

**REPORT C4220A
SEPTEMBER 2011**

GEOENVIRONMENTAL APPRAISAL

**of
MONKTON FELL, SOUTH TYNESIDE**

**prepared for
TAYLOR WIMPEY NORTHEAST LTD and BARRATT HOMES NORTHEAST
LTD**



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APPENDIX A FIGURES AND DRAWINGS

Drawing No.	Title	Scale
C4220A/01	Site Location Plan	1:50,000
C4220A/02	Exploratory Hole Location Plan	1:1000
C4220A/03	Revised Conceptual Site Model	NTS

NTS: Not to Scale

APPENDIX B EXPLORATORY HOLE LOGS

APPENDIX C LABORATORY TEST RESULTS

APPENDIX D GROUND GAS AND GROUNDWATER MONITORING RESULTS

APPENDIX E SIRIUS GENERIC ASSESSMENT CRITERIA



EXECUTIVE SUMMARY

Introduction	Sirius Geotechnical and Environmental Ltd (Sirius) were commissioned by Taylor Wimpey Northeast Ltd and Barratt Homes Northeast Ltd to undertake a geoenvironmental appraisal of Monkton Fell, South Tyneside.
Site Details	The site presently comprises four large open fields. The two northern fields and the southern field are set to pasture with the large central field recently cultivated with a crop of oil seed rape. The site is relatively flat lying with surrounding hedgerows.
Site History	Based on a review of available historical plans, no previous development is recorded on the site.
Fieldwork	16 No Shallow hand dug trial pits to a maximum depth of 0.25m. 43No. trial pits to a maximum depth of 3.5m. 8No. window sample probe holes to a maximum depth of 4.0m.
Laboratory Testing	Samples of soil were submitted for analysis of a range of metal, other inorganic and organic components. Geotechnical testing was scheduled on selected samples. All testing was undertaken at accredited laboratories.
Ground Conditions	Ground conditions were found to comprise cultivated topsoil overlying firm and stiff glacial clays (Pelaw Clay and Glacial Till).
Ground Stability	Trial pit excavations to a maximum of 3.5m bgl were found to be stable. No groundwater flows were recorded during the site investigation.
Foundations and Floor Slabs	Ground bearing or suspended floor slabs could be considered for the proposed residential development.
Sulphate Class	DS-1 and ACEC-1
Contamination	No significant sources of ground contamination were identified.
Gas Protection	Preliminary results indicate NHBC Green classification with no specific gas protection measures required. Gas monitoring is ongoing and final conclusions will be reported under separate cover.

Other Issues	None identified
Further Works	Conclusions and recommendations should be passed to the appropriate regulatory authorities (i.e. Local authority and NHBC) for approval.

1. INTRODUCTION

Sirius Geotechnical and Environmental Ltd (Sirius) were commissioned by Taylor Wimpey Northeast Ltd and Barratt Home Northeast Ltd to undertake a geoenvironmental appraisal of Monkton Fell, South Tyneside (the “site”). It is understood that consideration is being given to redevelopment for a residential with gardens end use.

The objectives of this appraisal were:

- To investigate near surface soil and groundwater conditions.
- To determine the potential risks posed by any ground contamination and provide recommendations on remedial measures to manage such risks.
- To establish the risks associated with hazardous ground gas.
- To evaluate whether past mining or other extractive industries could have an influence on the site.
- To provide advice relating to geotechnical issues associated with the site.
- To provide foundation recommendations.

A desk study has been previously produced for the site by Sirius referenced C4220 – Preliminary Appraisal of Land at Monkton Fell, Monkton, South Tyneside (May 2011). This investigation included an assessment of information provided by GroundSure Environmental reports, the British Geological Survey (BGS), the Coal Authority (CA) and the local authority. The present geoenvironmental appraisal should be read in conjunction with the previous desk study report.

Fieldwork was undertaken on 16th June 2011 and between 22nd August 2011 and 25th August 2011 and comprised the mechanical excavation of 43 No. trial pits and the boring of 8 No. window sample probe holes.

This report, which was designed to meet the requirements of all relevant current guidance, presents the factual information available during this appraisal, interpretation of the data obtained and recommendations relevant to the defined objectives.

It has been assumed in the production of this report that the site is to be developed for a residential with gardens end use. In addition, it is assumed that ground levels will not change significantly

from those described in this report. If this is not the case, then amendments to the recommendations made in this report may be required.

Where the report refers to the potential presence of invasive plants (such as Japanese Knotweed) or asbestos-containing materials, such observations are for information only and should be verified by a suitably qualified expert.

The comments and opinions presented in this report are based on the findings of the desk study, ground conditions encountered during intrusive investigation works performed by Sirius and the results of tests carried out within one or more laboratories. There may be other conditions prevailing on the site which have not been revealed by this investigation and which have not been taken into account by this report. Responsibility cannot be accepted for any conditions not revealed by this investigation. Any diagram or opinion on the possible configuration of strata, contamination or other spatially variable features between or beyond investigation positions is conjectural and given for guidance only. Confirmation of ground conditions between exploratory holes should be undertaken if deemed necessary. Evaluation of ground gas and groundwater is based on observations made at the time of the investigation and monitoring visits. It should be noted that ground gas and groundwater levels and quality may vary due to seasonal and other effects.

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2. SITE DETAILS AND DESCRIPTION

Table 2.1 Current Site Overview

Location	<p>Monkton fell, South Tyneside.</p> <p>For ease of description, the site is split into two areas labelled site A and site B which are divided from one another by Monkton Lane. Site A is north of Monkton Lane, with Campbell Park Road to the east and Monkton Village to the north.</p> <p>Site B is south of Monkton Lane, with Luke’s Lane and the Monkton Business Park to the west, a dismantled railway line and Leam Lane (A194) to the south and amenity playing fields to the east.</p> <p>The site location is shown on Drawing No. C4220/1 within Appendix A</p>
National Grid Reference	431900, 563000
Topography and Features	<p>Site A is flat, rough grassland. The site is bisected by a public footpath which runs from north to south. The area to the east of this footpath contains a boggy area within its south western corner, possibly due to inadequate surface drainage. A further boggy/waterlogged area is located in the north eastern section of the site.</p> <p>Site B is a flat agricultural field surrounded by intermittent hedge and rough grass on all sides. The northern section of the field is well drained while the southern section is poorly drained resulting in a waterlogged area. Area B has been recently cultivated with a crop of oilseed rape.</p> <p>The main site features are shown on Drawing No. C4220/2 within Appendix A.</p>
Approximate Site Area	Approximately 16 Ha in total.

Site Boundaries	<p>The boundary of site A consists of near continuous hedgerow running from the south west to the north east. Beyond the hedgerow to the north runs a dismantled rail line, the site of the former Pontop and Jarrow Line.</p> <p>To the east of the site A there is an access gap of approximately 17 meters and a hedgerow that extends for approximately 77 metres off the eastern boundary. The remainder of the eastern boundary consists of managed grass which continues to the south of the site.</p> <p>The southern boundary of site A is Monkton Lane which runs east to west.</p> <p>The northern boundary of site B is Monkton Lane. The eastern boundary of site B is currently open amenity playing fields which run the full length of the site. The southern boundary is currently open grassland with scattered trees. The western boundary is Luke’s Lane which separates the site from the Monkton Business Park, the site of the former Monkton Coke Works.</p>
Current Land Use	<p>Site A is unused semi-improved grassland.</p> <p>Site B is currently being used as agricultural land.</p>
Invasive Plant Species	<p>None noted during the site walkover and none reported within the immediate vicinity.</p>
Adjacent Land Uses	<p>Parkland and residential to the north east and north west of the site.</p> <p>Parkland and sports fields to the east.</p> <p>Parkland and semi-improved grassland to the south.</p> <p>Monkton Business Park to the west, this area is the site of the former Monkton Coke Works.</p>

The main site features are shown on Drawing No. C4220/02 within Appendix A.



3. ENVIRONMENTAL SETTING

3.1. Introduction

Published environmental, geological and historical data relating to the site has been reviewed. A summary of relevant information is provided within Sirius report referenced C4220 – Preliminary Appraisal of Land at Monkton Fell, Monkton, South Tyneside (May 2011) which should be read in conjunction with this report. The ground investigation is scoped based on the Preliminary Conceptual Site Model presented in the aforementioned desk study report.

4. FIELDWORK

4.1. Scope of Investigation

The information contained in this report is limited to areas of land accessible during the investigation within the site boundary, as indicated on the site plan, presented in Appendix A as Drawing No. C4220A/02.

Sirius scoped the intrusive ground investigation using guidance presented in BS 10175:2001, BS 8485:2007, the CLR series of documents (Defra and Environment Agency, 2002a-2002e) and BS EN 1997:2004 and 2007.

The investigation, which was supervised by a Sirius Geoenvironmental Engineer, took place on 16th June 2011 and between 22nd August 2011 and 25th August 2011 and comprised:

- Excavation of 16No. hand dug trial pits (HDTP1-16) to a maximum depth of 0.25m bgl.
- Excavation of 43No. trial pits (TP1-25, 27-33, 35-37 and 39-46), to a maximum depth of 3.5m.
- Boring of 8No. window sample probe holes (WS1-5, 26, 34 and 38) to a maximum depth of 4.0m.

Permanent monitoring installations for both groundwater and ground gas monitoring were installed in WS1 to WS5 inclusive.

4.2. Strata Description

Detailed descriptions of strata and groundwater observations made during investigation works, together with samples recovered, are presented on the Engineer's exploratory hole records in Appendix B.

Standard strata descriptions are compliant with BS EN ISO 14688:2002 and 2004 and BS EN ISO 14689:2003. The depths of strata on the record sheets are recorded from current ground levels at each location, unless indicated otherwise.

4.3. Exploratory Hole Locations

The exploratory hole locations were based on the findings of the Preliminary Conceptual Site Model in order to target specific areas of interest and achieve a general site coverage. Procedures and principals recommended in CLR4 and BS 10175:2001 were followed when determining exploratory hole locations. Locations were also selected at the request of the project archaeologist to target areas of potential archaeological interest following a non-intrusive ground magnetometry survey. An archaeologist was present during the excavation of trial pits to carry out a watching brief.

The following table details the exploratory hole rationale:

Table 4.1 Exploratory Hole Rationale

Exploratory Hole	Rationale
TP1 to TP46 and WS26, 34 and 38	General site coverage.
WS1 - 3	Site boundary adjacent to former landfill site to the north west.
HDTP1 - 16	General site coverage to allow sampling of topsoil for chemical analysis.

Exploratory hole locations are shown on Drawing No. C4220A/02 in Appendix A of this report. Locations were surveyed during fieldwork using a hand held GPS receiver to an accuracy of approximately 4m.

4.4. Geotechnical Testing

Geotechnical laboratory testing was carried out on selected samples in accordance with techniques outlined in BS 1377:1990 “Methods of Test for Soils for Civil Engineering Purposes” at the laboratory of Professional Soils Laboratory (PSL), a UKAS accredited laboratory.

Geotechnical and geochemical test results are included within Appendix C of this report.

4.5. Chemical Testing

Selected samples of the made ground and natural soils were tested for a range of potential contaminants under subcontract with Derwentside Environmental Testing Services (DETS), a UKAS and MCERTS accredited laboratory.

The potential contaminants of concern identified by the preliminary conceptual site model were selected as the analytes for the samples recovered from the site. The results of soil and leachate analysis, as received from the laboratory, are presented in Appendix D of this report.

5. GROUND CONDITIONS AND MATERIAL PROPERTIES

5.1. Strata Profile

A summary of the strata profile is provided in Table 7.1 below.

Table 5.1 Strata Profile

Strata	Depth Range (Thickness Range)	Description and Comments
Topsoil	Ground Level (0.1 to 0.4m)	A natural cultivated topsoil was encountered at the ground surface across the entirety of the site area. This was generally found to comprise a dark brown sandy clay with rootlets.
Natural Clay/Glacial Till	0.1 – 0.4m (>3.7m)	Firm and stiff, medium to high strength brown and grey sandy, gravelly clay with occasional pockets of medium sand. Locally the clays were noted to be indistinctly laminated or fissured and friable. No significant granular bands or water bearing bands were noted. Considered to be typical of the upper (Pelaw) clay and underlying glacial till.
Bedrock	(NR)	Bedrock was not encountered during this investigation.

NR - not recorded

5.2. Material Properties

Drift Deposits

Hand shear vane results in cohesive natural clays ranged between 30 and 130kN/m², indicative of low to high strength. Typically however, shear vane results were in excess of 60kN/m² and are indicative of medium to high strength generally.

SPT N values ranged between 8 and 17. Correlation with laboratory plasticity indices indicates a mass shear strength of approximately 40 to 85kPa.

Plasticity indices confirm that the Glacial Till ranges between a clay of intermediate to high plasticity. Calculation of the modified Plasticity Index in accordance with NHBC Chapter 4.2 indicates that the clay has a medium volume change potential.

Calculation of the Consistency Index for the natural clays indicates that they are generally of stiff and very stiff consistency.

5.3. Subsurface Mine Workings

The investigation of subsurface mine workings is beyond the scope of this investigation.

5.4. Groundwater

No groundwater strikes were encountered during the recent ground investigation works. Groundwater levels subsequently monitored within WS boreholes adjacent to the northern site boundary are summarised in Table 7.2, below.

Table 5.2 Summary of Groundwater Encountered

Exploratory Hole	Depth Encountered (m bgl)	Description	Stratum
WS1	2.9-2.96	Slight moisture in base of borehole	Natural clay
WS2	0.6 – 0.98	Slight seepage	Natural Clay
WS3	2.6 – 2.48	Slight moisture in base of borehole	Natural clay

5.5. Visual / Olfactory Evidence of Contamination

During the works, there was no olfactory or visual evidence of hydrocarbon or similar contamination. No obvious made ground was recorded by the site engineer.

5.6. Ground Gas

Ground gas monitoring has been carried out on two occasions to date, and the results are summarised in the Table 7.3 below. Full details of ground gas monitoring results are included in Appendix E.



Table 5.3 Summary of Gas Monitoring (2 visits only)

Well	Methane (range) %v/v	Carbon Dioxide (range) %v/v	Oxygen (range) %v/v	Flow (range) l/hr
WS1	ND	1.3 – 3.2	17.5 – 20.2	-0.2 – 1.2
WS2	ND	ND – 0.1	19.0 – 21.4	0.2 – 0.5
WS3	ND	0.3 – 0.9	19.5 – 20.9	0.1 – 0.4

ND Not Detected

The monitoring programme includes 4 visits over a 3 month period to provide an initial indication of potential gas risk associated with the site. On completion of the monitoring, a full set of results will be issued in an addendum letter.



6. RESULTS OF CHEMICAL TESTING

6.1. Assessment Methodology

The laboratory test data for the relevant soil strata were reviewed for completeness and consistency. Those determinands that represent potential contaminants of concern were subject to further evaluation.

Statistical testing was undertaken for the Planning Scenario by the methods described in CL:AIRE & CIEH “Guidance on Comparing Soil Contamination Data with a Critical Concentration”, May 2008. This statistical testing was undertaken to determine whether there was sufficient evidence that the true mean concentration of each determinand was less than the relevant critical concentration for that component.

