg	0.001	NONE	1	1	1	1	1

Pesticides

Alachlor	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Aldrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Azinphos-ethyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Azinphos-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
BHC-beta	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
BHC-delta	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Bifenthrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Carbophenothion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Chlordane-cis	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Chlordane-trans	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Chlorfenvinphos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Chlorothalonil	µg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Chlorpyrifos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Cyfluthrin (Sum)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Cyhalothrin (Lambda)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Cypermethrin (Sum)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
DDD-o,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
DDD-p,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
DDE-o,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
DDE-p,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
DDT-o,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
DDT-p,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Deltamethrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Demeton-O	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Demeton-S	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Diazinon	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Dichlorvos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Dieldrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Dimethoate	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Dimethylvinphos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Endosulfan I (alpha isomer)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Endosulfan II (beta isomer)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Endosulfan sulfate	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Endrin	µg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Endrin aldehyde	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Endrin ketone	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Ethion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Etrimfos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Fenitrothion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Fenthion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Fenvalerate (Sum)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Heptachlor	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Heptachlor exo-epoxide	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Hexachlorobenzene	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Hexachlorobutadiene	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Isodrin	µg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Malathion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10

Analytical Report Number: 22-62317
Project / Site name: Land East of Oxford Road
Your Order No: JN1683

Lab Sample Number				2298697	2298698	2298699	2298700	2298701
Sample Reference				TP26	TP39	TP34	TP47	TP50
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.15	0.15	0.15	0.15
Date Sampled				19/05/2022	25/05/2022	25/05/2022	25/05/2022	25/05/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Methacrifos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Methoxychlor, p,p'-	µg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Mevinphos, E+Z	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Omethoate	µg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Parathion	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Parathion-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Pendimethalin	µg/kg	10	NONE	110	13	120	< 10	35
Pentachlorobenzene	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Permethrin, Cis-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Permethrin, Trans-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Phorate	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Phosalone	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Phosphamidon (Sum)	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Pirimiphos-ethyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Pirimiphos-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Propetamphos	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Propyzamide	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Tecnazene	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Trifluralin	µg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10

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

Analytical Report Number: 22-62317
Project / Site name: Land East of Oxford Road
Your Order No: JN1683

Lab Sample Number				2298702	2298703	2298704	2298705
Sample Reference				HA115a	HA115b	HA115c	HA115d
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.10	0.10	0.10
Date Sampled				23/05/2022	23/05/2022	23/05/2022	23/05/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	13	12	11	12
Total mass of sample received	kg	0.001	NONE	1	1	1	1

Pesticides

Alachlor	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Aldrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Azinphos-ethyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Azinphos-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
BHC-beta	µg/kg	10	NONE	< 10	< 10	< 10	< 10
BHC-delta	µg/kg	10	NONE	< 10	< 10	< 10	< 10
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Bifenthrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Carbophenothion	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Chlordane-cis	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Chlordane-trans	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Chlorfenvinphos	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Chlorothalonil	µg/kg	20	NONE	< 20	< 20	< 20	< 20
Chlorpyrifos	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Cyfluthrin (Sum)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Cyhalothrin (Lambda)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Cypermethrin (Sum)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
DDD-o,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10
DDD-p,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10
DDE-o,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10
DDE-p,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10
DDT-o,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10
DDT-p,p'	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Deltamethrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Demeton-O	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Demeton-S	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Diazinon	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Dichlorvos	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Dieldrin	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Dimethoate	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Dimethylvinphos	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Endosulfan I (alpha isomer)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Endosulfan II (beta isomer)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Endosulfan sulfate	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Endrin	µg/kg	20	NONE	< 20	< 20	< 20	< 20
Endrin aldehyde	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Endrin ketone	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Ethion	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Etrimfos	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Fenitrothion	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Fenthion	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Fenvalerate (Sum)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Heptachlor	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Heptachlor exo-epoxide	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Hexachlorobenzene	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Hexachlorobutadiene	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Isodrin	µg/kg	20	NONE	< 20	< 20	< 20	< 20
Malathion	µg/kg	10	NONE	< 10	< 10	< 10	< 10

Analytical Report Number: 22-62317
Project / Site name: Land East of Oxford Road
Your Order No: JN1683

