

**East Midlands Gateway  
Phase 2 (EMG2)**

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ENVIRONMENTAL STATEMENT

**Technical Appendices**

Appendix 14I

# EMG1 Factual Ground Investigation Report

October 2025

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The East Midlands Gateway Phase 2  
and Highway Order 202X and The East Midlands Gateway  
Rail Freight and Highway (Amendment) Order 202X

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**Roxhill Developments Limited**

# **East Midlands Gateway Strategic Rail Freight Interchange**

## **Zone 1 Main Development Plateau and Rail Freight Terminal**

Factual Ground Investigation Report

312494-01 – 02 (00)

**DECEMBER 2013**



## RSK GENERAL NOTES

**Project No.:** 312494/1 – 02 (00)

**Title:** East Midlands Gateway: Strategic Rail Freight Interchange  
Zone 1 Main Development Plateau and Rail Freight Terminal  
Factual Ground Investigation Report

**Client:** Roxhill Developments Limited

**Date:** 2<sup>nd</sup> December 2013

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Date:	3 <sup>rd</sup> December 2013	Date:	5 <sup>th</sup> December 2013

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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK Environment Ltd.

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# 1 INTRODUCTION

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## 1.1 Introduction

RSK Environment Limited (RSK) has been commissioned by Roxhill Developments Limited (the Client) to carry out a series of Factual Ground Investigation Reports for the site of the proposed East Midlands Gateway: Strategic Rail Freight Interchange (the Main Development Site).

This report is subject to the RSK service constraints given in Appendix A.

## 1.2 Terms of reference

This report comprises a factual report in general accordance with the requirements of;

- BS5930:1999+A2:2010 'Code of practice for site investigations'
- Environment Agency CLR 11 2004a 'Model Procedures for the Management of Land Contamination' (Contaminated Land Risk Assessment),
- Highways Agency HD22/08, 'Managing Geotechnical Risk' (Ground Investigation).
- BS EN 1997-2:2007. Eurocode 7 — Geotechnical design — Part 2: Ground investigation and testing.

## 1.3 Proposed development

It is understood that the site is being considered for development to provide a Strategic Rail Freight Interchange for the East Midlands regions. This includes a large distribution warehousing complex, major trunk road improvements to the A453, A50 and M1 Junctions 24 and 24a, a new bypass to the south of Kegworth including bridge over the M1, and a new rail freight terminal and associated branch line from the Castle Donington line.

For the purpose of discussion, and to facilitate reporting; the site has been divided into four Zones, on the basis of the four main elements of the proposals as follows. The extent of each of the four Zones is defined by the proposed general arrangement presented as Figure 2.

- Zone 1: Main Development Plateau and Rail Freight Terminal
- Zone 2: Rail Branch Line (Network Rail)
- Zone 3: Major Trunk Road Improvements

- Zone 4: Kegworth Bypass including bridge over the M1

This report presents the investigation relating to Zone 1; Main Development Plateau and Rail Freight Terminal.

## 1.4 Objective

The subject of this report is Zone 1, the proposed Main Development Plateau for the construction of distribution warehouses and the Rail Freight Terminal. In accordance with the Client's specific objectives, requirements and brief; the objective for the works was developed with the aim of providing sufficient preliminary data to:

- provide sufficient data to confirm the ground model
- obtain data to provide a chemical and geotechnical characterisation of each strata
- assist with master planning design
- provide data to support planning applications

In line with Eurocode 7, BS5930, BS10175 and CLR 11 further phases of targeted investigation (post Planning Approval) may be required to provide specific data and information for detailed design of individual elements of the scheme as the design evolves.

## 1.5 Scope

The project has been carried out to an agreed brief as set out in RSK's proposal (ref. East Midlands Gateway; Geotechnical and Geo-environmental Services - Master Planning and EIA Support, dated 13<sup>th</sup> August 2013).

The ground investigation fieldwork carried out on Zone 1 was undertaken in general accordance with the Site Investigation Steering Group's UK Specification for Ground Investigation 2nd edition (2012), BS 5930 and A2: 2010 'Code of practice for site investigations', BS EN ISO 14688-1:2002, BS EN ISO 14689 – 1:2003 and in general accordance with the recommendations made within BS10175:2011 'Investigation of Potentially Contaminated Sites – Code of Practice'.

## 2 SITE DETAILS

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### 2.1 Site location

The Development Site covers approximately 374 hectares and currently consists of farmland with some areas of woodland. The M1 motorway, A453 runs roughly north to the east of the main development area of the site. The village of Castle Donington is situated approximately 600m to the west of the site. Hemington and Lockington villages are present directly to the north and East Midlands Airport is adjacent to the southern boundary of the site. The site location is presented within Figure 1.

Zone 1 covers an area of approximately 231Ha, the centre of which is defined by the following National Grid co-ordinates: 447330, 326660. The Zone is bound to the east by the A453 road, to the south by the East Midlands Airport; to the west and north there are no physical boundaries other than the hedgerows which form the field boundaries.

### 2.2 Local topography, geography and geomorphology

The site sits within a formerly glaciated area signified by rolling hills created by the harder geological formations and erosion of the glacial deposits.

Zone 1 generally slopes from the high plateau where East Midlands Airport is located with a general ground level of approximately 88m AOD down to the north east which has a ground level of approximately 44m AOD. The land across Zone 1 is rolling farmland dissected by minor streams with a knoll located in the north west. Two very minor drainage ditch / streams are shown to dissect Zone 1 and appear to originate from springs or rises in the southern part of Zone 1, although they are also fed by the surrounding watershed from the rolling farm lands which they dissect. One stream originates broadly in the middle of the eastern portion of Zone 1 close to Field Farm and runs west and then north through Zone 1 and beyond through Lockington Village, whilst a second stream originates further west and follows a similar path through natural folds in the ground west then north along Zone 1 western boundary through Hemington Village.

The ground beyond the northern boundary of Zone 1 is relatively flat but for the disturbance of manmade features, forming a river terrace to the River Trent which runs broadly west to east approximately 3km north of the Zone 1. The land to the east and west of Zone 1 follows a similar rolling farm land form with a general fall to the north, although further east the land falls east toward the River Soar which flows south to north to join the River Trent.



The geological sequence of the area is understood to be one of interbedded clays, mudstones, siltstones and sandstones deposited within sea conditions and eroded by periods of glaciations and later deposition and erosion from the River Trent which has cut through the geological strata depositing Alluvium and River Gravels along its course and flood plain.

## **2.3 Site description**

A site walkover was undertaken on the 9<sup>th</sup> September 2013. Zone 1 is predominately used for arable farming with hedgerow field boundaries including a variety of small, medium and mature sized trees with occasional small areas of woodland. There is one field located in the far north west corner of Zone 1 which was used as a paddock for horses. The majority of fields were under crop or stubble from recent harvesting.

There are two main public footpaths which cross Zone 1 one east west and one north south broadly intersecting each other in the centre of Zone 1 and connecting to the nearby villages of Lockington and Castle Donington.

King Street Plantation located in the centre of Zone 1 is understood to be protected woodland comprising of mature deciduous trees.

Field Farm located in the south eastern quadrant of Zone 1 is the principal set of buildings on Zone 1. The farm is operational and buildings comprise a brick built two storey farm house with outbuildings, office and store including a small garden to the south east and courtyard to the west. The Farm House buildings are surrounded to the west and north by farm sheds, silage bays, a pond/lagoon feature and small overgrown stockpile of soil materials understood to originate from the excavation of the more recent crop drying shed footprint. The crop drying shed is a large aluminium clad grain drying store located in the south western corner of the complex and is heated by a Calor Gas system with two gas tanks being located on its north eastern corner. The larger farm buildings are predominantly steel framed and many appear to be clad and roofed in a corrugated cement bonded boards which may contain asbestos. These barns are used to house tractors, plant and machinery, seed, fertiliser and other ancillary arable farming equipment. There are an extensive number of smaller disused wooden framed former cattle sheds and large bays for the storage of silage and cattle waste together with a heavily overgrown area anticipated to house a lagoon/pond although this was not visible at the time of the walkover. The farmyard area is a combination of mainly concrete hardstanding with some more open gravel at the periphery extents. A large trailer water tank is located centrally and is understood to be topped up with mains water and utilised for spraying. Two large modern diesel tanks are present in the farm yard and are understood to be used for fuel to plant and machinery. A single large tank is located on the northern periphery of the farm yard and is used for fertiliser storage. There are a number of small containers used for storing equipment in too. No spills or obvious areas of contamination were observed and the farmyard was in good order.

A small stand of what appeared to be Japanese Knotweed is located on the perimeter of the farm garden.

Power is received via low level overhead feed from the east with an above ground small substation mounted on the pole to the east of the farm.

The farm is connected by concrete access roads to Lockington Lane in the north east and the A453 in the south east. Further farm tracks and set aside field margins are present around many of the fields affording access for farm machinery to each of the arable fields. Anecdotal evidence suggests that cattle carcasses may be buried in the north eastern corner of the farm yard beneath the arising from when the drying warehouse was constructed.

The area of the airport land and the land enclosed within the Airport land in the south western corner of Zone 1 was not accessible at the time of the site walkover.

It is understood from conversations with the Farm Foreman that the farm had until 2000 been used predominantly for milk production with cattle using the fields. From 2000 the farm was turned over to arable crops. It is also understood that the area owned by the airport (formerly part of the RAF Castle Donington) had had some form of earth bunding and partially buried bunkers but that it was believed that these had been decommissioned and removed after the war with only concrete hard standing access roads still being retained.

The springs and streams locations were examined, however in the main the streams were dry or not flowing and only soft boggy ground with occasional stagnant water pools were present at the time of the visit.

## **2.4 Published geology and expected ground conditions**

The British geological Survey (BGS) plans and maps obtained have been reviewed to determine the anticipated geology beneath Zone 1.

It is envisaged that the local geology beneath Zone 1 will be in line with the summary below detailed within Table 1.

**Table 1: Expected geology**

Geology	Comment
<b>Surfacing and Buried Structures:</b> <small>(source: Envirocheck History Maps, Site Observation)</small>	<p>The main surfacing area is associated with farm located in the south eastern quadrant of the Zone. There is also the main access road which runs from the north of the Zone to the south to the farm yard and then to the southern boundary. Additional hardstanding tracks and bunkers may still be present in the south western corner of Zone 1.</p>
<b>Made Ground:</b> <small>(source: BGS Maps, Available Borehole Logs, Envirocheck Geology &amp; History Maps, memoirs)</small>	<p>There are several minor areas of made ground deposits located across the zone. An area of disturbed ground is located in the north western corner of Zone 1 likely to be associated with a former quarry. There are four small areas of made ground deposits and infilled materials located in the south western corner of Zone 1 within the East Midlands Airport land probably associated with the former RAF base operations. There are areas of worked and disturbed ground located in the centre of Zone 1 near to the King Street Plantation. Further made ground deposits are shown within the farm yard area.</p>
<b>Drift Deposits:</b> <small>(source: BGS Maps, Available Borehole Logs, Envirocheck Geology &amp; History Maps, memoirs)</small>	<p>A cap of <b>Thrussington Member</b> (Glacial Till) expected to take the form of sandy gravelly Clay is noted in the north western area of Zone 1 forming the knoll feature.</p> <p>There is a finger of <b>Head</b> deposits indicated to be located within the centre of Zone 1 orientated north to south, with further Head deposits indicated to be located in northern area wrapping round along the eastern boundary with a small area in the north western corner. Head deposits are expected to vary between silts, clays, sands and gravels.</p> <p>A thin finger of <b>Eagle Moore Sand and Gravel</b> is anticipated to be located in the northern part of Zone 1 with further sand and gravel deposits located in the north of Zone 1 orientated north west to south east, these been defined as the <b>Egginton Common Sand and Gravel</b> and the <b>Wanlip Member</b>.</p>
<b>Bedrock</b> <small>(source: BGS Maps, Available Borehole Logs, Envirocheck Geology &amp; History Maps, memoirs)</small>	<p>Zone 1 is underlain by the Mercia Mudstone Group which is sub divided into the following differing lithologies; The majority of Zone 1 is underlain by the <b>Taporley Siltstone Formation</b> which comprises interbedded mudstones, siltstone and sandstones. The southern boundary of Zone 1 is underlain by the <b>Gunthorpe Member</b> which comprises of interbedded mudstone and dolomitic siltstone. The far north of the Zone 1 is underlain by the <b>Edwalton Member</b> which comprises primarily of mudstone with siltstone and sandstone skerry bands. The underlying <b>Bromsgrove Sandstone Formation</b> is indicated to be present in two small areas to the east and the west.</p> <p>It is anticipated that where no drift deposits overlay the solid deposits the Mudstones will have weathered to clays, siltstones to silt and sandstones to sand.</p>
<b>Soil Chemistry</b> <small>(source: Envirocheck / BGS)</small>	<p>Available soil chemistry data suggests that the natural soils anticipated to be present across the site do not have any elevated concentrations of contaminants that would be considered to represent a risk to Human Health for the elements tested for.</p>

Geology	Comment
<b>Mining</b> <small>(source: Coal Authority web viewer, BGS Maps, Available Borehole Logs, Envirocheck records, Geology &amp; History Maps)</small>	None expected.
<b>Faults</b> <small>(source: BGS Maps, Available Borehole Logs, Envirocheck Geology Maps, memoirs)</small>	<p>A major fault (<b>Normanton Hills Fault</b>) is shown crossing the northern area of Zone 1 with an orientation of east to west down thrown to the north which is the division between the Taporley Siltstone and Edwalton Formation.</p> <p>Two further faults are shown in the western half of the Zone which is orientated north to south and both are down thrown to the east.</p>
<b>Opencast Quarrying</b> <small>(source: Coal Authority web viewer, BGS Maps, Envirocheck History Maps)</small>	Two areas of disturbed ground are shown; one in the north western corner and one to the west of the King Street Plantation in the centre of Zone 1.
<b>Mineral Protection</b> <small>(source: Local Authority Plan)</small>	Zone 1 does not fall within the Mineral Protection area.
<b>Groundwater Levels:</b> <small>(source: Available GI)</small>	<p>Due to the variable deposits anticipated to be present across Zone 1 and in particular the interbedded nature of the majority of the solid deposits it is expected that more permeable strata (sandstone and siltstone) beds confined between less permeable mudstones may yield local water tables. Initial monitoring of the preliminary Ground Investigation undertaken by others confirms that when drilled most boreholes were dry; however minor water strikes were encountered in discrete permeable beds. <b>Monitoring of wells installed to different depths and with differing response zones suggest a variety of water tables are present confined within the various confined permeable strata.</b> Several installations remained dry, while others collected only small amounts of groundwater.</p> <p>Given the rural location of Zone 1, it is considered unlikely that the development will be affected by rising groundwater levels associated with diminished abstraction by industry.</p>



The constraints to investigations undertaken in Zone 1 are summarised below in Table 2;

**Table 2: Constraints to investigation**

Issue	Comment
<b>Landowners Permissions</b>	The majority of Zone 1 is owned by Mr Coker.  Airport land was not investigated as the client had not been able to obtain an agreement to undertake investigations on this land at the time of investigations.
<b>Utilities &amp; Services</b>	<b>Overhead power lines</b> are present across the centre of the site running east to west.  A <b>gas main</b> is present along the northern eastern corner of the Zone.
<b>Live Carriageway</b>	No live carriageways were investigated within Zone 1.
<b>East Midlands Airport</b>	It was necessary to inform East Midlands Airport of the position (Coordinates and ground level) and height of all exploratory works to ensure that no breach regulated airspace would occur.
<b>Farming, Crops &amp; Livestock</b>	No investigation was feasible within the area of the <b>farmyard</b> at this time as the farm remained in operation.  The location of exploratory holes was constrained by the planting and ongoing harvest and replanting being undertaken at the time of the works.  It was not possible to undertake TP318. As the landowner/farmer refused entry to the area as it was required that RSK avoid significant crop damage.  Horses were present in the area of CP216 and TP301.

## **3 GROUND INVESTIGATION**

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### **3.1 Introduction**

RSK prepared a site specific Stage 2 Preliminary Ground Investigation Specification in accordance with the Site Investigation Steering Group's UK Specification for Ground Investigation 2nd edition (2012) and BS 5930 and A2: 2010 'Code of practice for site investigations', BS EN ISO 14688-1:2002 and BS EN ISO 14689-1:2003. It was decided that the Mercia Mudstone Formation strata were to be logged for weathering grades in accordance with the guidelines in Chandler and Davis (1973): Further work on the engineering properties of Keuper Marl (CIRIA Report 47) so that the logs maybe readily compared to available historical exploratory hole data to facilitate interpretation.

The specification for the works was developed with the aim of providing sufficient preliminary data to assist with master planning design taking account of the anticipated ground conditions detailed within the Preliminary Sources Study Report.

The site work for the investigation of the East Midlands Strategic Rail Freight Interchange across all four zones was undertaken between 23<sup>rd</sup> September and 11<sup>th</sup> October 2013.

### **3.2 Investigation strategy and methodology**

The techniques adopted for the intrusive investigation were appropriate to the expected geology and were also chosen to provide general preliminary non targeted arrangement covering both plan area and depth of strata sufficient to allow the ground model to be confirmed. In addition specific exploratory holes were targeted in order to provide data for specific critical design elements. The investigation and sampling strategy was primarily focused on the assessment of the shallow soils and weathered bedrock.

The rationale for each planned exploratory hole location is detailed within the Stage 2 Preliminary Ground Investigation Specification and summarised within the Provisional Exploratory Hole Schedule included in Appendix B. This formed the basis for the works decision making as works progressed.

Following completion of fieldworks and upon preparation of exploratory hole logs a series of samples were scheduled for a selection of geotechnical and chemical laboratory testing to help characterise the strata properties. Groundwater samples were also taken and analysed where it was viable.

An initial programme of four weekly soil gas and groundwater level monitoring was undertaken to establish the groundwater and ground gas conditions beneath the site.

The results of the monitoring are provided within Appendix J. Monitoring of 6 existing serviceable boreholes CP/RC101 – 106 installed in 2012 by others was also included for completeness.

### **3.2.1 Health and safety**

Services data was obtained and overlaid upon plans to aid in the design and safe positioning of exploratory holes.

RSK liaised with East Midlands Airport and Landowners to agree suitable and safe exploratory hole locations, access routes and to obtain all necessary permits and permissions.

RSK prepared site specific works H&S Plan, risk assessments and method statements for the undertaking of the works. These were reviewed by an independent CDMC appointed by Roxhill Developments Ltd.

A HSE Form F10, notification of construction project, was issued to the HSE to cover the works by the CDMC and was displayed on site throughout the works.

### **3.2.2 Location of exploratory hole positions and service clearance**

RSK met with landowners and stakeholders to confirm suitable access routes and viable exploratory hole locations prior to finalising the ground investigation specification and commencing works.

Services data was obtained and overlaid upon plans to aid in the safe positioning of exploratory holes.

RSK SafeGround team used a number of techniques and equipment to check all exploratory hole positions and the surrounding areas were free of buried services and utilities. SafeGround used the following equipment:

- CAT & Genny (Radiodetection RD8000),
- Ground Penetrating Radar (GPR) - GSSI SIR-3000 console with the GSSI 400MHz antenna (standard frequency, used in high risk clearances) and the GSSI 200MHz antenna (low frequency, used in locating the high pressure water pipe)
- EM31 (Geonics)

Hand excavated service avoidance inspection pits were excavated to depths of 1.2mbgl prior to commencing all boreholes.

Upon completion of the works an as-built survey of the exploratory hole positions was commissioned and the coordinates and levels of each position were recorded using a Leica Viva GPS accurate to +/-5mm in horizontal positioning and +/-10mm in elevation. The coordinates and level data are recorded upon each exploratory hole log whilst the position of each exploratory hole is shown upon the exploratory hole location plan presented as Figure 4.

### **3.2.3 Investigation techniques**

#### **Trial pits**

Machine excavated trial pits were utilised to provide coverage across the site and to provide data on the shallow near surface strata. Trial pits also allowed bulk disturbed samples to be taken for strata classification and earthworks testing.

Specific trial pits were undertaken at defined locations to facilitate soakaway testing to provide infiltration data to aid drainage design.

The trial pit logs and photographs are presented in Appendix C.

#### **Cable percussion boring**

150mm diameter cable percussion boreholes were utilised to penetrate shallow near surface drift strata to full depth and to prove the top of rock head. This technique was also used to provide in-situ strength and density testing (SPT), representative disturbed and undisturbed samples for laboratory testing and to facilitate installation of monitoring instrumentation within the shallow near surface deposits to facilitate long term soil gas and groundwater monitoring.

The cable percussion borehole logs are presented in Appendix D.

#### **Rotary coring boreholes**

92mm diameter ('P' size) rotary core drilling techniques were used to core solid strata at locations adjacent to selected cable percussion boreholes. This allowed representative rock core to be obtained for accurate logging and sub sampled for testing within the laboratory. The boreholes were installed with deep standpipes and standpipe piezometers to allow long term monitoring of groundwater and ground gas.

The rotary borehole logs and photographs are presented in Appendix E.



### **3.2.4 Zone 1 investigation**

The investigation undertaken at Zone 1 comprised the following:

- Setting out and service Clearance (RSK SafeGround).
- Excavation of twenty seven trial pits using an operated wheeled excavator to provisional depths of between 1.50m and 4.60m bgl.
- Carry out six soakaway tests in selected trial pits in general accordance with BRE 365.
- Sinking of nineteen boreholes to depths of between 2.32m and 10.94m bgl using a standard cable percussive drilling rig.
- Sinking of six rotary cored boreholes (air /mist) open holed to rock head and cored (P size) to depth of between 20.00m and 30.00m bgl.
- Installation of twenty eight combined groundwater/gas monitoring wells and piezometers to varying depths including provision of flush lockable covers and 1.5m high wooden marker stakes (in fields).
- Four initial return visits to monitor groundwater levels/ground gas concentrations
- One groundwater sampling visit.
- Surveying in of as built exploratory hole positions using GPS surveying equipment.
- Associated sampling and insitu testing.
- Soil and rock sample geotechnical laboratory testing.
- Soil sample chemical and contamination laboratory testing.
- Groundwater sample chemical and contamination laboratory testing.

### **3.2.5 Soil sampling, in-situ testing and laboratory analysis**

Details of the soil samples obtained during the intrusive investigation are recorded on the exploratory hole logs presented within Appendices C, D and E.

In-situ SPTs were undertaken within the cable percussion boreholes and are presented on the borehole logs included within Appendix D.

In-situ soakaway testing was undertaken in selected trial pit locations as denoted upon the exploratory hole plan presented as Figure 4. Preliminary soakaway tests were undertaken in unsupported shallow trial pits and were attempted in general accordance with the recommendation of BRE 365. Tests undertaken within TPs 301, 302, 303, 304, 305, 351 & 352 did not soakaway sufficiently to allow calculation of infiltration rates. The strata in which these tests were undertaken were predominantly cohesive and not considered to be conducive to soakaway and the testing undertaken has confirmed this. The in-situ soakaway test results are presented in Appendix F and the results are summarised below within Table3.

**Table 3: Summary of soakaway test results**

Hole	Test Zone (Depth m bgl)	Calculated Infiltration Rate m/s	Strata
TPS301	2.10 – 2.80	Insufficient soakage	Tarporley Siltstone Formation - Clay
TPS302	1.60 – 2.50	Insufficient soakage	Tarporley Siltstone Formation - Clay
TPS303	2.20 – 3.15	Insufficient soakage	Edwalton Member - Clay
TPS304	1.62 – 2.50	Insufficient soakage	Edwalton Member - Clay
TPS305	1.68 – 2.65	Insufficient soakage	Eggington Common Sand and Gravel Member
TPS351	1.97 – 2.65	Insufficient soakage	Wanlip Member – clayey sand and gravel
TPS352	1.85 – 2.55	Insufficient soakage	Wanlip Member –clayey gravely sand

A programme of laboratory testing was scheduled by RSK to be carried out on selected suitable samples, in order to provide characteristic geotechnical strata properties.

The programme of geotechnical testing undertaken is summarised below within Table 4.

**Table 4: Summary of geotechnical testing programme undertaken**

Stratum	Analysis Undertaken	Number
Head Deposits	Coefficient of consolidation $c_v$ ( $m^2/year$ )	1
	Undrained shear strength measured by triaxial testing ( $kN/m^2$ )	1
Thrussington Member	Sulphate Characterisation (BRE SD1)	1
	Undrained shear strength measured by triaxial testing ( $kN/m^2$ )	1
Egginton Common Sand and Gravel	Sulphate Characterisation (BRE SD1)	2
Wanlip Member	Classification tests (natural moisture content)	1

Stratum	Analysis Undertaken	Number
Gunthorpe Member	Sulphate Characterisation (BRE SD1)	1
	Classification tests (Atterberg Limits)	1
	Classification tests (natural moisture content)	7
	Undrained shear strength measured by shear vane testing (kN/m <sup>2</sup> )	1
	Undrained shear strength measured by triaxial testing (kN/m <sup>2</sup> )	2
	Point load testing (Axial/ Diametral)	5
Tarporey Siltstone Formation	Sulphate Characterisation (BRE SD1)	10
	Classification tests (Atterberg Limits)	12
	Classification tests (natural moisture content)	32
	Dry density (kN/m <sup>3</sup> )	1
	Sieve analysis	6
	Sedimentation analysis	6
	Dry density/moisture content relationship	4
	California Bearing Ratio	6
	Moisture condition value	4
	Moisture condition value/moisture content relationship	2
	Unconfined compressive strength testing (MPa)	2
	Coefficient of consolidation $c_v$ (m <sup>2</sup> /year)	2
	Undrained shear strength measured by triaxial testing (kN/m <sup>2</sup> )	6
	Point load testing (Axial/ Diametral)	9
Edwalton Member	Sulphate Characterisation (BRE SD1)	3
	Classification tests (Atterberg Limits)	2
	Classification tests (natural moisture content)	3
	Coefficient of consolidation $c_v$ (m <sup>2</sup> /year)	2
	Undrained shear strength measured by triaxial testing (kN/m <sup>2</sup> )	2

Stratum	Analysis Undertaken	Number
Bromsgrove Sandstone Formation	Sulphate Characterisation (BRE SD1)	4
	Classification tests (natural moisture content)	1
	Unconfined compressive strength testing (MPa)	3
	Point load testing (Axial/ Diametral)	20

The results of the geotechnical laboratory testing are presented in full within Appendix G.

In addition a programme of non targeted analytical chemical and contamination suites of tests were scheduled upon selected soil and groundwater samples obtained to confirm characteristic soil and groundwater chemistry and contamination potential.

The programme of analytical chemical and contamination suites of tests undertaken on soil samples is summarised below within Table 5.

**Table 5: Summary of analytical chemical and contamination testing programme undertaken on soil samples**

Stratum	Analysis Undertaken	Number
Subsoil	pH, Arsenic, Cadmium, Copper, Chromium, Chromium (hexavalent), Lead, Mercury, Nickel, Selenium, Zinc	4
	Total Organic Carbon (TOC)	1
	Asbestos in Soil	2
	Pesticides	4
	Polycyclic Aromatic Hydrocarbons (PAHs)	4
	Triazine Herbicides	4
	Total Petroleum Hydrocarbons Criteria Working Group (TPH CWG) + BTEX and MTBE	4
Made Ground	pH, Arsenic, Cadmium, Copper, Chromium, Chromium (hexavalent), Lead, Mercury, Nickel, Selenium, Zinc	1
	Total Organic Carbon (TOC)	1
	Polycyclic Aromatic Hydrocarbons (PAHs)	1
	Total Petroleum Hydrocarbons Criteria Working Group (TPH CWG) + BTEX and MTBE	1



Stratum	Analysis Undertaken	Number
Head Deposits	pH, Arsenic, Cadmium, Copper, Chromium, Chromium (hexavalent), Lead, Mercury, Nickel, Selenium, Zinc	1
	Total Organic Carbon (TOC)	1
	Asbestos in Soil	1
	Polycyclic Aromatic Hydrocarbons (PAHs)	1
	Total Petroleum Hydrocarbons Criteria Working Group (TPH CWG) + BTEX and MTBE	1
Egginton Common Sand and Gravel	pH, Arsenic, Cadmium, Copper, Chromium, Chromium (hexavalent), Lead, Mercury, Nickel, Selenium, Zinc	1
	Total Organic Carbon (TOC)	1
	Polycyclic Aromatic Hydrocarbons (PAHs)	1
	Total Petroleum Hydrocarbons Criteria Working Group (TPH CWG) + BTEX and MTBE	1
Wanlip Member	pH, Arsenic, Cadmium, Copper, Chromium, Chromium (hexavalent), Lead, Mercury, Nickel, Selenium, Zinc	1
	Total Organic Carbon (TOC)	1
	Polycyclic Aromatic Hydrocarbons (PAHs)	1
	Total Petroleum Hydrocarbons Criteria Working Group (TPH CWG) + BTEX and MTBE	1
Tarporey Siltstone Formation	pH, Arsenic, Cadmium, Copper, Chromium, Chromium (hexavalent), Lead, Mercury, Nickel, Selenium, Zinc	3
	Total Organic Carbon (TOC)	3
	Polycyclic Aromatic Hydrocarbons (PAHs)	3
	Total Petroleum Hydrocarbons Criteria Working Group (TPH CWG) + BTEX and MTBE	3

The results of the analytical chemical and contamination suites of tests are presented in full within Appendix H.

The programme of analytical chemical and contamination suites of tests undertaken on groundwater samples is summarised below within Table 6.

**Table 6: Summary of analytical chemical and contamination testing programme undertaken on groundwater samples**

Sample	Analysis Undertaken	Number
Groundwater	pH, Redox potential, Electrical conductivity, dissolved oxygen, hardness, ammoniacal nitrogen, Phenols, Arsenic, Cadmium, Copper, Chromium, Chromium (hexavalent), Lead, Mercury, Nickel, Selenium, Zinc	7
	Polycyclic Aromatic Hydrocarbons (PAHs)	7
	Semi-Volatile Organic Compounds (SVOCs)	7
	Volatile Organic Compounds (VOCs)	7
	Total Petroleum Hydrocarbons Criteria Working Group (TPH CWG) + BTEX and MTBE	7

The results of the analytical chemical and contamination suites of tests for the groundwater samples are presented in full within Appendix I.

### 3.2.6 Instrumentation and monitoring

Long term monitoring of gas and groundwater levels was made possible by the installation of standpipes and standpipe piezometers as shown within Table 7. It should be appreciated that monitoring included monitoring of boreholes installed previously (2012) by Geotechnics Ltd as well where still serviceable (Zone 1 only):

**Table 7: Monitoring well installation details**

Hole	Standpipe Response Zone / Piezometer Response Zone (m)	Standpipe Slotted zone/Piezometer Tip Depth (m)	Strata
CP203	1.00 – 4.00	1.00 – 4.00	Tarporley Siltstone Formation
CP204	1.00 – 4.30	1.00 – 4.00	Gunthorpe Member
CP205	1.00 – 4.30	1.00 – 4.30	Tarporley Siltstone Formation
CP206	1.00 – 3.30	1.00 – 3.30	Tarporley Siltstone Formation and Bromsgrove Sandstone Formation

CP207	1.00 – 2.70	1.00 – 2.70	Tarporley Siltstone Formation
CP208	1.00 – 2.32	1.00 – 2.00	Tarporley Siltstone Formation
CP210	8.50 – 9.50	8.50 – 9.50	Tarporley Siltstone Formation
CP211	1.00 – 7.00	1.00 – 7.00	Gunthorpe Member
CP212	1.00 – 3.45	1.00 – 3.30	Thrussington Member and Tarporley Siltstone Formation
CP213	1.00 – 4.20	1.00 – 4.20	Tarporley Siltstone Formation
CP214	1.00 – 4.20	1.00 – 4.20	Tarporley Siltstone Formation
CP215	1.00 – 4.80	1.00 – 4.80	Bromsgrove Sandstone Formation
CP216	0.50 – 2.40	0.50 – 2.40	Tarporley Siltstone Formation
CP217	1.00 – 4.60	1.00 – 4.60	Tarporley Siltstone Formation
CP218	1.00 – 4.60	1.00 – 4.60	Thrussington Member and Tarporley Siltstone Formation
CP219	1.00 – 7.70	1.00 – 7.50	Thrussington Member, Tarporley Siltstone Formation and Edwalton Member
CP220	1.00 – 5.90	1.00 – 5.70	Head Deposits and Edwalton Member
CP221	1.00 – 10.90	1.00 – 10.70	Egginton Common Sand and Gravel Member and Edwalton Member
CP222	2.50 – 6.00 (S)	6.00(P)	Edwalton Member
CP(R)203	7.00 – 25.00  28.80 – 30.00 (S)	7.00 – 25.00  29.00 (P)	Tarporley Siltstone Formation and Bromsgrove Sandstone Formation  Bromsgrove Sandstone Formation (P)
CP(R)204	14.00 – 20.00	14.00 – 20.00	Gunthorpe Member
CP(R)205	4.10 – 20.00	4.10 – 19.00	Tarporley Siltstone Formation and Bromsgrove Sandstone Formation

CP(R)206	9.00 – 21.00	9.00 – 21.00	Bromsgrove Sandstone Formation
	23.80 – 25.00 (S)	24.00 (P)	
CP(R)207	11.00 – 13.00 (S)	12.00 (P)	Tarporley Siltstone Formation (P)
	17.00 – 25.00	17.00 – 25.00	Bromsgrove Sandstone Formation
CP(R)208	5.00 – 20.00	5.00 – 20.00	Tarporley Siltstone Formation and Bromsgrove Sandstone Formation

(p) = Piezometer (S) = Sand Filter

Instrumentation installed within the boreholes has been monitored by trained technicians from RSK.

Initial Gas and Groundwater Monitoring was undertaken on 4 separate occasions over a five week period as follows;

- 16<sup>th</sup> and 17<sup>th</sup> October 2013
- 22<sup>nd</sup> and 23<sup>rd</sup> October 2013
- 30<sup>th</sup> and 31<sup>st</sup> October 2013
- 11<sup>th</sup> November 2013

Groundwater sampling was undertaken from Borehole CP210, CP212, CP213, CP217, CP220, CPR204 and CPR206 on the 22<sup>nd</sup> and 23<sup>rd</sup> October 2013. Groundwater sampling was undertaken in accordance with RSK Procedure No; SHEQ MS TP210 Groundwater and Surface Water – sampling and routine in-situ testing. This has been formulated in accordance with current published guidance. Samples obtained were sent to Envirolab for testing and the results are presented within Appendix I. Details of the in-situ water quality results are presented within Appendix J.

Gas and groundwater level monitoring was undertaken in accordance with RSK Group SHEQMS Technical Procedure TP211 Ground Gas (Permanent gases) Monitoring and Sampling. This has been formulated in accordance with current published guidance. Groundwater levels were established using a hand held dipmeter with levels recorded with reference to depth below ground level. Gas monitoring was carried out using a Geotechnical Instruments GA2000+ Infra red gas analyser and Gas Data GFM610 flow pod. Monitoring was carried out to check for Methane, Carbon Monoxide, Carbon dioxide, Hydrogen Sulphide, Oxygen, Barometric pressure and Flow rate. In addition a Mini RAE 3000 Photo Ionisation Detector (PID) was used to confirm if volatile organic compounds were also present. The detailed results of the gas and groundwater level monitoring are presented within Appendix J.

## FIGURES

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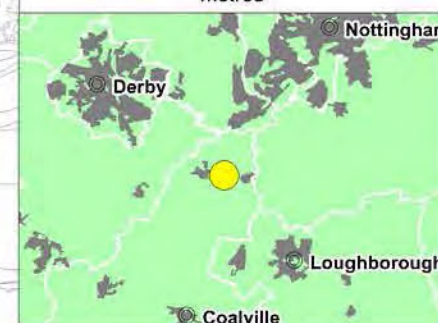




- Boundary
- Zone 1A - Main Development Plateau - Distribution
- Zone 1B - Main Development Plateau - Rail Freight Terminal
- Zone 2 - New Rail Branch Line
- Zone 3 - Major Trunk Road Improvements (Highways Agency)
- Zone 4 - Kegworth Bypass (Local Authority Highways)



0 500  
metres



00	28.11.13	Geo	RG	SP	DB
Rev	Date	Description	Drn	Chk	App

East Midlands Gateway

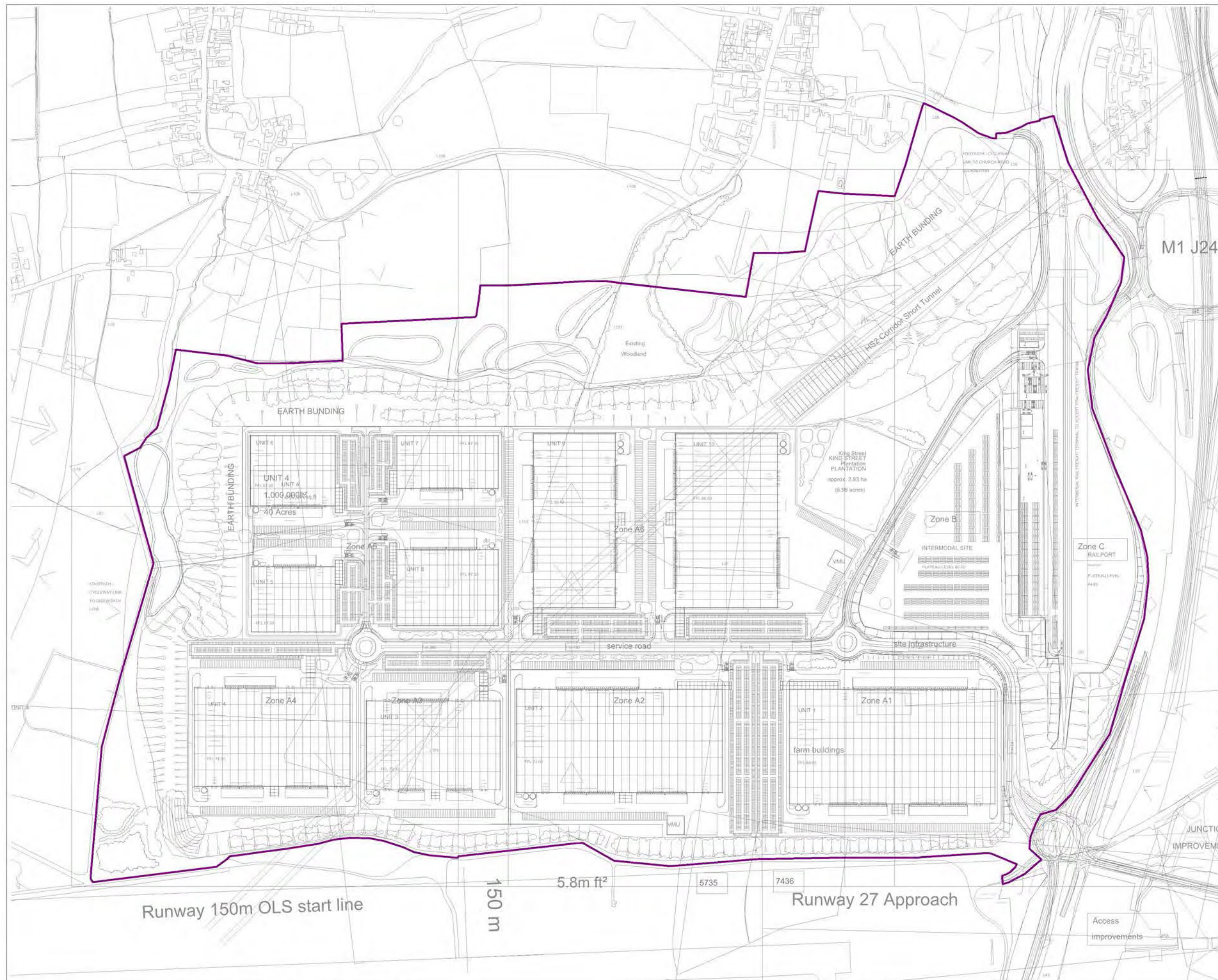
**RSK**

Figure 2  
Proposed Development Plan and Zones  
For Reporting

SCALE: 1:14,000 @ A3

REV 00





Zone 1 Boundary

0 250 metres

Derby Nottingham Loughborough Coalville

Rev	Date	Description	Drn	Chk	App
00	28.11.13	Geo	RG	SP	DB

East Midlands Gateway

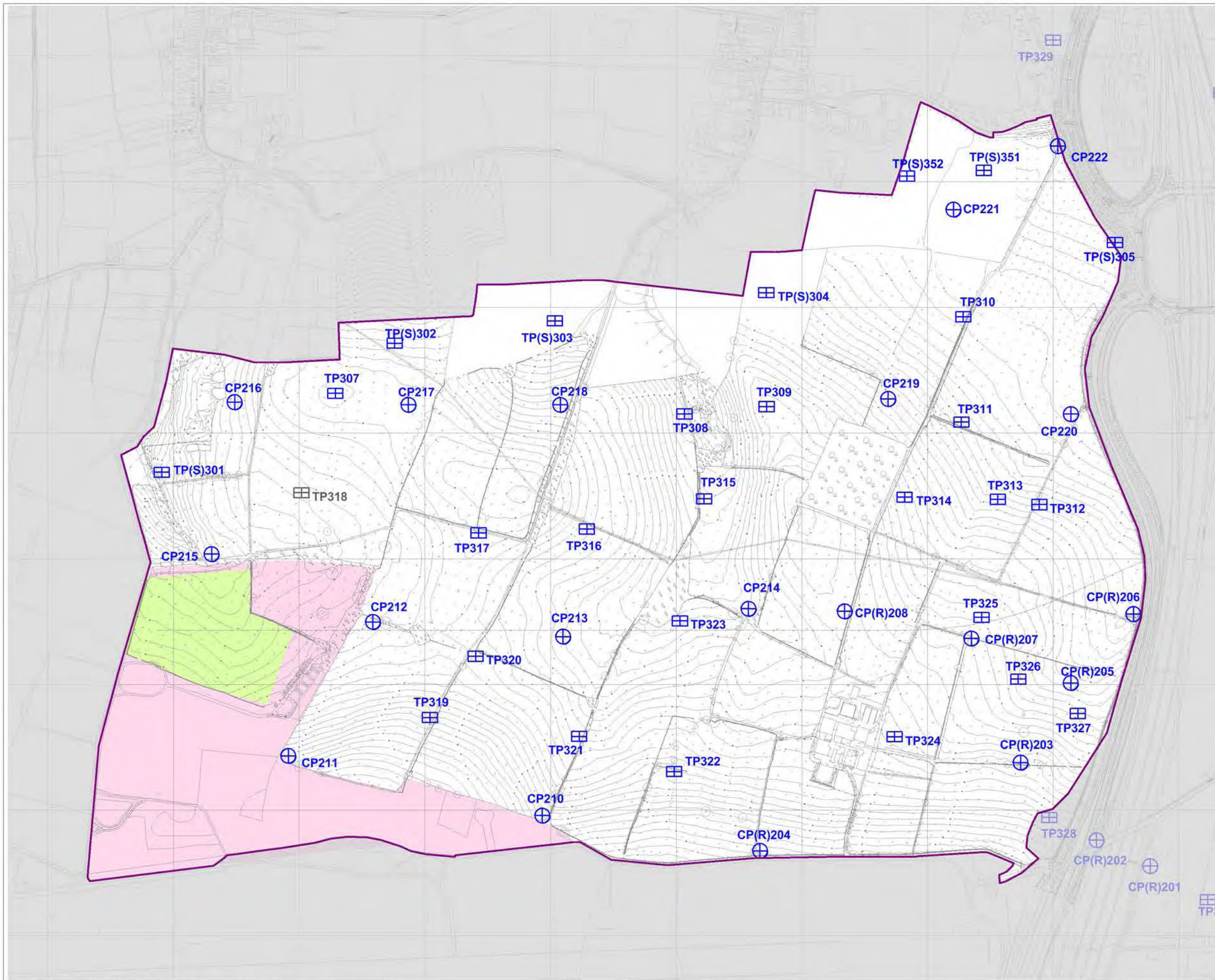
**RSK**

Figure 3  
Zone 1 Plan

SCALE: 1:7,500 @ A3

REV 00





Zone 1 Boundary

Airport land - Unavailable for investigation

Land access unavailable at time of survey

CP

Cable Percussion Borehole

CP(R)

Cable Percussion with Rotary follow on Borehole

TP

Trial Pit

TP(S)

Trial Pit (S) Soakaway

—

Phase 2 Investigation (Autumn 2013)

—

Exploratory hole not undertaken due to crops

N

W

E

S

0250

metres

00	28.11.13	Geo	RG	SP	DB
Rev	Date	Description	Drn	Chk	App

East Midlands Gateway

Figure 4  
Zone 1 Exploratory Hole Location Plan

SCALE: 1:7,500 @ A3

REV 00



# APPENDIX A

## SERVICE CONSTRAINTS

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1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for Roxhill Developments Limited in accordance with the terms of a contract between RSK and the "client", dated 3<sup>rd</sup> September 2013. The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.
2. Other than that expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.
3. Unless otherwise agreed the Services were performed by RSK exclusively for the purposes of the client. RSK is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. **Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.**
4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date hereof, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.
5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.
6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials.
7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a walk-over survey of the site together with RSK's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The Services are also based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely. The Services clearly are limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the walk-over survey. Further RSK was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the client and RSK.
8. The phase II or intrusive environmental site investigation aspects of the Services is a limited sampling of the site at pre-determined borehole and soil vapour locations based on the operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and RSK] [based on an understanding of the available operational and historical information,] and it should not be inferred that other chemical species are not present.
9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site.

# **APPENDIX B**

## **PROVISIONAL EXPLORATORY HOLE**

### **SCHEDULE**

---

312494 East Midlands Gateway  
SRFI

## Exploratory Hole Schedule

									Position		Estimated Ground Level	Estimated Design Ground Level	Diff in level		
Hole	Hole Type	Provisional Depth m bgl	Anticipated CP depth mbgl	Anticipated Coring length m	Provisional Instrumentation	Current Use/surfacing	Purposed end use	Special insitu testing / sampling /Likely Lab Testing Requirements	E	N	mAOD	mAOD	m		
Boreholes															
CPR 203	CP & RC	30	8	22	To Be confirmed by Engineer depending upon ground conditions and water strikes encountered. In general shallow combined gas and Groundwater monitoring stanpipes using 50mm HDPE pipe to be utilised in Cable Percussion boreholes around main buildings and plateaus to allow sahlhwo gas and perched or shallow groundwater strikes to be monitored . Deeper Standpipes or stand pipe piezometers to be utilised and installed in sperate deep rotary boreholes to allow deeper sub artesian or artesian water levels to be monitored.	Cropped Fields Beware sewer running S-N along eastern hedge boundary foot of A453???	Deep Rail Head Cut				69	44	25		
CPR 204	CP & RC	20	7	13			Development Cut Slope			83	70	13			
CPR 205	CP & RC	30	7	23			Deep Rail Head Cut			57	44	13			
CPR 206	CP & RC	25	7	18						52	44	8			
CPR 207	CP & RC	25	7	18						60	59.5	0.5			
CPR 208	CP & RC	20	7	13		Cropped Fields					65	59.5	5.5		
CP 210	CP	12	12							80	72	8			
CP 211	CP	12	12						Development Cut Slope		82	74	8		
CP 212	CP	8	8								69	73	-4		
CP 213	CP	8	8								65	72	-7		
CP 214	CP	8	8						Screening Embankment Foundation		63	72	-9		
CP 215	CP	8	8								60	82	-22		
CP 216	CP	8	8								64	78	-14		
CP 217	CP	8	8								71	76	-5		
CP 218	CP	8	8					66		76	-10				
CP 219	CP	8	8					55	55	0					
CP 220	CP	8	8					44	43	1					
CP 221	CP	8	8					40	58	-18					
CP 222	CP	10	10		Farm Entrance	Rail embankment and possible underpass structure			37	41	-4				
Trial Pits															
TPS301	TP & Soakaway	2.5			Cropped Fields		Area of propsoed SUDS/attenuation ponds	Soakaway Infiltration tests at 1 - 2.5m depth			55	53	2		
TPS302	TP & Soakaway	2.5								68	66	2			
TPS303	TP & Soakaway	2.5								56	54	2			
TPS304	TP & Soakaway	2.5								53	51	2			
TPS305	TP & Soakaway	2.5								40	38	2			
TP 307	TP	4.5					General Ground Conditions, foundations	HV and Std geotech and Env Sampling			72	77	-5		
TP 308	TP	4.5								60	77	-17			
TP 309	TP	4.5								63	77	-14			
TP 310	TP	4.5								44	44	0			
TP 311	TP	4.5							General Ground Conditions, foundations, cut soils for earthworks.	HV and Std geotech and Env Sampling, large bulks for earthworks classification and compactuion test suites in near top 1-5m depth			50	59.5	-9.5
TP 312	TP	4.5						52			44	8			
TP 313	TP	4.5						53			44	9			
TP 314	TP	4.5						60			59.5	0.5			
TP 315	TP	4.5					General Ground Conditions, foundations	HV and Std geotech and Env Sampling					56	66.5	-10.5
TP 316	TP	4.5								68	66.5	1.5			
TP 317	TP	4.5								73	67	6			
TP 318	TP	4.5								66	67	-1			
TP 319	TP	4.5							General Ground Conditions, foundations, cut soils for earthworks.	HV and Std geotech and Env Sampling, large bulks for earthworks classification and compactuion test suites in near top 1-5m depth			78	73	5
TP 320	TP	4.5						72			73	-1			
TP 321	TP	4.5						69			72	-3			
TP 322	TP	4.5						73			72	1			
TP 323	TP	4.5						62			66.5	-4.5			
TP 324	TP	4.5						69			70	-1			
TP 325	TP	4.5						62			59.5	2.5			
TP 326	TP	4.5						60			60	0			
TP 327	TP	4.5						60			44	16			
TP 351	TP & Soakaway	2.5					Cropped Fields	Flood compensation & ponds Main Development					39	37	2
TP 352	TP & Soakaway	2.5								41.6	39.6	2			
HP401-405															
HP406	Hand Pit	2						Cycle Path	Flood compensation, required to examine depth to bridge foundations	Log Only/					-1
NK = Not Known		TBC= To Be Confirmed					Note: Rotary Holes to be commenced 5m away from Cable Percussion holes and open holed to the depth achieved by Cable Percussion prior to commencing coring.								0
	Access not yet available , Acces to these positions still to be confirmed by client and landowner. Do not undertake these investigation positions untill can confirm.														
	Safeground GPR required as high risk utilities in area														

## **APPENDIX C**

# **TRIAL PIT LOGS AND PHOTOGRAPHS**

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## KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF ABBREVIATIONS

### SAMPLING

#### *Sample type codes*

B	=	Bulk disturbed sample.
C	=	Core sample.
CS	=	Core sample taken from rotary core for lab testing.
D	=	Small disturbed sample.
DSPT	=	Small disturbed sample originating from SPT test.
ES	=	Soil sample for environmental testing.
U	=	Undisturbed driven tube sample - Number of blows indicated. % recovery reported.

#### *Undisturbed sample detail codes*

U <sub>(100)</sub>	=	100mm diameter undisturbed sample.
--------------------	---	------------------------------------

### IN-SITU TESTING

SPT <sub>(c)</sub>	=	Standard Penetration Test using a solid 60 degree cone.
SPT	=	Standard Penetration Test using split spoon sampler. (SPT <sub>(NR)</sub> indicates 'No Sample Recovery').
	=	* denotes extrapolated N value. NP denotes 'No Penetration'.
V	=	Field Vane Test. Peak value (c <sub>u</sub> ) & Residual value (c <sub>r</sub> ), given as shear strength in kPa.

### ROTARY DRILLING INFORMATION

W	=	Water flush returns (%)
TCR	=	Total core recovery (%)
SCR	=	Solid core recovery (%)
RQD	=	Rock quality designations (%)
If	=	Fracture spacing (mm).
In the fracture column (i) denotes discontinuity is infilled (refer to Fracture Table for details).		
Where variable the minimum - average - maximum spacing may be quoted.		
'NI' denotes non-intact core. 'NA' denotes not applicable.		

All lengths used to determine rock core mechanical properties taken along the centre line of the core.

Obvious induced fractures have been ignored.

The assessment of solid core is based on lengths that show a full diameter and not necessarily a full circumference.

AZCL = Assessed zone of core loss.

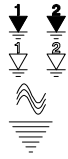
### ADDITIONAL NOTES

1. All soil and rock descriptions and legends in general accordance with BS EN ISO 14688-1, 14688-2, 14689-1, and BS5930:1999 including Amendment 2 (2010).
2. Material types divided by a broken line ( - - - ) indicates an unclear boundary.
3. The data on any sheet within the report showing the AGS icon is available in the AGS format.



## KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF GRAPHIC SYMBOLS

### WATER COLUMN SYMBOLS



First water strike, second water strike etc.

Standing water level following first strike, standing water level following second strike etc.

Seepage.

Standing water level recorded at documented date.

### MATERIAL GRAPHIC LEGENDS



CLAY



Clayey  
gravelly  
SAND



Gravelly  
clayey  
SAND



Clayey  
gravelly  
SAND  
with  
COBBLES



Clayey  
SAND



Clayey  
SAND  
with  
COBBLES



Clayey  
sandy  
GRAVEL



GRAVEL



GRAVEL  
with  
COBBLES



Gravelly  
CLAY



Gravelly  
silty  
CLAY



Silty  
gravelly  
CLAY



Silty  
gravelly  
CLAY  
with  
COBBLES



Gravelly  
SAND



Gravelly  
clayey  
SILT



Gravelly  
SILT



MADE  
GROUND



Mudstone



SAND



SAND  
with  
COBBLES

### INSTRUMENTATION SYMBOLS



Backfill



Bentonite  
seal



Concrete



Gravel  
filter



Sand filter



Stopcock  
cover



Piezometer  
tip









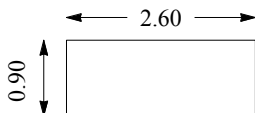
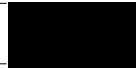

Plain pipe



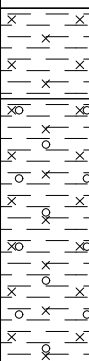


Slotted  
pipe

Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP307</b>
Contract Ref: <b>312494</b>	Start: <b>26.9.13</b> End: <b>26.9.13</b>	Ground Level (m AOD): <b>72.61</b>	National Grid Co-ordinate: <b>E:445822.3 N:327327.8</b>	Sheet: <b>1 of 1</b>

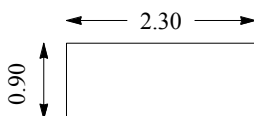
Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.20	1	ES	Tx2+J+Vx2			Sparse vegetation over stiff to very stiff dark brown slightly sandy slightly gravelly very silty CLAY. Gravel is subangular to rounded fine to coarse quartzite and rare angular brick and medium flint. (SUBSOIL)	(0.30) 0.30	
						Very stiff dark orange brown slightly sandy slightly gravelly very silty CLAY. Gravel is subangular to rounded fine to coarse quartzite. (THRUSSINGTON MEMBER)	(0.35) 0.65	
0.70 0.80-0.90	2	V B	$c_u=98/74/102$			Stiff to very stiff red brown slightly sandy slightly gravelly silty CLAY with occasional subangular to angular sandstone cobbles and with occasional sandy pockets. Gravel is tabular angular to rounded fine to coarse mudstone, quartzite and occasional sandstone. (THRUSSINGTON MEMBER)	(0.35) 1.00	
1.50-2.00	3	B				Very stiff red brown slightly sandy very silty CLAY. Recovery includes occasional tabular to angular fine to medium gravel sized mudstone and siltstone lithorelicts. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	(1.80) 2.80	
						... below 2.30m bgl, recovery includes occasional to some tabular and angular siltstone and fine sandstone cobbles and occasional 0.25m diameter boulders.	2.80	
						Grey and red brown SILTSTONE/MUDSTONE recovered as slightly sandy very clayey very silty very gravelly tabular and angular cobbles. (Weathering Grade II) (TARPORLEY SILTSTONE FORMATION)	3.00	
						Trial pit terminated at 3.00m depth.		

Plan (Not to Scale)		General Remarks		
		<ol style="list-style-type: none"> <li>Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.</li> <li>Trial pit remained stable during excavation.</li> <li>Groundwater not encountered.</li> <li>Trial pit backfilled and compacted with arisings upon completion.</li> <li>Pit terminated as machine unable to make significant further progress.</li> </ol>		
All dimensions in metres		Scale: <b>1:25</b>		
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By: 	

Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP308</b>
Contract Ref: <b>312494</b>	Start: <b>25.9.13</b> End: <b>25.9.13</b>	Ground Level (m AOD): <b>54.24</b>	National Grid Co-ordinate: <b>E:446515.8 N:327287.5</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.80	1	ES	Tx2+J+Vx2			Grass over brown slightly gravelly very silty CLAY, with frequent rootlets. Gravel is angular to rounded fine to medium occasional coarse quartzite, flint and rare fine brick. (SUBSOIL)  Orange brown slightly gravelly silty CLAY, with occasional rootlets. Gravel is angular to rounded fine to coarse quartzite, flint, occasional subangular fine to medium charcoal. (HEAD DEPOSITS)	(0.30) 0.30  (0.90) 1.20	
1.50-1.70	2	B				Stiff fissured red brown occasionally mottled green grey slightly silty CLAY. Recovery includes occasional tabular to angular fine to medium gravel siltstone fragments. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION) ... 1.20m bgl, brick and mortar in side of pit. (Land drain) ... 1.30m bgl, 15cm diameter land drain with flowing water.	(0.80) 2.00	
						Red brown bedded green grey SILTSTONE bands (~ 0.1m thick) and fine SANDSTONE recovered within clayey matrix as tabular and angular cobble sized fragments. (Grade II) (TARPORLEY SILTSTONE FORMATION)	(0.80) 2.80	
Trial pit terminated at 2.80m depth.								

Plan (Not to Scale)



## General Remarks

1. Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.
2. Trial pit remained stable during excavation.
3. Groundwater not encountered.
4. Trial pit backfilled and compacted with arisings upon completion.
5. Made ground associated with backfill material from the land drain encountered.
6. Pit terminated as machine unable to make significant further progress.

All dimensions in metres

Scale: **1:25**

Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By: 	
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Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP309</b>
Contract Ref: <b>312494</b>	Start: <b>25.9.13</b> End: <b>25.9.13</b>	Ground Level (m AOD): <b>63.52</b>	National Grid Co-ordinate: <b>E:446680.1 N:327302.3</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES	Tx2+J+Vx2			Crop stubble over very stiff brown slightly sandy slightly gravelly to gravelly silty CLAY, with frequent rootlets. Gravel is angular to rounded fine to coarse quartzite and flint. (SUBSOIL)	0.25	
						Brown very clayey angular to rounded fine to coarse quartzite and siltstone to fine sandstone GRAVEL/ very gravelly CLAY. (HEAD DEPOSITS)	0.45	
						Very stiff red brown occasionally mottled light grey silty CLAY. Recovery includes occasional angular to subangular fine to coarse sandstone fragments. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	(0.75)	
0.95-1.20	2	B				... 0.80m bgl, slightly gravelly.	1.20	
						Very stiff fissured red brown mottled green grey silty CLAY. Recovery includes occasional tabular and angular fine to coarse mudstone lithorelicts and siltstone and fine sandstone fragments. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	(1.50)	
						... below 1.90m bgl, recovery includes occasional to some cobble sized tabular mudstone fragments.	2.70	
						Red brown bedded green grey SILTSTONE and fine SANDSTONE recovered as gravel and tabular and angular cobbles within clay matrix. (Weathering Grade II) (TARPORLEY SILTSTONE FORMATION)	2.80	
						Trial pit terminated at 2.80m depth.		

<b>Plan (Not to Scale)</b>  		<b>General Remarks</b> 1. Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered. 2. Trial pit remained stable during excavation. 3. Groundwater not encountered. 4. Trial pit backfilled and compacted with arisings upon completion. 5. Pit terminated as machine unable to make significant further progress.	
Method Used: <b>Machine dug</b>		All dimensions in metres	
Plant Used: <b>JCB-3CX</b>		Scale: <b>1:25</b>	
Method Used: <b>Machine dug</b>		Logged By: <b>MHocking</b>	Checked By:

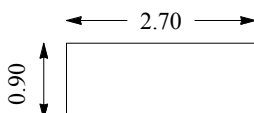


# TRIAL PIT LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP310</b>
Contract Ref: <b>312494</b>	Start: <b>25.9.13</b> End: <b>25.9.13</b>	Ground Level (m AOD): <b>44.47</b>	National Grid Co-ordinate: <b>E:447071.9 N:327481.3</b>		Sheet: <b>1 of 2</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.80-0.90	1	ES	Tx2+J+Vx2			Crop over brown slightly gravelly silty very sandy CLAY, with occasional to some rootlets. Gravel is angular to rounded fine to coarse quartzite and flint. (SUBSOIL)  Dark orange brown mottled brown slightly clayey silty gravelly fine to medium SAND with occasional rootlets. Gravel is angular to rounded fine to coarse flint and quartzite. (EGGINTON COMMON SAND AND GRAVEL)  ... 0.90m bgl, active land drain encountered.	(0.30) 0.30  (0.90) 1.20	
1.50-1.80	2	B				Orange brown clayey very silty slightly gravelly SAND. Gravel is rounded to angular fine to coarse quartzite and occasional tabular angular sandstone and flint. (EGGINTON COMMON SAND AND GRAVEL)  ... below 2.10m bgl, orange slightly clayey silty SAND.	(3.40)	
3.30-3.60	3	B						

Plan (Not to Scale)



## General Remarks

1. Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.
2. Trial pit remained stable during excavation.
3. Groundwater not encountered.
4. Trial pit backfilled and compacted with arisings upon completion.
5. Pit terminated as machine unable to make significant further progress.

All dimensions in metres

Scale: **1:25**

Method Used:

**Machine dug**

Plant Used:

**JCB-3CX**

Logged By:

**MHocking**

Checked By:





TRIAL PIT LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP310</b>
Contract Ref: <b>312494</b>	Start: <b>25.9.13</b> End: <b>25.9.13</b>	Ground Level (m AOD): <b>44.47</b>	National Grid Co-ordinate: <b>E:447071.9 N:327481.3</b>		Sheet: <b>2 of 2</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Trial pit terminated at 4.60m depth.	4.60	

<b>Plan (Not to Scale)</b> 		<b>General Remarks</b>			
		All dimensions in metres		Scale: <b>1:25</b>	
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By:		

Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP311</b>
Contract Ref: <b>312494</b>	Start: <b>25.9.13</b> End: <b>25.9.13</b>	Ground Level (m AOD): <b>50.03</b>	National Grid Co-ordinate: <b>E:447067.7 N:327271.9</b>	Sheet: <b>1 of 1</b>

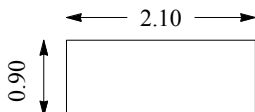

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.30	1	B	Tx2+J+Vx2			Crop stubble over very stiff brown slightly gravelly silty sandy CLAY with occasional subrounded quartzite cobbles and rootlets. Gravel is angular to rounded fine to coarse quartzite and flint, and rare angular fine brick. (SUBSOIL)	(0.30)	
0.20-0.30	2	ES				Very stiff dark orange brown mottled brown slightly gravelly very silty CLAY with occasional rootlets. Gravel is subrounded to rounded fine to medium occasional coarse quartzite. (HEAD DEPOSITS)	0.30	
							(0.60)	
							0.90	
						Very stiff red brown occasionally bedded green grey silty CLAY. Recovery includes occasional angular to subrounded fine to medium occasionally coarse gravel sized mudstone lithorelicts and siltstone fragments. (Weathering Grade IVb) (EDWALTON MEMBER)	(1.50)	
							2.40	
						Orange brown occasionally bedded grey very weathered SILTSTONE and fine SANDSTONE recovered as tabular and angular fine to coarse gravel and cobbles within clay matrix. (Weathering Grade II) (EDWALTON MEMBER) ... below 2.10m bgl, gravelly silty.	(1.35)	
							3.75	
Trial pit terminated at 3.75m depth.								

Plan (Not to Scale)		General Remarks		
		<ol style="list-style-type: none"> <li>Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.</li> <li>Trial pit remained stable during excavation.</li> <li>Groundwater not encountered.</li> <li>Trial pit backfilled and compacted with arisings upon completion.</li> <li>Rare brick fragments associated with farming track.</li> <li>Pit terminated as machine unable to make significant further progress.</li> </ol>		
All dimensions in metres		Scale: <b>1:25</b>		
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By:	



Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP312</b>
Contract Ref: <b>312494</b>	Start: <b>27.9.13</b> End: <b>27.9.13</b>	Ground Level (m AOD): <b>51.47</b>	National Grid Co-ordinate: <b>E:447222.9 N:327107.5</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.20	1	ES	Tx2+J+Vx2			Crop stubble over very soft dry slightly sandy slightly gravelly very silty CLAY with occasional rootlets. Gravel is angular to rounded fine to medium quartzite and flint. (SUBSOIL) Very stiff orange brown slightly sandy silty CLAY. Recovery includes frequent tabular and angular sandstone cobbles. (Weathering Grade IVb/III) (TARPORLEY SILTSTONE FORMATION)	(0.30) 0.30	
1.00-1.20	2	B				Very stiff fissured red brown bedded green grey silty CLAY. Recovery includes tabular and angular fine to coarse sandstone and siltstone fragments. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION) ... @ 1.10m bgl, green grey bands. ... @ 1.40m bgl, green grey bands.	(0.75) 0.95	
1.60-1.70	3	B				... below 1.60m bgl, recovery includes occasional to some tabular and angular sandstone and siltstone cobbles. Red brown bedded green grey fine SANDSTONE and SILTSTONE recovered as tabular and angular cobbles and occasional boulders upto 0.25m diameter within clay matrix. (Weathering Grade II) (TARPORLEY SILTSTONE FORMATION) ... @ 1.85m bgl, green grey bands. ... @ 2.00m bgl, green grey bands.	1.70 (0.40) 2.10	
						Trial pit terminated at 2.10m depth.		

Plan (Not to Scale)		General Remarks		
		<ol style="list-style-type: none"> <li>Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.</li> <li>Trial pit remained stable during excavation.</li> <li>Groundwater not encountered.</li> <li>Trial pit backfilled and compacted with arisings upon completion.</li> <li>Pit terminated as machine unable to make significant further progress.</li> </ol>		
		All dimensions in metres	Scale:	<b>1:25</b>
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By:	

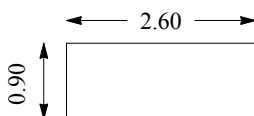


# TRIAL PIT LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP313</b>
Contract Ref: <b>312494</b>	Start: <b>24.9.13</b> End: <b>24.9.13</b>	Ground Level (m AOD): <b>52.57</b>	National Grid Co-ordinate: <b>E:447140.3 N:327118.1</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.30	1	ES	Tx2+J+Vx2			Crop stubble over very stiff very dry brown slightly gravelly silty sandy CLAY with frequent rootlets. Gravel is subangular to rounded fine to coarse quartzite and flint. (SUBSOIL)	(0.35)	
						Very stiff orange brown slightly gravelly silty sandy CLAY with occasional rootlets. Gravel is subangular to rounded fine to coarse quartzite and sandstone. (HEAD DEPOSITS)	(0.35)	
						Very stiff light red brown slightly sandy CLAY. Recovery includes some to frequent tabular and angular fine grained light grey brown sandstone cobbles. (Weathering Grade IVa) (TARPORLEY SILTSTONE FORMATION)		
1.30-1.50	2	B				... between 1.60m and 2.00m bgl, cobble to small boulder sized pockets of stiff red brown mottled green grey silty CLAY.	(1.60)	
2.10-2.30	3	B				... below 2.00m bgl, light brown grey fine to medium grained SANDSTONE recovered as tabular cobbles and 0.50m diameter cobbles and fine to coarse gravel in interbedded slightly sandy silty clay and slightly clayey sand.	2.30	
						Trial pit terminated at 2.30m depth.		

Plan (Not to Scale)



## General Remarks

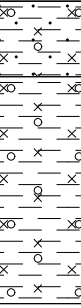



1. Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.
2. Trial pit remained stable during excavation.
3. Groundwater not encountered.
4. Trial pit backfilled and compacted with arisings upon completion.
5. Pit terminated as machine unable to make significant further progress.

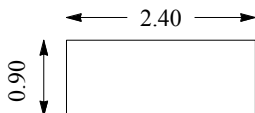


All dimensions in metres

Scale: **1:25**

Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By: 	
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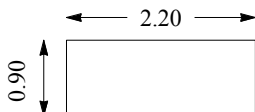


Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP314</b>
Contract Ref: <b>312494</b>	Start: <b>25.9.13</b> End: <b>25.9.13</b>	Ground Level (m AOD): <b>59.81</b>	National Grid Co-ordinate: <b>E:446965.9 N:327121.7</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.60-0.70	1	ES	Tx2+J+Vx2			Crop stubble over very stiff brown slightly sandy gravelly silty CLAY with frequent rootlets. Gravel is angular to rounded fine to medium occasionally coarse quartzite and flint. (SUBSOIL) Very stiff orange brown mottled brown slightly gravelly silty sandy CLAY with occasional rootlets. gravel is subangular to subrounded fine to medium quartzite. (HEAD DEPOSITS)	0.25   (0.75)	
1.00-1.20	2	B				Very stiff fissured red brown occasionally bedded green grey silty CLAY. Recovery includes occasional angular fine to coarse gravel sized siltstone and fine sandstone fragments. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	1.00   (0.85)	
2.15-2.35	3	B				Red brown bedded green grey SILTSTONE and fine SANDSTONE recovered as tabular and angular fine to coarse gravel and occasional to some cobble sized fragments within a clay matrix. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	1.85   (1.00)	
Trial pit terminated at 2.85m depth.							2.85	

Plan (Not to Scale)			General Remarks		
			<ol style="list-style-type: none"> <li>Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.</li> <li>Trial pit remained stable during excavation.</li> <li>Groundwater not encountered.</li> <li>Trial pit backfilled and compacted with arisings upon completion.</li> <li>Pit terminated as machine unable to make significant further progress.</li> </ol>		
All dimensions in metres			Scale: <b>1:25</b>		
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By: 		

Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP315</b>
Contract Ref: <b>312494</b>	Start: <b>26.9.13</b> End: <b>26.9.13</b>	Ground Level (m AOD): <b>56.37</b>	National Grid Co-ordinate: <b>E:446555.6 N:327118.9</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.20	1	ES	Tx2+J+Vx2			Grass over stiff brown slightly gravelly silty CLAY with frequent rootlets. Gravel is angular to rounded fine to medium coarse quartzite and flint. (SUBSOIL)	(0.30)	
0.70		V	c <sub>u</sub> =92/68/78			Very stiff dark orange brown slightly gravelly very silty CLAY with occasional rootlets. Gravel is angular to rounded fine to coarse quartzite. (HEAD DEPOSITS)	(0.50)	
1.20-1.40	2	B				Firm to stiff fissured red brown occasionally mottled green grey silty CLAY. Recovery includes occasional fine to coarse siltstone and fine sandstone fragments. (Weathering Grade IVa-III) (TARPORLEY SILTSTONE FORMATION) ... below 1.00m bgl, sandy very silty CLAY and slightly gravelly sandy very clayey SILT.	(2.90)	
						... below 2.90m bgl, recovery includes occasional tabular and angular siltstone and fine sandstone cobbles.		
						... below 3.55m bgl, light green grey interlaminated stiff silty CLAY and tabular and angular fine to coarse siltstone and fine sandstone GRAVEL. (Grade III)	3.70	
						Light green grey SILTSTONE and fine SANDSTONE recovered as tabular and angular cobbles within clay matrix. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	3.80	
						Trial pit terminated at 3.80m depth.		

<b>Plan (Not to Scale)</b> 		<b>General Remarks</b> 1. Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered. 2. Trial pit remained stable during excavation. 3. Groundwater not encountered. 4. Trial pit backfilled and compacted with arisings upon completion. 5. Pit terminated as machine unable to make significant further progress.		
Method Used: <b>Machine dug</b>		Plant Used: <b>JCB-3CX</b>		Logged By: <b>MHocking</b>
All dimensions in metres		Scale: <b>1:25</b>		
Checked By: 				

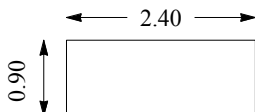

Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP316</b>
Contract Ref: <b>312494</b>	Start: <b>26.9.13</b> End: <b>26.9.13</b>	Ground Level (m AOD): <b>68.16</b>	National Grid Co-ordinate: <b>E:446322.8 N:327059.6</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.20	1	ES	Tx2+J+Vx2			Crop stubble over very stiff brown slightly gravelly slightly sandy silty CLAY with frequent rootlets. Gravel is subangular to rounded fine to coarse quartzite and rare brick. (MADE GROUND)	(0.30) 0.30	
0.50		V	>120 x 3			Very stiff dark orange brown slightly gravelly silty sandy CLAY with occasional rootlets. Gravel is subrounded to rounded fine to coarse quartzite. (THRUSSINGTON MEMBER) ... below 0.40m bgl, rare gravel.	(0.50) 0.80	
0.80-0.90 0.90	2	B V	>120 x 3			Very stiff fissured red brown occasionally mottled grey silty CLAY. Recovery includes rare tabular and angular fine sandstone cobbles. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)  ... below 1.50m bgl, recovery includes frequent grey fine to coarse gravel and cobbles of fine sandstone and siltstone. ... below 1.70m bgl, recovery includes frequent grey fine to coarse gravel and cobbles of fine sandstone and siltstone.	(1.15) 1.95	
1.90-2.00	3	B				Light grey banded red brown SILTSTONE and fine SANDSTONE recovered as tabular and angular cobbles within clay matrix.. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	(0.45) 2.40	
Trial pit terminated at 2.40m depth.								

<b>Plan (Not to Scale)</b>  		<b>General Remarks</b> 1. Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered. 2. Trial pit remained stable during excavation. 3. Groundwater not encountered. 4. Trial pit backfilled and compacted with arisings upon completion. 5. Made ground associated with farming track. 6. Pit terminated as machine unable to make significant further progress.		
Method Used: <b>Machine dug</b>		Plant Used: <b>JCB-3CX</b>		Logged By: <b>MHocking</b>
All dimensions in metres		Scale: <b>1:25</b>		
Checked By:				

Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP317</b>
Contract Ref: <b>312494</b>	Start: <b>26.9.13</b> End: <b>26.9.13</b>	Ground Level (m AOD): <b>73.04</b>	National Grid Co-ordinate: <b>E:446107.4 N:327052.1</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.30	1	ES	Tx2+J+Vx2			Crop stubble and grass over very stiff brown slightly sandy slightly gravelly very silty CLAY with occasional to some rootlets. Gravel is angular to rounded fine to coarse quartzite and flint. (SUBSOIL)	(0.30)	
						Very stiff dark orange brown slightly gravelly very silty CLAY. Gravel is subrounded to rounded fine to medium quartzite. (THRUSSINGTON MEMBER)	(0.30)	
0.65		V	>120 x 3			Very stiff red brown slightly silty CLAY. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	0.60	
0.90-1.00	2	B						
0.90-1.00	3	ES	Tx2+J+Vx2					
							(1.30)	
1.60	4	B						
							1.90	
2.00	5	B				Green grey and red brown fine SANDSTONE and MUDSTONE recovered as tabular fine to coarse gravel with frequent tabular cobbles upto 0.30m in size. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	2.10	
						Trial pit terminated at 2.10m depth.		

Plan (Not to Scale)		General Remarks		
		<ol style="list-style-type: none"> <li>Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.</li> <li>Trial pit remained stable during excavation.</li> <li>Groundwater not encountered.</li> <li>Trial pit backfilled and compacted with arisings upon completion.</li> <li>Pit terminated as machine unable to make significant further progress.</li> <li>Trial pit 318 not undertaken due to crops.</li> </ol>		
		All dimensions in metres	Scale:	<b>1:25</b>
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By:	

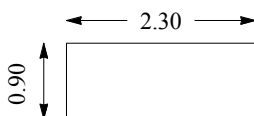


# TRIAL PIT LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP319</b>
Contract Ref: <b>312494</b>	Start: <b>25.9.13</b> End: <b>25.9.13</b>	Ground Level (m AOD): <b>77.59</b>	National Grid Co-ordinate: <b>E:446010.2 N:326684.3</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.20	1	ES	Tx2+J+Vx2			Crop stubble over stiff orange brown slightly gravelly slightly sandy silty CLAY with occasional rootlets. Gravel is angular to rounded fine to coarse quartzite and igneous rock. (SUBSOIL)	0.25	
1.10-1.20	2	B				Red brown occasionally mottled green grey SILTSTONE and fine SANDSTONE recovered as tabular and angular gravel, cobbles and occasional boulders up to 0.30m in size within a clayey matrix. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	(1.25)	
1.10-1.20	3	B					1.50	
						Trial pit terminated at 1.50m depth.		

Plan (Not to Scale)



## General Remarks

1. Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.
2. Trial pit remained stable during excavation.
3. Groundwater not encountered.
4. Trial pit backfilled and compacted with arisings upon completion.
5. Pit terminated as machine unable to make significant further progress.
6. Trial pit 318 not undertaken due to crops.

All dimensions in metres

Scale: **1:25**

Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By:	
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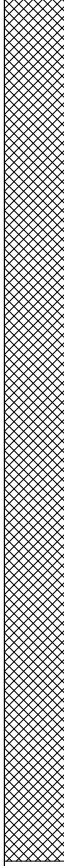
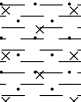
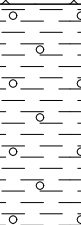




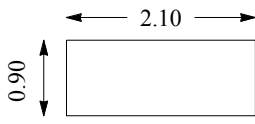


Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP320</b>
Contract Ref: <b>312494</b>	Start: <b>26.9.13</b> End: <b>26.9.13</b>	Ground Level (m AOD): <b>71.48</b>	National Grid Co-ordinate: <b>E:446101.0 N:326806.1</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.20	1	ES	Tx2+J+Vx2			Crop stubble over very soft brown slightly gravelly slightly sandy silty CLAY with occasional some rootlets. Gravel is angular to rounded fine to medium quartzite. (SUBSOIL)	(0.30)	
						Stiff orange brown slightly sandy slightly gravelly very silty CLAY. Gravel is subrounded to rounded fine to medium quartzite. (THRUSSINGTON MEMBER)	0.30	
0.75		V	$c_u=112/90/99$				(0.75)	
						Stiff light orange brown grey slightly gravelly silty CLAY. Gravel is angular to rounded fine to medium flint and quartzite. (THRUSSINGTON MEMBER)	1.05	
						Very stiff red brown bedded green grey slightly sandy very silty CLAY. Recovery includes occasional tabular fine sandstone and siltstone cobbles. (Weathering Grade IVa/ III) (TARPORLEY SILTSTONE FORMATION)	1.20	
1.50-1.70	2	B				... below 1.80m bgl, recovery includes some to frequent cobbles. (Grade III)	(1.90)	
1.50-1.70	3	B						
						Trial pit terminated at 3.10m depth.	3.10	


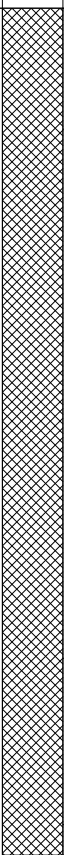
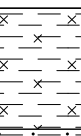
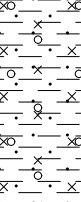
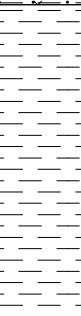

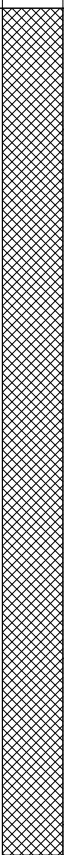
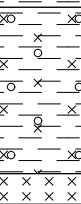



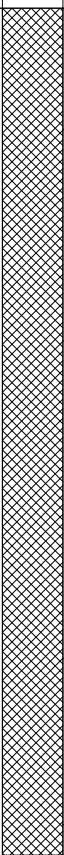



Plan (Not to Scale)		General Remarks		
		<ol style="list-style-type: none"> <li>Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.</li> <li>Trial pit remained stable during excavation.</li> <li>Groundwater encountered below 1.80m bgl.</li> <li>Trial pit backfilled and compacted with arisings upon completion.</li> <li>Pit terminated as machine unable to make significant further progress.</li> </ol>		
All dimensions in metres		Scale: <b>1:25</b>		
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By:	

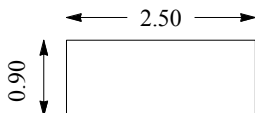


Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP321</b>
Contract Ref: <b>312494</b>	Start: <b>26.9.13</b> End: <b>26.9.13</b>	Ground Level (m AOD): <b>68.58</b>	National Grid Co-ordinate: <b>E:446307.6 N:326646.9</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.30	1	ES	Tx2+J+Vx2			Grass over very stiff brown slightly gravelly slightly sandy very silty CLAY with frequent rootlets. Gravel is subrounded to rounded fine to medium quartzite. (SUBSOIL)	(0.35)	
							0.35	
0.80-0.90	2	B				Red brown slightly gravelly sandy very silty CLAY. Gravel is subangular to rounded fine to medium occasional coarse quartzite and sandstone with rare rounded fine quartzite pebbles. (HEAD DEPOSITS)	(0.75)	
						1.10		
						Stiff to very stiff red brown mottled light grey and green grey slightly sandy silty CLAY. Recovery includes occasional tabular and angular fine to coarse siltstone and fine sandstone fragments. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	(1.40)	
					2.50			
2.70-2.80	3	B			Red brown SILTSTONE and fine SANDSTONE recovered as tabular and angular fine to coarse gravel and frequent cobbles within clay matrix. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	(0.35)		
				2.85				
Trial pit terminated at 2.85m depth.								

Plan (Not to Scale)		General Remarks		
		<ol style="list-style-type: none"> <li>1. Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.</li> <li>2. Trial pit remained stable during excavation.</li> <li>3. Groundwater encountered at 2.70m bgl.</li> <li>4. Trial pit backfilled and compacted with arisings upon completion.</li> <li>5. Pit terminated as machine unable to make significant further progress.</li> </ol>		
All dimensions in metres		Scale: <b>1:25</b>		
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By: 	

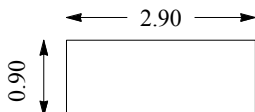


Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP322</b>
Contract Ref: <b>312494</b>	Start: <b>27.9.13</b> End: <b>27.9.13</b>	Ground Level (m AOD): <b>74.20</b>	National Grid Co-ordinate: <b>E:446496.5 N:326577.7</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.60	1	ES	Tx2+J+Vx2			Crop stubble over very stiff dry brown slightly gravelly slightly sandy very silty CLAY with occasional rootlets and small roots. Gravel is subrounded to rounded fine to medium quartzite. (SUBSOIL)	(0.40)	
						Very soft orange brown slightly sandy slightly gravelly very silty CLAY with occasional small roots. Gravel is angular to rounded fine to coarse quartzite and sandstone. (HEAD DEPOSITS)	0.40	
						Very stiff slightly red brown silty CLAY. Occasional rootlets. Recovery includes subangular to rounded fine occasional medium gravel sized siltstone fragments. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	(0.70)	
2.20-2.50	2 3	B B				... between 1.70m and 1.90m bgl calcareous band.	1.10	
						Very stiff fissured red brown silty CLAY. Recovery includes tabular and angular fine to coarse gravel sized siltstone and mudstone and fine sandstone fragments. (Weathering Grade IVa III) (TARPORLEY SILTSTONE FORMATION)	(1.05)	
						... between 2.30m and 2.45m green gray band. ... between 2.60m and 2.75m bgl green grey band.	2.15	
2.20-2.50	2 3	B B				Red brown bedded green grey SILTSTONE and fine SANDSTONE recovered as tabular and angular cobbles with occasional to some boulders up to 0.30m size in clayey matrix. (Weathering Grade II) (TARPORLEY SILTSTONE FORMATION)	(0.55)	
						Trial pit terminated at 2.80m depth.	2.70	
							2.80	

Plan (Not to Scale)		General Remarks		
		<ol style="list-style-type: none"> <li>Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.</li> <li>Trial pit remained stable during excavation.</li> <li>Groundwater encountered at 2.15m bgl.</li> <li>Trial pit backfilled and compacted with arisings upon completion.</li> <li>Pit terminated as machine unable to make significant further progress.</li> </ol>		
All dimensions in metres		Scale: <b>1:25</b>		
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By: 	

Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP323</b>
Contract Ref: <b>312494</b>	Start: <b>24.9.13</b> End: <b>24.9.13</b>	Ground Level (m AOD): <b>61.47</b>	National Grid Co-ordinate: <b>E:446507.7 N:326876.3</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Crop stubble over stiff red brown CLAY. (SUBSOIL)	(0.30)	
0.50	1	ES	Tx2+J+Vx2			Very stiff red brown CLAY, with occasional medium gravel sized pockets of grey or green grey silt. Recovery includes occasional angular to subangular fine to coarse sandstone fragments. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	(1.35)	
1.65-1.85	2	B				... below 1.50m bgl, recovery includes occasional to some angular sandstone and siltstone fragments.	1.65	
1.65-1.85	3	B				Interbedded extremely weak red brown SILTSTONE and extremely weak to very weak yellow and grey fine to medium grained SANDSTONE. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	(0.55)	
1.65-1.85	4	B						
1.65-1.85	5	B					2.20	
Trial pit terminated at 2.20m depth.								

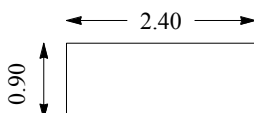
Plan (Not to Scale)		General Remarks		
		<ol style="list-style-type: none"> <li>Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.</li> <li>Trial pit remained stable during excavation.</li> <li>Groundwater not encountered.</li> <li>Trial pit backfilled and compacted with arisings upon completion.</li> <li>Pit terminated as machine unable to make significant further progress.</li> </ol>		
All dimensions in metres		Scale: <b>1:25</b>		
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By: 	



Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP324</b>
Contract Ref: <b>312494</b>	Start: <b>24.9.13</b> End: <b>24.9.13</b>	Ground Level (m AOD): <b>68.40</b>	National Grid Co-ordinate: <b>E:446934.7 N:326646.1</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.20	1	ES	Tx2+J+Vx2			Crop stubble over very stiff brown slightly gravelly silty sandy CLAY with frequent rootlets. Gravel is angular to rounded fine to coarse quartzite. (SUBSOIL) ... below 0.20m bgl, grey brown.	(0.30) 0.30	
0.65-0.85	2	B				Orange brown very rare very silty fine SAND with occasional rootlets. Gravel is angular to rounded quartzite and flint. (HEAD DEPOSITS)	(0.70) 1.00	
2.00-2.50	3	B				Very stiff red brown bedded green grey fissured silty CLAY. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	(1.40)	
2.00-2.50	4	B				... below 2.00m bgl, recovery includes occasional tabular and angular fine to coarse gravel sized siltstone and fine sandstone fragments.	2.40	
2.00-2.50	5	B						
2.30-2.50	6	B				Red brown bedded green grey extremely weak to very weak SILTSTONE and fine SANDSTONE recovered as tabular and angular fine to coarse gravel, cobbles and boulders up to 0.30 in size. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	(0.60) 3.00	
Trial pit terminated at 3.00m depth.								

Plan (Not to Scale)



## General Remarks

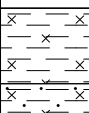

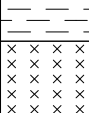


1. Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.
2. Trial pit remained stable during excavation.
3. Groundwater not encountered.
4. Trial pit backfilled and compacted with arisings upon completion.
5. Pit terminated as machine unable to make significant further progress.

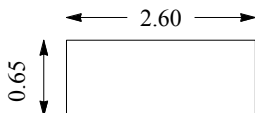


All dimensions in metres

Scale: **1:25**

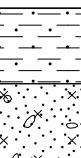
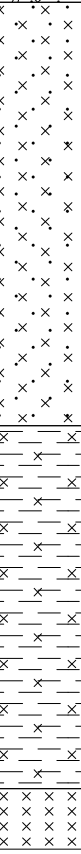
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By:	
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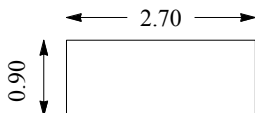


Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP325</b>
Contract Ref: <b>312494</b>	Start: <b>10.10.13</b> End: <b>10.10.13</b>	Ground Level (m AOD): <b>61.76</b>	National Grid Co-ordinate: <b>E:447107.9 N:326883.5</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.05	1	ES	Tx2+J+Vx2			Crop stubble over very stiff brown slightly sandy slightly gravelly silty to very silty CLAY with frequent rootlets. Gravel is angular to rounded fine to coarse quartzite and flint. (SUBSOIL)	0.25 0.35	
						Very stiff orange brown slightly gravelly silty sandy CLAY. Gravel is angular to rounded fine to medium flint and quartzite. (HEAD DEPOSITS)	(0.50)	
0.85-1.05	2	B				Very stiff red brown silty CLAY. Recovery includes occasional tabular fine to coarse mudstone lithorelicts. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	0.85	
						Red brown bedded green grey SILTSTONE recovered as very gravelly tabular and angular cobbles. (TARPORLEY SILTSTONE FORMATION) ... between 1.05m and 1.10m bgl, green grey SILTSTONE and fine grained SANDSTONE.	(1.20)	
1.45-2.05	3	B				... between 1.45m and 1.65m bgl, interlaminated with soft grey clay.  ... between 1.95m and 2.00m bgl, green grey SILTSTONE and fine grained SANDSTONE.	2.05	
Trial pit terminated at 2.05m depth.								