Data Below the Analytical Limit of Detection

The proportion of data below the analytical limit of detection (“non-detects”) was reviewed for each determinand. The dataset for each site zone (where applicable) was considered separately.

Non-detect data were given a concentration of half of the relevant limit of detection (LoD) for calculation purposes. In cases where a contaminant dataset for a zone consisted of more than 10-15% of non-detect data, then professional judgement was applied in selecting and applying statistical tests and in interpreting the data.

Assessment of Outliers and Data Distribution

Assessment of data distribution and the identification of statistical outliers was performed iteratively, applying appropriate data distribution and outlier tests for the complete and outlier-censored datasets.

The presence of outliers was determined using Grubbs’ test working with untransformed values for normally distributed data and natural log-transformed values for non-normally distributed data.

The data were tested for normality by at least two of the following methods:

- Probability histogram.
- Probability (q-q) plots.

- Shapiro-Wilk normality test.

Outliers were considered to form part of the overall site dataset *except* when there was clear evidence and justification for their exclusion.

Calculation of 95% Upper Confidence Limit of the Sample Mean

Based upon the normality and outlier tests, the 95% Upper Confidence Limit (US95) of each contaminant of concern was calculated by:

- One-sample t-test for datasets that are normally distributed or close to normal distribution.
- One-sided Chebyshev test for datasets that are significantly non-normal.

The calculated US95s are presented below and compared to the applicable Generic Assessment Criteria.

6.2. Soil Analysis

Results of chemical analysis are presented in full in Appendix D.

For this site, measured values were compared to Generic Assessment Criteria (GAC) derived for a residential with gardens end use. Source data for all GACs are provided in Appendix F.

Natural soils (Topsoil)

The chemical analysis results and screening criteria are summarised in Table 8.1.

Table 6.1 Summary of Total Soil Concentrations – Natural soils (Topsoil)

Determinand	No. of Samples Tested	Range of Results (mg/kg unless specified)	US95	GAC (5% SOM)	No. of Samples >GAC	Outliers
Metals						
Inorganic Arsenic	12			32	0	
Cadmium	12			10	0	
Chromium (III)	12			3000	0	
Lead	12			450	0	
Inorganic Mercury	12			170	0	
Selenium	12			350	0	
Copper	12			200	0	
Nickel	12			130	0	
Zinc	12			450	0	
Inorganics						
pH	12			<5	0	
Total Sulphate	12			2400	0	
Water Sol. Sulphate	12			0.5 g/l	0	
Speciated PAH						
Acenaphthene	12			840	0	
Anthracene	12			8200	0	
Acenaphthylene	12			710	0	
Benzo(a)anthracene	12			5.8	0	
Benzo(b)fluoranthene	12			7.0	0	
Benzo(k)fluoranthene	12			10	0	
Benzo(g,h,i)perylene	12			47	0	
Benzo(a)pyrene	12			1.0	0	
Chrysene	12			9.1	0	
Dibenzo(a,h)anthracene	12			0.9	0	
Fluoranthene	12			630	0	
Fluorene	12			660	0	
Indeno(1,2,3-cd)pyrene	12			4.1	0	
Naphthalene	12			3.2	0	
Pyrene	12			1500	0	
Phenanthrene	12			330	0	
Others						
Phenol	12			392	0	
TOC	12			3 w/w%	0	

Table based on a Residential with Gardens end use.

US95 - 95th percentile estimate of the mean value; GAC -generic assessment criterion; NA - not applicable.



Metals and Metalloids

No metals recorded concentrations above the relevant GAC.

Other Inorganic Analytes

No inorganics recorded concentrations above the relevant GAC.

Organics

No organics recorded concentrations above the relevant GAC.

7. REVISED CONCEPTUAL MODEL AND GENERIC QUANTITATIVE RISK ASSESSMENT OF POLLUTANT LINKAGES

The preliminary combined conceptual site model and conceptual exposure model, developed from the desk study information and presented in Sirius report C4220, has been revised in light of the ground investigation and the chemical analysis results presented above.

The revised conceptual model has been developed for the proposed future land use (residential with gardens). This summarises the understanding of surface and sub-surface features, the potential contaminant sources, transport pathways and receptors.

The revised conceptual model is presented in schematic form in Appendix A, Drawing No. C4220A/03.

7.1. Summary of Identified Pollutant Linkages

In summary, the revised CSM has identified the following potential pollutant linkages which could result in an unacceptable risk to the proposed end-use, denoted as a moderate or higher likelihood on the CSM:

- Potential gas risk from shallow adjacent historic landfill site posing a low to moderate likelihood of risk to human health receptors.

No other sources of ground contamination have been identified at the site.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1. General

This geoenvironmental appraisal has been performed for Monkton Fell, South Tyneside.

It has been assumed in the production of this report that the site is to be redeveloped for a residential with gardens end use. In addition, it has been assumed that ground levels will not change significantly from those described in this report. If this is not the case, then amendments to the interpretation and conclusions in this report may be required.

8.2. Flood Risk

The site is not located in an area vulnerable to flooding.

8.3. Geotechnical

Mining and Quarrying

Based on published geological information, it is considered that the risk of surface subsidence as a result of shallow mining is negligible.

An examination of the BGS map of the area shows there are no subcropping coal seams within the vicinity or beneath the site. Historic coal workings are recorded at depth below the site but these should not have any impact of the surface stability of the site.

No mine entries are known to exist on the site. However, the possibility of encountering unrecorded mine entries should not be discounted. It is recommended that all excavations are examined for evidence of mine entries. If a mine entry is suspected, advice should be sought immediately from a suitably qualified engineer.

Foundations

The investigation has identified topsoil of between 0.1 and 0.4m in thickness across the site. This in turn is underlain by firm and stiff glacial till.

The topsoil is sufficiently thin that it is not expected at normal foundation depth. Notwithstanding this, topsoil is considered unsuitable as a bearing stratum using conventional shallow spread foundations due to the potential for excessive total and differential settlements.

It is considered that the most suitable foundation solution is conventional spread foundations taken down through any topsoil or made ground into the underlying natural ground of adequate bearing capacity. The underlying Glacial Till is considered to have a characteristic shear strength of 60 to 70kN/m². Assuming conventional 600mm wide spread foundations and a maximum tolerable settlement of 25mm it is considered that such soils would be able to support a foundation loading of 90kN/m run.

The clay soils on this site have been found to be of medium volume change potential in accordance with NHBC Standards Chapter 4.2. Foundations placed into natural in-situ clay soils should be a minimum of 900mm deep, locally deepened within the zone of influence of existing or proposed trees. A tree survey was not included in the scope of this investigation, but should be carried out prior to the production of a detailed plot-specific foundation schedule. In addition, foundations should be taken below the base of any previously existing structures.

Floors

In accordance with NHBC Standards 2008 (Chapters 4.2, 4.6 and 5.1), suspended ground floor slabs are required in the following situations:

- Made Ground greater than 600mm thick.
- Where soil swelling may occur.
- Where vibratory ground improvement has been carried out.
- Where the ground has insufficient bearing capacity.

No made ground has been encountered and natural topsoil has been found to be less than 400mm in thickness. Either ground bearing or suspended floor slabs could therefore be considered for construction floors to the proposed residential properties.

If a ground bearing floor slab is to be considered all topsoil shall be removed with the floor bearing upon a suitable clean chemically inert compacted hardcore.

Sulphate Attack

Based on the samples tested, a Design Sulphate Class of DS-1 and an ACEC Class of AC-1 should be used for buried concrete structures in contact with natural ground.

Groundworks, Excavation Stability and Groundwater Dewatering

Excavations into existing made ground and the underlying natural soils should be assumed to be unstable. No man entry into unsupported excavations should be allowed without an appropriate risk assessment. Reference to CIRIA report 97 (1983) should be made to establish suitable means of support or battering of excavation sides.

Based on the results of this investigation, no significant inflows of groundwater into excavations are anticipated. If groundwater is encountered then localised pumping from sumps should generally be adequate to control such.

It is recommended that an adequate drainage system for surface water be installed by a competent contractor in order to prevent surface water ponding or collecting both during and post construction, as this may lead to deterioration of the founding stratum.

It is recommended that in order to reduce the possibility of softening or swelling of cohesive soils at the base of foundation trenches, such excavations should be suitably blinded with concrete.

Pavements and Highways

Based on a visual examination of the soil and Atterberg test results, guidance in Highways Agency document 73/06 Rev 1. (Table 5.1) indicates a preliminary design CBR value of 4% could be applied for the natural Glacial Till soils. One remoulded CBR analysis indicated a CBR of between 6.4 and 6.9% for the natural Glacial Till soils. It is recommended that an actual CBR design value is determined via in-situ CBR testing along the alignment of the proposed highways once this information is available and when final site levels will be known.

All road design should be discussed with the relevant local authority if highways are to be subject to a Section 38 agreement.

8.4. Asbestos-Containing Materials

Asbestos-containing materials were not observed within the soils encountered during this investigation.

8.5. Soil and Groundwater Contamination

Risk Evaluation for the Proposed Land Use (residential with gardens)

The revised conceptual site model confirms that generally, no significant pollutant linkages exist for site end users or controlled waters. A potential low to moderate risk from hazardous ground gas from an adjacent historic landfill site has been identified. The risk from hazardous ground gas is discussed in section 8.6 below.

Utilities

It is recommended that the results of the chemical testing and details of the proposed remedial works are provided to the appropriate utility companies to determine the necessity for service protection.

Construction and Maintenance Workers

No significant sources of contamination have been identified at the site. Any potential risks associated specifically with works to be carried out must be specifically assessed as part of the health and safety evaluation for the works to be performed in accordance with prevailing legislation. Site practices must conform to the specific legislative requirements and follow appropriate guidance (e.g., HSE, 1991; CIRIA, 1996).

Miscellaneous Receptors

No potential pollutant linkages to other receptors have been identified for this the site.

Outline Remediation Requirements

No significant ground contamination requiring specific remedial measures have been identified at the site.

In order to support good practice a soil management plan should be produced for the site in order to ensure that contamination of site soils does not occur during the construction phase of the development.

8.6. Ground Gas

A gas screening value of 0.016l/hr for carbon dioxide has been calculated based on the available results to date. No methane has been detected. Based on recorded carbon dioxide levels and

flows monitored to date the overall ground gas regime has been assessed as Green using the NHBC traffic light system for 150mm void presented in CIRIA C665. However this assessment should be regarded as interim only, prior to completion of the monitoring programme.

This interim categorisation indicates a low risk gas regime, which requires no specific gas protection measures within buildings.

Basic radon protection measures are not currently required for the proposed development on this site.

Ground gas monitoring is ongoing and the full results will be issued as an addendum letter on completion of the monitoring programme.

8.7. Invasive Plants

Invasive plant species were not observed on this site at the time of investigation.

It is recommended that the presence of invasive plant species is confirmed by a qualified consultant ecologist and their advice taken on appropriate treatment. The treatment of any invasive species should take place in advance of the proposed construction works.

8.8. Disposal of Soils

Any materials removed from site should be undertaken in accordance with the Duty of Care Regulations 1991. There will also be a requirement to classify the waste in accordance with the European Waste Catalogue. The waste should also be subject to Waste Acceptance Criteria (WAC) testing. In light of the new regulations it is recommended that discussion with landfill operators takes place at an early stage.

9. REGULATORY APPROVALS

The conclusions and recommendations presented above are considered reasonable based on the findings of the site investigation. However, these cannot be guaranteed to gain regulatory approval and, therefore, the report should be passed to the appropriate regulatory authorities and/or other organisations for their comment and approval prior to undertaking any works on site.



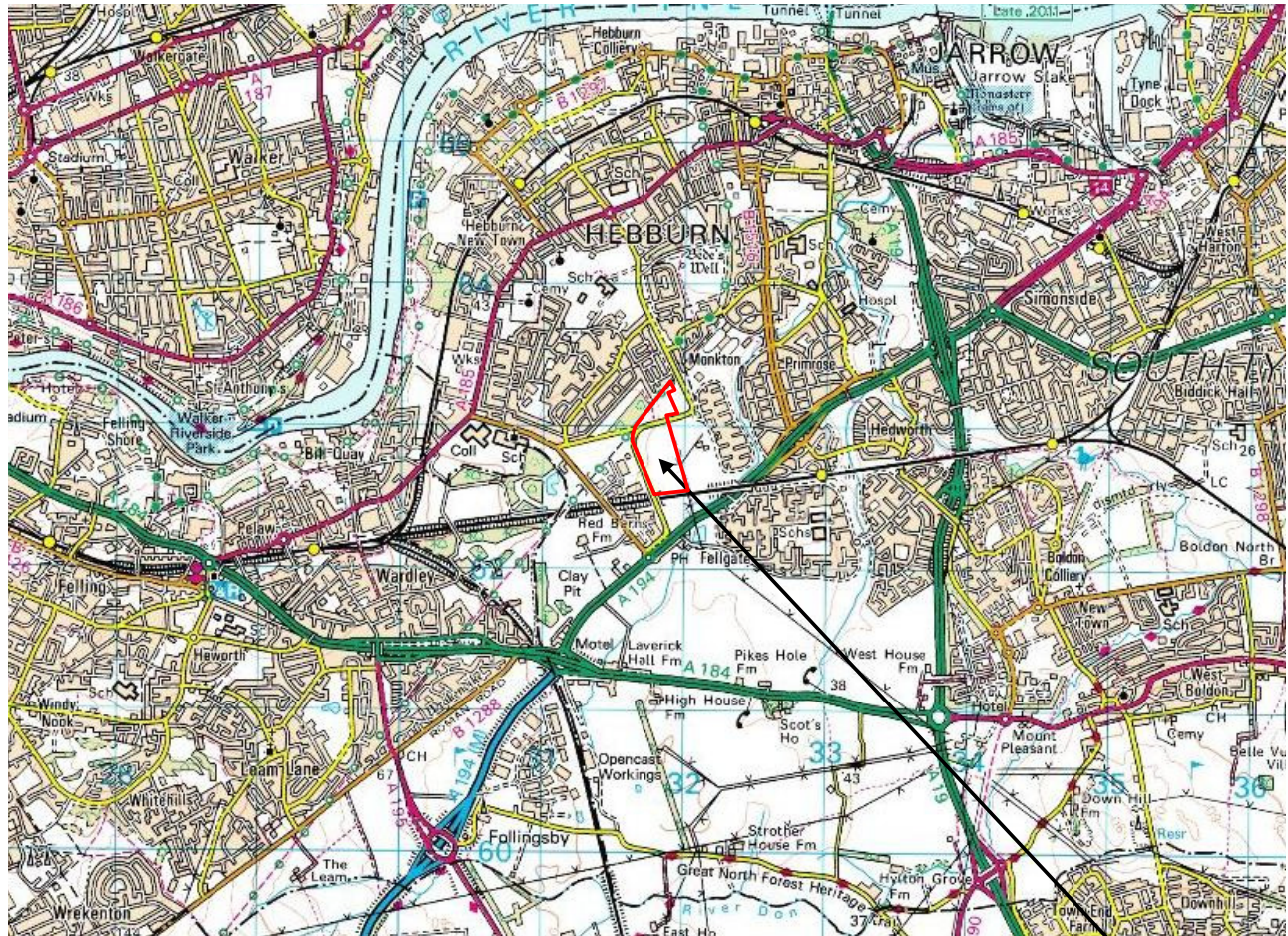
APPENDIX A

FIGURES AND DRAWINGS



SITE LOCATION PLAN

Contract Number	C4220A
Contract	Monkton Fell, Monkton South Tyneside
Client	Taylor Wimpey Northeast Limited and Barratt Homes Northeast Ltd