Lab Sample Number				2298702	2298703	2298704	2298705
Sample Reference				HA115a	HA115b	HA115c	HA115d
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.10	0.10	0.10
Date Sampled				23/05/2022	23/05/2022	23/05/2022	23/05/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Methacrifos	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Methoxychlor, p,p'-	µg/kg	20	NONE	< 20	< 20	< 20	< 20
Mevinphos, E+Z	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Omethoate	µg/kg	20	NONE	< 20	< 20	< 20	< 20
Parathion	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Parathion-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Pendimethalin	µg/kg	10	NONE	38	31	25	32
Pentachlorobenzene	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Permethrin, Cis-	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Permethrin, Trans-	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Phorate	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Phosalone	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Phosphamidon (Sum)	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Pirimiphos-ethyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Pirimiphos-methyl	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Propetamphos	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Propyzamide	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Tecnazene	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	< 10	< 10	< 10	< 10
Trifluralin	µg/kg	10	NONE	< 10	< 10	< 10	< 10

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

Analytical Report Number : 22-62317
Project / Site name: Land East of Oxford Road

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2298692	TP01	None Supplied	0.15	Brown clay and loam with gravel and vegetation.
2298693	TP12	None Supplied	0.15	Brown clay and loam with gravel and vegetation.
2298694	TP13	None Supplied	0.15	Brown clay and loam with vegetation and stones.
2298695	TP19	None Supplied	0.15	Brown clay and loam with gravel and vegetation.
2298696	TP24	None Supplied	0.2	Brown clay and loam with gravel and vegetation.
2298697	TP26	None Supplied	0.15	Brown clay and loam with gravel and vegetation.
2298698	TP39	None Supplied	0.15	Brown loam and clay with gravel and vegetation.
2298699	TP34	None Supplied	0.15	Brown clay and loam with gravel and stones.
2298700	TP47	None Supplied	0.15	Brown clay and sand with gravel and stones.
2298701	TP50	None Supplied	0.15	Brown loam and clay with gravel.
2298702	HA115a	None Supplied	0.1	Brown clay and loam with gravel and vegetation.
2298703	HA115b	None Supplied	0.1	Brown clay and loam with gravel and vegetation.
2298704	HA115c	None Supplied	0.1	Brown clay and loam with gravel and vegetation.
2298705	HA115d	None Supplied	0.1	Brown clay and loam with gravel and vegetation.

Analytical Report Number : 22-62317
Project / Site name: Land East of Oxford Road

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Pesticides by GC-MS/MS	Detemination of Pesticides in soil by GC MS/MS	In-house method	L055B-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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

Analytical Report Number : 22-62317
Project / Site name: Land East of Oxford Road

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

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
HA115a	None Supplied	S	2298702	b	Pesticides by GC-MS/MS	L055B-PL	b
HA115a	None Supplied	S	2298702	b	Pesticides extraction	L055B-PL	b
HA115b	None Supplied	S	2298703	b	Pesticides by GC-MS/MS	L055B-PL	b
HA115b	None Supplied	S	2298703	b	Pesticides extraction	L055B-PL	b
HA115c	None Supplied	S	2298704	b	Pesticides by GC-MS/MS	L055B-PL	b
HA115c	None Supplied	S	2298704	b	Pesticides extraction	L055B-PL	b
HA115d	None Supplied	S	2298705	b	Pesticides by GC-MS/MS	L055B-PL	b
HA115d	None Supplied	S	2298705	b	Pesticides extraction	L055B-PL	b
TP01	None Supplied	S	2298692	b	Pesticides by GC-MS/MS	L055B-PL	b
TP01	None Supplied	S	2298692	b	Pesticides extraction	L055B-PL	b
TP12	None Supplied	S	2298693	b	Pesticides by GC-MS/MS	L055B-PL	b
TP12	None Supplied	S	2298693	b	Pesticides extraction	L055B-PL	b
TP13	None Supplied	S	2298694	b	Pesticides by GC-MS/MS	L055B-PL	b
TP13	None Supplied	S	2298694	b	Pesticides extraction	L055B-PL	b
TP19	None Supplied	S	2298695	b	Pesticides by GC-MS/MS	L055B-PL	b
TP19	None Supplied	S	2298695	b	Pesticides extraction	L055B-PL	b
TP24	None Supplied	S	2298696	b	Pesticides by GC-MS/MS	L055B-PL	b
TP24	None Supplied	S	2298696	b	Pesticides extraction	L055B-PL	b
TP26	None Supplied	S	2298697	b	Pesticides by GC-MS/MS	L055B-PL	b
TP26	None Supplied	S	2298697	b	Pesticides extraction	L055B-PL	b
TP34	None Supplied	S	2298699	b	Pesticides by GC-MS/MS	L055B-PL	b
TP34	None Supplied	S	2298699	b	Pesticides extraction	L055B-PL	b
TP39	None Supplied	S	2298698	b	Pesticides by GC-MS/MS	L055B-PL	b
TP39	None Supplied	S	2298698	b	Pesticides extraction	L055B-PL	b
TP47	None Supplied	S	2298700	b	Pesticides by GC-MS/MS	L055B-PL	b
TP47	None Supplied	S	2298700	b	Pesticides extraction	L055B-PL	b
TP50	None Supplied	S	2298701	b	Pesticides by GC-MS/MS	L055B-PL	b
TP50	None Supplied	S	2298701	b	Pesticides extraction	L055B-PL	b