Plan (Not to Scale)		General Remarks		
		<ol style="list-style-type: none"> <li>Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.</li> <li>Trial pit remained stable during excavation.</li> <li>Groundwater not encountered.</li> <li>Trial pit backfilled and compacted with arisings upon completion.</li> <li>Pit terminated as machine unable to make significant further progress.</li> </ol>		
All dimensions in metres		Scale: <b>1:25</b>		
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By: 	

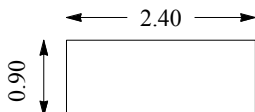


Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP326</b>
Contract Ref: <b>312494</b>	Start: <b>24.9.13</b> End: <b>24.9.13</b>	Ground Level (m AOD): <b>59.29</b>	National Grid Co-ordinate: <b>E:447181.0 N:326760.8</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.60-0.70	1	ES	Tx2+J+Vx2			Crop stubble over very soft brown slightly sandy CLAY with frequent rootlets. Gravel is angular to rounded fine to coarse quartzite and rare fine brick. (SUBSOIL) Orange brown slightly gravelly very silty fine SAND with occasional rootlets. Gravel is angular to rounded fine to medium quartzite and flints. (HEAD DEPOSITS) Red brown friable clayey sandy SILT. (TARPORLEY SILTSTONE FORMATION)	0.25 0.50	
1.50-1.70	2	B				... below 1.40m bgl, brown and slightly clayey slightly gravelly very sandy SILT.  Very stiff fissured red brown bedded green grey slightly sandy slightly silty CLAY. Recovery includes occasional tabular and angular fine to medium gravel sized siltstone fragments. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)  Red brown bedded green grey extremely weak to very weak SILTSTONE and fine SANDSTONE recovered as tabular and angular fine to coarse gravel and occasional cobbles with clay laminations. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)  Trial pit terminated at 3.30m depth.	(1.40) 1.90 (1.20) 3.10 3.30	

<b>Plan (Not to Scale)</b>  		<b>General Remarks</b>  1. Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered. 2. Trial pit remained stable during excavation. 3. Groundwater encountered between 1.80m and 2.00m bgl. 4. Trial pit backfilled and compacted with arisings upon completion. 5. Pit terminated as machine unable to make significant further progress.		
Method Used: <b>Machine dug</b>		Plant Used: <b>JCB-3CX</b>		Logged By: <b>MHocking</b>
All dimensions in metres		Scale: <b>1:25</b>		
Checked By: 				

Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TP327</b>
Contract Ref: <b>312494</b>	Start: <b>24.9.13</b> End: <b>24.9.13</b>	Ground Level (m AOD): <b>59.53</b>	National Grid Co-ordinate: <b>E:447299.6 N:326692.1</b>	Sheet: <b>1 of 1</b>

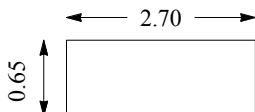

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.20	1	ES	Tx2+J+Vx2			Crop stubble over very soft brown slightly gravelly silty sandy CLAY with frequent rootlets. Gravel is angular to subrounded fine to medium flint and quartzite. (SUBSOIL)	(0.30)	
						Dark orange brown mottled slightly purple brown slightly clayey slightly gravelly very sandy SILT with occasional rootlets. gravel is angular to rounded fine to medium quartzite and flint. (HEAD DEPOSITS)	0.30 (0.70)	
1.20-1.40	2	B				Stiff to very stiff fissured red brown bedded green grey silty CLAY. Recovery includes occasional tabular and angular fine to coarse gravel sized siltstone and fine sandstone fragments. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	1.00 (0.90)	
2.60-2.80	3	B				Red brown bedded green grey extremely weak SILTSTONE and fine SANDSTONE recovered as silty tabular and angular fine to coarse gravel and occasional cobble sized and rare boulder sized fragments. (~0.30m) (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	1.90 (1.00)	
						Trial pit terminated at 2.90m depth.	2.90	

Plan (Not to Scale)		General Remarks		
		<ol style="list-style-type: none"> <li>Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.</li> <li>Trial pit remained stable during excavation.</li> <li>Groundwater not encountered.</li> <li>Trial pit backfilled and compacted with arisings upon completion.</li> <li>Pit terminated as machine unable to make significant further progress.</li> </ol>		
All dimensions in metres		Scale: <b>1:25</b>		
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By: 	



Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TPS301</b>
Contract Ref: <b>312494</b>	Start: <b>3.10.13</b> End: <b>3.10.13</b>	Ground Level (m AOD): <b>55.46</b>	National Grid Co-ordinate: <b>E:445476.8 N:327171.9</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.50	1	ES	Tx2+J+Vx2 $c_u=56/66/54$			Grass and weeds over stiff to very stiff brown desicated slightly gravelly silty sandy CLAY, with frequent rootlets and occasional roots. Gravel is angular to rounded fine to medium sandstone, quartzite and flint. (SUBSOIL)	0.20	
0.60	V					Firm becoming stiff red brown slightly sandy very silty CLAY. Recovery includes occasional subangular to rounded fine occasional medium sandstone fragments. Occasional quartzite gravel at the subsoil interface. (Weathering Grade IVb)		
0.70-1.00	2	B				(TARPORLEY SILTSTONE FORMATION)		
2.10-2.80	3	B				... below 1.30m bgl, recovery includes fine to medium and occasional coarse gravel sized sandstone fragments.  ... between 2.10m and 2.30m bgl, recovery includes occasional to some tabular sandstone cobbles. ... below 2.30m bgl, recovery includes tabular and angular fine to coarse gravel sized sandstone, and rare cobbles.	(2.65)	
						Trial pit terminated at 2.85m depth.	2.85	

Plan (Not to Scale)		General Remarks			
		<ol style="list-style-type: none"> <li>Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.</li> <li>Trial pit remained stable during excavation.</li> <li>Groundwater not encountered.</li> <li>Trial pit backfilled and compacted with arisings upon completion.</li> <li>Soakaway test completed.</li> <li>Pit terminated at anticipated maximum depth of soakaway/pond feature.</li> </ol>			
		All dimensions in metres		Scale:	<b>1:25</b>
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By:		

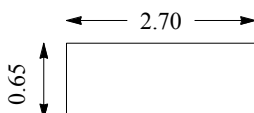


# TRIAL PIT LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TPS302</b>
Contract Ref: <b>312494</b>	Start: <b>3.10.13</b> End: <b>3.10.13</b>	Ground Level (m AOD): <b>67.94</b>	National Grid Co-ordinate: <b>E:445940.3 N:327428.4</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.40-0.60	1	ES	Tx2+J+Vx2			Very stiff brown desicated slightly gravelly slightly sandy silty CLAY. Gravel is angular to rounded fine to medium occasional coarse quartzite, occasional sandstone and rare brick. (SUBSOIL) Stiff dark orange grey slightly sandy slightly silty to very silty slightly gravelly to gravelly CLAY. Gravel is angular to rounded fine to coarse quartzite, sandstone and occasional coal. (THRUSSINGTON MEMBER) ... @ 0.50m bgl, land drain in side of pit, dry.	(0.30) 0.30	
1.60-1.80	2	B				Very stiff red brown fissured slightly sandy slightly silty CLAY. Recovery includes occasional tabular sandstone cobbles. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	1.10	
2.00-2.40	3	B					(1.40) 2.50	
Trial pit terminated at 2.50m depth.								

Plan (Not to Scale)



## General Remarks

1. Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.
2. Trial pit remained stable during excavation.
3. Groundwater not encountered.
4. Trial pit backfilled and compacted with arisings upon completion.
5. Soakaway test completed.
6. Pit terminated at anticipated maximum depth of soakaway/pond feature.

All dimensions in metres

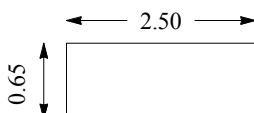
Scale: **1:25**

Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By:	
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Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TPS303</b>
Contract Ref: <b>312494</b>	Start: <b>3.10.13</b> End: <b>3.10.13</b>	Ground Level (m AOD): <b>54.36</b>	National Grid Co-ordinate: <b>E:446258.9 N:327473.2</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.20	1	ES	Tx2+J+Vx2			Crop stubble over stiff to very stiff brown desicated slightly gravelly silty sandy CLAY with occasional rootlets. Gravel is angular to rounded fine to medium occasional coarse quartzite and flint. (SUBSOIL)	(0.30)	
1.00-1.40	2	B				Very stiff orange brown slightly gravelly silty sandy CLAY with rare rootlets. Gravel is angular to rounded fine to coarse quartzite and rare flint and sandstone. (THRUSINGTON MEMBER)  ... below 0.70m bgl, rare subangular to rounded quartzite cobbles.	(1.55)	
2.50-3.00	3	B				Firm to stiff red brown slightly silty CLAY. Recovery includes occasional tabular and angular fine to medium gravel sized mudstone lithorelicts, siltstone and sandstone fragments. (Weathering Grade IVb) (EDWALTON MEMBER) ... @ 1.90m and 2.20m bgl, partings of green grey siltstone and sandstone.	(1.85)	
2.50-3.00	4	D				... @ 2.50m bgl, soft to firm.	(1.35)	
2.50		V	c <sub>u</sub> =54/30/34				3.20	
Trial pit terminated at 3.20m depth.								

Plan (Not to Scale)



## General Remarks

1. Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.
2. Trial pit remained stable during excavation.
3. Groundwater not encountered.
4. Trial pit backfilled and compacted with arisings upon completion.
5. Soakaway test completed.
6. Pit terminated at anticipated maximum depth of soakaway/pond feature.

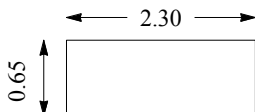


All dimensions in metres

Scale: **1:25**

Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By: 	
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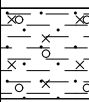
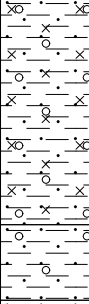
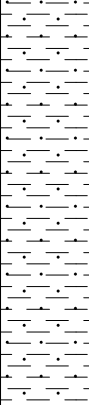
Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TPS304</b>
Contract Ref: <b>312494</b>	Start: <b>1.10.13</b> End: <b>1.10.13</b>	Ground Level (m AOD): <b>52.85</b>	National Grid Co-ordinate: <b>E:446679.4 N:327528.5</b>	Sheet: <b>1 of 1</b>

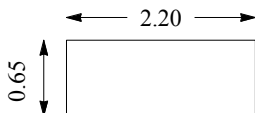


Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.30	1	ES	Tx2+J+Vx2			Crop stubble over very stiff very dry brown desicated slightly sandy slightly gravelly silty CLAY with occasional rootlets. Gravel is subangular to rounded fine to coarse quartzite. (SUBSOIL)	(0.30)	
						Very stiff red brown slightly gravelly sandy to very sandy CLAY. Gravel is subangular to rounded fine to medium occasional coarse quartzite. (HEAD DEPOSITS)	0.30 0.45	
0.80		V	$c_u=84$			Stiff red brown slightly sandy to sandy very gravelly CLAY. Gravel is angular to rounded and tabular fine to medium occasional coarse quartzite, flint and sandstone. (HEAD DEPOSITS)	(0.45) 0.90	
						Stiff to very stiff fissured red brown mottled green grey slightly sandy CLAY. Recovery includes occasional tabular and angular fine to coarse gravel sized siltstone and fine sandstone fragments. (Grade IVa) (EDWALTON MEMBER) ... below 1.20m bgl, occasional tabular siltstone cobbles.	(1.60)	
1.80-2.30	2	B				... below 2.00m bgl, recovery includes some to frequent tabular siltstone and fine sandstone cobbles. ... between 2.00m and 2.15m bgl, green clay.	2.50	
Trial pit terminated at 2.50m depth.								

Plan (Not to Scale)		General Remarks		
		<ol style="list-style-type: none"> <li>Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.</li> <li>Trial pit remained stable during excavation.</li> <li>Groundwater not encountered.</li> <li>Trial pit backfilled and compacted with arisings upon completion.</li> <li>Soakaway test completed.</li> <li>Pit terminated at anticipated maximum depth of soakaway/pond feature.</li> </ol>		
All dimensions in metres		Scale: <b>1:25</b>		
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By: 	



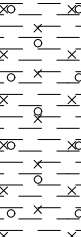



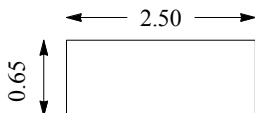


Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TPS305</b>
Contract Ref: <b>312494</b>	Start: <b>1.10.13</b> End: <b>1.10.13</b>	Ground Level (m AOD): <b>39.42</b>	National Grid Co-ordinate: <b>E:447372.8 N:327628.6</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.60	1	ES	Tx2+J+Vx2			Crop stubble over very stiff very dry desicated slightly sandy slightly gravelly silty CLAY with occasional rootlets. Gravel is subangular to rounded fine to medium occasional coarse quartzite. (SUBSOIL) Very stiff slightly orange brown slightly sandy slightly gravelly to gravelly silty CLAY. Gravel is subangular to rounded fine to coarse quartzite. (WANLIP MEMBER) ... below 0.70m bgl, sandy to very sandy.	(0.30) 0.30	
1.20-1.50	2	B				Stiff to very stiff orange grey mottled red brown slightly gravelly sandy to very sandy CLAY. Gravel is angular to rounded fine to coarse quartzite and occasional flint. (WANLIP MEMBER) Red brown very clayey very gravelly fine to medium occasionally coarse SAND. Gravel is angular to rounded fine to coarse quartzite and occasional flint. (WANLIP MEMBER) ... below 1.30m bgl red brown.	(0.75) 1.05 1.30	
2.10-2.30	3	B				... below 2.40m bgl, recovery includes rare tabular sandstone cobbles.	(1.35) 2.65	
Trial pit terminated at 2.65m depth.								

Plan (Not to Scale)		General Remarks			
		<ol style="list-style-type: none"> <li>Location scanned with GPR and a CAT and Signal Generator prior to breaking ground. No services encountered.</li> <li>Trial pit remained stable during excavation.</li> <li>Groundwater not encountered.</li> <li>Trial pit backfilled and compacted with arisings upon completion.</li> <li>Soakaway test completed.</li> <li>Pit terminated at anticipated maximum depth of soakaway/pond feature.</li> </ol>			
		All dimensions in metres		Scale:	<b>1:25</b>
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By:		

Contract: <b>East Midlands Gateway</b>		Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TPS351</b>
Contract Ref: <b>312494</b>	Start: <b>1.10.13</b> End: <b>1.10.13</b>	Ground Level (m AOD): <b>38.54</b>	National Grid Co-ordinate: <b>E:447112.1 N:327771.9</b>	Sheet: <b>1 of 1</b>


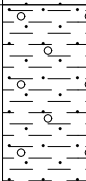
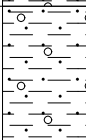
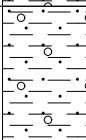
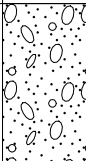
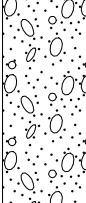
Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10-0.20	1	ES	Tx2+J+Vx2			New crop and crop stubble over very stiff brown slightly gravelly sandy silty CLAY with occasional rootlets. Gravel is angular to rounded fine to medium occasional coarse quartzite and occasional flint. (SUBSOIL)	(0.30) 0.30	
0.60-0.80	2	B				Orange grey slightly clayey to very clayey very gravelly fine to coarse SAND with occasional subrounded to rounded quartzite cobbles. Gravel is angular to rounded fine to coarse quartzite and occasional flint. (WANLIP MEMBER)  ... below 0.80m bgl, occasional cobble sized clay pockets.	(0.80) 1.10	
1.20-1.40	3	B				Stiff to very stiff red brown mottled orange and grey slightly silty slightly sandy slightly gravelly CLAY. Gravel is angular to rounded fine to medium quartzite and occasional flint. (WANLIP MEMBER)	(0.80) 1.90	
2.20-2.60	4	B				Red brown slightly clayey SAND and GRAVEL. Sand is fine to coarse. gravel is angular to rounded and tabular fine to coarse quartzite, flint and occasional sandstone. (WANLIP MEMBER)	(0.75) 2.65	
Trial pit terminated at 2.65m depth.								

Plan (Not to Scale)		General Remarks		
		<ol style="list-style-type: none"> <li>Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.</li> <li>Trial pit remained stable during excavation.</li> <li>Groundwater encountered below 2.35m bgl.</li> <li>Trial pit backfilled and compacted with arisings upon completion.</li> <li>Soakaway test completed.</li> <li>Pit terminated at anticipated maximum depth of soakaway/pond feature.</li> </ol>		
All dimensions in metres		Scale: <b>1:25</b>		
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>MHocking</b>	Checked By: 	

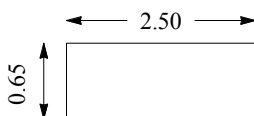


# TRIAL PIT LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Trial Pit: <b>TPS352</b>
Contract Ref: <b>312494</b>	Start: <b>1.10.13</b> End: <b>1.10.13</b>	Ground Level (m AOD): <b>41.14</b>	National Grid Co-ordinate: <b>E:446959.7 N:327760.9</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Depth	No	Type	Results					
0.50	1	ES	Tx2+J+Vx2			New crop and crop stubble over very stiff slightly gravelly sandy silty CLAY with occasional rootlets. Gravel is angular to rounded fine to medium quartzite and flint. (SUBSOIL)	(0.30)	
						Very stiff orange grey slightly gravelly sandy to very sandy CLAY. Gravel is angular to rounded fine to medium occasional coarse quartzite and flint. (WANLIP MEMBER)	(0.60)	
							0.90	
1.90-2.10	2	B				Stiff to very stiff red brown mottled orange and grey slightly silty slightly sandy to sandy slightly gravelly CLAY. Gravel is angular to rounded fine to coarse quartzite and flint. (WANLIP MEMBER)	(0.45)	
							1.35	
						Red brown clayey very silty very gravelly fine to medium occasional coarse SAND with occasional angular flint and rare quartzite cobbles. Gravel is angular to rounded fine to quartzite and flint. (WANLIP MEMBER)	(1.20)	
						... below 1.90m bgl, recovery includes occasional to some cobble to small boulder sized cemented sand clasts.	2.55	
Trial pit terminated at 2.55m depth.								

Plan (Not to Scale)



## General Remarks

1. Location scanned with a CAT and Signal Generator prior to breaking ground. No services encountered.
2. Trial pit remained stable during excavation.
3. Groundwater not encountered.
4. Trial pit backfilled and compacted with arisings upon completion.
5. Soakaway test completed.
6. Pit terminated at anticipated maximum depth of soakaway/pond feature.

All dimensions in metres

Scale: **1:25**

Method Used:

**Machine dug**

Plant Used:

**JCB-3CX**


Logged By:


**MHocking**

Checked By:




*PHOTOGRAPHIC LOG – Trial pits – Zone 1*


<b>Photo No.</b>  <b>1</b>	<b>Date:</b>  3.10.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TPS301 – soakaway test completed within trial pit		

<b>Photo No.</b>	<b>Date:</b>	
<b>2</b>	3.10.13	
<b>Direction Taken:</b>	<b>Photo Taken:</b>	
N/A		
<b>Description:</b>		
TPS302 – soakaway test completed within trial pit		




<b>Photo No.</b>  <b>3</b>	<b>Date:</b>  3.10.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TPS303 – soakaway test completed within trial pit		

<b>Photo No.</b>  <b>4</b>	<b>Date:</b>  1.10.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TPS304 – soakaway test completed within trial pit		


<b>Photo No.</b>  <b>5</b>	<b>Date:</b>  1.10.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TPS305 – soakaway test completed within trial pit		

<b>Photo No.</b>  6	<b>Date:</b>  26.09.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TP307		

<b>Photo No.</b>	<b>Date:</b>	
<b>7</b>	25.09.13	
<b>Direction Taken:</b>		
N/A		
<b>Description:</b>		
TP308		


<b>Photo No.</b>  8	<b>Date:</b>  25.09.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TP309		




<b>Photo No.</b>  <b>9</b>	<b>Date:</b>  25.09.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TP310		

<b>Photo No.</b>  <b>10</b>	<b>Date:</b>  25.09.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TP311		



<b>Photo No.</b>  <b>11</b>	<b>Date:</b>  27.09.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TP312		


<b>Photo No.</b>  <b>12</b>	<b>Date:</b>  24.09.13
<b>Direction Taken:</b>  N/A	<b>Photo</b>
<b>Description:</b>  TP313	

A photograph showing a cross-section of a deep, narrow trench or pit. The walls are composed of reddish-brown soil and rocks. A white object, possibly a pipe or a measuring tool, is visible on the left side of the trench. The bottom of the trench is dark and appears to be filled with water or a very dark, wet material. The overall scene suggests a geological or environmental investigation.

<b>Photo No.</b>  <b>13</b>	<b>Date:</b>  25.09.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TP314		


<b>Photo No.</b>  <b>14</b>	<b>Date:</b>  26.09.13
<b>Direction Taken:</b>  N/A	<b>Photo</b>
<b>Description:</b>  TP315	




<b>Photo No.</b>  <b>15</b>	<b>Date:</b>  26.09.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TP316		

<b>Photo No.</b>  <b>16</b>	<b>Date:</b>  26.09.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TP317		



<b>Photo No.</b>  <b>17</b>	<b>Date:</b>  25.09.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TP319		

<b>Photo No.</b>  <b>18</b>	<b>Date:</b>  26.09.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TP320		

<b>Photo No.</b>  <b>19</b>	<b>Date:</b>  26.09.13
<b>Direction Taken:</b>  N/A	<b>Photo</b>
<b>Description:</b>  TP321	




<b>Photo No.</b>  <b>20</b>	<b>Date:</b>  27.09.13
<b>Direction Taken:</b>  N/A	<b>Photo</b>
<b>Description:</b>  TP322	





<b>Photo No.</b>  <b>21</b>	<b>Date:</b>  24.09.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TP323		


<b>Photo No.</b>  <b>22</b>	<b>Date:</b>  24.09.13
<b>Direction Taken:</b>  N/A	<b>Photo</b>
<b>Description:</b>  TP324	



<b>Photo No.</b>  <b>23</b>	<b>Date:</b>  10.10.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TP325		


<b>Photo No.</b>  <b>24</b>	<b>Date:</b>  24.09.13
<b>Direction Taken:</b>  N/A	<b>Photo</b>
<b>Description:</b>  TP326	



<b>Photo No.</b>  <b>25</b>	<b>Date:</b>  24.09.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TP327		

<b>Photo No.</b>  <b>26</b>	<b>Date:</b>  1.10.13	
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>	
<b>Description:</b>  TPS351 – Soakaway test carried out on completion of trial pit		

<b>Photo No.</b>  <b>27</b>	<b>Date:</b>  1.10.13
<b>Direction Taken:</b>  N/A	<b>Photo Taken:</b>
<b>Description:</b>  TPS352 – Soakaway test carried out on completion of trial pit	



## **APPENDIX D**

# **CABLE PERCUSSION BOREHOLE LOGS**

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## KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF ABBREVIATIONS

### SAMPLING

#### *Sample type codes*

B	=	Bulk disturbed sample.
C	=	Core sample.
CS	=	Core sample taken from rotary core for lab testing.
D	=	Small disturbed sample.
DSPT	=	Small disturbed sample originating from SPT test.
ES	=	Soil sample for environmental testing.
U	=	Undisturbed driven tube sample - Number of blows indicated. % recovery reported.

#### *Undisturbed sample detail codes*

U <sub>(100)</sub>	=	100mm diameter undisturbed sample.
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### IN-SITU TESTING

SPT <sub>(c)</sub>	=	Standard Penetration Test using a solid 60 degree cone.
SPT	=	Standard Penetration Test using split spoon sampler. (SPT <sub>(NR)</sub> indicates 'No Sample Recovery').
	=	* denotes extrapolated N value. NP denotes 'No Penetration'.
V	=	Field Vane Test. Peak value (c <sub>u</sub> ) & Residual value (c <sub>r</sub> ), given as shear strength in kPa.

### ROTARY DRILLING INFORMATION

W	=	Water flush returns (%)
TCR	=	Total core recovery (%)
SCR	=	Solid core recovery (%)
RQD	=	Rock quality designations (%)
If	=	Fracture spacing (mm).
In the fracture column (i) denotes discontinuity is infilled (refer to Fracture Table for details).		
Where variable the minimum - average - maximum spacing may be quoted.		
'NI' denotes non-intact core. 'NA' denotes not applicable.		

All lengths used to determine rock core mechanical properties taken along the centre line of the core.

Obvious induced fractures have been ignored.

The assessment of solid core is based on lengths that show a full diameter and not necessarily a full circumference.

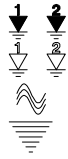
AZCL = Assessed zone of core loss.

### ADDITIONAL NOTES

1. All soil and rock descriptions and legends in general accordance with BS EN ISO 14688-1, 14688-2, 14689-1, and BS5930:1999 including Amendment 2 (2010).
2. Material types divided by a broken line ( - - - ) indicates an unclear boundary.
3. The data on any sheet within the report showing the AGS icon is available in the AGS format.

## KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF GRAPHIC SYMBOLS

### WATER COLUMN SYMBOLS



First water strike, second water strike etc.

Standing water level following first strike, standing water level following second strike etc.

Seepage.

Standing water level recorded at documented date.

### MATERIAL GRAPHIC LEGENDS



CLAY



Clayey  
gravelly  
SAND



Gravelly  
clayey  
SAND



Clayey  
gravelly  
SAND  
with  
COBBLES



Clayey  
SAND



Clayey  
SAND  
with  
COBBLES



Clayey  
sandy  
GRAVEL



GRAVEL



GRAVEL  
with  
COBBLES



Gravelly  
CLAY



Gravelly  
silty  
CLAY



Silty  
gravelly  
CLAY



Silty  
gravelly  
CLAY  
with  
COBBLES



Gravelly  
SAND



Gravelly  
clayey  
SILT



Gravelly  
SILT



MADE  
GROUND



Mudstone



SAND



SAND  
with  
COBBLES

### INSTRUMENTATION SYMBOLS



Backfill



Bentonite  
seal



Concrete



Gravel  
filter



Sand filter



Stopcock  
cover



Piezometer  
tip



Plain pipe





Slotted  
pipe



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP203</b>
Contract Ref: <b>312494</b>	Start: <b>25.9.13</b> End: <b>25.9.13</b>	Ground Level (m AOD): <b>67.92</b>	National Grid Co-ordinate: <b>E:447184.9 N:326594.2</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	D	29 blows 90% recovery			Brown slightly gravelly sandy CLAY. Gravel is angular to subangular fine to medium brick, sandstone. Occasional rootlets. (SUBSOIL)	(0.40)	
0.50	2	D				Red Brown slightly gravelly clayey fine SAND. Gravel is angular to subangular fine to medium sandstone. Occasional rootlets. (Weathering Grade IVa) (TARPORLEY SILTSTONE FORMATION)	(0.50)	
0.80-0.80	3	B				Stiff red brown clayey SILT. Occasional black staining. (Weathering Grade IVa) (TARPORLEY SILTSTONE FORMATION)	0.90	
1.00	4	D				Stiff to very stiff red brown silty clay becoming very weak red brown MUDSTONE. Occasional silt bedding and occasional grey reduction spots and sandstone skerries. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	(0.80)	
1.20-1.65	5	U						
1.70	6	D	N=33			Stiff red brown silty CLAY. Recovery includes occasional fine to angular to subangular fine to medium sandstone skerries fragments. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	(0.30)	
2.00	7	D				Stiff to very stiff red brown silty clay becoming very weak red brown MUDSTONE. Occasional silt bedding and occasional grey reduction spots and sandstone skerries. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	2.00	
2.20-2.65 2.20-2.70	1 8	SPT B						
2.90	9	D	N=38			...	(2.11)	
3.00-3.45	2	SPT						
3.70-4.00 3.70	3 10	SPT D	N=100*			...	4.11	
4.00-4.11 4.00	4 11	SPT D	N=333*					
Borehole terminated at 4.11m depth.								

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks			
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)				
25/09/13		1.20	1.20	150	Dry	3.70	4.00	01:00	1. Location scanned with CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater not encountered. 4. Gas and groundwater monitoring well installed to 4.00m bgl upon completion.			
25/09/13		2.20	1.50	150	Dry							
25/09/13		3.00	3.00	150	Dry							
25/09/13		3.70	3.00	150	Dry							
25/09/13		4.00	3.00	150	Dry							
									All dimensions in metres		Scale: 1:25	
Method Used: Cable percussion			Plant Used: Pilcon Wayfarer 1500			Drilled By: GH			Logged By: GShaw		Checked By: 	



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP204</b>
Contract Ref: <b>312494</b>	Start: <b>24.9.13</b> End: <b>24.9.13</b>	Ground Level (m AOD): <b>82.82</b>	National Grid Co-ordinate: <b>E:446669.2 N:326418.6</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
1.20-1.65	1	SPT	N=15			Dark brown slightly gravelly clayey SILT. Gravel is subangular to subrounded fine to medium sandstone, quartzite with occasional rootlets. (SUBSOIL)	(0.45)	
						Brown slightly silty CLAY. Recovery includes occasional subangular to subrounded fine to medium sandstone skerries fragments with rare rootlets. (Weathering Grade IVa) (GUNTORPE MEMBER)	0.45	
						Firm to stiff red brown silty CLAY with very weak grey siltstone bands. (Weathering Grade IVa) (GUNTORPE MEMBER)	(0.70)	
						Stiff red brown CLAY with grey reduction spots and occasional siltstone and mudstone bands. (Weathering Grade IVb) (GUNTORPE MEMBER)	1.40	
2.20-2.65	6	U <sub>(100)</sub>	63 blows 70% recovery					
2.70	7	D					2.80	
2.90	8	D				Very stiff grey mottled brown silty CLAY. (Weathering Grade IVb) (GUNTORPE MEMBER)	(0.50)	
3.00-3.43	2	SPT	N=55*					
3.00-3.50	9	B					3.30	
3.90	10	D				Very weak red brown MUDSTONE with grey siltstone bands and occasional grey reduction spots. (Weathering Grade III) (GUNTORPE MEMBER)	(1.02)	
4.00-4.33	3	SPT	N=86*				4.32	
Borehole terminated at 4.32m depth.								



Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	
24/09/13		4.32	3.00	150	Dry				1. Location scanned with CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater not encountered. 4. Gas and groundwater monitoring well installed to 4.00m bgl upon completion.
Method Used: <b>Cable percussion</b>						Plant Used: <b>Pilcon Wayfarer 1500</b>			All dimensions in metres
Drilled By: <b>GH</b>						Logged By: <b>GShaw</b>			Scale: <b>1:25</b>
Checked By:						Checked By:			



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP205</b>
Contract Ref: <b>312494</b>	Start: <b>25.9.13</b> End: <b>26.9.13</b>	Ground Level (m AOD): <b>56.42</b>	National Grid Co-ordinate: <b>E:447286.1 N:326756.4</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	D				Brown slightly clayey fine SAND with occasional black organic spots and rootlets. (SUBSOIL)	(0.60)	
0.70	2	D				Brown sandy CLAY with occasional rootlets. (HEAD DEPOSITS)	0.60 (0.30)	
1.00	3	D				Stiff red brown silty CLAY. Recovery includes occasional angular, tabulated fine to coarse sandstone and mudstone lithorelicts. (Weathering Grade IVa) (TARPORLEY SILTSTONE FORMATION)	0.90 (0.50)	
1.20-1.65 1.20-1.70	1 4	SPT B	N=18				1.40	
2.00	5	D				Stiff red brown mottled grey CLAY. Recovery includes occasional angular fine to coarse sandstone, mudstone and siltstone lithorelicts. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)		
2.20-2.65	2	SPT	N=29			... at 2.20m bgl, becomes stiff to very stiff.	(1.90)	
2.90 3.00-3.40 3.00-3.40	6 3 7	D SPT B	N=61*				3.30	
3.70 3.80-4.05	8 4	D SPT	N=158*			Very weak to weak red brown MUDSTONE with occasional grey reduction spots and sandstone skerries. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	(1.07)	
4.30-4.37 4.30	5 9	SPT D	N=500*			... at 4.30m bgl, moderately weak to moderately strong. Borehole terminated at 4.37m depth.	4.37	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks		
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)			
25/09/13		2.65	1.50	150	Dry	3.40	3.80	01:00			
26/09/13		4.36	3.00	150	Dry	3.80	4.30	01:00			
									1. Location scanned with CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater not encountered. 4. Gas and groundwater monitoring well installed to 4.30m bgl upon completion.		
									All dimensions in metres		
									Scale: 1:25		
Method Used: Cable percussion				Plant Used: Pilcon Wayfarer 1500		Drilled By: GH		Logged By: GShaw		Checked By: 	
											



Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP206</b>
Contract Ref: <b>312494</b>	Start: <b>1.10.13</b> End: <b>2.10.13</b>	Ground Level (m AOD): <b>51.90</b>	National Grid Co-ordinate: <b>E:447411.8 N:326888.7</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-1.00	1	B				Red brown sandy CLAY. Recovery includes occasional angular fine to coarse sandstone skerries fragments. (Weathering Grade IVa) (TARPORLEY SILTSTONE FORMATION)		
1.00-1.50	2	B					(2.00)	
1.50-1.95	3	U <sub>(100)</sub>	60 blows 75% recovery				2.00	
2.00-2.15	1	SPT	N=200*			Weak to moderately weak red brown thinly bedded MUDSTONE and SANDSTONE. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)		
2.00	4	D						
2.00-2.45	5	B					(1.00)	
2.50-3.00	6	B					3.00	
3.00-3.05	2	SPT	N=600*			Moderately weak to moderately strong grey and red/brown fine grained thinly bedded SANDSTONE. (Weathering Grade III) (BROMSGROVE SANDSTONE FORMATION)	(0.35)	
3.00-3.30	7	B					3.35	
3.30-3.35	3	SPT(c)	N=600*			Borehole terminated at 3.35m depth.		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	
01/10/13		2.00	1.50	150	Dry	3.00	3.30	01:00	
02/10/13		3.35	1.50	150	Dry				1. Location scanned with GPR a CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater not encountered. 4. Borehole backfilled with arisings upon completion.
Method Used: <b>Cable percussion</b>						Plant Used: <b>Dando 150</b>			All dimensions in metres
Drilled By: <b>TC</b>						Logged By: <b>GShaw</b>			Scale: <b>1:25</b>
Checked By:						Checked By:			



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP207</b>
Contract Ref: <b>312494</b>	Start: <b>25.9.13</b> End: <b>25.9.13</b>	Ground Level (m AOD): <b>63.04</b>	National Grid Co-ordinate: <b>E:447086.9 N:326841.6</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	D				Brown slightly gravelly slightly clayey fine SAND. Gravel is angular fine to coarse brick, clinker, quartzite and concrete. (MADE GROUND)	(0.50)	
0.60	2	D				Stiff red brown silty CLAY. Recovery includes occasional angular fine to coarse mudstone lithorelicts. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	(0.50)	
1.10	3	D				Very stiff to very weak red brown CLAY with grey sandstone skerries. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	(0.40)	
1.20-1.61	1	SPT	N=59*					
1.20-1.70	4	B					1.40	
2.00	5	D				Very weak to weak red brown MUDSTONE occasional grey reduction spots and sandstone skerries. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	(1.57)	
2.10-2.41	2	SPT	N=94*					
2.70-2.98	3	SPT	N=120*					
2.70	6	D					2.97	
Borehole terminated at 2.97m depth.								


Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	
25/09/13		2.97	1.50	150	Dry	2.40	2.70	01:00	1. Location scanned with CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater not encountered. 4. Gas and groundwater monitoring well installed to 2.70m bgl upon completion. 5. Made ground associated with farm track.
Method Used: <b>Cable percussion</b>						All dimensions in metres			Scale: <b>1:25</b>
Plant Used: <b>Pilcon Wayfarer 1500</b>			Drilled By: <b>GH</b>			Logged By: <b>GShaw</b>		Checked By:	



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP208</b>
Contract Ref: <b>312494</b>	Start: <b>24.9.13</b> End: <b>24.9.13</b>	Ground Level (m AOD): <b>66.58</b>	National Grid Co-ordinate: <b>E:446836.4 N:326895.9</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	D				Brown slightly gravelly silty CLAY. Gravel is angular fine to medium sandstone with occasional rootlets. (TOPSOIL)	(0.30)	
0.40	2	D				Very stiff red brown slightly sandy silty CLAY. Recovery includes occasional angular and tabulated fine to coarse sandstone skerries fragments. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	0.30	
0.90	3	D						
1.20-1.53	1	SPT	N=83*			... at 1.20m bgl, becomes very weak.	(2.02)	
2.00-2.32	2	SPT	N=86*					
2.00	4	D					2.32	
Borehole terminated at 2.32m depth.								

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks			
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)				
24/09/13		2.32	1.50	150	Dry	1.50	2.00	01:00				
									1. Location scanned with CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater not encountered. 4. Gas and groundwater monitoring well installed to 2.00m bgl upon completion.			
									All dimensions in metres		Scale: 1:25	
Method Used: Cable percussion				Plant Used: Pilcon Wayfarer 1500		Drilled By: GH		Logged By: GShaw		Checked By:  AGS		



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP210</b>
Contract Ref: <b>312494</b>	Start: <b>26.9.13</b> End: <b>26.9.13</b>	Ground Level (m AOD): <b>78.01</b>	National Grid Co-ordinate: <b>E:446234.1 N:326489.2</b>		Sheet: <b>1 of 3</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Brown slightly gravelly clayey fine SAND. Gravel is subangular to subrounded fine to coarse quartzite with many rootlets and occasional organic remains. (TOPSOIL)	0.05	
						Firm becoming stiff red brown CLAY with occasional grey sandstone skerries and grey reduction spots. (Weathering Grade IVa) (TARPORLEY SILTSTONE FORMATION)		
1.00-1.20	2	B						
1.20-1.65	3	U <sub>(100)</sub>	20 blows 100% recovery					
1.70-2.00	5	D					(3.45)	
2.00-2.45	1	SPT	N=15					
2.00-2.45	6	B						
2.50-3.00	7	D						
3.00-3.45	8	U <sub>(100)</sub>	35 blows 100% recovery					
3.50	9	D					3.50	
3.50-4.00	10	D				Very stiff red brown clayey SILT, occasional grey reduction spots. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	(0.50)	
4.00-4.45	2	SPT	N=35				4.00	
4.00-4.50	11	B				Very stiff to very weak red brown MUDSTONE with occasional sandstone skerries. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)		
							(1.00)	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	
26/09/13		9.55	1.50	150	9.40	9.00	9.50	01:00	
									1. Location scanned with GPR a CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater not encountered. 4. Gas and groundwater monitoring well installed to 9.50m bgl.
									All dimensions in metres Scale: <b>1:25</b>
Method Used: <b>Cable percussion</b>			Plant Used: <b>Pilcon Wayfarer 1500</b>			Drilled By: <b>GH</b>		Logged By: <b>GShaw</b>	Checked By:



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP210</b>
Contract Ref: <b>312494</b>	Start: <b>26.9.13</b> End: <b>26.9.13</b>	Ground Level (m AOD): <b>78.01</b>	National Grid Co-ordinate: <b>E:446234.1 N:326489.2</b>		Sheet: <b>2 of 3</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
5.00-5.45	12	U <sub>(100)</sub>	35 blows 100% recovery			Very stiff to very weak red brown MUDSTONE with occasional sandstone skerries. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION) <i>(stratum copied from 4.00m from previous sheet)</i>	5.00	
5.50 5.50-6.00	13 14	D D				Very weak red brown SILTSTONE with occasional grey reduction spots and clay bands. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)		x x x x x
6.00-6.31 6.00-6.45	3 15	SPT B	N=94*					x x x x x
7.00-7.45	16	U <sub>(100)</sub>	55 blows 70% recovery				(4.00)	x x x x x
7.50 7.50-8.00	17 18	D B						x x x x x
8.00-8.15 8.00-8.50	4 19	SPT B	N=200*			. . . at 8.00m bgl, becomes moderately weak.		x x x x x
							9.00	x x x x x

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)		





Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
9.00-9.15 9.00-9.45	5 20	SPT B	N=200*			Weak red brown MUDSTONE with occasional grey sandstone skerries. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	(0.55)	
9.50-9.55	6	SPT	N=600*			Borehole terminated at 9.55m depth.	9.55	



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# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP211</b>
Contract Ref: <b>312494</b>	Start: <b>27.9.13</b> End: <b>27.9.13</b>	Ground Level (m AOD): <b>80.98</b>	National Grid Co-ordinate: <b>E:445728.3 N:326608.2</b>		Sheet: <b>1 of 2</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-1.00	1	B				Brown slightly gravelly silty CLAY. Gravel is angular to subangular fine to medium quartzite and sandstone. (SUBSOIL)	(0.40)	
						Red brown silty CLAY. Recovery includes occasional angular to subangular fine to medium sandstone skerries fragments. (Weathering Grade IVa) (GUNTORPE MEMBER)	0.40	
1.00-1.20	2	B					(1.60)	
1.20-1.65	3	U <sub>(100)</sub>	15 blows 50% recovery					
1.70	4	D						
1.70-2.00	5	D					2.00	
2.00-2.45	1	SPT	N=23			Stiff becoming very stiff red brown very clayey SILT. Recovery includes occasional angular to subangular fine to medium sandstone skerries fragments, with occasional grey reduction spots. (Weathering Grade IVb) (GUNTORPE MEMBER)		
2.00-2.45	6	B						
2.50-3.00	7	D					(1.50)	
3.00-3.45	8	U <sub>(100)</sub>	55 blows 75% recovery				3.50	
3.50	9	D				Very stiff to very weak red brown MUDSTONE. Occasional grey sandstone skerries, and grey reduction spots. (Weathering Grade III) (GUNTORPE MEMBER)		
3.50-4.00	10	D						
4.00-4.45	2	SPT	N=49			... at 4.00m bgl, becomes weak to moderately weak with depth.		
4.00-4.45	11	B						

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks		
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)			
26/09/13 27/09/13		1.70 7.00	1.20 -	150	Dry 7.00	6.60	7.00	01:00	1. Location scanned with CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater seepage encountered at 7.00m bgl. 4. Gas and groundwater monitoring well installed to 7.00m bgl.		
									All dimensions in metres		Scale: 1:25
Method Used: Cable percussion			Plant Used: Pilcon Wayfarer 1500			Drilled By: GH		Logged By: GShaw		Checked By: 	



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP211</b>
Contract Ref: <b>312494</b>	Start: <b>27.9.13</b> End: <b>27.9.13</b>	Ground Level (m AOD): <b>80.98</b>	National Grid Co-ordinate: <b>E:445728.3 N:326608.2</b>		Sheet: <b>2 of 2</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
4.50-5.00	12	D	90 blows 70% recovery			Very stiff to very weak red brown MUDSTONE. Occasional grey sandstone skerries, and grey reduction spots. (Weathering Grade III) (GUNTHORPE MEMBER) <i>(stratum copied from 3.50m from previous sheet)</i>	(3.60)	
5.00-5.45	13	U <sub>(100)</sub>						
5.50 5.50-6.00	14 15	D D						
6.00-6.45 6.00-6.45	3 16	SPT B	N=50					
7.00-7.40	4	SPT	N=50				7.10	
Borehole terminated at 7.10m depth.								



Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks		
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)			



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP212</b>
Contract Ref: <b>312494</b>	Start: <b>27.9.13</b> End: <b>27.9.13</b>	Ground Level (m AOD): <b>69.14</b>	National Grid Co-ordinate: <b>E:445896.8 N:326874.4</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-1.00	1	B				Red brown gravelly CLAY with angular fine to medium quartzite. (SUBSOIL)	(0.30)	
						Firm to stiff red brown gravelly CLAY with angular fine to medium quartzite gravel, with grey reduction spots. (THRUSSINGTON MEMBER)	0.30	
1.00-1.20	2	B					(1.70)	
1.20-1.65	3	U <sub>(100)</sub>	35 blows 80% recovery					
1.70	4	D						
1.70	5	D						
2.00-2.45	1	SPT	N=44			Very stiff to very weak red brown thinly bedded SILTSTONE. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	2.00	
2.00-2.45	6	B						
2.50-3.00	7	D					(1.00)	
3.00-3.10	2	SPT	N=600*			Moderately weak red brown MUDSTONE thinly bedded. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	3.00	
3.00-3.45	8	B					(0.45)	
						Borehole terminated at 3.45m depth.	3.45	



Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks		
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)			
27/09/13		3.45	1.50	150	Dry	3.00	3.30	01:00	1. Location scanned with CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater not encountered. 4. Gas and groundwater monitoring well installed to 3.30m bgl.		
									All dimensions in metres		Scale: 1:25
Method Used: Cable percussion			Plant Used: Dando 150			Drilled By: TC		Logged By: GShaw		Checked By: 	



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP213</b>
Contract Ref: <b>312494</b>	Start: <b>25.9.13</b> End: <b>25.9.13</b>	Ground Level (m AOD): <b>65.13</b>	National Grid Co-ordinate: <b>E:446274.7 N:326846.0</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.30	1	D				Brown clayey fine SAND with occasional rootlets. (TOPSOIL)	(0.30)	
0.30-1.00	2	D				Firm to stiff red brown silty CLAY with occasional thin sandstone skerries. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	0.30 (0.70)	
1.00-1.20	3	D				Very weak red brown MUDSTONE with occasional thin sandstone skerries. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	1.00	
1.20-1.65	4	U <sub>(100)</sub>	45 blows 80% recovery					
1.70	5	D						
1.70-2.00	6	D						
2.00-2.38	1	SPT B	N=67*			... at 2.00m bgl, very weak.		
2.00-2.45	7							
2.50-3.00	8	B					(3.28)	
3.00-3.08	2	SPT B	N=300*			... at 3.00m bgl, moderately weak.		
3.00-3.50	9							
3.50-4.00	10	B						
4.20-4.28	3	SPT(c)	N=300*				4.28	
Borehole terminated at 4.28m depth.								

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks		
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)			
25/09/13	00:00	4.00	1.50	150	2.85	3.90	4.20	01:00	1. Location scanned with CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater encountered at 4.00m bgl. 4. Gas and groundwater monitoring well installed to 4.20m bgl.		
25/09/13	00:20	4.00	1.50	150	4.00						
25/09/13		4.25	1.50	150	3.80						
									All dimensions in metres		Scale: 1:25
Method Used: Cable percussion			Plant Used: Pilcon Wayfarer 1500			Drilled By: GH		Logged By: GShaw		Checked By: 	







# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP214</b>
Contract Ref: <b>312494</b>	Start: <b>25.9.13</b> End: <b>25.9.13</b>	Ground Level (m AOD): <b>60.97</b>	National Grid Co-ordinate: <b>E:446644.1 N:326900.8</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.30	1	D				Brown silty CLAY with occasional rootlets. (TOPSOIL)	(0.30)	
0.30-1.00	2	D				Soft orange brown slightly clayey SILT. (HEAD)	0.30 (0.70)	
1.00-1.20	3	D				Soft to firm red brown mottled grey sandy CLAY. Recovery includes occasional angular fine to coarse sandstone skerries fragments. (Weathering Grade IVa) (TARPORLEY SILTSTONE FORMATION)	1.00	
1.20-1.65	1	SPT B	N=8					
1.20-1.65	4							
2.00-2.45	2	SPT B	N=13			... at 2.00m bgl, becomes firm.		
2.00-2.45	5						(2.50)	
3.00-3.45	6	U <sub>(100)</sub>	50 blows 90% recovery				3.50	
3.50	7	D				Red brown interbedded thinly bedded MUDSTONE and SILTSTONE recovered as a tabulated fine to coarse gravel. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	(0.40)	
3.50-4.00	8	B					3.90	
4.00-4.45	3	SPT	N=50			Very weak grey thinly bedded medium to coarse SANDSTONE. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	(0.35)	
4.20-4.65	4	SPT	N=50			Borehole terminated at 4.25m depth.	4.25	



Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks		
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)			
25/09/13		4.25	3.00	150	Dry	3.90	4.20	01:00	1. Location scanned with CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater not encountered. 4. Gas and groundwater monitoring well installed to 4.20m bgl.		
									All dimensions in metres		Scale: 1:25
Method Used: Cable percussion			Plant Used: Pilcon Wayfarer 1500			Drilled By: GH		Logged By: GShaw		Checked By: 	





# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP215</b>
Contract Ref: <b>312494</b>	Start: <b>30.9.13</b> End: <b>30.9.13</b>	Ground Level (m AOD): <b>59.07</b>	National Grid Co-ordinate: <b>E:445575.8 N:327009.1</b>		Sheet: <b>1 of 2</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-1.00	1	B				Soft brown slightly gravelly clayey SILT. Gravel is subrounded to rounded fine to medium quartzite and sandstone. (THRUSINGTON MEMBER)	(1.00)	
1.00-1.20	2	B				Loose brown slightly gravelly clayey fine to coarse SAND. Gravel is subangular to subrounded fine to coarse sandstone and quartzite. (Weathering Grade IVa) (BROMSGROVE SANDSTONE FORMATION)	1.00	
1.20-1.65	1	SPT	N=4					
1.20-1.65	3	B					(1.00)	
2.00-2.45	2	SPT	N=16			Medium dense yellow grey slightly gravelly clayey fine to medium SAND. Gravel is angular fine to medium sandstone. (Weathering Grade IVa) (BROMSGROVE SANDSTONE FORMATION)	2.00	
2.00-2.45	4	B						
2.50-3.00	5	D					(2.00)	
3.00-3.45	3	SPT	N=15			Dense brown slightly gravelly slightly clayey fine SAND. Gravel is angular fine to coarse sandstone. (Weathering Grade IVb) (BROMSGROVE SANDSTONE FORMATION)		
3.00-3.45	6	B					4.00	
4.00-4.45	4	SPT	N=46				(0.85)	
4.00-4.45	7	B						

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks		
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)			
30/09/13	00:00	4.50	1.50	150	4.50	4.50	4.80	01:00			
30/09/13		4.85	4.50	150	4.25				1. Location scanned with GPR a CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater encountered at 4.50m bgl. 4. Gas and groundwater monitoring well installed to 4.80m bgl.		
									All dimensions in metres		Scale: 1:25
Method Used: Cable percussion				Plant Used: Dando 150		Drilled By: TC		Logged By: GShaw		Checked By: 	



Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
4.80-4.85	5	SPT	N=600*			Dense brown slightly gravelly slightly clayey fine SAND. Gravel is angular fine to coarse sandstone. (Weathering Grade IVb) (BROMSGROVE SANDSTONE FORMATION) <i>(stratum copied from 4.00m from previous sheet)</i>	4.85	
						Borehole terminated at 4.85m depth.		

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
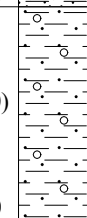
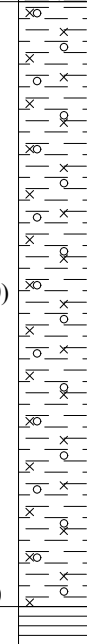


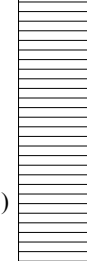


# BOREHOLE LOG



Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP216</b>
Contract Ref: <b>312494</b>	Start: <b>2.10.13</b> End: <b>2.10.13</b>	Ground Level (m AOD): <b>64.46</b>	National Grid Co-ordinate: <b>E:445621.9 N:327310.9</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-1.00	1	B				Stiff red brown mottled grey sandy silty CLAY. Recovery includes occasional angular fine to coarse sandstone skerries fragments. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)		
1.00-1.20	2	B						
1.20-1.65	3	U <sub>(100)</sub>	50 blows 80% recovery					
1.70	4	D					1.70	
1.70-2.00	5	B				Weak to moderately weak red brown thinly bedded MUDSTONE with occasional grey reduction spots. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	(0.30)	
2.00-2.13	1	SPT	N=300*				2.00	
2.00-2.40	6	B				Weak to moderately weak grey finely grained SANDSTONE. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	(0.45)	
2.40-2.48	2	SPT	N=300*				2.45	
						Borehole terminated at 2.45m depth.		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	
02/10/13		2.45	1.50	150	Dry	2.00	2.40	01:00	
									1. Location scanned with CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater not encountered. 4. Gas and groundwater monitoring well installed to 2.40m bgl.
									All dimensions in metres
									Scale: <b>1:25</b>
Method Used: <b>Cable percussion</b>			Plant Used: <b>Dando 150</b>			Drilled By: <b>TC</b>		Logged By: <b>GShaw</b>	Checked By:



Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-1.00	1	B				Dark brown silty CLAY. (TOPSOIL)	(0.30)	
						Firm to stiff brown slightly sandy slightly gravelly CLAY. Gravel is subrounded to rounded fine to medium quartzite. (THRUSSINGTON MEMBER)	0.30	
1.00-1.20	2	B	20 blows 75% recovery			Stiff red brown silty CLAY. Recovery includes occasional angular fine to medium mudstone lithorelicts, with occasional grey sandstone skerries fragments. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)		
1.20-1.65	3	U <sub>(100)</sub>						
1.70	4	D	N=18					
1.70-2.00	5	D						
2.00-2.45	1	SPT					(2.00)	
2.00-2.45	6	B						
3.00-3.45	7	U <sub>(100)</sub>	65 blows 75% recovery			Weak red brown MUDSTONE, with occasional grey reduction spots. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)		
3.50	8	D					(1.65)	
3.50-4.00	9	D						
4.00-4.30	2	SPT	N=100*					
4.00-4.60	10	B						

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks		
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)			
30/09/13		3.50	3.00	150	Dry	4.20	4.60	01:00	1. Location scanned with CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater not encountered. 4. Gas and groundwater monitoring well installed to 4.60m bgl upon completion.		
01/10/13		4.65	3.00	150	Dry						
									All dimensions in metres		Scale: <b>1:25</b>
Method Used: <b>Cable percussion</b>			Plant Used: <b>Dando 150</b>			Drilled By: <b>TC</b>		Logged By: <b>GShaw</b>		Checked By: 	

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Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
4.60-4.68	3	SPT	N=300*			Borehole terminated at 4.65m depth.	4.65	

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
# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP218</b>
Contract Ref: <b>312494</b>	Start: <b>1.10.13</b> End: <b>1.10.13</b>	Ground Level (m AOD): <b>65.61</b>	National Grid Co-ordinate: <b>E:446269.8 N:327306.0</b>		Sheet: <b>1 of 2</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-1.00	1	B				Brown slightly clayey slightly gravelly SILT. Gravel is subrounded to rounded fine to medium quartzite. (THRUSSINGTON MEMBER)	(1.00)	x x
1.00-1.08 1.00-1.45	1 2	SPT(c) B	N=300*			Very dense red brown mottled grey slightly gravelly clayey SAND. Gravel is angular fine to coarse sandstone. (THRUSSINGTON MEMBER)	1.00	
1.50-2.00	3	B					(2.00)	
2.00-2.45	4	U <sub>(100)</sub>	65 blows 90% recovery					
2.50 2.50	5 6	D D						
3.00-3.30 3.00-3.45	2 7	SPT B	N=100*			Weak red brown MUDSTONE thinly bedded with grey bands of sandstone. (Weathering Grade III) (TARPORLEY SILTSTONE FORMATION)	3.00	
4.00-4.10 4.00-4.60	3 8	SPT B	N=300*			... at 4.00m bgl, becomes moderately weak with depth.	(1.65)	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	
01/10/13		4.65	1.00	150	Dry	4.40	4.60	01:00	1. Location scanned with CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater not encountered. 4. Gas and groundwater monitoring well installed to 4.60m bgl upon completion.
Method Used: <b>Cable percussion</b>						Plant Used: <b>Dando 150</b>			All dimensions in metres
Drilled By: <b>TC</b>						Logged By: <b>GShaw</b>			Scale: <b>1:25</b>
Checked By:						Checked By:			



Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
4.60-4.70	4	SPT	N=300*				4.65	
						Borehole terminated at 4.65m depth.		



Log CABLE PERCUSSION LOG | 312494 - EAST MIDLANDS GATEWAY.GPJ - v8\_05 | 10/12/13 - 10:45 | KF.



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP219</b>
Contract Ref: <b>312494</b>	Start: <b>26.9.13</b> End: <b>27.9.13</b>	Ground Level (m AOD): <b>54.46</b>	National Grid Co-ordinate: <b>E:446922.2 N:327317.5</b>		Sheet: <b>1 of 2</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	D	56 blows 100% recovery			Brown slightly gravelly clayey fine SAND. Gravel is subangular to rounded fine to medium quartzite, sandstone and occasional rootlets. (TOPSOIL)	(0.30)	
0.60	2	D				Firm to stiff red brown slightly gravelly sandy CLAY. Gravel is subangular to rounded fine to medium quartzite, sandstone and occasional rootlets. (THRUSSINGTON MEMBER)	0.30	
1.20-1.65	3	U <sub>(100)</sub>					(1.50)	
1.70	4	D	N=22			Stiff grey and red brown slightly sandy silty CLAY. Recovery includes occasional angular to subangular fine to medium mudstone and sandstone lithorelicts fragments. (Weathering Grade IVb) (TARPORLEY SILTSTONE FORMATION)	1.80	
1.90	5	D					(1.00)	
2.00-2.45	1	SPT					2.80	
2.00-2.50	6	B	75 blows 70% recovery			Stiff red brown slightly silty CLAY. Recovery includes occasional angular to subangular fine to coarse mudstone, with occasional sandstone skerries fragments. (Weathering Grade IVb) (EDWALTON MEMBER)	(1.50)	
2.90	7	D						
3.00-3.45	8	U <sub>(100)</sub>						
3.50	9	D	N=70*			... at 4.10m bgl, becoming very stiff.	4.30	
4.00	10	D						
4.10-4.47	2	SPT						
4.10-4.50	11	B				Description on next sheet		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks		
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)			
26/09/13		1.70	-	150	Dry	6.80	7.10	01:00			
27/09/13		7.70	3.00	150	Dry	7.10	7.50	01:00	1. Location scanned with CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater not encountered. 4. Gas and groundwater monitoring well installed to 7.50m bgl upon completion.		
									All dimensions in metres		Scale: 1:25
Method Used: Cable percussion				Plant Used: Pilcon Wayfarer 1500		Drilled By: GH		Logged By: GShaw		Checked By: 	



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP219</b>
Contract Ref: <b>312494</b>	Start: <b>26.9.13</b> End: <b>27.9.13</b>	Ground Level (m AOD): <b>54.46</b>	National Grid Co-ordinate: <b>E:446922.2 N:327317.5</b>		Sheet: <b>2 of 2</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
4.90 5.00-5.45	12 3	D SPT	N=46			Very stiff to very weak red brown SILTSTONE with occasional grey sandstone skerries. (Weathering Grade III) (EDWALTON MEMBER) ... at 4.30m bgl, becoming very stiff.(stratum copied from 4.30m from previous sheet)	(2.50)	
5.90 6.00-6.39 6.00-6.50	13 4 14	D SPT B	N=62*				6.80	
6.90 7.10-7.34	15 5	D SPT	N=167*			Weak red brown thinly bedded MUDSTONE with occasional grey sandstone skerries. (Weathering Grade III) (EDWALTON MEMBER)	(0.90)	
7.40 7.50-7.71	16 6	D SPT	N=158*				7.70	
Borehole terminated at 7.70m depth.								

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)		





# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP220</b>
Contract Ref: <b>312494</b>	Start: <b>26.9.13</b> End: <b>26.9.13</b>	Ground Level (m AOD): <b>43.62</b>	National Grid Co-ordinate: <b>E:447285.5 N:327287.4</b>		Sheet: <b>1 of 2</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	D	29 blows 90% recovery		Brown slightly clayey silty fine SAND with occasional rootlets. (TOPSOIL)	(0.45)		
0.50-0.80 0.55	2	B			Orange brown slightly gravelly silty fine SAND. Gravel is subrounded to rounded fine to coarse quartzite. (HEAD DEPOSITS)	0.45		
	3	D			(0.35)			
0.90	4	D			Firm red brown slightly silty CLAY with occasional rootlets. (HEAD DEPOSITS)	0.80		
1.20-1.65	5	U <sub>(100)</sub>	N=9			(0.70)		
1.70	6	D				Red brown slightly clayey medium to coarse SAND. (HEAD DEPOSITS)		1.50
	2.00	7			D		(0.30)	
2.20-2.65 2.20-2.70		8			SPT B		1.80	
2.90 3.00-3.45	9	D	87 blows 80% recovery			(1.00)		
	10	U <sub>(100)</sub>				Firm red brown mottled grey sandy CLAY. Recovery includes occasional subangular to subrounded fine to coarse sandstone and mudstone lithorelicts. (Weathering Grade IVb) (EDWALTON MEMBER)		2.80
3.50	11	D					(1.60)	
4.00 4.10-4.51 4.10-4.50	12	D						
	13	SPT B	N=58*					
Description on next sheet								

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	
26/09/13		5.92	3.00	150	Dry	4.50	4.90	01:00	1. Location scanned with GPR a CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater not encountered. 4. Gas and groundwater monitoring well installed to 5.70m bgl upon completion.
						5.20	5.70	01:00	
Method Used: <b>Cable percussion</b>						Plant Used: <b>Pilcon Wayfarer 1500</b>			All dimensions in metres
Drilled By: <b>GH</b>						Logged By: <b>GShaw</b>			Scale: <b>1:25</b>
Checked By:						Checked By:			



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# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP221</b>
Contract Ref: <b>312494</b>	Start: <b>27.9.13</b> End: <b>30.9.13</b>	Ground Level (m AOD): <b>41.66</b>	National Grid Co-ordinate: <b>E:447051.9 N:327694.5</b>		Sheet: <b>1 of 3</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	D				Brown silty fine SAND with occasional rootlets. (TOPSOIL)	(0.35)	
0.45	2	D				Brown slightly silty gravelly fine SAND. Gravel is subangular to rounded fine to coarse quartzite and flint. (EGGINTON COMMON SAND AND GRAVEL MEMBER)	0.35	
0.50-1.00	3	B					(0.75)	
1.20-1.65	1	SPT(c)	N=15			Medium dense brown slightly gravelly clayey fine to medium SAND. Gravel is subangular to rounded fine to coarse quartzite. (EGGINTON COMMON SAND AND GRAVEL MEMBER)	1.10	
1.20	4	D					(1.40)	
2.00	5	D				Firm brown CLAY with occasional grey reduction spots. (Weathering Grade IVb) (EDWALTON MEMBER)	2.50	
2.20-2.65	2	SPT(c)	N=16					
2.90	6	D						
3.00-3.45	7	U <sub>(100)</sub>	31 blows 100% recovery					
3.50	8	D					(2.15)	
4.00	9	D						
4.20-4.65	3	SPT	N=11					

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	
27/09/13	00:00	4.65	4.00	150	4.65	10.30	10.70	01:00	
27/09/13	00:20	9.65	6.00	150	9.65				1. Location scanned with CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater encountered at 9.65m bgl. 4. Gas and groundwater monitoring well installed to 10.70m bgl upon completion.
30/09/13		9.65	6.00	150	9.65				
30/09/13		10.94	6.00	150	10.94				
Method Used: <b>Cable percussion</b>						All dimensions in metres			Scale: <b>1:25</b>
Plant Used: <b>Pilcon Wayfarer 1500</b>			Drilled By: <b>GH</b>			Logged By: <b>GShaw</b>		Checked By:	



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP221</b>
Contract Ref: <b>312494</b>	Start: <b>27.9.13</b> End: <b>30.9.13</b>	Ground Level (m AOD): <b>41.66</b>	National Grid Co-ordinate: <b>E:447051.9 N:327694.5</b>		Sheet: <b>2 of 3</b>


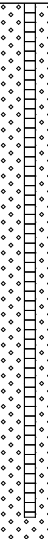

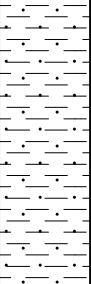

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
4.90 5.00-5.45	10 4	D SPT	N=11			Firm brown CLAY with occasional sandstone skerries. Recovery includes occasional angular fine to medium gravel sized mudstone lithorelicts and grey reduction spots. (Weathering Grade IVb) (EDWALTON MEMBER)	4.65	
5.80 6.00-6.45	11 12	D U <sub>(100)</sub>	43 blows 100% recovery					
6.50	13	D						
7.00	14	D					(4.85)	
7.20-7.65 7.20-7.70	5 15	SPT B	N=24			. . . at 7.20m bgl, becoming stiff.		
8.00 8.20-8.65	16 17	D U <sub>(100)</sub>	54 blows 100% recovery					
8.70	18	D						

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks		
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)			



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP221</b>
Contract Ref: <b>312494</b>	Start: <b>27.9.13</b> End: <b>30.9.13</b>	Ground Level (m AOD): <b>41.66</b>	National Grid Co-ordinate: <b>E:447051.9 N:327694.5</b>		Sheet: <b>3 of 3</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
9.10 9.20-9.65	19 6	D SPT	N=50			Firm brown CLAY with occasional sandstone skerries. Recovery includes occasional angular fine to medium gravel sized mudstone lithorelicts and grey reduction spots. (Weathering Grade IVb) (EDWALTON MEMBER) <i>(stratum copied from 4.65m from previous sheet)</i> ... at 9.20m bgl, becoming stiff to very stiff.	9.50	
10.00-10.34 10.00	7 20	SPT D	N=79*			Very stiff grey sandy CLAY. Recovery includes occasional angular fine to medium mudstone and sandstone lithorelicts. (Weathering Grade IVb) (EDWALTON MEMBER) ... at 10.00m bgl, becoming weak.	(1.00)	
10.60 10.70-10.95	21 8	D SPT(c)	N=158*			Weak grey brown SANDSTONE recovered as subangular coarse gravel. (Weathering Grade III) (ARDEN SANDSTONE FORMATION)	(0.44)	
Borehole terminated at 10.94m depth.							10.94	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)		





# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP222</b>
Contract Ref: <b>312494</b>	Start: <b>3.10.13</b> End: <b>3.10.13</b>	Ground Level (m AOD): <b>37.05</b>	National Grid Co-ordinate: <b>E:447259.3 N:327820.5</b>		Sheet: <b>1 of 2</b>



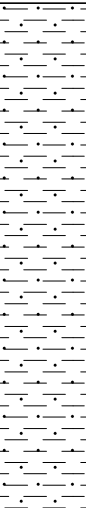



Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.25	1	D				Grass over brown slightly clayey SAND, with occasional rootlets. (MADE GROUND)	0.15	
0.40	2	D				Coarse angular GRAVEL of limestone. (MADE GROUND)	0.30	
0.60	3	D				Brown slightly clayey gravelly fine SAND. Gravel is subrounded to rounded quartzite and sandstone. (WANLIP MEMBER)	0.50	
0.80-1.20	4	B				Medium dense brown slightly clayey gravelly fine SAND. Gravel is subrounded to rounded quartzite and sandstone. (WANLIP MEMBER)	(1.10)	
1.20-1.65	1	SPT(c)	N=12				1.60	
1.20-1.65	5	B						
1.70	6	D				Medium dense orange and red brown slightly gravelly clayey coarse SAND. Gravel is subangular to subrounded fine to coarse quartzite and sandstone. (WANLIP MEMBER)	(1.80)	
2.20-2.65	2	SPT	N=18					
2.90	7	D					3.40	
3.00-3.45	8	U <sub>(100)</sub>	38 blows 100% recovery					
3.50	9	D				Soft to firm red brown slightly sandy CLAY. Recovery includes occasional angular fine mudstone and sandstone lithorelicts, with occasional grey reduction spots. (Weathering Grade IVa) (EDWALTON MEMBER)		
3.90	10	D						
4.00-4.45	3	SPT	N=7					
4.00-4.50	11	B						

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	
03/10/13	00:00	6.40	6.00	150	6.40	7.50	8.00	01:00	1. Location scanned with GPR and CAT and signal generator prior to breaking ground. No services encountered. 2. Hand dug inspection pit excavated to 1.20m bgl 3. Groundwater encountered at 6.40m bgl. 4. Gas and groundwater monitoring well installed to 6.00m bgl upon completion.
03/10/13	00:20	6.40	6.00	150	5.66				
03/10/13		8.29	7.50	150	Dry				
Method Used: <b>Cable percussion</b>						Plant Used: <b>Pilcon Wayfarer 1500</b>			All dimensions in metres
Drilled By: <b>GH</b>						Logged By: <b>GShaw</b>			Scale: <b>1:25</b>
Checked By:						Checked By:			



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP222</b>
Contract Ref: <b>312494</b>	Start: <b>3.10.13</b> End: <b>3.10.13</b>	Ground Level (m AOD): <b>37.05</b>	National Grid Co-ordinate: <b>E:447259.3 N:327820.5</b>		Sheet: <b>2 of 2</b>

Samples and In-situ Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
4.90 5.00-5.45	12 13	D U <sub>(100)</sub>	53 blows 90% recovery			Soft to firm red brown slightly sandy CLAY. Recovery includes occasional angular fine mudstone and sandstone lithorelicts, with occasional grey reduction spots. (Weathering Grade IVa) (EDWALTON MEMBER) <i>(stratum copied from 3.40m from previous sheet)</i>	(2.80)	
5.50	14	D						
6.00 6.10-6.44	15 4	D SPT	N=79*			6.20		
7.00 7.20-7.61	16 5	D SPT	N=59*			Very weak red brown MUDSTONE with occasional grey sandstone skerries. (Weathering Grade III) (EDWALTON MEMBER)	(2.09)	
8.00-8.30 8.00	6 17	SPT D	N=103*			8.29		
Borehole terminated at 8.29m depth.								

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)		
									</	

# **APPENDIX E**

## **ROTARY CORED BOREHOLE LOGS AND**

## **PHOTOGRAPHS**

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## KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF ABBREVIATIONS

### SAMPLING

#### *Sample type codes*

B	=	Bulk disturbed sample.
C	=	Core sample.
CS	=	Core sample taken from rotary core for lab testing.
D	=	Small disturbed sample.
DSPT	=	Small disturbed sample originating from SPT test.
ES	=	Soil sample for environmental testing.
U	=	Undisturbed driven tube sample - Number of blows indicated. % recovery reported.

#### *Undisturbed sample detail codes*

U <sub>(100)</sub>	=	100mm diameter undisturbed sample.
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### IN-SITU TESTING

SPT <sub>(c)</sub>	=	Standard Penetration Test using a solid 60 degree cone.
SPT	=	Standard Penetration Test using split spoon sampler. (SPT <sub>(NR)</sub> indicates 'No Sample Recovery').
	=	* denotes extrapolated N value. NP denotes 'No Penetration'.
V	=	Field Vane Test. Peak value (c <sub>u</sub> ) & Residual value (c <sub>r</sub> ), given as shear strength in kPa.

### ROTARY DRILLING INFORMATION

W	=	Water flush returns (%)
TCR	=	Total core recovery (%)
SCR	=	Solid core recovery (%)
RQD	=	Rock quality designations (%)
If	=	Fracture spacing (mm).
In the fracture column (i) denotes discontinuity is infilled (refer to Fracture Table for details).		
Where variable the minimum - average - maximum spacing may be quoted.		
'NI' denotes non-intact core. 'NA' denotes not applicable.		

All lengths used to determine rock core mechanical properties taken along the centre line of the core.

Obvious induced fractures have been ignored.

The assessment of solid core is based on lengths that show a full diameter and not necessarily a full circumference.

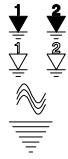
AZCL = Assessed zone of core loss.

### ADDITIONAL NOTES

1. All soil and rock descriptions and legends in general accordance with BS EN ISO 14688-1, 14688-2, 14689-1, and BS5930:1999 including Amendment 2 (2010).
2. Material types divided by a broken line ( - - - ) indicates an unclear boundary.
3. The data on any sheet within the report showing the AGS icon is available in the AGS format.

## KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF GRAPHIC SYMBOLS

### WATER COLUMN SYMBOLS



First water strike, second water strike etc.

Standing water level following first strike, standing water level following second strike etc.

Seepage.

Standing water level recorded at documented date.

### MATERIAL GRAPHIC LEGENDS



CLAY



Clayey  
gravelly  
SAND



Gravelly  
clayey  
SAND



Clayey  
gravelly  
SAND  
with  
COBBLES



Clayey  
SAND



Clayey  
SAND  
with  
COBBLES



Clayey  
sandy  
GRAVEL



GRAVEL



GRAVEL  
with  
COBBLES



Gravelly  
CLAY



Gravelly  
silty  
CLAY



Silty  
gravelly  
CLAY



Silty  
gravelly  
CLAY  
with  
COBBLES



Gravelly  
SAND



Gravelly  
clayey  
SILT



Gravelly  
SILT



MADE  
GROUND



Mudstone



SAND



SAND  
with  
COBBLES

### INSTRUMENTATION SYMBOLS



Backfill



Bentonite  
seal



Concrete



Gravel  
filter



Sand filter



Stopcock  
cover



Piezometer  
tip



Plain pipe



Slotted  
pipe





# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)203</b>
Contract Ref: <b>312494</b>	Start: <b>2.10.13</b> End: <b>3.10.13</b>	Ground Level (m AOD): <b>67.92</b>	National Grid Co-ordinate: <b>E:447184.9 N:326594.0</b>		Sheet: <b>1 of 5</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
5.50-7.00										Drillers description - Grass over red brown silty CLAY.	(1.20)	
											1.20	
										Drillers description - Weak red brown MUDSTONE.		
											(3.70)	
6.40-6.60	1	CS		93	60	27				Drillers description - Red brown MUDSTONE.	(0.70)	
											5.60	
										Weak to strong thinly interlaminated to thinly interbedded light grey and red brown SILTSTONE and mudstone. Discontinuities are subhorizontal very closely to medium spaced (28/130/230) planar rough and undulating rough partly open to open with some grey and orange brown staining, occasional black speckling and occasional thin clay smearing. (Weathering Grade I) (TARPORLEY SILTSTONE FORMATION) <i>Description on next sheet</i>		

Boring Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		
02/10/13	08:00	5.50	5.50	121	-	<ol style="list-style-type: none"><li>Location scanned with GPR and CAT and signal generator prior to breaking ground. Hand dug service pit to 1.20m bgl. No services encountered.</li><li>Rotary open holed to 5.50m bgl.</li><li>Borehole advanced to 30.00m bgl using coring techniques.</li><li>Gas and groundwater monitoring well installed to 25.00m bgl upon completion.</li><li>No groundwater strikes noted.</li><li>Piezometer installed at 29.00m bgl.</li></ol>	
02/10/13	17:00	28.00	5.50	121	-		
03/10/13	08:00	28.00	5.50	121	-		
03/10/13	17:00	30.00	5.50	121	-		
All dimensions in metres						Scale:	<b>1:39</b>
Method Used:	<b>Rotary open hole + Rotary Cored</b>		Plant Used:	<b>Comacchio MC450-P1</b>		Drilled By:	<b>LS/PC</b>
						Logged By:	<b>LAlderman</b>
						Checked By:	



Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)203</b>
Contract Ref: <b>312494</b>	Start: <b>2.10.13</b> End: <b>3.10.13</b>	Ground Level (m AOD): <b>67.92</b>	National Grid Co-ordinate: <b>E:447184.9 N:326594.0</b>		Sheet: <b>2 of 5</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thick ness)	Material Graphic Legend			
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)								
7.00-8.50	2	CS		↑	↑	↑				... between 5.90m and 6.00m bgl, undulating subhorizontal fracturing ... between 6.20m and 6.33m bgl, undulating subhorizontal fracturing ... between 6.64m and 7.00m bgl, undulating and stepped subhorizontal fracturing. Weak to strong thinly interlaminated to thinly interbedded light grey and red brown SILTSTONE and mudstone. Discontinuities are subhorizontal very closely to medium spaced (28/130/230) planar rough and undulating rough partly open to open with some grey and orange brown staining, occasional black speckling and occasional thin clay smearing. (Weathering Grade I) (TARPORLEY SILTSTONE FORMATION) (stratum copied from 5.60m from previous sheet) ... between 7.56m and 7.69m bgl, undulating subhorizontal fracturing ... between 8.72m and 8.97m bgl, undulating and stepped subhorizontal fracturing.	(4.20)				
8.50-10.00				100	43	23									
				↓	↓	↓									
				↑	↑	↑									
				100	47	16									
				↓	↓	↓									
10.00-11.50				↑	↑	↑									
				100.	60	14									
				↓	↓	↓									
11.50-13.00				↑	↑	↑									
12.10-12.37	100	61	47												
	↓	↓	↓												
13.00-14.50	↑	↑	↑												
	100	67	41												
	↓	↓	↓												
											(2.80)				


Boring Progress and Water Observations						General Remarks							
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth								
						All dimensions in metres		Scale: 1:39					
Method Used:	Rotary open hole + Rotary Cored			Plant Used:	Comacchio MC450-P1		Drilled By:	LS/PC	Logged By:	L Alderman	Checked By:	<div></div>	<div>AGS</div>



# BOREHOLE LOG


Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)203</b>
Contract Ref: <b>312494</b>	Start: <b>2.10.13</b> End: <b>3.10.13</b>	Ground Level (m AOD): <b>67.92</b>	National Grid Co-ordinate: <b>E:447184.9 N:326594.0</b>		Sheet: <b>3 of 5</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
14.50-16.00				100	67	41				Weak to medium strong thinly laminated to thinly interbedded red brown and light grey MUDSTONE and siltstone with thinly interbedded red brown fine micaceous sandstone. Discontinuities are subhorizontal very closely to medium spaced (38/90/230) planar rough with occasional grey staining and thin clay smearing and occasionally micaceous. (Weathering Grade I) (TARPORLEY SILTSTONE FORMATION) <i>(stratum copied from 12.58m from previous sheet)</i> ... between 14.17m and 14.85m bgl, undulating subvertical fracture.	15.38	
16.00-16.50				100	67	43				Medium strong to strong thickly laminated to thinly bedded light green grey and red brown fine grained micaceous SANDSTONE. Discontinuities are subhorizontal closely spaced planar rough partly open to open micaceous with occasional grey staining and thin clay smearing. (Weathering Grade I) (TARPORLEY SILTSTONE FORMATION)	(0.69)	
17.50-19.00				100	77	20				Weak to medium strong thinly laminated to thinly bedded red brown and light grey MUDSTONE and siltstone, with thickly interlaminated to thinly interbedded red brown fine grained micaceous sandstone. Discontinuities are subhorizontal very closely to closely spaced (50/100/180) partly open to open planar rough and undulating rough with grey staining, occasional black speckling and thin clay smearing. (Weathering Grade I) (BROMSGROVE SANDSTONE FORMATION) ... between 16.40m and 16.55m bgl, undulating subvertical fracture.	16.07	
18.60-18.94	3	CS		100	87	73				Medium strong to strong thinly to medium bedded light green grey and red brown fine grained micaceous SANDSTONE. Discontinuities are subhorizontal very closely to medium spaced (24/150/440) planar rough and undulating rough with thin clay smearing. (Weathering Grade I) (BROMSGROVE SANDSTONE FORMATION) ... between 19.00m and 20.04m bgl, zone of core loss.	(1.36)	
19.00-20.50				31	23	20					17.43	
20.50-22.00				100	67	36					(6.17)	

Boring Progress and Water Observations						General Remarks							
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth								
						All dimensions in metres		Scale: <b>1:39</b>					
Method Used:	<b>Rotary open hole + Rotary Cored</b>			Plant Used:	<b>Comacchio MC450-P1</b>		Drilled By:	<b>LS/PC</b>	Logged By:	<b>L Alderman</b>	Checked By:	<div></div>	<div></div>

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)203</b>
Contract Ref: <b>312494</b>	Start: <b>2.10.13</b> End: <b>3.10.13</b>	Ground Level (m AOD): <b>67.92</b>	National Grid Co-ordinate: <b>E:447184.9 N:326594.0</b>		Sheet: <b>4 of 5</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
22.00-23.50				100	67	36				Medium strong to strong thinly to medium bedded light green grey and red brown fine grained micaceous SANDSTONE. Discontinuities are subhorizontal very closely to medium spaced (24/150/440) planar rough and undulating rough with thin clay smearing. (Weathering Grade I) (BROMSGROVE SANDSTONE FORMATION) <i>(stratum copied from 17.43m from previous sheet)</i>		
23.50-25.00				97	87	44				... at 23.02m bgl, 25mm vug with partial calcite infill.	23.60	
23.83-24.12	4	CS		97	60	37				... at 23.39m bgl, 32mm vug with partial calcite infill. Weak to medium strong thinly interlaminated red brown and light grey MUDSTONE and siltstone with occasional thin interbeds of light grey fine grained micaceous sandstone. Discontinuities are subhorizontal closely to medium spaced (40/180/290) planar rough partly open to open with occasional grey staining and thin clay smearing. (Weathering Grade I) (BROMSGROVE SANDSTONE FORMATION) ... at 24.06m bgl, 8mm vug with partial calcite infill. ... at 24.08m bgl, 12mm vug with partial calcite infill.	(0.76)	
25.00-26.50				100	83	58				Weak to strong thinly to medium bedded light green grey and brown grey fine grained micaceous SANDSTONE. Discontinuities are subhorizontal very closely to medium spaced (39/200/500) planar rough and planar undulating partly open to open. (Weathering Grade I) (BROMSGROVE SANDSTONE FORMATION) ... between 24.50m and 24.80m bgl, subvertical fracturing (possible drilling induced) ... between 25.98m and 26.12m bgl, band of red brown mudstone.		
26.50-28.00				92	87	54				... between 27.38 and 27.52m bgl, honeycombed band of medium to coarse gravel sized vugs with partial calcite infill.	(5.64)	
27.02-27.47	5	CS										


Boring Progress and Water Observations						General Remarks									
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth										
						All dimensions in metres		Scale: 1:39							
Method Used:	Rotary open hole + Rotary Cored			Plant Used:	Comacchio MC450-P1		Drilled By:	LS/PC		Logged By:	L Alderman		Checked By:		



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)203</b>
Contract Ref: <b>312494</b>	Start: <b>2.10.13</b> End: <b>3.10.13</b>	Ground Level (m AOD): <b>67.92</b>	National Grid Co-ordinate: <b>E:447184.9 N:326594.0</b>		Sheet: <b>5 of 5</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
28.00-29.50	6	CS		↑	↑	↑				Weak to strong thinly to medium bedded light green grey and brown grey fine grained micaceous SANDSTONE. Discontinuities are subhorizontal very closely to medium spaced (39/200/500) planar rough and planar undulating partly open to open. (Weathering Grade I) (BROMSGROVE SANDSTONE FORMATION) (stratum copied from 24.37m from previous sheet)		
28.35-28.60				77	73	58						
29.50-30.00				100	40	24						
										... between 29.50m and 30.00m bgl, possible drilling induced subhorizontal and subvertical fractures. ... between 29.65m and 29.77m bgl, honeycombed band of medium to coarse gravel sized open clean vugs.	30.00	

Boring Progress and Water Observations						General Remarks									
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth										
						All dimensions in metres		Scale: 1:39							
Method Used:	Rotary open hole + Rotary Cored			Plant Used:	Comacchio MC450-P1		Drilled By:	LS/PC		Logged By:	L.Alderman		Checked By:		





# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>			Borehole: <b>CP(R)204</b>	
Contract Ref: <b>312494</b>		Start: <b>3.10.13</b> End: <b>3.10.13</b>	Ground Level (m AOD): <b>82.81</b>		National Grid Co-ordinate: <b>E:446666.4 N:326419.4</b>		Sheet: <b>1 of 3</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
3.50-5.00										Drillers description - Stiff red brown CLAY with gravels.	(3.55)	
										... between 3.50m and 3.55m bgl, zone of core loss.	3.55	
				97	73	20				Stiff red brown slightly sandy CLAY. Recovery includes angular to subangular medium to coarse mudstone lithorelicts. (Weathering Grade III) (GUNTHORPE MEMBER)	(1.85)	
										... between 3.96m and 4.00m bgl, weak light grey siltstone band.		
5.00-6.50										... between 4.00m and 4.13m bgl, weak red brown fine grained sandstone band with honeycombed appearance.	5.40	
				97	51	19				... between 4.18m and 4.25m bgl, weak to medium strong light grey fine to grained sandstone band.		
										... between 4.93m and 5.00m bgl, weak to medium strong light grey fine to grained sandstone band.	(1.92)	
6.50-8.00										... between 5.00m and 5.05m bgl, zone of core loss.		
				100	59	40				... between 5.05m and 5.40m bgl, several drilling induced fractures/disturbance and vegetation from surface.	7.32	
8.00-9.50										Very weak to weak thinly laminated to very thinly bedded red brown micaceous MUDSTONE. Discontinuities are subhorizontal very closely to closely spaced rough undulating tight to open with occasional black speckling and thin clay smearing. (Weathering Grade III) (GUNTHORPE MEMBER)		
8.25-8.50	1	CS		97	77	43				... between 5.90m and 6.15m bgl, with very thinly interbedded weak light grey siltstone bands.		
										... between 6.82m and 7.04m bgl, recovered as soft to firm gravelly clay.		

Boring Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		
03/10/13	08:00	5.00	5.00	121	-	1. Location scanned with GPR and CAT and signal generator prior to breaking ground. Hand dug service pit to 1.20m bgl. No services encountered. 2. Rotary open holed to 3.55m bgl. 3. Borehole advanced to 20.00m bgl using coring techniques. 4. Gas and groundwater monitoring well installed to 20.00m bgl upon completion. 5. No groundwater strikes noted.	
03/10/13	17:00	20.00	7.00	121	-		
All dimensions in metres						Scale:	1:50
Method Used:	Rotary open hole + Rotary Cored		Plant Used:	Comacchio MC450-P1		Drilled By:	SC/JO
						Logged By:	L Alderman
						Checked By:	

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)204</b>
Contract Ref: <b>312494</b>	Start: <b>3.10.13</b> End: <b>3.10.13</b>	Ground Level (m AOD): <b>82.81</b>	National Grid Co-ordinate: <b>E:446666.4 N:326419.4</b>		Sheet: <b>2 of 3</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
9.50-11.00				97	77	43				... between 7.15m and 7.25m bgl, recovered as soft to firm gravelly clay. ... between 7.25m and 7.32m bgl, medium strong light grey fine grained sandstone band. ... between 8.00m and 8.05m bgl, zone of core loss. ... between 8.40m and 8.55m bgl, stepped rough clean subvertical fracture; possible drilling induced. ... between 8.55m and 8.57m bgl, firm to stiff gravelly clay. Weak to medium strong thinly bedded red brown micaceous MUDSTONE. Discontinuities are subhorizontal very closely to medium closely spaced (20/150/300) undulating rough and planar rough tight to open with thin clay smearing and occasional black speckling. (Weathering Grade I) (GUNTHORPE MEMBER) (stratum copied from 7.32m from previous sheet) ... between 9.25m and 9.50m bgl, undulating rough clean subvertical fracture; possible drilling induced. ... at 10.30m bgl, thin (2mm) subhorizontal calcite vein. ... between 10.65m and 10.78m bgl, stiff light grey silt band. ... between 11.00m and 11.40m bgl, very weak. ... between 12.08m and 12.17m bgl, weak light grey sandstone band.	(5.18)	
11.00-12.50				93	70	43						
12.50-14.00				100	67	32					12.50	
12.90-13.20	2	CS		100	68	28				... between 12.08m and 12.17m bgl, weak light grey sandstone band. Medium strong to strong thinly interlaminated to thinly interbedded red brown and light grey MUDSTONE and siltstone with occasional very thin interbeds of fine grained light grey and red brown sandstone. Discontinuities are subhorizontal extremely closely to medium spaced (14/100/290) planar rough and undulating rough tight to open with thin clay smearing and occasional black speckling. (Weathering Grade I) (GUNTHORPE MEMBER) ... between 14.00m and 14.14m bgl, zone of core loss. ... between 15.50m and 15.80m bgl, zone of core loss. ... at 16.00m bgl, 35mm clean cavity.		
14.00-15.50				91	50	13						
15.50-17.00				80	37	0					(7.50)	
17.00-18.50				80	39	0				... between 17.00m and 17.30m bgl, zone of core loss.		