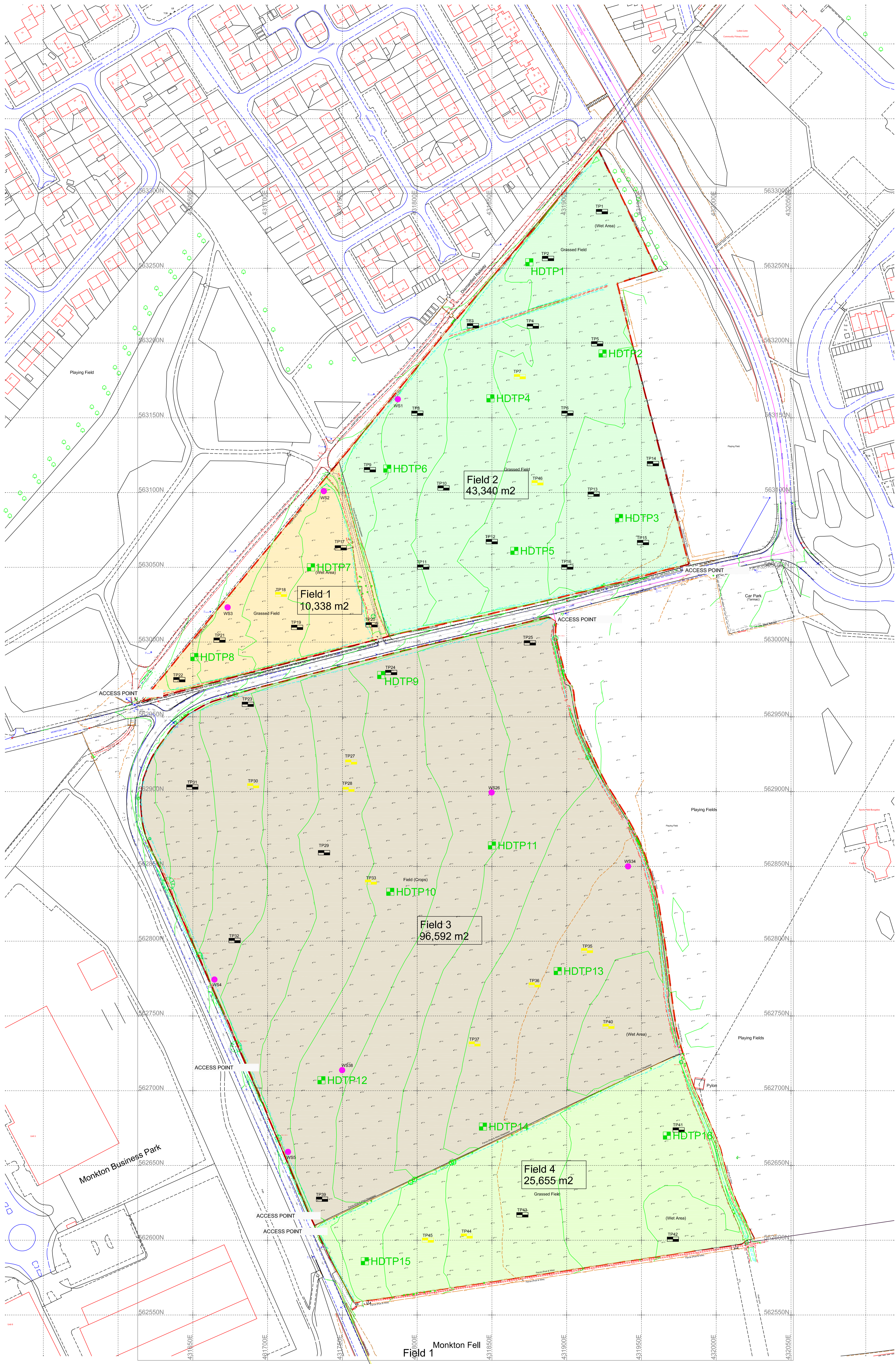
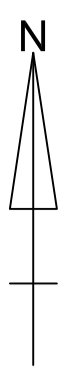


THE SITE



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 Sirius Geotechnical & Environmental Ltd, Suite 2, Russel House, Mill Road, Langley moor, Durham DH7 8HJ.
 Licence No. 100042005

Scale	1:50,000	
Drawn by	LAB	Approved DB
Drawing Number	C4220A/01	



NOTES

- Sirius Trial pit location
- Sirius Trial pit location (Archaeological)
- Window Sample location

- TP
1. 431923, 563287
 2. 431887, 563256
 3. 431837, 563211
 4. 431877, 563211
 5. 431920, 563199
 6. 431900, 563153
 7. 431868, 563177
 8. 431800, 563153
 9. 431786, 563115
 10. 431817, 563103
 11. 431804, 563050
 12. 431849, 563067
 13. 431918, 563098
 14. 431957, 563119
 15. 431951, 563066
 16. 431900, 563050
 17. 431748, 563063
 18. 431706, 563031
 19. 431719, 563009
 20. 431769, 563011
 21. 431667, 563001
 22. 431646, 562974
 23. 431688, 562958
 24. 431762, 562979
 25. 431675, 562969
 26. 431850, 562900 (WS)
 27. 431755, 562910
 28. 431754, 562901
 29. 431737, 562859
 30. 431695, 562804
 31. 431649, 562903
 32. 431677, 562800
 33. 431760, 562859
 34. 431941, 562850 (WS)
 35. 431913, 562793
 36. 431878, 562770
 37. 431838, 562731
 38. 431750, 562714 (WS)
 39. 431736, 562627
 40. 431927, 562743
 41. 431974, 562673
 42. 431971, 562690
 43. 431870, 562616
 44. 431833, 562602
 45. 431807, 562600
 46. 431880, 563106

- WS
1. 431787, 563162
 2. 431737, 563100
 3. 431673, 563023
 4. 431684, 562774
 5. 431713, 562659

- HDTP
1. 431875, 563254
 2. 431924, 563193
 3. 431935, 563083
 4. 431849, 563163
 5. 431865, 563061
 6. 431780, 563116
 7. 431729, 568050
 8. 431651, 562990
 9. 431772, 562988
 10. 431762, 562833
 11. 431850, 562864
 12. 431736, 562707
 13. 431894, 562780
 14. 431844, 562676
 15. 431765, 562656
 16. 431967, 562670

REVISION

0	>>
A	Holes moved to accommodate archaeological requirements
B	>>
C	>>
D	>>

SIRIUS GEOTECHNICAL & ENVIRONMENTAL
 Russel House,
 Mill Lane,
 Langley Moor
 Durham DH7 8HJ
www.the-siriusgroup.com
 TEL: 0191 378 9972
 FAX: 0191 378 1537



CLIENT

**Taylor Wimpey Northeast Ltd
 and
 Barrett Homes Northeast Ltd**

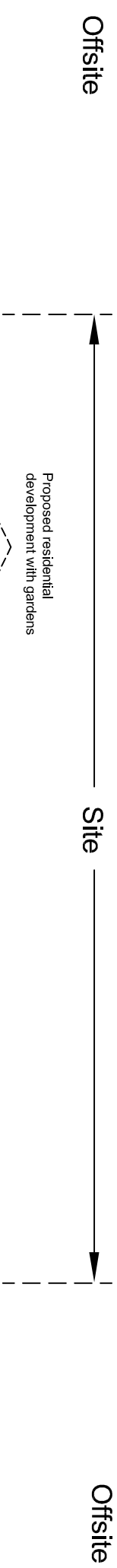
SITE

**Monkton Fell,
 South Tyneside**

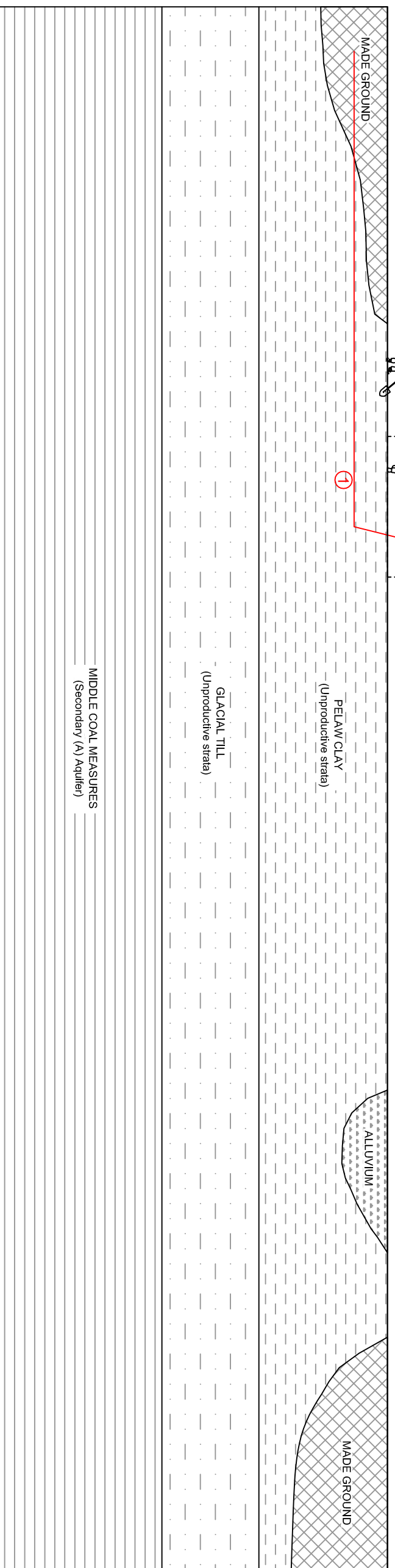
DRAWING TITLE

**Exploratory Hole
 Location Plan**

DRAWING NO. C4220A/02	REVISION NO. A
DRAWN BY DCB	APPROVED BY NJ
DATE 29.09.11	SCALE 1:1000
	PAPER SIZE A0



Off-site historic landfilled ground to the north west



Contamination Sources	Contamination Pathways	Potential receptors	Likelihood of significant pollutant linkage
Possible ground gas from made ground off site	① Migration and Inhalation of hazardous gases	End users	Low to Moderate

REVISION	
0	>>
A	>>
B	>>
C	>>
D	>>

SIRIUS GEOTECHNICAL & ENVIRONMENTAL
 Russel House,
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 Langley Moor
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CLIENT

Taylor Wimpey Northeast Ltd
 and
 Barratt Homes Northeast Ltd

SITE
 Monkton Fell,
 Monkton,
 South Tyneside

DRAWING TITLE
 Revised Conceptual
 Site Model

DRAWING NO. CA220A.03	REVISION NO. 0
DRAWN BY LAB	APPROVED BY DB
DATE 29/09/11	SCALE NTS
	PAPER SIZE A3



APPENDIX B

EXPLORATORY HOLE LOGS



TRIAL PIT RECORD

TP No. **TP1**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater
D	0.20m		
D	0.80m		
D	1.40m	70.0 80.0 65.0	
D	2.00m	80.0 90.0 70.0	
D	2.70m	80.0 85.0 75.0	
D	3.10m		

STRATA RECORD

Description		Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable medium dark brown sandy CLAY of low plasticity (field test) with many rootlets. (TOPSOIL).		0.20		
Stiff light brown sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.		0.30		
Stiff medium brown sandy slightly gravelly CLAY. Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.		0.80		
Stiff high strength brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone, sandstone and mudstone.		1.40		
Stiff fissured mottled brown grey blue sandy slightly gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.		1.60		
Stiff high strength fissured grey blue CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.		2.00		
End of Trial Pit at 3.30 m		3.30		

Logged By: GCB

Checked By:

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-
Easting:
-
Northing:
-

Fig. No.

TP1



TRIAL PIT RECORD

TP No. **TP2**
 Sheet 1 of 1
 Contract No: **C4220**
 Dates: 22/08/2011
 Scale **1:25**

Site : Monkton Fell, South Tyneside
 Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd
 Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	
D	0.80m	90.0 95.0 90.0
D	1.90m	100.0 110.0 90.0
D	2.60m	
D	2.80m	90.0 80.0 65.0

Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable brown sandy CLAY of low plasticity (field test) with rootlets (TOPSOIL).	0.20		
Stiff indistinctly laminated sandy CLAY of high plasticity (field test).	0.30		
Stiff high strength fissured grey brown sandy slightly gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of sandstone and limestone.	0.80		
Stiff high strength fissured brown sandy gravelly CLAY of high plasticity. Gravel is fine to coarse subangular to subrounded of sandstone and limestone.	1.90		
Stiff high strength fissured grey brown sandy slightly gravelly CLAY of high plasticity (field test) Gravel is fine to coarse subangular to subrounded of sandstone and limestone.	2.60		
End of Trial Pit at 3.20 m	3.20		

Logged By: GCB
 Checked By:

Remarks and Water Observations
 1. No groundwater encountered during excavation.
 2. Trial pit side walls remained stable during excavation.

GL (m AOD)
 -
 Easting:
 -
 Northing:
 -

Fig. No.
 TP2



TRIAL PIT RECORD

TP No. **TP3**
 Sheet 1 of 1
 Contract No: **C4220**
 Dates: 22/08/2011
 Scale **1:25**

Site : Monkton Fell, South Tyneside
 Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd
 Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	90.0 95.0 85.0
D	1.90m	90.0 100.0 105.0
D	3.00m	80.0 75.0 65.0

Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark brown sandy CLAY of low plasticity with rootlets (TOPSOIL).	0.00		
Stiff fissured grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	0.90		
Stiff high strength fissured grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.60		
Stiff high strength mottled brown blue grey sandy CLAY of high plasticity (field test).	3.20		
End of Trial Pit at 3.20 m			

Logged By: GCB			
Checked By:			

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)
 -
 Easting:
 -
 Northing:
 -

Fig. No.
 TP3



TRIAL PIT RECORD

TP No. **TP4**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater
D	0.20m		
D	1.00m		
D	1.80m	100.0 90.0 105.0	
D	2.60m		
D	3.10m	100.0 90.0 105.0	

STRATA RECORD

Description		Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable brown sandy CLAY of low plasticity with rootlets (TOPSOIL).		0.20		
Stiff grey brown sandy CLAY of low plasticity (field test).		0.30		
Stiff high strength indistinctly laminated grey blue slightly sandy slightly gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.		1.00		
Stiff high strength fissured grey blue sandy CLAY of high plasticity (field test).		2.60		
End of Trial Pit at 3.30 m		3.30		

Logged By: GCB

Checked By:

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP4



TRIAL PIT RECORD

TP No. **TP5**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
-

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater
D	0.20m		
B	0.90m		
D	2.50m		
D	3.20m		

STRATA RECORD

Description
Friable brown CLAY of low plasticity with rootlets. (TOPSOIL).
Stiff grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone
End of Trial Pit at 3.40 m

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.30		
3.40		

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP5



TRIAL PIT RECORD

TP No. **TP6**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.10m	
D	0.90m	
D	2.00m	
D	3.00m	

Groundwater

STRATA RECORD

Description

Friable dark brown organic sandy CLAY of low plasticity (field test) with rootlets (TOPSOIL).