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Created by	RJ at ST consult

RESULTS

Environment Agency

		Assessment Criterion (mg kg^{-1})			Ratio of ADE to HCV			Saturation Limit (mg kg^{-1})	50% rule?		Top Two applied?	Apply Top 2 Approach to Produce Group						
		oral	inhalation	combined	oral	inhalation	combined		Oral	Inhal		Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
1	Pendimethalin	5.82E+02	NR	NR	1.00	NR	NR	1.61E+01 (sol)	No	No	No	No	No	No	No	No	No
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Environment Agency

	Assessment Criterion (mg kg^{-1})			Ratio of ADE to HCV			Saturation Limit (mg kg^{-1})	50% rule?		Top Two applied?	Apply Top 2 Approach to Produce Group					
	oral	inhalation	combined	oral	inhalation	combined		Oral	Inhal		Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
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Environment Agency

		Soil Distribution				Media Concentrations													
		Sorbed	Dissolved	Vapour	Total	Soil	Soil gas	Indoor Dust	Outdoor dust at 0.8m	Outdoor dust at 1.6m	Indoor Vapour	Outdoor vapour at 0.8m	Outdoor vapour at 1.6m	Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
		%	%	%	%	mg kg^{-1}	mg m^{-3}	mg kg^{-1}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW
1	Pendimethalin	99.3	0.7	0.0	100.0	5.82E+02	9.07E-04	2.91E+02	2.48E-07	0.00E+00	9.01E-05	2.77E-03	0.00E+00	4.92E+01	1.10E+02	2.12E+02	0.00E+00	0.00E+00	1.01E+00
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Environment Agency

	Soil Distribution				Media Concentrations													
	Sorbed	Dissolved	Vapour	Total	Soil	Soil gas	Indoor Dust	Outdoor dust at 0.8m	Outdoor dust at 1.6m	Indoor Vapour	Outdoor vapour at 0.8m	Outdoor vapour at 1.6m	Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
	%	%	%	%	mg kg^{-1}	mg m^{-3}	mg kg^{-1}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW
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Environment Agency

		Average Daily Exposure (mg kg^{-1} bw day^{-1})							Distribution by Pathway (%)							
		Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour	Background (oral)	Background (inhalation)	Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour (indoor)	Inhalation of vapour (outdoor)	Background (oral)	Background (inhalation)
1	Pendimethalin	4.32E-03	5.59E-02	2.22E-03	9.63E-06	1.40E-04	9.85E-05	0.00E+00	6.91	89.38	3.55	0.00	0.00	0.00	0.16	0.00
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Environment Agency