Boring Progress and Water Observations						General Remarks			
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth				



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)204</b>
Contract Ref: <b>312494</b>	Start: <b>3.10.13</b> End: <b>3.10.13</b>	Ground Level (m AOD): <b>82.81</b>	National Grid Co-ordinate: <b>E:446666.4 N:326419.4</b>		Sheet: <b>3 of 3</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
18.50-20.00	3	CS		80	39	0				Medium strong to strong thinly interlaminated to thinly interbedded red brown and light grey MUDSTONE and siltstone with occasional very thin interbeds of fine grained light grey and red brown sandstone. Discontinuities are subhorizontal extremely closely to medium spaced (14/100/290) planar rough and undulating rough tight to open with thin clay smearing and occasional black speckling. (Weathering Grade I) (GUNTHORPE MEMBER) (stratum copied from 12.50m from previous sheet) ... at 18.26m bgl, 20mm honeycombed clean cavity. ... between 18.50m and 18.65m bgl, zone of core loss. ... at 19.15m bgl, 12mm clean cavity. ... at 19.30m bgl, 40mm clean cavity. ... between 19.50m and 20.00m bgl, with occasional bands of medium gravel sized clean vugs. Rotary probehole terminated at 20.00m depth.	20.00	
18.87-19.04				90	53	17						

Boring Progress and Water Observations						General Remarks									
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth										
						All dimensions in metres		Scale: <b>1:50</b>							
Method Used:	<b>Rotary open hole + Rotary Cored</b>			Plant Used:	<b>Comacchio MC450-P1</b>		Drilled By:	<b>SC/JO</b>		Logged By:	<b>L Alderman</b>		Checked By:		


Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)205</b>
Contract Ref: <b>312494</b>	Start: <b>3.10.13</b> End: <b>4.10.13</b>	Ground Level (m AOD): <b>56.42</b>	National Grid Co-ordinate: <b>E:447286.1 N:326753.4</b>		Sheet: <b>1 of 4</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
4.50-6.00				100	75	15				Drillers description - Red brown silty CLAY.	(1.20)	
6.00-7.50				100	91	60				Drillers description - Weak red brown MUDSTONE.	(2.90)	
7.50-9.00				97	78	42				Drillers description - Red brown MUDSTONE.	(4.10)	
8.58-8.70	1	CS								Weak to medium strong thinly interlaminated to thinly interbedded red brown and light grey MUDSTONE and siltstone with occasional very thinly interbedded light grey brown fine grained sandstone. Discontinuities are subhorizontal undulating rough and planar rough extremely closely to medium spaced (10/90/120) tight to open with thin clay smearing, occasional orange brown staining and black speckling and occasionally micaceous. (Weathering Grade I) (TARPORLEY SILTSTONE FORMATION)	(4.40)	
8.58-8.70										... between 6.87m and 7.11m bgl, undulating subvertical fracture. ... between 6.90m and 7.06m bgl, medium strong light grey brown fine to medium grained sandstone band. ... at 7.03m bgl, 31mm vug with partial calcite infill. ... at 7.05m bgl, 22mm vug with partial calcite infill. ... between 7.20m and 7.80m bgl, medium strong light grey brown fine grained sandstone with thinly interlaminated light grey and red brown siltstone and mudstone.	(8.90)	

Boring Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		
03/10/13	08:00	4.50	4.50	121	-	1. Location scanned with GPR and CAT and signal generator prior to breaking ground. Hand dug service pit to 1.20m bgl. No services encountered. 2. Rotary open hole to 4.50m bgl. 3. Borehole advanced to 30.00m bgl using coring techniques. 4. Gas and groundwater monitoring well installed to 19.00m bgl upon completion. 5. No groundwater strikes noted.	
03/10/13	17:00	28.50	4.50	121	-		
04/10/13	08:00	28.50	4.50	121	-		
04/10/13	17:00	30.00	4.50	121	-		
						All dimensions in metres	Scale: <b>1:50</b>
Method Used:	<b>Rotary open hole + Rotary Cored</b>		Plant Used:	<b>Comacchio MC450-P1</b>		Drilled By: <b>LS/PC</b>	Logged By: <b>LAlderman</b> Checked By:

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)205</b>
Contract Ref: <b>312494</b>	Start: <b>3.10.13</b> End: <b>4.10.13</b>	Ground Level (m AOD): <b>56.42</b>	National Grid Co-ordinate: <b>E:447286.1 N:326753.4</b>		Sheet: <b>2 of 4</b>


Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
9.00-10.50				↑	↑	↑				... at 7.35m bgl, large vugs up to 38mm with partial calcite infill.		
9.70-9.92	2	CS		100	91	58				Medium strong to strong very thinly to thinly bedded light green grey and light brown grey fine to medium grained SANDSTONE with occasional honeycombed appearance, with thinly interlaminated to very thinly interbedded red brown and light grey mudstone and siltstone. Discontinuities are subhorizontal undulating rough and planar rough closely to medium spaced (21/100/220) tight to open with thin clay smearing occasional black speckling and occasionally micaceous.	(3.05)	
10.50-12.00				↑	↑	↑				(BROMSGROVE SANDSTONE FORMATION)		
10.92-11.11	3	CS		100	94	75				(stratum copied from 8.90m from previous sheet)		
12.00-13.50				↑	↑	↑				... between 9.77m and 9.81m bgl, with medium to coarse gravel sized vugs with partial calcite infill.	11.95	
13.50-15.00				↑	↑	↑				... between 10.60m and 11.40m bgl, medium strong thinly interlaminated to very thinly interbedded red brown and light grey MUDSTONE, siltstone and fine grained sandstone.		
15.00-16.50				↑	↑	↑				... between 10.90 and 10.92m bgl, gravelly clay.		
16.50-18.00				↑	↑	↑				... between 11.30m and 11.33m bgl, gravelly clay.		
17.28-17.53	4	CS		100	84	60				Medium strong to strong very thinly to thinly bedded red brown and light grey brown fine to medium grained micaceous SANDSTONE with occasional honeycombed appearance with some thinly interlaminated to very thinly interbedded red brown and light grey mudstone and siltstone. Discontinuities are subhorizontal undulating rough and planar rough extremely closely to medium spaced (11/150/430) tight to open with thin clay smearing, occasional black speckling and orange brown staining and occasionally micaceous.		

Boring Progress and Water Observations						General Remarks									
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth										
						All dimensions in metres		Scale: <b>1:50</b>							
Method Used:	<b>Rotary open hole + Rotary Cored</b>			Plant Used:	<b>Comacchio MC450-P1</b>		Drilled By:	<b>LS/PC</b>		Logged By:	<b>L Alderman</b>		Checked By:	<div></div>	<div></div>





Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thick ness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
18.00-19.50				↑  100 ↓	↑  86 ↓	↑  29 ↓				... between 17.01m and 17.06m bgl, firm to stiff gravelly clay. Medium strong to strong very thinly to thinly bedded red brown and light grey brown fine to medium grained micaceous SANDSTONE with occasional honeycombed appearance with some thinly interlaminated to very thinly interbedded red brown and light grey mudstone and siltstone. Discontinuities are subhorizontal undulating rough and planar rough extremely closely to medium spaced (11/150/430) tight to open with thin clay smearing, occasional black speckling and orange brown staining and occasionally micaceous. (Weathering Grade I) (BROMSGROVE SANDSTONE FORMATION) <i>(stratum copied from 11.95m from previous sheet)</i> ... between 19.07m and 19.14m bgl, medium to coarse gravel sized vugs, some clean occasionally with partial calcite infill.	(18.05)	
19.50-21.00				↑  100 ↓	↑  56 ↓	↑  36 ↓			... between 19.46m and 19.48m bgl, firm to stiff gravelly clay. ... between 19.68m and 19.72m bgl, clayey gravel.			
21.00-22.50				↑  100 ↓	↑  95 ↓	↑  59 ↓			... between 19.84m and 20.00m bgl, undulating rough subvertical fracture with dark red brown staining. ... between 21.15m and 22.01m bgl, clayey gravel.			
22.50-24.00				↑  100 ↓	↑  83 ↓	↑  55 ↓			... at 21.43m bgl, 32mm clean vug. ... at 21.93m bgl, 16mm clean vug. ... between 22.41m and 22.50m bgl, medium to coarse gravel sized clean vugs, rarely with partial calcite infill.			
24.00-25.50				↑  95 ↓	↑  89 ↓	↑  80 ↓			... between 22.86m and 22.96m bgl, undulating rough subvertical fracture with thin clay smearing and micaceous. ... between 23.12m and 23.15m bgl, firm to stiff gravelly clay. ... between 23.37m and 23.42m bgl, clayey gravel. ... between 24.12m and 24.20m bgl, clay infilled fractures.			
25.50-27.00				↑  87 ↓	↑  65 ↓	↑  55 ↓			... at 25.15m bgl, clay infilled fracture.  ... between 25.50m and 25.70m bgl, zone of core loss. ... between 25.86m and 25.92m bgl, with rare medium to coarse gravel sized clean vugs.			
				↑   ↓	↑   ↓	↑   ↓			... between 26.68m and 26.70m bgl, with rare subrounded to rounded medium to coarse gravel of			

Boring Progress and Water Observations						General Remarks									
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth										
						All dimensions in metres		Scale:	1:50						
Method Used:	Rotary open hole + Rotary Cored			Plant Used:	Comacchio MC450-P1		Drilled By:	LS/PC		Logged By:	L Alderman		Checked By:		



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)205</b>
Contract Ref: <b>312494</b>	Start: <b>3.10.13</b> End: <b>4.10.13</b>	Ground Level (m AOD): <b>56.42</b>	National Grid Co-ordinate: <b>E:447286.1 N:326753.4</b>		Sheet: <b>4 of 4</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
27.00-28.50	5	CS		↑	↑	↑				quartzite. ... between 26.80m and 26.90m bgl, undulating rough subvertical fracture.		
27.79-28.00				97	87	80				Medium strong to strong very thinly to thinly bedded red brown and light grey brown fine to medium grained micaceous SANDSTONE with occasional honeycombed appearance with some thinly interlaminated to very thinly interbedded red brown and light grey mudstone and siltstone. Discontinuities are subhorizontal undulating rough and planar rough extremely closely to medium spaced (11/150/430) tight to open with thin clay smearing, occasional black speckling and orange brown staining and occasionally micaceous. (Weathering Grade I)		
28.50-30.00				↑	↑	↑				(BROMSGROVE SANDSTONE FORMATION) <i>(stratum copied from 11.95m from previous sheet)</i> ... between 27.00m and 27.05m bgl, zone of core loss.	30.00	
				99	79	53				... at 27.24m bgl, 18mm clean vug. ... between 28.32m and 28.38m bgl, recovered as sandy gravel. ... between 28.46m and 28.50m bgl, gravelly bands, gravel is subrounded to rounded fine to coarse quartzite, sandstone and mudstone. ... between 28.50m and 28.52m bgl, zone of core loss. ... between 28.57m and 28.59m bgl, gravelly bands, gravel is subrounded to rounded fine to coarse quartzite, sandstone and mudstone. ... between 28.94m and 28.98m bgl, gravelly bands, gravel is subrounded to rounded fine to coarse quartzite, sandstone and mudstone. Rotary probehole terminated at 30.00m depth.		

Boring Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		
						All dimensions in metres	Scale: <b>1:50</b>
Method Used: <b>Rotary open hole + Rotary Cored</b>	Plant Used: <b>Comacchio MC450-P1</b>		Drilled By: <b>LS/PC</b>		Logged By: <b>LAlderman</b>	Checked By:	


Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>			Borehole: <b>CP(R)206</b>	
Contract Ref: <b>312494</b>		Start: <b>4.10.13</b>	Ground Level (m AOD): <b>51.84</b>		National Grid Co-ordinate: <b>E:447408.6 N:326891.6</b>		Sheet: <b>1 of 4</b>
		End: <b>4.10.13</b>					

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
4.00-5.50				100	77	27				Drillers description - Firm to stiff red/brown CLAY.	(4.00)	
5.50-7.00				97	75	39				Medium strong to very strong very thinly to thinly bedded light grey brown and red brown fine to medium grained SANDSTONE with occasional honeycombed appearance, with occasional thinly to thickly inter laminated mudstone and siltstone. Discontinuities are subhorizontal undulating rough and planar rough very closely to medium spaced (22/130/250) tight to open with thin clay smearing, occasional black speckling and occasionally micaceous. (Weathering Grade I) (BROMSGROVE SANDSTONE FORMATION) ... between 5.50m and 5.55m bgl, zone of core loss.		
7.00-8.50				100	83	52						
8.50-10.00				100	80	42				... between 8.25m and 8.30m bgl, medium coarse gravel sized vugs with partial and some complete calcite infill.		

Boring Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		
04/10/13	08:00	5.50	3.00	121	-	1. Location scanned with GPR and CAT and signal generator prior to breaking ground. Hand dug service pit to 1.20m bgl. No services encountered. 2. Rotary open holed to 4.00m bgl. 3. Borehole advanced to 25.00m bgl using coring techniques. 4. Gas and groundwater monitoring well installed to 21.00m bgl upon completion. 5. No groundwater strikes noted. 6. Piezometer installed at 24.00m bgl.	
04/10/13	17:00	25.00	7.00	121	-		
All dimensions in metres						Scale:	<b>1:50</b>
Method Used:	<b>Rotary open hole + Rotary Cored</b>		Plant Used:	<b>Comacchio MC450-P1</b>		Drilled By:	<b>SC/JO</b>
						Logged By:	<b>LAlderman</b>
						Checked By:	<b>AGS</b>


Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)206</b>
Contract Ref: <b>312494</b>	Start: <b>4.10.13</b> End: <b>4.10.13</b>	Ground Level (m AOD): <b>51.84</b>	National Grid Co-ordinate: <b>E:447408.6 N:326891.6</b>		Sheet: <b>2 of 4</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
10.00-11.50				100	80	42				Medium strong to very strong very thinly to thinly bedded light grey brown and red brown fine to medium grained SANDSTONE with occasional honeycombed appearance, with occasional thinly to thickly interlaminated mudstone and siltstone. Discontinuities are subhorizontal undulating rough and planar rough very closely to medium spaced (22/130/250) tight to open with thin clay smearing, occasional black speckling and occasionally micaceous. (Weathering Grade I) (BROMSGROVE SANDSTONE FORMATION) <i>(stratum copied from 4.00m from previous sheet)</i> ... between 9.05m and 9.25m bgl, weak to medium strong thinly interlaminated red brown mudstone and siltstone. ... at 9.60m bgl, 6mm subhorizontal calcite infilled fracture. ... between 10.00m and 10.13m bgl, zone of core loss. ... between 11.50m and 11.55m bgl, zone of core loss. ... between 11.80m and 11.83m bgl, firm red brown silty gravelly clay. ... between 11.83m and 12.08m bgl, medium strong thinly interlaminated red brown mudstone, siltstone and sandstone. ... at 12.18m bgl, 32mm cavity with partial calcite infill. ... at 12.20m bgl, medium to coarse gravel sized vugs with partial calcite infill. ... between 13.00m and 13.20m bgl, zone of core loss. ... between 13.41m and 13.53m bgl, subvertical undulating rough fracture.  ... between 14.78m and 14.98m bgl, subvertical undulating rough fracture.	(11.57)	
11.50-13.00				91	68	39						
13.00-14.50				97	73	30						
14.50-16.00				87	59	39				Weak to strong thickly interlaminated to thinly interbedded red brown and light grey brown micaceous fine grained SANDSTONE and MUDSTONE with occasional honeycombed appearance. Discontinuities are subvertical undulating rough and planar rough closely to medium spaced (35/100/230) partly open to open with thin clay smearing, occasional black speckling and occasionally micaceous. (Weathering Grade I) (BROMSGROVE SANDSTONE FORMATION) ... between 16.00m and 16.10m bgl, zone of core loss. ... between 16.28m and 16.40m bgl, subvertical planar rough fracture with calcite infill.	15.57	
16.00-17.50				100	81	35						
17.50-19.00				93	45	15					(1.68)	
				90	80	62					17.25	

Boring Progress and Water Observations						General Remarks									
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth										
						All dimensions in metres		Scale: <b>1:50</b>							
Method Used:	<b>Rotary open hole + Rotary Cored</b>			Plant Used:	<b>Comacchio MC450-P1</b>		Drilled By:	<b>SC/JO</b>		Logged By:	<b>L Alderman</b>		Checked By:	<div></div>	<div></div>

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)206</b>
Contract Ref: <b>312494</b>	Start: <b>4.10.13</b> End: <b>4.10.13</b>	Ground Level (m AOD): <b>51.84</b>	National Grid Co-ordinate: <b>E:447408.6 N:326891.6</b>		Sheet: <b>3 of 4</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
19.00-20.50				90	80	62				... between 17.50m and 17.65m bgl, zone of core loss. Medium strong to strong thinly bedded red brown micaceous fine grained SANDSTONE with occasional honeycombed appearance. Discontinuities are subhorizontal undulating rough and planar rough very closely to medium spaced (30/150/290) partly open to open with thin clay smearing, occasional black speckling and occasionally micaceous. (Weathering Grade I) (BROMSGROVE SANDSTONE FORMATION) <i>(stratum copied from 17.25m from previous sheet)</i>	(2.55)	
20.50-22.00				91	55	48				... between 19.00m and 19.13m bgl, zone of core loss. Medium strong to strong thickly interlaminated to thinly interbedded red brown and light grey brown fine grained SANDSTONE, very occasional honeycombed appearance with thickly interlaminated to very thinly interbedded light grey and red brown siltstone and mudstone. Discontinuities are subhorizontal undulating rough and planar rough extremely closely to medium spaced (15/80/250) partly open to open with thin clay smearing.	19.80	
22.00-23.50				97	73	49				... between 20.50m and 20.55m bgl, zone of core loss. ... between 21.29m and 21.37m bgl, subvertical undulating rough fracture. ... between 21.50m and 22.00m bgl, medium to coarse grained. ... between 22.00m and 22.75m bgl, zone of core loss.	(4.40)	
23.50-25.00				57	37	9				... between 23.50m and 23.60m bgl, zone of core loss. ... at 23.17m bgl, 14mm vug with partial calcite infill. ... between 23.90m and 24.00m bgl, cross stratified. ... between 23.90m and 24.05m bgl, medium to coarse. ... between 24.17m and 24.19m bgl, flute clasts/evidence of scouring within mudstone band. ... between 24.19m and 24.21m bgl, conglomerate with subrounded to rounded medium to coarse quartzite, flint and sandstone clasts. Red brown grey white subrounded to rounded coarse GRAVEL of sandstone, quartzite and siltstone. (CONGLOMERATE) Medium strong to strong thickly interlaminated to very thinly interbedded red brown, grey and grey brown fine grained SANDSTONE, siltstone and mudstone. Discontinuities are subhorizontal	24.20 24.30 (0.70) 25.00	

Boring Progress and Water Observations						General Remarks							
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth								
						All dimensions in metres	Scale:	1:50					
Method Used:	Rotary open hole + Rotary Cored			Plant Used:	Comacchio MC450-P1		Drilled By:	SC/JO	Logged By:	LALderman	Checked By:		





# BOREHOLE LOG



Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>			Borehole: <b>CP(R)206</b>	
Contract Ref: <b>312494</b>		Start: <b>4.10.13</b> End: <b>4.10.13</b>	Ground Level (m AOD): <b>51.84</b>		National Grid Co-ordinate: <b>E:447408.6 N:326891.6</b>		Sheet: <b>4 of 4</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instru- mentation	Water	Description of Strata	Depth (Thick ness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
										undulating rough and planar rough closely to medium spaced (70/90/100) open with thin clay smearing. (Weathering Grade I) (BROMSGROVE SANDSTONE FORMATION) Rotary probehole terminated at 25.00m depth.		

Boring Progress and Water Observations						General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)207</b>
Contract Ref: <b>312494</b>	Start: <b>1.10.13</b> End: <b>1.10.13</b>	Ground Level (m AOD): <b>63.04</b>	National Grid Co-ordinate: <b>E:447086.9 N:326841.6</b>		Sheet: <b>1 of 4</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
2.30-3.80										Drillers description - Grass over red brown silty CLAY.	0.10	
										Drillers description - Red brown silty CLAY.	(1.10)	
										Drillers description - Weak red brown MUDSTONE.	1.20	
										Very weak thickly laminated red brown MUDSTONE. (Weathering Grade II) (TARPORLEY SILTSTONE FORMATION)	(0.40)	
3.80-5.30				100	52	0				Weak to strong thickly interlaminated to thinly interbedded red brown and light grey MUDSTONE and siltstone with occasional thinly interlaminated to very thinly interbedded fine grained sandstone. Discontinuities are subhorizontal undulating rough and planar rough very closely to medium spaced (28/120/290) tight to open with thin clay smearing, with occasional dark brown and orange brown staining and occasional black speckling and occasionally micaceous. (Weathering Grade I) (TARPORLEY SILTSTONE FORMATION)	2.30	
										... between 2.88m and 2.93m bgl, red brown silty gravelly clay.		
										... between 3.09m and 3.13m bgl, red brown silty gravelly clay.		
										... between 3.30m and 3.39m bgl, red brown silty gravelly clay.		
5.30-6.80				100	53	23				... between 4.60m and 4.95m bgl, subvertical stepped rough fracturing with dark brown staining and moist surface.	2.70	
										... between 5.45m and 5.49m bgl, firm clayey gravel.		
										... between 5.55m and 5.62m bgl, firm clayey gravel.		
										... between 5.97m and 6.22m bgl, medium strong light grey brown and red brown fine grained sandstone.		
6.80-8.30				100	60	21				... between 6.39m and 6.43m bgl, firm clayey gravel.		
										... between 6.60m and 6.73m bgl, several subvertical stepped rough fractures with dark grey staining.		

Boring Progress and Water Observations						General Remarks									
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth										
01/10/13	08:00	3.80	2.30	121	-	1. Location scanned with GPR and CAT and signal generator prior to breaking ground. Hand dug service pit to 1.20m bgl. No services encountered. 2. Rotary open holed to 2.30m bgl. 3. Borehole advanced to 24.80m bgl using coring techniques. 4. Gas and groundwater monitoring well installed to 24.80m bgl upon completion. 5. No groundwater strikes noted. 6. Piezometer installed at 12.10m bgl.									
01/10/13	13:00	12.80	12.10	121	-										
01/10/13	17:00	24.80	12.10	121	-										
						All dimensions in metres		Scale: <b>1:39</b>							
Method Used:	Rotary open hole + Rotary Cored			Plant Used:	Comacchio MC450-P1		Drilled By:	LS/PC		Logged By:	LALderman		Checked By:		



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)207</b>
Contract Ref: <b>312494</b>	Start: <b>1.10.13</b> End: <b>1.10.13</b>	Ground Level (m AOD): <b>63.04</b>	National Grid Co-ordinate: <b>E:447086.9 N:326841.6</b>		Sheet: <b>2 of 4</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
8.30-9.80				100	60	21				Weak to strong thickly interlaminated to thinly interbedded red brown and light grey MUDSTONE and siltstone with occasional thinly interlaminated to very thinly interbedded fine grained sandstone. Discontinuities are subhorizontal undulating rough and planar rough very closely to medium spaced (28/120/290) tight to open with thin clay smearing, with occasional dark brown and orange brown staining and occasional black speckling and occasionally micaceous. (Weathering Grade I) (TARPORLEY SILTSTONE FORMATION) (stratum copied from 2.70m from previous sheet) ... between 7.17m and 7.36m bgl, firm clayey gravel. ... between 7.81m and 7.86m bgl, firm clayey gravel. ... at 8.20m bgl, 26mm cavity with partial calcite infill. ... at 8.97m bgl, 35mm vug with partial calcite infill.	(10.30)	
9.80-11.30				100	81	41						
11.30-12.80				100	87	30				... between 10.60m and 10.83m bgl, light grey brown fine to medium grained sandstone with frequent medium to coarse gravel sized (up to 45mm) vugs with partial calcite infill. ... between 10.90m and 11.25m bgl, light grey brown fine to medium grained sandstone with frequent medium to coarse gravel sized (up to 45mm) vugs with partial calcite infill.		
12.80-14.30				100	85	29						
				100	63	47				Description on next sheet	13.00	
										... between 13.70m and 13.86m bgl, dark grey very thin cross stratification.		

Boring Progress and Water Observations						General Remarks			
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth				

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)207</b>
Contract Ref: <b>312494</b>	Start: <b>1.10.13</b> End: <b>1.10.13</b>	Ground Level (m AOD): <b>63.04</b>	National Grid Co-ordinate: <b>E:447086.9 N:326841.6</b>		Sheet: <b>3 of 4</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
14.30-15.80				100	63	47				... between 13.92m and 14.05m bgl, subvertical planar rough fracture with orange brown staining and sandy surface. Medium strong to strong thickly laminated to thinly bedded light grey brown and red brown fine grained SANDSTONE with occasional thick laminations of mudstone and siltstone. Discontinuities are subhorizontal undulating rough and planar rough very closely to medium spaced (26/150/290) partly open to open with thin clay smearing, occasional black speckling and rarely micaceous. (Weathering Grade I) (BROMSGROVE SANDSTONE FORMATION) <i>(stratum copied from 13.00m from previous sheet)</i>	(2.25)	
15.80-17.30				100	89	67				... between 14.44m and 14.65m bgl, subhorizontal undulating rough fracture with dark grey staining. Medium strong to strong very thinly to thinly bedded light grey brown and red brown fine to medium grained SANDSTONE with occasional thickly interlaminated to thinly interbedded mudstone and siltstone. Discontinuities are subhorizontal undulating rough and planar rough extremely closely to medium spaced (12/170/300) partly open to open with thin clay smearing, occasional black speckling and rarely micaceous. (Weathering Grade I) (BROMSGROVE SANDSTONE FORMATION) ... between 15.32m and 15.40m bgl, coarse gravel sized vugs with partial calcite infill. ... between 15.80m and 15.87m bgl, zone of core loss. ... between 16.44m and 16.48m bgl, coarse gravel sized vugs with partial and some complete calcite infill. ... between 17.57m and 17.64m bgl, firm gravelly clay. ... at 18.16m bgl, 45mm clean cavity. ... between 18.80m and 18.94m bgl, zone of core loss.	15.25	
17.30-18.80				95	87	77						
18.80-20.30				100	68	45						
20.30-21.80				91	36	0					(9.75)	
				100	65	37				... between 20.50m and 20.53m bgl, medium to coarse.		

Boring Progress and Water Observations						General Remarks			
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth				



Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)207</b>
Contract Ref: <b>312494</b>	Start: <b>1.10.13</b> End: <b>1.10.13</b>	Ground Level (m AOD): <b>63.04</b>	National Grid Co-ordinate: <b>E:447086.9 N:326841.6</b>		Sheet: <b>4 of 4</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instru- mentation	Water	Description of Strata	Depth (Thick- ness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
21.80-23.30				↓  ↑	↓  ↑	↓  ↑				Medium strong to strong very thinly to thinly bedded light grey brown and red brown fine to medium grained SANDSTONE with occasional thickly interlaminated to thinly interbedded mudstone nd siltstone. Discontinuities are subhorizontal undulating rough and planar rough extremely closely to medium spaced (12/170/300) partly open to open with thin clay smearing, occasional black speckling and rarely micaceous. (Weathering Grade I) (BROMSGROVE SANDSTONE FORMATION) <i>(stratum copied from 15.25m from previous sheet)</i> . . . between 21.03m and 21.30m bgl, subvertical undulating rough fracture. . . . between 22.47 and 22.51m bgl, soft gravelly clay. . . . between 22.79 and 22.82m bgl, soft gravelly clay.		
				100	65	37						
				100	73	43						
				↓  ↑	↓  ↑	↓  ↑						
23.30-24.80				↓  ↑	↓  ↑	↓  ↑				. . . at 24.53m bgl, 28mm vug with partial calcite infill.	25.00	
				100	87	58						
				↓	↓	↓						

Boring Progress and Water Observations						General Remarks							
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth								
						All dimensions in metres	Scale:	1:39					
Method Used:	Rotary open hole + Rotary Cored			Plant Used:	Comacchio MC450-P1		Drilled By:	LS/PC	Logged By:	L Alderman	Checked By:	<div></div>	<div>AGS</div>

LIBRARY V8\_05.GLB LibVersion: v8\_05 - Lib0004 PdfVersion: v8\_05 - Core+Logs 0002 | Log COMPOSITE LOG | 312494 - EAST MIDLANDS GATEWAY GPJ - v8\_05 | 10/12/13 - 10:41 | KF.  
Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk





# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)208</b>
Contract Ref: <b>312494</b>	Start: <b>4.10.13</b> End: <b>4.10.13</b>	Ground Level (m AOD): <b>66.58</b>	National Grid Co-ordinate: <b>E:446834.8 N:326895.4</b>		Sheet: <b>1 of 3</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
3.50-5.00										Drillers Descriptions - Dark brown silty CLAY.	0.40	
										Drillers Descriptions - Red brown silty CLAY.	(0.80)	
											1.20	
										Drillers Descriptions - Red brown MUDSTONE.	(1.00)	
											2.20	
										Drillers Descriptions - Grey MUDSTONE.	2.50	
5.00-6.50										Drillers Descriptions - Red brown MUDSTONE.	(1.00)	
											3.50	
										Firm red brown and light grey silty slightly sandy CLAY. Recovery includes subangular to subrounded fine to coarse mudstone lithorelicts. (TARPORLEY SILTSTONE FORMATION)	3.60	
										Medium strong to strong light grey brown SANDSTONE. (TARPORLEY SILTSTONE FORMATION)	4.00	
6.50-8.00										... between 3.82m and 3.89m bgl, occasional medium to coarse gravel sized vugs, some with partial calcite infill.	(0.65)	
										Recovered as red brown angular blocks/coarse gravel with small amount of clay along fractures. (Weathering Grade II) (TARPORLEY SILTSTONE FORMATION)	4.65	
7.40-7.59	1	CS								... between 4.06 and 4.35m bgl, stepped rough subvertical fracture with dark brown staining.	(3.43)	
										Weak to medium strong thickly laminated to thinly interbedded red brown and light grey MUDSTONE and siltstone, with some very thinly to thinly interbedded red brown and light grey brown fine to medium grained sandstone. Discontinuities are subhorizontal undulating rough and planar rough extremely closely to medium spaced (18/100/270) tight to open with thin clay smearing, occasional black speckling and grey staining and occasionally micaceous. (TARPORLEY SILTSTONE FORMATION)	8.08	
8.00-9.50										... between 4.95m and 5.20m bgl, strong light grey brown fine to medium grained sandstone.	(1.12)	
										... between 5.04m and 5.07m bgl, with medium to coarse gravel sized vugs with partial calcite infill.		
										... between 5.20m and 5.60m bgl, clayey gravel.		

Boring Progress and Water Observations						General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	
04/10/13	08:00	3.50	3.50	121	-	
04/10/13	17:00	20.00	3.50	121	-	
1. Location scanned with GPR and CAT and signal generator prior to breaking ground. Hand dug service pit 10 1.20m bgl. No services encountered.						
2. Rotary open holed to 3.50m bgl.						
3. Borehole advanced to 20.00m bgl using coring techniques.						
4. Gas and groundwater monitoring well installed to 20.00m bgl.						
5. No groundwater stikes noted.						
All dimensions in metres						
Scale: 1:50						
Method Used:	Rotary open hole + Rotary Cored		Plant Used:	Comacchio MC450-P1		
			Drilled By:	SC/JO		
			Logged By:	L Alderman		
			Checked By:		AGS	



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)208</b>
Contract Ref: <b>312494</b>	Start: <b>4.10.13</b> End: <b>4.10.13</b>	Ground Level (m AOD): <b>66.58</b>	National Grid Co-ordinate: <b>E:446834.8 N:326895.4</b>		Sheet: <b>2 of 3</b>

Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
9.50-11.00	2	CS		98	89	26				... between 5.31m and 5.37m bgl, clayey gravel. ... between 5.53m and 5.56m bgl, medium to coarse gravel sized vugs with partial calcite infill. ... between 6.55m and 6.60m bgl, medium strong to strong light grey brown fine to medium grained sandstone band. ... between 6.64m and 6.90m bgl, stepped rough subvertical fracture. ... between 8.00m and 8.03m bgl, zone of core loss. ... at 8.27m bgl, 34mm vug with partial calcite infill.	9.20	
9.98-10.15				97	90	40					(1.70)	
11.00-12.50	3	CS								Medium strong to very strong thickly laminated to thinly bedded light grey brown and red brown fine to medium grained SANDSTONE with occasional medium to coarse gravel sized vugs with partial calcite infill with occasional thickly interlaminated to thinly interbedded mudstone and siltstone. Discontinuities are subhorizontal undulating rough and planar rough very closely to medium spaced (48/100/270) tight to moderately wide with thin clay smearing, occasional black speckling and occasionally micaceous. (BROMSGROVE SANDSTONE FORMATION) <i>(stratum copied from 8.08m from previous sheet)</i>	10.90	
11.22-11.42				100	87	35					(1.65)	
12.50-14.00	4	CS								Medium strong to strong thickly interlaminated to very thinly interbedded red brown and light grey MUDSTONE and siltstone with occasional thickly interlaminated to very thinly interbedded light grey brown and red brown fine grained sandstone. Discontinuities are subhorizontal undulating rough and planar rough very closely to medium spaced (26/80/170) partly open to open with thin clay smearing, occasional orange brown stained and black speckling and occasionally micaceous. (Weathering Grade I) (BROMSGROVE SANDSTONE FORMATION) ... between 9.50m and 9.55m bgl, zone of core loss.	12.55	
14.00-15.50				100	87	76						
14.15-14.35												
				100	82	47						
15.50-17.00										Medium strong to strong thickly interlaminated to very thinly interbedded light green grey fine grained SANDSTONE and red brown and light grey siltstone and mudstone. Discontinuities are subhorizontal undulating rough and planar rough very closely to medium spaced (25/100/200) partly open to moderately open with thin clay smearing, micaceous and with occasional black speckling and orange brown staining. (BROMSGROVE SANDSTONE FORMATION) ... between 11.46m and 11.48m bgl, clayey gravel. ... between 11.70m and 11.74m bgl, clayey gravel. ... between 13.67m and 13.71m bgl, medium to coarse gravel sized vugs with partial calcite infill. <i>Description on next sheet</i>	(7.45)	
17.00-18.50				90	73	29						
				150	94	45						


Boring Progress and Water Observations						General Remarks	
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth		
						All dimensions in metres	Scale: <b>1:50</b>
Method Used: <b>Rotary open hole + Rotary Cored</b>	Plant Used: <b>Comacchio MC450-P1</b>		Drilled By: <b>SC/JO</b>	Logged By: <b>LAlderman</b>	Checked By:		



# BOREHOLE LOG

Contract: <b>East Midlands Gateway</b>			Client: <b>Roxhill Developments Ltd</b>		Borehole: <b>CP(R)208</b>
Contract Ref: <b>312494</b>	Start: <b>4.10.13</b> End: <b>4.10.13</b>	Ground Level (m AOD): <b>66.58</b>	National Grid Co-ordinate: <b>E:446834.8 N:326895.4</b>		Sheet: <b>3 of 3</b>


Depth (m)	Samples & Testing			Mechanical Log				Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
	No	Type	Results	TCR (%)	SCR (%)	RQD (%)	If (mm)					
18.50-20.00	5	CS		150	94	45				... between 15.04m and 15.11m bgl, coarse gravel sized vugs with partial calcite infill. ... between 15.50m and 15.65m bgl, zone of core loss. ... between 16.00m and 16.25m bgl, undulating rough subvertical fracture. ... between 16.48m and 16.50m bgl, firm gravelly clay. ... between 16.77m and 16.78m bgl, clayey gravel. ... between 17.48m and 17.50m bgl, with occasional medium to coarse gravel sized vugs with partial calcite infill.	20.00	
19.10-19.30				98	83	23				Medium strong to very strong thickly laminated to thinly bedded light grey brown and red brown fine to medium grained SANDSTONE, with occasional thickly interlaminated and very thinly interbedded mudstone and siltstone. Discontinuities are subhorizontal undulating rough and planar rough very closely to medium spaced (26/150/300) partly open to moderately open with thin clay smearing. (BROMSGROVE SANDSTONE FORMATION) (stratum copied from 12.55m from previous sheet) ... between 19.80m and 19.86m bgl, clayey gravel. Rotary probehole terminated at 20.00m depth.		

Boring Progress and Water Observations						General Remarks									
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth										
						All dimensions in metres		Scale: <b>1:50</b>							
Method Used:	<b>Rotary open hole + Rotary Cored</b>			Plant Used:	<b>Comacchio MC450-P1</b>		Drilled By:	<b>SC/JO</b>		Logged By:	<b>L Alderman</b>		Checked By:	<div></div>	<div></div>

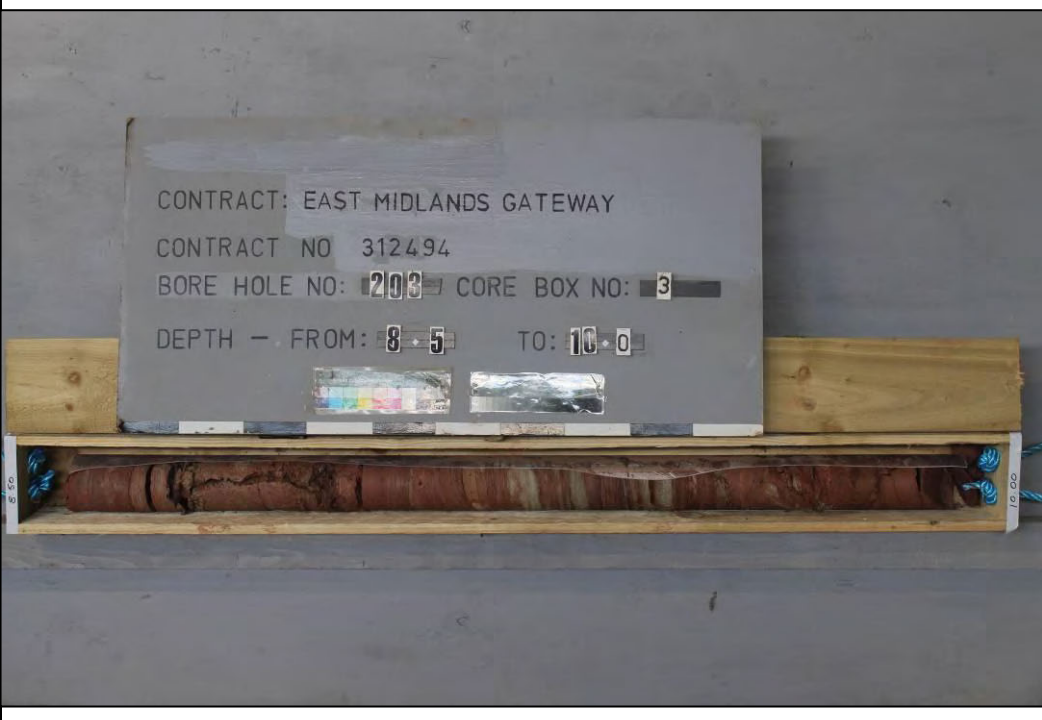
## APPENDIX E

### ROTARY CORED BOREHOLE PHOTOGRAPHS

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)203	
<b>Date drilled:</b> 02/10/13	
<b>Depth range:</b> 5.50 – 7.00m	

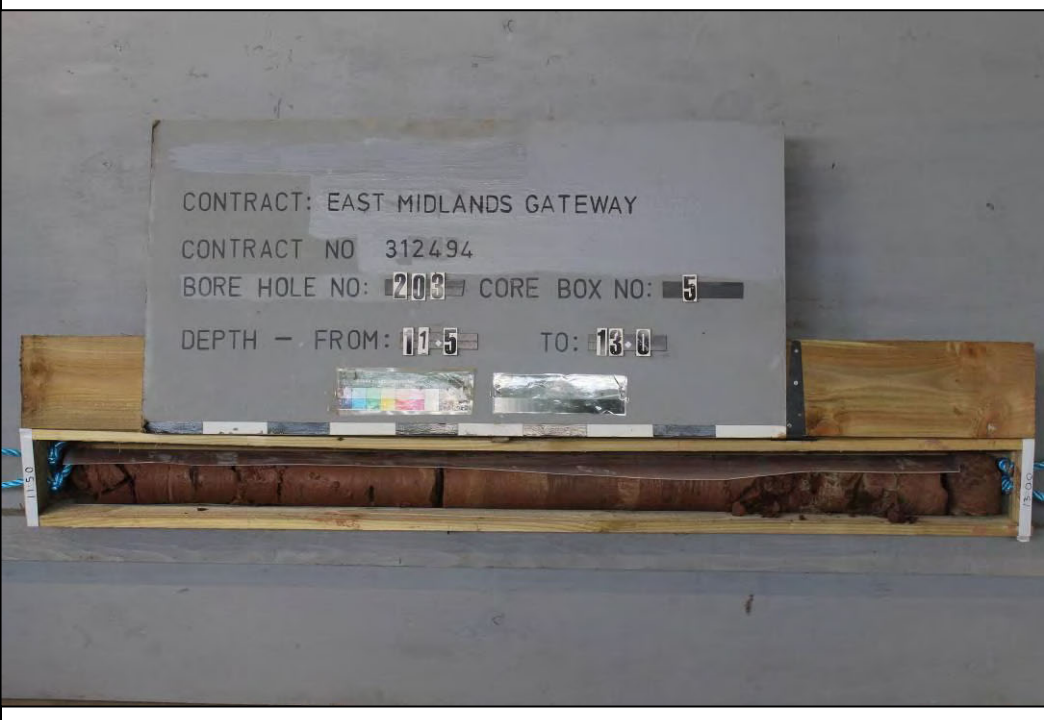
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)203	
<b>Date drilled:</b> 02/10/13	
<b>Depth range:</b> 7.00 – 8.50m	

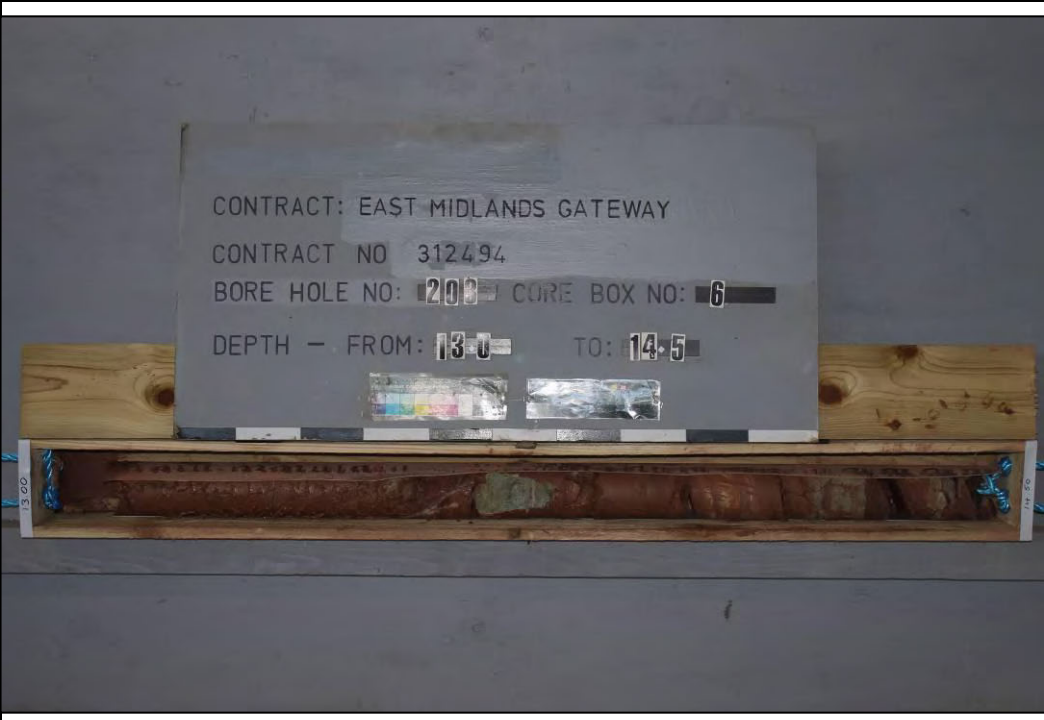


<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)203	
<b>Date drilled:</b> 02/10/13	
<b>Depth range:</b> 8.50 – 10.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)203	
<b>Date drilled:</b> 02/10/13	
<b>Depth range:</b> 10.00 – 11.50m	



<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)203	
<b>Date drilled:</b> 02/10/13	
<b>Depth range:</b> 11.50 – 13.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)203	
<b>Date drilled:</b> 02/10/13	
<b>Depth range:</b> 13.00 – 14.50m	


<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)203	
<b>Date drilled:</b> 02/10/13	
<b>Depth range:</b> 14.50 – 16.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)203	
<b>Date drilled:</b> 02/10/13	
<b>Depth range:</b> 16.00 – 17.50m	

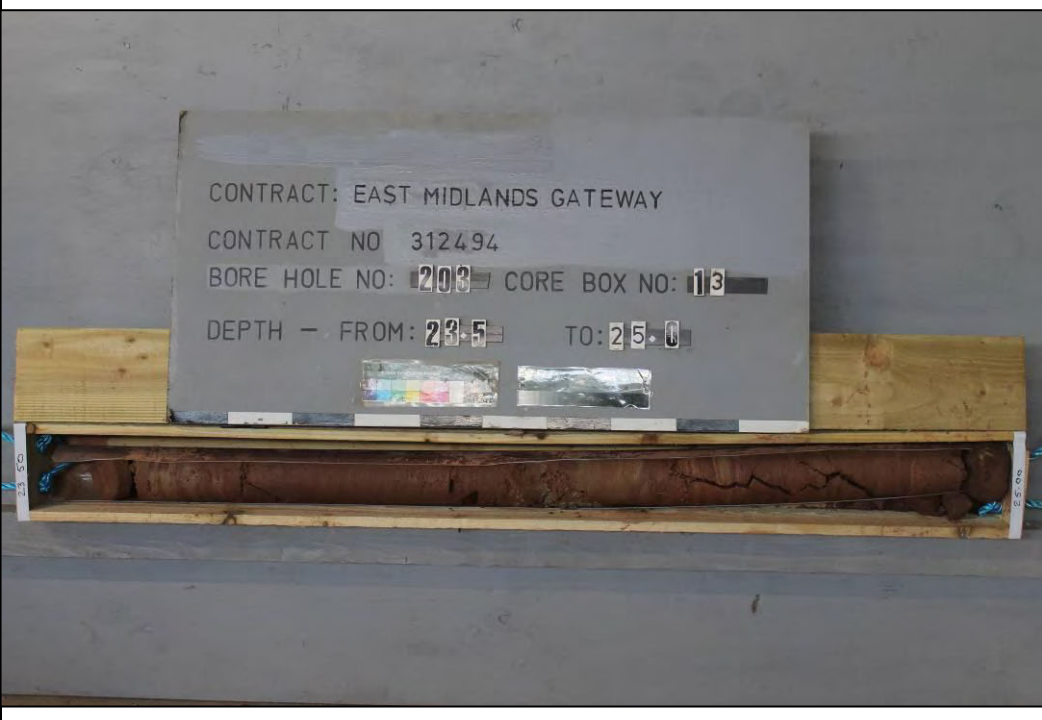
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)203	
<b>Date drilled:</b> 02/10/13	
<b>Depth range:</b> 17.50 – 19.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)203	
<b>Date drilled:</b> 02/10/13	
<b>Depth range:</b> 19.00 – 20.50m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)203	
<b>Date drilled:</b> 02/10/13	
<b>Depth range:</b> 20.50 – 22.00m	

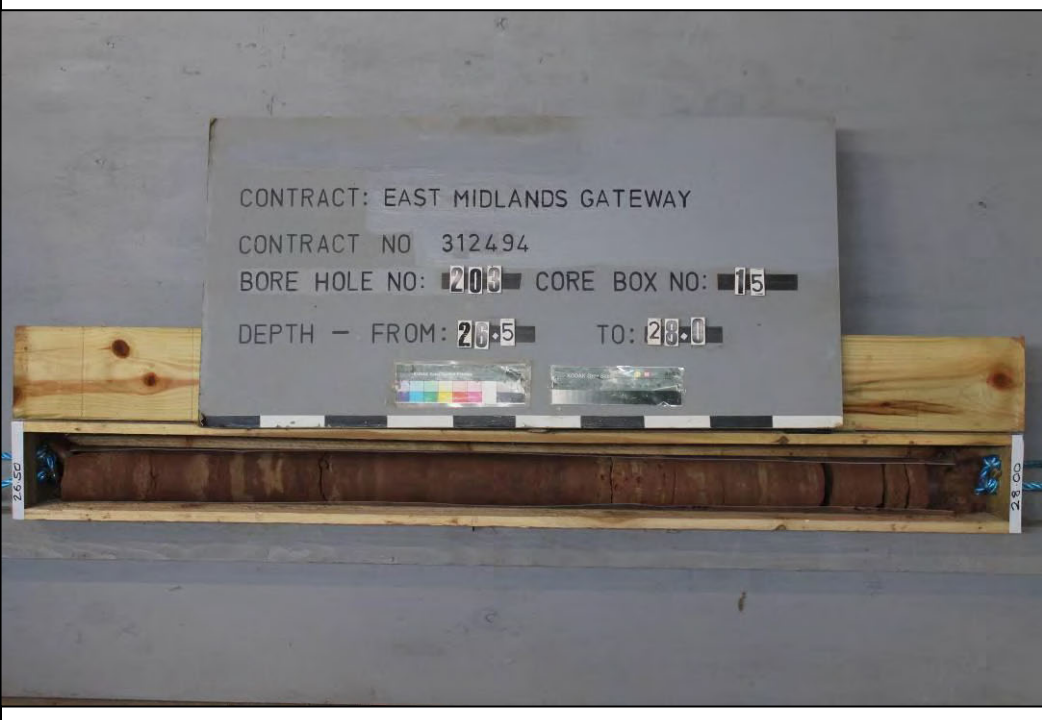
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)203	
<b>Date drilled:</b> 02/10/13	
<b>Depth range:</b> 22.00 – 23.50m	



<b>Zone:</b>  1	
<b>Borehole number:</b>  CP(R)203	
<b>Date drilled:</b>  02/10/13	
<b>Depth range:</b>  23.50 – 25.00m	

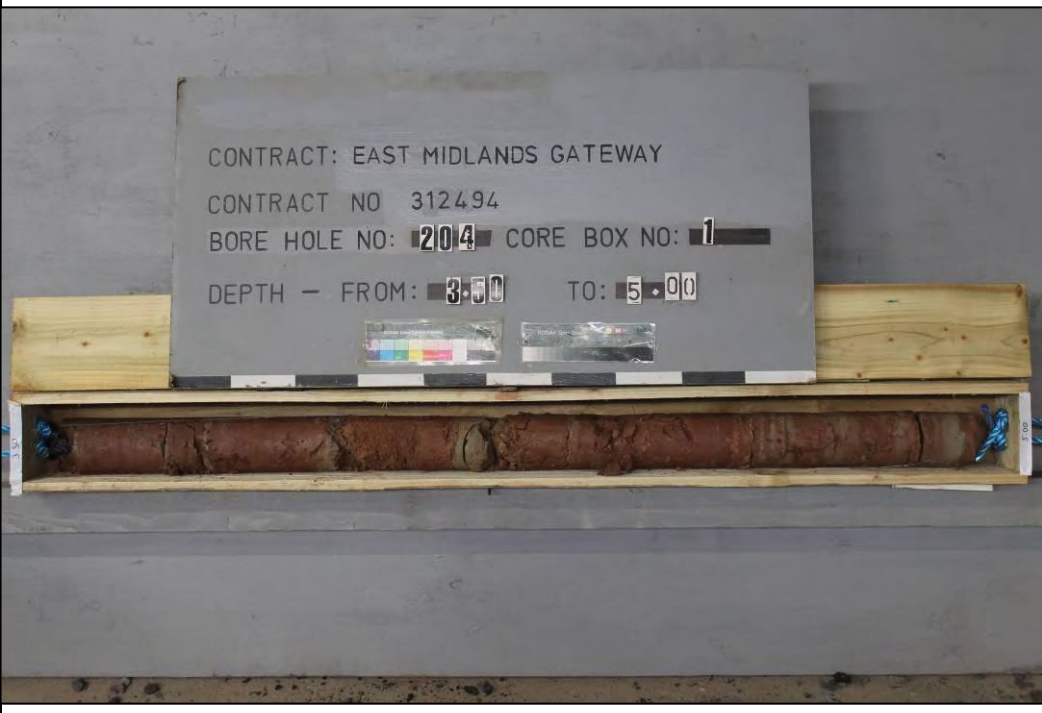
<b>Zone:</b>  1	
<b>Borehole number:</b>  CP(R)203	
<b>Date drilled:</b>  02/10/13	
<b>Depth range:</b>  25.00 – 26.50m	



<b>Zone:</b>  1	
<b>Borehole number:</b>  CP(R)203	
<b>Date drilled:</b>  02/10/13	
<b>Depth range:</b>  26.50 – 28.00m	

<b>Zone:</b>  1	
<b>Borehole number:</b>  CP(R)203	
<b>Date drilled:</b>  03/10/13	
<b>Depth range:</b>  28.00 – 29.50m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)203	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 29.50 – 30.00m	

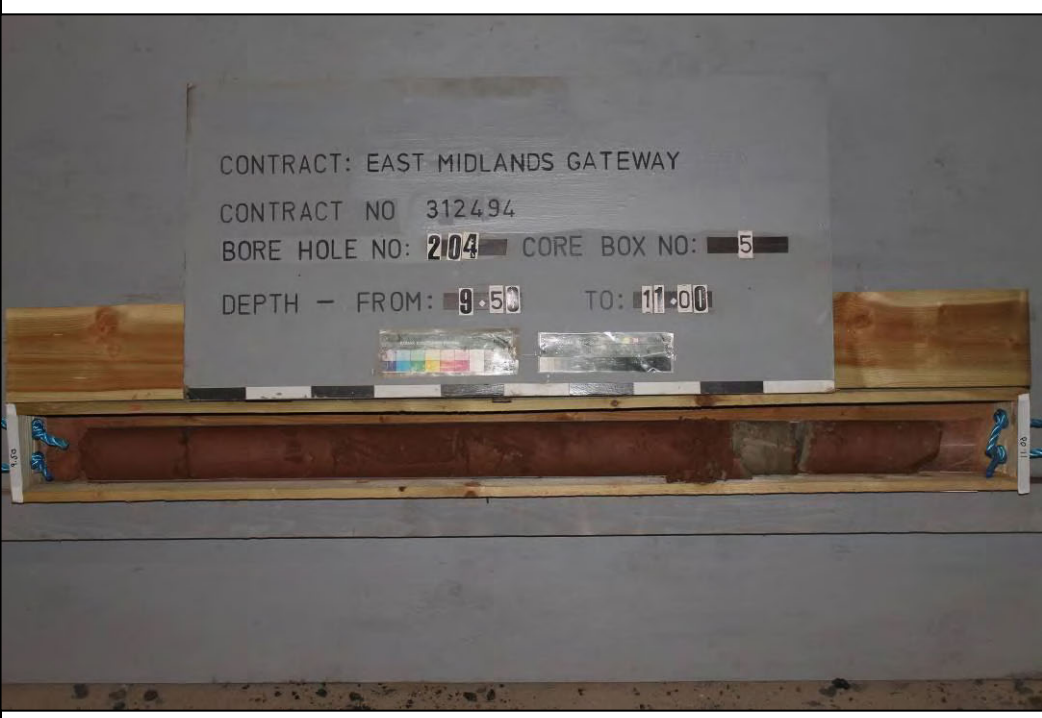
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)204	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 3.50 – 5.00m	

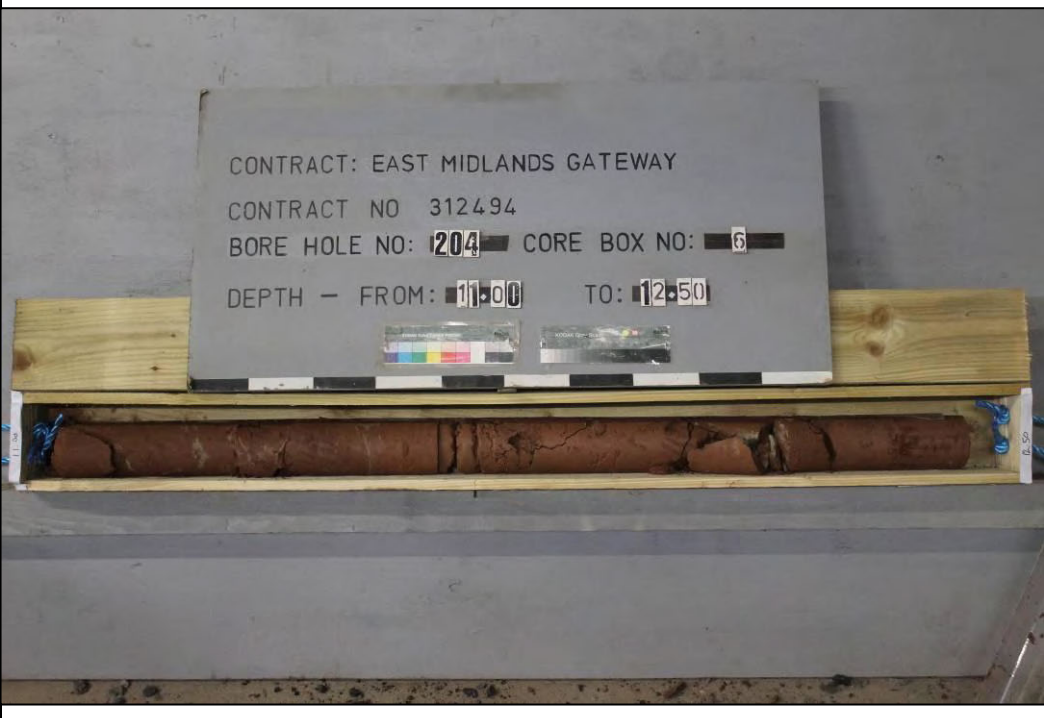
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)204	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 5.00 – 6.50m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)204	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 6.50 – 8.00m	



<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)204	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 8.00 – 9.50m	


<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)204	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 9.50 – 11.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)204	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 11.00 – 12.50m	


<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)204	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 12.50 – 14.00m	

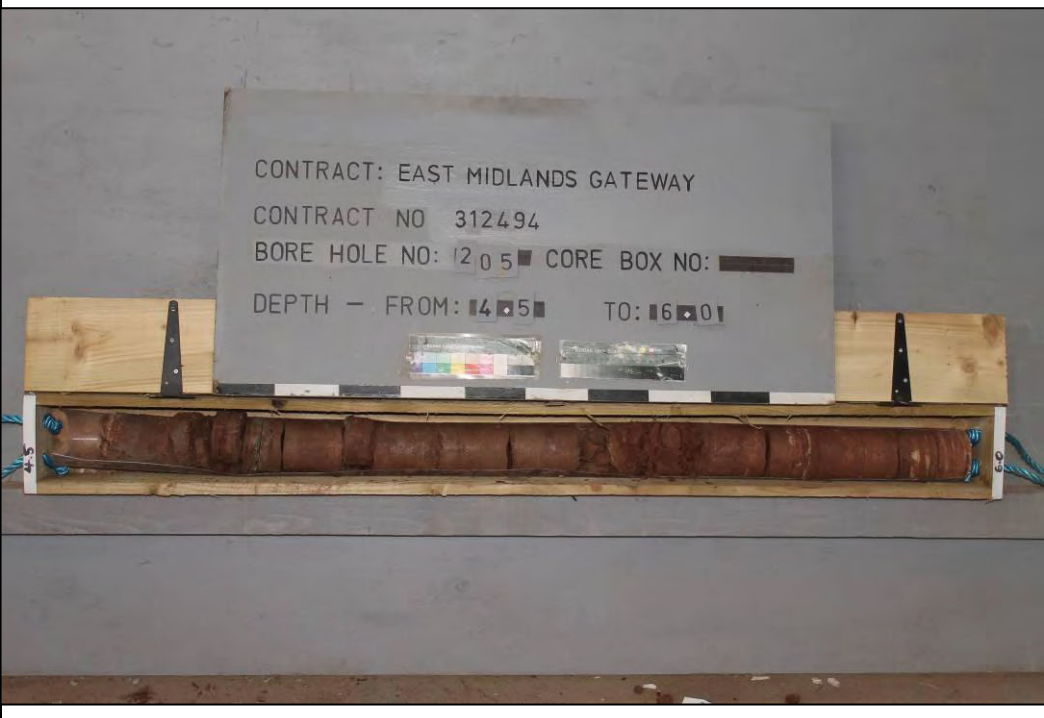


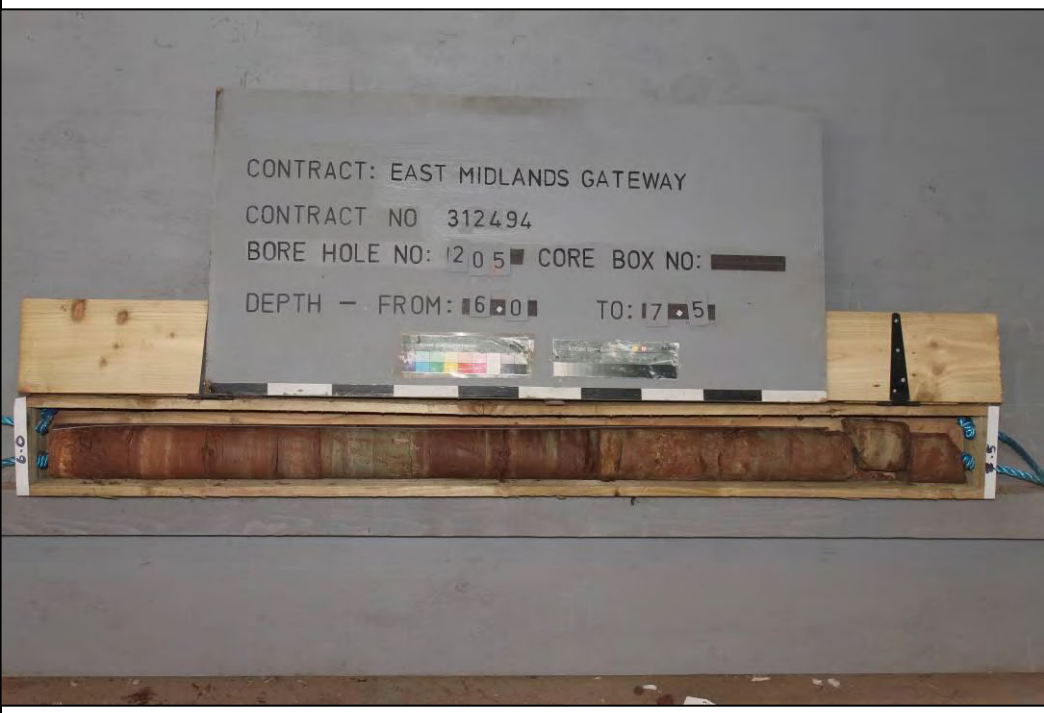
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)204	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 14.00 – 15.50m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)204	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 15.50 – 17.00m	

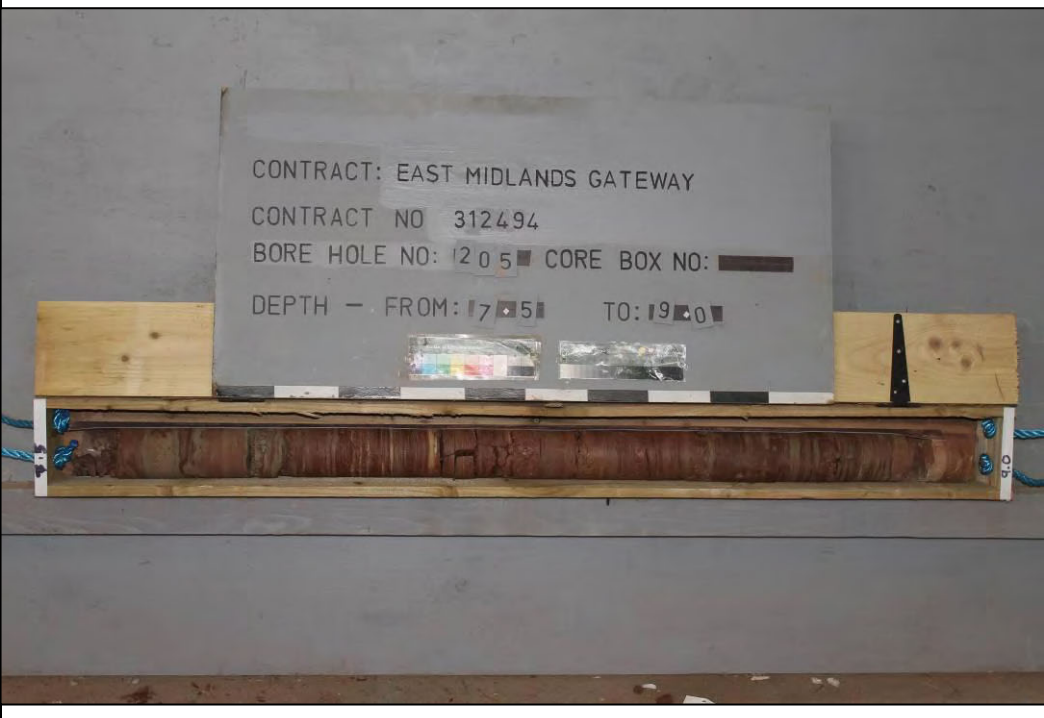
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)204	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 17.00 – 18.50m	

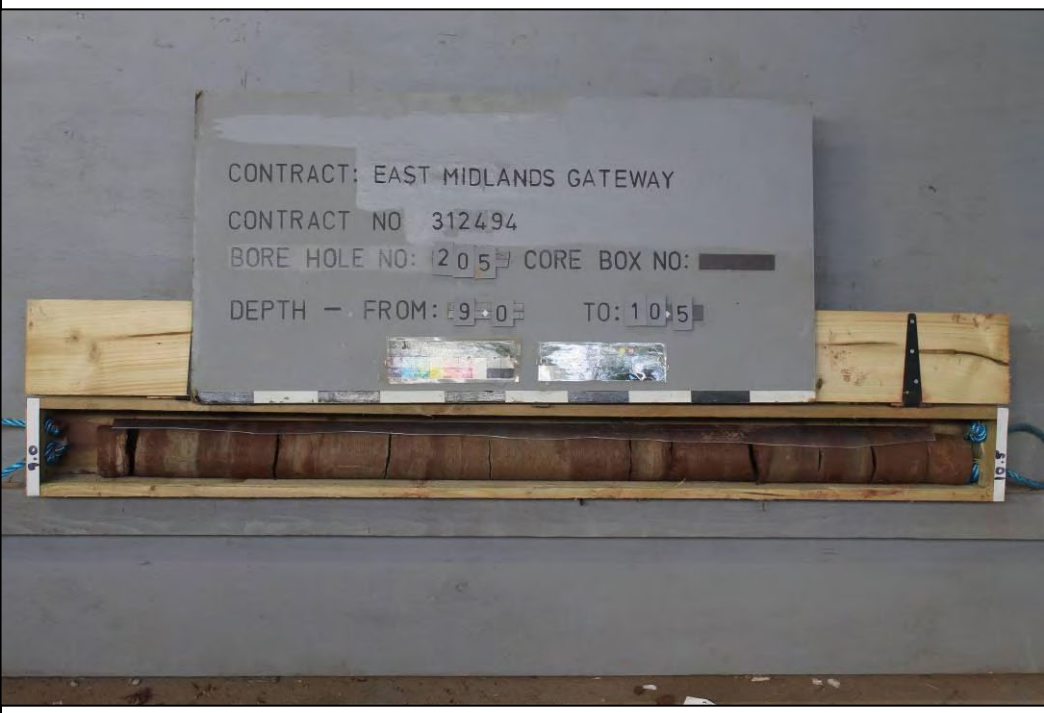
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)204	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 18.50 – 20.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)205	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 4.50 – 6.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)205	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 6.00 – 7.50m	



<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)205	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 7.50 – 9.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)205	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 9.00 – 10.50m	

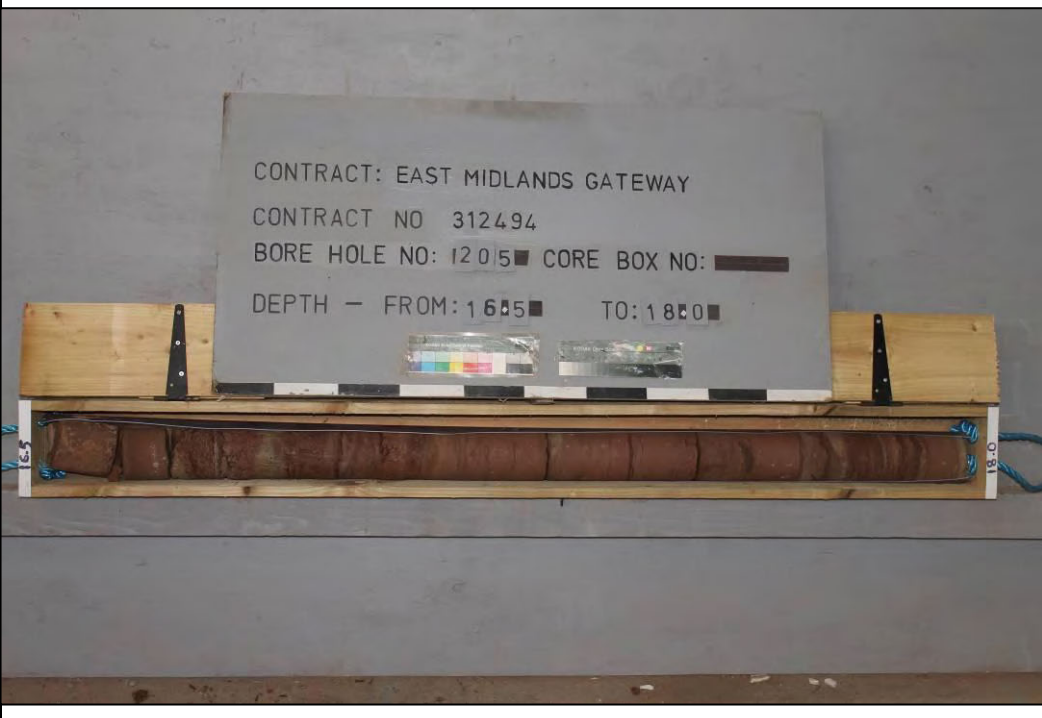
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)205	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 10.50 – 12.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)205	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 12.00 – 13.50m	




<b>Zone:</b>  1	
<b>Borehole number:</b>  CP(R)205	
<b>Date drilled:</b>  03/10/13	
<b>Depth range:</b>  13.50 – 15.00m	

<b>Zone:</b>  1	
<b>Borehole number:</b>  CP(R)205	
<b>Date drilled:</b>  03/10/13	
<b>Depth range:</b>  15.00 – 16.50m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)205	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 16.50 – 18.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)205	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 18.00 – 19.50m	

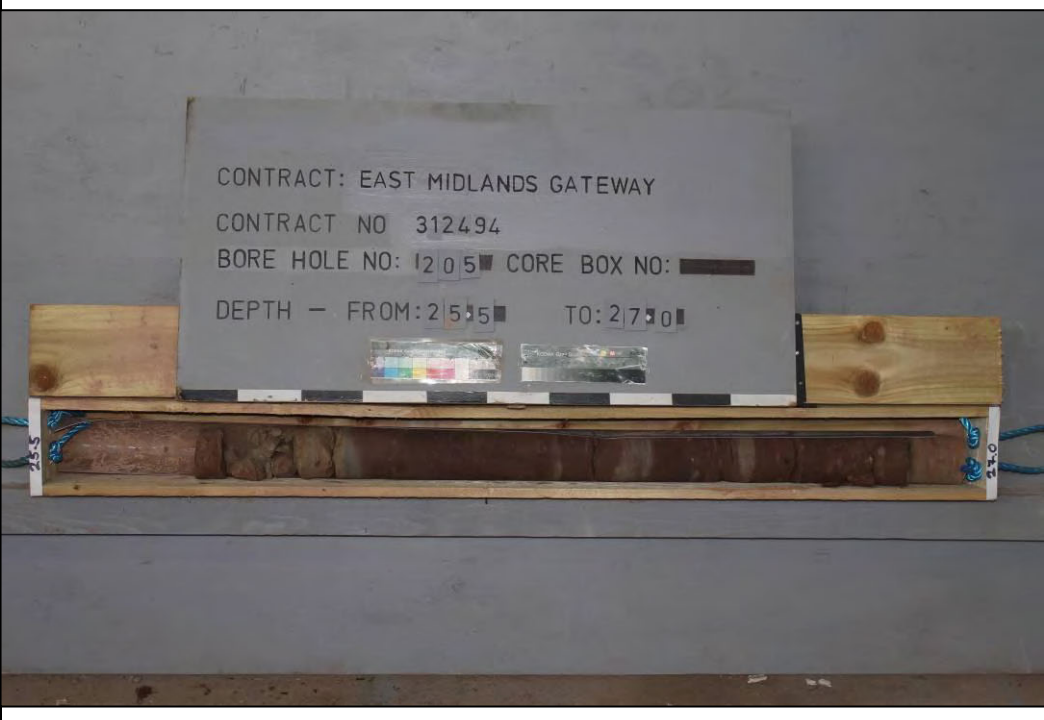
<b>Zone:</b>  1	
<b>Borehole number:</b>  CP(R)205	
<b>Date drilled:</b>  03/10/13	
<b>Depth range:</b>  19.50 – 21.00m	

<b>Zone:</b>  1	
<b>Borehole number:</b>  CP(R)205	
<b>Date drilled:</b>  03/10/13	
<b>Depth range:</b>  21.00 – 22.50m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)205	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 22.50 – 24.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)205	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 24.00 – 25.50m	




<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)205	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 25.50 – 27.00m	

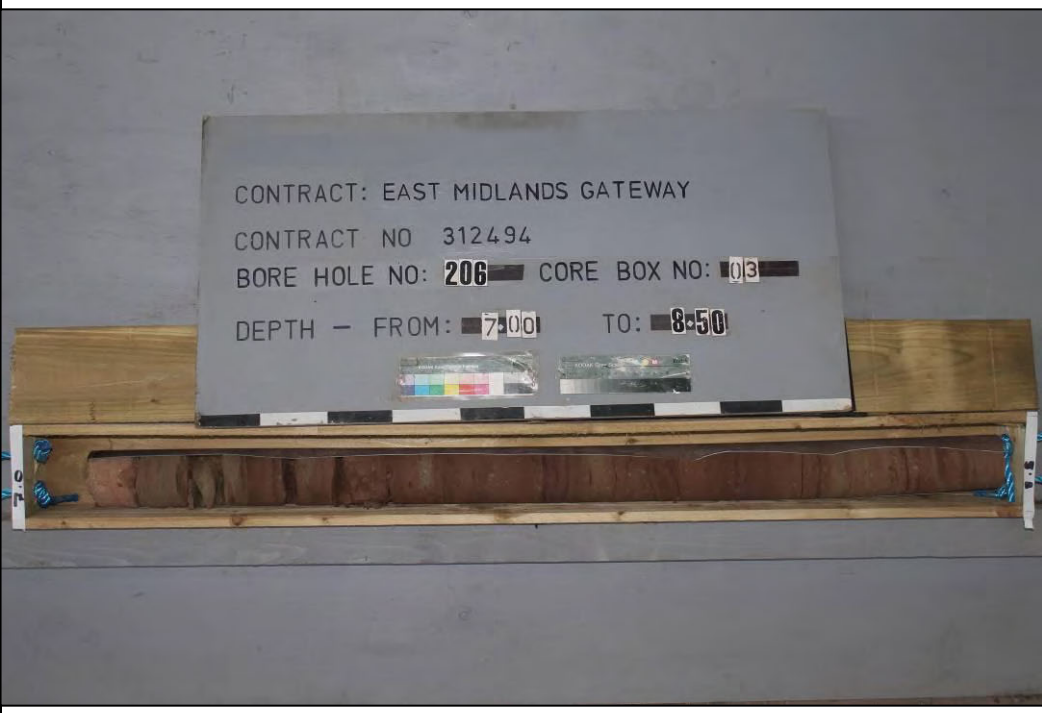
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)205	
<b>Date drilled:</b> 03/10/13	
<b>Depth range:</b> 27.00 – 28.50m	



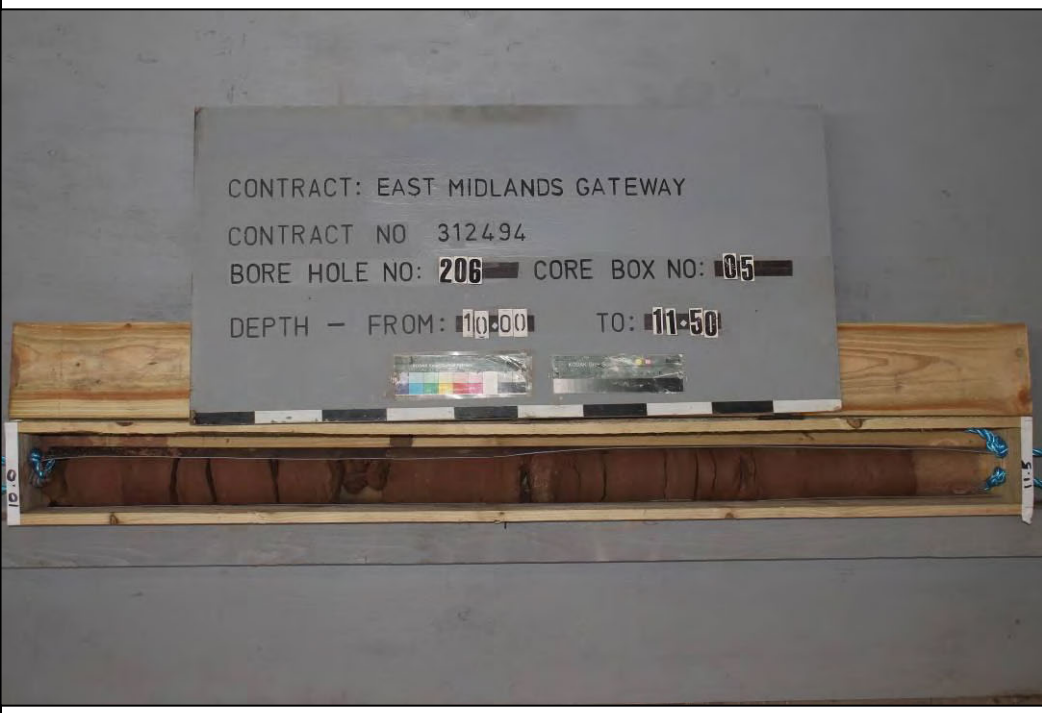
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)205	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 28.50 – 30.00m	

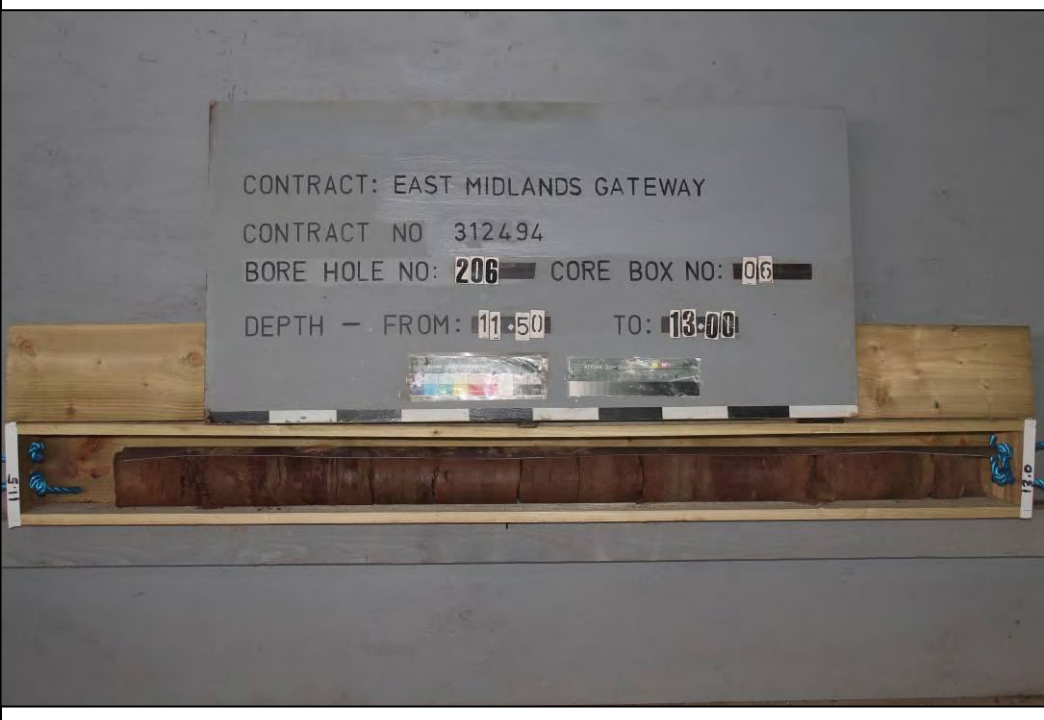
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)206	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 4.00 – 5.50m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)206	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 5.50 – 7.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)206	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 7.00 – 8.50m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)206	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 8.50 – 10.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)206	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 10.00 – 11.50m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)206	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 11.50 – 13.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)206	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 13.00 – 14.50m	




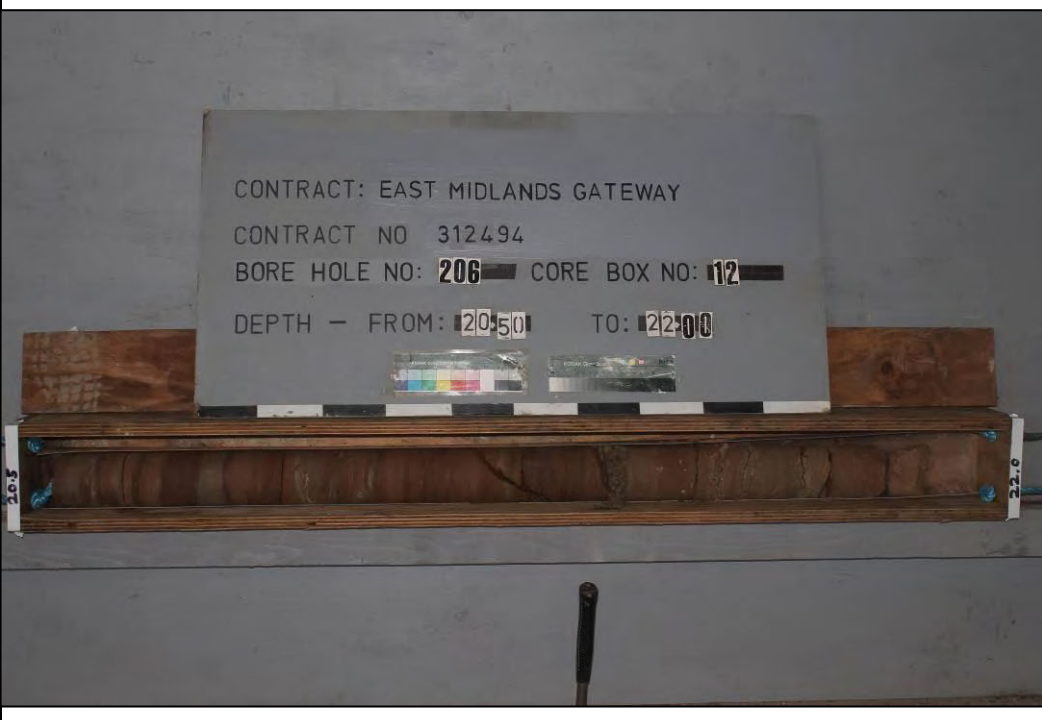
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)206	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 14.50 – 16.00m	


<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)206	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 16.00 – 17.50m	



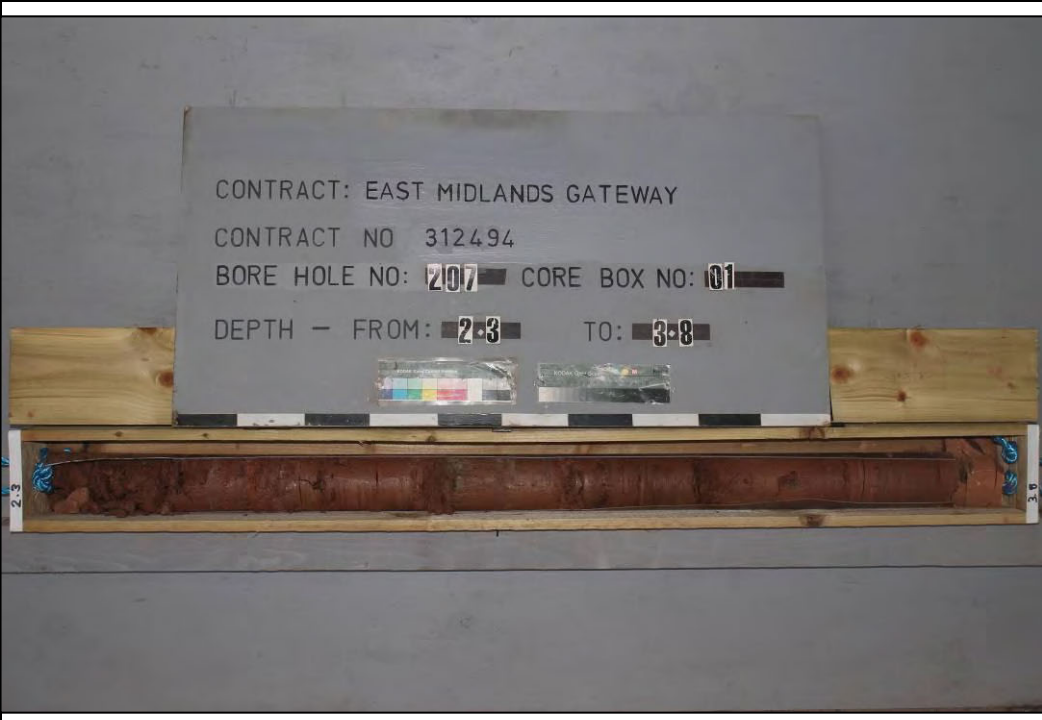
<b>Zone:</b>  1	
<b>Borehole number:</b>  CP(R)206	
<b>Date drilled:</b>  04/10/13	
<b>Depth range:</b>  17.50 – 19.00m	


<b>Zone:</b>  1	
<b>Borehole number:</b>  CP(R)206	
<b>Date drilled:</b>  04/10/13	
<b>Depth range:</b>  19.00 – 20.50m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)206	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 20.50 – 22.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)206	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 22.00 – 23.50m	

<b>Zone:</b> 1	 <p>CONTRACT: EAST MIDLANDS GATEWAY  CONTRACT NO 312494  BORE HOLE NO: 206 CORE BOX NO: 14  DEPTH - FROM: 23.50 TO: 25.00</p>
<b>Borehole number:</b> CP(R)206	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 23.50 – 25.00m	

<b>Zone:</b> 1	 <p>CONTRACT: EAST MIDLANDS GATEWAY  CONTRACT NO 312494  BORE HOLE NO: 207 CORE BOX NO: 01  DEPTH - FROM: 2.3 TO: 3.8</p>
<b>Borehole number:</b> CP(R)207	
<b>Date drilled:</b> 01/10/13	
<b>Depth range:</b> 2.30 – 3.80m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)207	
<b>Date drilled:</b> 01/10/13	
<b>Depth range:</b> 3.80 – 5.30m	