Stiff brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.

Stiff fissured blue sandy slightly gravelly CLAY of high plasticity (field test). Gravel is fine to coarse , subangular to subrounded of limestone and sandstone.

At 2.7m Limestone boulder encountered.

End of Trial Pit at 3.20 m

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.10		
0.30		
0.90		
3.20		

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP6



TRIAL PIT RECORD

TP No. **TP7**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.10m	
D	0.80m	60.0 80.0 50.0
D	1.80m	90.0 75.0 100.0 80.0 85.0 100.0
D	3.00m	

Groundwater

STRATA RECORD

Description

Friable brown sandy organic CLAY of low plasticity (field test) with rootlets. (TOPSOIL).

Stiff medium strength fissured slightly laminated CLAY of high plasticity (field test).

becoming high strength.

Stiff fissured blue grey slightly sandy gravelly CLAY.

End of Trial Pit at 3.20 m

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.20		
2.80		
3.20		

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP7



TRIAL PIT RECORD

TP No. **TP8**
 Sheet 1 of 1
 Contract No: **C4220**
 Dates: 22/08/2011
 Scale **1:25**

Site : Monkton Fell, South Tyneside
 Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd
 Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	
D	0.80m	
D	1.60m	90.0 120.0 100.0
D	2.60m	
D	3.00m	

Groundwater

STRATA RECORD

Description		Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark brown sandy CLAY of low plasticity (field test) with rootlets (TOPSOIL).		0.20		
Stiff Friable grey brown very sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.		0.80		
Stiff high strength fissured blue grey sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.		1.60		
End of Trial Pit at 3.20 m		3.20		

Logged By: GCB	
Checked By:	
Depth (m)	Level (mAOD) PID (ppm)
	Legend

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)
 -
 Easting:
 -
 Northing:
 -

Fig. No.
 TP8



TRIAL PIT RECORD

TP No. **TP9**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	
D	0.90m	
D	1.50m	65.0 80.0 90.0
D	2.40m	80.0 75.0
D	2.70m	

Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable organic dark brown sandy CLAY of low plasticity (field test) with rootlets (TOPSOIL).	0.30		
Stiff high strength fissured grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of sandstone and limestone.			
Very stiff blue grey slightly sandy CLAY of high plasticity (field test).	2.70		
End of Trial Pit at 3.50 m	3.50		

Logged By: GCB

Checked By:

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP9



TRIAL PIT RECORD

TP No. **TP10**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	
B	0.30m	
D	0.60m	
D	1.90m	80.0 85.0 100.0
D	2.60m	90.0 100.0 95.0

Groundwater

STRATA RECORD

Description

Friable brown sandy CLAY of low plasticity (field test) with rootlets (TOPSOIL).

Stiff fissured brown sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse subangular to subrounded of sandstone and limestone.

At 1m boulder of limestone encountered.

Very stiff high strength fissured blue grey slightly gravelly sandy CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

End of Trial Pit at 3.30 m

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.30		
1.90		
3.30		

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP10



TRIAL PIT RECORD

TP No. **TP11**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	
D	0.90m	
D	1.90m	90.0 100.0 110.0
D	3.10m	105.0

Groundwater

STRATA RECORD

Description

Friable organic dark brown sandy CLAY of low plasticity (field test) with rootlets (TOPSOIL).

Stiff fissured grey brown sandy slightly gravelly CLAY of high plasticity (field test).

Stiff high strength fissured blue grey sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

At 2.3 boulder of limestone encountered.

End of Trial Pit at 3.30 m

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.30		
1.90		
3.30		

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP11



TRIAL PIT RECORD

TP No. **TP12**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	
D	1.00m	80.0 85.0
D	2.00m	
D	2.70m	75.0 80.0 100.0
D	3.00m	

Groundwater

STRATA RECORD

Description

Friable dark brown sandy CLAY of low plasticity (field test) with rootlets (TOPSOIL).

Stiff high strength grey brown sandy slightly gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

Stiff high strength fissured blue grey sandy gravelly CLAY of high plasticity (field test).

End of Trial Pit at 3.20 m

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.30		
2.00		
3.20		

Remarks and Water Observations

1. No groundwater encountered during excavation.
2. Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP12



TRIAL PIT RECORD

TP No. **TP13**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²

Groundwater

STRATA RECORD

Description

Friable dark brown CLAY with rootlets (TOPSOIL).	0.30		
Stiff fissured grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.			
Stiff fissured dark grey sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone .	3.00 3.10 3.20		
Stiff brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone. End of Trial Pit at 3.20 m			

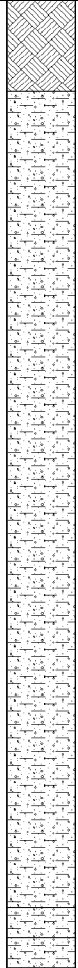
Logged By: GCB

Checked By:

Depth
(m)

Level
(mAOD)
PID
(ppm)

Legend



Remarks and Water Observations

1. No groundwater encountered during excavation.
2. Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP13



TRIAL PIT RECORD

TP No. **TP14**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater
D	0.20m		
D	0.80m		
	1.60m	70.0 80.0	
	2.10m	70.0 110.0 100.0	

STRATA RECORD

Description		Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark brown CLAY with rootlets. (TOPSOIL)		0.20		
Stiff fissured grey brown sandy gravelly CLAY.		0.30		
Stiff fissured laminated sandy blue grey CLAY of high plasticity (field test)		0.80		
Stiff fissured gravelly grey blue indistinctly laminated CLAY of high plasticity (field test). Gravel is fine to medium subangular to subrounded of brick, limestone and sandstone.		2.10		
Stiff blue grey laminated slightly sandy CLAY of high plasticity (field test).		3.00		
End of Trial Pit at 3.20 m		3.20		

Logged By: 22/08/2011

Checked By:

Remarks and Water Observations

1. No groundwater encountered during excavation.
2. Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP14



TRIAL PIT RECORD

TP No. **TP15**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater
D	0.20m		
D	1.10m		
D	1.80m		
D	2.50m		
D	3.20m		

STRATA RECORD

Description		Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable brown CLAY of low plasticity (field test) with rootlets (TOPSOIL).		0.30		
Stiff fissured dark brown sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse subangular to subrounded of sandstone and limestone.		1.10		
Stiff fissured dark grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.		1.10		
At 1.6m Boulder of Limestone encountered (1m x 2m x 1m).				
End of Trial Pit at 3.40 m		3.40		

Logged By: GCB

Checked By:

Remarks and Water Observations

1. No groundwater encountered during excavation.
2. Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP15



TRIAL PIT RECORD

TP No. **TP16**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater
D	0.20m		
D	1.10m	60.0 55.0 40.0	
D	1.60m	100.0 105.0 90.0	
D	2.00m	70.0 60.0 90.0	
D	2.70m		
D	3.20m	60.0 70.0	

STRATA RECORD

Description		Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable brown sandy CLAY of low plasticity (field test) no rootlets present (TOPSOIL).		0.20		
Firm friable dark brown sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.				
Firm medium strength fissured grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.		1.10		
Stiff high strength blue grey slightly sandy slightly gravelly CLAY.		1.60		
Firm medium strength fissured dark brown sandy gravelly CLAY.		2.00		
End of Trial Pit at 3.40 m		3.40		

Logged By: GCB

Checked By:

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP16



TRIAL PIT RECORD

TP No. **TP17**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	
B	0.30m	
D	0.70m	
D	1.40m	
D	3.10m	

Groundwater

STRATA RECORD

Description

Friable dark brown sandy organic CLAY of low plasticity (field test) with rootlets (TOPSOIL).

Firm light brown mottled medium brown slightly gravelly sandy CLAY of low plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.

Stiff fissured brown very sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

Stiff fissured indistinctly laminated blue grey sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.

End of Trial Pit at 3.40 m

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.30		
1.40		
2.10		
3.40		

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP17



TRIAL PIT RECORD

TP No. **TP18**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.10m	
D	0.90m	50.0 60.0 50.0
D	1.40m	
D	1.90m	
D	2.30m	70.0 80.0 75.0
D	3.00m	

Groundwater

STRATA RECORD

Description

Friable dark brown organic sandy CLAY of low plasticity (field test). No rootlets present (TOPSOIL).

Firm medium strength indistinctly laminated grey brown sandy gravelly CLAY.

Stiff fissured dark brown sandy gravelly CLAY.

Stiff high strength fissured grey brown sandy CLAY of high plasticity of high plasticity.

End of Trial Pit at 3.20 m

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.10		
1.40		
1.90		
3.20		

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP18



TRIAL PIT RECORD

TP No. **TP19**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	
D	0.80m	
D	2.20m	
D	3.00m	

Groundwater

STRATA RECORD

Description

Friable dark brown sandy slightly gravelly organic CLAY of low plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone. (TOPSOIL).

Firm fissured grey blue sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

Very stiff fissured brown grey sandy CLAY of low plasticity (field test).

End of Trial Pit at 3.00 m

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.30		
2.20		
3.00		

Remarks and Water Observations

1. No groundwater encountered during excavation.
2. Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP19



TRIAL PIT RECORD

TP No. **TP20**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater
D	0.20m		
D	1.10m		
D	1.80m	60.0 70.0 55.0	
D	2.10m		
D	2.70m	60.0 50.0 90.0	
D	2.80m		
D	3.20m	90.0 80.0 75.0	

STRATA RECORD

Description		Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark brown organic CLAY of low plasticity (field test) with rootlets (TOPSOIL).		0.00 - 0.20		
Firm fissured dark brown sandy gravelly CLAY of high plasticity (field test). Gravel is subangular to subrounded of sandstone and limestone.		0.20 - 1.10		
Stiff medium strength fissured blue grey sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of sandstone and limestone.		1.10 - 3.20		
End of Trial Pit at 3.40 m		3.40		

Logged By: GCB

Checked By:

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP20



TRIAL PIT RECORD

TP No. **TP21**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	85.0 80.0
D B	0.80m	
D	1.50m	
D	2.50m	
D	3.00m	

Groundwater

STRATA RECORD

Description

	Friable dark brown CLAY of low plasticity (field test) with rootlets (TOPSOIL).	0.30	
	Stiff high strength light brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.		
	Stiff indistinctly laminated sandy CLAY of low plasticity (field test).	1.50	
	Stiff fissured grey blue CLAY of high plasticity (field test).	2.50	
	End of Trial Pit at 3.00 m	3.00	

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.30		
1.50		
2.50		
3.00		

Remarks and Water Observations

1. No groundwater encountered during excavation.
2. Trial pit side walls remained stable during excavation.

GL (m AOD)

-
Easting:
-
Northing:
-

Fig. No.

TP21



TRIAL PIT RECORD

TP No. **TP22**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	
D	0.80m	
D	1.20m	80.0 70.0
D	1.80m	
D	2.60m	90.0 100.0 95.0

Groundwater

STRATA RECORD

Description

	Friable dark brown organic CLAY of low plasticity (field test) with rootlets (TOPSOIL).	0.20	
	Firm friable weathered mottled light dark brown sandy CLAY of low plasticity (field test).		
	Stiff high strength grey blue slightly sandy CLAY of high plasticity (field test).	0.80	
	End of Trial Pit at 3.20 m	3.20	

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.20		
0.80		
3.20		

Remarks and Water Observations

1. No groundwater encountered during excavation.
2. Trial pit side walls remained stable during excavation.

GL (m AOD)

-
Easting:
-
Northing:
-

Fig. No.

TP22



TRIAL PIT RECORD

TP No. **TP23**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	
B	0.30m	
D	0.80m	
D	2.00m	
D	2.50m	90.0 80.0 70.0
D	3.20m	90.0 95.0 85.0

Groundwater

STRATA RECORD

Description

Friable dark brown sandy CLAY of low plasticity (field test) with rootlets (TOPSOIL).

Stiff brown indistinctly laminated sandy CLAY of low plasticity (field test).

Stiff high strength fissured blue grey sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.

Very stiff high strength fissured indistinctly laminated dark brown sandy CLAY of high plasticity (field test).

End of Trial Pit at 3.40 m

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.30		
2.00		
3.20		
3.40		

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP23



TRIAL PIT RECORD

TP No. **TP24**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater
D	0.20m		
D	0.60m		
D	1.20m		
D	1.70m	80.0 70.0 65.0	
D	2.40m	120.0 100.0 95.0	
D	3.00m		

STRATA RECORD

Description		Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark brown sandy CLAY of low plasticity (field test). No rootlets present. (TOPSOIL).		0.30		
Stiff fissured dark grey brown sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.				
Stiff medium strength fissured grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.		1.70		
Stiff high strength fissured blue grey sandy slightly gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.		2.40		
End of Trial Pit at 3.40 m		3.20		

Logged By: GCB

Checked By:

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP24



TRIAL PIT RECORD

TP No. **TP25**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater
D	0.20m		
B	0.30m		
D	0.80m		
D	1.40m		
D	1.70m	100.0 90.0 110.0	
D	2.50m		
D	3.00m	100.0 90.0 85.0	

STRATA RECORD

Description		Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark brown CLAY of low plasticity (field test) No rootlets present (TOPSOIL).		0.30		
Stiff brown sandy gravelly CLAY of intermediate plasticity. Gravel is fine to coarse subangular to subrounded of limestone and sandstone.		0.80		
Very stiff high strength fissured grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.		1.70		
Stiff fissured indistinctly laminated mottled brown grey blue Gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.		3.20		
End of Trial Pit at 3.20 m				

Logged By: GCB

Checked By:

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP25



TRIAL PIT RECORD

TP No. **TP28**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.10m	
D B	0.60m	40.0 55.0 65.0
D	2.00m	
D	2.80m	85.0 100.0 105.0

Groundwater

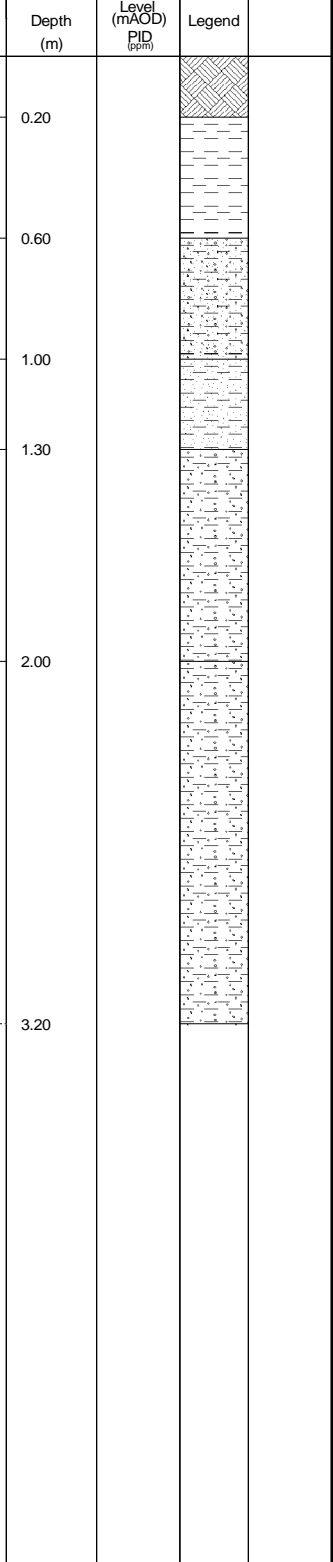
STRATA RECORD

Description

	Friable dark brown organic CLAY of low plasticity (field test) with rootlets (TOPSOIL).	0.20		
	Firm friable weathered light brown sandy CLAY of low plasticity (field test). At 0.3m sandy horizon 0.3m in thickness encountered.			
	Stiff fissured grey blue sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	0.60		
	Stiff medium strength fissured dark brown sandy CLAY of low plasticity (field test).	1.00		
	Stiff fissured grey blue slightly sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	1.30		
	Stiff high strength grey blue gravelly CLAY of high plasticity (field test) Gravel is fine to coarse subangular to subrounded of limestone and sandstone.	2.00		
	End of Trial Pit at 3.20 m	3.20		