	Average Daily Exposure (mg kg^{-1} bw day^{-1})							Distribution by Pathway (%)							
	Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour	Background (oral)	Background (inhalation)	Direct soil ingestion	Consumption of homegrown produce	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour (indoor)	Inhalation of vapour (outdoor)	Background (oral)	Background (inhalation)
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		Oral Health Criteria Value (µg kg^{-1} BW day^{-1})		Inhalation Health Criteria Value (µg kg^{-1} BW day^{-1})	Oral Mean Daily Intake (µg day^{-1})	Inhalation Mean Daily Intake (µg day^{-1})	Air-water partition coefficient (K_{aw}) (cm^3 cm^{-3})	Coefficient of Diffusion in Air (m^2 s^{-1})	Coefficient of Diffusion in Water (m^2 s^{-1})	log K_{oc} (cm^3 g^{-1})	log K_{ow} (dimensionless)	Dermal Absorption Fraction (dimensionless)	Soil-to-dust transport factor (g g^{-1} DW)	Sub-surface soil to indoor air correction factor (dimensionless)	Relative bioavailability via soil ingestion (unitless)	Relative bioavailability via dust inhalation (unitless)
1	Pendimethalin	TDI	62.5	NR	0	1.75	0	8.11E-08	3.97E-02	4.98E-06	3.95	5.4	0.1	0.5	10	1	1
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	Oral Health Criteria Value ($\mu g\ kg^{-1}\ BW\ day^{-1}$)		Inhalation Health Criteria Value ($\mu g\ kg^{-1}\ BW\ day^{-1}$)		Oral Mean Daily Intake ($\mu g\ day^{-1}$)	Inhalation Mean Daily Intake ($\mu g\ day^{-1}$)	Air-water partition coefficient (K_{aw}) ($cm^3\ cm^{-3}$)	Coefficient of Diffusion in Air ($m^2\ s^{-1}$)	Coefficient of Diffusion in Water ($m^2\ s^{-1}$)	log K_{oc} ($cm^3\ g^{-1}$)	log K_{ow} (dimensionless)	Dermal Absorption Fraction (dimensionless)	Soil-to-dust transport factor ($g\ g^{-1}$ DW)	Sub-surface soil to indoor air correction factor (dimensionless)	Relative bioavailability via soil ingestion (unitless)	Relative bioavailability via dust inhalation (unitless)
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Environment Agency

		Soil-to-water partition coefficient ($cm^3\ g^{-1}$)	Vapour pressure (Pa)	Water solubility ($mg\ L^{-1}$)	Soil-to-plant concentration factor for green vegetables ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)	Soil-to-plant concentration factor for root vegetables ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)	Soil-to-plant concentration factor for tuber vegetables ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)	Soil-to-plant concentration factor for herbaceous fruit ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)	Soil-to-plant concentration factor for shrub fruit ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)	Soil-to-plant concentration factor for tree fruit ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)
1	Pendimethalin	5.17E+01	3.34E-03	3.09E-01	model	model	model	model	model	model
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Environment Agency

	Soil-to-water partition coefficient (cm^3 g^{-1})	Vapour pressure (Pa)	Water solubility (mg L^{-1})	Soil-to-plant concentration factor for green vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for root vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tuber vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for herbaceous fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for shrub fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tree fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)
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RESULTS