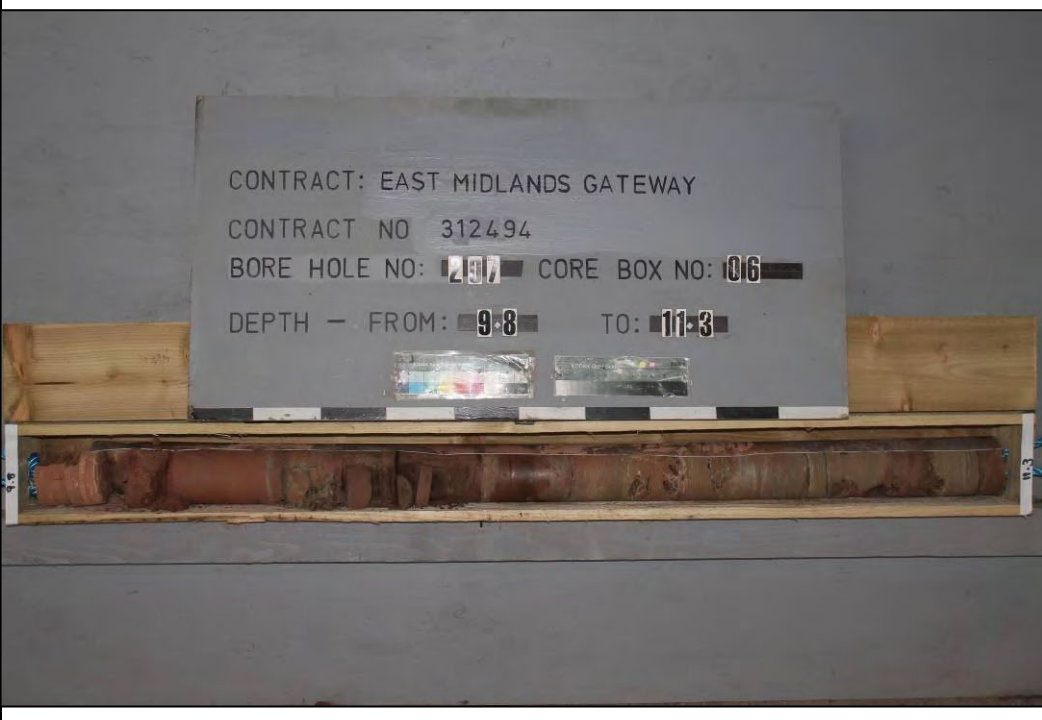
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)207	
<b>Date drilled:</b> 01/10/13	
<b>Depth range:</b> 5.30 – 6.80m	



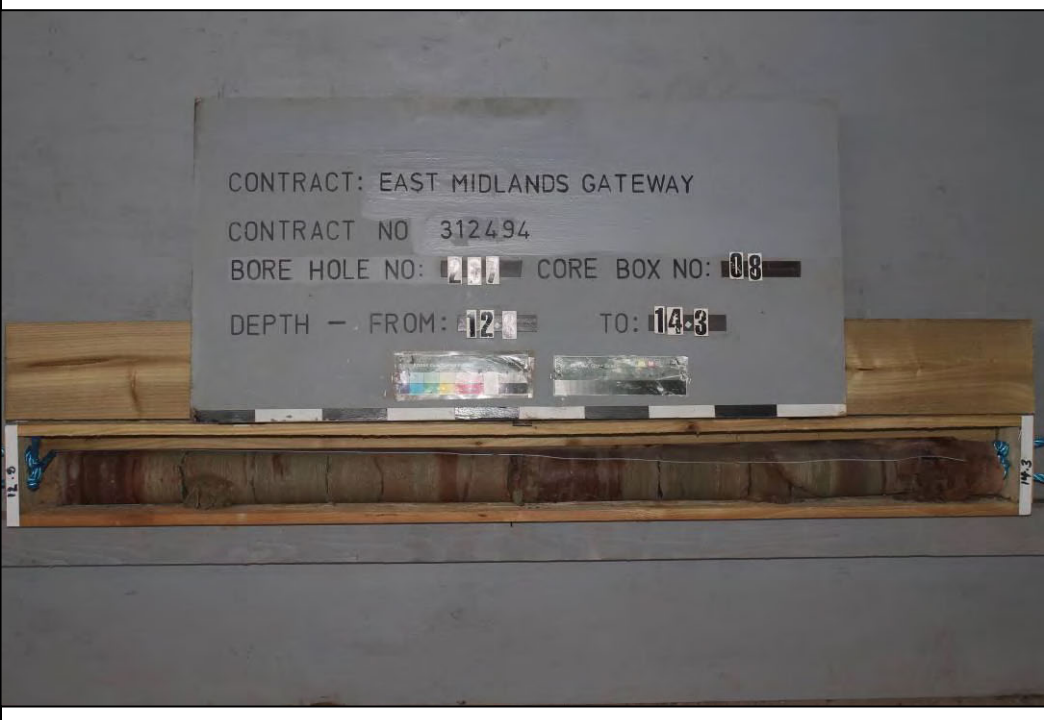
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)207	
<b>Date drilled:</b> 01/10/13	
<b>Depth range:</b> 6.80 – 8.30m	

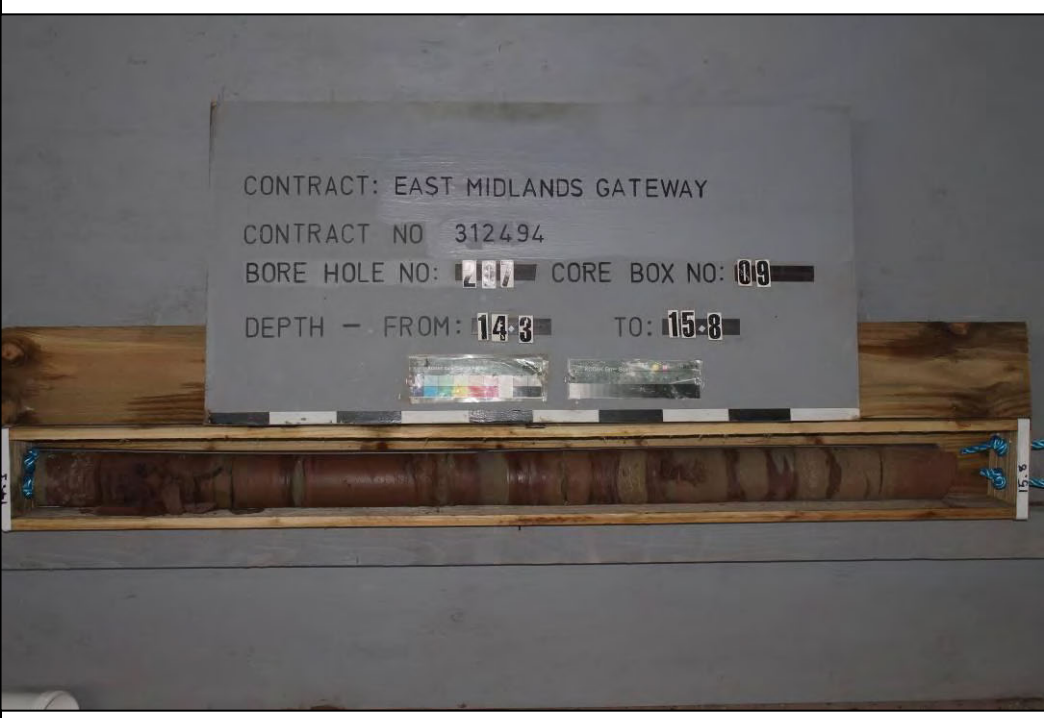
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)207	
<b>Date drilled:</b> 01/10/13	
<b>Depth range:</b> 8.30 – 9.80m	



<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)207	
<b>Date drilled:</b> 01/10/13	
<b>Depth range:</b> 9.80 – 11.30m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)207	
<b>Date drilled:</b> 01/10/13	
<b>Depth range:</b> 11.30 – 12.80m	

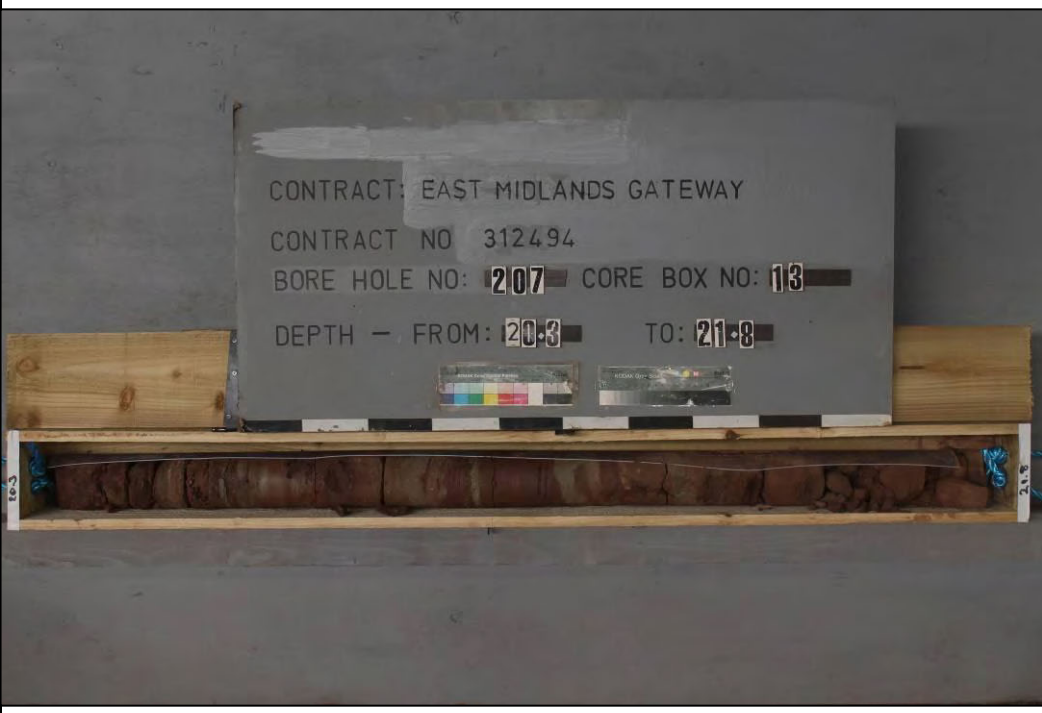
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)207	
<b>Date drilled:</b> 01/10/13	
<b>Depth range:</b> 12.80 – 14.30m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)207	
<b>Date drilled:</b> 01/10/13	
<b>Depth range:</b> 14.30 – 15.80m	

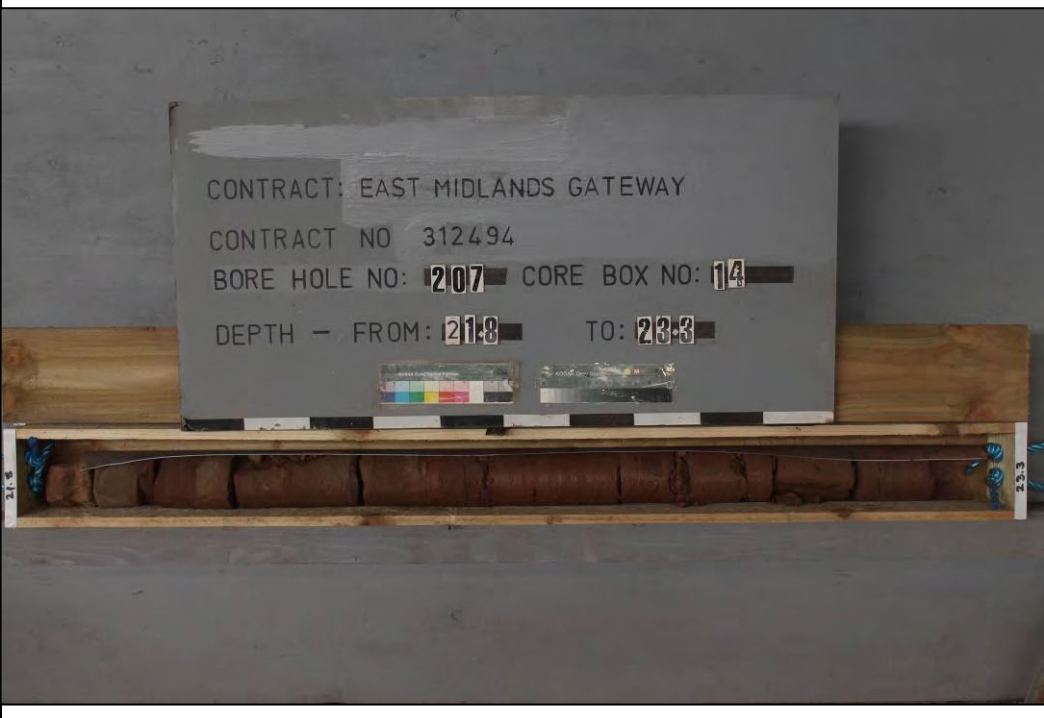
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<b>Borehole number:</b> CP(R)207	
<b>Date drilled:</b> 01/10/13	
<b>Depth range:</b> 15.80 – 17.30m	

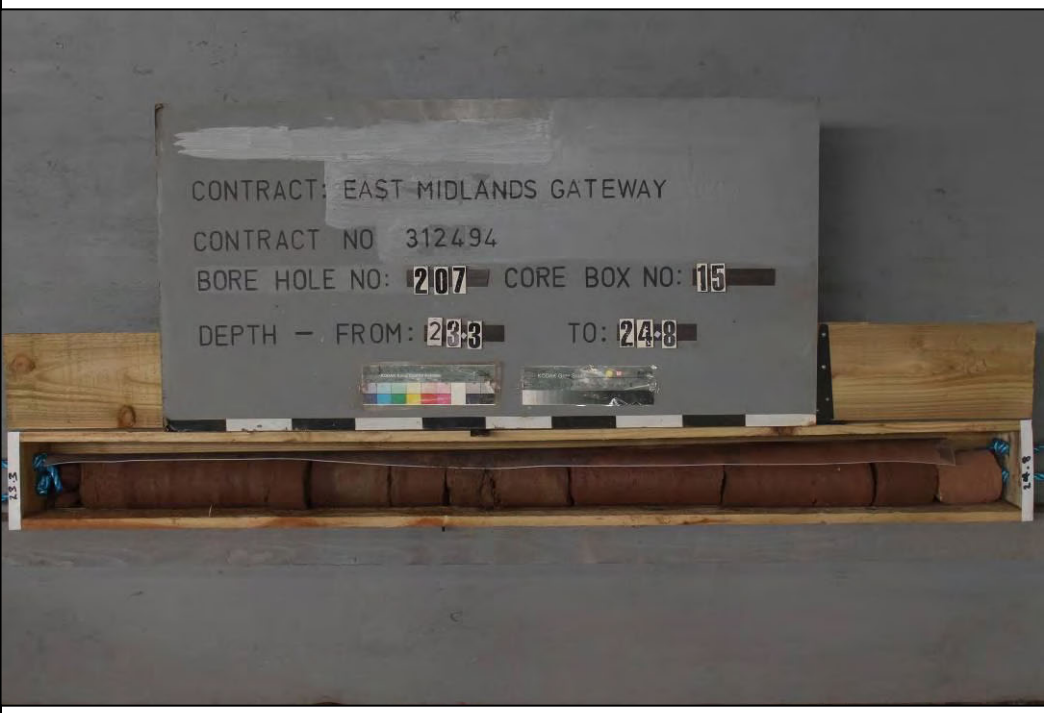
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)207	
<b>Date drilled:</b> 01/10/13	
<b>Depth range:</b> 17.30 – 18.80m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)207	
<b>Date drilled:</b> 01/10/13	
<b>Depth range:</b> 18.80 – 20.30m	

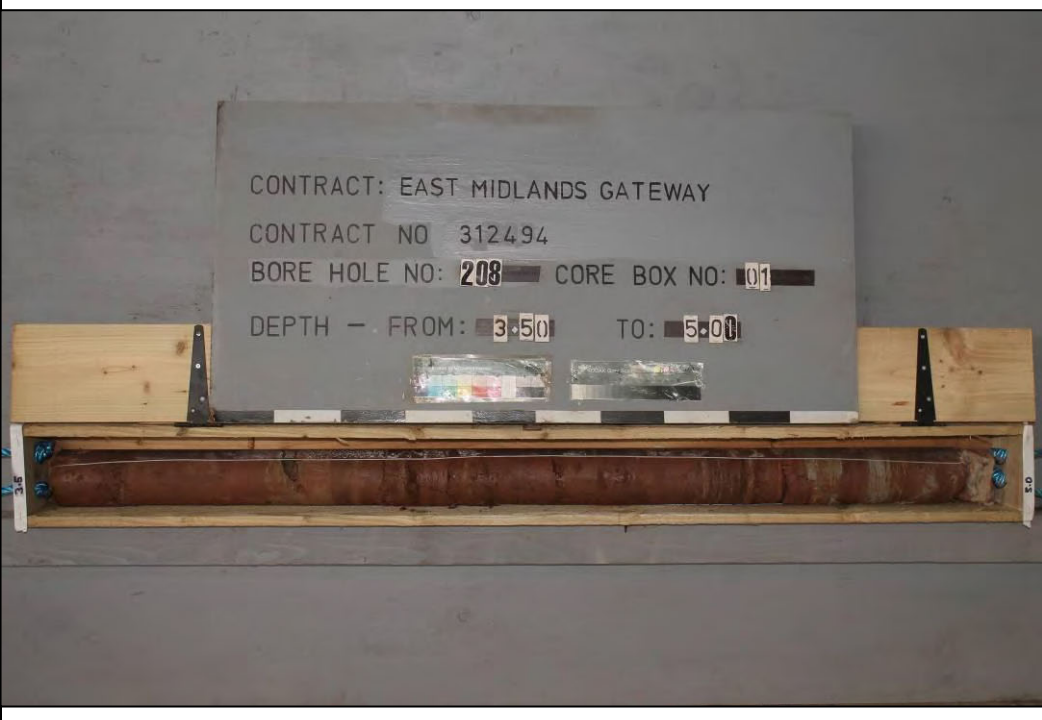
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)207	
<b>Date drilled:</b> 01/10/13	
<b>Depth range:</b> 20.30 – 21.80m	



<b>Zone:</b>  1	
<b>Borehole number:</b>  CP(R)207	
<b>Date drilled:</b>  01/10/13	
<b>Depth range:</b>  21.80 – 23.30m	

<b>Zone:</b>  1	
<b>Borehole number:</b>  CP(R)207	
<b>Date drilled:</b>  01/10/13	
<b>Depth range:</b>  23.30 – 24.80m	

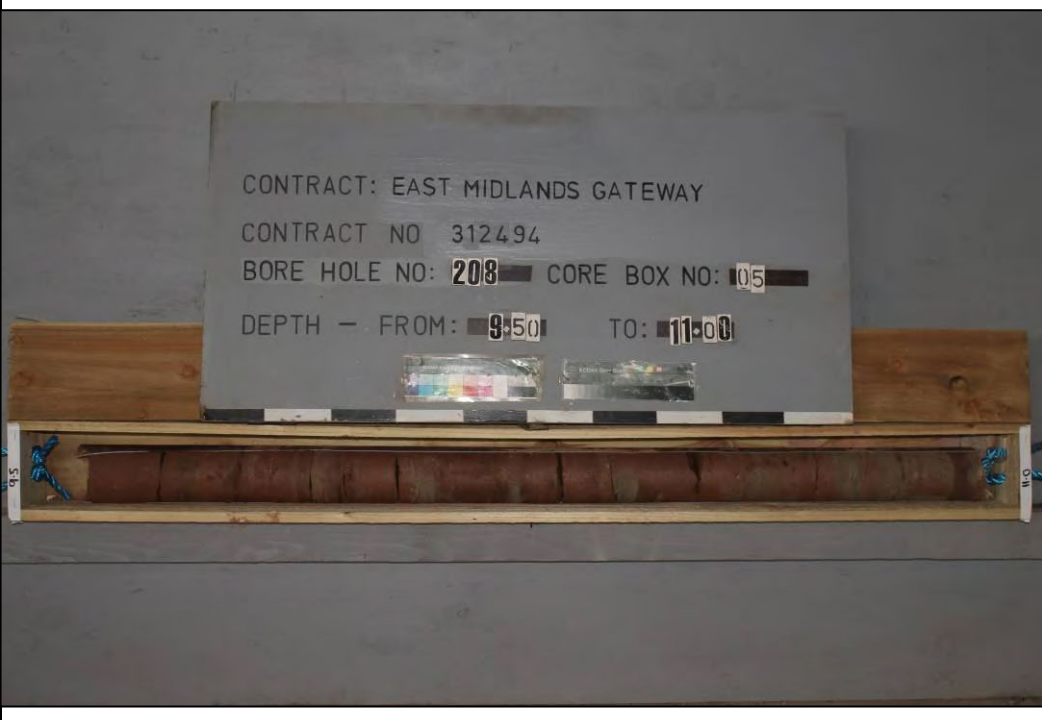


<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)208	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 3.50 – 5.00m	

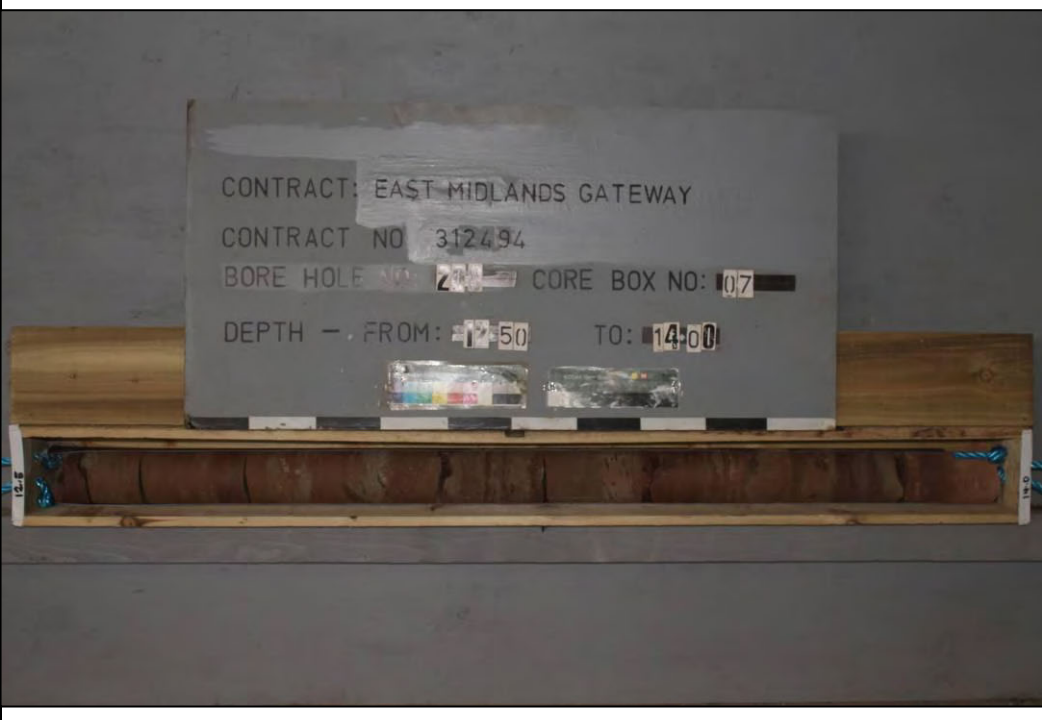
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)208	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 5.00 – 6.50m	

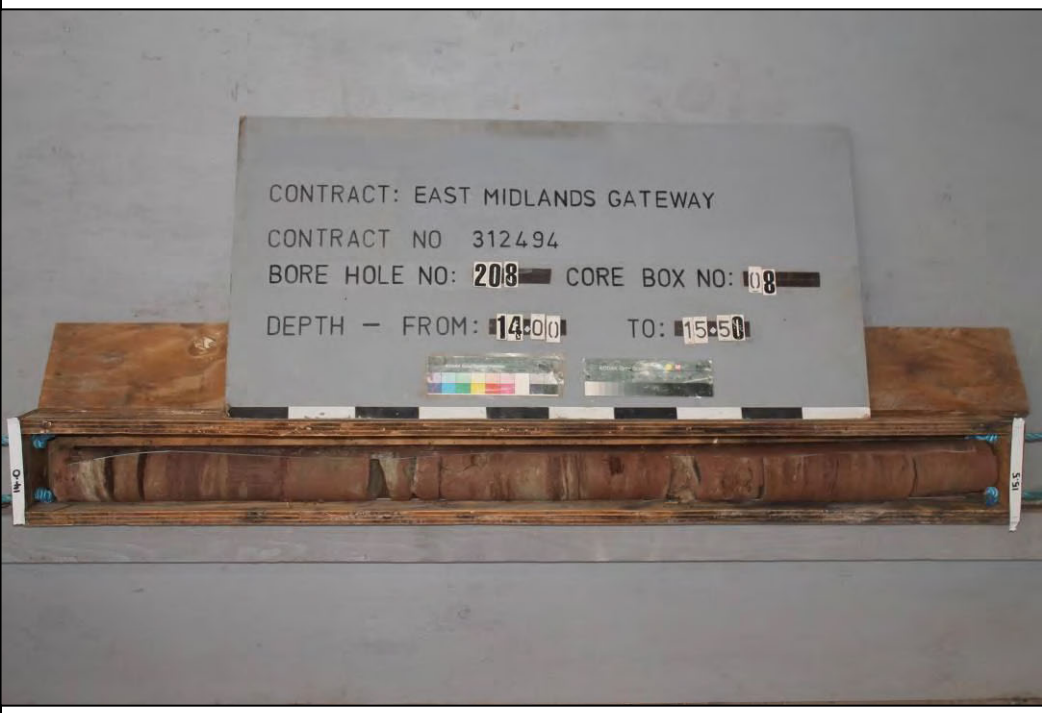
<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)208	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 6.50 – 8.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)208	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 8.00 – 9.50m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)208	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 9.50 – 11.00m	

<b>Zone:</b> 1	
<b>Borehole number:</b> CP(R)208	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 11.00 – 12.50m	

<b>Zone:</b>  1	
<b>Borehole number:</b>  CP(R)208	
<b>Date drilled:</b>  04/10/13	
<b>Depth range:</b>  12.50 – 14.00m	

<b>Zone:</b>  1	
<b>Borehole number:</b>  CP(R)208	
<b>Date drilled:</b>  04/10/13	
<b>Depth range:</b>  14.00 – 15.50m	



<b>Zone:</b> 1	 <p>CONTRACT: EAST MIDLANDS GATEWAY  CONTRACT NO 312494  BORE HOLE NO: 208 CORE BOX NO: 108  DEPTH - FROM: 15.50 TO: 17.00</p>
<b>Borehole number:</b> CP(R)208	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 15.50 – 17.00m	

<b>Zone:</b> 1	 <p>CONTRACT: EAST MIDLANDS GATEWAY  CONTRACT NO 312494  BORE HOLE NO: 208 CORE BOX NO: 110  DEPTH - FROM: 17.00 TO: 22.00</p>
<b>Borehole number:</b> CP(R)208	
<b>Date drilled:</b> 04/10/13	
<b>Depth range:</b> 17.00 – 20.00m	



## **APPENDIX F**

# **IN-SITU SOAKAWAY TEST RESULTS**

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# STRUCTURAL SOILS LTD

## INSITU TESTING REPORT

Report No. 744139R.01(02)

Date ■-November-2013 Contract Field Farm, Lockington

Client RSK Environment Ltd  
Address Abbey Park  
Humber Road  
Coventry  
CV3 4AQ

For the Attention of Gareth Shaw

Order received	18-September-2013	Client Reference	None
Testing Started	01-October-2013	Client Order No.	P0235653
Testing Completed	11-October-2013	Instruction Type	Written

Test(s) undertaken (Not UKAS Accredited)

7no. Insitu soakaway tests carried out at locations specified by client.

Testing undertaken in the Laboratory

Environmental conditions (if relevant)

The results represent the ground conditions at the specified locations and depths at the time of testing.

Please Note: Remaining samples will be retained for a period of one month from today and will then be disposed of .

Test were undertaken on samples 'as received' unless otherwise stated.

Opinions and interpretations expressed in this report are outside the scope of accreditation for this laboratory.

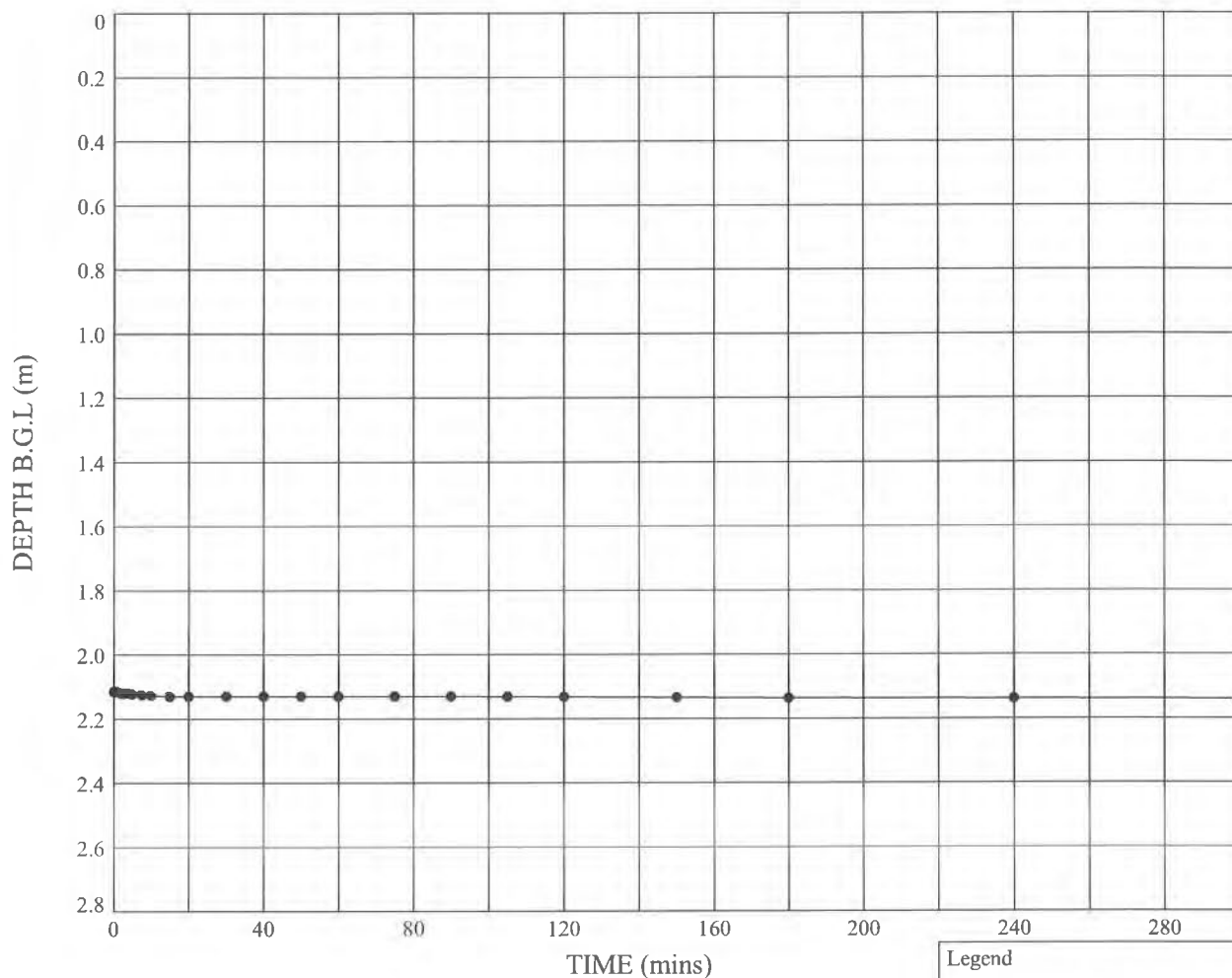
Page 1 of 8

# FULL SCALE SOAKAWAY TEST

Non standard test

Soakaway Test - Position ID : TP301

## PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



Test 1

Pit start depth: = 2.80 m  
 Pit final depth: = 2.80 m  
 Effective depth,  $D_e$  = 0.69 m  
 Effective storage volume,  $V_{p75-25}$  = 0.5514 m<sup>3</sup>  
 Surface area,  $a_{p50}$  = 3.6650 m<sup>2</sup>  
 Time,  $t_{p75-25}$  = NA secs  
 Infiltration rate,  $f$  = NA m/s

Notes: Insufficient drop in water level. Unable to calculate infiltration rate.

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON M. STOKES

Legend

● Test 1 (03.10.13)

Plan (Not to scale)



No Bearing Taken



STRUCTURAL SOILS  
 1a Princess Street  
 Bedminster  
 Bristol  
 BS3 4AG

Compiled By

Date

Checked By

Date

07/10/13

5/10/13

Contract:

Field Farm, Lockington

Contract Ref:

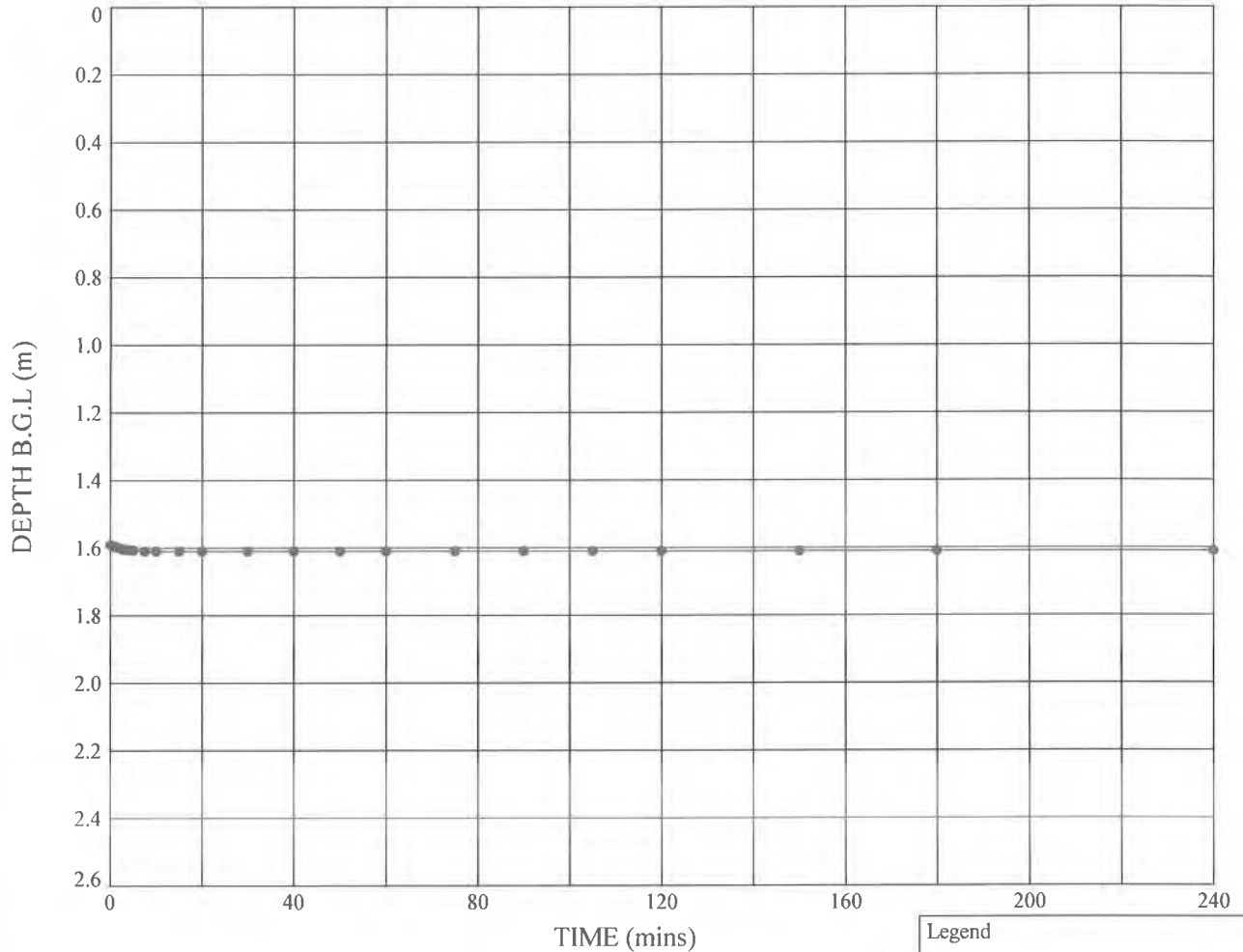
744139

# FULL SCALE SOAKAWAY TEST

Non standard test

Soakaway Test - Position ID : TP302

## PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



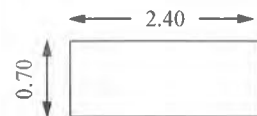
Test 1

Pit start depth: = 2.50 m  
 Pit final depth: = 2.45 m  
 Effective depth,  $D_e$  = 0.86 m  
 Effective storage volume,  $V_{p75-25}$  = 0.7224 m<sup>3</sup>  
 Surface area,  $a_{p50}$  = 4.3460 m<sup>2</sup>  
 Time,  $t_{p75-25}$  = NA secs  
 Infiltration rate,  $f$  = NA m/s

Legend

● Test 1 (03.10.13)

Plan (Not to scale)



No Bearing Taken

Notes: Standing water in pit prior to test. Insufficient drop in water level. Unable to calculate infiltration rate.

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON M. STOKES



STRUCTURAL SOILS  
 1a Princess Street  
 Bedminster  
 Bristol  
 BS3 4AG

Compiled By

Date

07/10/13

Checked By

Date

15/01/13

Contract:

Field Farm, Lockington

Contract Ref:

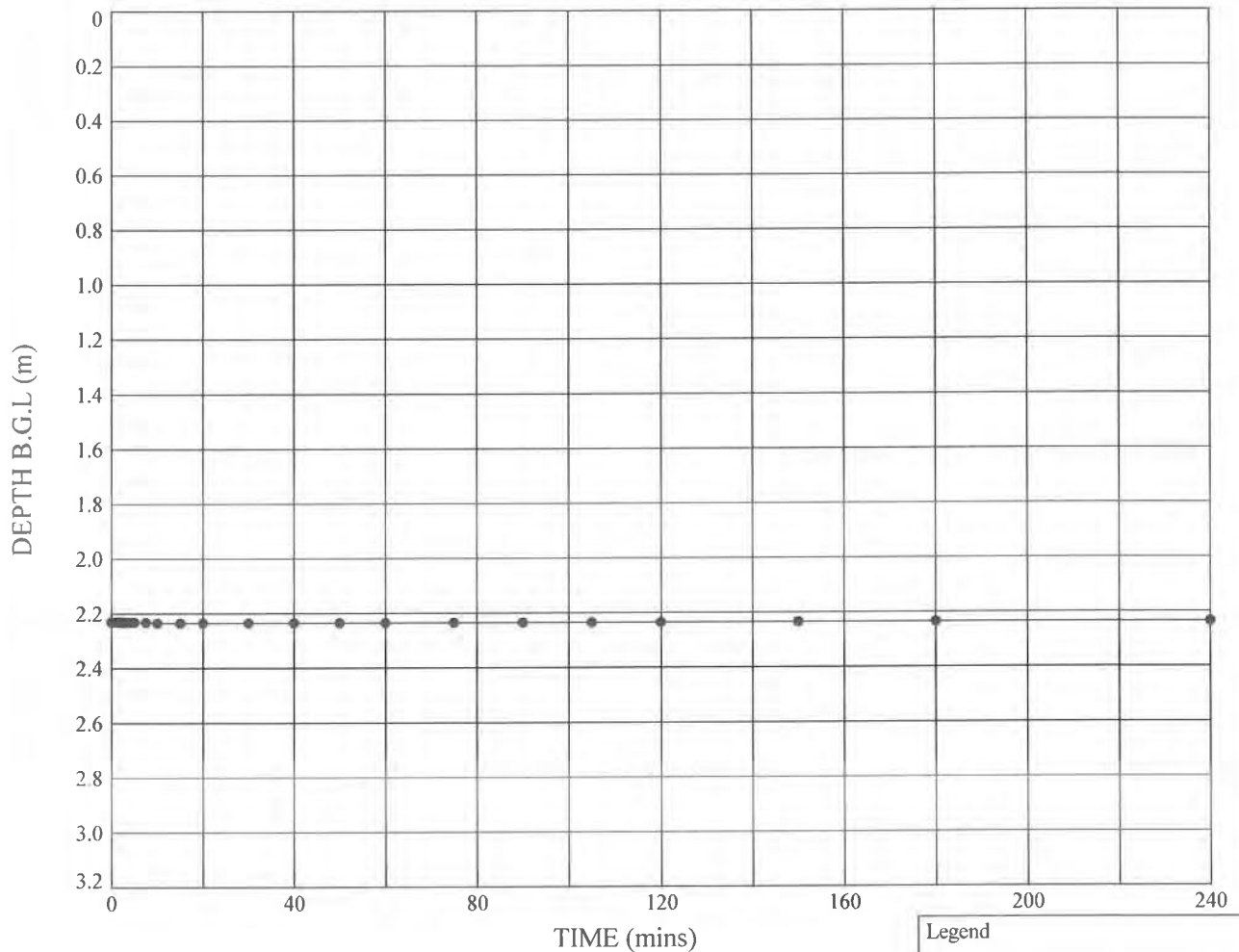
744139

# FULL SCALE SOAKAWAY TEST

Non standard test

Soakaway Test - Position ID : TP303

## PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



Test 1

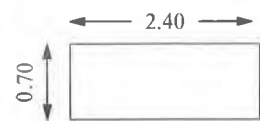
Pit start depth: = 3.15 m  
 Pit final depth: = 3.10 m  
 Effective depth,  $D_e$  = 0.87 m  
 Effective storage volume,  $V_{p75-25}$  = 0.7308 m<sup>3</sup>  
 Surface area,  $a_{p50}$  = 4.3770 m<sup>2</sup>  
 Time,  $t_{p75-25}$  = NA secs  
 Infiltration rate,  $f$  = NA m/s

Notes: Insufficient drop in water level. Unable to calculate infiltration rate.

Legend

● Test 1 (03.10.13)

Plan (Not to scale)



No Bearing Taken

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON M. STOKES



**STRUCTURAL SOILS**  
 1a Princess Street  
 Bedminster  
 Bristol  
 BS3 4AG

Compiled By

Date

Checked By

Date

07/10/13

15/10/13

Contract:

**Field Farm, Lockington**

Contract Ref:

**744139**

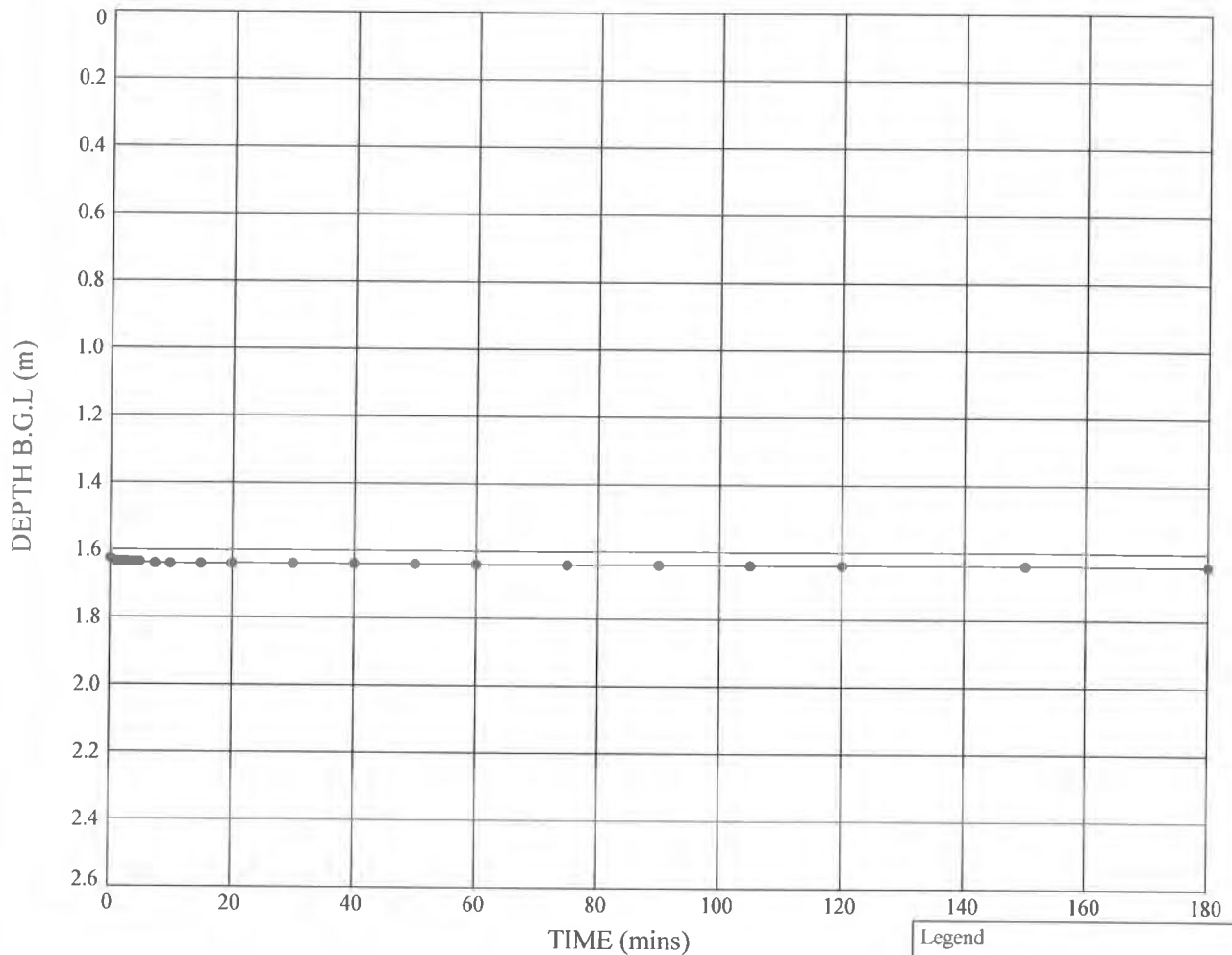


# FULL SCALE SOAKAWAY TEST

Non standard test

Soakaway Test - Position ID : TP304

## PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



Test 1

Pit start depth: = 2.50 m  
 Pit final depth: = 2.50 m  
 Effective depth,  $D_e$  = 0.88 m  
 Effective storage volume,  $V_{p75-25}$  = 0.7350 m<sup>3</sup>  
 Surface area,  $a_{p50}$  = 4.3925 m<sup>2</sup>  
 Time,  $t_{p75-25}$  = NA secs  
 Infiltration rate,  $f$  = NA m/s

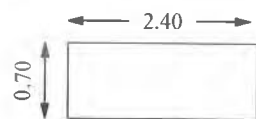
Notes: Insufficient drop in water level. Unable to calculate infiltration rate.

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON M. STOKES

Legend

● Test 1 (01.10.13)

Plan (Not to scale)



No Bearing Taken



**STRUCTURAL SOILS**  
 1a Princess Street  
 Bedminster  
 Bristol  
 BS3 4AG

Compiled By

Date

Checked By

Date

07/10/13

15/10/13

Contract:

**Field Farm, Lockington**

Contract Ref:

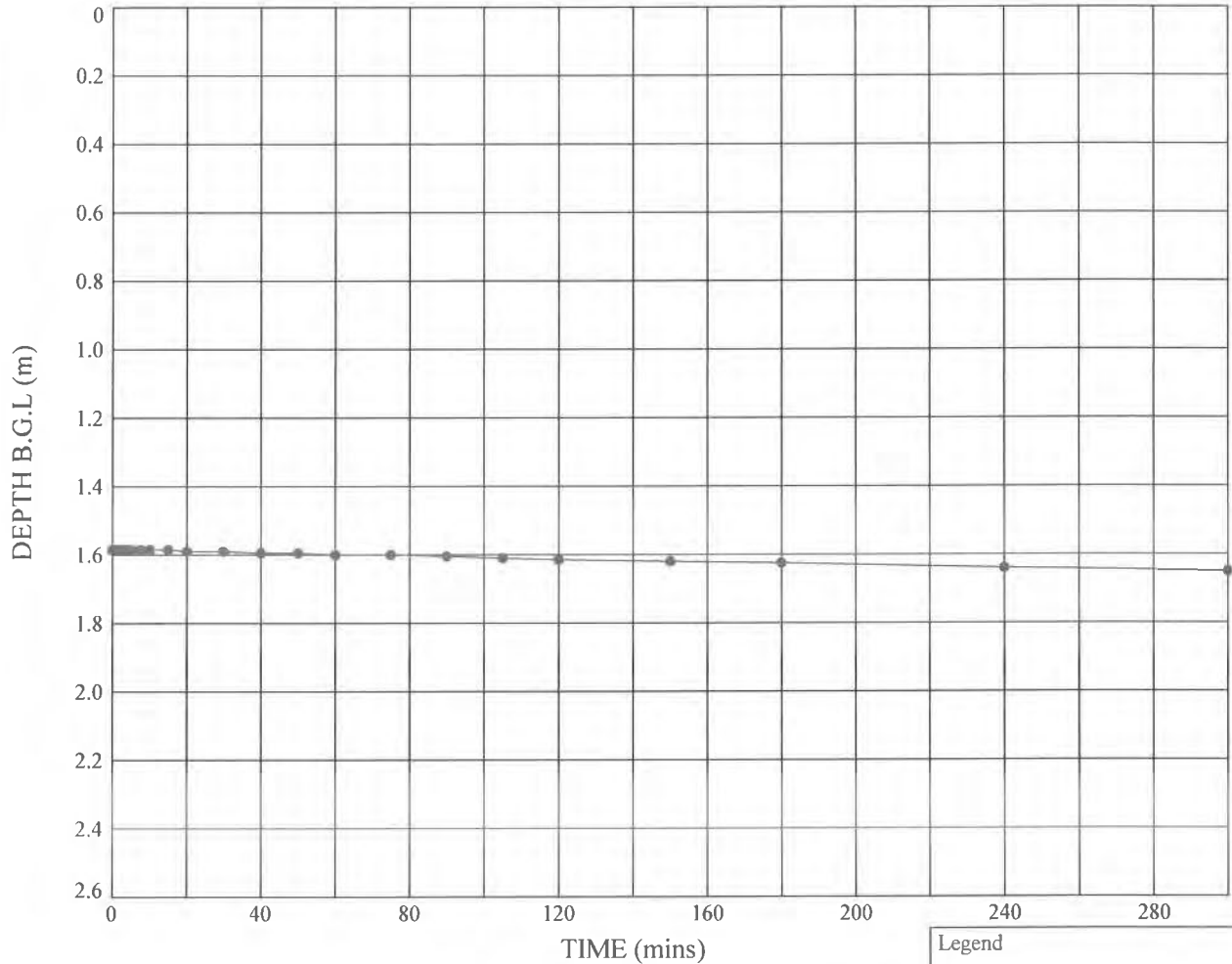
**744139**

# FULL SCALE SOAKAWAY TEST

Non standard test

Soakaway Test - Position ID : TP305

## PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



Pit start depth: = **2.65** m  
 Pit final depth: = **2.55** m  
 Effective depth,  $D_e$  = **0.97** m  
 Effective storage volume,  $V_{p75-25}$  = **0.7768** m<sup>3</sup>  
 Surface area,  $a_{p50}$  = **4.5050** m<sup>2</sup>  
 Time,  $t_{p75-25}$  = **NA** secs  
 Infiltration rate,  $f$  = **NA** m/s

Notes: Insufficient drop in water level. Unable to calculate infiltration rate.

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON M. STOKES

Legend

● Test 1 (01.10.13)

Plan (Not to scale)

No Bearing Taken



**STRUCTURAL SOILS**  
 1a Princess Street  
 Bedminster  
 Bristol  
 BS3 4AG

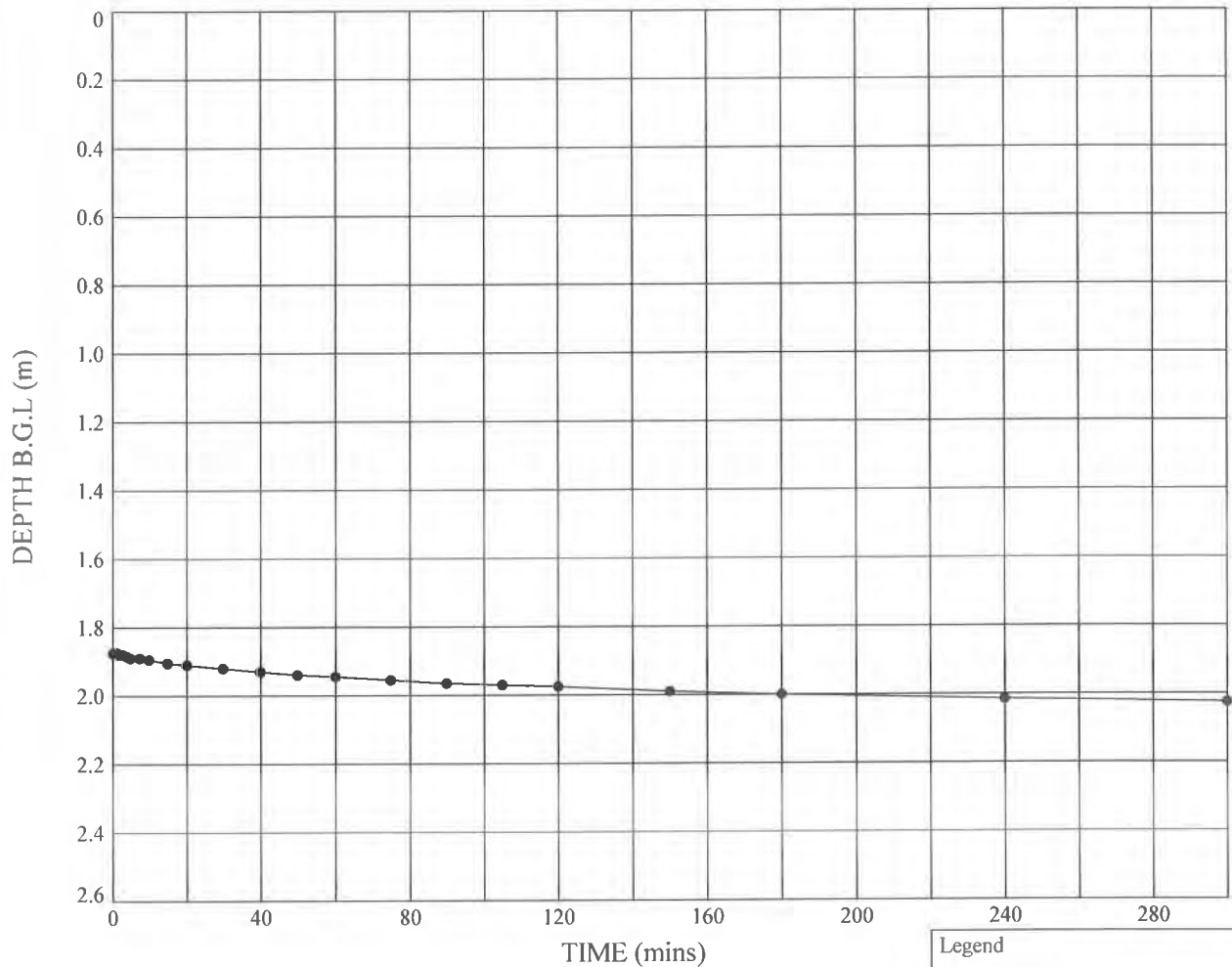
Compiled By	Date	Checked By	Date
[REDACTED]	07/10/13	[REDACTED]	15/10/13
Contract: <b>Field Farm, Lockington</b>		Contract Ref: <b>744139</b>	

# FULL SCALE SOAKAWAY TEST

Non standard test

Soakaway Test - Position ID : TP351

## PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



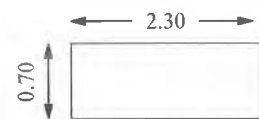
Test 1

Pit start depth: = 2.70 m  
 Pit final depth: = 2.60 m  
 Effective depth,  $D_e$  = 0.73 m  
 Effective storage volume,  $V_{p75-25}$  = 0.5836 m<sup>3</sup>  
 Surface area,  $a_{p50}$  = 3.7850 m<sup>2</sup>  
 Time,  $t_{p75-25}$  = NA secs  
 Infiltration rate,  $f$  = NA m/s

Legend

● Test 1 (01.10.13)

Plan (Not to scale)



No Bearing Taken

Notes: Standing water in pit prior to test. Insufficient drop in water level. Unable to calculate infiltration rate.

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON M. STOKES



**STRUCTURAL SOILS**  
 1a Princess Street  
 Bedminster  
 Bristol  
 BS3 4AG

Compiled By

Date

Checked By

Date

07/10/13

15/10/13

Contract:

**Field Farm, Lockington**

Contract Ref:

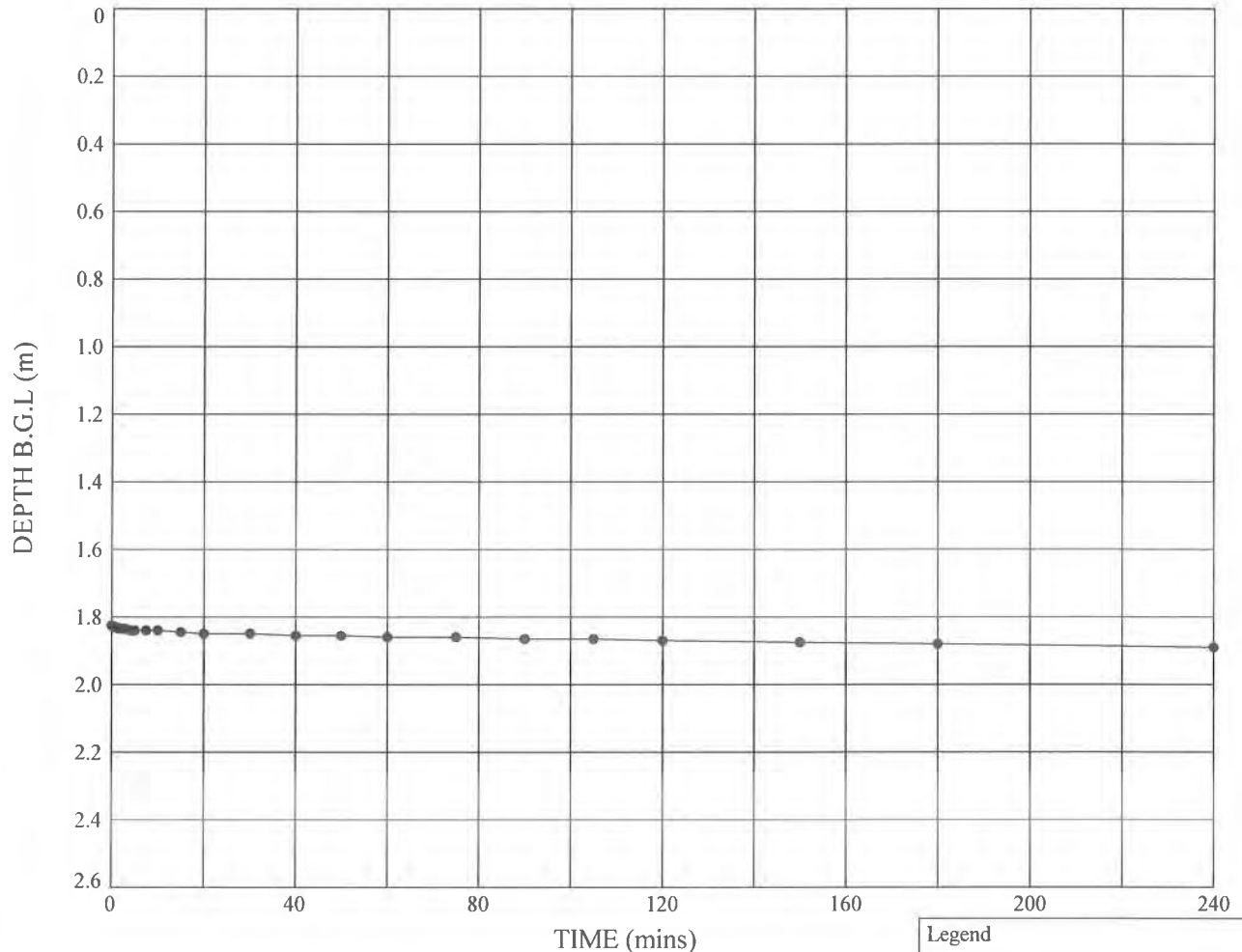
**744139**

# FULL SCALE SOAKAWAY TEST

Non standard test

Soakaway Test - Position ID : TP352

## PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



Pit start depth: = **2.58** m  
 Pit final depth: = **2.55** m  
 Effective depth,  $D_e$  = **0.73** m  
 Effective storage volume,  $V_{p75-25}$  = **0.6090** m<sup>3</sup>  
 Surface area,  $a_{p50}$  = **3.9275** m<sup>2</sup>  
 Time,  $t_{p75-25}$  = **NA** secs  
 Infiltration rate,  $f$  = **NA** m/s

Notes: Insufficient drop in water level. Unable to calculate infiltration rate.

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON M. STOKES

Legend

● Test 1 (01.10.13)

Plan (Not to scale)

2.40

0.70

No Bearing Taken



**STRUCTURAL SOILS**  
 1a Princess Street  
 Bedminster  
 Bristol  
 BS3 4AG

Compiled By	Date	Checked By	Date
[REDACTED]	07/10/13	[REDACTED]	15/01/13
Contract: <b>Field Farm, Lockington</b>		Contract Ref: <b>744139</b>	

# **APPENDIX G**

## **GEOTECHNICAL LABORATORY TESTING**

### **RESULTS**

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# STRUCTURAL SOILS LTD

## TEST REPORT



Report No. 744186R.01(00)

1774

Date 20-November-2013 Contract East Midlands Gateway - Zone 1

Client RSK Environment  
Address Abbey Park  
Humber Road  
Coventry  
CV3 4AQ

For the Attention of Darren Bench

Samples submitted by client	16-October-2013	Client Reference	312494
Testing Started	18-October-2013	Client Order No.	None
Testing Completed	14-November-2013	Instruction Type	Written

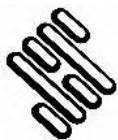
Tests marked 'Not UKAS Accredited' in this report are not included in the UKAS Accreditation Schedule for our Laboratory.

### UKAS Accredited Tests

- |       |  |
|-------|--|
| 1.01  | Moisture Content (oven drying method) BS1377:Part 2:1990:clause 3.2  |
| 1.03  | Liquid Limit (one point method ) & Plastic Limit BS1377:Part 2:1990,clause 4.4/5.3   |
| 1.08  | Density linear measurement method BS1377:Part 2:1990, clause 7.2   |
| 1.10  | Particle Size Distribution wet sieve method BS1377:Part 2:1990,clause 9.2  |
| 3.02  | Dry density/moisture content relationship 4.5kg rammer method BS1377:Part 4:1990 clause 3.5  |
| 3.04  | Dry density/moisture content relationship 4.5kg rammer method BS1377:Part 4:1990 clause 3.6  |
| 3.10  | California Bearing Ratio BS1377:Part 4:1990,clause 7.4   |
| 3.06  | Moisture condition value natural moisture content BS1377:Part 4:1990,clause 5.4  |
| 3.07  | Moisture condition value/moisture content relationship BS1377:Part 4:1990,clause 5.5   |
| 5.05  | Undrained shear strength triaxial compression without pore pressure measurement (multistage loading) BS1377:Part 7:1990,clause 9.4 |
| 10.06 | Point Load Index ISRM:1985   |

### Not UKAS Accredited Tests

- |      |   |
|------|---|
| 1.13 | Particle Size Distribution sedimentation hydrometer method BS1377:Part 2: 1990,clause 9.5 |
| 4.01 | One-dimensional consolidation BS1377:Part 5:1990,clause 3.5<br>Hand Vane                  |



## STRUCTURAL SOILS LTD



Report No. 744186R.01(00)

1774

Testing carried out by an external laboratory - Envirolab

2.06	Sulphate content (acid extract) in accordance with BRE Special Digest 1:2005
2.04	Sulphate content (water extract) in accordance with BRE Special Digest 1:2005
2.07	pH value in accordance with BRE Special Digest 1:2005
2.05	Total sulphur in accordance with BRE Special Digest 1:2005

Please Note: Remaining samples will be retained for a period of one month from today and will then be disposed of .

Test were undertaken on samples 'as received' unless otherwise stated.

Opinions and interpretations expressed in this report are outside the scope of accreditation for this laboratory.

Page 1 of 55

# TESTING VERIFICATION CERTIFICATE



1774

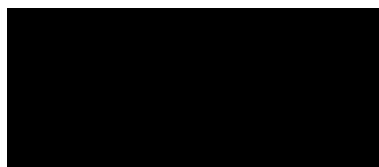
The test results included in this report are certified as:-

ISSUE STATUS: **FINAL**

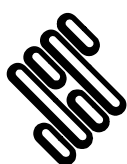
In accordance with Structural Soils Ltd Laboratory Quality Assurance Manual, Issue 6, January 2010 all results sheets and summaries of results issued by the laboratory are checked by an approved signatory. This check will also involve checking of at least 10% of calculations for each test type to ensure that data has been correctly entered into the computer and calculated. The integrity of the test data and results are ensured by control of the computer system employed by the laboratory as part of the Software Verification Program as detailed in the Laboratory Quality Assurance Manual.

This testing verification certificate covers all testing compiled on or before the following datetime: **16/11/2013 09:01:43**.

Testing reported after this date is not covered by this Verification Certificate.



Approved Signatory  
**Justin Barrett (Laboratory Manager)**



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

Contract:

**East Midlands Gateway - Zone 1**

Job No:

**744186**

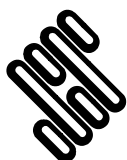


# SUMMARY OF MOISTURE CONTENT TESTS

In accordance with clause 3.2 of BS1377:Part 2

Exploratory Position ID	Sample Ref	Depth (m)	Sample Type	Moisture Content (%)
CP203	8	2.20	DSPT	14
CP203	11	3.00	DSPT	12
CP203	12	3.70	D	15
CP204	4	1.20	DSPT	14
CP204	10	3.00	DSPT	12
CP204	13	4.00	DSPT	15
CP205	4	1.20	DSPT	13
CP205	7	2.20	DSPT	14
CP205	9	3.00	DSPT	13
CP205	12	3.80	DSPT	10
CP206	5	2.00	D	23
CP206	8	3.00	D	12
CP210		2.00	D	17
CP210	12	4.00	D	14
CP210		6.00	D	12
CP210	5	8.00	D	14
CP210	24	9.00	D	13
CP211	6	2.00	D	15
CP211	12	4.00	D	13
CP211	18	6.00	D	11
CP211	11	7.00	D	12
CP221	12	4.20	DSPT	32
CP221	14	5.00	DSPT	26
CP222	7	2.20	DSPT	9.4
CP222	12	4.00	DSPT	35

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK

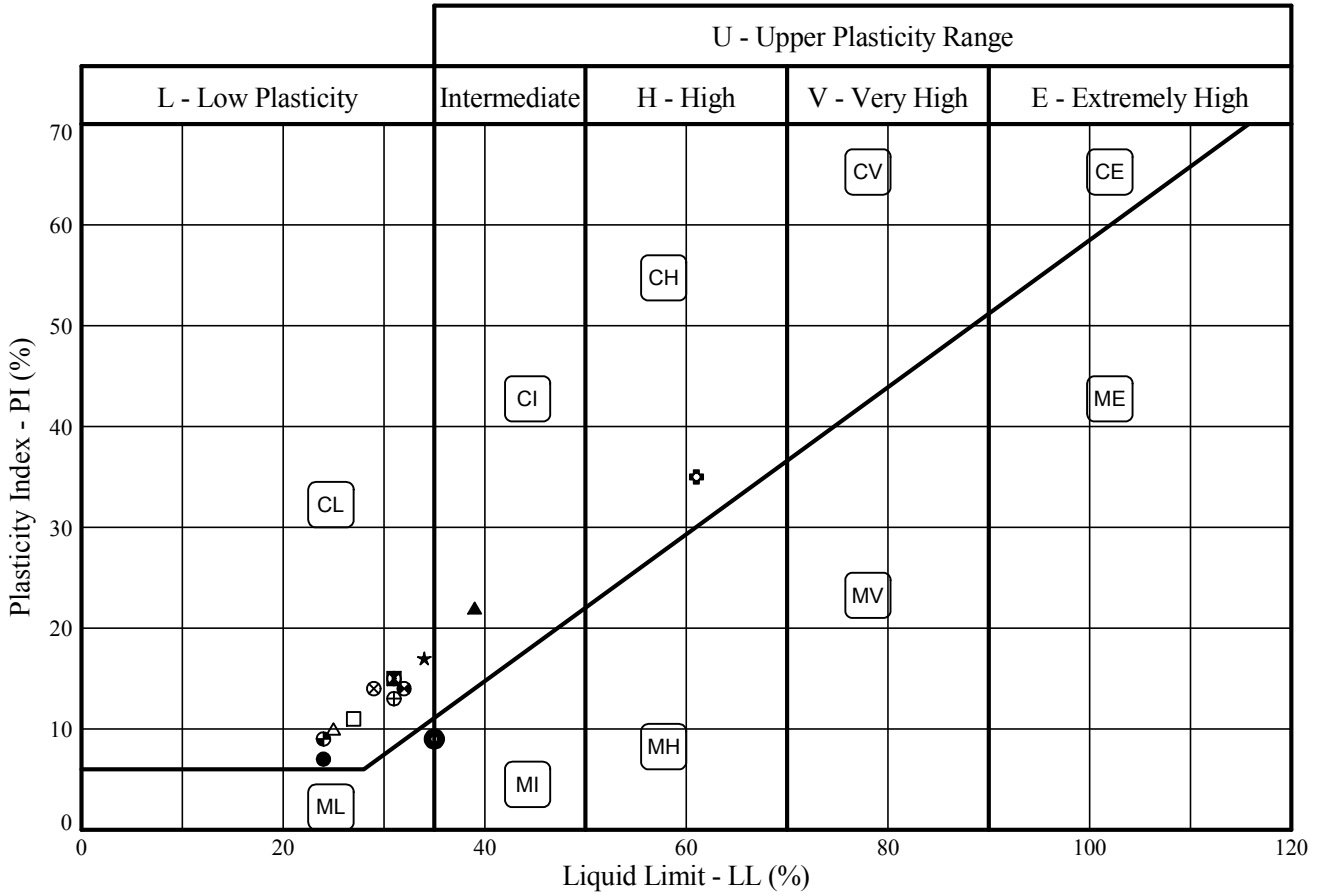


**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
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Contract:		Contract Ref:
<b>East Midlands Gateway - Zone 1</b>		<b>744186</b>

# PLASTICITY CHART - PI Vs LL

In accordance with clause 42.3 of BS5930:1999  
Testing in accordance with BS1377-2:1990



Sample Identification				BS Test Method #	Preparation Method +	MC %	LL %	PL %	PI %	<425um %	
Exploratory Position ID	Sample	Depth (m)									
●	CP203	5U	1.27	3.2/4.4/5.3/5.4	4.2.3	13	24	17	7	100	
⊠	CP204	7U	2.20	3.2/4.4/5.3/5.4	4.2.3	15	31	16	15	100	
▲	CP210	3U	1.57	3.2/4.4/5.3/5.4	4.2.3	17	39	17	22	92	
★	CP210	9U	3.06	3.2/4.4/5.3/5.4	4.2.3	19	34	17	17	74	
⊙	CP210	14U	5.00	3.2/4.4/5.3/5.4	4.2.3	12	31	16	15	69	
⊕	CP221	9U	3.35	3.2/4.4/5.3/5.4	4.2.3	40	61	26	35	100	
⊗	CP222	9U	3.42	3.2/4.4/5.3/5.4	4.2.3	32	35	26	9	98	
△	TP301	B	0.70	3.2/4.4/5.3/5.4	4.2.3	23	25	15	10	93	
⊗	TP302	B	1.60	3.2/4.4/5.3/5.4	4.2.4	14	29	15	14	23	
⊕	TP321	B	2.70	3.2/4.4/5.3/5.4	4.2.4	12	31	18	13	17	
□	TP322	1LB	2.20	3.2/4.4/5.3/5.4	4.2.4	14	27	16	11	73	
⊗	TP324	1LB	2.00	3.2/4.4/5.3/5.4	4.2.3	16	32	18	14	78	
⊕	TP326	1LB	1.50	3.2/4.4/5.3/5.4	4.2.3	15	24	15	9	100	

# Tested in accordance with the following clauses of BS1377-2:1990.

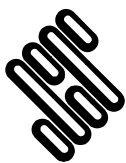
3.2 - Moisture Content  
4.3 - Cone Penetrometer Method  
4.4 - One Point Cone Penetrometer Method  
4.6 - One Point Casagrande Method  
5.3 - Plastic Limit Method  
5.4 - Plasticity Index

+ Tested in accordance with the following clauses of BS1377-2:1990.

4.2.3 - Natural State  
4.2.4 - Wet Sieved

Key: \* = Non standard test, NP = Non plastic.

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



**STRUCTURAL SOILS**  
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Bristol  
BS3 4AG

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Date

ALAN FROST

15/11/13

Contract

**East Midlands Gateway - Zone 1**

Contract Ref:

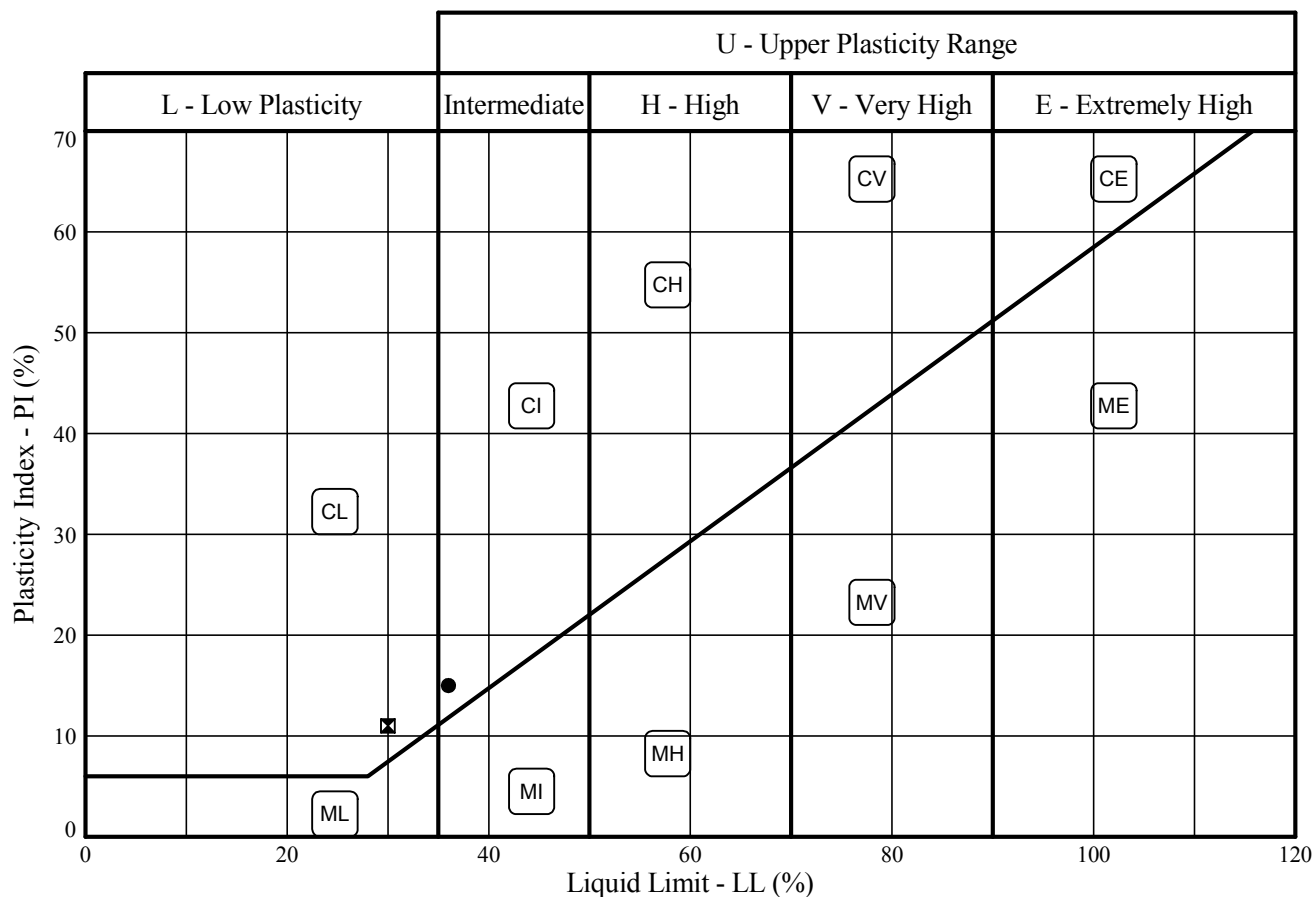
**744186**





# PLASTICITY CHART - PI Vs LL

In accordance with clause 42.3 of BS5930:1999  
Testing in accordance with BS1377-2:1990



Sample Identification				BS Test Method #	Preparation Method +	MC %	LL %	PL %	PI %	<425um %
Exploratory Position ID	Sample	Depth (m)								
●	TP327	1LB	1.20	3.2/4.4/5.3/5.4	4.2.4	23	36	21	15	77
☒	TP328	1LB	2.10	3.2/4.4/5.3/5.4	4.2.3	14	30	19	11	62

# Tested in accordance with the following clauses of BS1377-2:1990.

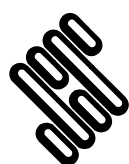
3.2 - Moisture Content  
4.3 - Cone Penetrometer Method  
4.4 - One Point Cone Penetrometer Method  
4.6 - One Point Casagrande Method  
5.3 - Plastic Limit Method  
5.4 - Plasticity Index

+ Tested in accordance with the following clauses of BS1377-2:1990.

4.2.3 - Natural State  
4.2.4 - Wet Sieved

Key: \* = Non standard test, NP = Non plastic.