Logged By: GCB

Checked By:



Remarks and Water Observations

1. No groundwater encountered during excavation.
2. Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP28



TRIAL PIT RECORD

TP No. **TP29**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	
B	0.30m	
D	0.80m	
D	1.80m	
D	3.20m	90.0 80.0 75.0

Groundwater

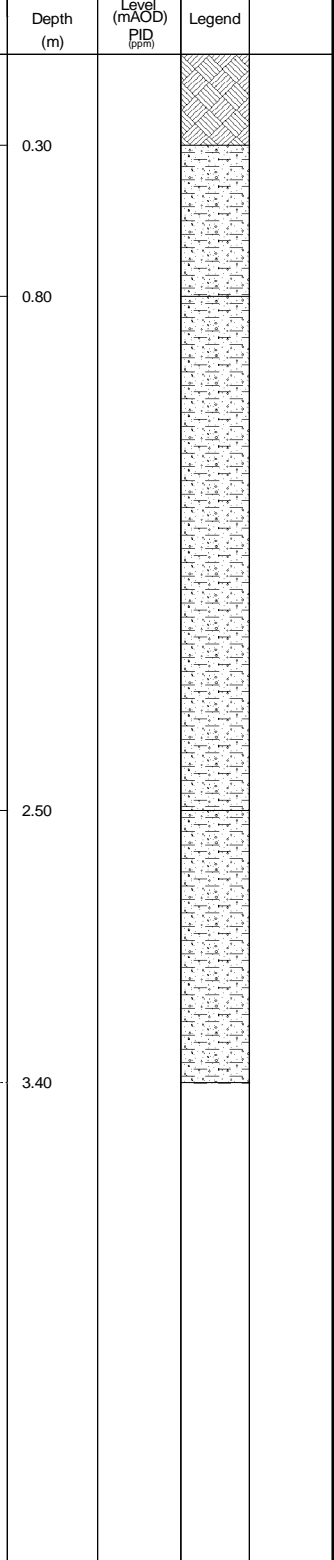
STRATA RECORD

Description

	Friable dark brown sandy CLAY of low plasticity (field test) with rootlets. (TOPSOIL).	0.30		
	Firm brown sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.			
	Stiff fissured light brown sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.	0.80		
	Stiff high strength fissured grey blue sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.	2.50		
	End of Trial Pit at 3.40 m	3.40		

Logged By: GCB

Checked By:



Remarks and Water Observations

1. No groundwater encountered during excavation.
2. Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP29



TRIAL PIT RECORD

TP No. **TP30**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.10m	
D	0.50m	60.0 70.0
D	1.10m	140.0 120.0 110.0
D	2.40m	
D	2.80m	

Groundwater

STRATA RECORD

Description

Friable dark brown organic CLAY of low plasticity (field test)
No rootlets present. (TOPSOIL).

Firm dark brown sandy CLAY of low plasticity (field test)

Stiff medium strength fissured slightly sandy CLAY of low plasticity (field test).

At 0.9m Field drain encountered.

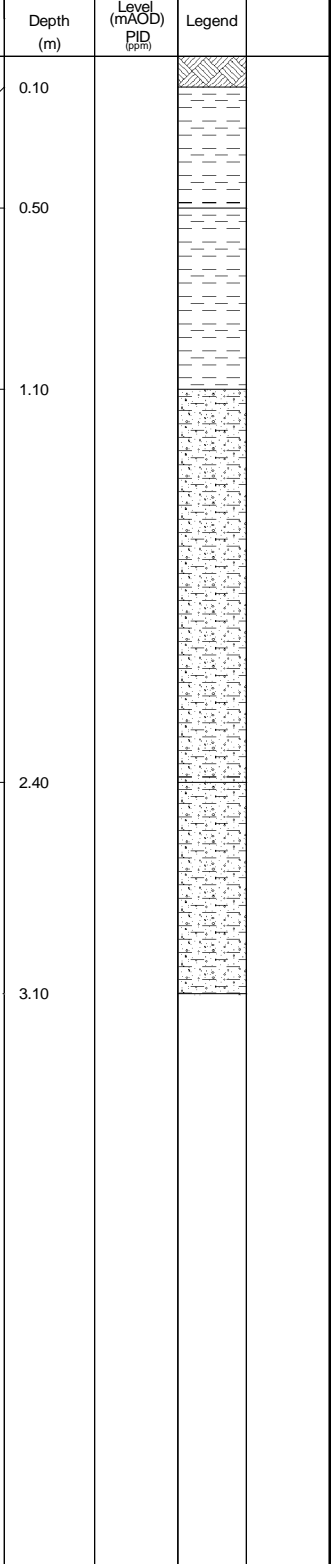
Stiff high strength fissured dark brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.

Stiff grey blue slightly sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.

End of Trial Pit at 3.10 m

Logged By: GCB

Checked By:



Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP30



TRIAL PIT RECORD

TP No. **TP31**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	
B	0.30m	
D	0.80m	
D	2.10m	65.0 70.0 85.0
D	3.20m	

Groundwater

STRATA RECORD

Description

Friable organic dark brown sandy CLAY of low plasticity (field test) with rootlets (TOPSOIL).

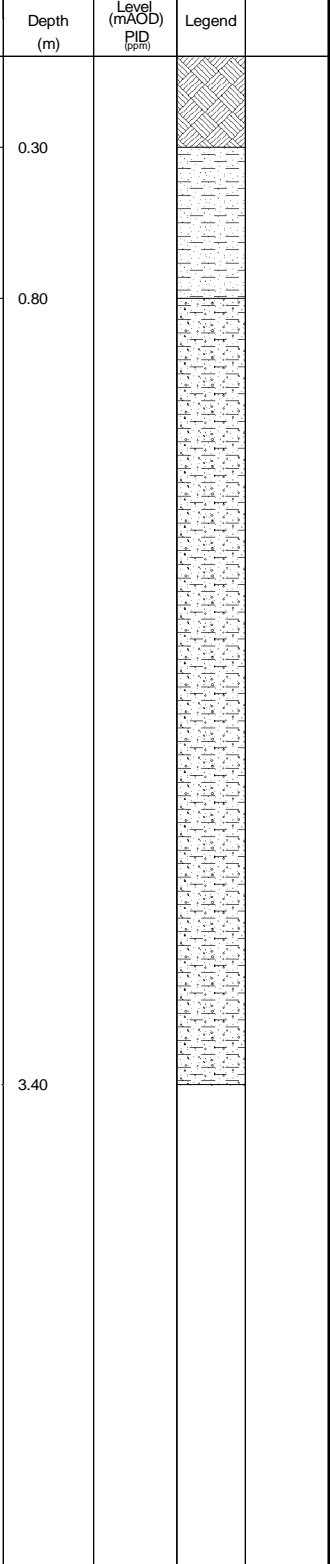
Stiff fissured indistinctly laminated brown sandy CLAY of high plasticity (field test).

Stiff fissured mottled brown grey blue sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.

End of Trial Pit at 3.40 m

Logged By: GCB

Checked By:



Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP31



TRIAL PIT RECORD

TP No. **TP32**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	
B	0.30m	
D	0.80m	90.0 70.0 80.0
D	2.30m	70.0 65.0 60.0
D	2.70m	
D	3.20m	

Groundwater

STRATA RECORD

Description

Friable dark brown sandy CLAY of low plasticity (field test) with rootlets (TOPSOIL).

Stiff high strength brown very sandy slightly gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.

Stiff medium strength blue grey sandy gravelly CLAY of intermediate plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.

End of Trial Pit at 3.40 m

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.30		
2.30		
3.20		

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP32



TRIAL PIT RECORD

TP No. **TP33**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.10m	
D	0.80m	
D	2.00m	100.0
		110.0 85.0
D	3.20m	90.0 100.0

Groundwater

STRATA RECORD

Description

Friable dark brown CLAY of low plasticity (field test) with rootlets (TOPSOIL).

Dark brown grey slightly sandy CLAY of high plasticity (field test).

Stiff fissured grey blue sandy slightly gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

Firm indistinctly laminated grey brown slightly sandy CLAY of high plasticity (field test).

End of Trial Pit at 3.20 m

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.10		
0.80		
2.80		
3.20		

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP33



TRIAL PIT RECORD

TP No. **TP35**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.10m	
D	0.70m	
D	0.90m	80.0 90.0 95.0
D	1.20m	
D	2.00m	
D	2.80m	90.0 95.0

Groundwater

STRATA RECORD

Description

Dark brown sandy CLAY of low plasticity (field test) with rootlets (TOPSOIL).

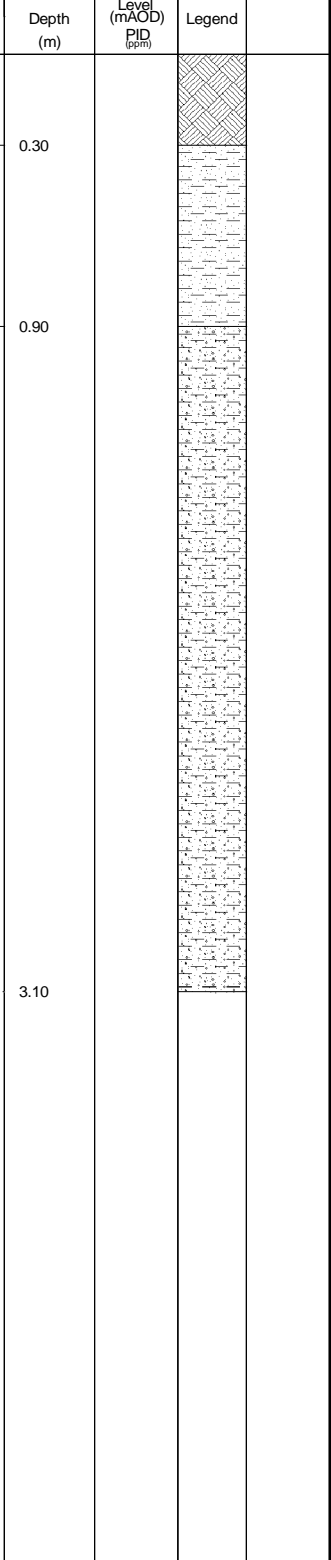
Stiff grey brown sandy CLAY of low plasticity (field test).

Stiff high strength fissured indistinctly laminated sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

End of Trial Pit at 3.10 m

Logged By: GCB

Checked By:



Remarks and Water Observations

1. No groundwater encountered during excavation.
2. Trial pit side walls remained stable during excavation.

GL (m AOD)

-
Easting:
-
Northing:
-

Fig. No.

TP35



TRIAL PIT RECORD

TP No. **TP36**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.10m	
D	0.30m	
B	0.50m	
D	0.80m	70.0 60.0 80.0 70.0
D	1.60m	
D	2.00m	
D	2.90m	
D	3.10m	

Groundwater

STRATA RECORD

Description

	Friable dark brown sandy CLAY of low plasticity (field test) with rootlets (TOPSOIL).		
	Firm brown laminated sandy CLAY of low plasticity (field test).	0.30	
	Firm medium strength fissured blue grey sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone. At 0.9m Field drain encountered.	0.80	
	Stiff dark grey blue slightly silty CLAY of high plasticity (field test).	1.60	
	Cobble of sandstone (3mm x 2mm x 2mm).		
	Dark brown slightly silty CLAY of high plasticity (field test).	2.90	
	End of Trial Pit at 3.20 m	3.20	

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP36



TRIAL PIT RECORD

TP No. **TP37**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.10m	
D	0.80m	50.0
D	1.00m	40.0
		45.0
D	1.80m	
D	2.00m	
		100.0
		105.0
		90.0
		90.0
		100.0

Groundwater

STRATA RECORD

Description

Friable brown sandy CLAY of low plasticity (field test). No rootlets present (TOPSOIL).

Firm dark brown laminated sandy CLAY of low plasticity (field test).

Stiff medium strength laminated grey blue sandy CLAY of low plasticity (field test).

becoming high strength.

End of Trial Pit at 3.20 m

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.10		
0.80		
3.20		

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP37



TRIAL PIT RECORD

TP No. **TP39**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	
D	0.80m	
D	1.70m	70.0 85.0 95.0
D	3.10m	

Groundwater

STRATA RECORD

Description

Friable dark brown sandy CLAY of low plasticity (field test)
No rootlets present. (TOPSOIL).

Firm light brown sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

Stiff high strength fissured blue grey sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.

Stiff fissured blue grey sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of limestone and sandstone.

End of Trial Pit at 3.30 m

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.30		
1.70		
2.50		
3.30		

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP39



TRIAL PIT RECORD

TP No. **TP40**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.10m	
D B	0.70m	85.0 90.0 80.0
D	1.50m	100.0 95.0 90.0
		100.0 105.0 95.0

Groundwater

STRATA RECORD

Description

Friable dark brown CLAY of low plasticity (field test) with rootlets. (TOPSOIL).

Stiff high strength grey brown sandy CLAY of low plasticity (field test).

Stiff high strength mottled brown blue grey CLAY of high plasticity (field test).

End of Trial Pit at 3.10 m

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.10		
0.70		
1.50		
2.70		
3.10		

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP40



TRIAL PIT RECORD

TP No. **TP41**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
25/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.10m	
D	0.50m	86.0 89.0 78.0
		117.0 106.0 108.0
D	1.50m	
D	2.50m	

Groundwater

STRATA RECORD

Description

Friable dark grey brown slightly sandy organic CLAY with many rootlets. (TOPSOIL).

Stiff high strength orange brown slightly sandy slightly gravelly CLAY of low plasticity (field test). Gravel is subangular to subrounded fine to medium of sandstone, mudstone and coal.
Below 0.60m: Red brown mottled grey

Below 1.30m: Very stiff and fissured

Below 2.30m: Hard

End of Trial Pit at 3.10 m

Logged By: LAB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.20		
3.10		

Remarks and Water Observations

1. No groundwater encountered during excavation.
2. Trial pit side walls remained stable during excavation.

GL (m AOD)

-
Easting:

-
Northing:

-

Fig. No.

TP41



TRIAL PIT RECORD

TP No. **TP42**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
25/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.10m	
D	0.50m	78.0 82.0 76.0
		113.0 102.0 101.0
D	1.50m	
D	2.50m	

Groundwater

STRATA RECORD

Description

Friable dark grey brown slightly sandy organic CLAY with many rootlets. (TOPSOIL).