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Environment Agency

		Assessment Criterion (mg kg^{-1})			Ratio of ADE to HCV			Saturation Limit (mg kg^{-1})	50% rule?		Top Two applied?	Apply Top 2 Approach to Produce Group						
		oral	inhalation	combined	oral	inhalation	combined		Oral	Inhal		Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
1	Pendimethalin	1.73E+03	NR	NR	1.00	NR	NR	6.24E+01 (sol)	No	No	No	No	No	No	No	No	No
2																	
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	Assessment Criterion (mg kg^{-1})			Ratio of ADE to HCV			Saturation Limit (mg kg^{-1})	50% rule?		Top Two applied?	Apply Top 2 Approach to Produce Group					
	oral	inhalation	combined	oral	inhalation	combined		Oral	Inhal		Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
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		Soil Distribution				Media Concentrations													
		Sorbed	Dissolved	Vapour	Total	Soil	Soil gas	Indoor Dust	Outdoor dust at 0.8m	Outdoor dust at 1.6m	Indoor Vapour	Outdoor vapour at 0.8m	Outdoor vapour at 1.6m	Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
		%	%	%	%	mg kg^{-1}	mg m^{-3}	mg kg^{-1}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW
1	Pendimethalin	99.8	0.2	0.0	100.0	1.73E+03	6.96E-04	8.67E+02	7.38E-07	0.00E+00	6.92E-05	4.19E-03	0.00E+00	3.78E+01	8.41E+01	1.63E+02	0.00E+00	0.00E+00	7.76E-01
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	Soil Distribution				Media Concentrations													
	Sorbed	Dissolved	Vapour	Total	Soil	Soil gas	Indoor Dust	Outdoor dust at 0.8m	Outdoor dust at 1.6m	Indoor Vapour	Outdoor vapour at 0.8m	Outdoor vapour at 1.6m	Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
	%	%	%	%	mg kg^{-1}	mg m^{-3}	mg kg^{-1}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW
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		Average Daily Exposure (mg kg^{-1} bw day^{-1})							Distribution by Pathway (%)							
		Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour	Background (oral)	Background (inhalation)	Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour (indoor)	Inhalation of vapour (outdoor)	Background (oral)	Background (inhalation)
1	Pendimethalin	1.29E-02	4.29E-02	6.61E-03	2.87E-05	1.69E-04	9.85E-05	0.00E+00	20.58	68.68	10.58	0.00	0.00	0.00	0.16	0.00
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	Average Daily Exposure (mg kg^{-1} bw day^{-1})							Distribution by Pathway (%)							
	Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour	Background (oral)	Background (inhalation)	Direct soil ingestion	Consumption of homegrown produce	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour (indoor)	Inhalation of vapour (outdoor)	Background (oral)	Background (inhalation)
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		Oral Health Criteria Value (µg kg^{-1} BW day^{-1})		Inhalation Health Criteria Value (µg kg^{-1} BW day^{-1})	Oral Mean Daily Intake (µg day^{-1})	Inhalation Mean Daily Intake (µg day^{-1})	Air-water partition coefficient (K_{aw}) (cm^3 cm^{-3})	Coefficient of Diffusion in Air (m^2 s^{-1})	Coefficient of Diffusion in Water (m^2 s^{-1})	log K_{oc} (cm^3 g^{-1})	log K_{ow} (dimensionless)	Dermal Absorption Fraction (dimensionless)	Soil-to-dust transport factor (g g^{-1} DW)	Sub-surface soil to indoor air correction factor (dimensionless)	Relative bioavailability via soil ingestion (unitless)	Relative bioavailability via dust inhalation (unitless)
1	Pendimethalin	TDI	62.5	NR	0	1.75	0	8.11E-08	3.97E-02	4.98E-06	3.95	5.4	0.1	0.5	10	1	1
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	Oral Health Criteria Value ($\mu g\ kg^{-1}\ BW\ day^{-1}$)		Inhalation Health Criteria Value ($\mu g\ kg^{-1}\ BW\ day^{-1}$)		Oral Mean Daily Intake ($\mu g\ day^{-1}$)	Inhalation Mean Daily Intake ($\mu g\ day^{-1}$)	Air-water partition coefficient (K_{aw}) ($cm^3\ cm^{-3}$)	Coefficient of Diffusion in Air ($m^2\ s^{-1}$)	Coefficient of Diffusion in Water ($m^2\ s^{-1}$)	log K_{oc} ($cm^3\ g^{-1}$)	log K_{ow} (dimensionless)	Dermal Absorption Fraction (dimensionless)	Soil-to-dust transport factor ($g\ g^{-1}$ DW)	Sub-surface soil to indoor air correction factor (dimensionless)	Relative bioavailability via soil ingestion (unitless)	Relative bioavailability via dust inhalation (unitless)
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		Soil-to-water partition coefficient ($cm^3\ g^{-1}$)	Vapour pressure (Pa)	Water solubility ($mg\ L^{-1}$)	Soil-to-plant concentration factor for green vegetables ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)	Soil-to-plant concentration factor for root vegetables ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)	Soil-to-plant concentration factor for tuber vegetables ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)	Soil-to-plant concentration factor for herbaceous fruit ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)	Soil-to-plant concentration factor for shrub fruit ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)	Soil-to-plant concentration factor for tree fruit ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)
1	Pendimethalin	2.02E+02	3.34E-03	3.09E-01	model	model	model	model	model	model
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	Soil-to-water partition coefficient (cm^3 g^{-1})	Vapour pressure (Pa)	Water solubility (mg L^{-1})	Soil-to-plant concentration factor for green vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for root vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tuber vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for herbaceous fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for shrub fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tree fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)
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