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



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Compiled By		Date
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Contract		Contract Ref:
<b>East Midlands Gateway - Zone 1</b>		<b>744186</b>

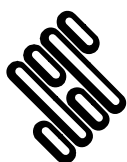


# SUMMARY OF DENSITY TESTS

In accordance with clause 7.2 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Depth (m)	Sample Type	Moisture Content (%)	Bulk Density (Mg/m <sup>3</sup> )	Dry Density (Mg/m <sup>3</sup> )
CP204	7	2.20	U	15	2.08	1.81

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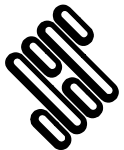
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[REDACTED]		15/11/13
Contract: <b>East Midlands Gateway - Zone 1</b>		Contract Ref: <b>744186</b>

# SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Bulk Density Mg/m <sup>3</sup>	Dry Density Mg/m <sup>3</sup>	Liquid Limit %	Plastic Limit %	Plasticity Index %	% <425um	MCV (%)	% retained on 20 mm sieve	Description of Sample
CP203	5	U	1.27	13			24	17	7	100			Brown slightly sandy silty CLAY
CP203	8	DSPT	2.20	14									Reddish brown slightly sandy CLAY
CP203	11	DSPT	3.00	12									Reddish brown slightly gravelly CLAY
CP203	12	D	3.70	15									Reddish brown CLAY
CP204	4	DSPT	1.20	14									Reddish brown mottled greenish grey CLAY
CP204	7	U	2.20	15	2.08	1.81	31	16	15	100			Reddish brown slightly sandy CLAY
CP204	10	DSPT	3.00	12									Reddish brown mottled greenish grey slightly sandy CLAY
CP204	13	DSPT	4.00	15									Reddish brown slightly sandy CLAY



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Contract Ref:

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# SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Bulk Density Mg/m <sup>3</sup>	Dry Density Mg/m <sup>3</sup>	Liquid Limit %	Plastic Limit %	Plasticity Index %	% <425um	MCV (%)	% retained on 20 mm sieve	Description of Sample
CP205	4	DSPT	1.20	13									Reddish brown mottled greenish grey CLAY
CP205	7	DSPT	2.20	14									Reddish brown mottled greenish grey CLAY
CP205	9	DSPT	3.00	13									Reddish brown mottled greenish grey CLAY
CP205	12	DSPT	3.80	10									Greenish grey mottled reddish brown slightly gravelly slightly sandy
													CLAY
CP206	5	D	2.00	23									Reddish brown slightly sandy CLAY
CP206	8	D	3.00	12									Greenish grey mottled reddish brown CLAY
CP207	4	DSPT	1.20	15									Brown mottled grey CLAY
CP207	7	DSPT	2.10	12									Brown CLAY



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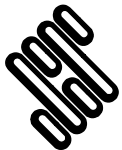
**744186**



# SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Bulk Density Mg/m <sup>3</sup>	Dry Density Mg/m <sup>3</sup>	Liquid Limit %	Plastic Limit %	Plasticity Index %	% <425um	MCV (%)	% retained on 20 mm sieve	Description of Sample
CP207	9	DSPT	2.70	12									Brown CLAY
CP210	3	U	1.57	17			39	17	22	92			Reddish brown mottled grey slightly gravelly CLAY
CP210		D	2.00	17									Reddish brown slightly sandy CLAY
CP210	9	U	3.06	19			34	17	17	74			Brown slightly sandy slightly gravelly CLAY
CP210	12	D	4.00	14									Reddish brown CLAY
CP210	14	U	5.00	12			31	16	15	69			Brown slightly sandy slightly gravelly CLAY
CP210		D	6.00	12									Reddish brown CLAY
CP210	5	D	8.00	14									Reddish brown slightly sandy CLAY



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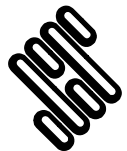




# SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Bulk Density Mg/m <sup>3</sup>	Dry Density Mg/m <sup>3</sup>	Liquid Limit %	Plastic Limit %	Plasticity Index %	% <425um	MCV (%)	% retained on 20 mm sieve	Description of Sample
CP210	24	D	9.00	13									Reddish brown CLAY
CP211	6	D	2.00	15									Reddish brown CLAY
CP211	12	D	4.00	13									Reddish brown slightly sandy CLAY
CP211	18	D	6.00	11									Reddish brown mottled greenish grey CLAY
CP211	11	D	7.00	12									Reddish brown CLAY
CP221	9	U	3.35	40			61	26	35	100			Reddish brown slightly sandy CLAY
CP221	12	DSPT	4.20	32									Reddish brown CLAY
CP221	14	DSPT	5.00	26									Reddish brown CLAY



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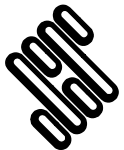
**744186**



# SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Bulk Density Mg/m <sup>3</sup>	Dry Density Mg/m <sup>3</sup>	Liquid Limit %	Plastic Limit %	Plasticity Index %	% <425um	MCV (%)	% retained on 20 mm sieve	Description of Sample
CP222	7	DSPT	2.20	9.4									Reddish brown mottled greenish grey silty sandy GRAVEL
CP222	9	U	3.42	32			35	26	9	98			Brown slightly gravelly slightly sandy SILT
CP222	12	DSPT	4.00	35									Reddish brown CLAY
TP301		B	0.70	23			25	15	10	93			Reddish brown slightly gravelly slightly sandy silty CLAY
TP302		B	1.60	14			29	15	14	23			Brown slightly gravelly slightly sandy silty CLAY with high cobble
													content
TP321		B	2.70	12			31	18	13	17			Brown slightly sandy slightly silty very gravelly COBBLES
TP322	1	LB	2.20	14			27	16	11	73	9.8	59	Brown mottled grey slightly sandy gravelly CLAY
TP324	1	LB	2.00	16			32	18	14	78	9.9	0	Brown slightly gravelly slightly sandy silty CLAY



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# SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Bulk Density Mg/m <sup>3</sup>	Dry Density Mg/m <sup>3</sup>	Liquid Limit %	Plastic Limit %	Plasticity Index %	% <425um	MCV (%)	% retained on 20 mm sieve	Description of Sample
TP326	1	LB	1.50	15			24	15	9	100			Brown slightly gravelly sandy silty CLAY
TP327	1	LB	1.20	23			36	21	15	77			Reddish brown slightly gravelly slightly sandy CLAY
TP328	1	LB	2.10	14			30	19	11	62			Reddish brown slightly gravelly slightly sandy silty CLAY



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# PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

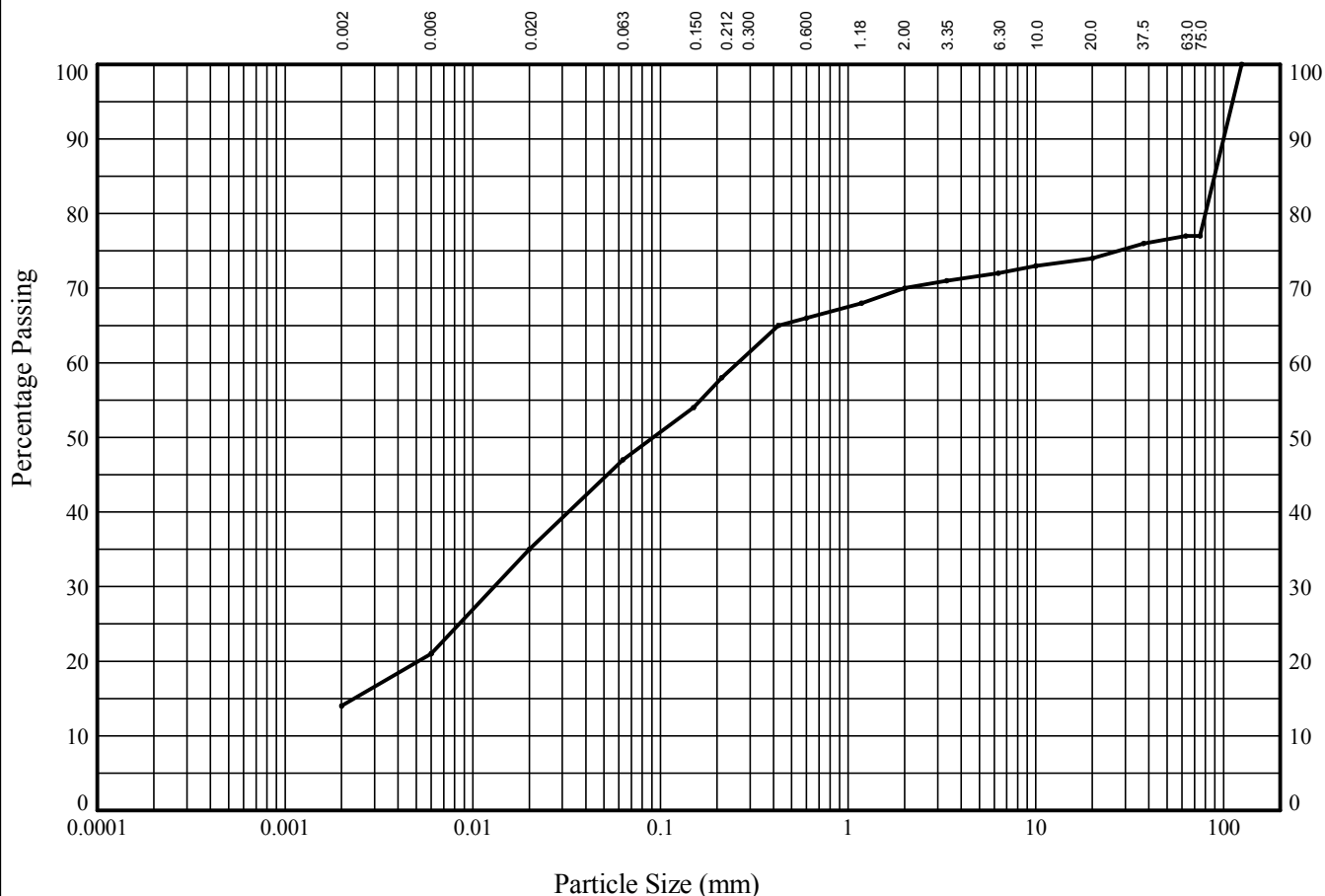
NON STANDARD TEST

Trial Pit : **TP302**

Sample Ref:

Sample Type: **B**

Depth (m): **1.60**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125.0	100
75.0	77
63.0	77
37.5	76
20.0	74
10.0	73
6.30	72
3.35	71
2.00	70
1.18	68
0.600	66
0.425	65
0.212	58
0.150	54
0.063	47

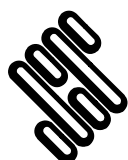
Particle Diameter	Percentage Passing
0.02	35
0.006	21
0.002	14

Soil Fraction	Sieve Percentage
COBBLES	23
GRAVEL	7
SAND	23
SILT	33
CLAY	14

Soil Description:

**Brown slightly gravelly slightly sandy silty CLAY with high cobble content**

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

Compiled By		Date
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Contract		Contract Ref:
<b>East Midlands Gateway - Zone 1</b>		<b>744186</b>



# PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

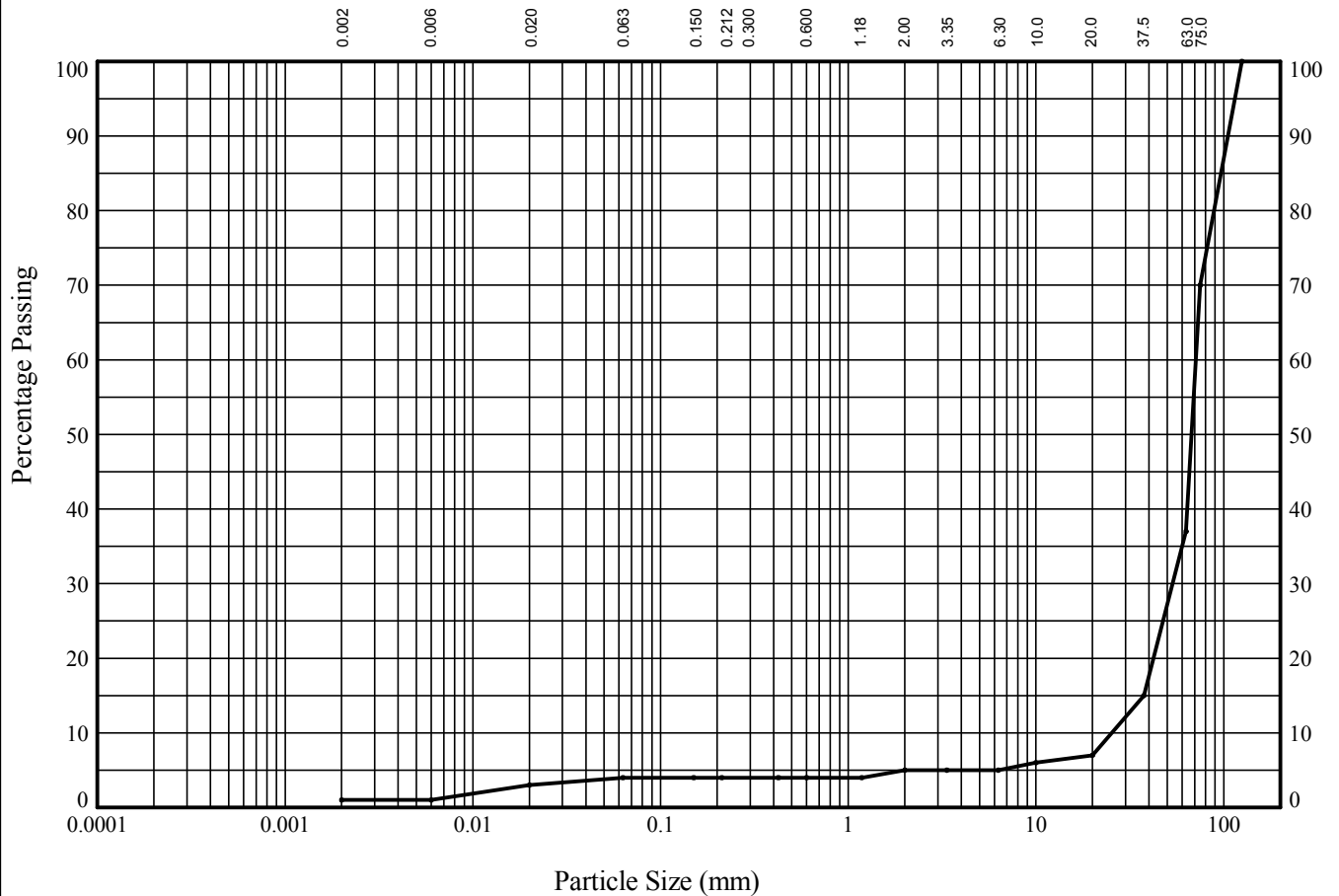
NON STANDARD TEST

Trial Pit : **TP321**

Sample Ref:

Sample Type: **B**

Depth (m): **2.70**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125.0	100
75.0	70
63.0	37
37.5	15
20.0	7
10.0	6
6.30	5
3.35	5
2.00	5
1.18	4
0.600	4
0.425	4
0.212	4
0.150	4
0.063	4

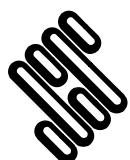
Particle Diameter	Percentage Passing
0.02	3
0.006	1
0.002	1

Soil Fraction	Sieve Percentage
COBBLES	63
GRAVEL	32
SAND	1
SILT	3
CLAY	1

Soil Description:

**Brown slightly sandy slightly silty very gravelly COBBLES**

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

Compiled By		Date
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Contract		Contract Ref:
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# PARTICLE SIZE DISTRIBUTION TEST

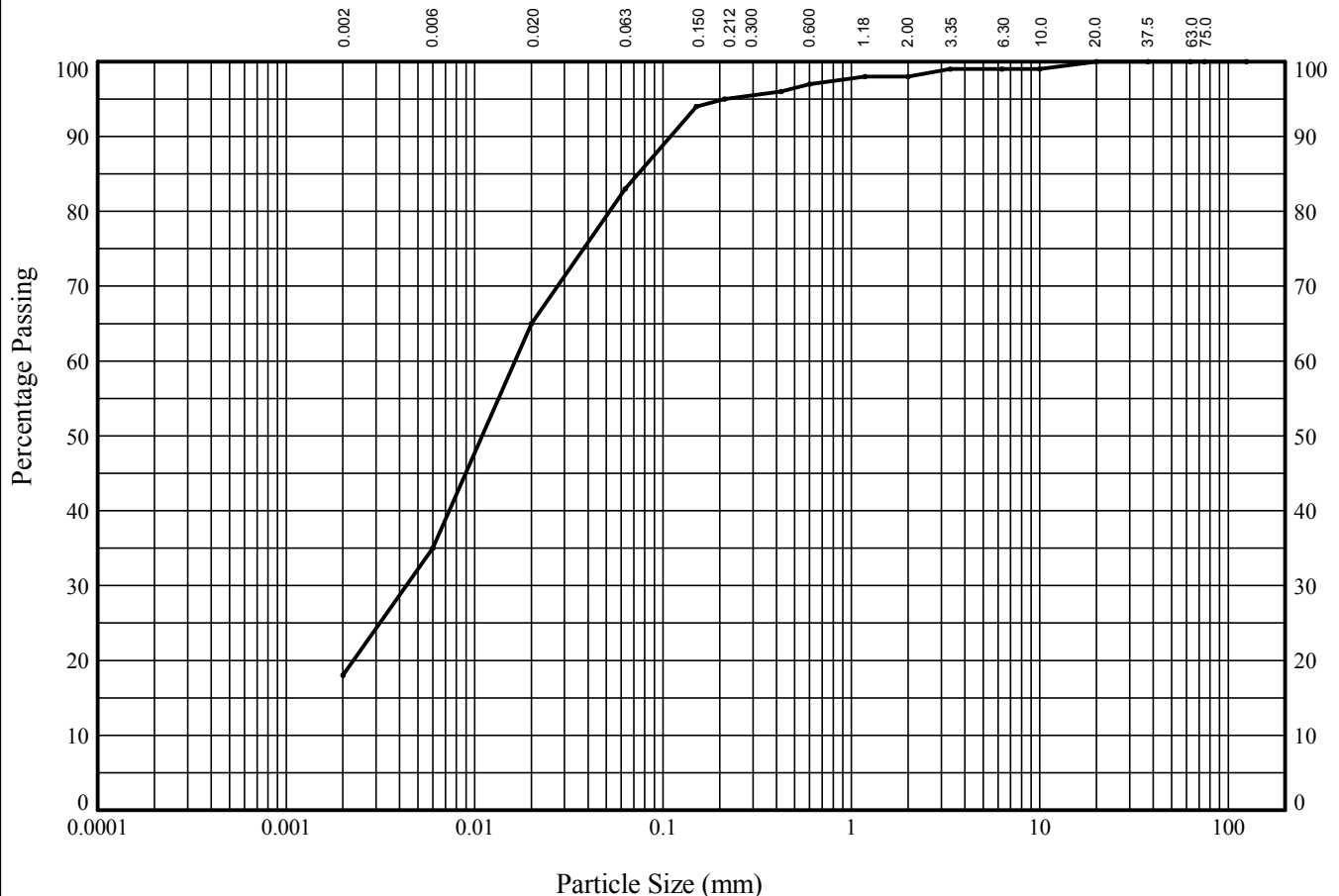
In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit : **TP324**

Sample Ref: **1**

Sample Type: **LB**

Depth (m): **2.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	99
6.30	99
3.35	99
2.00	98
1.18	98
0.600	97
0.425	96
0.212	95
0.150	94
0.063	83

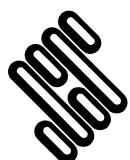
Particle Diameter	Percentage Passing
0.02	65
0.006	35
0.002	18

Soil Fraction	Sieve Percentage
GRAVEL	2
SAND	15
SILT	65
CLAY	18

Soil Description:

**Brown slightly gravelly slightly sandy silty CLAY**

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

Compiled By		Date
[Redacted]		15/11/13
Contract		Contract Ref:
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# PARTICLE SIZE DISTRIBUTION TEST

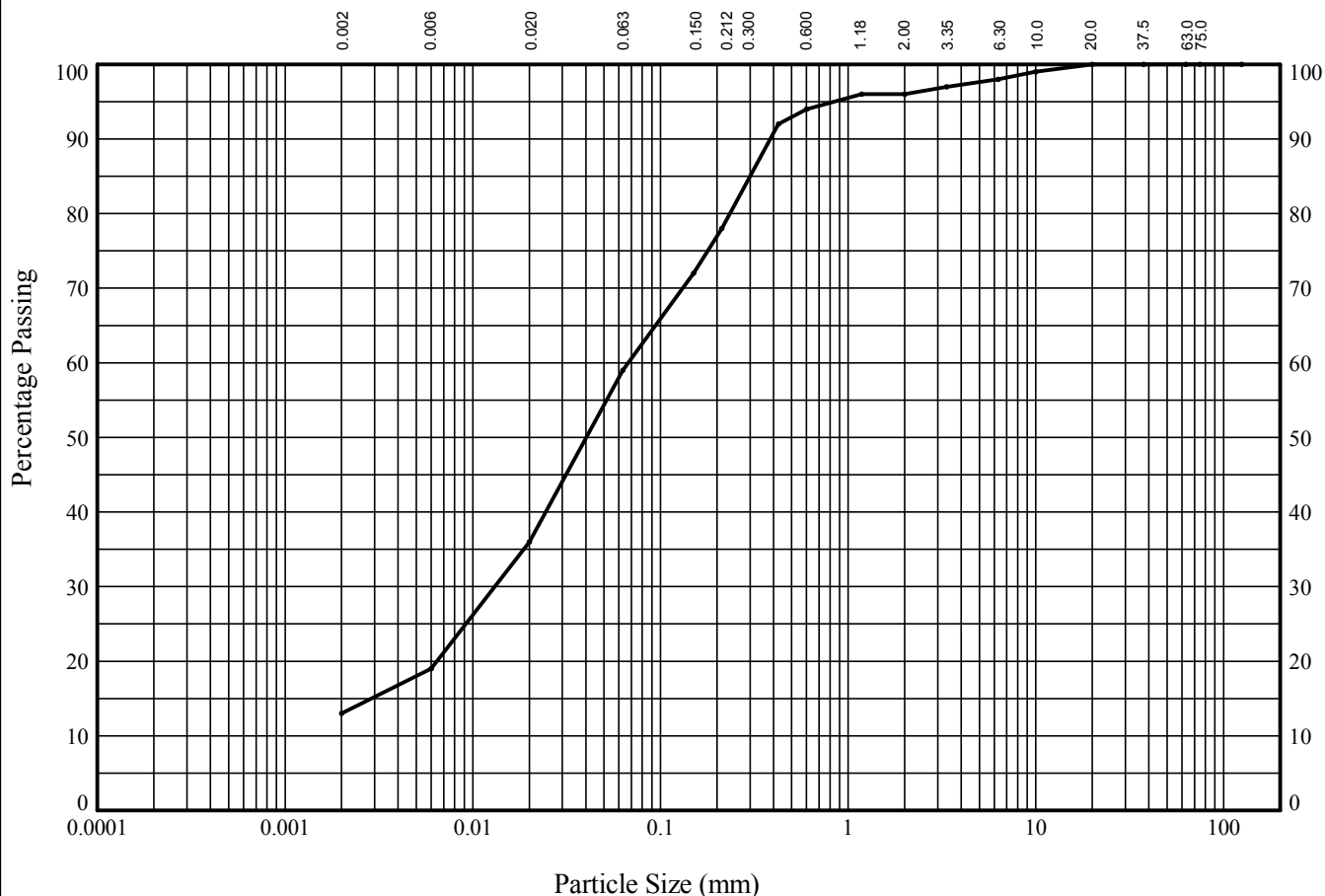
In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit : **TP326**

Sample Ref: **1**

Sample Type: **LB**

Depth (m): **1.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	99
6.30	98
3.35	97
2.00	96
1.18	96
0.600	94
0.425	92
0.212	78
0.150	72
0.063	59

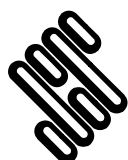
Particle Diameter	Percentage Passing
0.02	36
0.006	19
0.002	13

Soil Fraction	Sieve Percentage
GRAVEL	4
SAND	37
SILT	46
CLAY	13

Soil Description:

**Brown slightly gravelly sandy silty CLAY**

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

Compiled By		Date
[Redacted]		15/11/13
Contract		Contract Ref:
<b>East Midlands Gateway - Zone 1</b>		<b>744186</b>



# PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

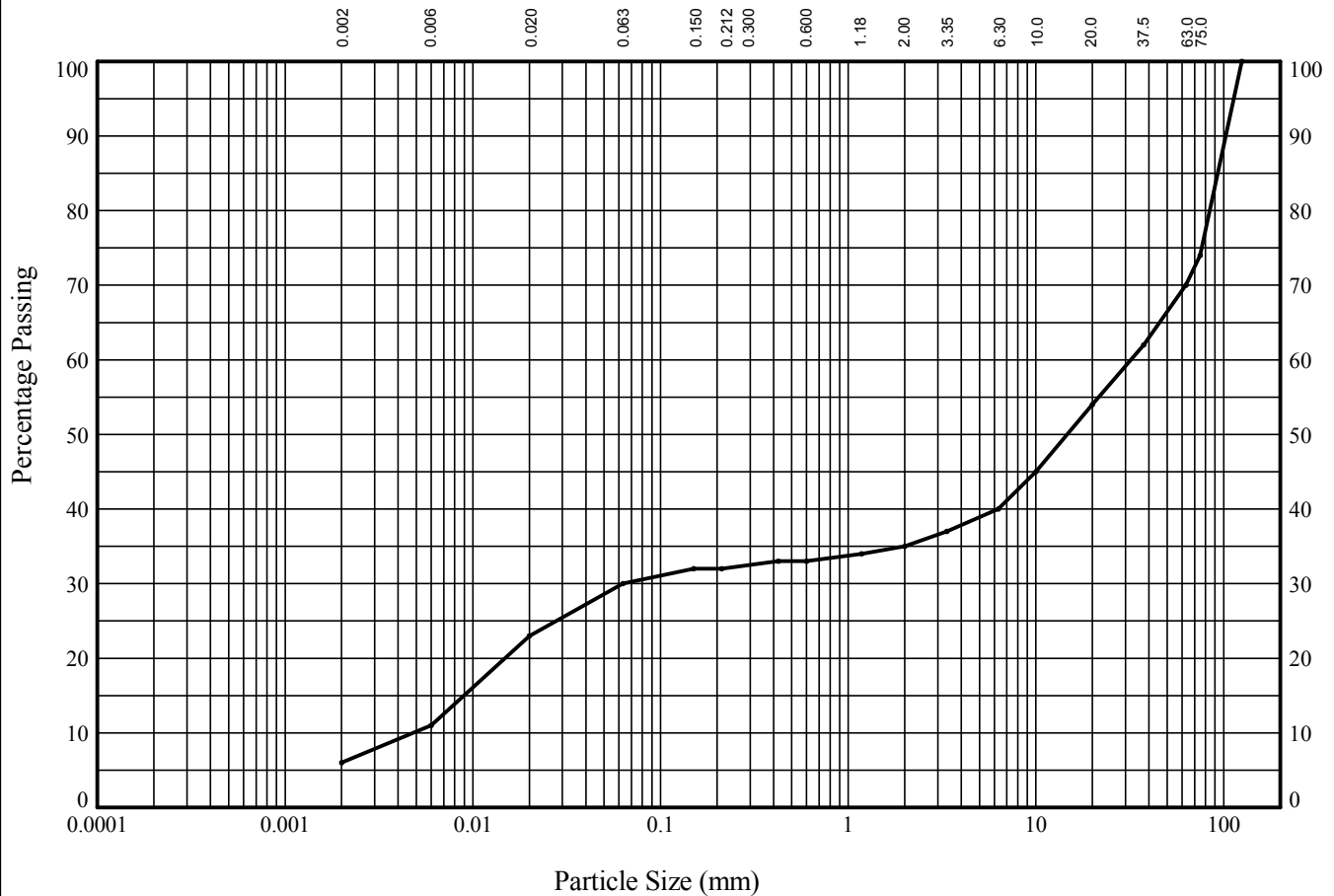
## NON STANDARD TEST

Trial Pit : **TP327**

Sample Ref: **1**

Sample Type: **LB**

Depth (m): **2.60**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125.0	100
75.0	74
63.0	70
37.5	62
20.0	54
10.0	45
6.30	40
3.35	37
2.00	35
1.18	34
0.600	33
0.425	33
0.212	32
0.150	32
0.063	30

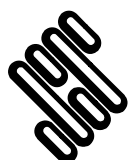
Particle Diameter	Percentage Passing
0.02	23
0.006	11
0.002	6

Soil Fraction	Sieve Percentage
COBBLES	30
GRAVEL	35
SAND	5
SILT	24
CLAY	6

Soil Description:

**Reddish brown sandy very silty GRAVEL with high cobble content**

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

Compiled By		Date
[Redacted]		15/11/13
Contract		Contract Ref:
<b>East Midlands Gateway - Zone 1</b>		<b>744186</b>



# PARTICLE SIZE DISTRIBUTION TEST

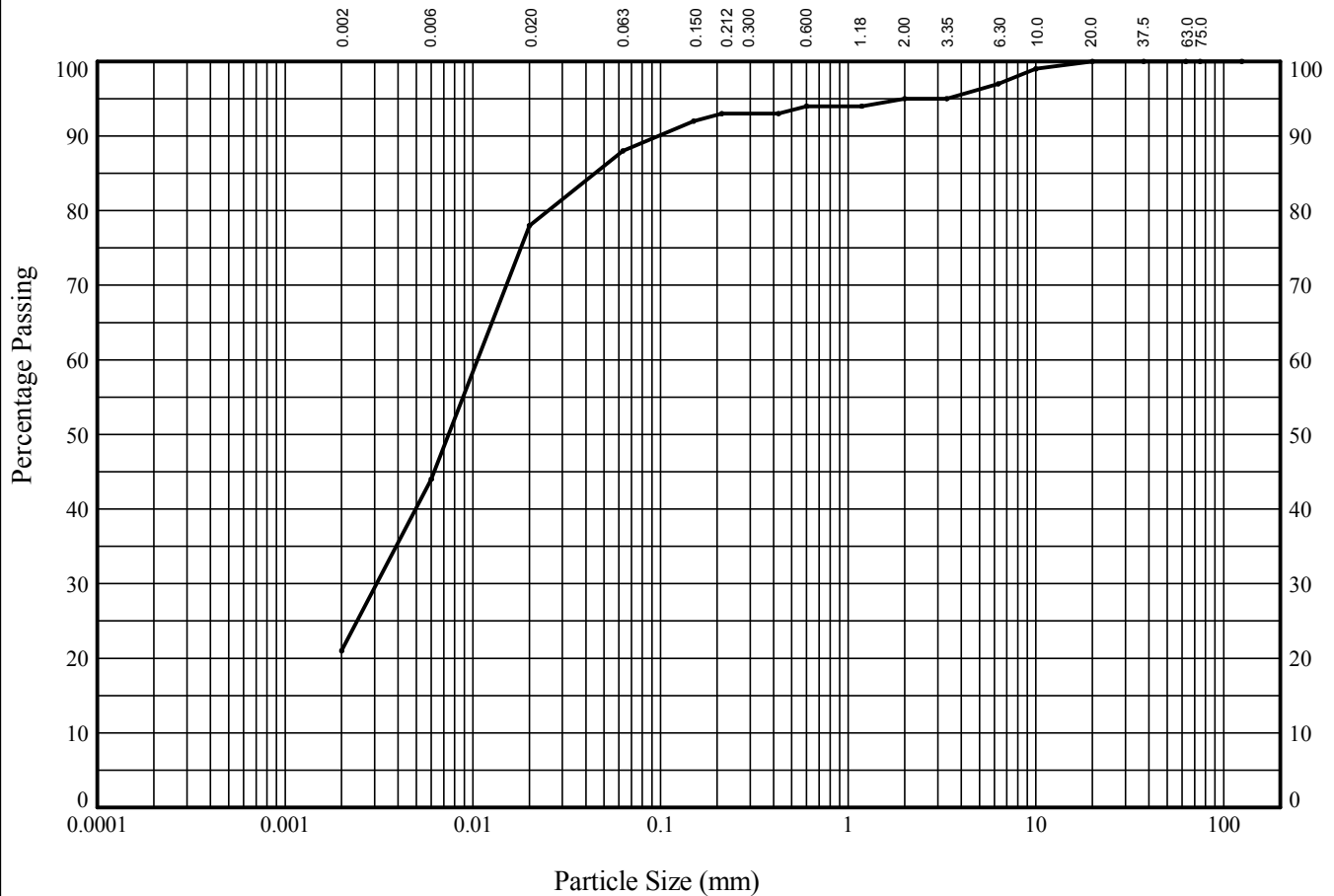
In accordance with clauses 9.2,9.5 of BS1377:Part 2:1990

Trial Pit : **TP328**

Sample Ref: **1**

Sample Type: **LB**

Depth (m): **2.10**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

BS Test Sieve (mm)	Percentage Passing
125.0	100
75.0	100
63.0	100
37.5	100
20.0	100
10.0	99
6.30	97
3.35	95
2.00	95
1.18	94
0.600	94
0.425	93
0.212	93
0.150	92
0.063	88

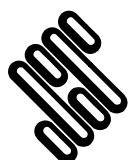
Particle Diameter	Percentage Passing
0.02	78
0.006	44
0.002	21

Soil Fraction	Sieve Percentage
GRAVEL	5
SAND	7
SILT	67
CLAY	21

Soil Description:

**Reddish brown slightly gravelly slightly sandy silty CLAY**

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

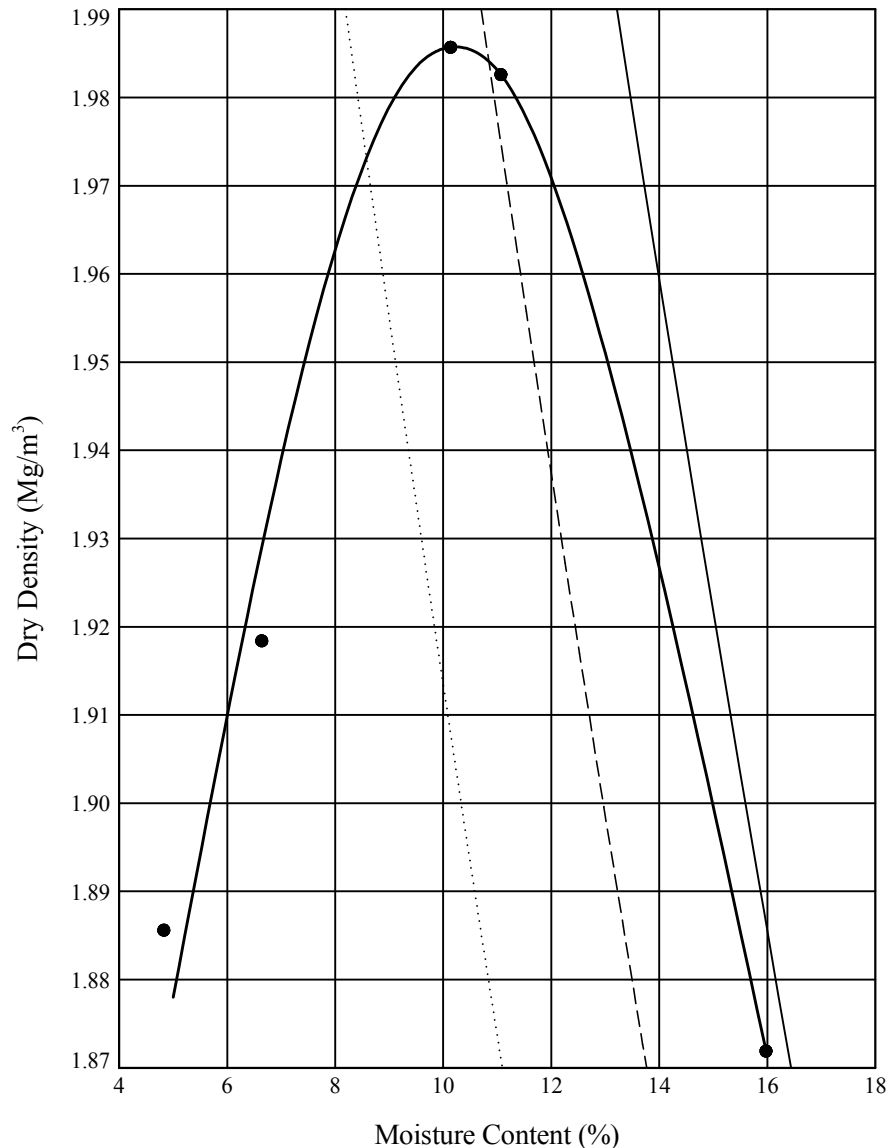
Compiled By		Date
[Redacted]		15/11/13
Contract		Contract Ref:
<b>East Midlands Gateway - Zone 1</b>		<b>744186</b>



# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

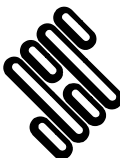


In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit : **TP324**      Sample Ref: **1**      Sample Type: **LB**      Depth (m): **2.00**



Initial Sample Conditions	Test Details	Test Results
Initial Moisture Content (%) : <b>16</b>	Compaction Type : <b>Heavy</b>	Maximum Dry Density (Mg/m³) : <b>1.99</b>
% Retained on 37.5mm BS Sieve : <b>0</b>	Mass of Rammer (kg): <b>4.5</b>	Optimum Moisture Content (%) : <b>10</b>
% Retained on 20.0mm BS Sieve : <b>0</b>	Type of Mould : <b>Proctor</b>	Method Used: <b>Clause 3.5</b>
Particle Density - assumed (Mg/m³) : <b>2.70</b>		Remarks:
Size of Soil Pieces : <b>&lt;20mm</b>	Separate samples were used.	
Sample Description		Key to Air Voids Lines
<b>Brown slightly gravelly slightly sandy silty CLAY</b>		<div>———— 0%</div> <div>----- 5%</div> <div>..... 10%</div>

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK

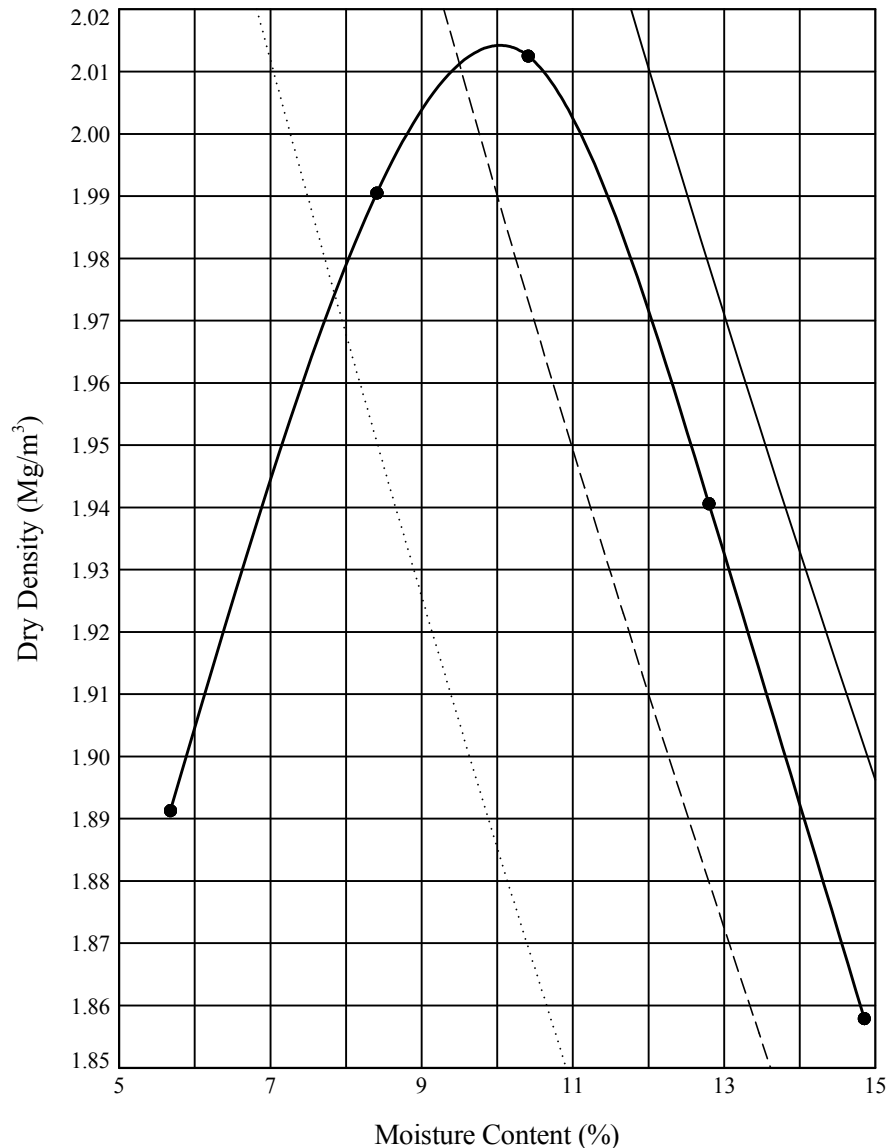
 <b>STRUCTURAL SOILS</b> 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		<b>ALAN FROST</b>	<b>15/11/13</b>
	Contract <b>East Midlands Gateway - Zone 1</b>		Contract Ref: <b>744186</b> 



# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit : **TP326**      Sample Ref: **1**      Sample Type: **LB**      Depth (m): **1.50**



Initial Sample Conditions	Test Details	Test Results
Initial Moisture Content (%) : <b>15</b>	Compaction Type : <b>Heavy</b>	Maximum Dry Density (Mg/m³) : <b>2.01</b>
% Retained on 37.5mm BS Sieve : <b>0</b>	Mass of Rammer (kg): <b>4.5</b>	Optimum Moisture Content (%) : <b>10</b>
% Retained on 20.0mm BS Sieve : <b>0</b>	Type of Mould : <b>Proctor</b>	Method Used: <b>Clause 3.5</b>
Particle Density - assumed (Mg/m³) : <b>2.65</b>		Remarks:
Size of Soil Pieces : <b>&lt;20mm</b>	Separate samples were used.	
Sample Description		Key to Air Voids Lines
<b>Brown slightly gravelly sandy silty CLAY</b>		<div>———— 0%</div> <div>----- 5%</div> <div>..... 10%</div>

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK

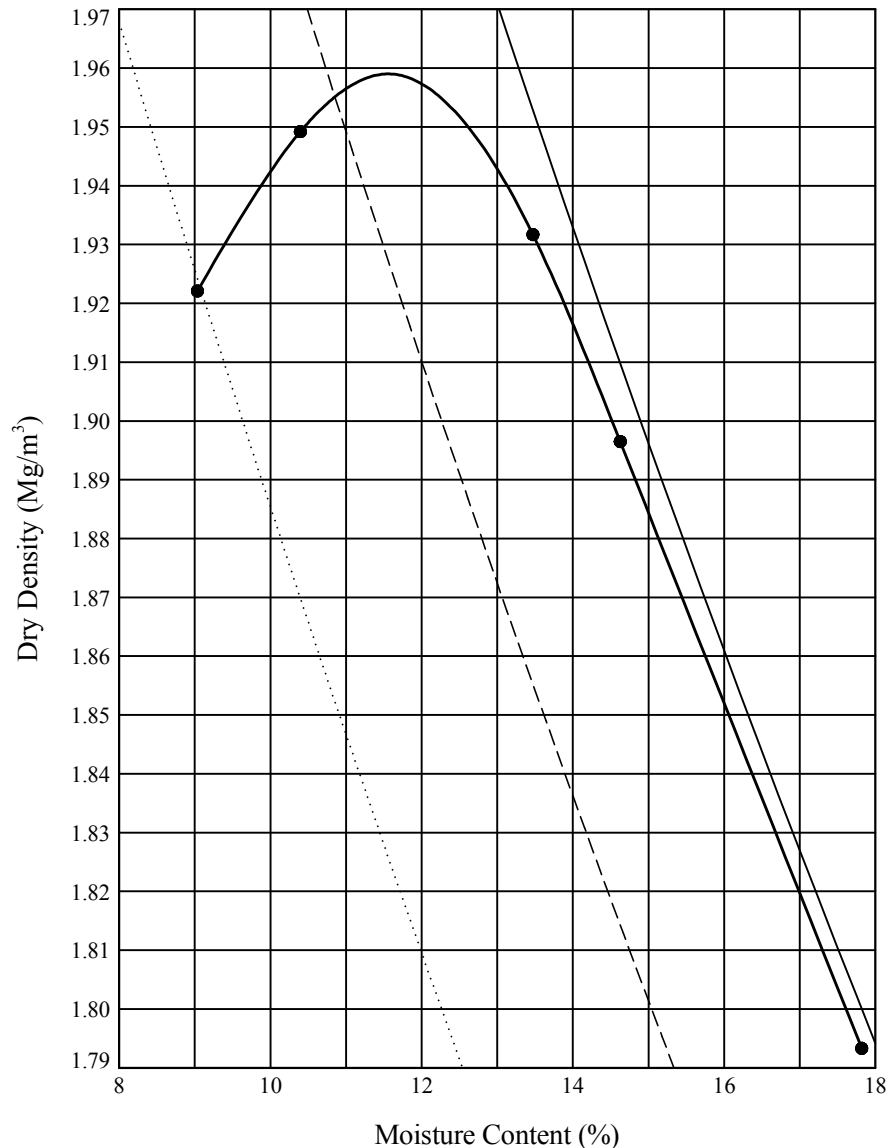
 <b>STRUCTURAL SOILS</b> 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	[Redacted]		15/11/13
	Contract <b>East Midlands Gateway - Zone 1</b>	Contract Ref: <b>744186</b>	



# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

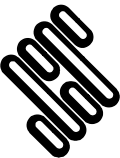

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit : **TP327**      Sample Ref: **1**      Sample Type: **LB**      Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: 18	Compaction Type	: Heavy	Maximum Dry Density (Mg/m³)	: 1.96
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg):	4.5	Optimum Moisture Content (%)	: 12
% Retained on 20.0mm BS Sieve	: 3	Type of Mould	: Proctor	Method Used:	Clause 3.5
Particle Density - assumed (Mg/m³)	: 2.65	Remarks:			
Size of Soil Pieces	: <20mm				
Sample Description			Key to Air Voids Lines		
Reddish brown slightly gravelly slightly sandy CLAY			——— 0%	— — — — 5%	..... 10%

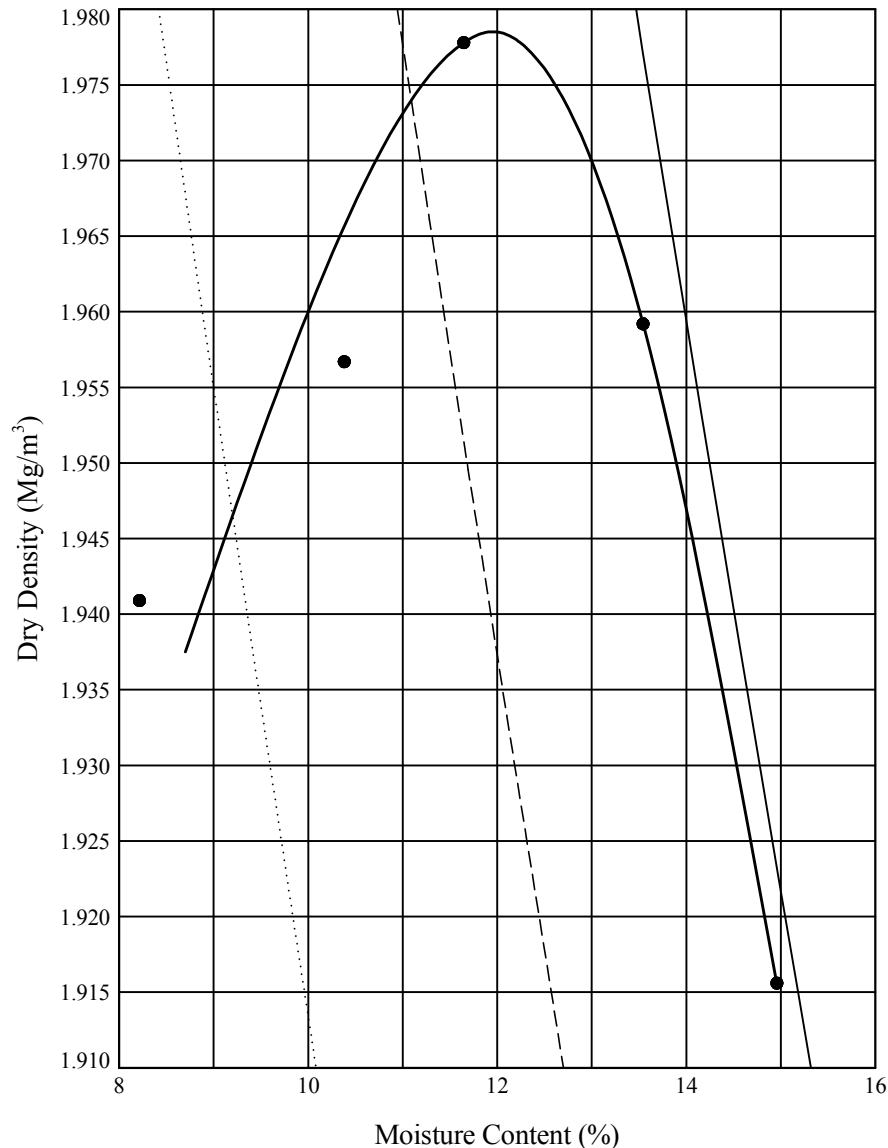
Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK

 <b>STRUCTURAL SOILS</b> 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	[Redacted]		ALAN FROST
	Contract		Contract Ref:
<b>East Midlands Gateway - Zone 1</b>		<b>744186</b>	
			

# DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

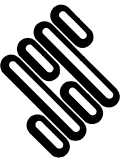
In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit : **TP328**      Sample Ref: **1**      Sample Type: **LB**      Depth (m): **2.10**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: 15	Compaction Type	: Heavy	Maximum Dry Density (Mg/m³)	: 1.98
% Retained on 37.5mm BS Sieve	: 4	Mass of Rammer (kg):	4.5	Optimum Moisture Content (%)	: 12
% Retained on 20.0mm BS Sieve	: 6	Type of Mould	: CBR	Method Used:	Clause 3.6
Particle Density - assumed (Mg/m³)	: 2.70	Remarks:			
Size of Soil Pieces	: <20mm				
Sample Description			Key to Air Voids Lines		
Reddish brown slightly gravelly slightly sandy silty CLAY			———— 0%	— — — — 5%	..... 10%

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK

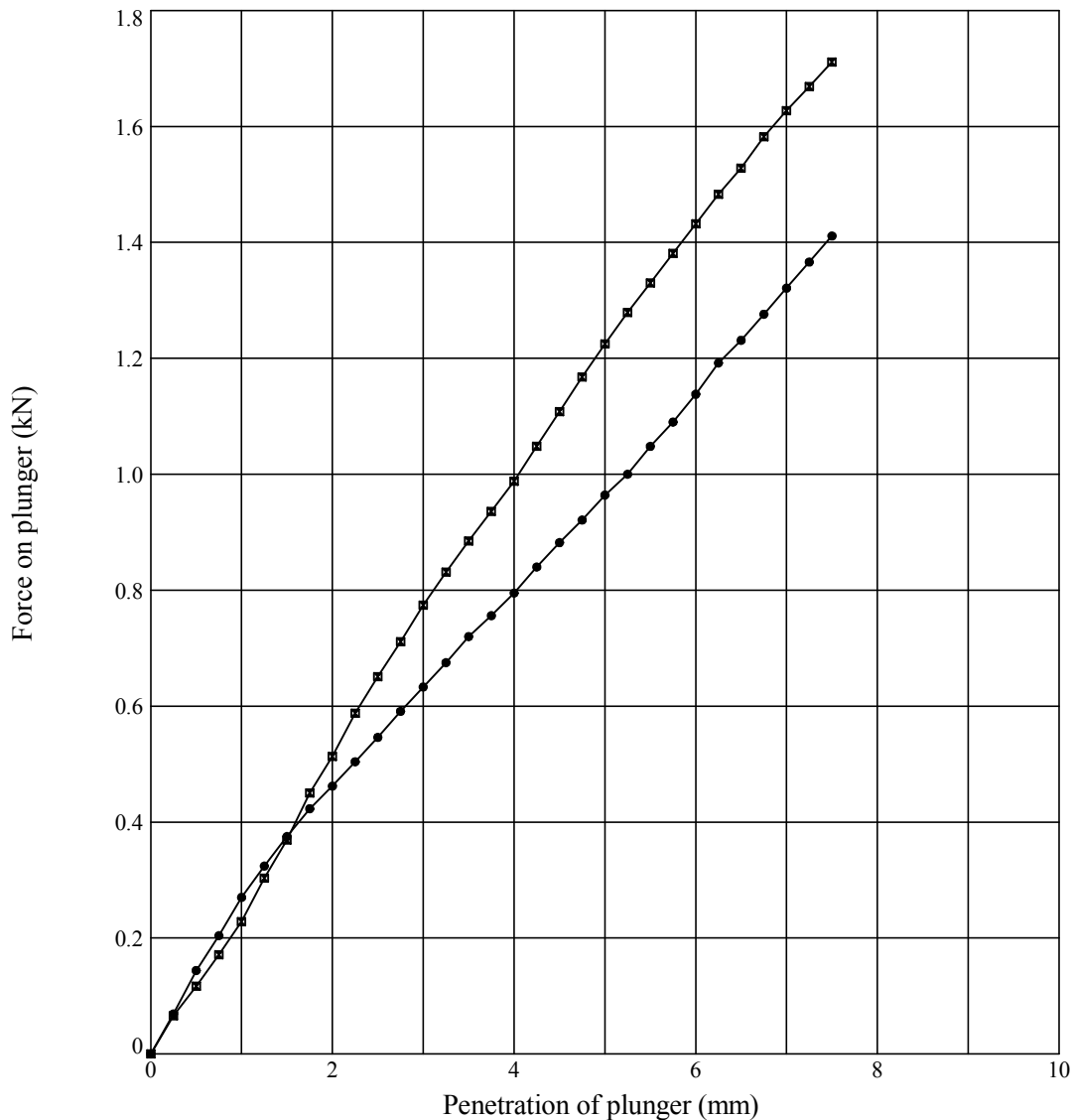
 <b>STRUCTURAL SOILS</b> 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	[Redacted]		ALAN FROST
	Contract <b>East Midlands Gateway - Zone 1</b>		Contract Ref: <b>744186</b>



# LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990  
NON STANDARD TEST

Trial Pit : **TP322**      Sample Ref: **1**      Sample Type: **LB**      Depth (m): **2.20**



Initial Sample Conditions		Test Details		Test Results		Top	Base
Initial Moisture Content (%)	: <b>15</b>	Compaction Type	: <b>4.5 kg Dynamic</b>	Moisture Content (%)		<b>15</b>	<b>15</b>
Initial Bulk Density (Mg/m <sup>3</sup> )	: <b>2.17</b>	Surcharge (kg)	: <b>4.5</b>	CBR value (%)		<b>4.8</b>	<b>6.1</b>
Initial Dry Density (Mg/m <sup>3</sup> )	: <b>1.89</b>	Soaking Time (hrs)	:	Remarks:			
% retained on 20mm sieve	: <b>59</b>	Swelling (mm)	:				
Sample Description				Key			
<b>Brown mottled grey slightly sandy gravelly CLAY</b>				<b>● Top      ☒ Base</b>			

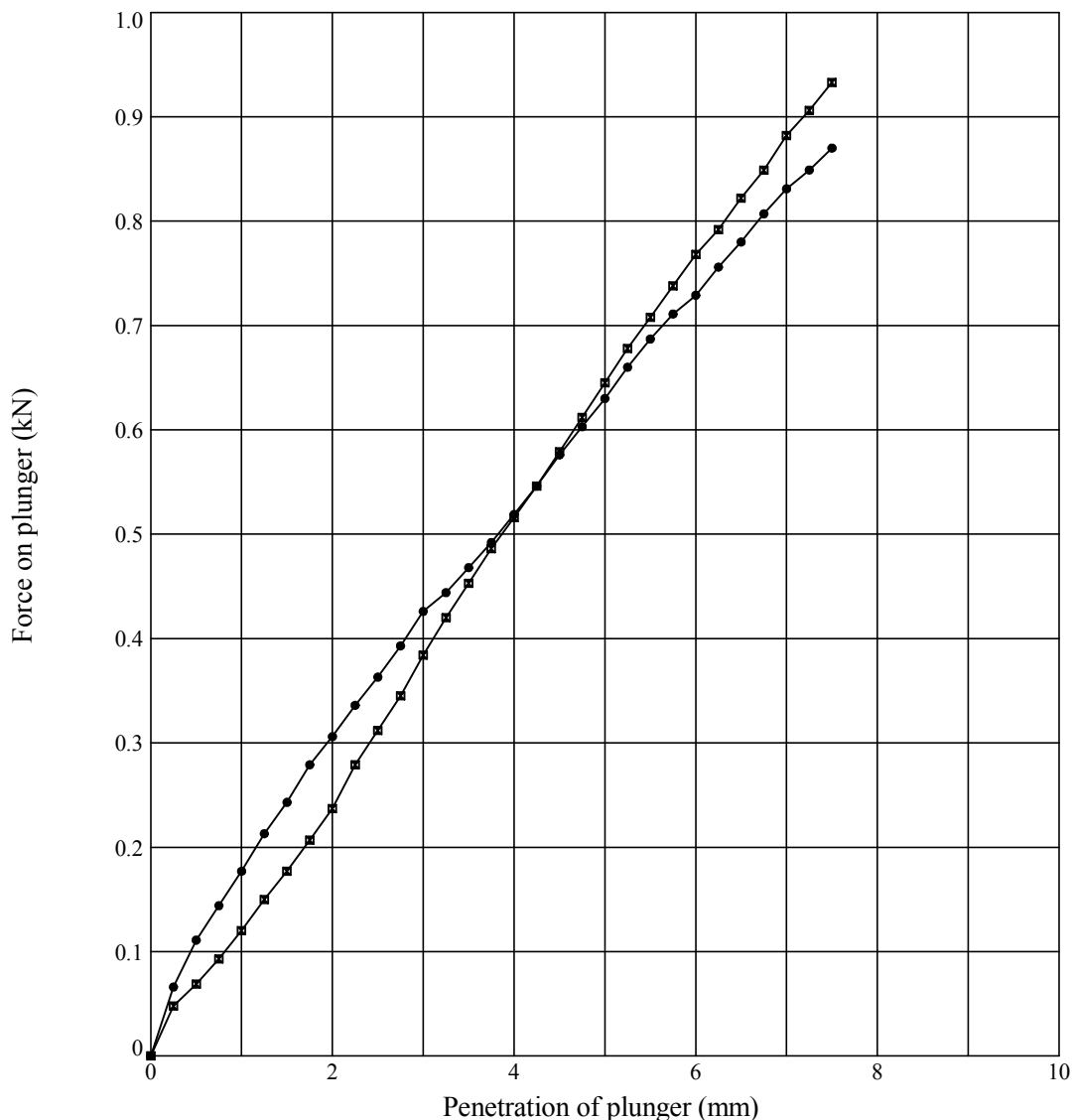
Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK

 <b>STRUCTURAL SOILS</b> 1a Princess Street Bristol BS3 4AG	Compiled By		Date
	[Redacted]		<b>ALAN FROST</b>
	Contract	Contract Ref:	
	<b>East Midlands Gateway - Zone 1</b>	<b>744186</b>	
			

# LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit : **TP324**      Sample Ref: **1**      Sample Type: **LB**      Depth (m): **2.00**



Initial Sample Conditions		Test Details		Test Results	Top	Base
Initial Moisture Content (%)	: <b>16</b>	Compaction Type	: <b>4.5 kg Dynamic</b>	Moisture Content (%)	<b>17</b>	<b>16</b>
Initial Bulk Density (Mg/m <sup>3</sup> )	: <b>2.14</b>	Surcharge (kg)	: <b>4.5</b>	CBR value (%)	<b>3.2</b>	<b>3.2</b>
Initial Dry Density (Mg/m <sup>3</sup> )	: <b>1.84</b>	Soaking Time (hrs)	:	Remarks:		
% retained on 20mm sieve	: <b>0</b>	Swelling (mm)	:			
Sample Description				Key		
<b>Brown slightly gravelly slightly sandy silty CLAY</b>				<b>● Top      ☒ Base</b>		

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK

 <b>STRUCTURAL SOILS</b> 1a Princess Street Bristol BS3 4AG	Compiled By		Date
	<b>MATT STOKES</b>		<b>15/11/13</b>
	Contract <b>East Midlands Gateway - Zone 1</b>	Contract Ref: <b>744186</b>	

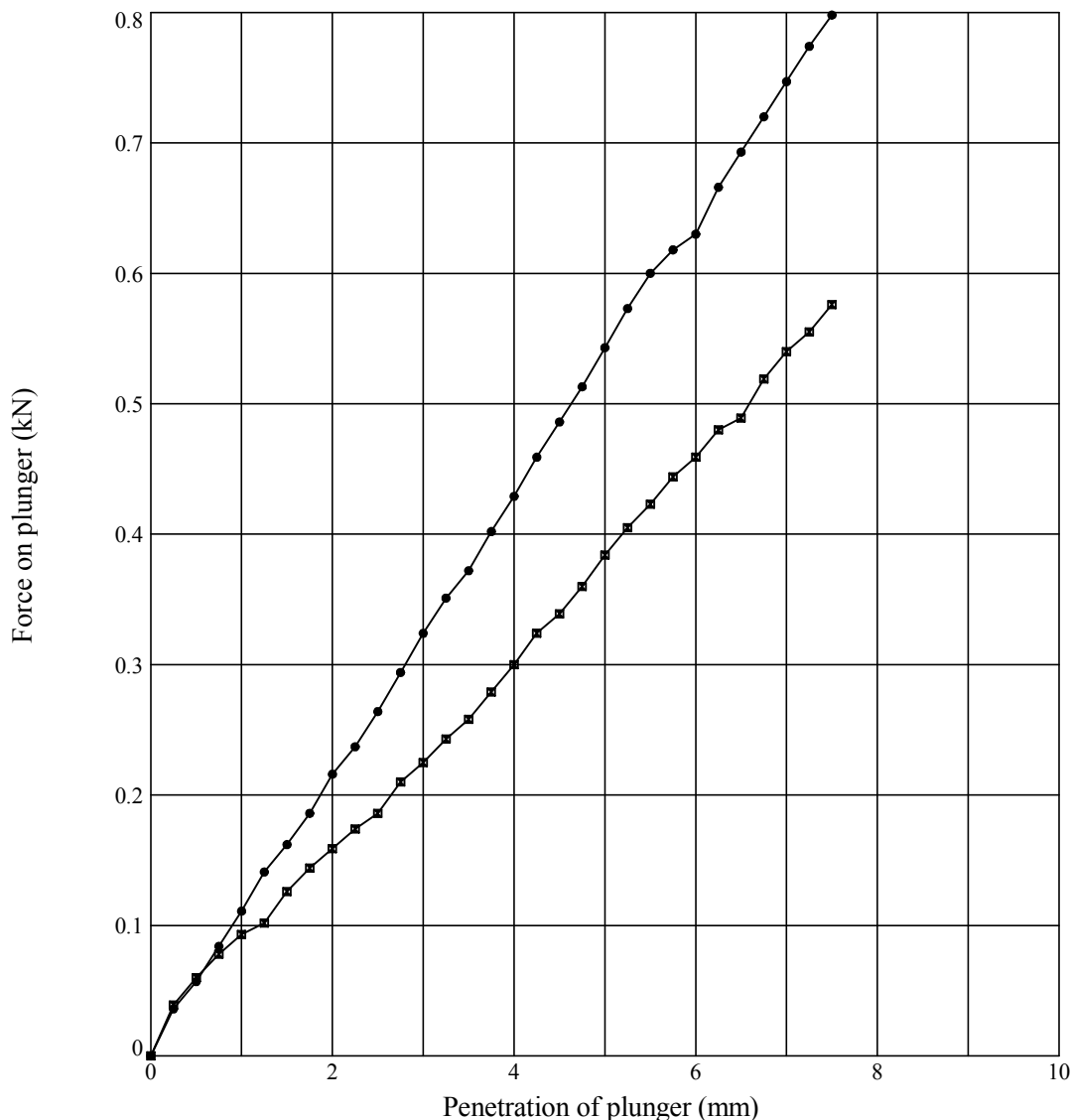




# LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit : **TP326**      Sample Ref: **1**      Sample Type: **LB**      Depth (m): **1.50**



Initial Sample Conditions	Test Details	Test Results	Top	Base
Initial Moisture Content (%) : <b>15</b>	Compaction Type : <b>4.5 kg Dynamic</b>	Moisture Content (%)	<b>15</b>	<b>15</b>
Initial Bulk Density (Mg/m <sup>3</sup> ) : <b>2.10</b>	Surcharge (kg) : <b>4.5</b>	CBR value (%)	<b>2.7</b>	<b>1.9</b>
Initial Dry Density (Mg/m <sup>3</sup> ) : <b>1.82</b>	Soaking Time (hrs) :	Remarks:		
% retained on 20mm sieve : <b>0</b>	Swelling (mm) :			
Sample Description		Key		
<b>Brown slightly gravelly sandy silty CLAY</b>		<b>● Top      ☒ Base</b>		

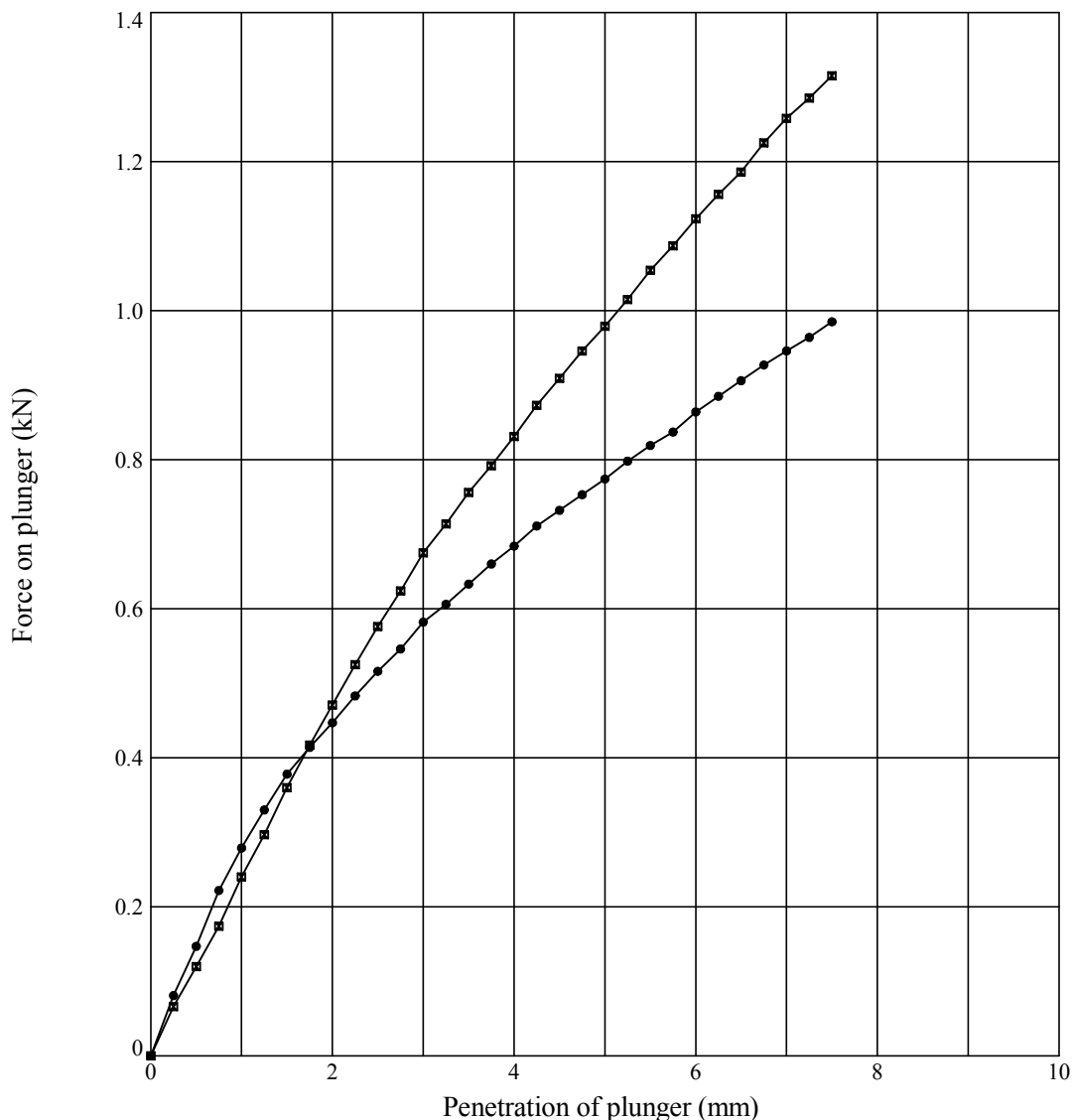
Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK

 <b>STRUCTURAL SOILS</b> 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	[Redacted]		<b>MATT STOKES</b>
	Contract	Contract Ref:	
<b>East Midlands Gateway - Zone 1</b>		<b>744186</b>	
			

# LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit : **TP327**      Sample Ref: **1**      Sample Type: **LB**      Depth (m): **1.20**



Initial Sample Conditions		Test Details		Test Results	Top	Base
Initial Moisture Content (%)	: <b>18</b>	Compaction Type	: <b>4.5 kg Dynamic</b>	Moisture Content (%)	<b>18</b>	<b>17</b>
Initial Bulk Density (Mg/m <sup>3</sup> )	: <b>2.19</b>	Surcharge (kg)	: <b>4.5</b>	CBR value (%)	<b>3.9</b>	<b>4.9</b>
Initial Dry Density (Mg/m <sup>3</sup> )	: <b>1.86</b>	Soaking Time (hrs)	:	Remarks:		
% retained on 20mm sieve	: <b>2</b>	Swelling (mm)	:			
Sample Description				Key		
<b>Reddish brown slightly gravelly slightly sandy CLAY</b>				<b>● Top      ☒ Base</b>		

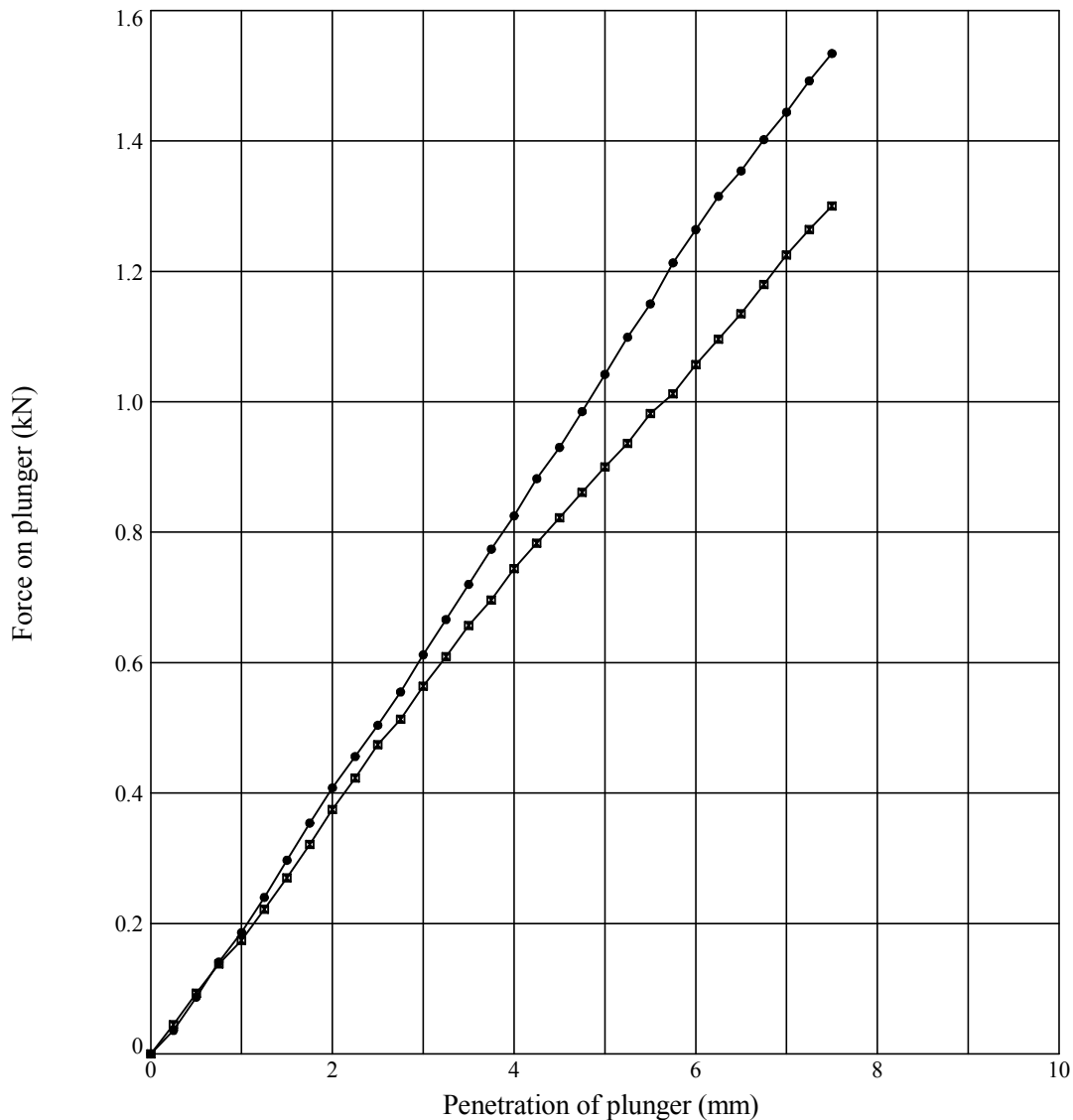
Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK

 <div>STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG</div>	Compiled By		Date
	<div></div>	MATT STOKES	15/11/13
	Contract East Midlands Gateway - Zone 1		Contract Ref: 744186
			

# LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990  
NON STANDARD TEST

Trial Pit : **TP327** Sample Ref: **1** Sample Type: **LB** Depth (m): **2.60**



Initial Sample Conditions	Test Details	Test Results	Top	Base
Initial Moisture Content (%) : <b>15</b>	Compaction Type : <b>4.5 kg Dynamic</b>	Moisture Content (%)	<b>15</b>	<b>14</b>
Initial Bulk Density (Mg/m <sup>3</sup> ) : <b>2.21</b>	Surcharge (kg) : <b>4.5</b>	CBR value (%)	<b>5.2</b>	<b>4.5</b>
Initial Dry Density (Mg/m <sup>3</sup> ) : <b>1.92</b>	Soaking Time (hrs) :	Remarks:		
% retained on 20mm sieve : <b>57</b>	Swelling (mm) :			
Sample Description		Key		
<b>Reddish brown sandy very silty GRAVEL with high cobble content</b>		<b>● Top</b> <b>⊠ Base</b>		

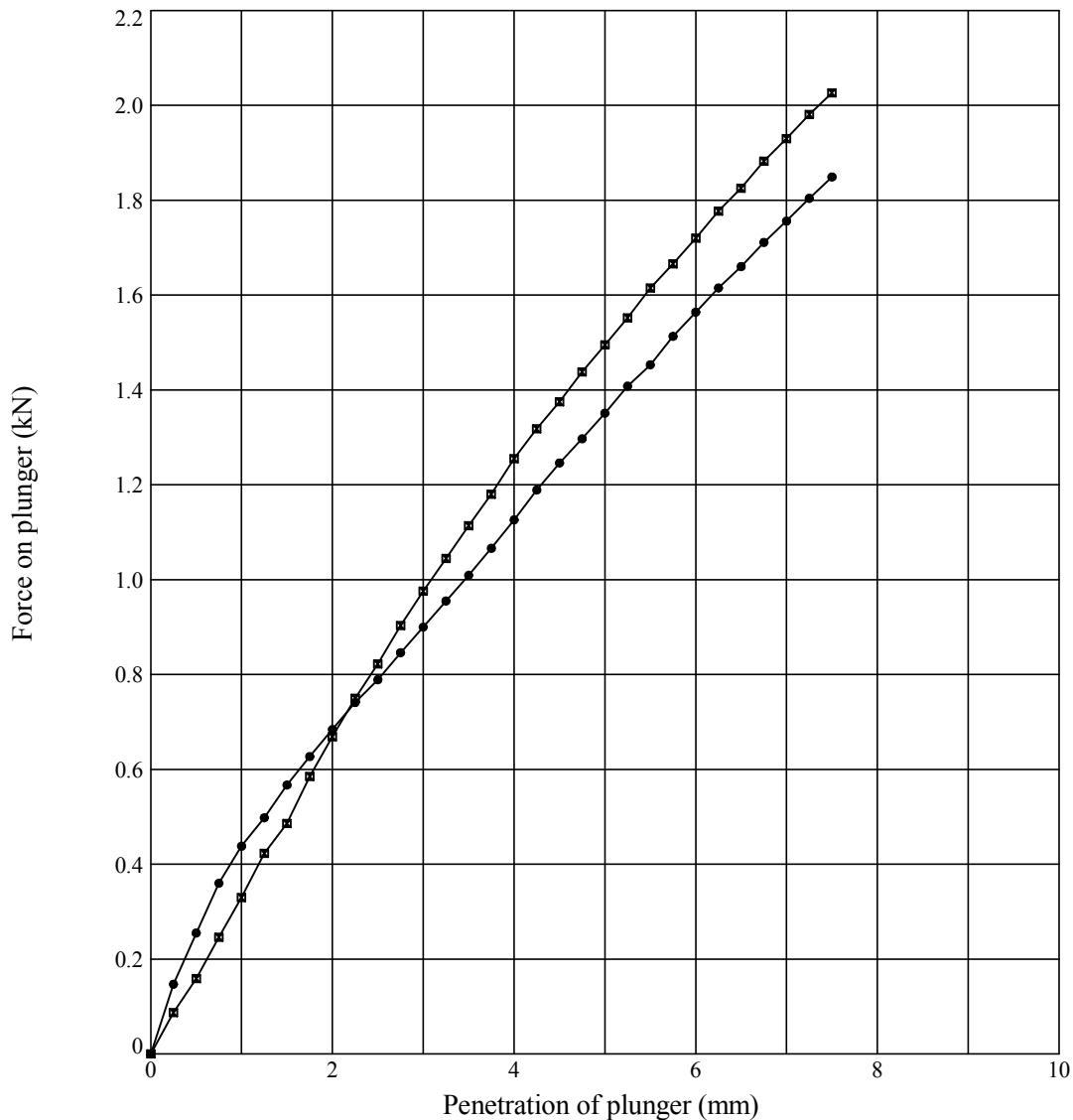
Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK

 <b>STRUCTURAL SOILS</b> 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
		<b>ALAN FROST</b>	<b>15/11/13</b>
	Contract <b>East Midlands Gateway - Zone 1</b>		Contract Ref: <b>744186</b> 

# LABORATORY CALIFORNIA BEARING RATIO TEST

In accordance with clause 7 of BS1377:Part 4:1990

Trial Pit : **TP328**      Sample Ref: **1**      Sample Type: **LB**      Depth (m): **2.10**



Initial Sample Conditions		Test Details		Test Results		Top	Base
Initial Moisture Content (%)	: <b>16</b>	Compaction Type	: <b>4.5 kg Dynamic</b>	Moisture Content (%)		<b>16</b>	<b>16</b>
Initial Bulk Density (Mg/m <sup>3</sup> )	: <b>2.18</b>	Surcharge (kg)	: <b>4.5</b>	CBR value (%)		<b>6.8</b>	<b>7.5</b>
Initial Dry Density (Mg/m <sup>3</sup> )	: <b>1.89</b>	Soaking Time (hrs)	:	Remarks:			
% retained on 20mm sieve	: <b>10</b>	Swelling (mm)	:				
Sample Description				Key			
<b>Reddish brown slightly gravelly slightly sandy silty CLAY</b>				<b>● Top      ☒ Base</b>			

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK

 <b>STRUCTURAL SOILS</b> 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	<b>MATT STOKES</b>		<b>15/11/13</b>
	Contract <b>East Midlands Gateway - Zone 1</b>	Contract Ref: <b>744186</b>	

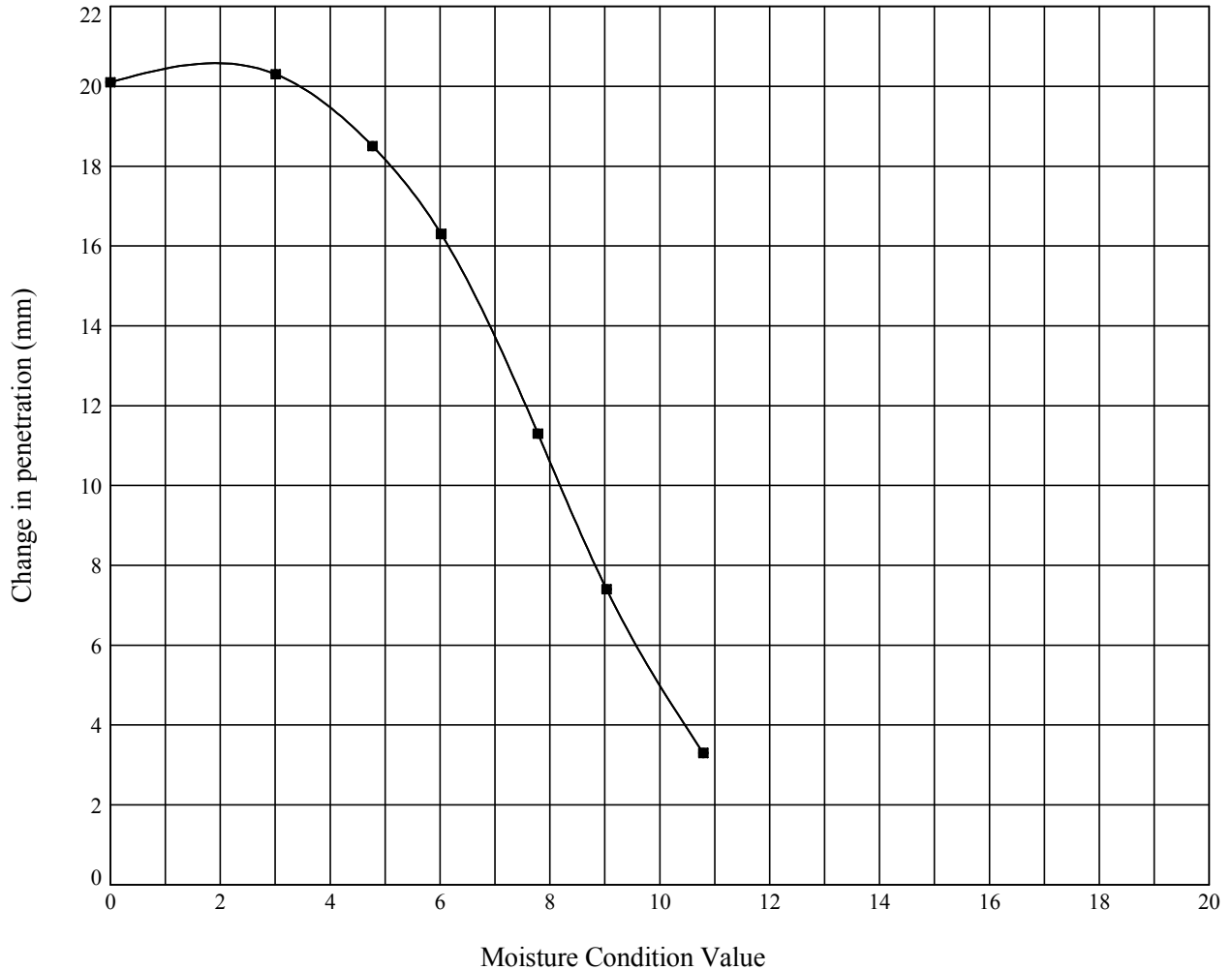


# MOISTURE CONDITION VALUE

In accordance with clause 5 of BS1377:Part 4:1990

Trial Pit : **TP322**      Sample Ref: **1**      Sample Type: **LB**      Depth (m): **2.20**

Description : **Brown mottled grey slightly sandy gravelly CLAY**



Moisture Content :	= 15	%
Percentage retained on 20 mm sieve :	= 59	%
Moisture Condition Value :	= 9.8	
Interpretation of curve:	= Steepest straight line	

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

Compiled By

Date

Contract

**East Midlands Gateway - Zone 1**

Contract Ref:

**744186**

**MATT STOKES**

**15/11/13**

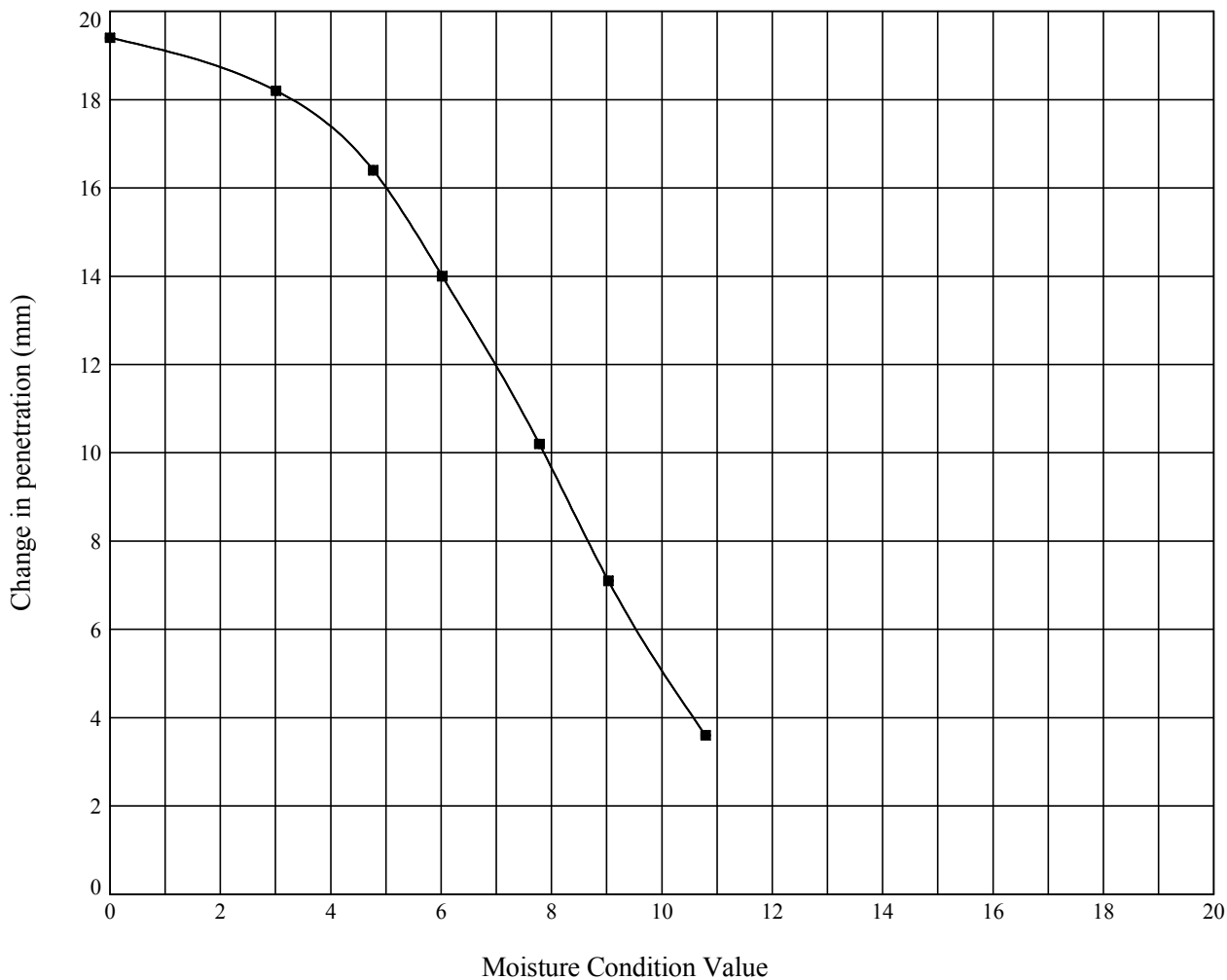


# MOISTURE CONDITION VALUE

In accordance with clause 5 of BS1377:Part 4:1990

Trial Pit : **TP324**      Sample Ref: **1**      Sample Type: **LB**      Depth (m): **2.00**

Description : **Brown slightly gravelly slightly sandy silty CLAY**



Moisture Content : = 17 %

Percentage retained on 20 mm sieve : = 0 %

Moisture Condition Value : = 9.9

Interpretation of curve: = Steepest straight line

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

Compiled By		Date
[REDACTED]		MATT STOKES
Contract		Contract Ref:
<b>East Midlands Gateway - Zone 1</b>		<b>744186</b>

# MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

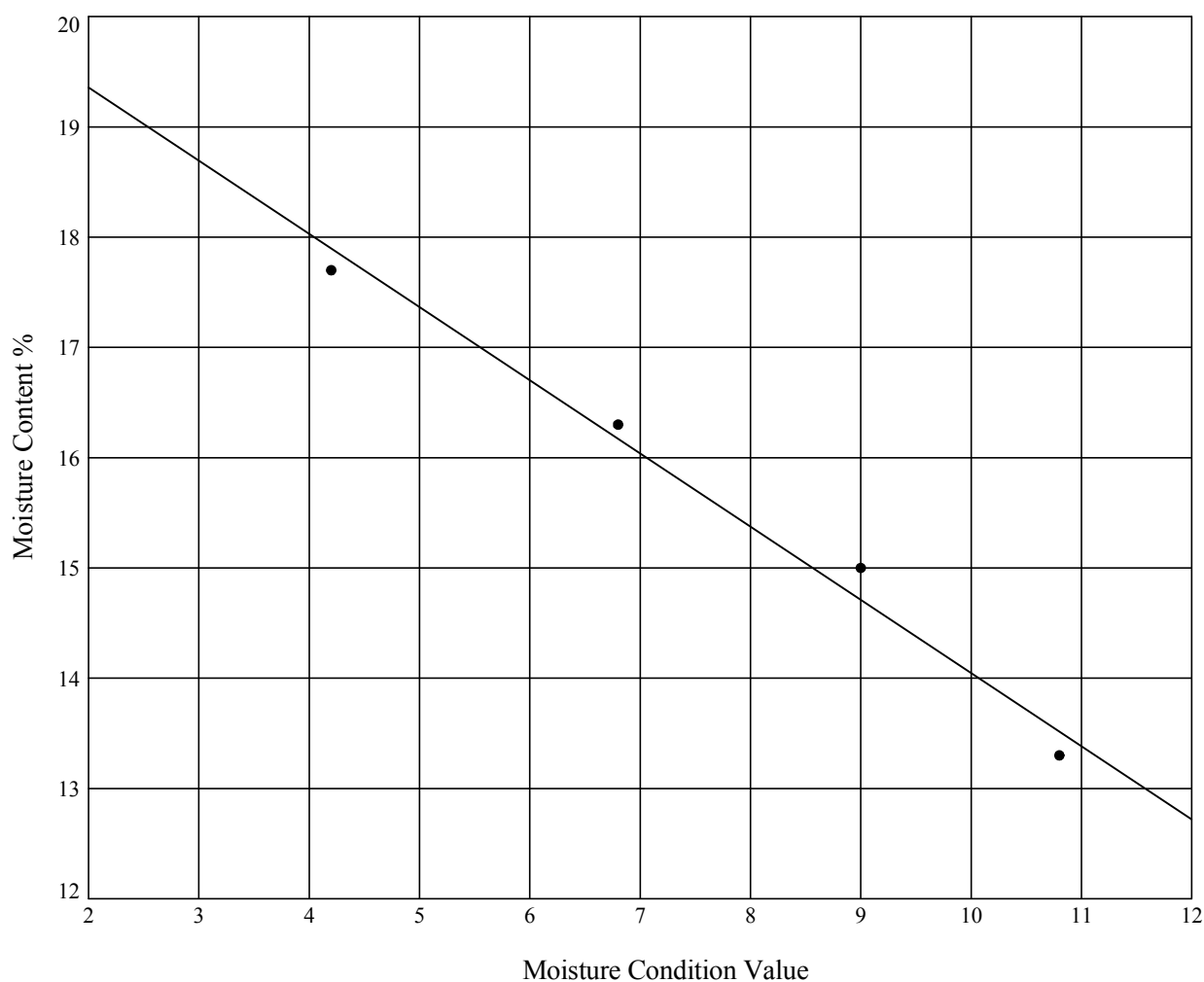
Trial Pit : **TP326**      Sample Ref: **1**      Sample Type: **LB**      Depth (m): **1.50**

Percentage retained on 20mm sieve : **0**

Description : **Brown slightly gravelly sandy silty CLAY**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	15.0	16.3	17.7	13.3	-
MCV	9.0	6.8	4.2	10.8	-



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK

 <b>STRUCTURAL SOILS</b> 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
	[REDACTED]		MATT STOKES
	Contract <b>East Midlands Gateway - Zone 1</b>	Contract Ref: <b>744186</b>	
			

# MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

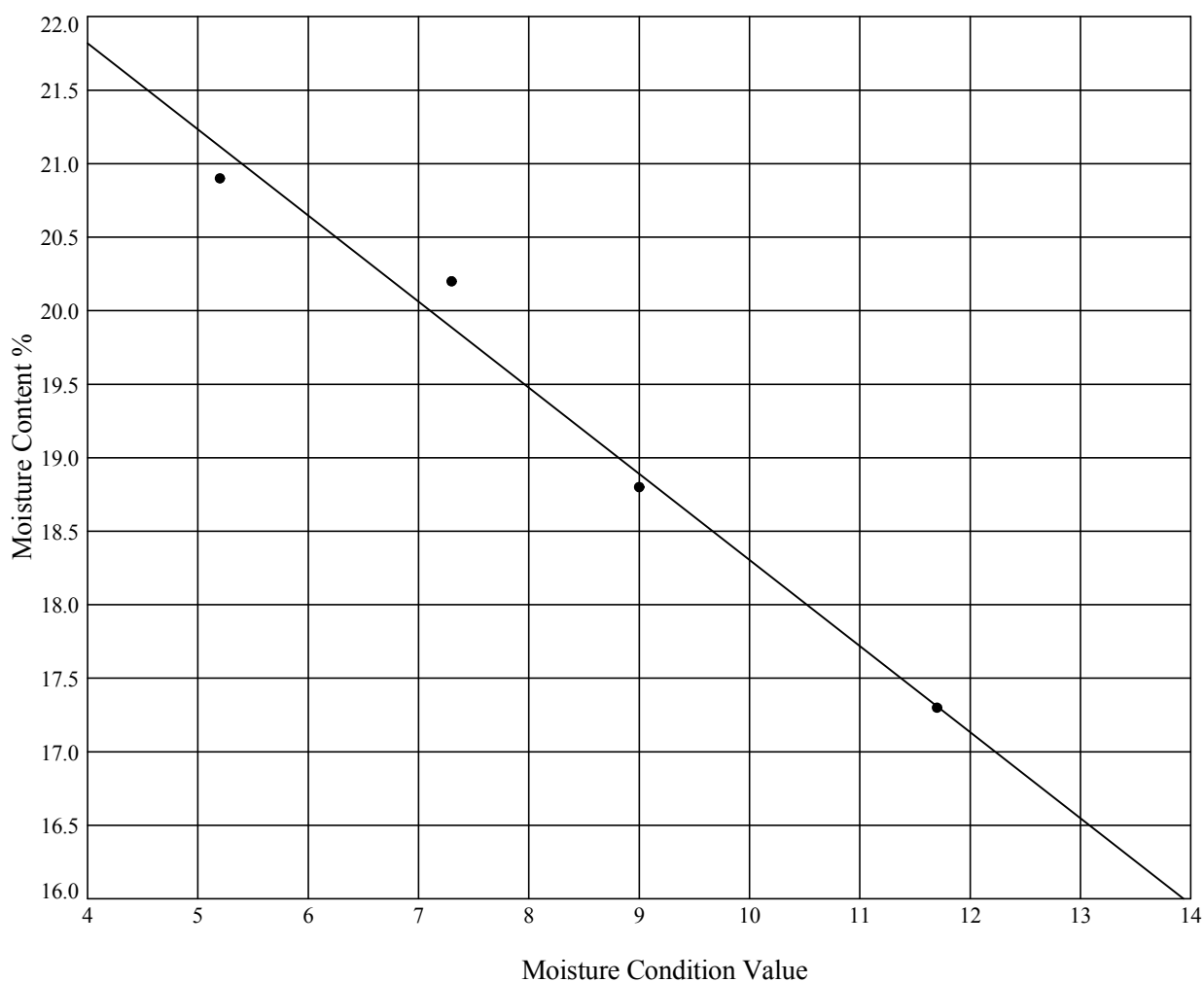
Trial Pit : **TP327**      Sample Ref: **1**      Sample Type: **LB**      Depth (m): **1.20**

Percentage retained on 20mm sieve : **2**

Description : **Reddish brown slightly gravelly slightly sandy CLAY**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	18.8	20.2	20.9	17.3	-
MCV	9.0	7.3	5.2	11.7	-



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



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Bristol  
BS3 4AG

Compiled By

Date

**MATT STOKES**

**15/11/13**

Contract

**East Midlands Gateway - Zone 1**

Contract Ref:

**744186**



# MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

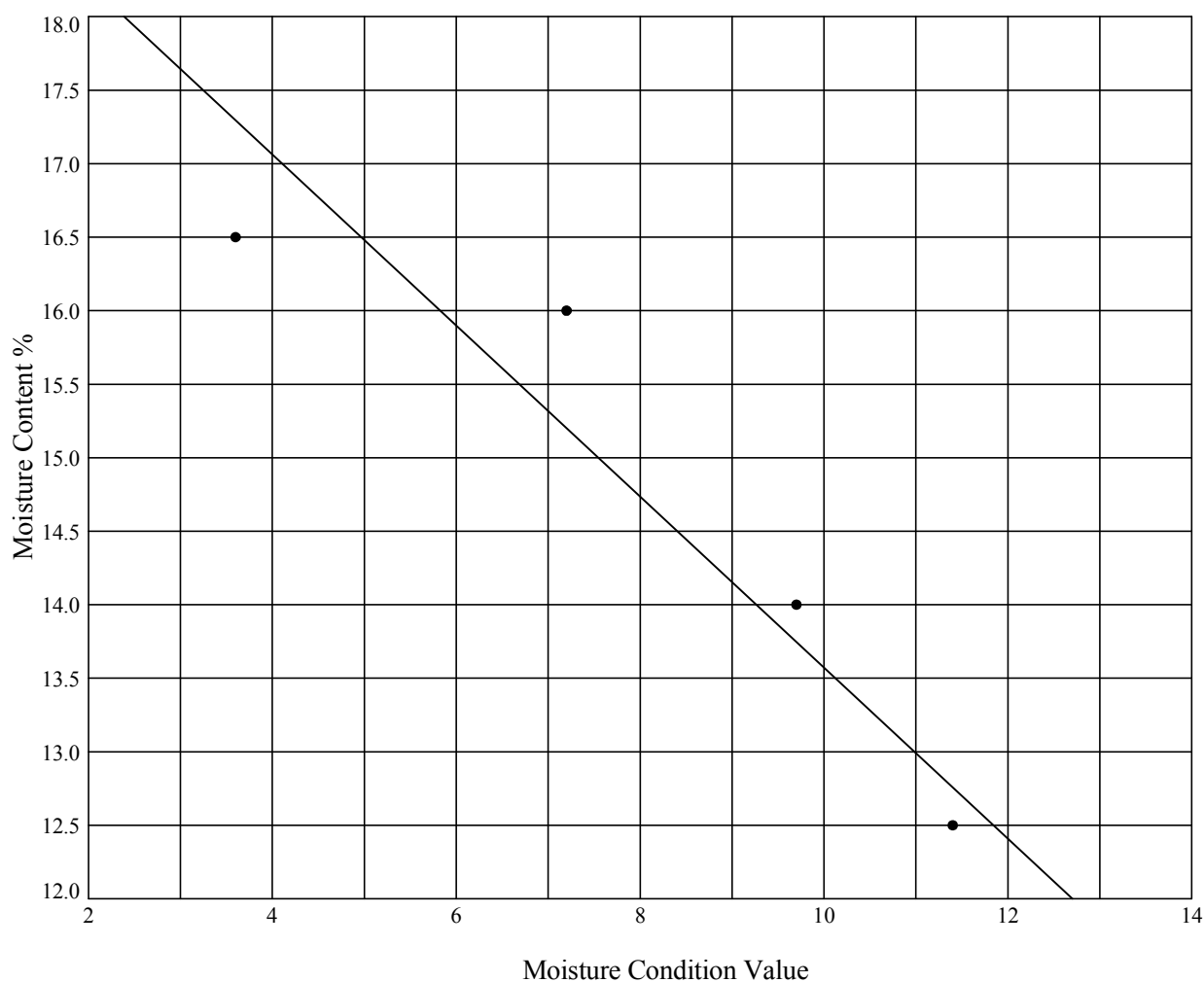
Trial Pit : **TP327**      Sample Ref: **1**      Sample Type: **LB**      Depth (m): **2.60**