Stiff high strength orange brown slightly sandy slightly gravelly CLAY of low plasticity (field test). Gravel is subangular to subrounded fine to medium of sandstone, mudstone and coal.
Below 0.40m: Red brown mottled grey

Below 1.00m: Very stiff and fissured

Below 2.30m: Hard

End of Trial Pit at 3.20 m

Logged By: LAB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.25		
3.20		

Remarks and Water Observations

1. No groundwater encountered during excavation.
2. Trial pit side walls remained stable during excavation.

GL (m AOD)

-
Easting:
-
Northing:
-

Fig. No.

TP42



TRIAL PIT RECORD

TP No. **TP43**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
25/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.10m	
B	0.30m	
D	1.30m	109.0 107.0 118.0
D	2.30m	
D	3.30m	

Groundwater

STRATA RECORD

Description

Friable dark grey brown slightly sandy organic CLAY with many rootlets. (TOPSOIL).

Stiff high strength orange brown slightly sandy slightly gravelly CLAY of low plasticity (field test). Gravel is subangular to subrounded fine to medium of sandstone, mudstone and coal.

Below 0.60m: Red brown mottled grey

Below 1.20m: Fissured

Below 2.10m: Hard

End of Trial Pit at 3.40 m

Logged By: LAB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.20		
3.40		

Remarks and Water Observations

- No groundwater encountered during excavation.
- Trial pit side walls remained stable during excavation.

GL (m AOD)

-
Easting:
-
Northing:
-

Fig. No.

TP43



TRIAL PIT RECORD

TP No. **TP44**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	
D	0.80m	
D	2.10m	90.0 100.0 95.0
D	3.00m	100.0 90.0 105.0

Groundwater

STRATA RECORD

Description

0.20	Friable dark brown CLAY of low plasticity (field test) with rootlets. (TOPSOIL).
0.80	Firm mottled dark brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.
0.80	Stiff high strength fissured blue grey gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.
3.00	Stiff high strength grey gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.
3.20	End of Trial Pit at 3.20 m

Logged By:

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.20		
0.80		
3.00		
3.20		

Remarks and Water Observations

1. No groundwater encountered during excavation.
2. Trial pit side walls remained stable during excavation.

GL (m AOD)

-

Easting:

-

Northing:

-

Fig. No.

TP44



TRIAL PIT RECORD

TP No. **TP45**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.10m	
D	0.80m	
D	1.20m	90.0 70.0
D	2.40m	
D	3.20m	

Groundwater

STRATA RECORD

Description

Friable dark brown organic CLAY of low plasticity (field test) with rootlets. (TOPSOIL).

Stiff high strength mottled brown grey sand gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

Stiff fissured grey blue CLAY of high plasticity (field test).

End of Trial Pit at 3.30 m

Logged By: GCB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.10		
0.80		
1.20		
2.40		
3.20		
3.30		

Remarks and Water Observations

1. No groundwater encountered during excavation.
2. Trial pit side walls remained stable during excavation.

GL (m AOD)

-
Easting:

-
Northing:

-

Fig. No.

TP45



TRIAL PIT RECORD

TP No. **TP46**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method : Excavated with a JCB 3CX using a 0.6m wide toothed bucket.

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
D	0.20m	
D	0.80m	
D	1.70m	55.0 90.0 80.0
D	2.80m	
D	3.20m	

Groundwater

STRATA RECORD

Description

<p>Friable dark brown CLAY of low plasticity (field test) with rootlets (TOPSOIL)</p>	0.30			
<p>Stiff fissured grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.</p>				
<p>Stiff fissured mottled brown grey blue sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.</p>	2.80			
<p>End of Trial Pit at 3.30 m</p>	3.30			

Logged By: GCB

Checked By:

Depth (m)

Level (mAOD) PID (ppm)

Legend

Remarks and Water Observations

1. No groundwater encountered during excavation.
2. Trial pit side walls remained stable during excavation.

GL (m AOD)

Easting:

Northing:

Fig. No.

TP46



DRAFT WINDOW SAMPLING RECORD

BH No. **WS1**
 Sheet 1 of 1
 Contract No: **C4220**
 Dates: **22/08/2011**
 Scale **1:25**

Site: **Monkton Fell, South Tyneside**
 Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**
 Method: **Track mounted window sampler**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane	Groundwater
		70.0 85.0 62.0	
	120.0 120.0 120.0		
	120.0 120.0 120.0		

STRATA RECORD

Description		Depth (m)	Level (mAOD)	Legend	Well
Firm brown friable sandy gravelly CLAY of low plasticity (field test) Gravel is fine to coarse of coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (Topsoil).		0.30			
Stiff medium strength brown gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone, mudstone and coal.					
becoming high strength below 1.5m					
End of Window Sample at 3.00 m		3.00			

Remarks and Water Observations

- No groundwater flows encountered.
- Gas/groundwater monitoring standpipe installed as shown.

Stratum description are based solely on field observations and in situ tests and are subject to amendment following receipt of laboratory test results

GL (mAOD)
 Easting:
 Northing:

Fig. No.
 WS1



SEDIMENT SAMPLING RECORD

BH No. **WS1**

Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Track mounted window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane	Groundwater
		70.0 85.0 62.0	
		120.0 120.0 120.0	
		120.0 120.0 120.0	

STRATA RECORD

Description		Depth (m)	Level (mAOD)	Legend	Well
Firm brown friable sandy gravelly CLAY of low plasticity (field test) Gravel is fine to coarse of coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (Topsoil).		0.30			
Stiff medium strength brown gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone, mudstone and coal.					
becoming high strength below 1.5m					
End of Window Sample at 3.00 m		3.00			

Remarks and Water Observations

1. No groundwater flows encountered.
2. Gas/groundwater monitoring standpipe installed as shown.

GL (mAOD)

-
Easting:
-
Northing:
-

Fig. No.

WS1



WINDOW SAMPLING RECORD

BH No. **WS1**

Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method: Track mounted window sampler

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane	Groundwater
		70.0 85.0 62.0	
		120.0 120.0 120.0	
		120.0 120.0 120.0	

STRATA RECORD

Firm brown friable sandy gravelly CLAY of low plasticity (field test) Gravel is fine to coarse of coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (Topsoil).

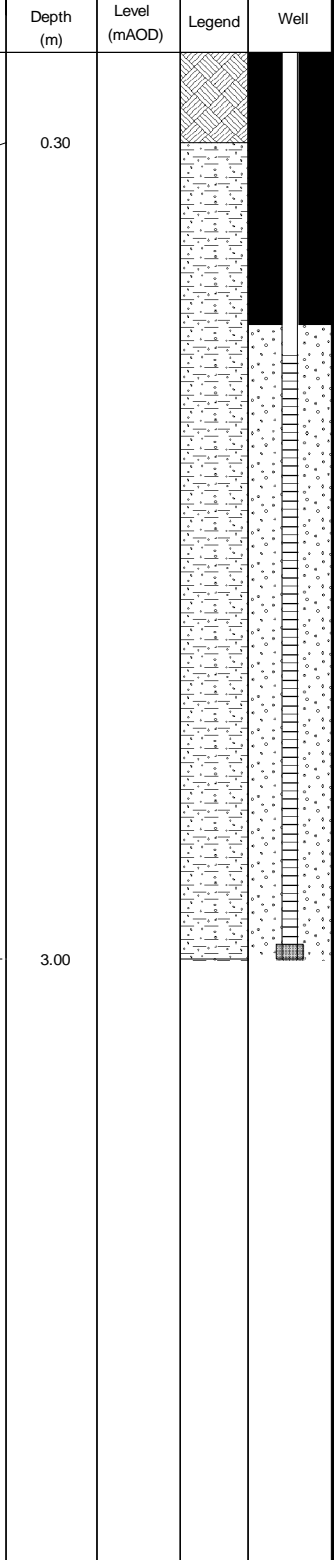
Stiff medium strength brown gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone, mudstone and coal.

becoming high strength below 1.5m

End of Window Sample at 3.00 m

Logged By: GCB Checked By: DCB

Driller: RP



Remarks and Water Observations

- No groundwater flows encountered.
- Gas/groundwater monitoring standpipe installed as shown.

GL (mAOD)

-
Easting:
-
Northing:
-

Fig. No.

WS1



DRAFT WINDOW SAMPLING RECORD

BH No. **WS1**
 Sheet 1 of 1
 Contract No: **C4220**
 Dates: **22/08/2011**
 Scale **1:25**

Site: **Monkton Fell, South Tyneside**
 Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**
 Method: **Track mounted window sampler**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane	Groundwater
		70.0 85.0 62.0	
		120.0 120.0 120.0	
		120.0 120.0 120.0	

STRATA RECORD

Description	Depth (m)	Level (mAOD)	Legend	Well
Firm brown friable sandy gravelly CLAY of low plasticity (field test) Gravel is fine to coarse of coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (Topsoil).	0.30			
Stiff medium strength brown gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone, mudstone and coal.				
becoming high strength below 1.5m				
End of Window Sample at 3.00 m	3.00			

Remarks and Water Observations

- No groundwater flows encountered.
- Gas/groundwater monitoring standpipe installed as shown.

GL (mAOD)
 Easting:
 Northing:

Fig. No.
 WS1



WINDOW SAMPLING RECORD

BH No. **WS1**

Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Track mounted window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane	Groundwater
		70.0 85.0 62.0	
		120.0 120.0 120.0	
		120.0 120.0 120.0	

STRATA RECORD

Firm brown friable sandy gravelly CLAY of low plasticity (field test) Gravel is fine to coarse of coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (Topsoil).

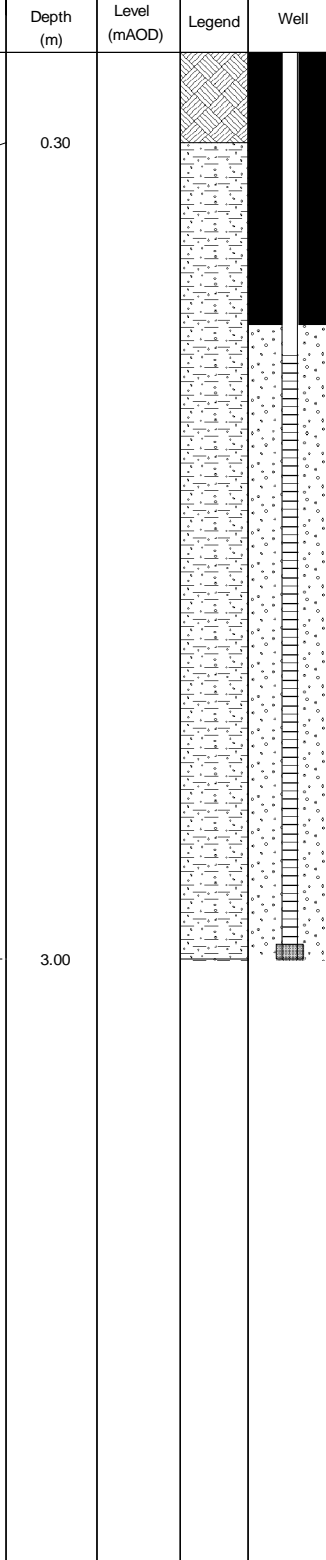
Stiff medium strength brown gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone, mudstone and coal.

becoming high strength below 1.5m

End of Window Sample at 3.00 m

Logged By: GCB Checked By: DCB

Driller: RP



Remarks and Water Observations

1. No groundwater flows encountered.
2. Gas/groundwater monitoring standpipe installed as shown.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS1



WINDOW SAMPLING RECORD

BH No. **WS1**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates: 22/08/2011

Method: Track mounted window sampler

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane [PID (ppm)]

Groundwater

STRATA RECORD

Description

Logged By: GCB Checked By: DCB

Driller: RP

Depth (m)	Level (mAOD)	Legend	Well
-----------	--------------	--------	------

Firm brown friable sandy gravelly CLAY of low plasticity (field test) Gravel is fine to coarse of coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (Topsoil).

0.30

Stiff medium strength brown gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone, mudstone and coal.

becoming high strength below 1.5m

End of Window Sample at 3.00 m

3.00

Remarks and Water Observations

- No groundwater flows encountered.
- Gas/groundwater monitoring standpipe installed as shown.

GL (mAOD)

-

Easting:

-

Northing:

-

Fig. No.

WS1



DRAFT WINDOW SAMPLING RECORD

BH No. **WS2**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates: 22/08/2011

Method: Tracked window sampler

Scale 1:25

SAMPLE DETAILS

Groundwater

STRATA RECORD

Logged By: GCB Checked By: DCB

Driller: RP

Type	Depth From - To(m)	(N) Shear vane	Description	Depth (m)	Level (mAOD)	Legend	Well
		70.0 72.0	Firm brown friable sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (TOPSOIL).	0.40			
		40.0 42.0 54.0	Firm medium strength yellow brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of sandstone and mudstone.				
		120.0 120.0 120.0	At 1.8m bgl; very sandy. becoming high strength.				
----- End of Window Sample at 3.00 m				3.00			

Remarks and Water Observations

- No groundwater encountered.
- Gas monitoring well installed as shown.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS2

Stratum description are based solely on field observations and in situ tests and are subject to amendment following receipt of laboratory test results



SEDIMENT SAMPLING RECORD

BH No. **WS2**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane	Groundwater
		70.0 72.0	
	40.0 42.0 54.0		
	120.0 120.0 120.0		

STRATA RECORD

Firm brown friable sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (TOPSOIL).

Firm medium strength yellow brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of sandstone and mudstone.

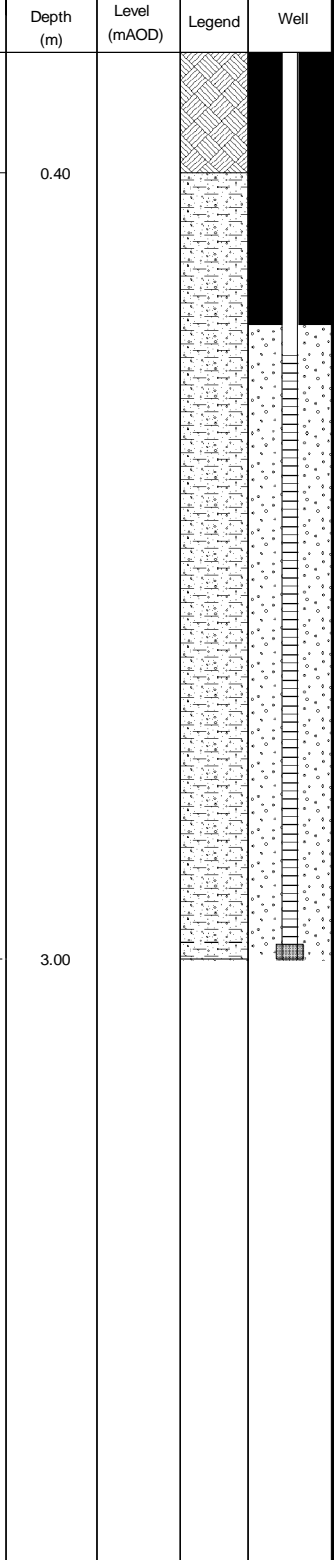
At 1.8m bgl; very sandy.

becoming high strength.

End of Window Sample at 3.00 m

Logged By: GCB Checked By: DCB

Driller: RP



Remarks and Water Observations

1. No groundwater encountered.
2. Gas monitoring well installed as shown.

GL (mAOD)

-
Easting:
-
Northing:
-

Fig. No.

WS2



WINDOW SAMPLING RECORD

BH No. **WS2**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method: Tracked window sampler

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane	Groundwater
		70.0 72.0	
		40.0 42.0 54.0	
		120.0 120.0 120.0	

STRATA RECORD

Firm brown friable sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (TOPSOIL).

Firm medium strength yellow brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of sandstone and mudstone.

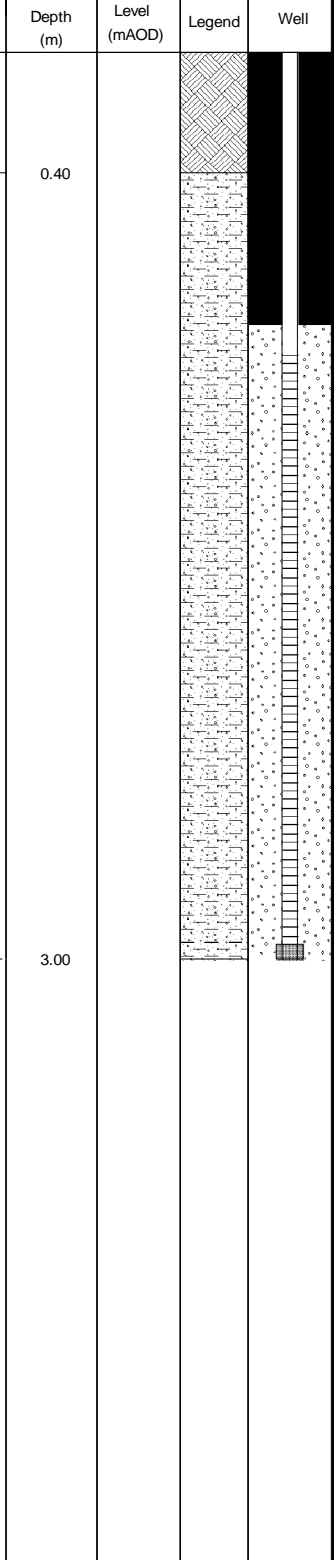
At 1.8m bgl; very sandy.

becoming high strength.

End of Window Sample at 3.00 m

Logged By: GCB Checked By: DCB

Driller: RP



Remarks and Water Observations

1. No groundwater encountered.
2. Gas monitoring well installed as shown.

GL (mAOD)

-
Easting:
-
Northing:
-

Fig. No.

WS2



DRAFT WINDOW SAMPLING RECORD

BH No. **WS2**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates: 22/08/2011

Method: Tracked window sampler

Scale 1:25

SAMPLE DETAILS

Groundwater

STRATA RECORD

Logged By: GCB Checked By: DCB

Driller: RP

Type	Depth From - To(m)	(N) Shear vane	Description	Depth (m)	Level (mAOD)	Legend	Well
		70.0 72.0	Firm brown friable sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (TOPSOIL).	0.40			
		40.0 42.0 54.0	Firm medium strength yellow brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of sandstone and mudstone.				
		120.0 120.0 120.0	At 1.8m bgl; very sandy. becoming high strength.				
End of Window Sample at 3.00 m				3.00			

Remarks and Water Observations

- No groundwater encountered.
- Gas monitoring well installed as shown.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS2



WINDOW SAMPLING RECORD

BH No. **WS2**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane
		70.0 72.0
	40.0 42.0 54.0	
	120.0 120.0 120.0	

Groundwater

STRATA RECORD

Firm brown friable sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (TOPSOIL).

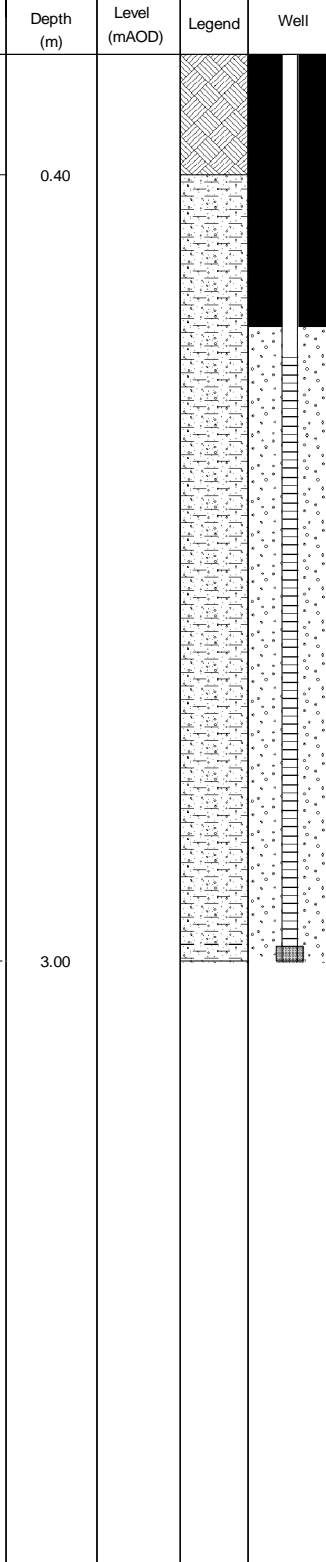
Firm medium strength yellow brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of sandstone and mudstone.

At 1.8m bgl; very sandy.

becoming high strength.

End of Window Sample at 3.00 m

Logged By: GCB Checked By: DCB
Driller: RP



Remarks and Water Observations

1. No groundwater encountered.
2. Gas monitoring well installed as shown.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS2



WINDOW SAMPLING RECORD

BH No. **WS2**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane [PID (ppm)]

Groundwater

STRATA RECORD

Description

Logged By: GCB Checked By: DCB

Driller: RP

Depth (m)	Level (mAOD)	Legend	Well
0.40			
3.00			

Firm brown friable sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (TOPSOIL).

Firm medium strength yellow brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse subangular to subrounded of sandstone and mudstone.

At 1.8m bgl; very sandy.

becoming high strength.

End of Window Sample at 3.00 m

Remarks and Water Observations

1. No groundwater encountered.
2. Gas monitoring well installed as shown.

GL (mAOD)

-

Easting:

-

Northing:

-

Fig. No.

WS2



DRAFT WINDOW SAMPLING RECORD

BH No. **WS3**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates: 22/08/2011

Method: Tracked window sampler

Scale 1:25

SAMPLE DETAILS

Groundwater

STRATA RECORD

Logged By: GCB Checked By: DCB

Driller: RP

Type	Depth From - To(m)	(N) Shear vane	Description	Depth (m)	Level (mAOD)	Legend	Well
		72.0 85.0 80.0	Firm brown friable sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (TOPSOIL)	0.40			
		100.0 95.0 110.0	Stiff high strength brown gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone.				
		120.0 120.0 120.0	End of Window Sample at 3.00 m	3.00			

Remarks and Water Observations

- No groundwater encountered. #
- Gas monitoring well installed as shown.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS3

Stratum description are based solely on field observations and in situ tests and are subject to amendment following receipt of laboratory test results



SEDIMENT SAMPLING RECORD

BH No. **WS3**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane	Groundwater
		72.0 85.0 80.0	
		100.0 95.0 110.0	
		120.0 120.0 120.0	

STRATA RECORD

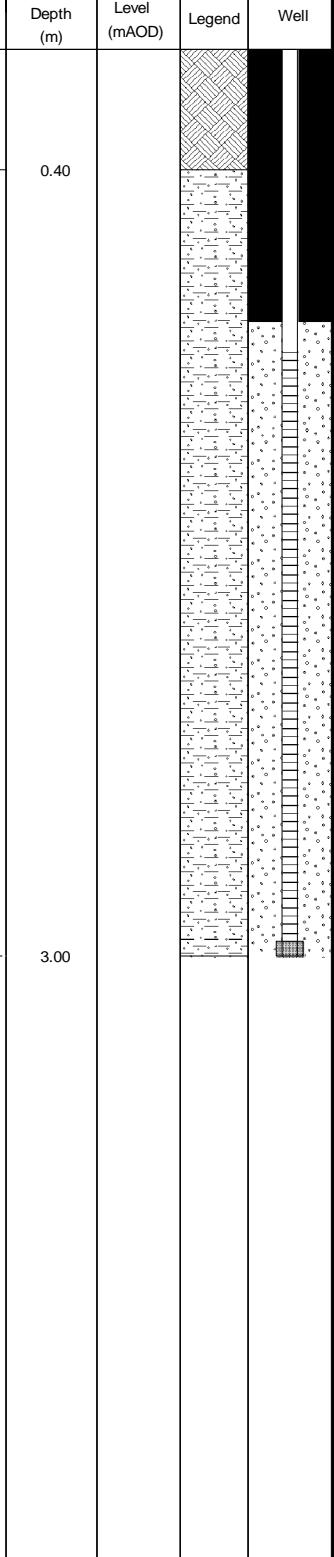
Firm brown friable sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (TOPSOIL)

Stiff high strength brown gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone.

End of Window Sample at 3.00 m

Logged By: GCB Checked By: DCB

Driller: RP



Remarks and Water Observations

1. No groundwater encountered. #
2. Gas monitoring well installed as shown.

GL (mAOD)

-
Easting:
-
Northing:
-

Fig. No.

WS3



WINDOW SAMPLING RECORD

BH No. **WS3**

Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method: Tracked window sampler

Scale **1:25**

SAMPLE DETAILS

Groundwater

STRATA RECORD

Logged By: GCB Checked By: DCB

Driller: RP

Type	Depth From - To(m)	(N) Shear vane	Description	Depth (m)	Level (mAOD)	Legend	Well
		72.0 85.0 80.0	Firm brown friable sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (TOPSOIL)	0.40			
		100.0 95.0 110.0	Stiff high strength brown gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone.				
		120.0 120.0 120.0		3.00			
End of Window Sample at 3.00 m							

Remarks and Water Observations

- No groundwater encountered. #
- Gas monitoring well installed as shown.

GL (mAOD)

-
Easting:
-
Northing:
-

Fig. No.

WS3



DRAFT WINDOW SAMPLING RECORD

BH No. **WS3**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method: Tracked window sampler

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane	Groundwater
		72.0 85.0 80.0	
		100.0 95.0 110.0	
		120.0 120.0 120.0	

STRATA RECORD

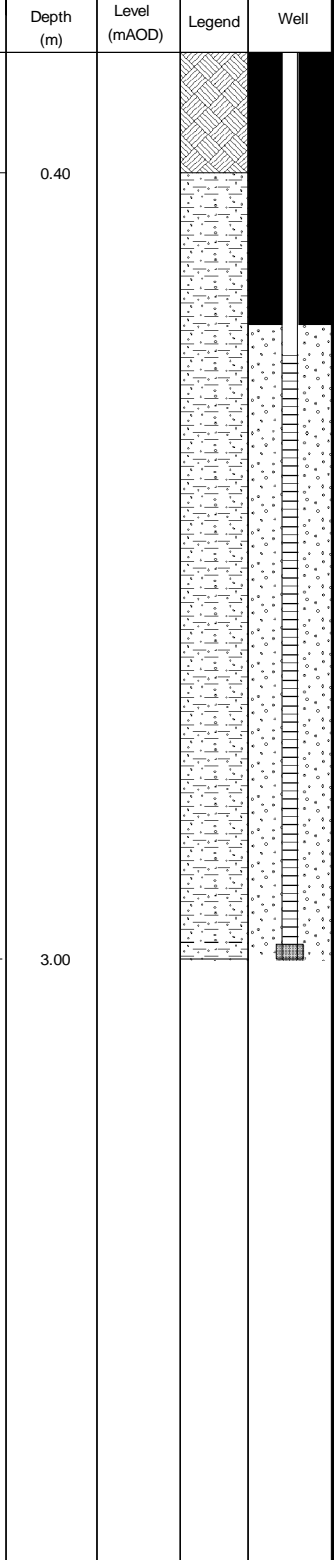
Firm brown friable sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (TOPSOIL)

Stiff high strength brown gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone.

End of Window Sample at 3.00 m

Logged By: GCB | Checked By: DCB

Driller: RP



Remarks and Water Observations

1. No groundwater encountered. #
2. Gas monitoring well installed as shown.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS3



WINDOW SAMPLING RECORD

BH No. **WS3**

Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane	Groundwater
		72.0 85.0 80.0	
		100.0 95.0 110.0	
		120.0 120.0 120.0	

STRATA RECORD

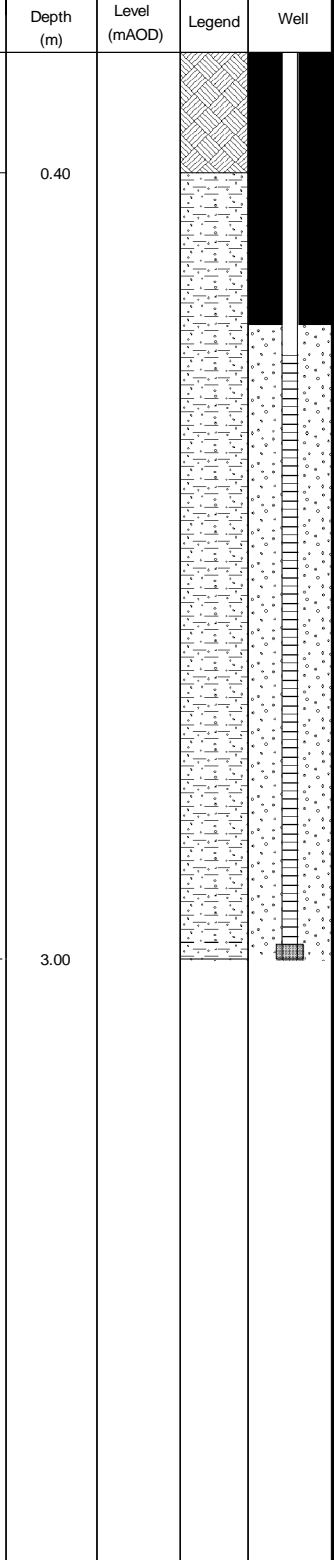
Firm brown friable sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (TOPSOIL)

Stiff high strength brown gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone.