Percentage retained on 20mm sieve : **58**

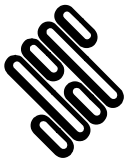


Description : **Reddish brown sandy very silty GRAVEL with high cobble content**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	14.0	12.5	16.0	16.5	-
MCV	9.7	11.4	7.2	3.6	-



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# MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

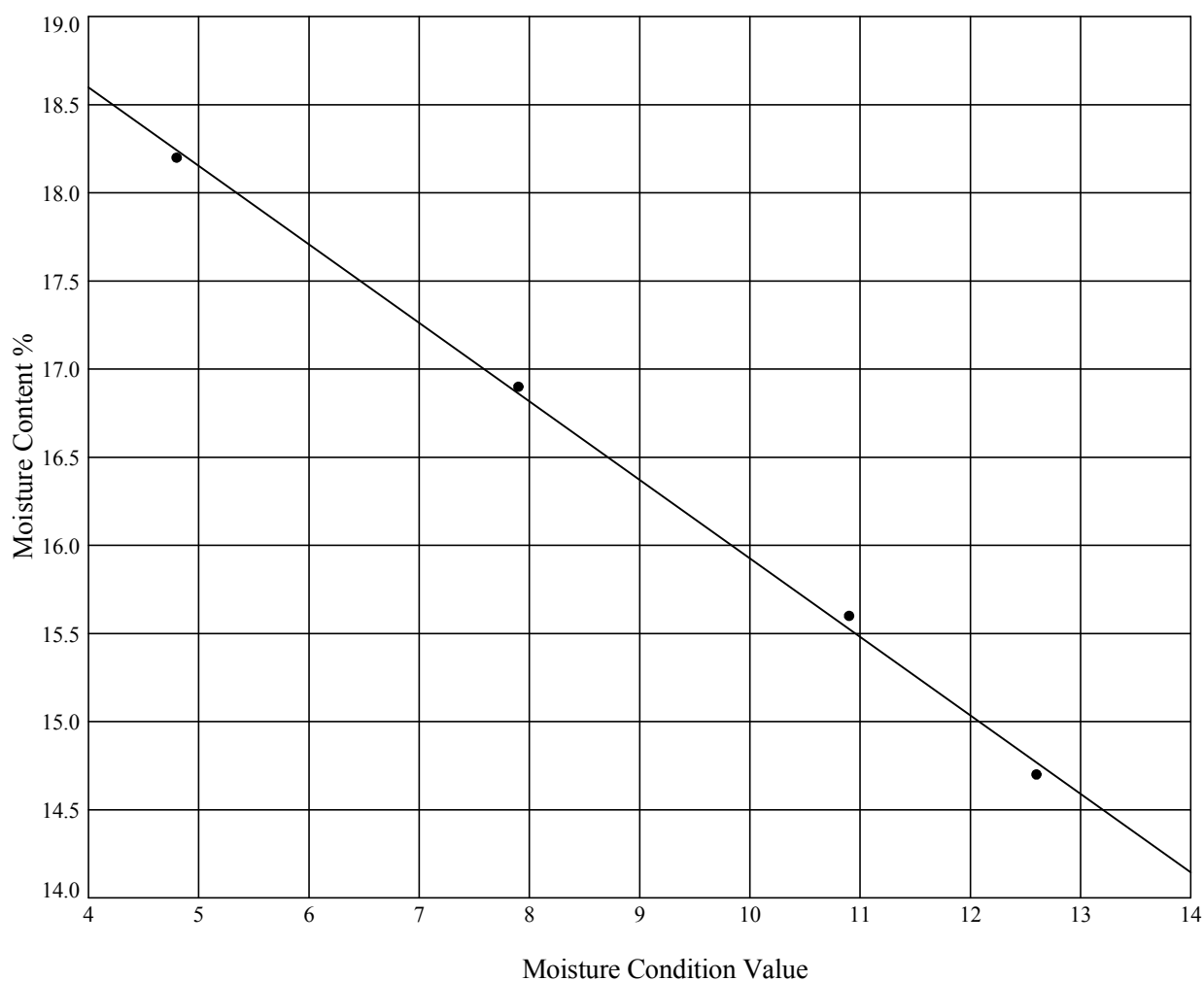
Trial Pit : **TP328**      Sample Ref: **1**      Sample Type: **LB**      Depth (m): **2.10**

Percentage retained on 20mm sieve : **9**

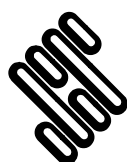
Description : **Reddish brown slightly gravelly slightly sandy silty CLAY**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	15.6	16.9	18.2	14.7	-
MCV	10.9	7.9	4.8	12.6	-



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Contract Ref:

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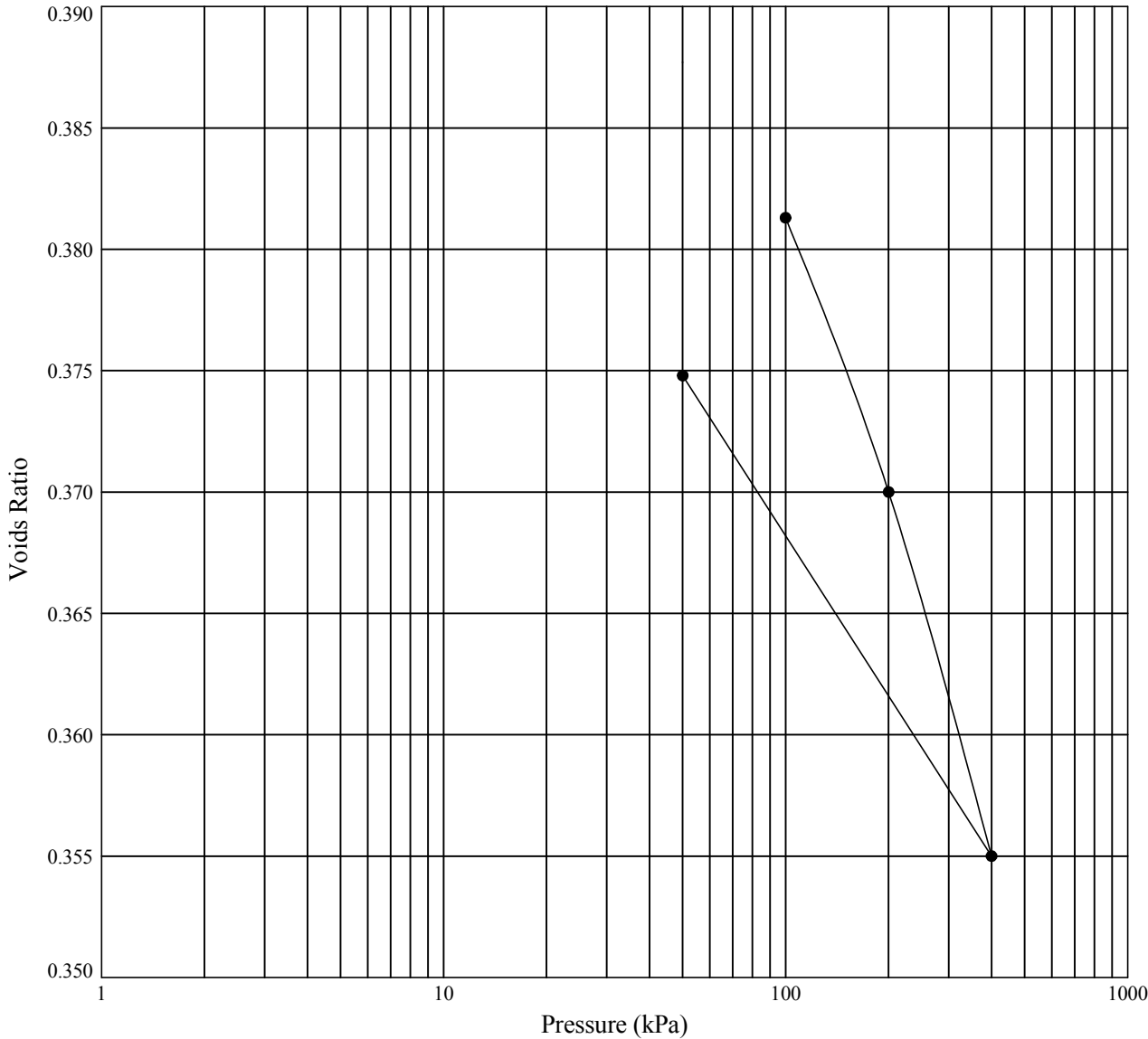


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ONE DIMENSIONAL CONSOLIDATION TEST




In accordance with BS1377:Part 5:1990

Position ID : CP216      Sample Ref: 3      Sample Type: U      Depth (m): 1.41



Initial Specimen Condition		Final Specimen Condition		Test Results		
Moisture Content (%)	: 14	Moisture Content (%)	: 16	Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)
Bulk Density (Mg/m³)	: 2.16	Bulk Density (Mg/m³)	: 2.24	0 - 50	Sample	Swelling
Dry Density (Mg/m³)	: 1.89	Dry Density (Mg/m³)	: 1.93	50 - 100	0.093	32
Void Ratio	: 0.3985	Void Ratio	: 0.3748	100 - 200	0.081	27
Specimen Details				200 - 400	0.055	43
Description <b>Reddish brown CLAY</b>	Height (mm)		: 20.14	400 - 50	NA	NA
	Diameter (mm)		: 75.05			
	Particle Density (Mg/m³) (assumed)		: 2.65			
	Swelling Pressure (kPa)		: NA			

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			15/11/13
	Contract <b>East Midlands Gateway - Zone 1</b>	Contract Ref: <b>744186</b> 	

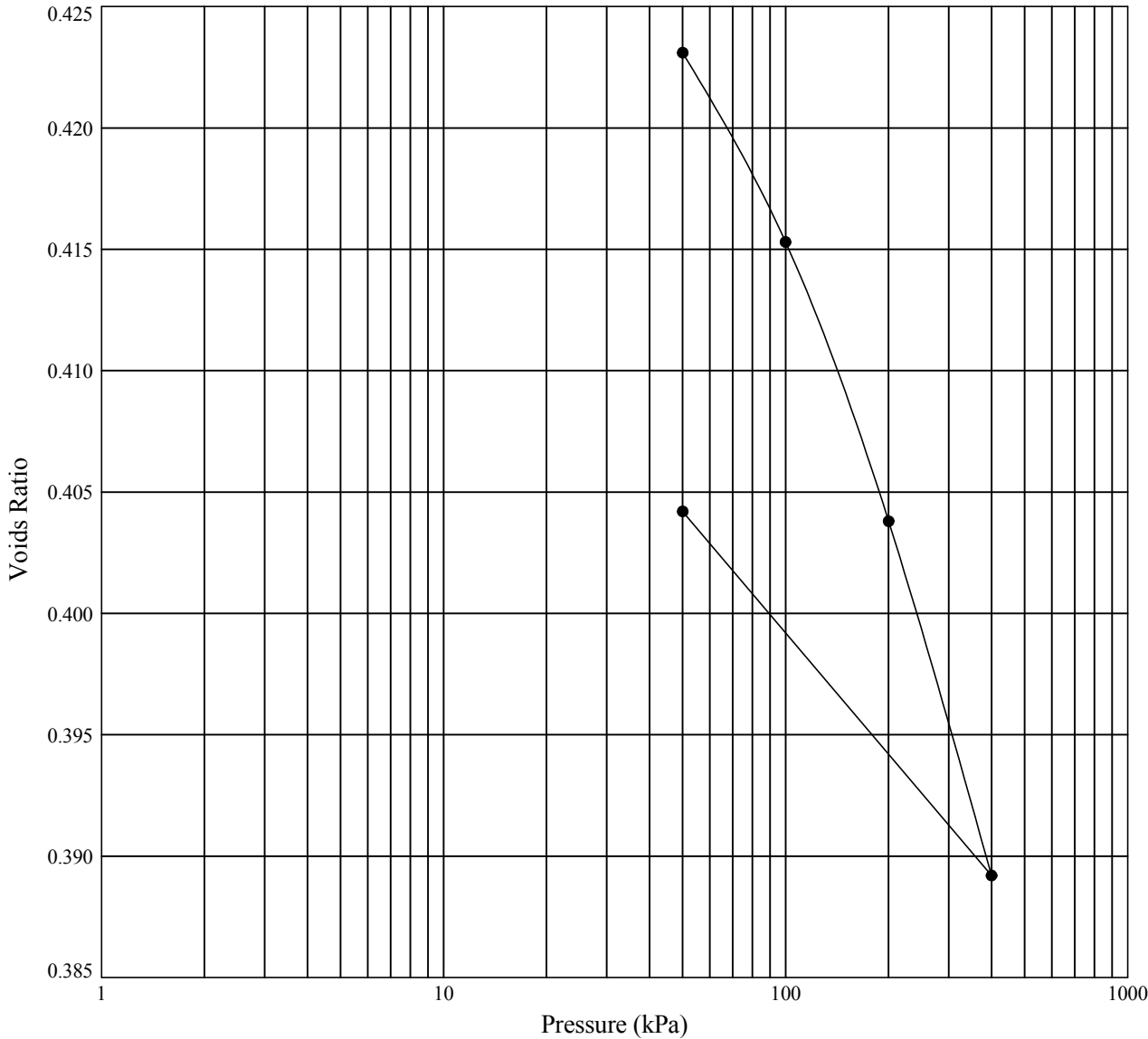


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# ONE DIMENSIONAL CONSOLIDATION TEST

In accordance with BS1377:Part 5:1990

Position ID : CP218      Sample Ref: 4      Sample Type: U      Depth (m): 2.02



Initial Specimen Condition		Final Specimen Condition		Test Results		
Moisture Content (%)	: 14	Moisture Content (%)	: 17	Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)
Bulk Density (Mg/m³)	: 2.09	Bulk Density (Mg/m³)	: 2.20	0 - 50	0.32	105
Dry Density (Mg/m³)	: 1.83	Dry Density (Mg/m³)	: 1.88	50 - 100	0.11	22
Void Ratio	: 0.4462	Void Ratio	: 0.4042	100 - 200	0.081	37
Specimen Details				200 - 400	0.052	44
Description <b>Reddish brown slightly gravelly sandy CLAY</b>	Height (mm)		: 19.62	400 - 50	NA	NA
	Diameter (mm)		: 75.08			
	Particle Density (Mg/m³) (assumed)		: 2.65			
	Swelling Pressure (kPa)		: NA			

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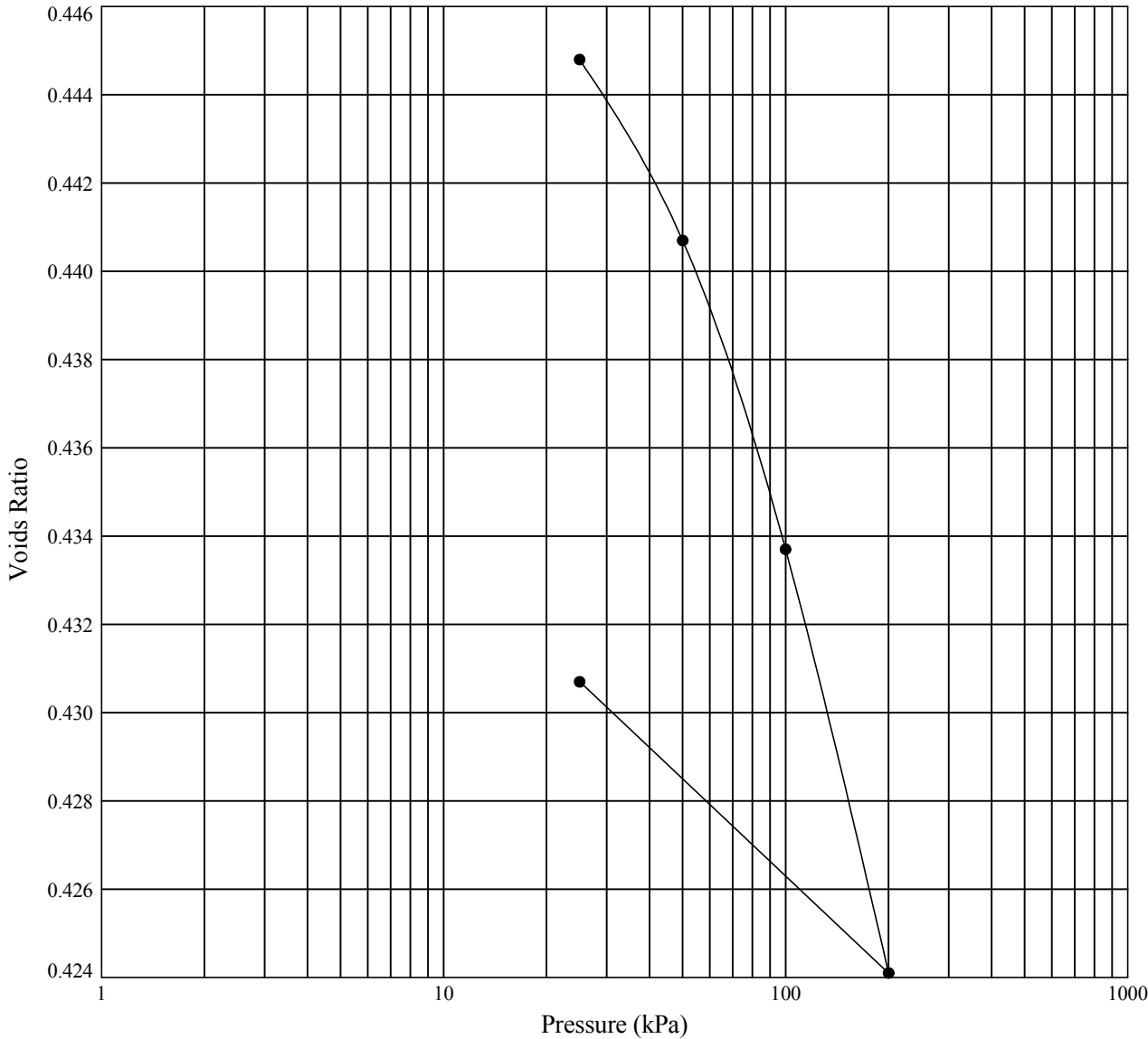
 <b>STRUCTURAL SOILS</b> 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
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ONE DIMENSIONAL CONSOLIDATION TEST


In accordance with BS1377:Part 5:1990

Position ID : CP220      Sample Ref: 5      Sample Type: U      Depth (m): 1.50



Initial Specimen Condition		Final Specimen Condition		Test Results		
Moisture Content (%)	: 9.9	Moisture Content (%)	: 14	Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)
Bulk Density (Mg/m³)	: 2.00	Bulk Density (Mg/m³)	: 2.11	0 - 25	0.28	23
Dry Density (Mg/m³)	: 1.82	Dry Density (Mg/m³)	: 1.85	25 - 50	0.11	13
Void Ratio	: 0.4549	Void Ratio	: 0.4307	50 - 100	0.097	27
Specimen Details				100 - 200	0.067	15
Description		Height (mm)	: 20.00	200 - 25	NA	NA
Brown clayey gravelly SAND		Diameter (mm)	: 75.00			
		Particle Density (Mg/m³)	: 2.65			
		(assumed)				
		Swelling Pressure (kPa)	: NA			

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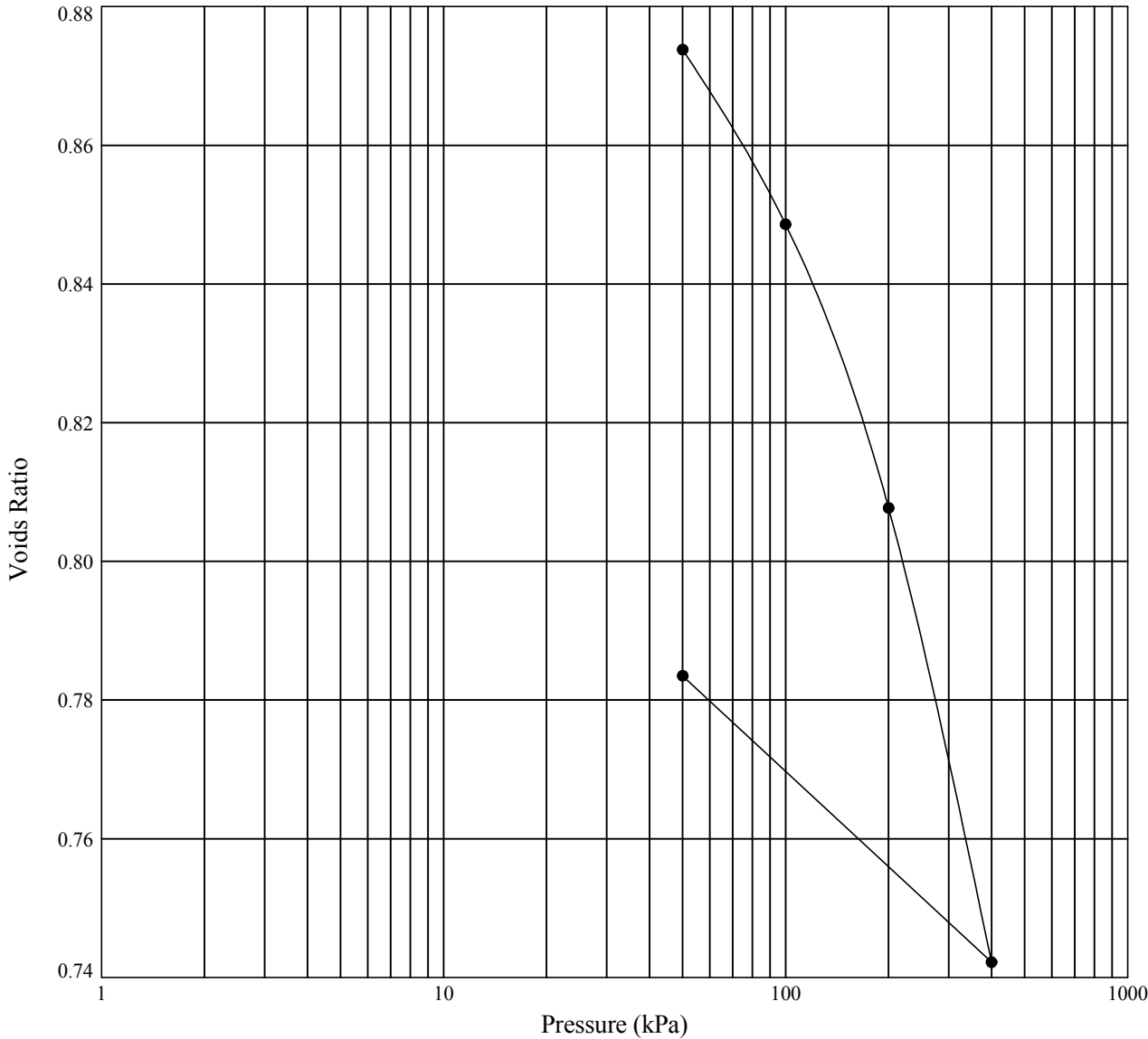
 <div>STRUCTURAL SOILS 1a Princess Street Bedminster Bristol BS3 4AG</div>	Compiled By		Date
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	Contract		Contract Ref:
East Midlands Gateway - Zone 1		744186	
			

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# ONE DIMENSIONAL CONSOLIDATION TEST


In accordance with BS1377:Part 5:1990

Position ID : CP221      Sample Ref: 9      Sample Type: U      Depth (m): 3.39



Initial Specimen Condition		Final Specimen Condition		Test Results		
Moisture Content (%)	: 40	Moisture Content (%)	: 37	Pressure Range (kPa)	Mv (m <sup>2</sup> /MN)	Cv (m <sup>2</sup> /yr)
Bulk Density (Mg/m <sup>3</sup> )	: 1.94	Bulk Density (Mg/m <sup>3</sup> )	: 2.03	0 - 50	0.48	1.7
Dry Density (Mg/m <sup>3</sup> )	: 1.38	Dry Density (Mg/m <sup>3</sup> )	: 1.48	50 - 100	0.27	1.0
Void Ratio	: 0.9200	Void Ratio	: 0.7835	100 - 200	0.22	1.2
Specimen Details				200 - 400	0.18	0.62
Description <b>Reddish brown slightly sandy CLAY</b>	Height (mm)		: 18.91	400 - 50	NA	NA
	Diameter (mm)		: 75.06			
	Particle Density (Mg/m <sup>3</sup> )		: 2.65			
	(assumed)					
	Swelling Pressure (kPa)		: NA			

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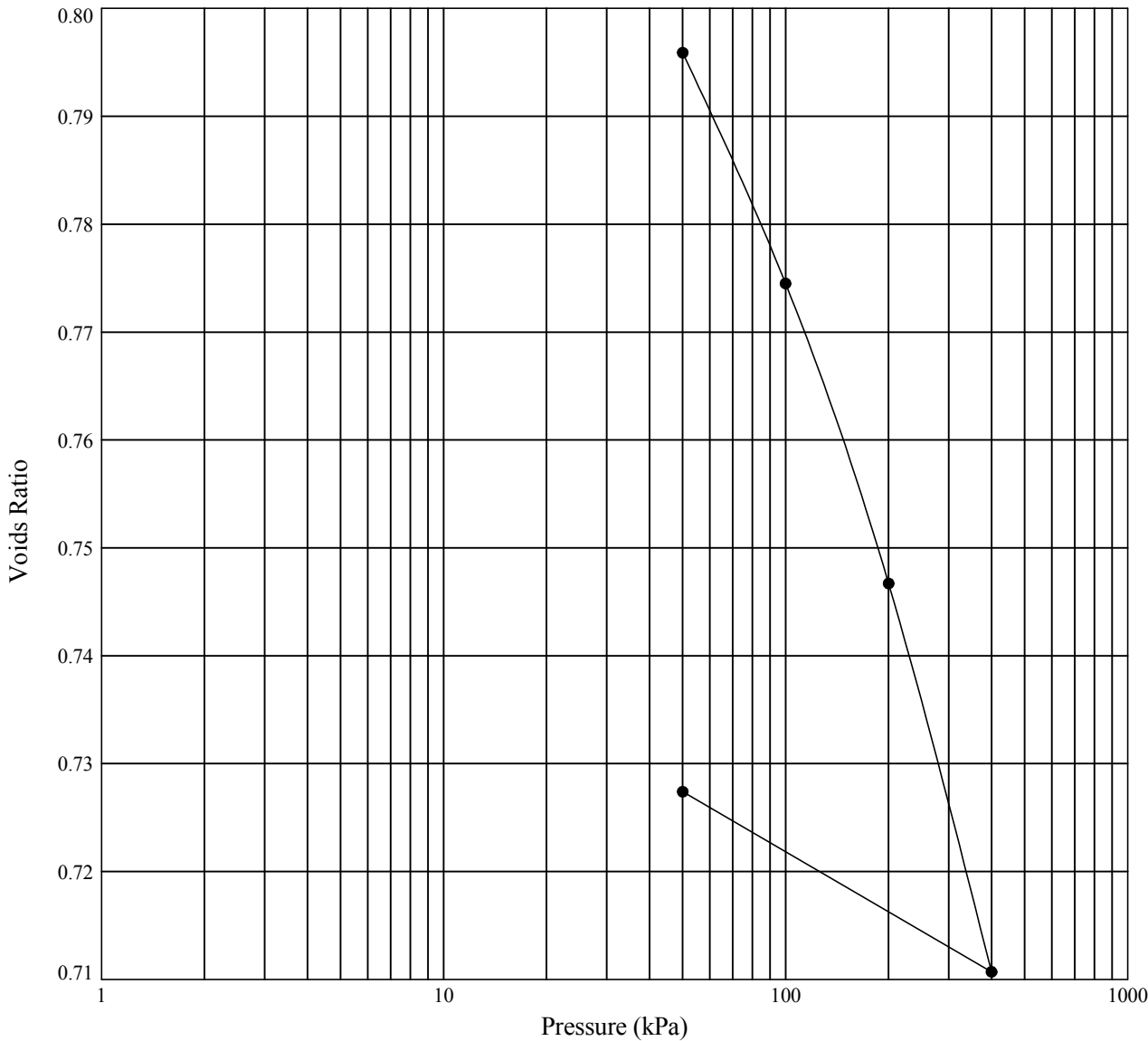
 <b>STRUCTURAL SOILS</b> 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date
			15/11/13
	Contract <b>East Midlands Gateway - Zone 1</b>	Contract Ref: <b>744186</b> 	

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ONE DIMENSIONAL CONSOLIDATION TEST

In accordance with BS1377:Part 5:1990

Position ID : CP222      Sample Ref: 9      Sample Type: U      Depth (m): 3.40



Initial Specimen Condition		Final Specimen Condition		Test Results		
Moisture Content (%)	: 34	Moisture Content (%)	: 30	Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)
Bulk Density (Mg/m³)	: 1.90	Bulk Density (Mg/m³)	: 1.99	0 - 50	0.81	37
Dry Density (Mg/m³)	: 1.42	Dry Density (Mg/m³)	: 1.53	50 - 100	0.24	61
Void Ratio	: 0.8717	Void Ratio	: 0.7274	100 - 200	0.16	34
Specimen Details				200 - 400	0.10	31
Description <b>Brown slightly gravelly slightly sandy SILT</b>	Height (mm)		: 20.50	400 - 50	NA	NA
	Diameter (mm)		: 75.03			
	Particle Density (Mg/m³) (assumed)		: 2.65			
	Swelling Pressure (kPa)		: NA			

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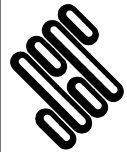
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	Contract <b>East Midlands Gateway - Zone 1</b>		Contract Ref: <b>744186</b> 

# SUMMARY OF LABORATORY HAND PENETROMETER & VANE TEST RESULTS

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content (%)	Vane Type	Average Reading (kPa)	Sample Description
CP204	7	U	2.20	15	HVP	134	Reddish brown slightly sandy CLAY

Key : HVP = Hand Vane (Peak), HVR = Hand Vane (Remoulded), PP = Pocket Penetrometer.

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	East Midlands Gateway - Zone 1			

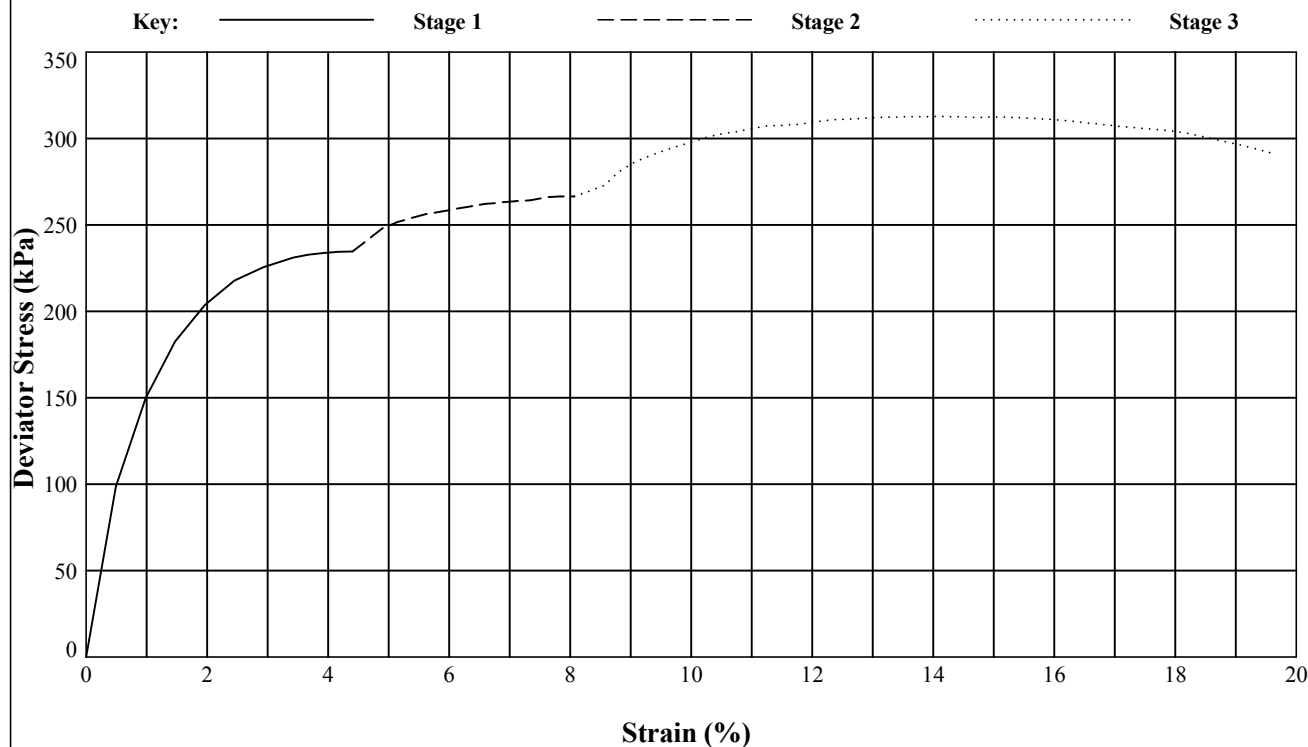
# UNCONSOLIDATED QUICK UNDRAINED (MULTI-STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377:Part 7:1990, Clause 9

Position ID : **CP203**      Sample Ref: **5**      Sample Type: **U**      Depth (m): **1.35**

Description : **Brown slightly sandy silty CLAY**

STAGE NUMBER		1	2	3
SAMPLE DETAILS	Sample Condition	Undisturbed		
	Orientation of sample	Vertical		
	Diameter (mm)	102.12		
	Height (mm)	204.45		
	Moisture Content (%)	23		
	Bulk Density (Mg/m <sup>3</sup> )	1.91		
	Dry Density (Mg/m <sup>3</sup> )	1.56		
TEST DETAILS	Membrane Thickness (mm)	0.62	0.62	0.62
	Rate of Axial Displacement (%/min)	1.22	1.22	1.22
	Cell Pressure (kPa)	40	80	160
	Membrane Correction (kPa)	0.73	1.15	1.79
	Corrected Deviator Stress (kPa)	235	267	313
	Undrained Shear Strength (kPa)	117	133	156
	Strain at Failure (%)	4.4	7.8	14.2
	Mode of Failure			Compound



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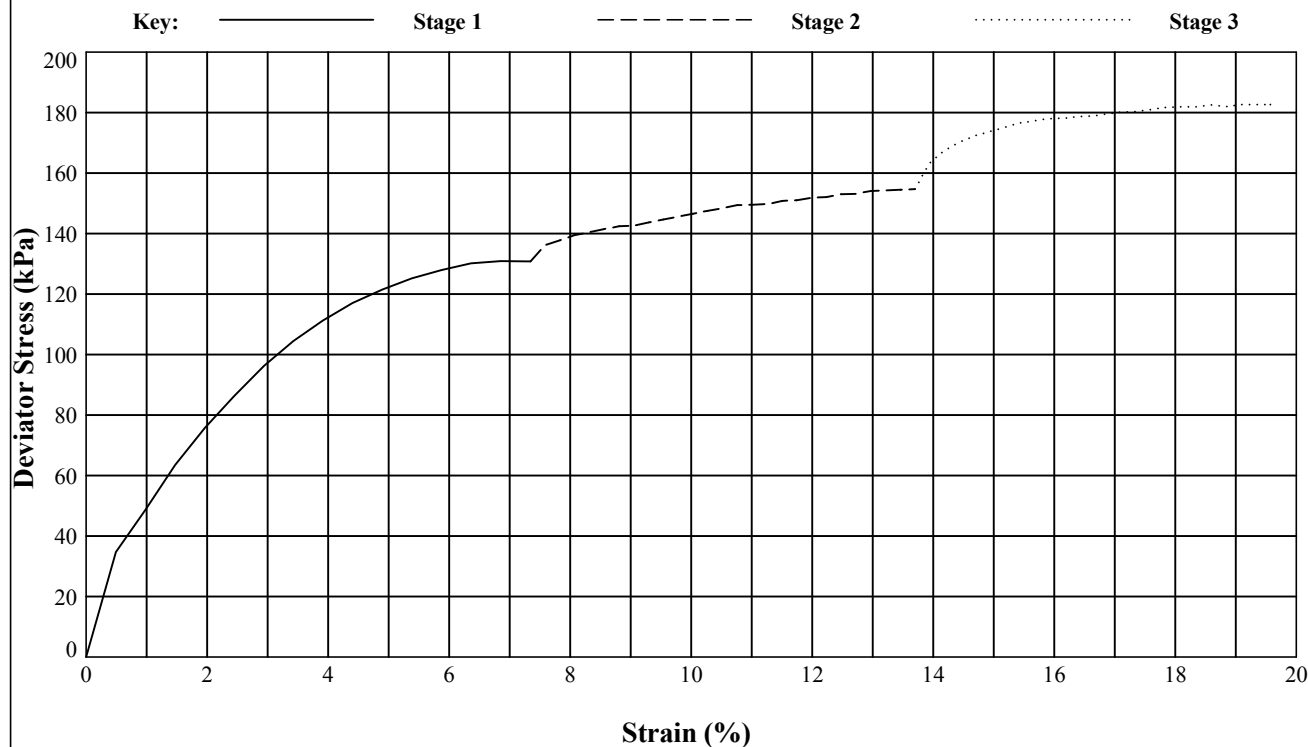
# UNCONSOLIDATED QUICK UNDRAINED (MULTI-STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377:Part 7:1990, Clause 9

Position ID : **CP210**      Sample Ref: **3**      Sample Type: **U**      Depth (m): **1.37**

Description : **Reddish brown mottled grey slightly gravelly CLAY**

STAGE NUMBER		1	2	3
SAMPLE DETAILS	Sample Condition	Undisturbed		
	Orientation of sample	Vertical		
	Diameter (mm)	103.19		
	Height (mm)	204.38		
	Moisture Content (%)	18		
	Bulk Density (Mg/m <sup>3</sup> )	2.10		
	Dry Density (Mg/m <sup>3</sup> )	1.78		
TEST DETAILS	Membrane Thickness (mm)	0.55	0.55	0.55
	Rate of Axial Displacement (%/min)	1.22	1.22	1.22
	Cell Pressure (kPa)	40	80	160
	Membrane Correction (kPa)	0.91	1.53	1.96
	Corrected Deviator Stress (kPa)	131	155	183
	Undrained Shear Strength (kPa)	65	77	91
	Strain at Failure (%)	6.8	13.7	19.1
	Mode of Failure			Compound



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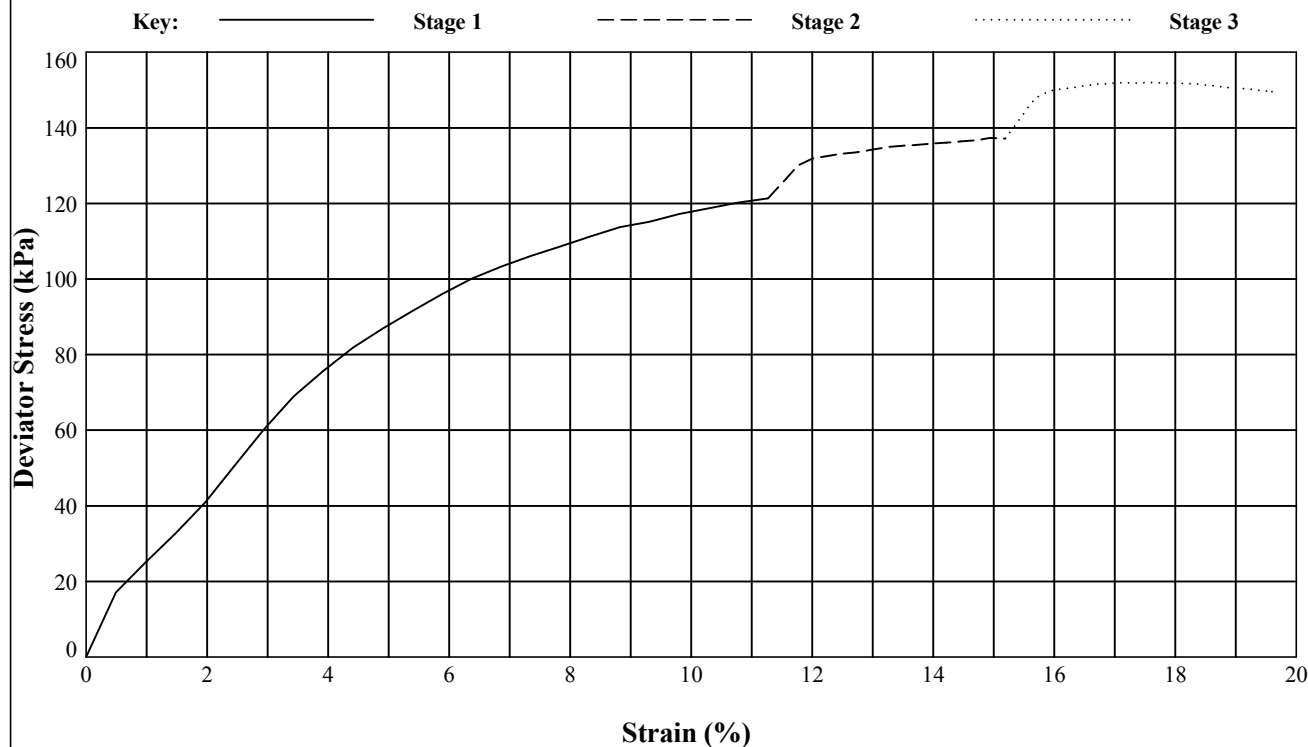
# UNCONSOLIDATED QUICK UNDRAINED (MULTI-STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377:Part 7:1990, Clause 9

Position ID : **CP210**      Sample Ref: **9**      Sample Type: **U**      Depth (m): **3.15**

Description : **Brown mottled grey slightly sandy CLAY**

STAGE NUMBER		1	2	3
SAMPLE DETAILS	Sample Condition	Undisturbed		
	Orientation of sample	Vertical		
	Diameter (mm)	103.34		
	Height (mm)	204.08		
	Moisture Content (%)	21		
	Bulk Density (Mg/m <sup>3</sup> )	2.12		
	Dry Density (Mg/m <sup>3</sup> )	1.75		
TEST DETAILS	Membrane Thickness (mm)	0.55	0.55	0.55
	Rate of Axial Displacement (%/min)	1.22	1.22	1.22
	Cell Pressure (kPa)	60	120	240
	Membrane Correction (kPa)	1.33	1.63	1.84
	Corrected Deviator Stress (kPa)	121	137	152
	Undrained Shear Strength (kPa)	61	69	76
	Strain at Failure (%)	11.3	14.9	17.6
	Mode of Failure			Compound



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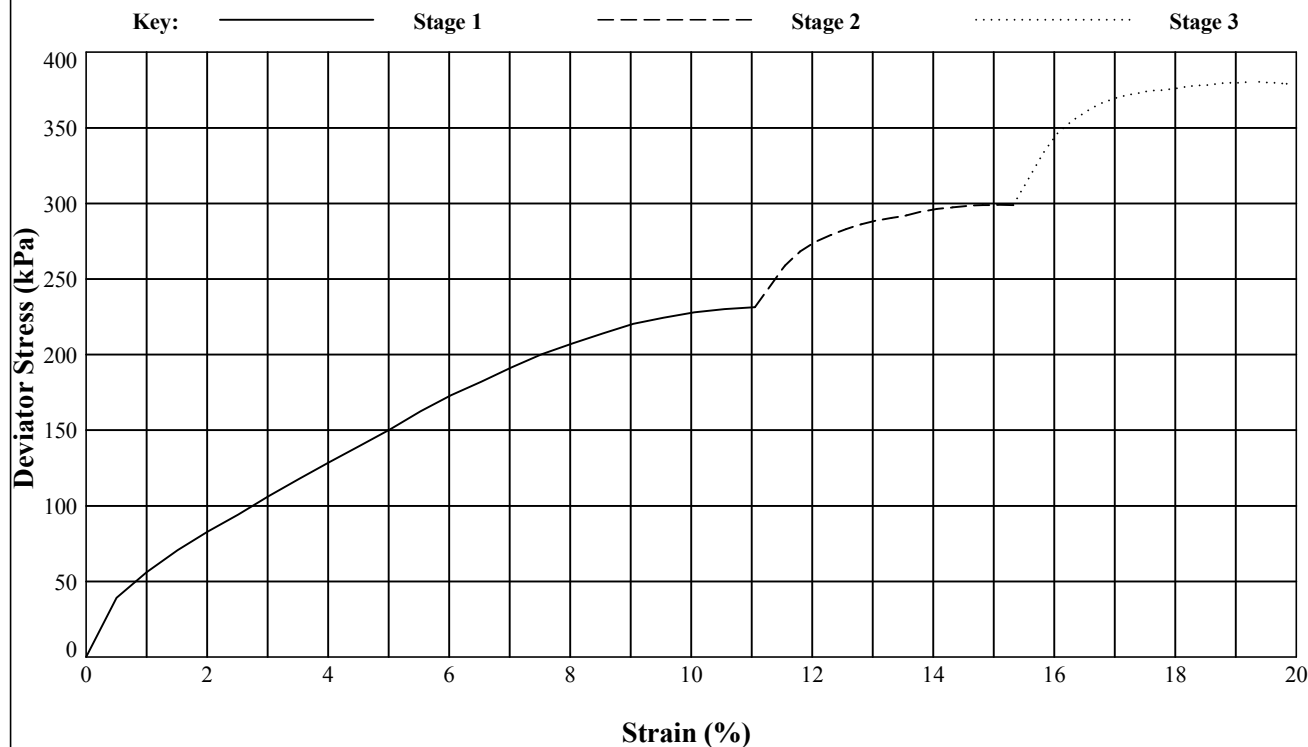
# UNCONSOLIDATED QUICK UNDRAINED (MULTI-STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377:Part 7:1990, Clause 9

Position ID : **CP210**      Sample Ref: **14**      Sample Type: **U**      Depth (m): **5.10**

Description : **Brown slightly sandy slightly gravelly CLAY**

STAGE NUMBER		1	2	3
SAMPLE DETAILS	Sample Condition	Undisturbed		
	Orientation of sample	Vertical		
	Diameter (mm)	103.32		
	Height (mm)	199.08		
	Moisture Content (%)	15		
	Bulk Density (Mg/m <sup>3</sup> )	2.13		
	Dry Density (Mg/m <sup>3</sup> )	1.85		
TEST DETAILS	Membrane Thickness (mm)	0.57	0.57	0.57
	Rate of Axial Displacement (%/min)	1.26	1.26	1.26
	Cell Pressure (kPa)	80	160	320
	Membrane Correction (kPa)	1.36	1.70	2.05
	Corrected Deviator Stress (kPa)	231	299	380
	Undrained Shear Strength (kPa)	116	150	190
	Strain at Failure (%)	11.0	15.1	19.3
	Mode of Failure			Compound



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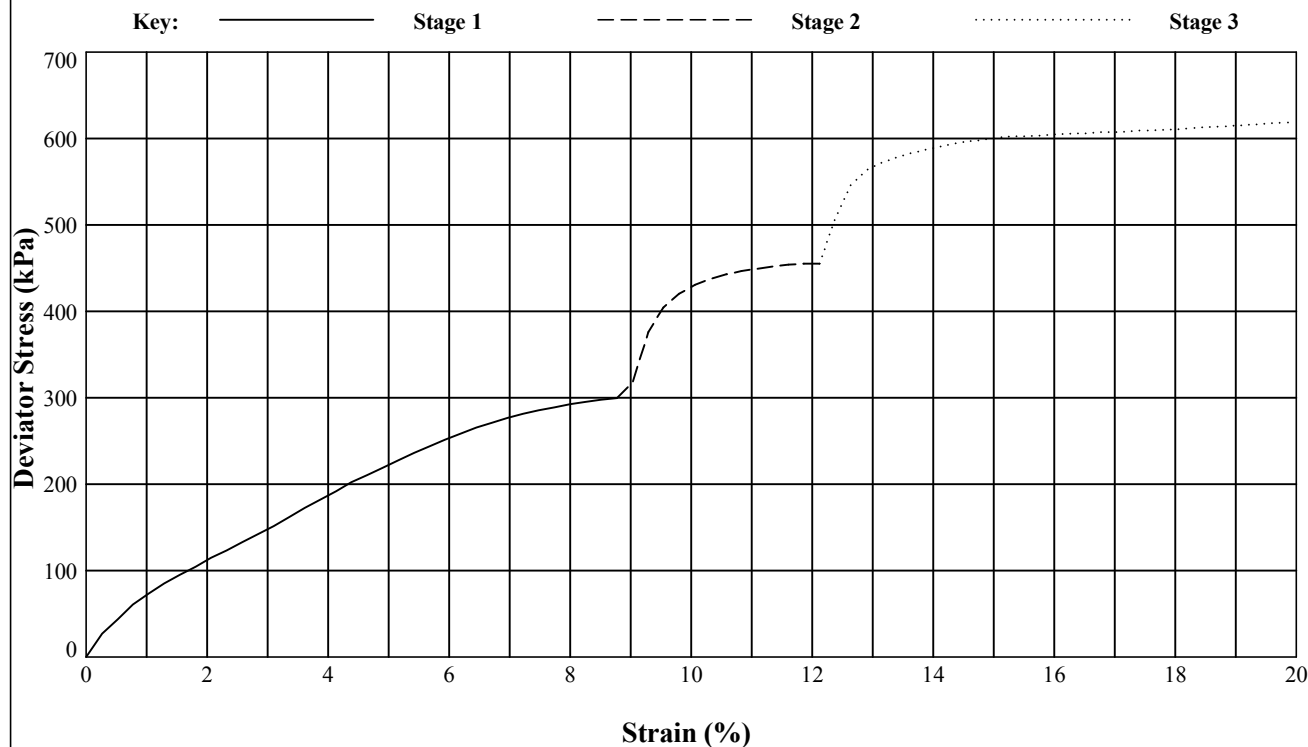
# UNCONSOLIDATED QUICK UNDRAINED (MULTI-STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377:Part 7:1990, Clause 9

Position ID : **CP210**      Sample Ref: **19**      Sample Type: **U**      Depth (m): **7.00**

Description : **Reddish brown mottled grey CLAY**

STAGE NUMBER		1	2	3
SAMPLE DETAILS	Sample Condition	Undisturbed		
	Orientation of sample	Vertical		
	Diameter (mm)	103.40		
	Height (mm)	193.85		
	Moisture Content (%)	14		
	Bulk Density (Mg/m <sup>3</sup> )	2.18		
	Dry Density (Mg/m <sup>3</sup> )	1.92		
TEST DETAILS	Membrane Thickness (mm)	0.49	0.49	0.49
	Rate of Axial Displacement (%/min)	1.29	1.29	1.29
	Cell Pressure (kPa)	100	200	300
	Membrane Correction (kPa)	0.98	1.23	1.80
	Corrected Deviator Stress (kPa)	300	455	619
	Undrained Shear Strength (kPa)	150	228	309
	Strain at Failure (%)	8.8	11.9	19.9
	Mode of Failure			Compound



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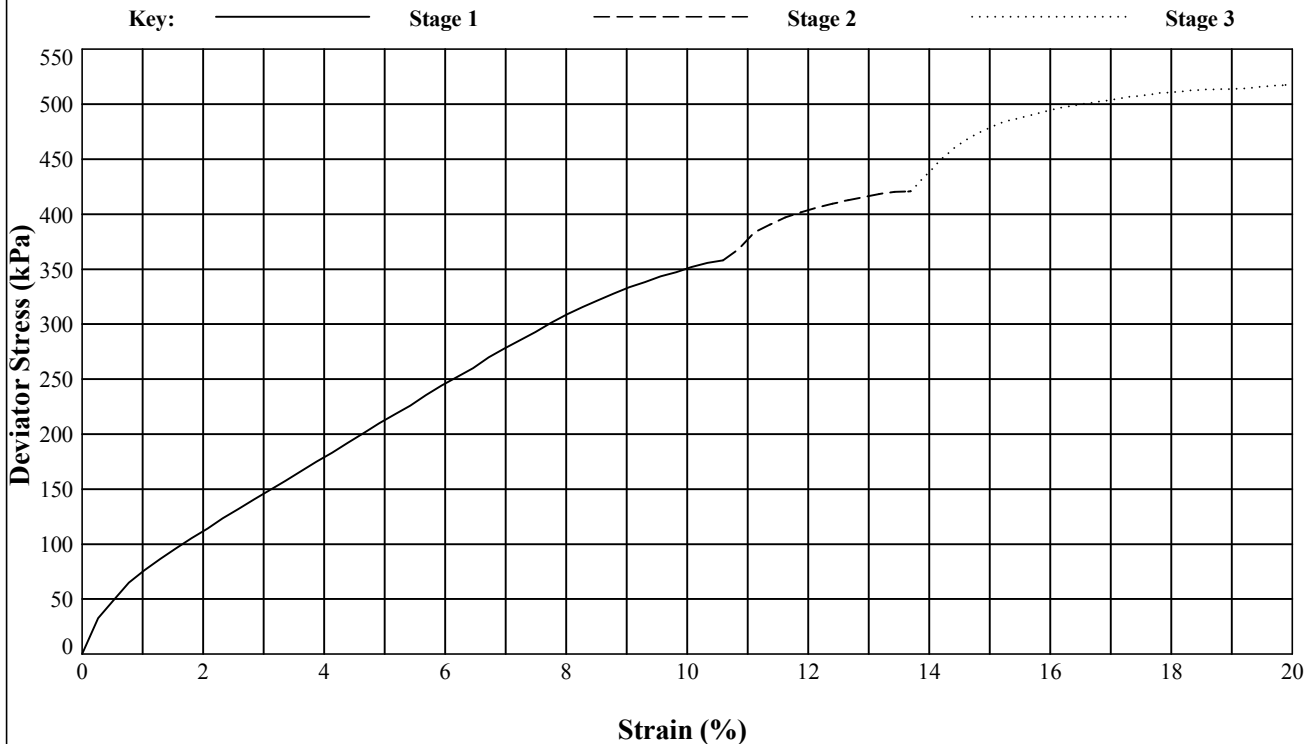
# UNCONSOLIDATED QUICK UNDRAINED (MULTI-STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377:Part 7:1990, Clause 9

Position ID : **CP211**      Sample Ref: **9**      Sample Type: **U**      Depth (m): **3.00**

Description : **Reddish brown mottled grey slightly sandy CLAY**


STAGE NUMBER		1	2	3
SAMPLE DETAILS	Sample Condition	Undisturbed		
	Orientation of sample	Vertical		
	Diameter (mm)	103.00		
	Height (mm)	193.57		
	Moisture Content (%)	13		
	Bulk Density (Mg/m <sup>3</sup> )	2.20		
	Dry Density (Mg/m <sup>3</sup> )	1.95		
TEST DETAILS	Membrane Thickness (mm)	0.48	0.48	0.48
	Rate of Axial Displacement (%/min)	1.29	1.29	1.29
	Cell Pressure (kPa)	60	120	240
	Membrane Correction (kPa)	1.12	1.34	1.77
	Corrected Deviator Stress (kPa)	358	421	518
	Undrained Shear Strength (kPa)	179	210	259
	Strain at Failure (%)	10.6	13.7	19.9
	Mode of Failure			Compound



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

Compiled By		Date
[Redacted]		15/11/13
Contract		Contract Ref:
<b>East Midlands Gateway - Zone 1</b>		<b>744186</b>
		

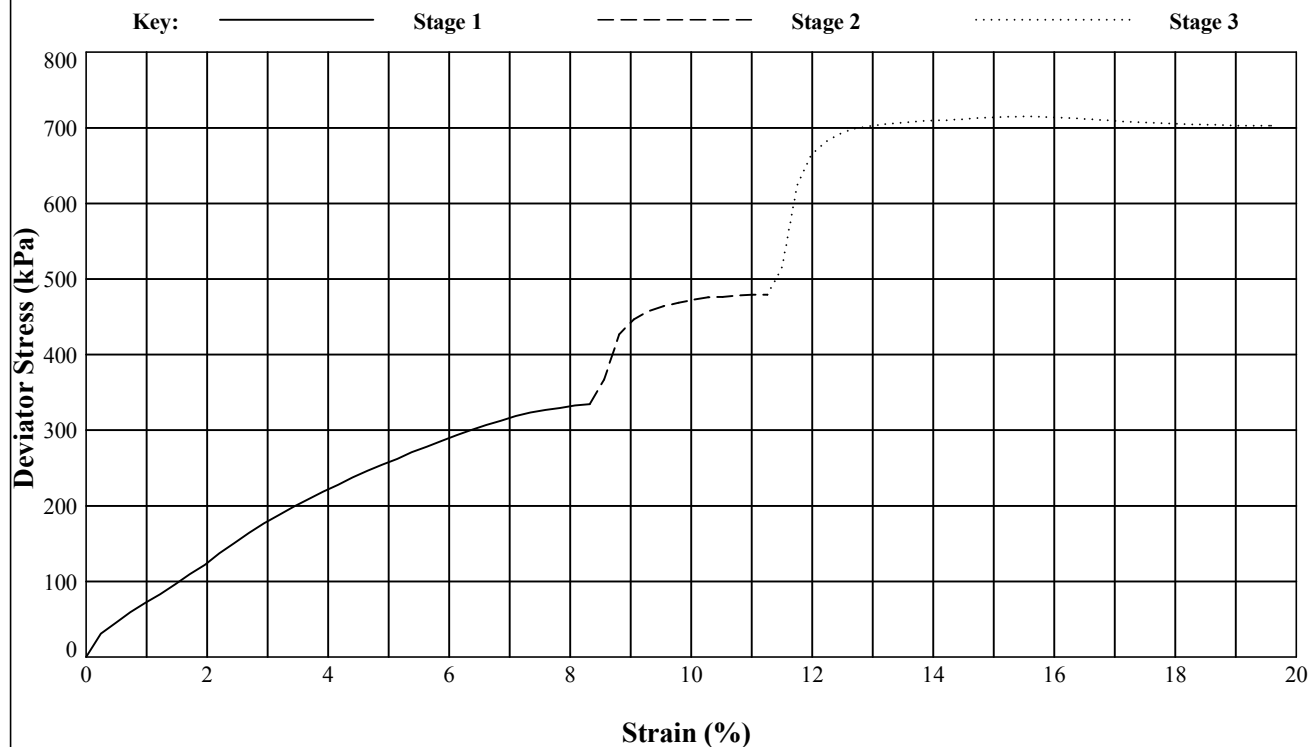
# UNCONSOLIDATED QUICK UNDRAINED (MULTI-STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377:Part 7:1990, Clause 9

Position ID : **CP211**      Sample Ref: **15**      Sample Type: **U**      Depth (m): **5.01**

Description : **Reddish brown mottled grey slightly sandy CLAY**

STAGE NUMBER		1	2	3
SAMPLE DETAILS	Sample Condition	Undisturbed		
	Orientation of sample	Vertical		
	Diameter (mm)	103.25		
	Height (mm)	204.32		
	Moisture Content (%)	15		
	Bulk Density (Mg/m <sup>3</sup> )	2.20		
	Dry Density (Mg/m <sup>3</sup> )	1.91		
TEST DETAILS	Membrane Thickness (mm)	0.61	0.61	0.61
	Rate of Axial Displacement (%/min)	1.22	1.22	1.22
	Cell Pressure (kPa)	80	160	320
	Membrane Correction (kPa)	1.17	1.46	1.87
	Corrected Deviator Stress (kPa)	334	479	715
	Undrained Shear Strength (kPa)	167	240	358
	Strain at Failure (%)	8.3	11.0	15.7
	Mode of Failure			Compound



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



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Compiled By		Date
MATT STOKES		15/11/13
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# UNCONSOLIDATED QUICK UNDRAINED (MULTI-STAGE) TRIAXIAL COMPRESSION TEST

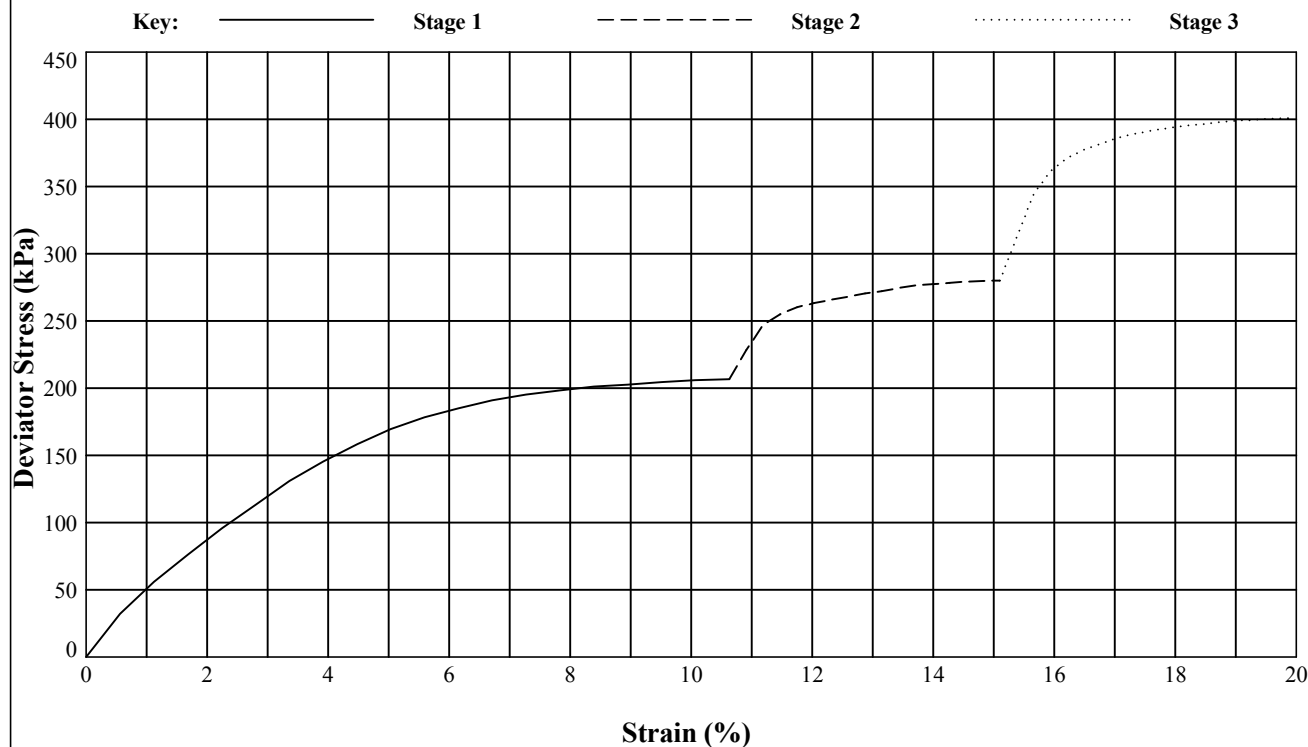
In accordance with BS1377:Part 7:1990, Clause 9

Position ID : **CP216**      Sample Ref: **3**      Sample Type: **U**      Depth (m): **1.20**

Description : **Brown mottled grey CLAY**

Remarks : **Non-standard height**

STAGE NUMBER		1	2	3
SAMPLE DETAILS	Sample Condition	Undisturbed		
	Orientation of sample	Vertical		
	Diameter (mm)	103.45		
	Height (mm)	178.75		
	Moisture Content (%)	15		
	Bulk Density (Mg/m <sup>3</sup> )	2.11		
	Dry Density (Mg/m <sup>3</sup> )	1.83		
TEST DETAILS	Membrane Thickness (mm)	0.64	0.64	0.64
	Rate of Axial Displacement (%/min)	1.40	1.40	1.40
	Cell Pressure (kPa)	50	100	200
	Membrane Correction (kPa)	1.49	1.91	2.35
	Corrected Deviator Stress (kPa)	207	280	401
	Undrained Shear Strength (kPa)	103	140	200
	Strain at Failure (%)	10.6	15.1	19.9
	Mode of Failure			Compound



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



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Compiled By		Date
[Redacted]		15/11/13
Contract		Contract Ref:
<b>East Midlands Gateway - Zone 1</b>		<b>744186</b>



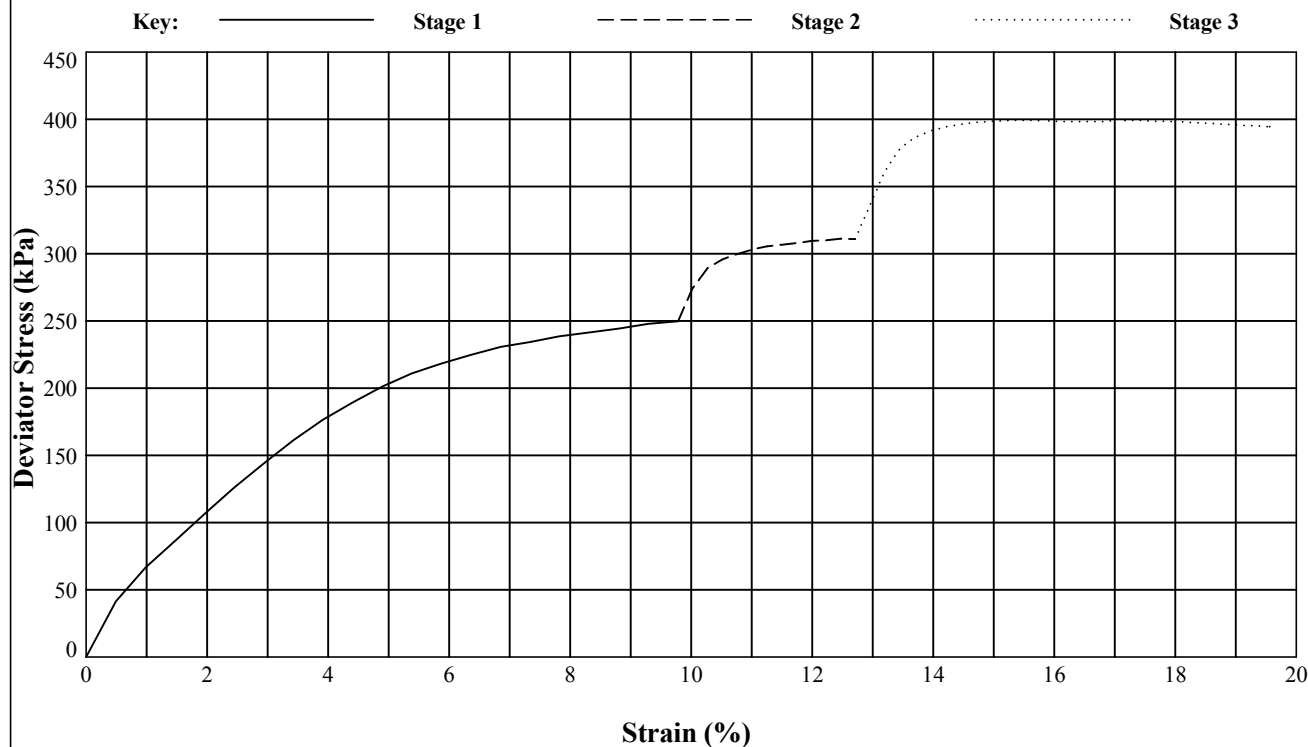
# UNCONSOLIDATED QUICK UNDRAINED (MULTI-STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377:Part 7:1990, Clause 9

Position ID : **CP218**      Sample Ref: **4**      Sample Type: **U**      Depth (m): **2.06**

Description : **Reddish brown slightly gravelly sandy CLAY**

STAGE NUMBER		1	2	3
SAMPLE DETAILS	Sample Condition	Undisturbed		
	Orientation of sample	Vertical		
	Diameter (mm)	103.37		
	Height (mm)	204.50		
	Moisture Content (%)	13		
	Bulk Density (Mg/m <sup>3</sup> )	2.17		
	Dry Density (Mg/m <sup>3</sup> )	1.92		
TEST DETAILS	Membrane Thickness (mm)	0.49	0.49	0.49
	Rate of Axial Displacement (%/min)	1.22	1.22	1.22
	Cell Pressure (kPa)	50	100	200
	Membrane Correction (kPa)	1.07	1.27	1.50
	Corrected Deviator Stress (kPa)	250	311	399
	Undrained Shear Strength (kPa)	125	156	200
	Strain at Failure (%)	9.8	12.5	15.6
	Mode of Failure			Compound



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

Compiled By		Date
[Redacted] <b>MATT STOKES</b>		15/11/13
Contract	Contract Ref:	
<b>East Midlands Gateway - Zone 1</b>	<b>744186</b>	



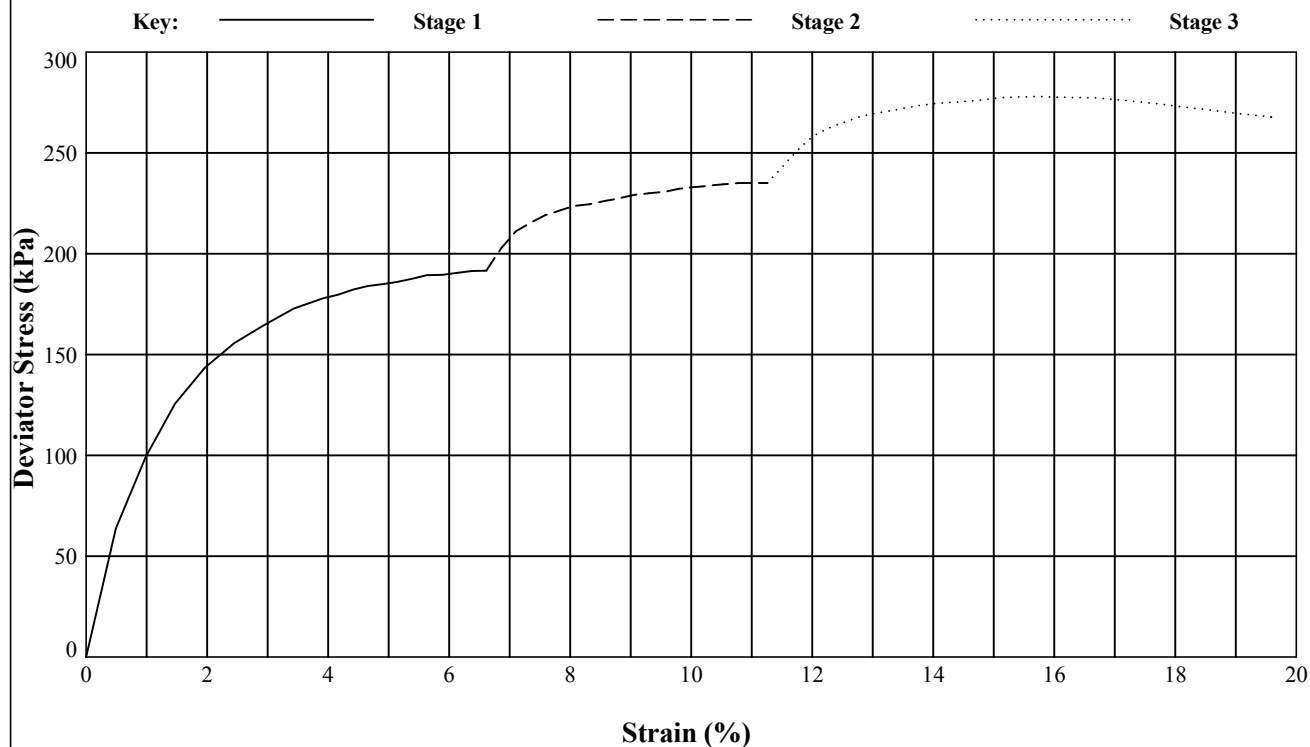
# UNCONSOLIDATED QUICK UNDRAINED (MULTI-STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377:Part 7:1990, Clause 9

Position ID : **CP220**      Sample Ref: **5**      Sample Type: **U**      Depth (m): **1.28**

Description : **Brown mottled grey and light brown slightly gravelly slightly sandy CLAY**

STAGE NUMBER		1	2	3
SAMPLE DETAILS	Sample Condition	Undisturbed		
	Orientation of sample	Vertical		
	Diameter (mm)	101.62		
	Height (mm)	204.19		
	Moisture Content (%)	27		
	Bulk Density (Mg/m <sup>3</sup> )	2.03		
	Dry Density (Mg/m <sup>3</sup> )	1.59		
TEST DETAILS	Membrane Thickness (mm)	0.56	0.56	0.56
	Rate of Axial Displacement (%/min)	1.22	1.22	1.22
	Cell Pressure (kPa)	40	80	160
	Membrane Correction (kPa)	0.91	1.34	1.74
	Corrected Deviator Stress (kPa)	192	235	278
	Undrained Shear Strength (kPa)	96	118	139
	Strain at Failure (%)	6.6	10.8	15.7
	Mode of Failure			Compound



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

Compiled By		Date
[Redacted] MATT STOKES		15/11/13
Contract	Contract Ref:	
<b>East Midlands Gateway - Zone 1</b>	<b>744186</b>	



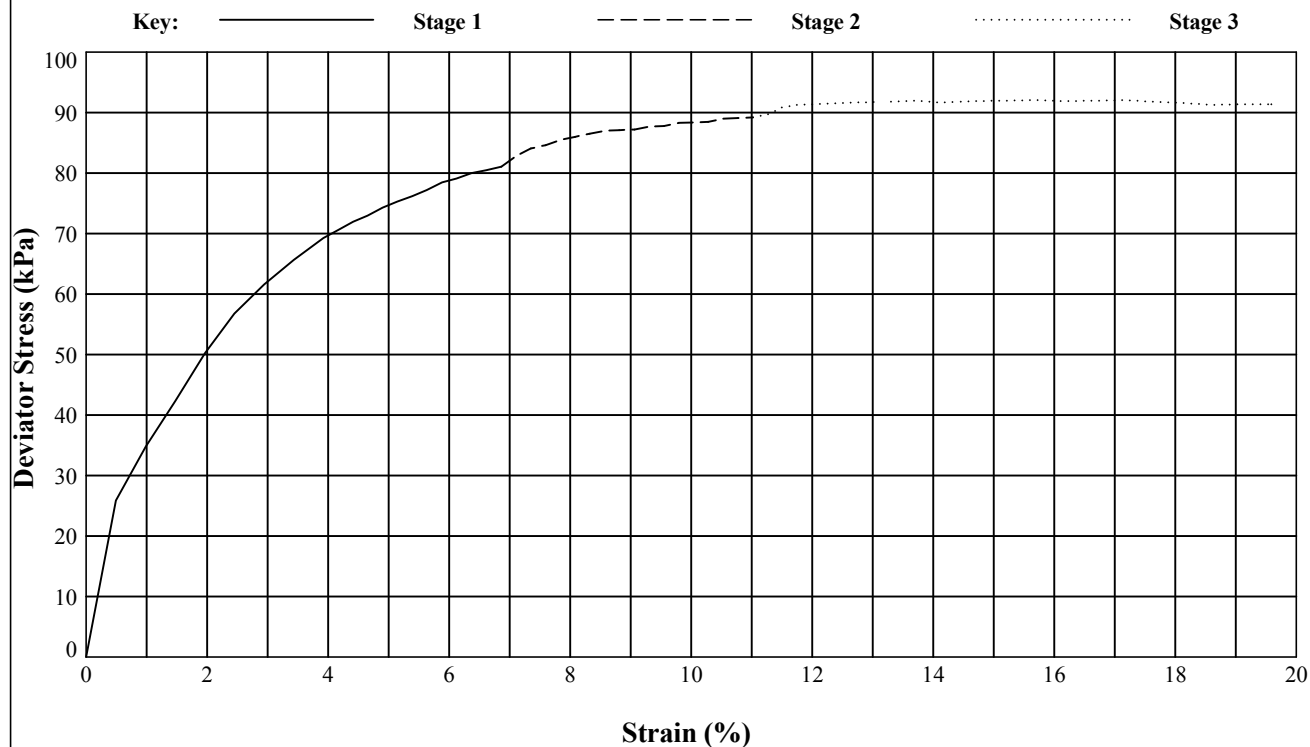
# UNCONSOLIDATED QUICK UNDRAINED (MULTI-STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377:Part 7:1990, Clause 9

Position ID : **CP221**      Sample Ref: **9**      Sample Type: **U**      Depth (m): **3.14**

Description : **Reddish brown slightly sandy CLAY**

STAGE NUMBER		1	2	3
SAMPLE DETAILS	Sample Condition	Undisturbed		
	Orientation of sample	Vertical		
	Diameter (mm)	102.85		
	Height (mm)	204.21		
	Moisture Content (%)	27		
	Bulk Density (Mg/m <sup>3</sup> )	1.92		
	Dry Density (Mg/m <sup>3</sup> )	1.51		
TEST DETAILS	Membrane Thickness (mm)	0.57	0.57	0.57
	Rate of Axial Displacement (%/min)	1.22	1.22	1.22
	Cell Pressure (kPa)	60	120	240
	Membrane Correction (kPa)	0.95	1.37	1.75
	Corrected Deviator Stress (kPa)	81	89	92
	Undrained Shear Strength (kPa)	41	45	46
	Strain at Failure (%)	6.9	11.0	15.7
	Mode of Failure			Compound



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

Compiled By		Date
[Redacted] MATT STOKES		15/11/13
Contract		Contract Ref:
East Midlands Gateway - Zone 1		744186



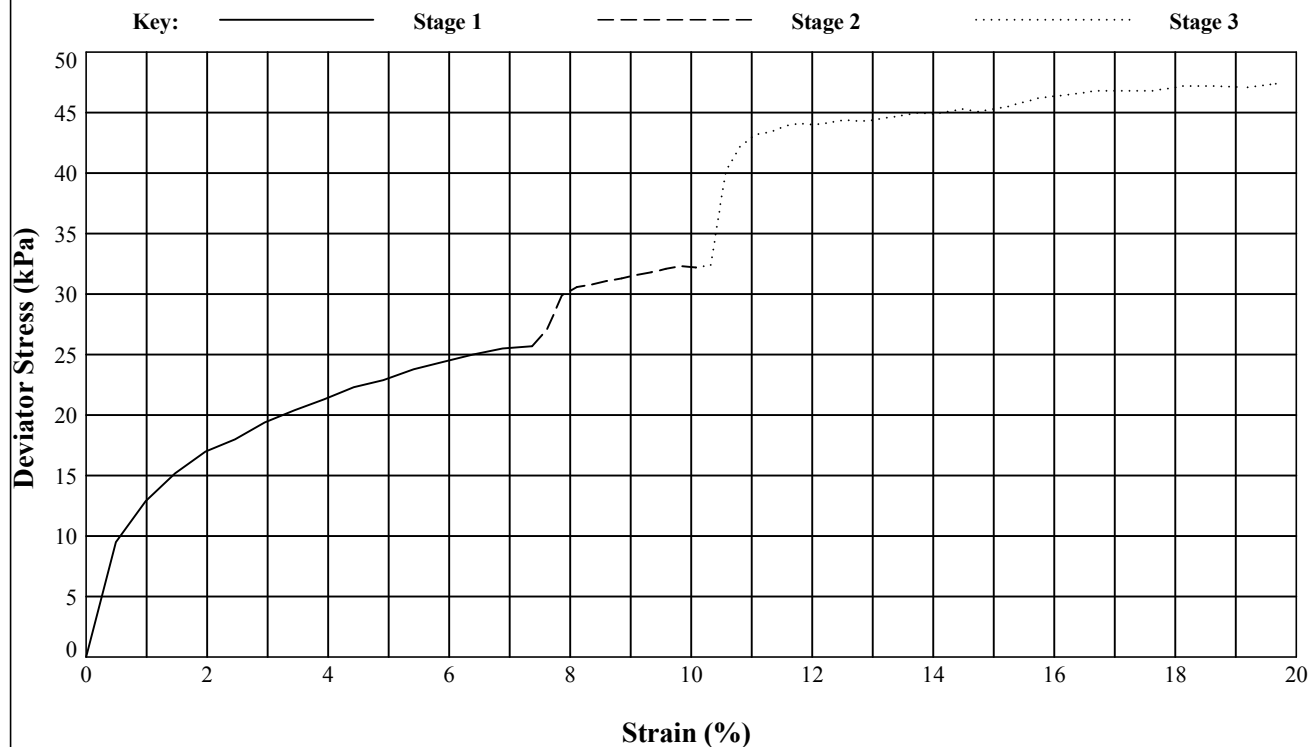
# UNCONSOLIDATED QUICK UNDRAINED (MULTI-STAGE) TRIAXIAL COMPRESSION TEST

In accordance with BS1377:Part 7:1990, Clause 9

Position ID : **CP222**      Sample Ref: **9**      Sample Type: **U**      Depth (m): **3.10**

Description : **Brown slightly gravelly slightly sandy SILT**

STAGE NUMBER		1	2	3
SAMPLE DETAILS	Sample Condition	Undisturbed		
	Orientation of sample	Vertical		
	Diameter (mm)	104.62		
	Height (mm)	203.46		
	Moisture Content (%)	14		
	Bulk Density (Mg/m <sup>3</sup> )	2.13		
	Dry Density (Mg/m <sup>3</sup> )	1.86		
TEST DETAILS	Membrane Thickness (mm)	0.62	0.62	0.62
	Rate of Axial Displacement (%/min)	1.23	1.23	1.23
	Cell Pressure (kPa)	50	100	200
	Membrane Correction (kPa)	1.07	1.35	2.23
	Corrected Deviator Stress (kPa)	26	32	47
	Undrained Shear Strength (kPa)	13	16	24
	Strain at Failure (%)	7.4	9.8	19.7
	Mode of Failure			Compound



Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

Compiled By		Date
[Redacted]		15/11/13
Contract	Contract Ref:	
<b>East Midlands Gateway - Zone 1</b>	<b>744186</b>	





# SUMMARY OF POINT LOAD INDEX TEST RESULTS

(International Society for Rock Mechanics : 1985)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D <sub>e</sub> ) (mm)	Point Load (I <sub>s</sub> ) (MN/m <sup>2</sup> )	Size Factor (F)	Point Load Index (I <sub>s(50)</sub> ) (MN/m <sup>2</sup> )	Moisture Content (%)	Rock Type
CP206	1.50	A	86	50	1.419	74	0.26	1.19	0.31	12	MUDSTONE
CP206	1.50	A	61	18	0.239	37	0.17	0.88	0.15	12	MUDSTONE
CP206	1.50	A	65	15	0.098	35	0.08	0.85	0.07	12	MUDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK

 <b>STRUCTURAL SOILS</b> 1a Princess Street Bedminster Bristol BS3 4AG	Compiled By		Date	Contract Ref:  <b>744186</b> 
	[REDACTED]		<b>ALAN FROST</b>	
	Contract: <b>East Midlands Gateway - Zone 1</b>		<b>15.11.13</b>	

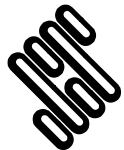


## SUMMARY OF CHEMICAL ANALYSES

[illegible]

NOTES:- All chemical tests were undertaken by Envirolab.

Approved Signatories: J.BARRETT A.FROST M.STOKES S.HANDCOCK



**STRUCTURAL SOILS**  
1a Princess Street  
Bedminster  
Bristol  
BS3 4AG

Compiled By

Date \_\_\_\_\_

Contract Ref:
---------------

ALAN FROST

**15.11.13**

Contract:

## East Midlands Gateway - Zone 1

744186



Edinburgh Road  
Springhill  
Shotts  
ML7 5DT

Tel: 01501 822 244

Fax 01501 825 044

email: info@mattest.org

Website: www.mattest.org

## LABORATORY TEST CERTIFICATE MATERIALS LABORATORY

**Certificate No** 13/889 - 01  
**To :** Mr Mark Athorne  
**Client :** Structural Soils Limited  
The Potteries  
Pottery Street  
Castleford  
WF10 1NJ

Dear Sirs,

### LABORATORY TESTING OF ROCK

#### Introduction

We refer to samples taken from East Midlands Gateway, Zone 1 and delivered to our laboratory on the 18th November 2013.

#### Material & Source

Sampled By : Client  
Test Reference : See Report Plates  
Description : N/A  
Date Sampled : Not Supplied  
Date Tested : 18th November 2013 Onwards  
Source : East Midlands Gateway - Zone 1

#### Test Results;

As Detailed On Page 2 to Page 4 inclusive.

#### Comments;

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation  
This report should not be reproduced except in full without the written approval of the laboratory  
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

#### Remarks;

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#### Approved for Issue

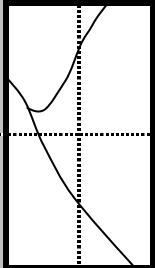
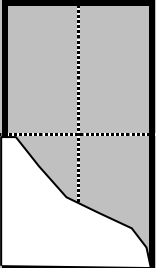
\_\_\_\_\_  
Laboratory Manager

Date 29/11/2013

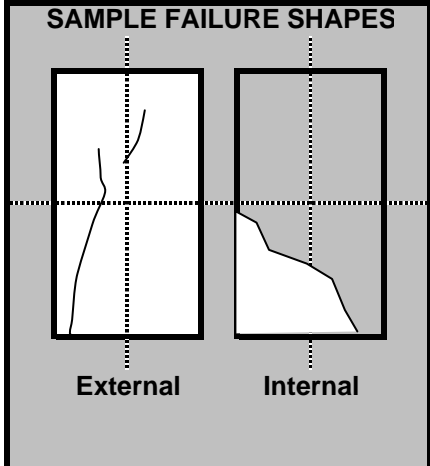


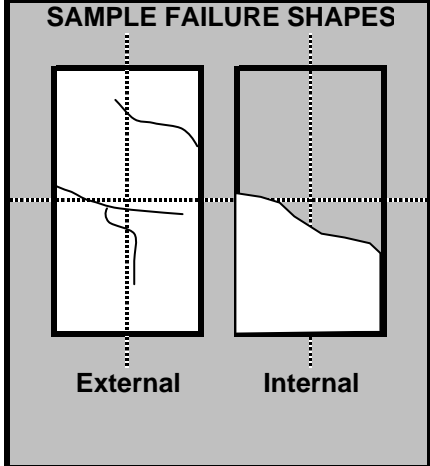
Tested in accordance with "ISRM Suggested Methods"

## Issue No.02

BOREHOLE		CP(R)203	<div>SAMPLE FAILURE SHAPES</div> <div><div></div><div>External</div></div> <div><div></div><div>Internal</div></div>
CORE RUN		-	
DEPTH		6.40	
SAMPLE DIAMETER	mm	85.96	
SAMPLE HEIGHT	mm	136.32	
WATER CONTENT	%	9.9	
TEST CONDITION		As received	
RATE OF LOADING	kN/s	0.1	
TEST DURATION	min.sec	4.00	
DATE OF TESTING		20-Nov-13	
LOAD FRAME USED		50kN	
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		Perpendicular	
FAILURE LOAD	kN	18.8	
UNCONFINED COMPRESSIVE STRENGTH	MPa	3.2	

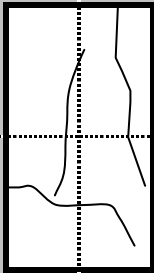
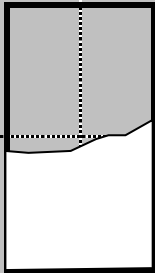
Test specimen does not meet specified length / diameter ratio requirements

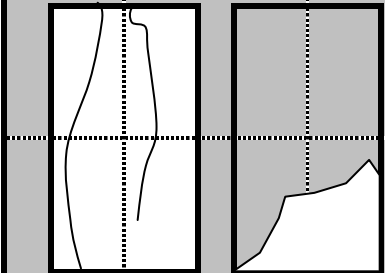
BOREHOLE		CP(R)203	<div>SAMPLE FAILURE SHAPES</div> <div></div> <div>ExternalInternal</div>
CORE RUN		-	
DEPTH		12.10	
SAMPLE DIAMETER	mm	85.75	
SAMPLE HEIGHT	mm	192.80	
WATER CONTENT	%	6.7	
TEST CONDITION		As received	
RATE OF LOADING	kN/s	0.2	
TEST DURATION	min.sec	4.05	
DATE OF TESTING		20-Nov-13	
LOAD FRAME USED		50kN	
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		Perpendicular	
FAILURE LOAD	kN	39.0	
UNCONFINED COMPRESSIVE STRENGTH	MPa	6.8	

BOREHOLE		CP(R)203	<div>SAMPLE FAILURE SHAPES</div> <div></div> <div>ExternalInternal</div>
CORE RUN		-	
DEPTH		18.60	
SAMPLE DIAMETER	mm	86.30	
SAMPLE HEIGHT	mm	194.80	
WATER CONTENT	%	4.4	
TEST CONDITION		As received	
RATE OF LOADING	kN/s	0.2	
TEST DURATION	min.sec	5.00	
DATE OF TESTING		20-Nov-13	
LOAD FRAME USED		2000kN	
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		Perpendicular	
FAILURE LOAD	kN	72.6	
UNCONFINED COMPRESSIVE STRENGTH	MPa	12.4	

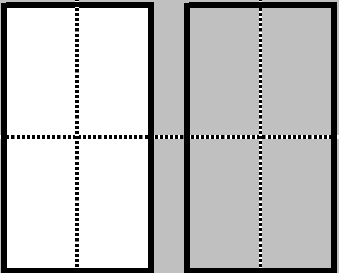
Tested in accordance with ASTM D7012 - 10

## SUMMARY OF UNCONFINED COMPRESSIVE STRENGTH

BOREHOLE		CP(R)203	<div>SAMPLE FAILURE SHAPES</div> <div><div></div><div></div></div> <div>ExternalInternal</div>
CORE RUN		-	
DEPTH		23.83	
SAMPLE DIAMETER	mm	86.55	
SAMPLE HEIGHT	mm	196.09	
WATER CONTENT	%	9.3	
TEST CONDITION		As received	
RATE OF LOADING	kN/s	0.3	
TEST DURATION	min.sec	4.41	
DATE OF TESTING		20-Nov-13	
LOAD FRAME USED		2000kN	
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		Perpendicular	
FAILURE LOAD	kN	66.6	
UNCONFINED COMPRESSIVE STRENGTH	MPa	11.3	

BOREHOLE		CP(R)206	<div>SAMPLE FAILURE SHAPES</div> <div></div> <div>ExternalInternal</div>
CORE RUN		-	
DEPTH		7.57	
SAMPLE DIAMETER	mm	86.73	
SAMPLE HEIGHT	mm	149.31	
WATER CONTENT	%	10.1	
TEST CONDITION		As received	
RATE OF LOADING	kN/s	0.1	
TEST DURATION	min.sec	14.14	
DATE OF TESTING		20-Nov-13	
LOAD FRAME USED		2000kN	
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		Perpendicular	
FAILURE LOAD	kN	124.3	
UNCONFINED COMPRESSIVE STRENGTH	MPa	21.0	

Test specimen does not meet specified length / diameter ratio requirements

				<b>SAMPLE FAILURE SHAPES</b>  External Internal

Tested in accordance with ASTM D7012 - 10

## SUMMARY OF UNCONFINED COMPRESSIVE STRENGTH



# SUMMARY OF POINT LOAD INDEX TEST RESULTS

(International Society for Rock Mechanics : 1985)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D <sub>e</sub> ) (mm)	Point Load (I <sub>s</sub> ) (MN/m <sup>2</sup> )	Size Factor (F)	Point Load Index (I <sub>s(50)</sub> ) (MN/m <sup>2</sup> )	Moisture Content (%)	Rock Type
CP(R)203	27.02	D	107.5	85	1.015	85	0.14	1.27	0.18	8.4	SANDSTONE
CP(R)203	27.02	A	85	60	0.565	81	0.09	1.24	0.11	8.4	SANDSTONE
CP(R)203	28.35	D	52.645	86.4	1.870	86	0.25	1.28	0.32	5.7	MUDSTONE
CP(R)203	28.35	A	86.4	40.29	1.170	67	0.26	1.14	0.30	5.7	MUDSTONE
CP(R)204	8.25	D	62.365	85.87	0.240	86	0.03	1.28	0.04	11	MUDSTONE
CP(R)204	8.25	A	85.87	66.22	0.190	85	0.03	1.27	0.03	11	MUDSTONE
CP(R)204	12.90	A	87.41	69.47	1.640	88	0.21	1.29	0.27	8.8	MUDSTONE
CP(R)204	18.87	D	57.475	86.75	2.320	87	0.31	1.28	0.40	7.4	MUDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

Approved Signatories: J.BARRETT M.ATHORNE A.FROST M.RANDERSON R.CLARKSON M.FISHER C.COLE M.STOKES

 <div>STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ</div>	Compiled By			Date	Contract Ref:  <div>781044</div> 
			MAUREEN FISHER	29.11.13	
	Contract:  East Midlands Gateway - Zone 1				





# SUMMARY OF POINT LOAD INDEX TEST RESULTS

(International Society for Rock Mechanics : 1985)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D <sub>e</sub> ) (mm)	Point Load (I <sub>s</sub> ) (MN/m <sup>2</sup> )	Size Factor (F)	Point Load Index (I <sub>s(50)</sub> ) (MN/m <sup>2</sup> )	Moisture Content (%)	Rock Type
CP(R)204	18.87	A	86.75	53.79	1.445	77	0.24	1.22	0.30	7.4	MUDSTONE
CP(R)205	8.58	D	60.11	86.31	0.780	86	0.10	1.28	0.13	8.2	MUDSTONE
CP(R)205	8.58	A	86.31	42	1.080	68	0.23	1.15	0.27	8.2	MUDSTONE
CP(R)205	9.70	D	119	85	1.600	85	0.22	1.27	0.28	7.6	MUDSTONE
CP(R)205	9.70	A	85	52.92	1.305	76	0.23	1.21	0.27	7.6	MUDSTONE
CP(R)205	10.92	D	67.72	86.24	2.130	86	0.29	1.28	0.37	8.5	MUDSTONE
CP(R)205	10.92	A	86.24	58.1	2.440	80	0.38	1.23	0.47	8.5	MUDSTONE
CP(R)206	6.61	D	44.22	86.59	2.825	87	0.38	1.28	0.48	9.6	MUDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

Approved Signatories: J.BARRETT M.ATHORNE A.FROST M.RANDERSON R.CLARKSON M.FISHER C.COLE M.STOKES

 <div>STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ</div>	Compiled By			Date	Contract Ref:  <div>781044</div> 
			MAUREEN FISHER	29.11.13	
	Contract:  East Midlands Gateway - Zone 1				



# SUMMARY OF POINT LOAD INDEX TEST RESULTS

(International Society for Rock Mechanics : 1985)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D <sub>e</sub> ) (mm)	Point Load (I <sub>s</sub> ) (MN/m <sup>2</sup> )	Size Factor (F)	Point Load Index (I <sub>s(50)</sub> ) (MN/m <sup>2</sup> )	Moisture Content (%)	Rock Type
CP(R)206	6.61	A	86.59	28.16	3.010	56	0.97	1.05	1.02	9.6	MUDSTONE
CP(R)206	12.72	D	65.9	86.57	3.155	87	0.42	1.28	0.54	5.9	MUDSTONE
CP(R)206	12.72	A	86.57	62.92	3.255	83	0.47	1.26	0.59	5.9	MUDSTONE
CP(R)207	9.40	D	52.08	86.4	0.790	86	0.11	1.28	0.14	8.6	MUDSTONE
CP(R)207	9.40	A	86.4	42.65	1.170	68	0.25	1.15	0.29	8.6	MUDSTONE
CP(R)207	16.64	D	63.225	86.3	0.940	86	0.13	1.28	0.16	6.7	MUDSTONE
CP(R)207	16.64	A	86.3	56.13	2.465	79	0.40	1.23	0.49	6.7	MUDSTONE
CP(R)207	24.15	D	43.955	86.1	0.370	86	0.05	1.28	0.06	7.1	MUDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

Approved Signatories: J.BARRETT M.ATHORNE A.FROST M.RANDERSON R.CLARKSON M.FISHER C.COLE M.STOKES

 <b>STRUCTURAL SOILS</b> The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By			Date	Contract Ref:  <b>781044</b> 
	MAUREEN FISHER			29.11.13	
	Contract: East Midlands Gateway - Zone 1				



# SUMMARY OF POINT LOAD INDEX TEST RESULTS

(International Society for Rock Mechanics : 1985)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D <sub>e</sub> ) (mm)	Point Load (I <sub>s</sub> ) (MN/m <sup>2</sup> )	Size Factor (F)	Point Load Index (I <sub>s(50)</sub> ) (MN/m <sup>2</sup> )	Moisture Content (%)	Rock Type
CP(R)207	24.15	A	86.1	45.15	0.910	70	0.18	1.17	0.21	7.1	MUDSTONE
CP(R)208	7.40	D	50	85	0.965	85	0.13	1.27	0.17	9.5	MUDSTONE
CP(R)208	7.40	A	85	36	0.630	62	0.16	1.10	0.18	9.5	MUDSTONE
CP(R)208	9.98	D	51.44	86.89	1.955	87	0.26	1.28	0.33	8.0	MUDSTONE
CP(R)208	9.98	A	86.89	45.04	1.115	71	0.22	1.17	0.26	8.0	MUDSTONE
CP(R)208	11.22	D	48.285	86.22	4.625	86	0.62	1.28	0.80	12	MUDSTONE
CP(R)208	11.22	A	86.22	48.13	5.250	73	0.99	1.18	1.18	12	MUDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

Approved Signatories: J.BARRETT M.ATHORNE A.FROST M.RANDERSON R.CLARKSON M.FISHER C.COLE M.STOKES

 <b>STRUCTURAL SOILS</b> The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Compiled By		Date	Contract Ref:  <b>781044</b> 
	Contract: <span style="background-color: black; color: black;">[REDACTED]</span>		<b>MAUREEN FISHER</b>	
	<b>East Midlands Gateway - Zone 1</b>		<b>29.11.13</b>	

# **APPENDIX H**

## **CHEMICAL LABORATORY CERTIFICATES FOR SOIL ANALYSIS**

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## FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 13/04787  
**Issue Number:** 1

**Date:** 24 October, 2013

**Client:** RSK Environment Ltd Coventry  
Humber Road, Abbey Park  
Coventry  
UK  
CV3 4AQ

**Project Manager:** Darren Bench / Mariah Hocking / Marc Dixon  
**Project Name:** East Midlands Gateway Zone 1  
**Project Ref:** 312494  
**Order No:** Not specified  
**Date Samples Received:** 02/10/13  
**Date Instructions Received:** 10/10/13  
**Date Analysis Completed:** 24/10/13

**Prepared by:**



Melanie Marshall  
Laboratory Coordinator

**Approved by:**



Liz Oliver  
Client Service Manager

Envirolab Job Number: 13/04787

Client Project Name: East Midlands Gateway Zone 1

Client Project Ref: 312494

Lab Sample ID	13/04787/1	13/04787/2	13/04787/3	13/04787/4	13/04787/5	13/04787/6	13/04787/7	13/04787/8	Units	Method ref
Client Sample No										
Client Sample ID	TP310	TP314	TP323	TP324	TP316	TP319	TP326	TP328		
Depth to Top	0.80	0.60	0.50	0.10	0.10	0.10	0.60	0.15		
Depth To Bottom	0.90	0.70		0.20	0.20	0.20	0.70	0.25		
Date Sampled	25-Sep-13	25-Sep-13	24-Sep-13	24-Sep-13	26-Sep-13	26-Sep-13	24-Sep-13	24-Sep-13		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	5	5	3	6E	6E	6E	6E	6E		
pH <sub>D</sub> <sup>M#</sup>	6.36	7.46	7.98	4.96	5.66	8.30	7.00	7.08	pH	A-T-031s
Total Organic Carbon <sub>D</sub> <sup>M#</sup>	0.41	0.29	0.19	-	1.64	-	0.36	-	% w/w	A-T-032s
Arsenic <sub>D</sub> <sup>#</sup>	3	1	2	4	4	3	2	5	mg/kg	A-T-024
Cadmium <sub>D</sub> <sup>M#</sup>	<0.5	0.7	1.0	0.5	0.7	0.7	0.5	0.6	mg/kg	A-T-024
Copper <sub>D</sub> <sup>M#</sup>	10	14	28	19	17	12	16	21	mg/kg	A-T-024
Chromium <sub>D</sub> <sup>#</sup>	20	45	57	25	30	40	30	26	mg/kg	A-T-024
Chromium (hexavalent) <sub>D</sub>	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	A-T-040s
Lead <sub>D</sub> <sup>M#</sup>	11	10	8	25	27	54	9	56	mg/kg	A-T-024
Mercury <sub>D</sub>	<0.17	0.22	0.30	0.24	0.21	0.27	<0.17	0.37	mg/kg	A-T-024
Nickel <sub>D</sub> <sup>#</sup>	12	28	44	15	21	26	19	22	mg/kg	A-T-024
Selenium <sub>D</sub> <sup>#</sup>	<1	<1	1	<1	<1	<1	<1	<1	mg/kg	A-T-024
Zinc <sub>D</sub> <sup>M#</sup>	52	102	77	64	71	76	52	77	mg/kg	A-T-024
Asbestos in Soil (inc. matrix)										
Asbestos in soil <sub>D</sub> <sup>#</sup>	-	NAD	-	-	-	NAD	-	-		A-T-045
Asbestos Matrix (visual) <sub>A</sub>	-	N/A	-	-	-	N/A	-	-		Visual
Asbestos Matrix (microscope) <sub>D</sub>	-	N/A	-	-	-	N/A	-	-		A-T-045



Envirolab Job Number: 13/04787

Client Project Name: East Midlands Gateway Zone 1

Client Project Ref: 312494

Lab Sample ID	13/04787/1	13/04787/2	13/04787/3	13/04787/4	13/04787/5	13/04787/6	13/04787/7	13/04787/8	Units	Method ref
Client Sample No										
Client Sample ID	TP310	TP314	TP323	TP324	TP316	TP319	TP326	TP328		
Depth to Top	0.80	0.60	0.50	0.10	0.10	0.10	0.60	0.15		
Depth To Bottom	0.90	0.70		0.20	0.20	0.20	0.70	0.25		
Date Sampled	25-Sep-13	25-Sep-13	24-Sep-13	24-Sep-13	26-Sep-13	26-Sep-13	24-Sep-13	24-Sep-13		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	5	5	3	6E	6E	6E	6E	6E		
Pest-c										
Mevinphos	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
Dichlorvos	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
alpha-Hexachlorocyclohexane (HCH)	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
Diazinon	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
gamma-Hexachlorocyclohexane (HCH / Lindane)	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
Heptachlor	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
Aldrin	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
beta-Hexachlorocyclohexane (HCH)	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
Methyl Parathion	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
Malathion	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
Fenitrothion	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
Heptachlor Epoxide	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
Parathion (Ethyl Parathion)	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
p,p-DDE	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
p,p-DDT	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
p,p-Methoxychlor	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
p,p-TDE (DDD)	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
o,p-DDE	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
o,p-DDT	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
o,p-Methoxychlor	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
o,p-TDE (DDD)	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
Endosulphan I	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
Endosulphan II	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
Endosulphan Sulphate	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
Endrin	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
Ethion	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
Dieldrin	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon
Azinphos-methyl	-	-	-	<50	-	<50	-	<50	µg/kg	Subcon

Envirolab Job Number: 13/04787

Client Project Name: East Midlands Gateway Zone 1

Client Project Ref: 312494

Lab Sample ID	13/04787/1	13/04787/2	13/04787/3	13/04787/4	13/04787/5	13/04787/6	13/04787/7	13/04787/8	Units	Method ref
Client Sample No										
Client Sample ID	TP310	TP314	TP323	TP324	TP316	TP319	TP326	TP328		
Depth to Top	0.80	0.60	0.50	0.10	0.10	0.10	0.60	0.15		
Depth To Bottom	0.90	0.70		0.20	0.20	0.20	0.70	0.25		
Date Sampled	25-Sep-13	25-Sep-13	24-Sep-13	24-Sep-13	26-Sep-13	26-Sep-13	24-Sep-13	24-Sep-13		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	5	5	3	6E	6E	6E	6E	6E		
PAH 16										
Acenaphthene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Acenaphthylene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Anthracene <sub>A</sub> <sup>M#</sup>	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	A-T-019s
Benzo(a)anthracene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-019s
Benzo(a)pyrene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.04	mg/kg	A-T-019s
Benzo(b)fluoranthene <sub>A</sub> <sup>M#</sup>	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-019s
Benzo(ghi)perylene <sub>A</sub> <sup>M#</sup>	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-019s
Benzo(k)fluoranthene <sub>A</sub> <sup>M#</sup>	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	A-T-019s
Chrysene <sub>A</sub> <sup>M#</sup>	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	mg/kg	A-T-019s
Dibenzo(ah)anthracene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-019s
Fluoranthene <sub>A</sub> <sup>M#</sup>	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	mg/kg	A-T-019s
Fluorene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Indeno(123-cd)pyrene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	A-T-019s
Naphthalene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	A-T-019s
Phenanthrene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.04	mg/kg	A-T-019s
Pyrene <sub>A</sub> <sup>M#</sup>	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	A-T-019s
PAH (total 16) <sub>A</sub> <sup>M#</sup>	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	0.09	mg/kg	A-T-019s

Envirolab Job Number: 13/04787

Client Project Name: East Midlands Gateway Zone 1

Client Project Ref: 312494

Lab Sample ID	13/04787/1	13/04787/2	13/04787/3	13/04787/4	13/04787/5	13/04787/6	13/04787/7	13/04787/8	Units	Method ref
Client Sample No										
Client Sample ID	TP310	TP314	TP323	TP324	TP316	TP319	TP326	TP328		
Depth to Top	0.80	0.60	0.50	0.10	0.10	0.10	0.60	0.15		
Depth To Bottom	0.90	0.70		0.20	0.20	0.20	0.70	0.25		
Date Sampled	25-Sep-13	25-Sep-13	24-Sep-13	24-Sep-13	26-Sep-13	26-Sep-13	24-Sep-13	24-Sep-13		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	5	5	3	6E	6E	6E	6E	6E		
Triazines (x11)										
Ametryne	-	-	-	<0.2	-	<0.2	-	<0.2	mg/kg	Subcon
Atraton	-	-	-	<0.2	-	<0.2	-	<0.2	mg/kg	Subcon
Atrazine	-	-	-	<0.02	-	<0.02	-	<0.02	mg/kg	Subcon
Cyanazine	-	-	-	<0.02	-	<0.02	-	<0.02	mg/kg	Subcon
Prometon	-	-	-	<0.2	-	<0.2	-	<0.2	mg/kg	Subcon
Prometryn	-	-	-	<0.02	-	<0.02	-	<0.02	mg/kg	Subcon
Propazine	-	-	-	<0.02	-	<0.02	-	<0.02	mg/kg	Subcon
Simazine	-	-	-	<0.02	-	<0.02	-	<0.02	mg/kg	Subcon
Simetryn	-	-	-	<0.2	-	<0.2	-	<0.2	mg/kg	Subcon
Terbuthylazine	-	-	-	<0.02	-	<0.02	-	<0.02	mg/kg	Subcon
Terbutryn	-	-	-	<0.02	-	<0.02	-	<0.02	mg/kg	Subcon

Envirolab Job Number: 13/04787

Client Project Name: East Midlands Gateway Zone 1

Client Project Ref: 312494

Lab Sample ID	13/04787/1	13/04787/2	13/04787/3	13/04787/4	13/04787/5	13/04787/6	13/04787/7	13/04787/8	Units	Method ref
Client Sample No										
Client Sample ID	TP310	TP314	TP323	TP324	TP316	TP319	TP326	TP328		
Depth to Top	0.80	0.60	0.50	0.10	0.10	0.10	0.60	0.15		
Depth To Bottom	0.90	0.70		0.20	0.20	0.20	0.70	0.25		
Date Sampled	25-Sep-13	25-Sep-13	24-Sep-13	24-Sep-13	26-Sep-13	26-Sep-13	24-Sep-13	24-Sep-13		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	5	5	3	6E	6E	6E	6E	6E		
TPH CWG										
% Stones >10mm <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	% w/w	A-T-044
Ali >C5-C6 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Ali >C6-C8 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Ali >C8-C10 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Ali >C10-C12 <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Ali >C12-C16 <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Ali >C16-C21 <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Ali >C21-C35 <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Total Aliphatics <sub>A</sub>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022+23s
Aro >C5-C7 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Aro >C7-C8 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Aro >C8-C9 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Aro >C9-C10 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Aro >C10-C12 <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Aro >C12-C16 <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Aro >C16-C21 <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Aro >C21-C35 <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s
Total Aromatics <sub>A</sub>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022+23s
TPH (Ali & Aro) <sub>A</sub>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-022+23s
BTEX - Benzene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
BTEX - Toluene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
BTEX - Ethyl Benzene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
BTEX - m & p Xylene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
BTEX - o Xylene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
MTBE <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-022s
Mineral Oil (>C10-C35) <sub>A</sub>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	A-T-023s

## **REPORT NOTES**

### **Notes - Soil analysis**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

### **Notes - General**

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

Superscript "M" indicates method accredited to MCERTS.

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations. If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling.

### **TPH analysis of water by method A-T-007**

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

### **Asbestos in soil**

Asbestos in soil analysis is performed on an aliquot of the submitted sample and cannot guarantee to identify asbestos if present at low concentrations or as discrete fibres/fragments.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed.

Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

### **Predominant Matrix Codes:**

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER.

Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our MCERTS accreditation.

### **Secondary Matrix Codes:**

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

IS indicates Insufficient sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

## FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 13/04851

**Issue Number:** 1

**Date:** 28 October, 2013

**Client:**

RSK Environment Ltd Coventry  
Humber Road, Abbey Park  
Coventry  
UK  
CV3 4AQ

**Project Manager:**

Derren Bench / Mariah Hocking / Marc Dixon

**Project Name:**

East Midlands Gateway Zone 1

**Project Ref:**

312494

**Order No:**

Not specified

**Date Samples Received:**

15/10/13

**Date Instructions Received:**

15/10/13

**Date Analysis Completed:**

28/10/13

**Prepared by:**



Melanie Marshall  
Laboratory Coordinator

**Approved by:**



Liz Oliver  
Client Service Manager



Envirolab Job Number: 13/04851

Client Project Name: East Midlands Gateway Zone 1

Client Project Ref: 312494

Lab Sample ID	13/04851/1	13/04851/2	13/04851/3						Units	Method ref
Client Sample No										
Client Sample ID	TP301	TP303	TP352							
Depth to Top	0.50	0.10	0.50							
Depth To Bottom		0.20	0.70							
Date Sampled	03-Oct-13	03-Oct-13	01-Oct-13							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	5E	5AE	5E							
pH <sub>D</sub> <sup>M#</sup>	8.32	6.26	6.06						pH	A-T-031s
Total Organic Carbon <sub>D</sub> <sup>M#</sup>	0.61	0.99	0.46						% w/w	A-T-032s
Arsenic <sub>D</sub> <sup>#</sup>	8	3	4						mg/kg	A-T-024
Cadmium <sub>D</sub> <sup>M#</sup>	<0.5	<0.5	<0.5						mg/kg	A-T-024
Copper <sub>D</sub> <sup>M#</sup>	28	14	12						mg/kg	A-T-024
Chromium <sub>D</sub> <sup>#</sup>	30	23	18						mg/kg	A-T-024
Chromium (hexavalent) <sub>D</sub>	<1	<1	<1						mg/kg	A-T-040s
Lead <sub>D</sub> <sup>M#</sup>	11	27	21						mg/kg	A-T-024
Mercury <sub>D</sub>	<0.17	0.17	<0.17						mg/kg	A-T-024
Nickel <sub>D</sub> <sup>#</sup>	23	14	10						mg/kg	A-T-024
Selenium <sub>D</sub> <sup>#</sup>	<1	<1	<1						mg/kg	A-T-024
Zinc <sub>D</sub> <sup>M#</sup>	45	57	51						mg/kg	A-T-024
Asbestos in Soil (inc. matrix)										
Asbestos in soil <sub>D</sub> <sup>#</sup>	-	NAD	-							A-T-045
Asbestos Matrix (visual) <sub>A</sub>	-	N/A	-							Visual
Asbestos Matrix (microscope) <sub>D</sub>	-	N/A	-							A-T-045

Envirolab Job Number: 13/04851

Client Project Name: East Midlands Gateway Zone 1

Client Project Ref: 312494

Lab Sample ID	13/04851/1	13/04851/2	13/04851/3						Units	Method ref
Client Sample No										
Client Sample ID	TP301	TP303	TP352							
Depth to Top	0.50	0.10	0.50							
Depth To Bottom		0.20	0.70							
Date Sampled	03-Oct-13	03-Oct-13	01-Oct-13							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	5E	5AE	5E							
Pest-c										
Mevinphos	-	<50	-						µg/kg	Subcon
Dichlorvos	-	<50	-						µg/kg	Subcon
alpha-Hexachlorocyclohexane (HCH)	-	<50	-						µg/kg	Subcon
Diazinon	-	<50	-						µg/kg	Subcon
gamma-Hexachlorocyclohexane (HCH / Lindane)	-	<50	-						µg/kg	Subcon
Heptachlor	-	<50	-						µg/kg	Subcon
Aldrin	-	<50	-						µg/kg	Subcon
beta-Hexachlorocyclohexane (HCH)	-	<50	-						µg/kg	Subcon
Methyl Parathion	-	<50	-						µg/kg	Subcon
Malathion	-	<50	-						µg/kg	Subcon
Fenitrothion	-	<50	-						µg/kg	Subcon
Heptachlor Epoxide	-	<50	-						µg/kg	Subcon
Parathion (Ethyl Parathion)	-	<50	-						µg/kg	Subcon
p,p-DDE	-	<50	-						µg/kg	Subcon
p,p-DDT	-	<50	-						µg/kg	Subcon
p,p-Methoxychlor	-	<50	-						µg/kg	Subcon
p,p-TDE (DDD)	-	<50	-						µg/kg	Subcon
o,p-DDE	-	<50	-						µg/kg	Subcon
o,p-DDT	-	<50	-						µg/kg	Subcon
o,p-Methoxychlor	-	<50	-						µg/kg	Subcon
o,p-TDE (DDD)	-	<50	-						µg/kg	Subcon
Endosulphan I	-	<50	-						µg/kg	Subcon
Endosulphan II	-	<50	-						µg/kg	Subcon
Endosulphan Sulphate	-	<50	-						µg/kg	Subcon
Endrin	-	<50	-						µg/kg	Subcon
Ethion	-	<50	-						µg/kg	Subcon
Dieldrin	-	<50	-						µg/kg	Subcon
Azinphos-methyl	-	<50	-						µg/kg	Subcon

Envirolab Job Number: 13/04851

Client Project Name: East Midlands Gateway Zone 1

Client Project Ref: 312494

Lab Sample ID	13/04851/1	13/04851/2	13/04851/3						Units	Method ref
Client Sample No										
Client Sample ID	TP301	TP303	TP352							
Depth to Top	0.50	0.10	0.50							
Depth To Bottom		0.20	0.70							
Date Sampled	03-Oct-13	03-Oct-13	01-Oct-13							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	5E	5AE	5E							
PAH 16										
Acenaphthene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01						mg/kg	A-T-019s
Acenaphthylene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01						mg/kg	A-T-019s
Anthracene <sub>A</sub> <sup>M#</sup>	<0.02	<0.02	<0.02						mg/kg	A-T-019s
Benzo(a)anthracene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04						mg/kg	A-T-019s
Benzo(a)pyrene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04						mg/kg	A-T-019s
Benzo(b)fluoranthene <sub>A</sub> <sup>M#</sup>	<0.05	<0.05	<0.05						mg/kg	A-T-019s
Benzo(ghi)perylene <sub>A</sub> <sup>M#</sup>	<0.05	<0.05	<0.05						mg/kg	A-T-019s
Benzo(k)fluoranthene <sub>A</sub> <sup>M#</sup>	<0.07	<0.07	<0.07						mg/kg	A-T-019s
Chrysene <sub>A</sub> <sup>M#</sup>	<0.06	<0.06	<0.06						mg/kg	A-T-019s
Dibenzo(ah)anthracene <sub>A</sub> <sup>M#</sup>	<0.04	<0.04	<0.04						mg/kg	A-T-019s
Fluoranthene <sub>A</sub> <sup>M#</sup>	<0.08	<0.08	<0.08						mg/kg	A-T-019s
Fluorene <sub>A</sub> <sup>M#</sup>	<0.01	<0.01	<0.01						mg/kg	A-T-019s
Indeno(123-cd)pyrene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	<0.03						mg/kg	A-T-019s
Naphthalene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	<0.03						mg/kg	A-T-019s
Phenanthrene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	<0.03						mg/kg	A-T-019s
Pyrene <sub>A</sub> <sup>M#</sup>	<0.07	<0.07	<0.07						mg/kg	A-T-019s
PAH (total 16) <sub>A</sub> <sup>M#</sup>	<0.08	<0.08	<0.08						mg/kg	A-T-019s

Envirolab Job Number: 13/04851

Client Project Name: East Midlands Gateway Zone 1

Client Project Ref: 312494

Lab Sample ID	13/04851/1	13/04851/2	13/04851/3						Units	Method ref
Client Sample No										
Client Sample ID	TP301	TP303	TP352							
Depth to Top	0.50	0.10	0.50							
Depth To Bottom		0.20	0.70							
Date Sampled	03-Oct-13	03-Oct-13	01-Oct-13							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	5E	5AE	5E							
Triazines (x11)										
Ametryne	-	<0.2	-						mg/kg	Subcon
Atraton	-	<0.2	-						mg/kg	Subcon
Atrazine	-	<0.02	-						mg/kg	Subcon
Cyanazine	-	<0.02	-						mg/kg	Subcon
Prometon	-	<0.2	-						mg/kg	Subcon
Prometryn	-	<0.02	-						mg/kg	Subcon
Propazine	-	<0.02	-						mg/kg	Subcon
Simazine	-	<0.02	-						mg/kg	Subcon
Simetryn	-	<0.2	-						mg/kg	Subcon
Terbuthylazine	-	<0.02	-						mg/kg	Subcon
Terbutryn	-	<0.02	-						mg/kg	Subcon

Envirolab Job Number: 13/04851

Client Project Name: East Midlands Gateway Zone 1

Client Project Ref: 312494

Lab Sample ID	13/04851/1	13/04851/2	13/04851/3						Units	Method ref
Client Sample No										
Client Sample ID	TP301	TP303	TP352							
Depth to Top	0.50	0.10	0.50							
Depth To Bottom		0.20	0.70							
Date Sampled	03-Oct-13	03-Oct-13	01-Oct-13							
Sample Type	Soil - ES	Soil - ES	Soil - ES							
Sample Matrix Code	5E	5AE	5E							
TPH CWG										
% Stones >10mm <sub>A</sub> <sup>#</sup>	<0.1	4.5	<0.1						% w/w	A-T-044
Ali >C5-C6 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01						mg/kg	A-T-022s
Ali >C6-C8 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01						mg/kg	A-T-022s
Ali >C8-C10 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01						mg/kg	A-T-022s
Ali >C10-C12 <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1						mg/kg	A-T-023s
Ali >C12-C16 <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1						mg/kg	A-T-023s
Ali >C16-C21 <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1						mg/kg	A-T-023s
Ali >C21-C35 <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1						mg/kg	A-T-023s
Total Aliphatics <sub>A</sub>	<0.1	<0.1	<0.1						mg/kg	A-T-022+23s
Aro >C5-C7 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01						mg/kg	A-T-022s
Aro >C7-C8 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01						mg/kg	A-T-022s
Aro >C8-C9 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01						mg/kg	A-T-022s
Aro >C9-C10 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01						mg/kg	A-T-022s
Aro >C10-C12 <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1						mg/kg	A-T-023s
Aro >C12-C16 <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1						mg/kg	A-T-023s
Aro >C16-C21 <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1						mg/kg	A-T-023s
Aro >C21-C35 <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1						mg/kg	A-T-023s
Total Aromatics <sub>A</sub>	<0.1	<0.1	<0.1						mg/kg	A-T-022+23s
TPH (Ali & Aro) <sub>A</sub>	<0.1	<0.1	<0.1						mg/kg	A-T-022+23s
BTEX - Benzene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01						mg/kg	A-T-022s
BTEX - Toluene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01						mg/kg	A-T-022s
BTEX - Ethyl Benzene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01						mg/kg	A-T-022s
BTEX - m & p Xylene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01						mg/kg	A-T-022s
BTEX - o Xylene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01						mg/kg	A-T-022s
MTBE <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01						mg/kg	A-T-022s
Mineral Oil (>C10-C35) <sub>A</sub>	<0.1	<0.1	<0.1						mg/kg	A-T-023s

## **REPORT NOTES**

### **Notes - Soil analysis**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

### **Notes - General**

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

Superscript "M" indicates method accredited to MCERTS.

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations. If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling.

### **TPH analysis of water by method A-T-007**

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

### **Asbestos in soil**

Asbestos in soil analysis is performed on an aliquot of the submitted sample and cannot guarantee to identify asbestos if present at low concentrations or as discrete fibres/fragments.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed.

Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

### **Predominant Matrix Codes:**

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER.

Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our MCERTS accreditation.

### **Secondary Matrix Codes:**

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

IS indicates Insufficient sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.



## FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 13/04858

**Issue Number:** 2

**Date:** 19 November, 2013

**Client:** RSK Environment Ltd Coventry  
Humber Road, Abbey Park  
Coventry  
UK  
CV3 4AQ

**Project Manager:** Darren Bench / Mariah Hocking / Marc Dixon  
**Project Name:** East Midlands Gateway Zone 1  
**Project Ref:** 312494  
**Order No:** Not specified  
**Date Samples Received:** 15/10/13  
**Date Instructions Received:** 16/10/13  
**Date Analysis Completed:** 23/10/13

**Prepared by:**



Lynette Toon  
Administrative Assistant

**Approved by:**



Liz Oliver  
Client Service Manager

Envirolab Job Number: 13/04858

Client Project Name: East Midlands Gateway Zone 1

Client Project Ref: 312494

Lab Sample ID	13/04858/1	13/04858/2	13/04858/3	13/04858/4	13/04858/5	13/04858/6	13/04858/7	13/04858/8	Units	Method ref
Client Sample No	4	8	20	2	14	2	4	8		
Client Sample ID	CP219	CP219	CP219	CP203	CP203	CP221	CP221	CP221		
Depth to Top	1.70	2.90	6.90	0.50	4.00	0.45	1.20	2.90		
Depth To Bottom										
Date Sampled	26-Sep-13	27-Sep-13	27-Sep-13	25-Sep-13	25-Sep-13	27-Sep-13	27-Sep-13	27-Sep-13		
Sample Type	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D		
Sample Matrix Code	3	3	3	6E	3	4AE	4AE	3		
% Stones >10mm <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1	<0.1	<0.1	8.3	11.7	<0.1	% w/w	A-T-044
pH BRE <sub>D</sub> <sup>M#</sup>	8.71	8.70	8.73	8.10	8.74	7.35	8.22	6.94	pH	A-T-031s
Sulphate BRE (water sol 2:1) <sub>D</sub> <sup>M#</sup>	142	39	25	<10	20	<10	12	32	mg/l	A-T-026s
Sulphate BRE (acid sol) <sub>D</sub> <sup>M#</sup>	0.07	0.05	0.04	0.02	0.02	<0.02	<0.02	<0.02	% w/w	A-T-028
Sulphur BRE (total) <sub>D</sub>	0.03	0.02	0.02	0.01	<0.01	<0.01	<0.01	<0.01	% w/w	A-T-024

Envirolab Job Number: 13/04858

Client Project Name: East Midlands Gateway Zone 1

Client Project Ref: 312494

Lab Sample ID	13/04858/9	13/04858/10	13/04858/11	13/04858/12	13/04858/13				Units	Method ref
Client Sample No				5	9					
Client Sample ID	CP210	CP210	CP210	CP217	CP217					
Depth to Top	1.70	5.50	7.50	1.70	3.50					
Depth To Bottom	2.00			2.00						
Date Sampled				27-Sep-13	27-Sep-13					
Sample Type	Soil - D	Soil - D	Soil - D	Soil - D	Soil - D					
Sample Matrix Code	6	6	6	6	6					
% Stones >10mm <sup>#</sup>	<0.1	<0.1	<0.1	<0.1	<0.1				% w/w	A-T-044
pH BRE <sub>D</sub> <sup>M#</sup>	8.54	8.60	8.74	8.43	8.67				pH	A-T-031s
Sulphate BRE (water sol 2:1) <sub>D</sub> <sup>M#</sup>	13	15	15	22	32				mg/l	A-T-026s
Sulphate BRE (acid sol) <sub>D</sub> <sup>M#</sup>	<0.02	<0.02	0.03	<0.02	0.04				% w/w	A-T-028
Sulphur BRE (total) <sub>D</sub>	<0.01	<0.01	<0.01	<0.01	0.01				% w/w	A-T-024

## **REPORT NOTES**

### **Notes - Soil chemical analysis**

All results are reported as dry weight (<40 °C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

### **Notes - General**

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts.

Superscript "M" indicates method accredited to MCERTS.

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations. If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling.

### **TPH analysis of water by method A-T-007**

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

### **Asbestos in soil**

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified a being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed.

Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

### **Predominant Matrix Codes:**

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER.

Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our MCERTS accreditation.

### **Secondary Matrix Codes:**

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

IS indicates Insufficient sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

## FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 13/05397  
**Issue Number:** 2a

**Date:** 20 November, 2013

**Client:** Structural Soils Castleford Lab  
The Potteries  
Pottery Street  
Castleford  
West Yorkshire  
UK  
WF10 1NJ

**Project Manager:** Mark Athorne  
**Project Name:** East Midlands Gateway - Zone 1  
**Project Ref:** 781044  
**Order No:** Not specified  
**Date Samples Received:** 12/11/13  
**Date Instructions Received:** 13/11/13  
**Date Analysis Completed:** 20/11/13

**Prepared by:**



Melanie Marshall  
Laboratory Coordinator

**Approved by:**



Liz Oliver  
Client Service Manager

Envirolab Job Number: 13/05397

Client Project Name: East Midlands Gateway - Zone 1

Client Project Ref: 781044

Lab Sample ID	13/05397/1	13/05397/2	13/05397/3	13/05397/4	13/05397/5	13/05397/6			Units	Method ref
Client Sample No										
Client Sample ID	CP(R)203	CP(R)203	CP(R)204	CP(R)205	CP(R)206	CP(R)208				
Depth to Top	18.60	27.02	8.25	9.70	7.57	7.40				
Depth To Bottom	18.94	27.47	8.50	9.92	7.85	7.59				
Date Sampled										
Sample Type	Solid	Solid	Soil	Solid	Solid	Solid				
Sample Matrix Code	7	7	5	7	7	7				
% Stones >10mm <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			% w/w	A-T-044
pH BRE <sub>D</sub> <sup>M#</sup>	8.98	8.95	8.90	9.08	9.25	9.14			pH	A-T-031s
Sulphate BRE (water sol 2:1) <sub>D</sub> <sup>M#</sup>	15	17	21	<10	<10	<10			mg/l	A-T-026s
Sulphate BRE (acid sol) <sub>D</sub> <sup>M#</sup>	<0.02	0.03	0.03	<0.02	0.02	0.03			% w/w	A-T-028
Sulphur BRE (total) <sub>D</sub>	<0.01	<0.01	0.01	<0.01	<0.01	0.01			% w/w	A-T-024



## **REPORT NOTES**

### **Notes - Soil chemical analysis**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

### **Notes - General**

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts.

Superscript "M" indicates method accredited to MCERTS.

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations. If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling.

### **TPH analysis of water by method A-T-007**

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

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Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if present as discrete fibres/fragments. Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed.

Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

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1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER.

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A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

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NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

# **APPENDIX I**

## **CHEMICAL LABORATORY CERTIFICATES FOR GROUNDWATER ANALYSIS**

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## FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 13/05152

**Issue Number:** 2a

**Date:** 29 November, 2013

**Client:** RSK Environment Ltd Coventry  
Humber Road, Abbey Park  
Coventry  
UK  
CV3 4AQ

**Project Manager:** Gareth Shaw / Darren Bench / Leon Terrace  
**Project Name:** East Midlands RFT  
**Project Ref:** 312494  
**Order No:** Not specified  
**Date Samples Received:** 29/10/13  
**Date Instructions Received:** 31/10/13  
**Date Analysis Completed:** 13/11/13

**Prepared by:**



Melanie Marshall  
Laboratory Coordinator

**Approved by:**



Gill Scott  
Laboratory Manager

Envirolab Job Number: 13/05152

Client Project Name: East Midlands RFT

Client Project Ref: 312494

Lab Sample ID	13/05152/1	13/05152/2	13/05152/3	13/05152/4	13/05152/6	13/05152/7	13/05050/1	13/05050/2	Units	Method ref
Client Sample No							Deep			
Client Sample ID	CP220	CP210	CP213	CP217	CP212	CP204	CPR206	CPR204		
Depth to Top							14.68			
Depth To Bottom										
Date Sampled	23-Oct-13	24-Oct-13	24-Oct-13	23-Oct-13	24-Oct-13	22-Oct-13	22-Oct-13	22-Oct-13		
Sample Type	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W		
Sample Matrix Code										
pH (w) <sub>A</sub> <sup>#</sup>	8.14	8.03	7.91	7.92	8.05	8.00	7.11	7.20	pH	A-T-031w
Redox Potential (w) <sub>A</sub>	246	263	274	284	287	259	239	232	mV	A-T-048
Electrical conductivity @ 20 °C (w) <sub>A</sub> <sup>#</sup>	1220	1030	868	2690	847	645	1040	675	µs/cm	A-T-037w
Dissolved oxygen <sub>A</sub>	8.6	5.8	7.6	3.7	6.1	8.1	3.7	6.2	mg/l	A-T-048
Hardness <sub>A</sub> <sup>#</sup>	458	493	522	838	499	383	552	447	mg/l Ca CO <sub>3</sub>	A-T-049
Ammoniacal nitrogen (w) <sub>A</sub> <sup>#</sup>	0.21	0.09	0.16	0.31	0.18	0.06	0.09	0.03	mg/l	A-T-033w
Phenols - Total by HPLC (w) <sub>A</sub>	0.02	0.05	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	mg/l	A-T-050w
Arsenic (dissolved) <sub>A</sub> <sup>#</sup>	1	1	<1	1	<1	<1	<1	<1	µg/l	A-T-025
Boron (dissolved) <sub>A</sub> <sup>#</sup>	48	62	52	82	53	22	50	25	µg/l	A-T-025
Cadmium (dissolved) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-025
Copper (dissolved) <sub>A</sub> <sup>#</sup>	2	2	2	4	2	<1	2	2	µg/l	A-T-025
Chromium (dissolved) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-025
Chromium (hexavalent) (w) <sub>A</sub> <sup>#</sup>	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/l	A-T-040w
Lead (dissolved) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-025
Mercury (dissolved) <sub>A</sub> <sup>#</sup>	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	µg/l	A-T-025
Nickel (dissolved) <sub>A</sub> <sup>#</sup>	3	3	1	3	1	<1	1	<1	µg/l	A-T-025
Selenium (dissolved) <sub>A</sub> <sup>#</sup>	39	1	<1	4	<1	<1	<1	<1	µg/l	A-T-025
Zinc (dissolved) <sub>A</sub> <sup>#</sup>	7	9	2	4	6	<1	6	6	µg/l	A-T-025

Envirolab Job Number: 13/05152

Client Project Name: East Midlands RFT

Client Project Ref: 312494

Lab Sample ID	13/05152/1	13/05152/2	13/05152/3	13/05152/4	13/05152/6	13/05152/7	13/05050/1	13/05050/2	Units	Method ref
Client Sample No							Deep			
Client Sample ID	CP220	CP210	CP213	CP217	CP212	CP204	CPR206	CPR204		
Depth to Top							14.68			
Depth To Bottom										
Date Sampled	23-Oct-13	24-Oct-13	24-Oct-13	23-Oct-13	24-Oct-13	22-Oct-13	22-Oct-13	22-Oct-13		
Sample Type	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W		
Sample Matrix Code										
PAH 16MS (w)										
Acenaphthene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	µg/l	A-T-019w
Acenaphthylene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	µg/l	A-T-019w
Anthracene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	µg/l	A-T-019w
Benzo(a)anthracene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	µg/l	A-T-019w
Benzo(a)pyrene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	µg/l	A-T-019w
Benzo(b)fluoranthene (w) <sub>A</sub> <sup>#</sup>	0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	µg/l	A-T-019w
Benzo(ghi)perylene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	µg/l	A-T-019w
Benzo(k)fluoranthene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	µg/l	A-T-019w
Chrysene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	µg/l	A-T-019w
Dibenzo(ah)anthracene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	µg/l	A-T-019w
Fluoranthene (w) <sub>A</sub> <sup>#</sup>	0.02	<0.01	<0.01	0.02	<0.01	-	0.01	<0.01	µg/l	A-T-019w
Fluorene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	µg/l	A-T-019w
Indeno(123-cd)pyrene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	0.01	0.01	-	<0.01	<0.01	µg/l	A-T-019w
Naphthalene (w) <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	µg/l	A-T-019w
Phenanthrene (w) <sub>A</sub> <sup>#</sup>	0.02	<0.01	<0.01	0.01	<0.01	-	<0.01	<0.01	µg/l	A-T-019w
Pyrene (w) <sub>A</sub> <sup>#</sup>	0.03	<0.01	0.01	0.02	0.01	-	<0.01	<0.01	µg/l	A-T-019w
PAH (total 16) (w) <sub>A</sub> <sup>#</sup>	0.08	<0.01	0.01	0.06	0.02	-	0.01	<0.01	µg/l	A-T-019w

Envirolab Job Number: 13/05152

Client Project Name: East Midlands RFT

Client Project Ref: 312494

Lab Sample ID	13/05152/1	13/05152/2	13/05152/3	13/05152/4	13/05152/6	13/05152/7	13/05050/1	13/05050/2	Units	Method ref
Client Sample No							Deep			
Client Sample ID	CP220	CP210	CP213	CP217	CP212	CP204	CPR206	CPR204		
Depth to Top							14.68			
Depth To Bottom										
Date Sampled	23-Oct-13	24-Oct-13	24-Oct-13	23-Oct-13	24-Oct-13	22-Oct-13	22-Oct-13	22-Oct-13		
Sample Type	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W		
Sample Matrix Code										
SVOC (w)										
1,2,4-Trichlorobenzene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
1,2-Dichlorobenzene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
1,3-Dichlorobenzene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
1,4-Dichlorobenzene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
2,4,5-Trichlorophenol <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
2,4,6-Trichlorophenol <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
2,4-Dichlorophenol <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
2,4-Dimethylphenol <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
2,4-Dinitrotoluene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
2,6-Dinitrotoluene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
2-Chloronaphthalene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
2-Chlorophenol <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
2-Methylnaphthalene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
2-Methylphenol <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
2-Nitrophenol <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
4-Bromophenyl phenyl ether <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
4-Chloro-3-methylphenol <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
4-Methylphenol <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
4-Nitrophenol <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Acenaphthene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Acenaphthylene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Anthracene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Bis(2-chloroethyl)ether <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Bis(2-chloroethoxy)methane <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Bis(2-ethylhexyl)phthalate <sub>A</sub>	<2	<2	<2	<2	<2	-	<2	<2	µg/l	A-T-052
Benzo(a)anthracene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Butylbenzyl phthalate <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Benzo(b)fluoranthene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Benzo(k)fluoranthene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052



Envirolab Job Number: 13/05152

Client Project Name: East Midlands RFT

Client Project Ref: 312494

Lab Sample ID	13/05152/1	13/05152/2	13/05152/3	13/05152/4	13/05152/6	13/05152/7	13/05050/1	13/05050/2	Units	Method ref
Client Sample No							Deep			
Client Sample ID	CP220	CP210	CP213	CP217	CP212	CP204	CPR206	CPR204		
Depth to Top							14.68			
Depth To Bottom										
Date Sampled	23-Oct-13	24-Oct-13	24-Oct-13	23-Oct-13	24-Oct-13	22-Oct-13	22-Oct-13	22-Oct-13		
Sample Type	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W		
Sample Matrix Code										
Benzo(a)pyrene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Benzo(ghi)perylene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Carbazole <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Chrysene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Dibenzofuran <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
n-Dibutylphthalate <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
n-Dioctylphthalate <sub>A</sub>	<5	<5	<5	<5	<5	-	<5	<5	µg/l	A-T-052
n-Nitroso-n-dipropylamine <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Diethyl phthalate <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Dimethyl phthalate <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Dibenzo(ah)anthracene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Fluorene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Fluoranthene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Hexachlorobutadiene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Hexachlorobenzene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Pentachlorophenol <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Phenol <sub>A</sub>	<1	<1	<1	<1	<1	-	4	<1	µg/l	A-T-052
Hexachloroethane <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Nitrobenzene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Naphthalene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Isophorone <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Hexachlorocyclopentadiene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Phenanthrene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Pyrene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Indeno(1,2,3-cd)pyrene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Bis(2-chloroisopropyl)ether <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
2,4-Dinitrophenol <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
4,6-Dinitro-2-methylphenol <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052
Perylene <sub>A</sub>	<1	<1	<1	<1	<1	-	<1	<1	µg/l	A-T-052

Envirolab Job Number: 13/05152

Client Project Name: East Midlands RFT

Client Project Ref: 312494

Lab Sample ID	13/05152/1	13/05152/2	13/05152/3	13/05152/4	13/05152/6	13/05152/7	13/05050/1	13/05050/2	Units	Method ref
Client Sample No							Deep			
Client Sample ID	CP220	CP210	CP213	CP217	CP212	CP204	CPR206	CPR204		
Depth to Top							14.68			
Depth To Bottom										
Date Sampled	23-Oct-13	24-Oct-13	24-Oct-13	23-Oct-13	24-Oct-13	22-Oct-13	22-Oct-13	22-Oct-13		
Sample Type	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W		
Sample Matrix Code										
VOC (w)										
Dichlorodifluoromethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Chloromethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Vinyl Chloride <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Bromomethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Chloroethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Trichlorofluoromethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
trans 1,2-Dichloroethene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Dichloromethane <sub>A</sub>	<100	<100	<100	<100	<100	<100	<100	<100	µg/l	A-T-006
Carbon Disulphide <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
1,1-Dichloroethene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
1,1-Dichloroethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
cis 1,2-Dichloroethene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Bromochloromethane <sub>A</sub> <sup>#</sup>	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-006
Chloroform <sub>A</sub> <sup>#</sup>	<25	<25	<25	<25	<25	<25	<25	<25	µg/l	A-T-006
2,2-Dichloropropane <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
1,2-Dichloroethane <sub>A</sub> <sup>#</sup>	<2	<2	<2	<2	<2	<2	<2	<2	µg/l	A-T-006
1,1,1-Trichloroethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
1,1-Dichloropropene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Benzene VOC <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Carbon Tetrachloride <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Dibromomethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
1,2-Dichloropropane <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Bromodichloromethane <sub>A</sub> <sup>#</sup>	<10	<10	<10	<10	<10	<10	<10	<10	µg/l	A-T-006
Trichloroethene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
cis 1,3-Dichloropropene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
trans 1,3-Dichloropropene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
1,1,2-Trichloroethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Toluene VOC <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
1,3-Dichloropropane <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006

Envirolab Job Number: 13/05152

Client Project Name: East Midlands RFT

Client Project Ref: 312494

Lab Sample ID	13/05152/1	13/05152/2	13/05152/3	13/05152/4	13/05152/6	13/05152/7	13/05050/1	13/05050/2	Units	Method ref
Client Sample No							Deep			
Client Sample ID	CP220	CP210	CP213	CP217	CP212	CP204	CPR206	CPR204		
Depth to Top							14.68			
Depth To Bottom										
Date Sampled	23-Oct-13	24-Oct-13	24-Oct-13	23-Oct-13	24-Oct-13	22-Oct-13	22-Oct-13	22-Oct-13		
Sample Type	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W		
Sample Matrix Code										
Dibromochloromethane <sub>A</sub> <sup>#</sup>	<3	<3	<3	<3	<3	<3	<3	<3	µg/l	A-T-006
1,2-Dibromoethane <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Tetrachloroethene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
1,1,1,2-Tetrachloroethane <sub>A</sub>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Chlorobenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Ethylbenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
m & p Xylene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Bromoform <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Styrene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
1,1,2,2-Tetrachloroethane <sub>A</sub>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
o-Xylene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
1,2,3-Trichloropropane <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Isopropylbenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
Bromobenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
2-Chlorotoluene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
n-propylbenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
4-Chlorotoluene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
1,2,4-Trimethylbenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
4-Isopropyltoluene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
1,3,5-Trimethylbenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
1,2-Dichlorobenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
1,4-Dichlorobenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
sec-Butylbenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
tert-Butylbenzene <sub>A</sub> <sup>#</sup>	<2	<2	<2	<2	<2	<2	<2	<2	µg/l	A-T-006
1,3-Dichlorobenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
n-butylbenzene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006
1,2-Dibromo-3-chloropropane <sub>A</sub> <sup>#</sup>	<2	<2	<2	<2	<2	<2	<2	<2	µg/l	A-T-006
1,2,4-Trichlorobenzene <sub>A</sub> <sup>#</sup>	<3	<3	<3	<3	<3	<3	<3	<3	µg/l	A-T-006
1,2,3-Trichlorobenzene <sub>A</sub> <sup>#</sup>	<3	<3	<3	<3	<3	<3	<3	<3	µg/l	A-T-006
Hexachlorobutadiene <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-006

Envirolab Job Number: 13/05152

Client Project Name: East Midlands RFT

Client Project Ref: 312494

Lab Sample ID	13/05152/1	13/05152/2	13/05152/3	13/05152/4	13/05152/6	13/05152/7	13/05050/1	13/05050/2	Units	Method ref
Client Sample No							Deep			
Client Sample ID	CP220	CP210	CP213	CP217	CP212	CP204	CPR206	CPR204		
Depth to Top							14.68			
Depth To Bottom										
Date Sampled	23-Oct-13	24-Oct-13	24-Oct-13	23-Oct-13	24-Oct-13	22-Oct-13	22-Oct-13	22-Oct-13		
Sample Type	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W	Water - W		
Sample Matrix Code										
TPH CWG										
Ali >C5-C6 (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Ali >C6-C8 (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Ali >C8-C10 (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Ali >C10-C12 (w) <sub>A</sub> <sup>#</sup>	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-023w
Ali >C12-C16 (w) <sub>A</sub> <sup>#</sup>	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-023w
Ali >C16-C21 (w) <sub>A</sub> <sup>#</sup>	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-023w
Ali >C21-C35 (w) <sub>A</sub> <sup>#</sup>	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-023w
Total Aliphatics (w) <sub>A</sub>	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022+23w
Aro >C5-C7 (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Aro >C7-C8 (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Aro >C8-C9 (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Aro >C9-C10 (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
Aro >C10-C12 (w) <sub>A</sub> <sup>#</sup>	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-023w
Aro >C12-C16 (w) <sub>A</sub> <sup>#</sup>	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-023w
Aro >C16-C21 (w) <sub>A</sub> <sup>#</sup>	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-023w
Aro >C21-C35 (w) <sub>A</sub> <sup>#</sup>	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-023w
Total Aromatics (w) <sub>A</sub>	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022+23w
TPH (Ali & Aro) (w) <sub>A</sub>	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-022+23w
Mineral Oil (>C10-C35) (w) <sub>A</sub> <sup>#</sup>	<5	<5	<5	<5	<5	<5	<5	<5	µg/l	A-T-023w
BTEX - Benzene (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
BTEX - Toluene (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
BTEX - Ethyl Benzene (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
BTEX - m & p Xylene (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
BTEX - o Xylene (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w
MTBE (w) <sub>A</sub> <sup>#</sup>	<1	<1	<1	<1	<1	<1	<1	<1	µg/l	A-T-022w

## **REPORT NOTES**

### **Notes - Soil analysis**

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis. For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

### **Notes - General**

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts.

Superscript "M" indicates method accredited to MCERTS.

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations. If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling.

### **TPH analysis of water by method A-T-007**

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

### **Asbestos in soil**

Asbestos in soil analysis is performed on an aliquot of the submitted sample and cannot guarantee to identify asbestos if present at low concentrations or as discrete fibres/fragments.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed.

Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

### **Predominant Matrix Codes:**

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER.

Samples with Matrix Code 7 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our MCERTS accreditation.

### **Secondary Matrix Codes:**

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

# **APPENDIX J**

## **GAS AND GROUNDWATER MONITORING RESULTS**



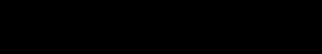

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# IN-SITU GAS MONITORING RESULTS

[Pressures]	Previous	During	Start	End	Equipment Used & Remarks
Round 1	-	Constant	1003	1003	Dipmeter + GA2000 SN-GA07744 + Weather: Overcast + Ground: Wet + Wind: None + Air Temp: 12DegC
Round 2	-	Constant	984	984	Dipmeter + GA2000 SN-GA07744 + Weather: Overcast + Ground: Wet + Wind: None + Air Temp: 15DegC
Round 3	-	Constant	1012	1012	Dipmeter + GA2000 SN-GA07744 + Weather: Sunny + Ground: Wet + Wind: None + Air Temp: 12DegC
Round 4	-	Constant	1020	1020	Dipmeter + GA2000 SN-GA07744 + Weather: Overcast + Ground: Wet + Wind: None + Air Temp: 10DegC

Exploratory Position ID	Monitoring Round	Measured Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP203	1	3.77	16/10/2013 12:33:00	1003	1003	-	DRY	0.1	0.0	20.7	0.0	0.0	0.0	
CP203	1	---	15 secs	-	-	-	-	1.5	0.0	19.9	0.0	0.0	0.0	
CP203	1	---	30 secs	-	-	-	-	1.4	0.0	18.8	0.0	0.0	0.0	
CP203	1	---	60 secs	-	-	-	-	1.4	0.0	19.0	0.0	0.0	0.0	
CP203	1	---	90 secs	-	-	-	-	1.5	0.0	18.9	0.0	0.0	0.0	
CP203	1	---	120 secs	-	-	-	-	1.4	0.0	18.9	0.0	0.0	0.0	
CP203	1	---	180 secs	-	-	-	-	1.5	0.0	19.0	0.0	0.0	0.0	
CP203	1	---	240 secs	-	-	-	-	1.5	0.0	19.0	0.0	0.0	0.0	
CP203	1	---	300 secs	-	-	-	-	1.6	0.0	19.0	0.0	0.0	0.0	
CP203	2	3.78	23/10/2013 13:42:00	987	987	-0.1 <sub>(I)</sub>	DRY	0.0	0.0	20.8	0.0	0.0	0.0	
CP203	2	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	1.9	0.0	19.9	0.0	0.0	0.0	
CP203	2	---	30 secs	-	-	-	-	1.8	0.1	19.8	1.0	0.0	0.0	
CP203	2	---	60 secs	-	-	-	-	2.0	0.0	18.6	0.0	0.0	0.0	
CP203	2	---	90 secs	-	-	-	-	2.0	0.0	18.5	0.0	0.0	0.0	
CP203	2	---	120 secs	-	-	-	-	2.0	0.0	18.6	0.0	0.0	0.0	
CP203	2	---	180 secs	-	-	-	-	2.0	0.0	18.8	0.0	0.0	0.0	
CP203	2	---	240 secs	-	-	-	-	2.1	0.0	18.7	0.0	0.0	0.0	
CP203	2	---	300 secs	-	-	-	-	2.0	0.0	18.7	0.0	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.



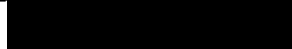

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP203	3	3.74	30/10/2013 16:50:00	1010	1010	0.0 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP203	3	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	1.4	0.0	18.1	0.0	0.0	0.0	
CP203	3	---	30 secs	-	-	-	-	1.7	0.0	17.8	0.0	0.0	0.0	
CP203	3	---	60 secs	-	-	-	-	1.6	0.1	17.8	1.0	0.0	0.0	
CP203	3	---	90 secs	-	-	-	-	1.6	0.1	17.8	1.0	0.0	0.0	
CP203	3	---	120 secs	-	-	-	-	1.7	0.1	17.7	1.0	0.0	0.0	
CP203	3	---	180 secs	-	-	-	-	1.4	0.1	18.2	1.0	0.0	0.0	
CP203	3	---	240 secs	-	-	-	-	1.6	0.1	18.1	1.0	0.0	0.0	
CP203	3	---	300 secs	-	-	-	-	1.5	0.1	18.4	1.0	0.0	0.0	
CP203	4	3.76	12/11/2013 10:22:00	1020	1020	0.3 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP203	4	---	15 secs	-	-	0.1 <sub>(SS)</sub>	-	1.4	0.0	18.6	0.0	0.0	0.0	
CP203	4	---	30 secs	-	-	-	-	1.2	0.0	17.9	0.0	0.0	0.0	
CP203	4	---	60 secs	-	-	-	-	1.2	0.0	17.8	0.0	13.0	0.0	
CP203	4	---	90 secs	-	-	-	-	1.3	0.0	17.8	0.0	0.0	0.0	
CP203	4	---	120 secs	-	-	-	-	1.3	0.0	17.9	0.0	0.0	0.0	
CP203	4	---	180 secs	-	-	-	-	1.3	0.0	17.8	0.0	2.0	0.0	
CP203	4	---	240 secs	-	-	-	-	1.3	0.0	18.0	0.0	4.0	0.0	
CP203	4	---	300 secs	-	-	-	-	1.3	0.0	17.9	0.0	0.0	0.0	
CP204	1	3.90	17/10/2013 16:06:00	1010	1010	-	DRY	0.0	0.0	20.8	0.0	0.0	0.0	
CP204	1	---	15 secs	-	-	-	-	1.1	0.0	18.9	0.0	0.0	0.0	
CP204	1	---	30 secs	-	-	-	-	1.1	0.0	16.7	0.0	0.0	0.0	
CP204	1	---	60 secs	-	-	-	-	1.1	0.0	16.3	0.0	0.0	0.0	
CP204	1	---	90 secs	-	-	-	-	1.2	0.0	16.4	0.0	0.0	0.0	
CP204	1	---	120 secs	-	-	-	-	1.2	0.0	16.4	0.0	0.0	0.0	





Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP204	1	---	180 secs	-	-	-	-	1.3	0.0	16.3	0.0	0.0	0.0	
CP204	1	---	240 secs	-	-	-	-	1.4	0.0	15.9	0.0	0.0	0.0	
CP204	1	---	300 secs	-	-	-	-	1.4	0.0	15.8	0.0	0.0	0.0	
CP204	2	3.91	22/10/2013 15:38:00	983	983	0.0 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP204	2	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	0.7	0.0	20.0	0.0	0.0	0.0	
CP204	2	---	30 secs	-	-	-	-	1.0	0.0	18.6	0.0	0.0	0.0	
CP204	2	---	60 secs	-	-	-	-	1.3	0.0	17.4	0.0	0.0	0.0	
CP204	2	---	90 secs	-	-	-	-	1.4	0.1	16.8	1.0	0.0	0.0	
CP204	2	---	120 secs	-	-	-	-	1.5	0.0	16.7	0.0	0.0	0.0	
CP204	2	---	180 secs	-	-	-	-	1.6	0.1	16.6	1.0	0.0	0.0	
CP204	2	---	240 secs	-	-	-	-	1.7	0.0	16.6	0.0	0.0	0.0	
CP204	2	---	300 secs	-	-	-	-	1.7	0.0	16.7	0.0	0.0	0.0	
CP204	3	3.95	30/10/2013 16:00:00	1009	1009	0.0 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP204	3	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	0.9	0.0	18.5	0.0	0.0	0.0	
CP204	3	---	30 secs	-	-	-	-	0.9	0.0	17.6	0.0	0.0	0.0	
CP204	3	---	60 secs	-	-	-	-	0.9	0.0	17.6	0.0	0.0	0.0	
CP204	3	---	90 secs	-	-	-	-	0.9	0.0	17.5	0.0	0.0	0.0	
CP204	3	---	120 secs	-	-	-	-	0.9	0.0	17.5	0.0	0.0	0.0	
CP204	3	---	180 secs	-	-	-	-	0.9	0.0	17.5	0.0	0.0	0.0	
CP204	3	---	240 secs	-	-	-	-	0.9	0.0	17.5	0.0	0.0	0.0	
CP204	3	---	300 secs	-	-	-	-	0.9	0.0	17.5	0.0	0.0	0.0	
CP204	4	3.88	12/11/2013 11:36:00	1020	1020	-0.4 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP204	4	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	0.1	0.0	20.1	0.0	0.0	0.0	
CP204	4	---	30 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP204	4	---	60 secs	-	-	-	-	0.1	0.0	20.4	0.0	3.0	0.0	



Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP204	4	---	90 secs	-	-	-	-	0.1	0.0	20.5	0.0	9.0	0.0	
CP204	4	---	120 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP204	4	---	180 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP204	4	---	240 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP204	4	---	300 secs	-	-	-	-	0.1	0.0	20.5	0.0	1.0	0.0	
CP205	1	4.37	16/10/2013 12:43:00	1003	1003	-	4.13	0.1	0.0	20.7	0.0	0.0	0.0	
CP205	1	---	15 secs	-	-	-	-	0.9	0.0	20.4	0.0	0.0	0.0	
CP205	1	---	30 secs	-	-	-	-	1.1	0.0	19.8	0.0	0.0	0.0	
CP205	1	---	60 secs	-	-	-	-	1.2	0.0	19.7	0.0	0.0	0.0	
CP205	1	---	90 secs	-	-	-	-	1.2	0.0	19.8	0.0	0.0	0.0	
CP205	1	---	120 secs	-	-	-	-	1.2	0.0	19.8	0.0	0.0	0.0	
CP205	1	---	180 secs	-	-	-	-	1.2	0.0	19.7	0.0	0.0	0.0	
CP205	1	---	240 secs	-	-	-	-	1.2	0.0	19.7	0.0	0.0	0.0	
CP205	1	---	300 secs	-	-	-	-	1.2	0.0	19.7	0.0	0.0	0.0	
CP205	2	4.37	23/10/2013 14:06:00	987	987	0.0 <sub>(I)</sub>	4.12	0.1	0.0	20.8	0.0	0.0	0.0	
CP205	2	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	1.3	0.0	19.6	0.0	0.0	0.0	
CP205	2	---	30 secs	-	-	-	-	1.3	0.0	18.8	0.0	0.0	0.0	
CP205	2	---	60 secs	-	-	-	-	1.4	0.0	18.5	0.0	0.0	0.0	
CP205	2	---	90 secs	-	-	-	-	1.4	0.0	18.6	0.0	0.0	0.0	
CP205	2	---	120 secs	-	-	-	-	1.4	0.0	18.6	0.0	0.0	0.0	
CP205	2	---	180 secs	-	-	-	-	1.4	0.0	18.6	0.0	0.0	0.0	
CP205	2	---	240 secs	-	-	-	-	1.4	0.0	18.6	0.0	0.0	0.0	
CP205	2	---	300 secs	-	-	-	-	1.4	0.0	18.6	0.0	0.0	0.0	
CP205	3	4.37	30/10/2013 09:25:00	1010	1012	-2.5 <sub>(I)</sub>	4.19	0.1	0.0	20.8	0.0	0.0	0.0	



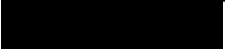

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
	<div style="background-color: black; width: 100px; height: 1.2em;"></div>	28/11/13	<div style="background-color: black; width: 100px; height: 1.2em;"></div>	28/11/13	312494
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP205	3	---	15 secs	-	-	-2.5 <sub>(SS)</sub>	-	0.9	0.0	20.5	0.0	0.0	0.0	
CP205	3	---	30 secs	-	-	-	-	1.1	0.0	19.2	0.0	0.0	0.0	
CP205	3	---	60 secs	-	-	-	-	1.1	0.0	18.8	0.0	0.0	0.0	
CP205	3	---	90 secs	-	-	-	-	1.1	0.0	18.9	0.0	0.0	0.0	
CP205	3	---	120 secs	-	-	-	-	1.1	0.0	18.8	0.0	0.0	0.0	
CP205	3	---	180 secs	-	-	-	-	1.1	0.0	18.9	0.0	0.0	0.0	
CP205	3	---	240 secs	-	-	-	-	1.1	0.0	18.8	0.0	0.0	0.0	
CP205	3	---	300 secs	-	-	-	-	1.1	0.0	18.8	0.0	0.0	0.0	
CP205	4	4.37	12/11/2013 09:45:00	1020	1020	1.0 <sub>(I)</sub>	4.20	0.1	0.0	20.8	0.0	0.0	0.0	
CP205	4	---	15 secs	-	-	0.4 <sub>(SS)</sub>	-	0.6	0.0	20.3	0.0	0.0	0.0	
CP205	4	---	30 secs	-	-	-	-	1.1	0.0	18.9	0.0	0.0	0.0	
CP205	4	---	60 secs	-	-	-	-	1.2	0.0	18.9	0.0	0.0	0.0	
CP205	4	---	90 secs	-	-	-	-	1.2	0.0	18.8	0.0	0.0	0.0	
CP205	4	---	120 secs	-	-	-	-	1.2	0.0	18.9	0.0	0.0	0.0	
CP205	4	---	180 secs	-	-	-	-	1.2	0.0	18.8	0.0	0.0	0.0	
CP205	4	---	240 secs	-	-	-	-	1.2	0.0	19.0	0.0	0.0	0.0	
CP205	4	---	300 secs	-	-	-	-	1.2	0.0	19.0	0.0	0.0	0.0	
CP206	1	3.22	16/10/2013 13:37:00	1003	1003	-	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP206	1	---	15 secs	-	-	-	-	2.5	0.0	18.8	0.0	0.0	0.0	
CP206	1	---	30 secs	-	-	-	-	2.6	0.0	16.0	0.0	0.0	0.0	
CP206	1	---	60 secs	-	-	-	-	2.6	0.0	15.6	0.0	0.0	0.0	
CP206	1	---	90 secs	-	-	-	-	2.6	0.0	15.5	0.0	0.0	0.0	
CP206	1	---	120 secs	-	-	-	-	2.7	0.0	15.5	0.0	0.0	0.0	
CP206	1	---	180 secs	-	-	-	-	2.7	0.0	15.5	0.0	0.0	0.0	





Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP206	1	---	240 secs	-	-	-	-	2.7	0.0	15.6	0.0	0.0	0.0	
CP206	1	---	300 secs	-	-	-	-	2.8	0.0	15.7	0.0	0.0	0.0	
CP206	2	3.23	22/10/2013 14:26:30	988	988	0.4 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP206	2	---	15 secs	-	-	0.3 <sub>(SS)</sub>	-	2.5	0.0	15.4	0.0	0.0	0.0	
CP206	2	---	30 secs	-	-	-	-	3.4	0.0	12.6	0.0	0.0	0.0	
CP206	2	---	60 secs	-	-	-	-	3.5	0.0	12.4	0.0	0.0	0.0	
CP206	2	---	90 secs	-	-	-	-	3.5	0.0	12.6	0.0	0.0	0.0	
CP206	2	---	120 secs	-	-	-	-	3.5	0.0	12.5	0.0	0.0	0.0	
CP206	2	---	180 secs	-	-	-	-	3.5	0.0	12.6	0.0	0.0	0.0	
CP206	2	---	240 secs	-	-	-	-	3.5	0.0	12.6	0.0	0.0	0.0	
CP206	2	---	300 secs	-	-	-	-	3.5	0.0	12.7	0.0	0.0	0.0	
CP206	3	3.29	30/10/2013 09:43:00	1012	1012	-0.7 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP206	3	---	15 secs	-	-	-0.5 <sub>(SS)</sub>	-	2.7	0.0	19.3	0.0	0.0	0.0	
CP206	3	---	30 secs	-	-	-	-	2.9	0.0	14.9	0.0	0.0	0.0	
CP206	3	---	60 secs	-	-	-	-	2.9	0.0	14.7	0.0	0.0	0.0	
CP206	3	---	90 secs	-	-	-	-	2.9	0.0	14.7	0.0	0.0	0.0	
CP206	3	---	120 secs	-	-	-	-	2.9	0.0	14.7	0.0	0.0	0.0	
CP206	3	---	180 secs	-	-	-	-	2.9	0.0	14.9	0.0	0.0	0.0	
CP206	3	---	240 secs	-	-	-	-	2.9	0.0	14.9	0.0	0.0	0.0	
CP206	3	---	300 secs	-	-	-	-	2.9	0.0	14.9	0.0	0.0	0.0	
CP206	4	3.21	11/11/2013 16:44:00	1017	1017	0.0 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP206	4	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	3.3	0.0	12.9	0.0	0.0	0.0	
CP206	4	---	30 secs	-	-	-	-	3.5	0.0	12.2	0.0	7.0	0.0	
CP206	4	---	60 secs	-	-	-	-	3.5	0.0	12.1	0.0	0.0	0.0	
CP206	4	---	90 secs	-	-	-	-	3.5	0.0	12.0	0.0	0.0	0.0	



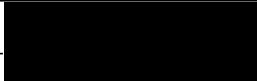

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP206	4	---	120 secs	-	-	-	-	3.5	0.0	12.1	0.0	2.0	0.0	
CP206	4	---	180 secs	-	-	-	-	3.5	0.0	12.1	0.0	0.0	0.0	
CP206	4	---	240 secs	-	-	-	-	3.4	0.0	12.2	0.0	7.0	0.0	
CP206	4	---	300 secs	-	-	-	-	3.4	0.0	12.3	0.0	0.0	0.0	
CP207	1	2.68	16/10/2013 15:32:00	1003	1003	-	DRY	0.1	0.0	20.7	0.0	0.0	0.0	
CP207	1	---	15 secs	-	-	-	-	1.4	0.0	19.6	0.0	0.0	0.0	
CP207	1	---	30 secs	-	-	-	-	1.5	0.0	13.4	0.0	0.0	0.0	
CP207	1	---	60 secs	-	-	-	-	1.5	0.0	13.2	0.0	0.0	0.0	
CP207	1	---	90 secs	-	-	-	-	1.5	0.0	13.0	0.0	0.0	0.0	
CP207	1	---	120 secs	-	-	-	-	1.5	0.0	17.9	0.0	0.0	0.0	
CP207	1	---	180 secs	-	-	-	-	1.5	0.0	17.8	0.0	0.0	0.0	
CP207	1	---	240 secs	-	-	-	-	1.5	0.0	17.8	0.0	0.0	0.0	
CP207	1	---	300 secs	-	-	-	-	1.5	0.0	17.8	0.0	0.0	0.0	
CP207	2	2.70	23/10/2013 14:40:00	987	987	0.0 <sub>(I)</sub>	DRY	0.0	0.0	20.8	0.0	0.0	0.0	
CP207	2	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	1.7	0.0	19.0	0.0	0.0	0.0	
CP207	2	---	30 secs	-	-	-	-	1.8	0.1	18.5	1.0	0.0	0.0	
CP207	2	---	60 secs	-	-	-	-	1.7	0.1	18.4	1.0	0.0	0.0	
CP207	2	---	90 secs	-	-	-	-	1.8	0.1	18.4	1.0	0.0	0.0	
CP207	2	---	120 secs	-	-	-	-	1.8	0.0	18.5	0.0	0.0	0.0	
CP207	2	---	180 secs	-	-	-	-	1.8	0.0	18.4	0.0	0.0	0.0	
CP207	2	---	240 secs	-	-	-	-	1.8	0.0	18.5	0.0	0.0	0.0	
CP207	2	---	300 secs	-	-	-	-	1.9	0.0	18.5	0.0	0.0	0.0	
CP207	3	2.69	30/10/2013 16:42:00	1010	1010	0.0 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP207	3	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	1.8	0.0	19.2	0.0	0.0	0.0	


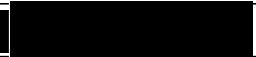


Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP207	3	---	30 secs	-	-	-	-	1.8	0.0	18.6	0.0	0.0	0.0	
CP207	3	---	60 secs	-	-	-	-	1.8	0.0	18.4	0.0	0.0	0.0	
CP207	3	---	90 secs	-	-	-	-	1.8	0.0	18.4	0.0	0.0	0.0	
CP207	3	---	120 secs	-	-	-	-	1.8	0.0	18.3	0.0	0.0	0.0	
CP207	3	---	180 secs	-	-	-	-	1.9	0.0	18.2	0.0	0.0	0.0	
CP207	3	---	240 secs	-	-	-	-	1.9	0.0	18.1	0.0	0.0	0.0	
CP207	3	---	300 secs	-	-	-	-	1.9	0.0	18.0	0.0	0.0	0.0	
CP207	4	2.67	11/11/2013 16:08:00	1017	1017	0.1 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP207	4	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	0.7	0.0	19.9	0.0	0.0	0.0	
CP207	4	---	30 secs	-	-	-	-	1.4	0.0	18.2	0.0	24.0	0.0	
CP207	4	---	60 secs	-	-	-	-	1.8	0.0	17.5	0.0	0.0	0.0	
CP207	4	---	90 secs	-	-	-	-	1.8	0.0	17.6	0.0	5.0	0.0	
CP207	4	---	120 secs	-	-	-	-	1.9	0.0	17.6	0.0	0.0	0.0	
CP207	4	---	180 secs	-	-	-	-	1.9	0.0	17.5	0.0	9.0	0.0	
CP207	4	---	240 secs	-	-	-	-	1.9	0.0	17.5	0.0	0.0	0.0	
CP207	4	---	300 secs	-	-	-	-	1.9	0.0	17.5	0.0	4.0	0.0	
CP208	1	1.90	16/10/2013 15:16:41	1003	1003	-	DRY	0.0	0.0	20.7	0.0	0.0	0.0	
CP208	1	---	15 secs	-	-	-	-	1.2	0.1	19.5	1.0	0.0	0.0	
CP208	1	---	30 secs	-	-	-	-	1.2	0.1	17.4	1.0	0.0	0.0	
CP208	1	---	60 secs	-	-	-	-	1.2	0.1	17.4	1.0	0.0	0.0	
CP208	1	---	90 secs	-	-	-	-	1.2	0.1	17.4	1.0	0.0	0.0	
CP208	1	---	120 secs	-	-	-	-	1.2	0.0	17.4	0.0	0.0	0.0	
CP208	1	---	180 secs	-	-	-	-	1.2	0.0	17.4	0.0	0.0	0.0	
CP208	1	---	240 secs	-	-	-	-	1.2	0.0	17.5	0.0	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.



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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP208	1	---	300 secs	-	-	-	-	1.2	0.0	17.3	0.0	0.0	0.0	
CP208	2	1.88	24/10/2013 13:00:00	1005	1005	-0.1 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP208	2	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	1.2	0.0	19.0	0.0	0.0	0.0	
CP208	2	---	30 secs	-	-	-	-	1.3	0.0	16.0	0.0	0.0	0.0	
CP208	2	---	60 secs	-	-	-	-	1.3	0.0	15.7	0.0	0.0	0.0	
CP208	2	---	90 secs	-	-	-	-	1.3	0.0	15.7	0.0	0.0	0.0	
CP208	2	---	120 secs	-	-	-	-	1.3	0.0	15.7	0.0	0.0	0.0	
CP208	2	---	180 secs	-	-	-	-	1.3	0.0	15.6	0.0	0.0	0.0	
CP208	2	---	240 secs	-	-	-	-	1.3	0.0	15.6	0.0	0.0	0.0	
CP208	2	---	300 secs	-	-	-	-	1.3	0.0	15.6	0.0	0.0	0.0	
CP208	3	1.90	30/10/2013 16:10:00	1009	1009	-0.1 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP208	3	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	1.0	0.0	17.7	0.0	0.0	0.0	
CP208	3	---	30 secs	-	-	-	-	1.0	0.0	16.5	0.0	0.0	0.0	
CP208	3	---	60 secs	-	-	-	-	1.0	0.0	16.3	0.0	0.0	0.0	
CP208	3	---	90 secs	-	-	-	-	1.0	0.0	16.3	0.0	0.0	0.0	
CP208	3	---	120 secs	-	-	-	-	1.0	0.0	16.3	0.0	0.0	0.0	
CP208	3	---	180 secs	-	-	-	-	1.0	0.0	16.2	0.0	0.0	0.0	
CP208	3	---	240 secs	-	-	-	-	1.1	0.0	16.2	0.0	0.0	0.0	
CP208	3	---	300 secs	-	-	-	-	1.1	0.0	16.0	0.0	0.0	0.0	
CP208	4	1.86	11/11/2013 15:36:00	1016	1017	0.9 <sub>(I)</sub>	1.85	0.1	0.0	20.8	0.0	0.0	0.0	
CP208	4	---	15 secs	-	-	0.2 <sub>(SS)</sub>	-	0.8	0.0	18.2	0.0	0.0	0.0	
CP208	4	---	30 secs	-	-	-	-	0.9	0.0	16.4	0.0	0.0	0.0	
CP208	4	---	60 secs	-	-	-	-	1.0	0.0	15.9	0.0	0.0	0.0	
CP208	4	---	90 secs	-	-	-	-	1.0	0.0	15.6	0.0	0.0	0.0	
CP208	4	---	120 secs	-	-	-	-	1.0	0.0	15.5	0.0	0.0	0.0	





Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP208	4	---	180 secs	-	-	-	-	1.0	0.0	15.5	0.0	0.0	0.0	
CP208	4	---	240 secs	-	-	-	-	1.0	0.0	15.6	0.0	0.0	0.0	
CP208	4	---	300 secs	-	-	-	-	1.0	0.0	15.5	0.0	0.0	0.0	
CP210	1	9.05	17/10/2013 16:31:11	1012	1010	-	5.47	0.0	0.0	20.8	0.0	0.0	0.0	
CP210	1	---	15 secs	-	-	-	-	0.5	0.0	19.0	0.0	0.0	0.0	
CP210	1	---	30 secs	-	-	-	-	0.5	0.0	18.1	0.0	0.0	0.0	
CP210	1	---	60 secs	-	-	-	-	0.5	0.0	18.1	0.0	0.0	0.0	
CP210	1	---	90 secs	-	-	-	-	0.5	0.0	18.3	0.0	0.0	0.0	
CP210	1	---	120 secs	-	-	-	-	0.5	0.0	18.3	0.0	0.0	0.0	
CP210	1	---	180 secs	-	-	-	-	0.5	0.0	18.3	0.0	0.0	0.0	
CP210	1	---	240 secs	-	-	-	-	0.5	0.0	18.3	0.0	0.0	0.0	
CP210	1	---	300 secs	-	-	-	-	0.5	0.0	18.3	0.0	0.0	0.0	
CP210	2	9.05	23/10/2013 09:44:00	984	984	0.0 <sub>(I)</sub>	4.77	0.0	0.0	20.8	0.0	0.0	0.0	
CP210	2	---	15 secs	-	-	0.1 <sub>(SS)</sub>	-	0.5	0.0	19.2	0.0	0.0	0.0	
CP210	2	---	30 secs	-	-	-	-	0.5	0.0	19.1	0.0	0.0	0.0	
CP210	2	---	60 secs	-	-	-	-	0.4	0.0	19.4	0.0	0.0	0.0	
CP210	2	---	90 secs	-	-	-	-	0.4	0.0	19.5	0.0	0.0	0.0	
CP210	2	---	120 secs	-	-	-	-	0.4	0.0	19.5	0.0	0.0	0.0	
CP210	2	---	180 secs	-	-	-	-	0.4	0.0	19.6	0.0	0.0	0.0	
CP210	2	---	240 secs	-	-	-	-	0.4	0.0	19.7	0.0	0.0	0.0	
CP210	2	---	300 secs	-	-	-	-	0.4	0.0	19.7	0.0	0.0	0.0	
CP210	3	9.03	30/10/2013 14:35:00	1009	1009	0.0 <sub>(I)</sub>	3.88	0.1	0.0	20.8	0.0	0.0	0.0	
CP210	3	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	1.7	0.0	19.5	0.0	0.0	0.0	
CP210	3	---	30 secs	-	-	-	-	1.7	0.0	18.6	0.0	0.0	0.0	



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 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP210	3	---	60 secs	-	-	-	-	1.4	0.0	18.7	0.0	0.0	0.0	
CP210	3	---	90 secs	-	-	-	-	1.4	0.0	18.9	0.0	0.0	0.0	
CP210	3	---	120 secs	-	-	-	-	1.4	0.0	18.8	0.0	0.0	0.0	
CP210	3	---	180 secs	-	-	-	-	0.8	0.0	19.5	0.0	0.0	0.0	
CP210	3	---	240 secs	-	-	-	-	0.9	0.0	19.3	0.0	0.0	0.0	
CP210	3	---	300 secs	-	-	-	-	0.8	0.0	19.3	0.0	0.0	0.0	
CP210	4	9.04	12/11/2013 12:22:00	1019	1020	0.0 <sub>(I)</sub>	3.27	0.1	0.0	20.8	0.0	0.0	0.0	
CP210	4	---	15 secs	-	-	1.6 <sub>(SS)</sub>	-	1.5	0.0	18.3	0.0	0.0	0.0	
CP210	4	---	30 secs	-	-	-	-	2.4	0.0	15.1	0.0	5.0	0.0	
CP210	4	---	60 secs	-	-	-	-	2.4	0.0	15.0	0.0	0.0	0.0	
CP210	4	---	90 secs	-	-	-	-	2.1	0.0	15.4	0.0	0.0	0.0	
CP210	4	---	120 secs	-	-	-	-	2.1	0.0	15.5	0.0	0.0	0.0	
CP210	4	---	180 secs	-	-	-	-	2.1	0.0	15.5	0.0	0.0	0.0	
CP210	4	---	240 secs	-	-	-	-	2.0	0.0	15.7	0.0	0.0	0.0	
CP210	4	---	300 secs	-	-	-	-	2.0	0.0	15.9	0.0	0.0	0.0	
CP211	1	6.68	17/10/2013 16:43:18	1010	1010	-	DRY	0.0	0.0	20.8	0.0	0.0	0.0	
CP211	1	---	15 secs	-	-	-	-	1.9	0.0	16.0	0.0	0.0	0.0	
CP211	1	---	30 secs	-	-	-	-	2.0	0.0	12.2	0.0	0.0	0.0	
CP211	1	---	60 secs	-	-	-	-	2.0	0.0	11.9	0.0	0.0	0.0	
CP211	1	---	90 secs	-	-	-	-	2.0	0.0	11.8	0.0	0.0	0.0	
CP211	1	---	120 secs	-	-	-	-	2.0	0.0	11.7	0.0	0.0	0.0	
CP211	1	---	180 secs	-	-	-	-	2.0	0.0	11.8	0.0	0.0	0.0	
CP211	1	---	240 secs	-	-	-	-	2.0	0.0	11.6	0.0	0.0	0.0	
CP211	1	---	300 secs	-	-	-	-	2.0	0.0	11.8	0.0	0.0	0.0	



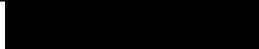

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP211	2	6.67	24/10/2013 10:40:00	1005	1005	-0.1 <sub>(I)</sub>	6.14	0.0	0.0	20.8	0.0	0.0	0.0	
CP211	2	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	2.5	0.0	17.4	0.0	0.0	0.0	
CP211	2	---	30 secs	-	-	-	-	2.6	0.0	10.9	0.0	0.0	0.0	
CP211	2	---	60 secs	-	-	-	-	2.6	0.0	10.8	0.0	0.0	0.0	
CP211	2	---	90 secs	-	-	-	-	2.6	0.0	10.8	0.0	0.0	0.0	
CP211	2	---	120 secs	-	-	-	-	2.6	0.0	10.8	0.0	0.0	0.0	
CP211	2	---	180 secs	-	-	-	-	2.6	0.0	10.9	0.0	0.0	0.0	
CP211	2	---	240 secs	-	-	-	-	2.6	0.0	10.9	0.0	0.0	0.0	
CP211	2	---	300 secs	-	-	-	-	2.6	0.0	10.9	0.0	0.0	0.0	
CP211	3	6.67	30/10/2013 14:00:00	1008	1009	-0.1 <sub>(I)</sub>	6.14	0.1	0.0	20.8	0.0	0.0	0.0	
CP211	3	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	2.1	0.0	15.1	0.0	0.0	0.0	
CP211	3	---	30 secs	-	-	-	-	2.1	0.0	13.6	0.0	0.0	0.0	
CP211	3	---	60 secs	-	-	-	-	1.9	0.0	13.9	0.0	0.0	0.0	
CP211	3	---	90 secs	-	-	-	-	2.0	0.0	13.7	0.0	0.0	0.0	
CP211	3	---	120 secs	-	-	-	-	1.9	0.0	14.0	0.0	0.0	0.0	
CP211	3	---	180 secs	-	-	-	-	1.8	0.0	14.3	0.0	0.0	0.0	
CP211	3	---	240 secs	-	-	-	-	1.9	0.0	14.1	0.0	0.0	0.0	
CP211	3	---	300 secs	-	-	-	-	1.8	0.0	14.5	0.0	0.0	0.0	
CP211	4	6.65	12/11/2013 12:53:00	1018	1020	0.1 <sub>(I)</sub>	5.96	0.1	0.0	20.8	0.0	0.0	0.0	
CP211	4	---	15 secs	-	-	0.1 <sub>(SS)</sub>	-	0.3	0.0	20.1	0.0	0.0	0.0	
CP211	4	---	30 secs	-	-	-	-	2.3	0.0	9.6	0.0	7.0	0.0	
CP211	4	---	60 secs	-	-	-	-	2.3	0.0	9.2	0.0	0.0	0.0	
CP211	4	---	90 secs	-	-	-	-	2.2	0.0	9.3	0.0	0.0	0.0	
CP211	4	---	120 secs	-	-	-	-	1.0	0.0	17.0	0.0	0.0	0.0	
CP211	4	---	180 secs	-	-	-	-	0.8	0.0	17.1	0.0	0.0	0.0	



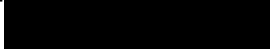

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP211	4	---	240 secs	-	-	-	-	0.8	0.0	17.4	0.0	0.0	0.0	
CP211	4	---	300 secs	-	-	-	-	0.8	0.0	17.3	0.0	0.0	0.0	
CP212	1	3.39	17/10/2013 16:56:18	1010	1010	-	2.22	0.0	0.0	20.8	0.0	0.0	0.0	
CP212	1	---	15 secs	-	-	-	-	2.3	0.0	19.4	0.0	0.0	0.0	
CP212	1	---	30 secs	-	-	-	-	2.4	0.0	18.5	0.0	0.0	0.0	
CP212	1	---	60 secs	-	-	-	-	2.4	0.0	18.2	0.0	0.0	0.0	
CP212	1	---	90 secs	-	-	-	-	2.4	0.0	18.3	0.0	0.0	0.0	
CP212	1	---	120 secs	-	-	-	-	2.5	0.0	18.3	0.0	0.0	0.0	
CP212	1	---	180 secs	-	-	-	-	2.5	0.0	18.1	0.0	0.0	0.0	
CP212	1	---	240 secs	-	-	-	-	2.4	0.0	18.3	0.0	0.0	0.0	
CP212	1	---	300 secs	-	-	-	-	2.3	0.0	18.4	0.0	0.0	0.0	
CP212	2	3.39	23/10/2013 10:45:00	984	984	0.1 <sub>(I)</sub>	1.48	0.0	0.0	20.8	0.0	0.0	0.0	
CP212	2	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	3.6	0.0	20.0	0.0	0.0	0.0	
CP212	2	---	30 secs	-	-	-	-	3.8	0.0	15.0	0.0	0.0	0.0	
CP212	2	---	60 secs	-	-	-	-	3.8	0.0	15.5	0.0	0.0	0.0	
CP212	2	---	90 secs	-	-	-	-	3.8	0.0	15.5	0.0	0.0	0.0	
CP212	2	---	120 secs	-	-	-	-	3.8	0.0	15.5	0.0	0.0	0.0	
CP212	2	---	180 secs	-	-	-	-	3.6	0.0	15.9	0.0	0.0	0.0	
CP212	2	---	240 secs	-	-	-	-	3.4	0.0	16.4	0.0	0.0	0.0	
CP212	2	---	300 secs	-	-	-	-	3.2	0.0	16.8	0.0	0.0	0.0	
CP212	3	3.38	30/10/2013 13:55:00	1007	1009	0.3 <sub>(I)</sub>	1.22	0.1	0.0	20.8	0.0	0.0	0.0	
CP212	3	---	15 secs	-	-	0.4 <sub>(SS)</sub>	-	2.3	0.0	19.5	0.0	0.0	0.0	
CP212	3	---	30 secs	-	-	-	-	2.4	0.0	18.5	0.0	0.0	0.0	
CP212	3	---	60 secs	-	-	-	-	2.4	0.0	18.3	0.0	0.0	0.0	



Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP212	3	---	90 secs	-	-	-	-	2.4	0.0	18.3	0.0	0.0	0.0	
CP212	3	---	120 secs	-	-	-	-	2.3	0.0	18.4	0.0	0.0	0.0	
CP212	3	---	180 secs	-	-	-	-	2.2	0.0	18.6	0.0	0.0	0.0	
CP212	3	---	240 secs	-	-	-	-	2.0	0.0	18.9	0.0	0.0	0.0	
CP212	3	---	300 secs	-	-	-	-	1.8	0.0	19.1	0.0	0.0	0.0	
CP212	4	3.37	12/11/2013 13:12:00	1020	1020	-1.6 <sub>(I)</sub>	1.04	0.1	0.0	20.8	0.0	0.0	0.0	
CP212	4	---	15 secs	-	-	0.1 <sub>(SS)</sub>	-	3.3	0.0	17.0	0.0	0.0	0.0	
CP212	4	---	30 secs	-	-	-	-	3.4	0.0	16.9	0.0	0.0	0.0	
CP212	4	---	60 secs	-	-	-	-	3.4	0.0	16.9	0.0	11.0	0.0	
CP212	4	---	90 secs	-	-	-	-	3.4	0.0	16.8	0.0	0.0	0.0	
CP212	4	---	120 secs	-	-	-	-	3.3	0.0	16.8	0.0	0.0	0.0	
CP212	4	---	180 secs	-	-	-	-	2.9	0.0	17.5	0.0	0.0	0.0	
CP212	4	---	240 secs	-	-	-	-	2.8	0.0	17.6	0.0	0.0	0.0	
CP212	4	---	300 secs	-	-	-	-	2.8	0.0	17.5	0.0	0.0	0.0	
CP213	1	4.08	17/10/2013 18:00:00	1010	1010	-	2.39	0.0	0.0	20.8	0.0	0.0	0.0	
CP213	1	---	15 secs	-	-	-	-	1.2	0.0	18.5	0.0	3.0	0.0	
CP213	1	---	30 secs	-	-	-	-	1.5	0.0	18.3	0.0	2.0	0.0	
CP213	1	---	60 secs	-	-	-	-	1.3	0.0	18.4	0.0	6.0	0.0	
CP213	1	---	90 secs	-	-	-	-	1.4	0.0	18.1	0.0	0.0	0.0	
CP213	1	---	120 secs	-	-	-	-	1.4	0.0	18.1	0.0	0.0	0.0	
CP213	1	---	180 secs	-	-	-	-	1.5	0.0	18.0	0.0	0.0	0.0	
CP213	1	---	240 secs	-	-	-	-	1.6	0.0	18.1	0.0	0.0	0.0	
CP213	1	---	300 secs	-	-	-	-	1.6	0.0	18.1	0.0	0.0	0.0	
CP213	2	4.08	23/10/2013 10:16:00	983	983	0.2 <sub>(I)</sub>	2.24	0.0	0.0	20.8	0.0	0.0	0.0	





Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP213	2	---	15 secs	-	-	0.1 <sub>(SS)</sub>	-	1.6	0.0	19.9	0.0	0.0	0.0	
CP213	2	---	30 secs	-	-	-	-	1.7	0.0	18.0	0.0	0.0	0.0	
CP213	2	---	60 secs	-	-	-	-	1.7	0.0	17.8	0.0	0.0	0.0	
CP213	2	---	90 secs	-	-	-	-	1.8	0.0	17.8	0.0	0.0	0.0	
CP213	2	---	120 secs	-	-	-	-	1.8	0.0	17.6	0.0	0.0	0.0	
CP213	2	---	180 secs	-	-	-	-	2.0	0.0	17.6	0.0	0.0	0.0	
CP213	2	---	240 secs	-	-	-	-	2.1	0.0	17.6	0.0	0.0	0.0	
CP213	2	---	300 secs	-	-	-	-	2.1	0.0	17.6	0.0	0.0	0.0	
CP213	3	4.08	30/10/2013 12:00:00	1012	1012	2.4 <sub>(I)</sub>	2.18	0.1	0.0	20.8	0.0	0.0	0.0	
CP213	3	---	15 secs	-	-	2.5 <sub>(SS)</sub>	-	2.1	0.0	20.0	0.0	0.0	0.0	
CP213	3	---	30 secs	-	-	-	-	2.4	0.0	17.2	0.0	0.0	0.0	
CP213	3	---	60 secs	-	-	-	-	2.4	0.0	17.0	0.0	0.0	0.0	
CP213	3	---	90 secs	-	-	-	-	2.4	0.0	16.9	0.0	0.0	0.0	
CP213	3	---	120 secs	-	-	-	-	2.4	0.0	17.0	0.0	0.0	0.0	
CP213	3	---	180 secs	-	-	-	-	2.4	0.0	17.0	0.0	0.0	0.0	
CP213	3	---	240 secs	-	-	-	-	2.4	0.0	17.0	0.0	0.0	0.0	
CP213	3	---	300 secs	-	-	-	-	2.4	0.0	17.0	0.0	0.0	0.0	
CP213	4	4.07	12/11/2013 15:46:00	1020	1020	0.3 <sub>(I)</sub>	1.78	0.1	0.0	20.8	0.0	0.0	0.0	
CP213	4	---	15 secs	-	-	0.1 <sub>(SS)</sub>	-	1.5	0.0	19.3	0.0	0.0	0.0	
CP213	4	---	30 secs	-	-	-	-	1.6	0.0	18.5	0.0	0.0	0.0	
CP213	4	---	60 secs	-	-	-	-	1.9	0.0	17.8	0.0	21.0	0.0	
CP213	4	---	90 secs	-	-	-	-	2.0	0.0	17.6	0.0	4.0	0.0	
CP213	4	---	120 secs	-	-	-	-	2.0	0.0	17.7	0.0	0.0	0.0	
CP213	4	---	180 secs	-	-	-	-	2.0	0.0	17.6	0.0	0.0	0.0	
CP213	4	---	240 secs	-	-	-	-	2.0	0.0	17.6	0.0	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.



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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP213	4	---	300 secs	-	-	-	-	2.0	0.0	17.5	0.0	0.0	0.0	
CP214	1	4.08	17/10/2013 18:20:18	1011	1010	-	3.49	0.0	0.0	20.8	0.0	0.0	0.0	
CP214	1	---	15 secs	-	-	-	-	3.4	0.0	18.6	0.0	0.0	0.0	
CP214	1	---	30 secs	-	-	-	-	3.6	0.0	16.1	0.0	0.0	0.0	
CP214	1	---	60 secs	-	-	-	-	3.6	0.0	15.9	0.0	0.0	0.0	
CP214	1	---	90 secs	-	-	-	-	3.6	0.0	15.9	0.0	0.0	0.0	
CP214	1	---	120 secs	-	-	-	-	3.6	0.0	18.8	0.0	0.0	0.0	
CP214	1	---	180 secs	-	-	-	-	3.6	0.0	18.6	0.0	0.0	0.0	
CP214	1	---	240 secs	-	-	-	-	3.6	0.0	16.0	0.0	0.0	0.0	
CP214	1	---	300 secs	-	-	-	-	3.5	0.0	16.0	0.0	0.0	0.0	
CP214	2	4.10	24/10/2013 13:20:00	1005	1005	0.1 <sub>(I)</sub>	3.38	0.1	0.0	20.7	0.0	0.0	0.0	
CP214	2	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	3.7	0.0	17.8	0.0	0.0	0.0	
CP214	2	---	30 secs	-	-	-	-	3.8	0.0	14.5	0.0	0.0	0.0	
CP214	2	---	60 secs	-	-	-	-	3.7	0.0	14.3	0.0	0.0	0.0	
CP214	2	---	90 secs	-	-	-	-	3.7	0.0	14.3	0.0	0.0	0.0	
CP214	2	---	120 secs	-	-	-	-	3.7	0.0	14.3	0.0	0.0	0.0	
CP214	2	---	180 secs	-	-	-	-	3.7	0.0	14.3	0.0	0.0	0.0	
CP214	2	---	240 secs	-	-	-	-	3.7	0.0	14.3	0.0	0.0	0.0	
CP214	2	---	300 secs	-	-	-	-	3.7	0.0	14.3	0.0	0.0	0.0	
CP214	3	4.08	30/10/2013 10:35:00	1012	1012	-1.5 <sub>(I)</sub>	3.00	0.1	0.0	20.8	0.0	0.0	0.0	
CP214	3	---	15 secs	-	-	-1.0 <sub>(SS)</sub>	-	3.6	0.0	17.9	0.0	0.0	0.0	
CP214	3	---	30 secs	-	-	-	-	3.8	0.0	13.4	0.0	0.0	0.0	
CP214	3	---	60 secs	-	-	-	-	3.8	0.0	12.9	0.0	0.0	0.0	
CP214	3	---	90 secs	-	-	-	-	3.8	0.0	12.8	0.0	0.0	0.0	





Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP214	3	---	120 secs	-	-	-	-	3.8	0.0	12.9	0.0	0.0	0.0	
CP214	3	---	180 secs	-	-	-	-	3.8	0.0	12.9	0.0	0.0	0.0	
CP214	3	---	240 secs	-	-	-	-	3.8	0.0	13.0	0.0	0.0	0.0	
CP214	3	---	300 secs	-	-	-	-	3.8	0.0	13.0	0.0	0.0	0.0	
CP214	4	4.07	12/11/2013 15:49:00	1020	1020	0.3 <sub>(I)</sub>	2.13	0.1	0.0	20.8	0.0	0.0	0.0	
CP214	4	---	15 secs	-	-	0.1 <sub>(SS)</sub>	-	4.0	0.0	14.2	0.0	0.0	0.0	
CP214	4	---	30 secs	-	-	-	-	4.1	0.0	13.1	0.0	0.0	0.0	
CP214	4	---	60 secs	-	-	-	-	4.1	0.0	12.6	0.0	0.0	0.0	
CP214	4	---	90 secs	-	-	-	-	4.1	0.0	12.6	0.0	16.0	0.0	
CP214	4	---	120 secs	-	-	-	-	4.1	0.0	12.6	0.0	0.0	0.0	
CP214	4	---	180 secs	-	-	-	-	4.1	0.0	12.5	0.0	0.0	0.0	
CP214	4	---	240 secs	-	-	-	-	4.1	0.0	12.6	0.0	0.0	0.0	
CP214	4	---	300 secs	-	-	-	-	4.1	0.0	12.5	0.0	0.0	0.0	
CP215	1	4.98	17/10/2013 17:15:00	1010	1010	-	1.72	0.0	0.0	20.8	0.0	0.0	0.0	
CP215	1	---	15 secs	-	-	-	-	2.5	0.0	18.1	0.0	0.0	0.0	
CP215	1	---	30 secs	-	-	-	-	1.9	0.0	16.4	0.0	0.0	0.0	
CP215	1	---	60 secs	-	-	-	-	1.4	0.0	17.8	0.0	0.0	0.0	
CP215	1	---	90 secs	-	-	-	-	1.2	0.0	18.2	0.0	0.0	0.0	
CP215	1	---	120 secs	-	-	-	-	1.0	0.0	18.6	0.0	0.0	0.0	
CP215	1	---	180 secs	-	-	-	-	0.8	0.0	19.3	0.0	0.0	0.0	
CP215	1	---	240 secs	-	-	-	-	0.6	0.0	19.6	0.0	0.0	0.0	
CP215	1	---	300 secs	-	-	-	-	0.5	0.0	19.7	0.0	0.0	0.0	
CP215	2	4.98	24/10/2013 11:15:00	1005	1005	0.1 <sub>(I)</sub>	1.07	0.1	0.0	20.8	0.0	0.0	0.0	
CP215	2	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	3.1	0.0	18.6	0.0	0.0	0.0	





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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP215	2	---	30 secs	-	-	-	-	2.4	0.0	15.2	0.0	0.0	0.0	
CP215	2	---	60 secs	-	-	-	-	1.9	0.0	16.3	0.0	0.0	0.0	
CP215	2	---	90 secs	-	-	-	-	1.5	0.0	17.1	0.0	0.0	0.0	
CP215	2	---	120 secs	-	-	-	-	1.3	0.0	17.6	0.0	0.0	0.0	
CP215	2	---	180 secs	-	-	-	-	1.0	0.0	18.3	0.0	0.0	0.0	
CP215	2	---	240 secs	-	-	-	-	0.9	0.0	18.5	0.0	0.0	0.0	
CP215	2	---	300 secs	-	-	-	-	0.8	0.0	18.7	0.0	0.0	0.0	
CP215	3	4.98	30/10/2013 13:20:00	1012	1012	-2.3 <sub>(I)</sub>	0.88	0.1	0.0	20.8	0.0	0.0	0.0	
CP215	3	---	15 secs	-	-	-1.8 <sub>(SS)</sub>	-	2.5	0.0	20.0	0.0	0.0	0.0	
CP215	3	---	30 secs	-	-	-	-	2.0	0.0	16.5	0.0	0.0	0.0	
CP215	3	---	60 secs	-	-	-	-	1.2	0.0	18.1	0.0	0.0	0.0	
CP215	3	---	90 secs	-	-	-	-	1.1	0.0	18.6	0.0	0.0	0.0	
CP215	3	---	120 secs	-	-	-	-	1.0	0.0	18.9	0.0	0.0	0.0	
CP215	3	---	180 secs	-	-	-	-	1.1	0.0	18.8	0.0	0.0	0.0	
CP215	3	---	240 secs	-	-	-	-	1.0	0.0	18.9	0.0	0.0	0.0	
CP215	3	---	300 secs	-	-	-	-	1.0	0.0	19.0	0.0	0.0	0.0	
CP215	4	4.96	12/11/2013 13:30:00	1019	1020	0.0 <sub>(I)</sub>	0.55	0.1	0.0	20.8	0.0	0.0	0.0	
CP215	4	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	3.8	0.0	15.0	0.0	0.0	0.0	
CP215	4	---	30 secs	-	-	-	-	3.8	0.0	13.6	0.0	0.0	0.0	
CP215	4	---	60 secs	-	-	-	-	3.8	0.0	13.4	0.0	4.0	0.0	
CP215	4	---	90 secs	-	-	-	-	3.4	0.0	13.9	0.0	0.0	0.0	
CP215	4	---	120 secs	-	-	-	-	3.4	0.0	13.9	0.0	0.0	0.0	
CP215	4	---	180 secs	-	-	-	-	3.4	0.0	14.1	0.0	0.0	0.0	
CP215	4	---	240 secs	-	-	-	-	3.2	0.0	14.4	0.0	0.0	0.0	
CP215	4	---	300 secs	-	-	-	-	3.2	0.0	14.4	0.0	0.0	0.0	


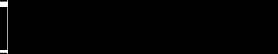


Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:  <b>312494</b>
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	Contract: <b>East Midlands Gateway</b>				Page: <b>18 of 36</b> 

# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP216	3	2.55	18/01/2000	1011	1011	2.4 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
Remarks: Borehole could not be located on the first two visits onsite.														
CP216	3	---	15 secs	-	-	2.4 <sub>(SS)</sub>	-	1.4	0.0	19.1	0.0	6.0	0.0	
CP216	3	---	30 secs	-	-	-	-	1.4	0.0	17.2	0.0	3.0	0.0	
CP216	3	---	60 secs	-	-	-	-	1.3	0.0	17.4	0.0	0.0	0.0	
CP216	3	---	90 secs	-	-	-	-	1.2	0.1	17.5	1.0	0.0	0.0	
CP216	3	---	120 secs	-	-	-	-	1.2	0.1	17.7	1.0	0.0	0.0	
CP216	3	---	180 secs	-	-	-	-	1.1	0.0	18.0	0.0	0.0	0.0	
CP216	3	---	240 secs	-	-	-	-	1.0	0.0	18.1	0.0	0.0	0.0	
CP216	3	---	300 secs	-	-	-	-	1.0	0.0	18.3	0.0	0.0	0.0	
CP216	4	2.55	12/11/2013 14:35:00	1020	1020	2.2 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP216	4	---	15 secs	-	-	2.0 <sub>(SS)</sub>	-	1.4	0.0	19.4	0.0	1.0	0.0	
CP216	4	---	30 secs	-	-	-	-	1.3	0.0	17.0	0.0	0.0	0.0	
CP216	4	---	60 secs	-	-	-	-	1.1	0.0	17.7	0.0	0.0	0.0	
CP216	4	---	90 secs	-	-	-	-	1.0	0.0	17.8	0.0	0.0	0.0	
CP216	4	---	120 secs	-	-	-	-	1.0	0.0	18.1	0.0	0.0	0.0	
CP216	4	---	180 secs	-	-	-	-	0.9	0.0	18.3	0.0	12.0	0.0	
CP216	4	---	240 secs	-	-	-	-	0.9	0.0	18.2	0.0	0.0	0.0	
CP216	4	---	300 secs	-	-	-	-	0.9	0.0	18.3	0.0	0.0	0.0	
CP217	1	4.64	17/10/2013 17:42:00	1010	1010	-	2.25	0.0	0.0	20.8	0.0	0.0	0.0	
CP217	1	---	15 secs	-	-	-	-	0.8	0.0	18.1	0.0	0.0	0.0	
CP217	1	---	30 secs	-	-	-	-	0.6	0.0	17.9	0.0	0.0	0.0	
CP217	1	---	60 secs	-	-	-	-	0.5	0.0	18.4	0.0	0.0	0.0	



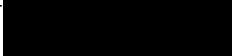

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP217	1	---	90 secs	-	-	-	-	0.5	0.0	18.5	0.0	0.0	0.0	
CP217	1	---	120 secs	-	-	-	-	0.4	0.0	18.7	0.0	0.0	0.0	
CP217	1	---	180 secs	-	-	-	-	0.4	0.0	18.8	0.0	0.0	0.0	
CP217	1	---	240 secs	-	-	-	-	0.4	0.0	18.8	0.0	0.0	0.0	
CP217	1	---	300 secs	-	-	-	-	0.3	0.0	18.8	0.0	0.0	0.0	
CP217	2	4.64	23/10/2013 11:20:00	984	984	-	1.70	0.1	0.0	20.7	0.0	0.0	0.0	
CP217	2	---	15 secs	-	-	-	-	1.6	0.0	19.6	0.0	0.0	0.0	
CP217	2	---	30 secs	-	-	-	-	1.7	0.0	16.2	0.0	0.0	0.0	
CP217	2	---	60 secs	-	-	-	-	1.1	0.0	17.3	0.0	0.0	0.0	
CP217	2	---	90 secs	-	-	-	-	0.8	0.0	18.4	0.0	0.0	0.0	
CP217	2	---	120 secs	-	-	-	-	0.6	0.0	19.1	0.0	0.0	0.0	
CP217	2	---	180 secs	-	-	-	-	0.4	0.0	20.0	0.0	0.0	0.0	
CP217	2	---	240 secs	-	-	-	-	0.3	0.0	20.4	0.0	0.0	0.0	
CP217	2	---	300 secs	-	-	-	-	0.2	0.0	20.6	0.0	0.0	0.0	
CP217	3	4.64	30/10/2013 12:56:00	1011	1012	1.6 <sub>(I)</sub>	1.60	0.1	0.0	20.8	0.0	0.0	0.0	
CP217	3	---	15 secs	-	-	1.3 <sub>(SS)</sub>	-	2.1	0.0	17.6	0.0	0.0	0.0	
CP217	3	---	30 secs	-	-	-	-	2.0	0.0	16.8	0.0	0.0	0.0	
CP217	3	---	60 secs	-	-	-	-	1.3	0.0	17.9	0.0	0.0	0.0	
CP217	3	---	90 secs	-	-	-	-	1.0	0.0	18.6	0.0	0.0	0.0	
CP217	3	---	120 secs	-	-	-	-	0.7	0.0	19.3	0.0	0.0	0.0	
CP217	3	---	180 secs	-	-	-	-	0.6	0.0	19.6	0.0	0.0	0.0	
CP217	3	---	240 secs	-	-	-	-	0.4	0.0	20.0	0.0	0.0	0.0	
CP217	3	---	300 secs	-	-	-	-	0.2	0.0	20.2	0.0	0.0	0.0	
CP217	4	4.62	12/11/2013 14:06:00	1020	1020	0.4 <sub>(I)</sub>	1.43	0.1	0.0	20.8	0.0	0.0	0.0	
CP217	4	---	15 secs	-	-	0.2 <sub>(SS)</sub>	-	2.2	0.0	17.9	0.0	0.0	0.0	


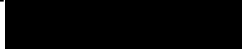


Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP217	4	---	30 secs	-	-	-	-	1.8	0.0	17.7	0.0	0.0	0.0	
CP217	4	---	60 secs	-	-	-	-	0.8	0.0	19.5	0.0	2.0	0.0	
CP217	4	---	90 secs	-	-	-	-	0.7	0.0	19.6	0.0	10.0	0.0	
CP217	4	---	120 secs	-	-	-	-	0.6	0.0	19.9	0.0	0.0	0.0	
CP217	4	---	180 secs	-	-	-	-	0.5	0.0	19.9	0.0	3.0	0.0	
CP217	4	---	240 secs	-	-	-	-	0.4	0.0	20.0	0.0	0.0	0.0	
CP217	4	---	300 secs	-	-	-	-	0.4	0.0	20.0	0.0	0.0	0.0	
CP218	1	4.77	17/10/2013 17:47:19	1011	1010	-	DRY	0.0	0.0	20.8	0.0	0.0	0.0	
CP218	1	---	15 secs	-	-	-	-	2.0	0.0	18.3	0.0	0.0	0.0	
CP218	1	---	30 secs	-	-	-	-	2.1	0.0	16.6	0.0	0.0	0.0	
CP218	1	---	60 secs	-	-	-	-	2.1	0.0	16.7	0.0	0.0	0.0	
CP218	1	---	90 secs	-	-	-	-	2.1	0.0	16.6	0.0	0.0	0.0	
CP218	1	---	120 secs	-	-	-	-	2.1	0.0	16.5	0.0	0.0	0.0	
CP218	1	---	180 secs	-	-	-	-	2.1	0.0	16.6	0.0	0.0	0.0	
CP218	1	---	240 secs	-	-	-	-	2.1	0.0	16.7	0.0	0.0	0.0	
CP218	1	---	300 secs	-	-	-	-	2.1	0.0	16.7	0.0	0.0	0.0	
CP218	2	4.77	24/10/2013 11:40:00	1005	1005	0.1 <sub>(I)</sub>	DRY	0.0	0.0	20.7	0.0	0.0	0.0	
CP218	2	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	1.4	0.0	19.0	0.0	0.0	0.0	
CP218	2	---	30 secs	-	-	-	-	1.4	0.0	18.3	0.0	0.0	0.0	
CP218	2	---	60 secs	-	-	-	-	1.4	0.0	18.1	0.0	0.0	0.0	
CP218	2	---	90 secs	-	-	-	-	1.4	0.0	18.1	0.0	0.0	0.0	
CP218	2	---	120 secs	-	-	-	-	1.4	0.0	18.2	0.0	0.0	0.0	
CP218	2	---	180 secs	-	-	-	-	1.4	0.0	18.2	0.0	0.0	0.0	
CP218	2	---	240 secs	-	-	-	-	1.4	0.0	18.2	0.0	0.0	0.0	


Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP218	2	---	300 secs	-	-	-	-	1.4	0.0	18.3	0.0	0.0	0.0	
CP218	3	4.78	30/10/2013 13:30:00	1013	1012	0.9 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP218	3	---	15 secs	-	-	0.8 <sub>(SS)</sub>	-	1.0	0.0	20.5	0.0	0.0	0.0	
CP218	3	---	30 secs	-	-	-	-	1.1	0.0	19.9	0.0	0.0	0.0	
CP218	3	---	60 secs	-	-	-	-	1.1	0.0	19.9	0.0	0.0	0.0	
CP218	3	---	90 secs	-	-	-	-	1.1	0.0	19.9	0.0	0.0	0.0	
CP218	3	---	120 secs	-	-	-	-	1.1	0.0	19.9	0.0	0.0	0.0	
CP218	3	---	180 secs	-	-	-	-	1.1	0.0	19.9	0.0	0.0	0.0	
CP218	3	---	240 secs	-	-	-	-	1.1	0.0	19.9	0.0	0.0	0.0	
CP218	3	---	300 secs	-	-	-	-	1.1	0.0	19.9	0.0	0.0	0.0	
CP218	4	4.76	12/11/2013 14:58:00	1020	1020	0.1 <sub>(I)</sub>	4.63	0.1	0.0	20.8	0.0	0.0	0.0	
CP218	4	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	1.6	0.0	18.8	0.0	0.0	0.0	
CP218	4	---	30 secs	-	-	-	-	2.2	0.0	15.8	0.0	0.0	0.0	
CP218	4	---	60 secs	-	-	-	-	2.5	0.0	15.1	0.0	0.0	0.0	
CP218	4	---	90 secs	-	-	-	-	2.7	0.0	14.1	0.0	0.0	0.0	
CP218	4	---	120 secs	-	-	-	-	2.7	0.0	14.0	0.0	0.0	0.0	
CP218	4	---	180 secs	-	-	-	-	2.7	0.0	14.1	0.0	0.0	0.0	
CP218	4	---	240 secs	-	-	-	-	2.7	0.0	14.1	0.0	0.0	0.0	
CP218	4	---	300 secs	-	-	-	-	2.7	0.0	14.0	0.0	0.0	0.0	
CP219	1	7.43	16/10/2013 14:47:23	1003	1003	-	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP219	1	---	15 secs	-	-	-	-	1.5	0.0	18.4	0.0	0.0	0.0	
CP219	1	---	30 secs	-	-	-	-	1.5	0.0	16.4	0.0	0.0	0.0	
CP219	1	---	60 secs	-	-	-	-	1.5	0.0	16.0	0.0	0.0	0.0	
CP219	1	---	90 secs	-	-	-	-	1.5	0.1	15.9	1.0	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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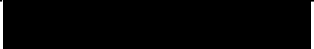
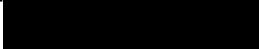





# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP219	1	---	120 secs	-	-	-	-	1.5	0.1	15.9	1.0	0.0	0.0	
CP219	1	---	180 secs	-	-	-	-	1.6	0.1	15.3	1.0	0.0	0.0	
CP219	1	---	240 secs	-	-	-	-	1.6	0.1	14.8	1.0	0.0	0.0	
CP219	1	---	300 secs	-	-	-	-	1.6	0.0	14.6	0.0	0.0	0.0	
CP219	2	7.44	24/10/2013 13:40:00	1006	1006	0.1 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP219	2	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	0.2	0.0	20.2	0.0	0.0	0.0	
CP219	2	---	30 secs	-	-	-	-	0.2	0.0	20.1	0.0	0.0	0.0	
CP219	2	---	60 secs	-	-	-	-	0.1	0.0	20.2	0.0	0.0	0.0	
CP219	2	---	90 secs	-	-	-	-	0.1	0.0	20.1	0.0	0.0	0.0	
CP219	2	---	120 secs	-	-	-	-	0.1	0.0	20.2	0.0	0.0	0.0	
CP219	2	---	180 secs	-	-	-	-	0.1	0.0	20.2	0.0	0.0	0.0	
CP219	2	---	240 secs	-	-	-	-	0.1	0.0	20.2	0.0	0.0	0.0	
CP219	2	---	300 secs	-	-	-	-	0.1	0.0	20.2	0.0	0.0	0.0	
CP219	3	7.41	30/10/2013 13:10:13	1009	1009	0.2 <sub>(I)</sub>	7.32	0.1	0.0	20.8	0.0	0.0	0.0	
CP219	3	---	15 secs	-	-	0.1 <sub>(SS)</sub>	-	1.4	0.0	16.0	0.0	0.0	0.0	
CP219	3	---	30 secs	-	-	-	-	1.2	0.0	12.3	0.0	0.0	0.0	
CP219	3	---	60 secs	-	-	-	-	0.9	0.0	14.1	0.0	0.0	0.0	
CP219	3	---	90 secs	-	-	-	-	0.8	0.0	15.5	0.0	0.0	0.0	
CP219	3	---	120 secs	-	-	-	-	0.7	0.0	16.1	0.0	0.0	0.0	
CP219	3	---	180 secs	-	-	-	-	0.6	0.0	17.0	0.0	0.0	0.0	
CP219	3	---	240 secs	-	-	-	-	0.5	0.0	17.5	0.0	0.0	0.0	
CP219	3	---	300 secs	-	-	-	-	0.5	0.0	17.8	0.0	0.0	0.0	
CP219	4	7.43	11/11/2013 14:58:00	1017	1017	-3.0 <sub>(I)</sub>	7.34	0.1	0.0	20.8	0.0	0.0	0.0	
CP219	4	---	15 secs	-	-	1.5 <sub>(SS)</sub>	-	0.9	0.0	19.5	0.0	0.0	0.0	
CP219	4	---	30 secs	-	-	-	-	0.9	0.0	18.6	0.0	0.0	0.0	



Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP219	4	---	60 secs	-	-	-	-	0.9	0.0	18.8	0.0	0.0	0.0	
CP219	4	---	90 secs	-	-	-	-	0.8	0.0	18.9	0.0	3.0	0.0	
CP219	4	---	120 secs	-	-	-	-	0.4	0.0	19.8	0.0	0.0	0.0	
CP219	4	---	180 secs	-	-	-	-	0.4	0.0	19.9	0.0	0.0	0.0	
CP219	4	---	240 secs	-	-	-	-	0.3	0.0	20.0	0.0	0.0	0.0	
CP219	4	---	300 secs	-	-	-	-	0.3	0.0	20.0	0.0	1.0	0.0	
CP220	1	5.79	16/10/2013 13:54:18	1003	1003	-	3.04	0.0	0.0	20.7	0.0	0.0	0.0	
CP220	1	---	15 secs	-	-	-	-	0.8	0.0	20.4	0.0	0.0	0.0	
CP220	1	---	30 secs	-	-	-	-	0.8	0.0	19.6	0.0	0.0	0.0	
CP220	1	---	60 secs	-	-	-	-	0.8	0.0	19.6	0.0	0.0	0.0	
CP220	1	---	90 secs	-	-	-	-	0.8	0.0	19.6	0.0	0.0	0.0	
CP220	1	---	120 secs	-	-	-	-	0.8	0.0	19.6	0.0	0.0	0.0	
CP220	1	---	180 secs	-	-	-	-	0.8	0.0	19.6	0.0	0.0	0.0	
CP220	1	---	240 secs	-	-	-	-	0.9	0.0	19.5	0.0	0.0	0.0	
CP220	1	---	300 secs	-	-	-	-	0.9	0.0	19.6	0.0	0.0	0.0	
CP220	2	5.79	22/10/2013 13:28:00	988	988	0.4 <sub>(I)</sub>	3.04	0.1	0.0	20.8	0.0	0.0	0.0	
CP220	2	---	15 secs	-	-	0.8 <sub>(SS)</sub>	-	0.3	0.0	19.4	0.0	0.0	0.0	
CP220	2	---	30 secs	-	-	-	-	0.3	0.0	19.5	0.0	0.0	0.0	
CP220	2	---	60 secs	-	-	-	-	0.3	0.0	19.5	0.0	0.0	0.0	
CP220	2	---	90 secs	-	-	-	-	0.3	0.0	19.4	0.0	0.0	0.0	
CP220	2	---	120 secs	-	-	-	-	0.4	0.0	19.4	0.0	0.0	0.0	
CP220	2	---	180 secs	-	-	-	-	0.4	0.0	19.4	0.0	0.0	0.0	
CP220	2	---	240 secs	-	-	-	-	0.4	0.0	19.4	0.0	0.0	0.0	
CP220	2	---	300 secs	-	-	-	-	0.4	0.0	19.4	0.0	0.0	0.0	



Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:  <b>312494</b>
	Contract: [Redacted]	28/11/13	[Redacted]	28/11/13	
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP220	3	5.80	30/10/2013 14:40:00	1013	1012	-1.3 <sub>(I)</sub>	2.99	0.1	0.0	20.8	0.0	0.0	0.0	
CP220	3	---	15 secs	-	-	-1.0 <sub>(SS)</sub>	-	0.5	0.0	20.5	0.0	0.0	0.0	
CP220	3	---	30 secs	-	-	-	-	0.6	0.0	20.0	0.0	0.0	0.0	
CP220	3	---	60 secs	-	-	-	-	0.4	0.0	20.2	0.0	0.0	0.0	
CP220	3	---	90 secs	-	-	-	-	0.4	0.0	20.2	0.0	0.0	0.0	
CP220	3	---	120 secs	-	-	-	-	0.5	0.0	20.2	0.0	0.0	0.0	
CP220	3	---	180 secs	-	-	-	-	0.5	0.0	20.0	0.0	0.0	0.0	
CP220	3	---	240 secs	-	-	-	-	0.5	0.0	20.1	0.0	0.0	0.0	
CP220	3	---	300 secs	-	-	-	-	0.4	0.0	20.2	0.0	0.0	0.0	
CP220	4	5.77	11/11/2013 14:39:00	1017	1017	1.5 <sub>(I)</sub>	2.08	0.1	0.0	20.8	0.0	0.0	0.0	
CP220	4	---	15 secs	-	-	1.6 <sub>(SS)</sub>	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP220	4	---	30 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP220	4	---	60 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP220	4	---	90 secs	-	-	-	-	0.1	0.0	20.5	0.0	3.0	0.0	
CP220	4	---	120 secs	-	-	-	-	0.1	0.0	20.7	0.0	4.0	0.0	
CP220	4	---	180 secs	-	-	-	-	0.1	0.0	20.7	0.0	5.0	0.0	
CP220	4	---	240 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP220	4	---	300 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP221	1	10.00	16/10/2013 14:30:00	1003	1003	-	5.43	0.1	0.0	20.7	0.0	0.0	0.0	
CP221	1	---	15 secs	-	-	-	-	1.3	0.0	19.7	0.0	0.0	0.0	
CP221	1	---	30 secs	-	-	-	-	1.2	0.0	18.8	0.0	0.0	0.0	
CP221	1	---	60 secs	-	-	-	-	1.2	0.0	18.7	0.0	0.0	0.0	
CP221	1	---	90 secs	-	-	-	-	1.2	0.0	18.7	0.0	0.0	0.0	
CP221	1	---	120 secs	-	-	-	-	1.2	0.0	18.7	0.0	0.0	0.0	





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 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP221	1	---	180 secs	-	-	-	-	1.2	0.0	18.9	0.0	0.0	0.0	
CP221	1	---	240 secs	-	-	-	-	1.2	0.0	18.6	0.0	0.0	0.0	
CP221	1	---	300 secs	-	-	-	-	1.2	0.0	18.9	0.0	0.0	0.0	
CP221	2	10.10	24/10/2013 14:00:00	1006	1006	0.0 <sub>(I)</sub>	5.50	0.0	0.0	20.8	0.0	0.0	0.0	
CP221	2	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	1.4	0.0	19.6	0.0	0.0	0.0	
CP221	2	---	30 secs	-	-	-	-	1.3	0.0	18.6	0.0	0.0	0.0	
CP221	2	---	60 secs	-	-	-	-	1.2	0.0	18.6	0.0	0.0	0.0	
CP221	2	---	90 secs	-	-	-	-	1.2	0.0	18.7	0.0	0.0	0.0	
CP221	2	---	120 secs	-	-	-	-	1.2	0.0	18.7	0.0	0.0	0.0	
CP221	2	---	180 secs	-	-	-	-	1.2	0.0	18.7	0.0	0.0	0.0	
CP221	2	---	240 secs	-	-	-	-	1.2	0.0	18.7	0.0	0.0	0.0	
CP221	2	---	300 secs	-	-	-	-	1.2	0.0	18.7	0.0	0.0	0.0	
CP221	3	10.08	30/10/2013 13:10:00	1008	1009	0.1 <sub>(I)</sub>	5.48	0.1	0.0	20.8	0.0	0.0	0.0	
CP221	3	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	1.0	0.0	19.6	0.0	0.0	0.0	
CP221	3	---	30 secs	-	-	-	-	1.1	0.0	18.6	0.0	0.0	0.0	
CP221	3	---	60 secs	-	-	-	-	1.3	0.0	18.0	0.0	0.0	0.0	
CP221	3	---	90 secs	-	-	-	-	1.3	0.0	18.1	0.0	0.0	0.0	
CP221	3	---	120 secs	-	-	-	-	1.3	0.0	17.4	0.0	0.0	0.0	
CP221	3	---	180 secs	-	-	-	-	1.3	0.0	18.0	0.0	0.0	0.0	
CP221	3	---	240 secs	-	-	-	-	1.3	0.0	18.0	0.0	0.0	0.0	
CP221	3	---	300 secs	-	-	-	-	1.3	0.0	18.1	0.0	0.0	0.0	
CP221	4	10.07	11/11/2013 14:20:00	1017	1017	-	5.36	0.1	0.0	20.8	0.0	0.0	0.0	
CP221	4	---	15 secs	-	-	-	-	0.6	0.0	20.0	0.0	0.0	0.0	
CP221	4	---	30 secs	-	-	-	-	1.4	0.0	18.3	0.0	0.0	0.0	
CP221	4	---	60 secs	-	-	-	-	1.6	0.0	17.7	0.0	0.0	0.0	



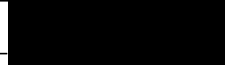

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP221	4	---	90 secs	-	-	-	-	1.6	0.0	17.7	0.0	0.0	0.0	
CP221	4	---	120 secs	-	-	-	-	1.6	0.0	17.7	0.0	0.0	0.0	
CP221	4	---	180 secs	-	-	-	-	1.6	0.0	17.6	0.0	0.0	0.0	
CP221	4	---	240 secs	-	-	-	-	1.7	0.0	17.7	0.0	0.0	0.0	
CP221	4	---	300 secs	-	-	-	-	1.7	0.0	17.6	0.0	0.0	0.0	
CP222	1	5.68	16/10/2013 14:12:16	1003	1004	-	2.93	0.1	0.0	20.7	0.0	0.0	0.0	
CP222	1	---	15 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP222	1	---	30 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP222	1	---	60 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP222	1	---	90 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP222	1	---	120 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP222	1	---	180 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP222	1	---	240 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP222	1	---	300 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP222	2	5.95	22/10/2013 12:48:00	988	988	0.4 <sub>(I)</sub>	2.82	0.1	0.0	20.8	0.0	0.0	0.0	
CP222	2	---	15 secs	-	-	0.4 <sub>(SS)</sub>	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP222	2	---	30 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP222	2	---	60 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP222	2	---	90 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP222	2	---	120 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP222	2	---	180 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP222	2	---	240 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP222	2	---	300 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP222	3	5.64	30/10/2013 15:10:00	-	-	-	2.44	-	-	-	-	-	-	





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 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP222	4	5.69	11/11/2013 14:10:00	-	-	-	2.42	-	-	-	-	-	-	
CP(R)203	1	24.78	16/10/2013 12:05:00	1003	1003	-	24.47	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)203	1	---	15 secs	-	-	-	-	2.2	0.0	18.9	0.0	0.0	0.0	
CP(R)203	1	---	30 secs	-	-	-	-	2.3	0.1	16.6	1.0	0.0	0.0	
CP(R)203	1	---	60 secs	-	-	-	-	2.3	0.0	16.2	0.0	0.0	0.0	
CP(R)203	1	---	90 secs	-	-	-	-	2.3	0.0	16.2	0.0	0.0	0.0	
CP(R)203	1	---	120 secs	-	-	-	-	2.3	0.0	16.0	0.0	0.0	0.0	
CP(R)203	1	---	180 secs	-	-	-	-	2.3	0.0	16.0	0.0	0.0	0.0	
CP(R)203	1	---	240 secs	-	-	-	-	2.3	0.0	16.0	0.0	0.0	0.0	
CP(R)203	1	---	300 secs	-	-	-	-	2.4	0.0	15.8	0.0	0.0	0.0	
CP(R)203	2	24.81	23/10/2013 13:34:00	987	987	-0.2 <sub>(I)</sub>	24.56	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)203	2	---	15 secs	-	-	-0.2 <sub>(SS)</sub>	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)203	2	---	30 secs	-	-	-	-	2.2	0.1	18.8	1.0	0.0	0.0	
CP(R)203	2	---	60 secs	-	-	-	-	2.5	0.1	15.6	1.0	0.0	0.0	
CP(R)203	2	---	90 secs	-	-	-	-	2.5	0.1	15.0	1.0	0.0	0.0	
CP(R)203	2	---	120 secs	-	-	-	-	2.6	0.1	15.0	1.0	0.0	0.0	
CP(R)203	2	---	180 secs	-	-	-	-	2.6	0.0	15.0	0.0	0.0	0.0	
CP(R)203	2	---	240 secs	-	-	-	-	2.6	0.0	15.0	0.0	0.0	0.0	
CP(R)203	2	---	300 secs	-	-	-	-	2.6	0.0	15.0	0.0	0.0	0.0	
CP(R)203	2	---	330 secs	-	-	-	-	2.6	0.0	15.0	0.0	0.0	0.0	
CP(R)203	3	24.79	30/10/2013 16:50:00	1010	1010	-0.3 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)203	3	---	15 secs	-	-	-0.2 <sub>(SS)</sub>	-	1.4	0.1	19.4	1.0	0.0	0.0	
CP(R)203	3	---	30 secs	-	-	-	-	1.4	0.1	19.0	1.0	0.0	0.0	
CP(R)203	3	---	60 secs	-	-	-	-	1.4	0.1	18.9	1.0	0.0	0.0	



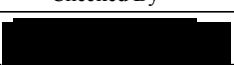

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:  <b>312494</b>
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP(R)203	3	---	90 secs	-	-	-	-	1.4	0.1	18.9	1.0	0.0	0.0	
CP(R)203	3	---	120 secs	-	-	-	-	1.4	0.1	18.9	1.0	0.0	0.0	
CP(R)203	3	---	180 secs	-	-	-	-	1.5	0.1	18.9	1.0	0.0	0.0	
CP(R)203	3	---	240 secs	-	-	-	-	1.5	0.1	18.9	1.0	0.0	0.0	
CP(R)203	3	---	300 secs	-	-	-	-	1.5	0.1	18.8	1.0	0.0	0.0	
CP(R)203	4	24.77	12/11/2013 10:31:00	1027	1027	-1.3 <sub>(I)</sub>	24.51	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)203	4	---	15 secs	-	-	-1.6 <sub>(SS)</sub>	-	0.9	0.0	19.5	0.0	0.0	0.0	
CP(R)203	4	---	30 secs	-	-	-	-	1.4	0.0	18.4	0.0	0.0	0.0	
CP(R)203	4	---	60 secs	-	-	-	-	1.6	0.0	17.9	0.0	0.0	0.0	
CP(R)203	4	---	90 secs	-	-	-	-	1.7	0.0	17.7	0.0	0.0	0.0	
CP(R)203	4	---	120 secs	-	-	-	-	1.8	0.0	17.5	0.0	0.0	0.0	
CP(R)203	4	---	180 secs	-	-	-	-	1.9	0.0	17.2	0.0	0.0	0.0	
CP(R)203	4	---	240 secs	-	-	-	-	1.9	0.0	17.2	0.0	0.0	0.0	
CP(R)203	4	---	300 secs	-	-	-	-	1.9	0.0	17.2	0.0	0.0	0.0	
CP(R)204	1	19.80	17/10/2013 15:50:00	1010	1010	-	15.90	0.0	0.0	20.8	0.0	0.0	0.0	
CP(R)204	1	---	15 secs	-	-	-	-	0.9	0.0	19.2	0.0	0.0	0.0	
CP(R)204	1	---	30 secs	-	-	-	-	0.9	0.0	18.3	0.0	0.0	0.0	
CP(R)204	1	---	60 secs	-	-	-	-	0.9	0.0	18.2	0.0	0.0	0.0	
CP(R)204	1	---	90 secs	-	-	-	-	0.9	0.0	18.1	0.0	0.0	0.0	
CP(R)204	1	---	120 secs	-	-	-	-	0.9	0.0	18.2	0.0	0.0	0.0	
CP(R)204	1	---	180 secs	-	-	-	-	0.9	0.0	18.3	0.0	0.0	0.0	
CP(R)204	1	---	240 secs	-	-	-	-	0.9	0.0	18.5	0.0	0.0	0.0	
CP(R)204	1	---	300 secs	-	-	-	-	0.9	0.0	18.5	0.0	0.0	0.0	
CP(R)204	2	19.80	22/10/2013 15:50:00	985	986	0.0 <sub>(I)</sub>	15.80	0.0	0.0	20.8	0.0	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.



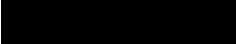

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP(R)204	2	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	0.6	0.0	20.3	0.0	0.0	0.0	
CP(R)204	2	---	30 secs	-	-	-	-	0.6	0.0	19.5	0.0	0.0	0.0	
CP(R)204	2	---	60 secs	-	-	-	-	0.6	0.0	19.7	0.0	0.0	0.0	
CP(R)204	2	---	90 secs	-	-	-	-	0.6	0.0	19.7	0.0	0.0	0.0	
CP(R)204	2	---	120 secs	-	-	-	-	0.6	0.0	19.7	0.0	0.0	0.0	
CP(R)204	2	---	180 secs	-	-	-	-	0.6	0.0	19.6	0.0	0.0	0.0	
CP(R)204	2	---	240 secs	-	-	-	-	0.6	0.0	19.6	0.0	0.0	0.0	
CP(R)204	2	---	300 secs	-	-	-	-	0.6	0.0	19.6	0.0	0.0	0.0	
CP(R)204	3	19.72	30/10/2013 15:36:00	1008	1009	0.0 <sub>(I)</sub>	15.51	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)204	3	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)204	3	---	30 secs	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)204	3	---	60 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP(R)204	3	---	90 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP(R)204	3	---	120 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP(R)204	3	---	180 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP(R)204	3	---	240 secs	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)204	3	---	300 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP(R)204	4	19.81	12/11/2013 11:44:00	1020	1020	-14.1 <sub>(I)</sub>	14.93	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)204	4	---	15 secs	-	-	-13.1 <sub>(SS)</sub>	-	0.6	0.0	19.7	0.0	0.0	0.0	
CP(R)204	4	---	30 secs	-	-	-	-	0.6	0.0	18.8	0.0	0.0	0.0	
CP(R)204	4	---	60 secs	-	-	-	-	1.2	0.0	16.6	0.0	13.0	0.0	
CP(R)204	4	---	90 secs	-	-	-	-	1.6	0.0	15.1	0.0	1.0	0.0	
CP(R)204	4	---	120 secs	-	-	-	-	1.7	0.0	14.6	0.0	14.0	0.0	
CP(R)204	4	---	180 secs	-	-	-	-	1.8	0.0	14.0	0.0	0.0	0.0	
CP(R)204	4	---	240 secs	-	-	-	-	1.8	0.0	13.8	0.0	0.0	0.0	



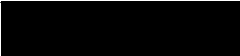

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:  <b>312494</b>
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP(R)204	4	---	300 secs	-	-	-	-	1.8	0.0	14.0	0.0	0.0	0.0	
CP(R)205	1	18.41	16/10/2013 12:50:15	1002	1003	-	18.27	0.1	0.0	20.7	0.0	0.0	0.0	
CP(R)205	1	---	15 secs	-	-	-	-	1.8	0.0	19.7	0.0	0.0	0.0	
CP(R)205	1	---	30 secs	-	-	-	-	1.9	0.0	17.3	0.0	0.0	0.0	
CP(R)205	1	---	60 secs	-	-	-	-	1.9	0.0	16.9	0.0	0.0	0.0	
CP(R)205	1	---	90 secs	-	-	-	-	1.9	0.0	16.7	0.0	0.0	0.0	
CP(R)205	1	---	120 secs	-	-	-	-	2.0	0.0	16.6	0.0	0.0	0.0	
CP(R)205	1	---	180 secs	-	-	-	-	2.0	0.0	16.6	0.0	0.0	0.0	
CP(R)205	1	---	240 secs	-	-	-	-	2.0	0.0	16.5	0.0	0.0	0.0	
CP(R)205	1	---	300 secs	-	-	-	-	2.0	0.0	16.6	0.0	0.0	0.0	
CP(R)205	2	18.41	23/10/2013 14:14:00	989	987	-3.1 <sub>(I)</sub>	18.28	0.1	0.0	20.7	0.0	0.0	0.0	
CP(R)205	2	---	15 secs	-	-	-3.0 <sub>(SS)</sub>	-	0.1	0.0	20.3	0.0	0.0	0.0	
CP(R)205	2	---	30 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)205	2	---	60 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)205	2	---	90 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)205	2	---	120 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)205	2	---	180 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)205	2	---	240 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)205	2	---	300 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)205	3	18.40	30/10/2013 16:55:00	1011	1010	-0.1 <sub>(I)</sub>	18.26	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)205	3	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP(R)205	3	---	30 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP(R)205	3	---	60 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)205	3	---	90 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	



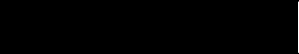

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:  <b>312494</b>
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP(R)205	3	---	120 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP(R)205	3	---	180 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP(R)205	3	---	240 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP(R)205	3	---	300 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP(R)205	4	18.40	12/11/2013 09:55:00	1021	1020	-12.6 <sub>(I)</sub>	18.27	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)205	4	---	15 secs	-	-	-18.6 <sub>(SS)</sub>	-	0.1	0.0	20.8	0.0	4.0	0.0	
CP(R)205	4	---	30 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP(R)205	4	---	60 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP(R)205	4	---	90 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP(R)205	4	---	120 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP(R)205	4	---	180 secs	-	-	-	-	0.1	0.0	20.9	0.0	0.0	0.0	
CP(R)205	4	---	240 secs	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)205	4	---	300 secs	-	-	-	-	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)206	1	21.17	16/10/2013 13:37:00	1003	1003	-	14.72	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)206	1	---	15 secs	-	-	-	-	2.3	0.0	18.7	0.0	0.0	0.0	
CP(R)206	1	---	30 secs	-	-	-	-	2.4	0.0	16.9	0.0	0.0	0.0	
CP(R)206	1	---	60 secs	-	-	-	-	2.4	0.0	16.5	0.0	0.0	0.0	
CP(R)206	1	---	90 secs	-	-	-	-	2.4	0.0	16.4	0.0	0.0	0.0	
CP(R)206	1	---	120 secs	-	-	-	-	2.6	0.0	16.6	0.0	0.0	0.0	
CP(R)206	1	---	180 secs	-	-	-	-	2.6	0.0	16.6	0.0	0.0	0.0	
CP(R)206	1	---	240 secs	-	-	-	-	2.6	0.0	16.4	0.0	0.0	0.0	
CP(R)206	1	---	300 secs	-	-	-	-	2.6	0.0	16.5	0.0	0.0	0.0	
CP(R)206	2	21.18	22/10/2013 14:45:00	988	988	1.2 <sub>(I)</sub>	14.68	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)206	2	---	15 secs	-	-	1.6 <sub>(SS)</sub>	-	2.4	0.0	16.5	0.0	0.0	0.0	


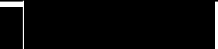
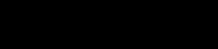

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 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP(R)206	2	---	30 secs	-	-	-	-	2.4	0.0	16.4	0.0	0.0	0.0	
CP(R)206	2	---	60 secs	-	-	-	-	2.4	0.0	16.2	0.0	0.0	0.0	
CP(R)206	2	---	90 secs	-	-	-	-	2.4	0.0	16.2	0.0	0.0	0.0	
CP(R)206	2	---	120 secs	-	-	-	-	2.4	0.0	16.2	0.0	0.0	0.0	
CP(R)206	2	---	180 secs	-	-	-	-	2.4	0.0	16.3	0.0	0.0	0.0	
CP(R)206	2	---	240 secs	-	-	-	-	2.4	0.0	16.2	0.0	0.0	0.0	
CP(R)206	2	---	300 secs	-	-	-	-	2.4	0.0	16.1	0.0	0.0	0.0	
CP(R)206	3	21.11	30/10/2013 10:23:00	1011	1012	-4.6 <sub>(I)</sub>	14.63	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)206	3	---	15 secs	-	-	-4.5 <sub>(SS)</sub>	-	0.3	0.0	20.2	0.0	0.0	0.0	
CP(R)206	3	---	30 secs	-	-	-	-	0.4	0.0	20.0	0.0	0.0	0.0	
CP(R)206	3	---	60 secs	-	-	-	-	0.5	0.0	19.9	0.0	0.0	0.0	
CP(R)206	3	---	90 secs	-	-	-	-	0.5	0.0	19.8	0.0	0.0	0.0	
CP(R)206	3	---	120 secs	-	-	-	-	0.6	0.0	19.7	0.0	0.0	0.0	
CP(R)206	3	---	180 secs	-	-	-	-	0.8	0.0	19.6	0.0	0.0	0.0	
CP(R)206	3	---	240 secs	-	-	-	-	1.8	0.0	18.3	0.0	0.0	0.0	
CP(R)206	3	---	300 secs	-	-	-	-	2.1	0.0	17.7	0.0	0.0	0.0	
CP(R)206	4	21.15	11/11/2013 16:54:00	1017	1017	0.1 <sub>(I)</sub>	14.65	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)206	4	---	15 secs	-	-	-5.6 <sub>(SS)</sub>	-	0.1	0.0	20.1	0.0	0.0	0.0	
CP(R)206	4	---	30 secs	-	-	-	-	0.1	0.0	20.4	0.0	6.0	0.0	
CP(R)206	4	---	60 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)206	4	---	90 secs	-	-	-	-	0.1	0.0	20.4	0.0	2.0	0.0	
CP(R)206	4	---	120 secs	-	-	-	-	0.1	0.0	20.6	0.0	6.0	0.0	
CP(R)206	4	---	180 secs	-	-	-	-	0.1	0.0	20.4	0.0	2.0	0.0	
CP(R)206	4	---	240 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)206	4	---	300 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	



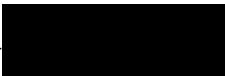

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:  <b>312494</b>
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP(R)207	1	24.66	16/10/2013 15:40:00	1001	1003	-	24.25	0.1	0.0	20.7	0.0	0.0	0.0	
CP(R)207	1	---	15 secs	-	-	-	-	2.4	0.0	19.1	0.0	0.0	0.0	
CP(R)207	1	---	30 secs	-	-	-	-	2.5	0.0	15.5	0.0	0.0	0.0	
CP(R)207	1	---	60 secs	-	-	-	-	2.5	0.0	14.8	0.0	0.0	0.0	
CP(R)207	1	---	90 secs	-	-	-	-	2.5	0.0	14.7	0.0	0.0	0.0	
CP(R)207	1	---	120 secs	-	-	-	-	2.5	0.0	14.6	0.0	0.0	0.0	
CP(R)207	1	---	180 secs	-	-	-	-	2.5	0.0	14.9	0.0	0.0	0.0	
CP(R)207	1	---	240 secs	-	-	-	-	2.5	0.0	14.8	0.0	0.0	0.0	
CP(R)207	1	---	300 secs	-	-	-	-	2.5	0.0	14.9	0.0	0.0	0.0	
CP(R)207	2	24.67	23/10/2013 15:00:00	989	987	-3.4 <sub>(I)</sub>	24.24	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)207	2	---	15 secs	-	-	-3.3 <sub>(SS)</sub>	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP(R)207	2	---	30 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)207	2	---	60 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)207	2	---	90 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)207	2	---	120 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP(R)207	2	---	180 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP(R)207	2	---	240 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP(R)207	2	---	300 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP(R)207	3	24.64	30/10/2013 10:07:00	-	1012	-3.5 <sub>(I)</sub>	24.48	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)207	3	---	15 secs	-	-	-3.3 <sub>(SS)</sub>	-	0.3	0.0	19.8	0.0	0.0	0.0	
CP(R)207	3	---	30 secs	-	-	-	-	0.3	0.0	19.8	0.0	0.0	0.0	
CP(R)207	3	---	60 secs	-	-	-	-	0.3	0.0	19.7	0.0	0.0	0.0	
CP(R)207	3	---	90 secs	-	-	-	-	0.6	0.0	19.5	0.0	0.0	0.0	
CP(R)207	3	---	120 secs	-	-	-	-	0.6	0.0	19.5	0.0	0.0	0.0	



Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP(R)207	3	---	180 secs	-	-	-	-	0.7	0.0	19.4	0.0	0.0	0.0	
CP(R)207	3	---	240 secs	-	-	-	-	0.7	0.0	19.2	0.0	0.0	0.0	
CP(R)207	3	---	300 secs	-	-	-	-	0.7	0.0	19.3	0.0	0.0	0.0	
CP(R)207	4	24.65	11/11/2013 16:14:00	1017	1017	-12.2 <sub>(I)</sub>	24.54	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)207	4	---	15 secs	-	-	-13.5 <sub>(SS)</sub>	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP(R)207	4	---	30 secs	-	-	-	-	0.1	0.0	20.5	0.0	22.0	0.0	
CP(R)207	4	---	60 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)207	4	---	90 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP(R)207	4	---	120 secs	-	-	-	-	0.2	0.0	20.5	0.0	0.0	0.0	
CP(R)207	4	---	180 secs	-	-	-	-	0.4	0.0	20.3	0.0	3.0	0.0	
CP(R)207	4	---	240 secs	-	-	-	-	0.5	0.0	20.1	0.0	0.0	0.0	
CP(R)207	4	---	300 secs	-	-	-	-	0.6	0.0	19.9	0.0	0.0	0.0	
CP(R)208	1	20.20	16/10/2013 14:59:01	1002	1003	-	DRY	0.0	0.1	20.7	1.0	0.0	0.0	
CP(R)208	1	---	15 secs	-	-	-	-	1.4	0.1	19.8	1.0	0.0	0.0	
CP(R)208	1	---	30 secs	-	-	-	-	1.4	0.1	17.4	1.0	0.0	0.0	
CP(R)208	1	---	60 secs	-	-	-	-	1.4	0.1	17.1	1.0	0.0	0.0	
CP(R)208	1	---	90 secs	-	-	-	-	1.4	0.1	17.2	1.0	0.0	0.0	
CP(R)208	1	---	120 secs	-	-	-	-	1.4	0.1	17.0	1.0	0.0	0.0	
CP(R)208	1	---	180 secs	-	-	-	-	1.4	0.1	17.3	1.0	0.0	0.0	
CP(R)208	1	---	240 secs	-	-	-	-	1.4	0.0	17.5	0.0	0.0	0.0	
CP(R)208	1	---	300 secs	-	-	-	-	1.4	0.0	17.2	0.0	0.0	0.0	
CP(R)208	2	20.20	24/10/2013 13:08:00	1006	1005	-1.8 <sub>(I)</sub>	DRY	0.1	0.0	20.7	0.0	0.0	0.0	
CP(R)208	2	---	15 secs	-	-	-1.9 <sub>(SS)</sub>	-	0.1	0.0	20.3	0.0	0.0	0.0	
CP(R)208	2	---	30 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	





Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:  <b>312494</b>
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# IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Monitoring Round	Installation Depth (mbgl)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	
CP(R)208	2	---	60 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP(R)208	2	---	90 secs	-	-	-	-	0.1	0.0	20.4	0.0	0.0	0.0	
CP(R)208	2	---	120 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)208	2	---	180 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)208	2	---	240 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)208	2	---	300 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)208	3	20.19	30/10/2013 16:35:00	1011	1010	-0.1 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)208	3	---	15 secs	-	-	0.0 <sub>(SS)</sub>	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP(R)208	3	---	30 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP(R)208	3	---	60 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP(R)208	3	---	90 secs	-	-	-	-	0.1	0.0	20.7	0.0	0.0	0.0	
CP(R)208	3	---	120 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP(R)208	3	---	180 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP(R)208	3	---	240 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)208	3	---	300 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)208	4	20.19	11/11/2013 15:26:00	1017	1017	1.3 <sub>(I)</sub>	DRY	0.1	0.0	20.8	0.0	0.0	0.0	
CP(R)208	4	---	15 secs	-	-	1.3 <sub>(SS)</sub>	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)208	4	---	30 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP(R)208	4	---	60 secs	-	-	-	-	0.1	0.0	20.5	0.0	0.0	0.0	
CP(R)208	4	---	90 secs	-	-	-	-	0.1	0.0	20.6	0.0	4.0	0.0	
CP(R)208	4	---	120 secs	-	-	-	-	0.1	0.0	20.5	0.0	4.0	0.0	
CP(R)208	4	---	180 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP(R)208	4	---	240 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	
CP(R)208	4	---	300 secs	-	-	-	-	0.1	0.0	20.6	0.0	0.0	0.0	

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

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# IN-SITU WATER MONITORING RESULTS

	<u>Weather</u>	<u>Ground Conditions</u>	<u>Wind Conditions</u>	<u>Air Temperature (°C)</u>	<u>Equipment Used &amp; Remarks</u>
Round 1	Overcast	Wet	None	12	Dipmeter + GA2000 SN-GA07744
Round 2	Overcast	Wet	None	15	Dipmeter + GA2000 SN-GA07744
Round 3	Sunny	Wet	None	12	Dipmeter + GA2000 SN-GA07744
Round 4	Overcast	Wet	None	10	Dipmeter + GA2000 SN-GA07744

Exploratory Position ID	Pipe Ref	Pipe Diameter	Monitoring Round / Test Number	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring	Water Depth (mbgl)	Remarks
CP203	1	50	1 / 1	4.00	3.78	1.00 to 4.00	16/10/2013 12:05	DRY	
CP203	1	50	2 / 1	4.00	3.78	1.00 to 4.00	23/10/2013 13:42	DRY	
CP203	1	50	3 / 1	4.00	3.83	1.00 to 4.00	30/10/2013 16:50	DRY	
CP203	1	50	4 / 1	4.00	3.76	1.00 to 4.00	12/11/2013 10:22	DRY	
CP204	1	50	1 / 1	4.00	3.91	1.00 to 4.00	17/10/2013 15:50	DRY	
CP204	1	50	2 / 1	4.00	3.91	1.00 to 4.00	22/10/2013 15:38	DRY	
CP204	1	50	3 / 1	4.00	3.95	1.00 to 4.00	30/10/2013 16:00	DRY	
CP204	1	50	4 / 1	4.00	3.88	1.00 to 4.00	12/11/2013 11:36	DRY	
CP205	1	50	1 / 1	4.30	4.37	1.00 to 4.30	16/10/2013 12:13	4.13	
CP205	1	50	2 / 1	4.30	4.37	1.00 to 4.30	23/10/2013 14:06	4.12	
CP205	1	50	3 / 1	4.30	4.37	1.00 to 4.30	30/10/2013 09:25	4.19	
CP205	1	50	4 / 1	4.30	4.37	1.00 to 4.30	12/11/2013 09:45	4.20	
CP206	1	50	1 / 1	3.30	3.23	0.50 to 3.30	16/10/2013 13:37	DRY	
CP206	1	50	2 / 1	3.30	3.23	0.50 to 3.30	22/10/2013 14:26	DRY	
CP206	1	50	3 / 1	3.30	3.29	0.50 to 3.30	30/10/2013 09:43	DRY	


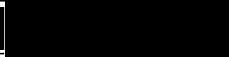


Key: NDA denotes 'no data available'.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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# IN-SITU WATER MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter	Monitoring Round / Test Number	Reported Installation Depth (m)	Measured Installation Depth (m)	Response Zone	Date & Time of Monitoring	Water Depth (m)	Remarks
CP206	1	50	4 / 1	3.30	3.21	0.50 to 3.30	11/11/2013 16:44	DRY	
CP207	1	50	1 / 1	2.70	2.68	1.00 to 2.70	16/10/2013 15:32	DRY	
CP207	1	50	2 / 1	2.70	2.70	1.00 to 2.70	23/10/2013 14:40	DRY	
CP207	1	50	3 / 1	2.70	2.69	1.00 to 2.70	30/10/2013 16:42	DRY	
CP207	1	50	4 / 1	2.70	2.67	1.00 to 2.70	11/11/2013 16:08	DRY	
CP208	1	50	1 / 1	2.00	1.90	1.00 to 2.00	16/10/2013 15:41	DRY	
CP208	1	50	2 / 1	2.00	1.88	1.00 to 2.00	24/10/2013 13:00	DRY	
CP208	1	50	3 / 1	2.00	1.90	1.00 to 2.00	30/10/2013 16:10	DRY	
CP208	1	50	4 / 1	2.00	1.85	1.00 to 2.00	11/11/2013 15:36	DRY	
CP210	1	50	1 / 1	9.50	9.05	8.50 to 9.50	17/10/2013 16:31	5.47	
CP210	1	50	2 / 1	9.50	9.05	8.50 to 9.50	23/10/2013 09:00	4.77	Operator: GShaw, Weather: Overcast, Surface Conditions: Wet, General Remarks: 3x well volume purged - full sample obtained.
CP210	1	50	3 / 1	9.50	9.03	8.50 to 9.50	30/10/2013 14:35	3.88	
CP210	1	50	4 / 1	9.50	9.04	8.50 to 9.50	12/11/2013 12:22	3.27	
CP211	1	50	1 / 1	7.00	6.68	1.00 to 7.00	17/10/2013 16:43	DRY	
CP211	1	50	2 / 1	7.00	6.67	1.00 to 7.00	24/10/2013 10:40	6.14	
CP211	1	50	3 / 1	7.00	6.67	1.00 to 7.00	30/10/2013 14:00	6.14	
CP211	1	50	4 / 1	7.00	6.65	1.00 to 7.00	12/11/2013 12:53	5.96	
CP212	1	50	1 / 1	3.30	3.39	1.00 to 3.30	17/10/2013 16:56	2.22	
CP212	1	50	2 / 1	3.30	3.39	1.00 to 3.30	22/10/2013 10:20	2.22	Operator: GShaw, Weather: Overcast, Surface Conditions: Wet, General Remarks: 3x well volume purged - full sample obtained.
CP212	1	50	2 / 2	3.30	3.39	1.00 to 3.30	23/10/2013 10:45	1.48	





Key: NDA denotes 'no data available'.

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# IN-SITU WATER MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter	Monitoring Round / Test Number	Reported Installation Depth (m)	Measured Installation Depth (m)	Response Zone	Date & Time of Monitoring	Water Depth (m)	Remarks
CP212	1	50	3 / 2	3.30	3.38	1.00 to 3.30	30/10/2013 13:55	1.22	
CP212	1	50	4 / 2	3.30	3.37	1.00 to 3.30	12/11/2013 13:12	1.04	
CP213	1	50	1 / 1	4.20	4.08	1.00 to 4.20	17/10/2013 18:00	2.39	
CP213	1	50	2 / 1	4.20	4.08	1.00 to 4.20	22/10/2013 18:00	2.39	Operator: GShaw, Weather: Overcast, Surface Conditions: Wet, General Remarks: 3x well volume purged - full sample obtained.
CP213	1	50	2 / 2	4.20	4.08	1.00 to 4.20	23/10/2013 10:16	2.24	
CP213	1	50	3 / 1	4.20	4.08	1.00 to 4.20	30/10/2013 12:00	2.18	
CP213	1	50	4 / 1	4.20	4.07	1.00 to 4.20	12/11/2013 15:46	1.78	
CP214	1	50	1 / 1	4.20	4.08	1.00 to 4.20	17/10/2013 18:20	3.49	
CP214	1	50	2 / 1	4.20	4.10	1.00 to 4.20	24/10/2013 13:30	3.38	
CP214	1	50	3 / 1	4.20	4.08	1.00 to 4.20	30/10/2013 10:35	3.00	
CP214	1	50	4 / 1	4.20	4.07	1.00 to 4.20	12/11/2013 15:49	2.13	
CP215	1	50	1 / 1	4.80	4.85	1.00 to 4.80	17/10/2013 17:15	1.72	
CP215	1	50	2 / 1	4.80	4.85	1.00 to 4.80	24/10/2013 11:15	1.07	
CP215	1	50	3 / 1	4.80	4.85	1.00 to 4.80	30/10/2013 13:20	0.88	
CP215	1	50	4 / 1	4.80	4.85	1.00 to 4.80	12/11/2013 13:30	0.55	
CP216	1	50	3 / 1	2.40	2.45	0.50 to 2.40	30/10/2013 12:40	DRY	
CP216	1	50	4 / 1	2.40	2.45	0.50 to 2.40	12/11/2013 14:35	DRY	
CP217	1	50	1 / 1	4.60	4.64	1.00 to 4.60	17/10/2013 17:42	2.25	
CP217	1	50	2 / 1	4.60	4.64	1.00 to 4.60	23/10/2013 11:20	1.70	
CP217	1	50	2 / 2	4.60	4.64	1.00 to 4.60	23/10/2013 12:05	1.70	Operator: GShaw, Weather: Overcast, Surface Conditions: Wet, General Remarks: 3xwell volume purged - full sample obtained





Key: NDA denotes 'no data available'.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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# IN-SITU WATER MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter	Monitoring Round / Test Number	Reported Installation Depth (m)	Measured Installation Depth (m)	Response Zone	Date & Time of Monitoring	Water Depth (m)	Remarks
CP217	1	50	3 / 1	4.60	4.64	1.00 to 4.60	30/10/2013 12:56	1.60	
CP217	1	50	4 / 1	4.60	4.62	1.00 to 4.60	12/11/2013 14:06	1.43	
CP218	1	50	1 / 1	4.60	4.65	1.00 to 4.60	17/10/2013 17:47	DRY	
CP218	1	50	2 / 1	4.60	4.65	1.00 to 4.60	24/10/2013 11:40	DRY	
CP218	1	50	3 / 1	4.60	4.65	1.00 to 4.60	30/10/2013 13:30	DRY	
CP218	1	50	4 / 1	4.60	4.65	1.00 to 4.60	12/11/2013 14:58	4.63	
CP219	1	50	1 / 1	7.50	7.43	1.00 to 7.50	16/10/2013 14:47	DRY	
CP219	1	50	2 / 1	7.50	7.44	1.00 to 7.50	24/10/2013 13:45	DRY	
CP219	1	50	3 / 1	7.50	7.41	1.00 to 7.50	30/10/2013 13:10	7.32	
CP219	1	50	4 / 1	7.50	7.43	1.00 to 7.50	11/11/2013 14:58	7.34	
CP220	1	50	1 / 1	5.70	5.79	0.00 to 5.70	16/10/2013 13:54	3.04	
CP220	1	50	2 / 1	5.70	5.79	0.00 to 5.70	22/10/2013 13:28	3.04	
CP220	1	50	2 / 2	5.70	5.80	0.00 to 5.70	23/10/2013 09:00	4.40	Operator: GShaw, Weather: Overcast, Surface Conditions: Wet, General Remarks: 3xwell volume purged - full sample obtained
CP220	1	50	3 / 1	5.70	5.80	0.00 to 5.70	30/10/2013 14:40	2.99	
CP220	1	50	4 / 1	5.70	5.77	0.00 to 5.70	11/11/2013 14:39	2.08	
CP221	1	50	1 / 1	10.70	10.00	1.00 to 10.70	16/10/2013 14:30	5.43	
CP221	1	50	2 / 1	10.70	10.10	1.00 to 10.70	24/10/2013 14:00	5.50	
CP221	1	50	3 / 1	10.70	10.08	1.00 to 10.70	30/10/2013 13:10	5.48	
CP221	1	50	4 / 1	10.70	10.07	1.00 to 10.70	11/11/2013 14:20	5.36	
CP222	1	19	1 / 1	6.00	5.68	5.70 to 6.00	17/10/2013 12:45	2.93	Weather: Overcast, Surface Conditions: Wet



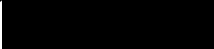

Key: NDA denotes 'no data available'.

 <b>RSK Environment Ltd</b> Abbey Park Humber Road Coventry CV3 4AQ	Compiled By	Date	Checked By	Date	Contract Ref:
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# IN-SITU WATER MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter	Monitoring Round / Test Number	Reported Installation Depth (m)	Measured Installation Depth (m)	Response Zone	Date & Time of Monitoring	Water Depth (m)	Remarks
CP222	1	19	2 / 1	6.00	5.65	5.70 to 6.00	22/10/2013 12:48	2.82	Weather: Overcast, Surface Conditions: Wet
CP222	1	19	3 / 1	6.00	5.64	5.70 to 6.00	30/10/2013 15:10	2.44	Weather: Overcast, Surface Conditions: Wet
CP222	1	19	4 / 1	6.00	5.69	5.70 to 6.00	11/11/2013 14:10	2.42	Weather: Overcast, Surface Conditions: Wet
CP(R)203	1	50	1 / 1	25.00	24.78	7.00 to 25.00	16/10/2013 12:05	24.47	
CP(R)203	2	19	1 / 1	29.00	29.41	0.00 to 29.00	16/10/2013 12:10	DRY	
CP(R)203	1	50	2 / 1	25.00	24.81	7.00 to 25.00	23/10/2013 13:43	24.56	
CP(R)203	2	19	2 / 1	29.00	29.43	0.00 to 29.00	23/10/2013 13:48	DRY	
CP(R)203	1	50	3 / 1	25.00	24.79	7.00 to 25.00	30/10/2013 16:50	DRY	
CP(R)203	2	19	3 / 1	29.00	29.55	0.00 to 29.00	30/10/2013 16:55	DRY	
CP(R)203	1	50	4 / 1	25.00	24.77	7.00 to 25.00	12/11/2013 10:31	24.51	
CP(R)203	2	19	4 / 1	29.00	29.43	0.00 to 29.00	12/11/2013 10:40	DRY	
CP(R)204	1	50	1 / 1	20.00	19.80	14.00 to 20.00	17/10/2013 16:06	15.90	
CP(R)204	1	50	2 / 1	20.00	19.80	14.00 to 20.00	22/10/2013 15:10	15.80	
CP(R)204	1	50	2 / 2	20.00	19.80	14.00 to 20.00	22/10/2013 16:30	15.80	Operator: GShaw, Weather: Overcast, Surface Conditions: Wet, General Remarks: 3xwell volume purged - full sample obtained
CP(R)204	1	50	3 / 1	20.00	19.72	14.00 to 20.00	30/10/2013 15:36	15.51	
CP(R)204	1	50	4 / 1	20.00	19.81	14.00 to 20.00	12/11/2013 11:36	14.93	
CP(R)205	1	50	1 / 1	19.00	18.41	4.00 to 19.00	16/10/2013 12:13	18.27	
CP(R)205	1	50	2 / 1	19.00	18.41	4.00 to 19.00	23/10/2013 14:14	18.28	
CP(R)205	1	50	3 / 1	19.00	18.40	4.00 to 19.00	30/10/2013 16:55	18.26	
CP(R)205	1	50	4 / 1	19.00	18.40	4.00 to 19.00	11/11/2013 09:55	18.27	
CP(R)206	1	50	1 / 1	21.00	21.17	9.00 to 21.00	16/10/2013 13:37	14.72	


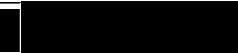


Key: NDA denotes 'no data available'.

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# IN-SITU WATER MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter	Monitoring Round / Test Number	Reported Installation Depth (m)	Measured Installation Depth (m)	Response Zone	Date & Time of Monitoring	Water Depth (m)	Remarks
CP(R)206	2	19	1 / 1	24.00	24.04	23.70 to 24.00	16/10/2013 13:42	14.65	
CP(R)206	2	19	2 / 1	24.00	24.08	23.70 to 24.00	22/10/2013 13:14	14.69	
CP(R)206	1	50	2 / 1	21.00	21.18	9.00 to 21.00	22/10/2013 14:45	14.68	
CP(R)206	1	50	2 / 2	21.00	21.18	9.00 to 21.00	22/10/2013 14:55	14.68	Operator: GShaw, Weather: Overcast, Surface Conditions: Wet, General Remarks: 3xwell volume purged - full sample obtained
CP(R)206	1	50	3 / 1	21.00	21.11	9.00 to 21.00	30/10/2013 09:53	14.63	
CP(R)206	2	19	3 / 1	24.00	23.91	23.70 to 24.00	30/10/2013 10:28	14.57	
CP(R)206	1	50	4 / 1	21.00	21.15	9.00 to 21.00	11/11/2013 16:45	14.65	
CP(R)206	2	19	4 / 1	24.00	24.06	23.70 to 24.00	11/11/2013 17:02	14.78	
CP(R)207	1	50	1 / 1	25.00	24.66	17.00 to 25.00	16/10/2013 15:40	24.25	
CP(R)207	2	19	1 / 1	12.10	12.18	11.80 to 12.10	16/10/2013 15:45	10.85	
CP(R)207	1	50	2 / 1	25.00	24.67	17.00 to 25.00	23/10/2013 15:00	24.24	
CP(R)207	2	19	2 / 1	12.10	12.17	11.80 to 12.10	23/10/2013 15:05	10.90	
CP(R)207	1	50	3 / 1	25.00	24.64	17.00 to 25.00	30/10/2013 10:07	24.48	
CP(R)207	2	19	3 / 1	12.10	12.16	11.80 to 12.10	30/10/2013 10:12	10.82	
CP(R)207	1	50	4 / 1	25.00	24.65	17.00 to 25.00	11/11/2013 16:14	24.54	
CP(R)207	2	19	4 / 1	12.10	12.17	11.80 to 12.10	11/11/2013 16:19	10.81	
CP(R)208	1	50	1 / 1	20.00	20.00	5.00 to 15.00	16/10/2013 14:59	DRY	
CP(R)208	1	50	2 / 1	20.00	20.00	5.00 to 15.00	24/10/2013 13:08	DRY	
CP(R)208	1	50	3 / 1	20.00	20.00	5.00 to 15.00	30/10/2013 16:35	DRY	
CP(R)208	1	50	4 / 1	20.00	20.00	5.00 to 15.00	11/11/2013 15:26	DRY	
CP/RC 101	1	19	1 / 1	27.60	27.59	14.00 to 27.60	16/10/2013 08:56	26.20	
CP/RC 101	1	19	2 / 1	27.60	27.57	14.00 to 27.60	23/10/2013 13:55	26.16	





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Exploratory Position ID	Pipe ref	Pipe Diameter	Monitoring Round / Test Number	Reported Installation Depth (m)	Measured Installation Depth (m)	Response Zone	Date & Time of Monitoring	Water Depth (m)	Remarks
CP/RC 101	1	19	3 / 1	27.60	27.57	14.00 to 27.60	30/10/2013 08:56	26.18	
CP/RC 101	1	19	4 / 1	27.60	27.56	14.00 to 27.60	11/11/2013 10:09	26.07	
CP/RC 102	1	19	1 / 1	17.20	4.32	4.00 to 17.20	16/10/2013 11:10	DRY	
CP/RC 102	1	19	2 / 1	17.20	4.32	4.00 to 17.20	23/10/2013 14:27	DRY	
CP/RC 102	1	19	3 / 1	17.20	4.32	4.00 to 17.20	30/10/2013 16:50	DRY	
CP/RC 102	1	19	4 / 1	17.20	4.36	4.00 to 17.20	11/11/2013 16:31	4.34	
CP/RC 103	1	19	1 / 1	15.00	14.87	12.00 to 15.00	16/10/2013 10:30	DRY	
CP/RC 103	2	19	1 / 1	5.00	4.10	1.00 to 5.00	16/10/2013 10:33	DRY	
CP/RC 103	1	19	2 / 1	15.00	14.81	12.00 to 15.00	23/10/2013 13:08	14.56	
CP/RC 103	2	19	2 / 1	5.00	4.12	1.00 to 5.00	23/10/2013 13:11	DRY	
CP/RC 103	1	19	3 / 1	15.00	14.75	12.00 to 15.00	30/10/2013 08:15	DRY	
CP/RC 103	2	19	3 / 1	5.00	4.13	1.00 to 5.00	30/10/2013 08:18	DRY	
CP/RC 103	1	19	4 / 1	15.00	14.88	12.00 to 15.00	12/11/2013 10:59	14.83	
CP/RC 103	2	19	4 / 1	5.00	4.13	1.00 to 5.00	12/11/2013 11:03	3.83	
CP/RC 104	1	19	1 / 1	18.00	17.92	16.00 to 18.00	16/10/2013 10:28	DRY	
CP/RC 104	2	19	1 / 1	12.00	12.96	7.00 to 14.00	16/10/2013 10:29	DRY	
CP/RC 104	1	19	2 / 1	18.00	17.92	16.00 to 18.00	24/10/2013 10:58	DRY	
CP/RC 104	2	19	2 / 1	12.00	12.96	7.00 to 14.00	24/10/2013 10:59	DRY	
CP/RC 104	1	19	3 / 1	18.00	17.91	16.00 to 18.00	31/10/2013 11:50	DRY	
CP/RC 104	2	19	3 / 1	12.00	12.96	7.00 to 14.00	31/10/2013 11:51	DRY	
CP/RC 104	1	19	4 / 1	18.00	17.90	16.00 to 18.00	12/11/2013 12:38	DRY	
CP/RC 104	2	19	4 / 1	12.00	11.95	7.00 to 14.00	12/11/2013 12:39	DRY	

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# IN-SITU WATER MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter	Monitoring Round / Test Number	Reported Installation Depth (m)	Measured Installation Depth (m)	Response Zone	Date & Time of Monitoring	Water Depth (m)	Remarks
CP/RC 105	1	19	1 / 1	14.70	14.47	1.00 to 14.70	16/10/2013 10:10	DRY	
CP/RC 105	1	19	2 / 1	14.70	14.52	1.00 to 14.70	24/10/2013 11:35	DRY	
CP/RC 105	1	19	3 / 1	14.70	14.48	1.00 to 14.70	30/10/2013 13:10	DRY	
CP/RC 105	1	19	4 / 1	14.70	14.50	1.00 to 14.70	12/11/2013 15:11	14.44	
CP/RC 106	1	19	2 / 1	16.40	16.10	8.00 to 16.50	24/10/2013 08:30	11.84	General Remarks: Borehole not been located on 1st round of monitoring.
CP/RC 106	1	19	3 / 1	16.40	16.09	8.00 to 16.50	30/10/2013 12:00	11.78	
CP/RC 106	1	19	4 / 1	16.40	16.09	8.00 to 16.50	12/11/2013 12:06	11.32	

Key: NDA denotes 'no data available'.



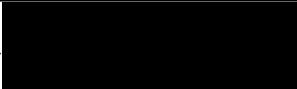
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# IN-SITU WATER MONITORING RESULTS

	<u>Weather</u>	<u>Ground Conditions</u>	<u>Wind Conditions</u>	<u>Air Temperature (°C)</u>	<u>Equipment Used &amp; Remarks</u>
Round 2	Overcast	Wet	None	15	Dipmeter + GA2000 SN-GA07744

Exploratory Position ID	Pipe Ref	Pipe Diameter	Monitoring Round / Test Number	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring	Water Depth (mbgl)	pH	Conductivity (uS/cm)	Temperature (°C)	Remarks
CP210	1	50	2 / 1	9.50	9.05	8.50 to 9.50	23/10/2013 09:00	4.77	6.43	1830	10.2	Operator: GShaw, Weather: Overcast, Surface Conditions: Wet, General Remarks: 3x well volume purged - full sample obtained.
CP212	1	50	2 / 1	3.30	3.39	1.00 to 3.30	22/10/2013 10:20	2.22	6.24	1837	12.7	Operator: GShaw, Weather: Overcast, Surface Conditions: Wet, General Remarks: 3x well volume purged - full sample obtained.
CP213	1	50	2 / 1	4.20	4.08	1.00 to 4.20	22/10/2013 18:00	2.39	6.27	1500	10.9	Operator: GShaw, Weather: Overcast, Surface Conditions: Wet, General Remarks: 3x well volume purged - full sample obtained.
CP217	1	50	2 / 2	4.60	4.64	1.00 to 4.60	23/10/2013 12:05	1.70	5.48	444	11.9	Operator: GShaw, Weather: Overcast, Surface Conditions: Wet, General Remarks: 3xwell volume purged - full sample obtained
CP220	1	50	2 / 2	5.70	5.80	0.00 to 5.70	23/10/2013 09:00	4.40	6.51	256	10.9	Operator: GShaw, Weather: Overcast, Surface Conditions: Wet, General Remarks: 3xwell volume purged - full sample obtained
CP(R)204	1	50	2 / 2	20.00	19.80	14.00 to 20.00	22/10/2013 16:30	15.80	6.18	1530	11.0	Operator: GShaw, Weather: Overcast, Surface Conditions: Wet, General Remarks: 3xwell volume purged - full sample obtained
CP(R)206	1	50	2 / 2	21.00	21.18	9.00 to 21.00	22/10/2013 14:55	14.68	7.54	940	15.1	Operator: GShaw, Weather: Overcast, Surface Conditions: Wet, General Remarks: 3xwell volume purged - full sample obtained

Key: NDA denotes 'no data available'.

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