End of Window Sample at 3.00 m

Logged By: GCB Checked By: DCB

Driller: RP



Remarks and Water Observations

1. No groundwater encountered. #
2. Gas monitoring well installed as shown.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS3



WINDOW SAMPLING RECORD

BH No. **WS3**

Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane [PID (ppm)]	Groundwater

STRATA RECORD

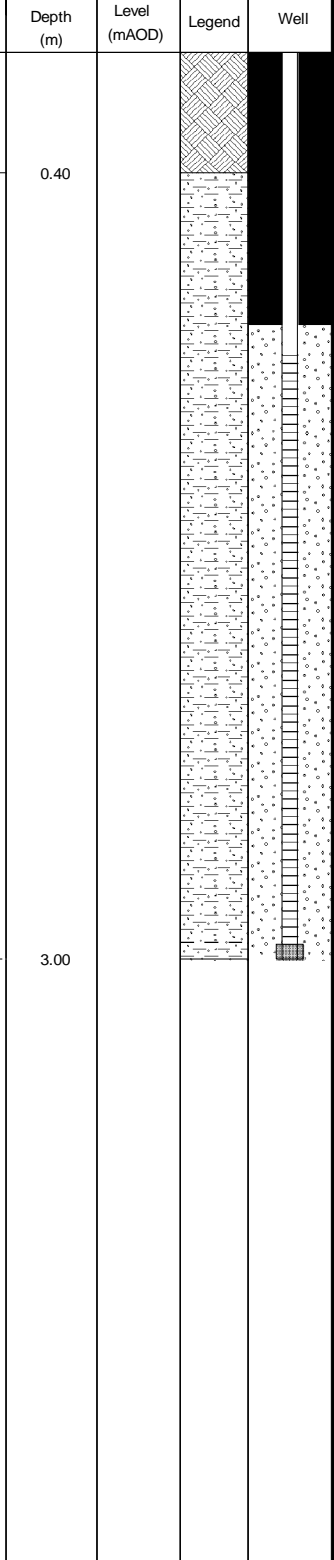
Firm brown friable sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone. Many rootlets. (TOPSOIL)

Stiff high strength brown gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone.

End of Window Sample at 3.00 m

Logged By: GCB | Checked By: DCB

Driller: RP



Remarks and Water Observations

1. No groundwater encountered. #
2. Gas monitoring well installed as shown.

GL (mAOD)

-
Easting:
-
Northing:
-

Fig. No.

WS3



DRAFT WINDOW SAMPLING RECORD

BH No. **WS4**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates: 22/08/2011

Method: Tracked window sampler

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane
		60.0 70.0 75.0
		110.0 90.0 95.0
		110.0 110.0 95.0

Groundwater

STRATA RECORD

Friable dark brown sandy CLAY with rootlets. (TOPSOIL).

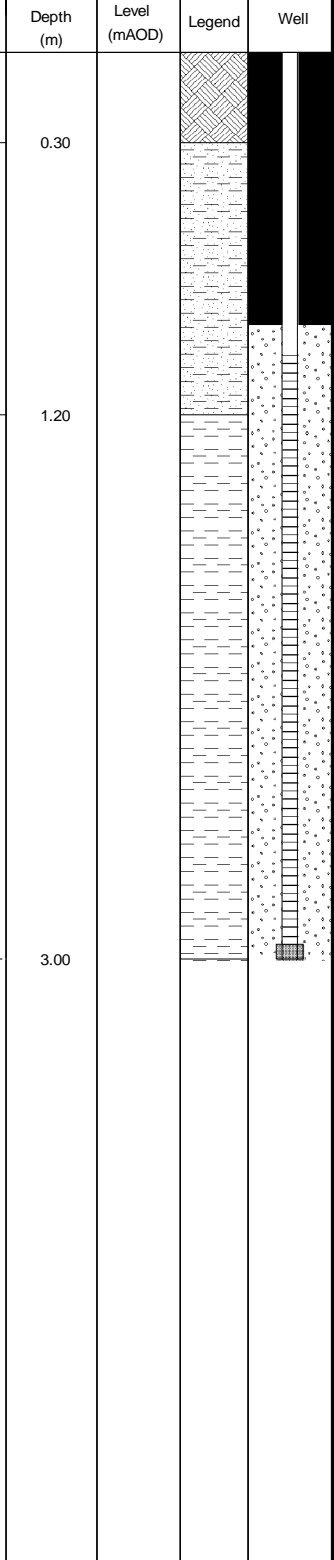
Stiff medium strength light brown sandy CLAY of low plasticity (field test).

Stiff high strength dark brown slightly sandy slightly gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

End of Window Sample at 3.00 m

Logged By: GCB Checked By: DCB

Driller:



Remarks and Water Observations

- No groundwater encountered.
- Gas monitoring well installed as shown.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS4

Stratum description are based solely on field observations and in situ tests and are subject to amendment following receipt of laboratory test results



SEDIMENT SAMPLING RECORD

BH No. **WS4**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

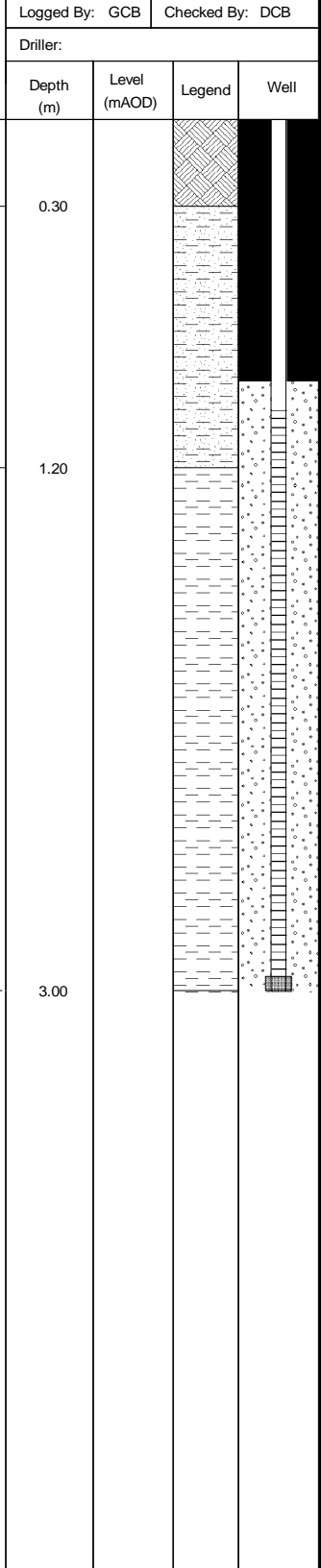
SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane
		60.0 70.0 75.0
		110.0 90.0 95.0
		110.0 110.0 95.0

Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD)	Legend	Well
Friable dark brown sandy CLAY with rootlets. (TOPSOIL).				
Stiff medium strength light brown sandy CLAY of low plasticity (field test).	0.30			
Stiff high strength dark brown slightly sandy slightly gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	1.20			
End of Window Sample at 3.00 m	3.00			



Remarks and Water Observations

1. No groundwater encountered.
2. Gas monitoring well installed as shown.

GL (mAOD)
-
Easting:
-
Northing:
-

Fig. No.

WS4



WINDOW SAMPLING RECORD

BH No. **WS4**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method: Tracked window sampler

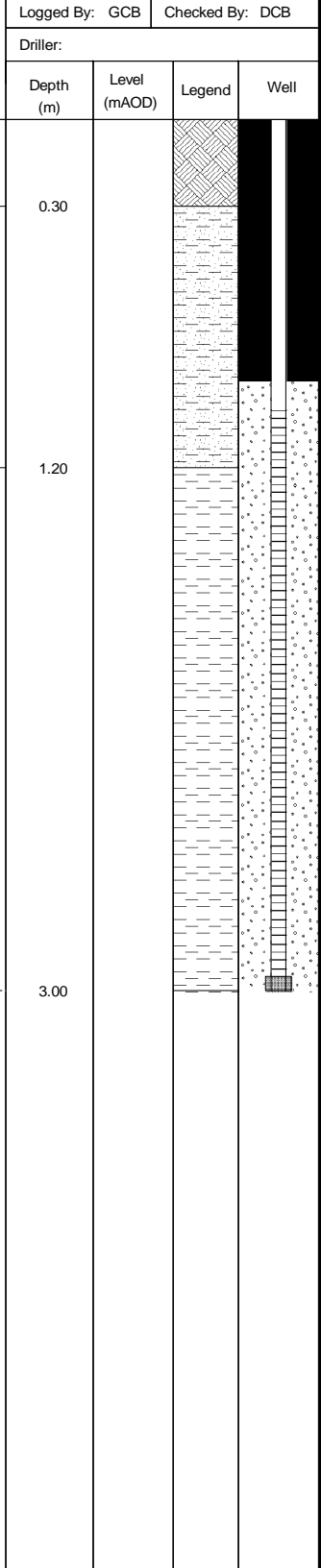
Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane	Groundwater
		60.0 70.0 75.0	
		110.0 90.0 95.0	
		110.0 110.0 95.0	

STRATA RECORD

Description		Depth (m)	Level (mAOD)	Legend	Well
Friable dark brown sandy CLAY with rootlets. (TOPSOIL).					
Stiff medium strength light brown sandy CLAY of low plasticity (field test).		0.30			
Stiff high strength dark brown slightly sandy slightly gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.		1.20			
End of Window Sample at 3.00 m		3.00			



Remarks and Water Observations

1. No groundwater encountered.
2. Gas monitoring well installed as shown.

GL (mAOD)
-
Easting:
-
Northing:
-

Fig. No.

WS4



DRAFT WINDOW SAMPLING RECORD

BH No. **WS4**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates: 22/08/2011

Method: Tracked window sampler

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane
		60.0 70.0 75.0
		110.0 90.0 95.0
		110.0 110.0 95.0

Groundwater

STRATA RECORD

Friable dark brown sandy CLAY with rootlets. (TOPSOIL).

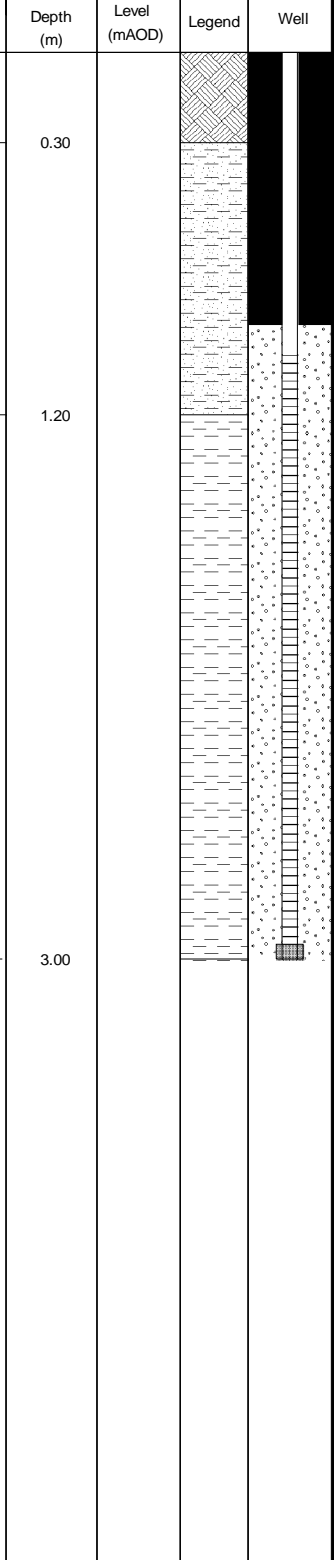
Stiff medium strength light brown sandy CLAY of low plasticity (field test).

Stiff high strength dark brown slightly sandy slightly gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

End of Window Sample at 3.00 m

Logged By: GCB Checked By: DCB

Driller:



Remarks and Water Observations

- No groundwater encountered.
- Gas monitoring well installed as shown.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS4



WINDOW SAMPLING RECORD

BH No. **WS4**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

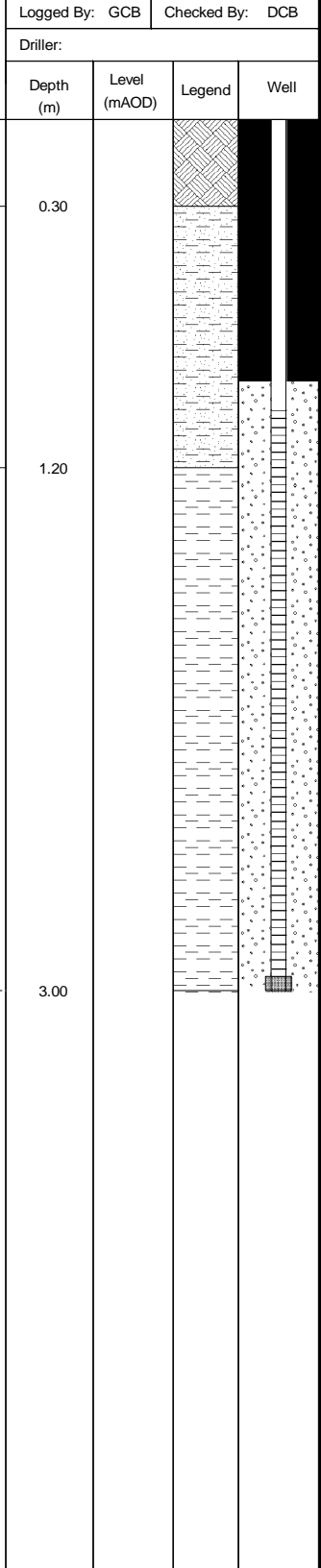
Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane	Groundwater
		60.0 70.0 75.0	
		110.0 90.0 95.0	
		110.0 110.0 95.0	

STRATA RECORD

Description		Depth (m)	Level (mAOD)	Legend	Well
Friable dark brown sandy CLAY with rootlets. (TOPSOIL).					
Stiff medium strength light brown sandy CLAY of low plasticity (field test).		0.30			
Stiff high strength dark brown slightly sandy slightly gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.		1.20			
End of Window Sample at 3.00 m		3.00			



Remarks and Water Observations

1. No groundwater encountered.
2. Gas monitoring well installed as shown.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS4



WINDOW SAMPLING RECORD

BH No. **WS4**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane [PID (ppm)]

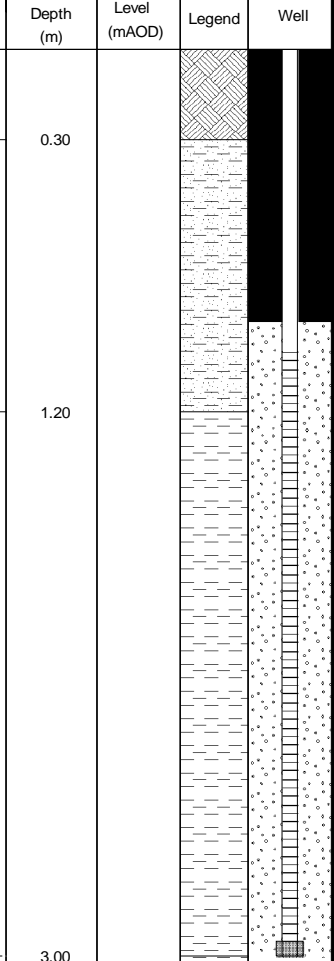
Groundwater

STRATA RECORD

Description

Logged By: **GCB** Checked By: **DCB**

Driller:



Friable dark brown sandy CLAY with rootlets. (TOPSOIL).

Stiff medium strength light brown sandy CLAY of low plasticity (field test).

Stiff high strength dark brown slightly sandy slightly gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

End of Window Sample at 3.00 m

Remarks and Water Observations

1. No groundwater encountered.
2. Gas monitoring well installed as shown.

GL (mAOD)

-

Easting:

-

Northing:

-

Fig. No.

WS4



DRAFT WINDOW SAMPLING RECORD

BH No. **WS5**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates: 22/08/2011

Method: Tracked window sampler

Scale 1:25

SAMPLE DETAILS

Groundwater

Type	Depth From - To(m)	(N) Shear vane
		75.0 85.0 70.0
		90.0 110.0 95.0
		110.0 100.0 90.0

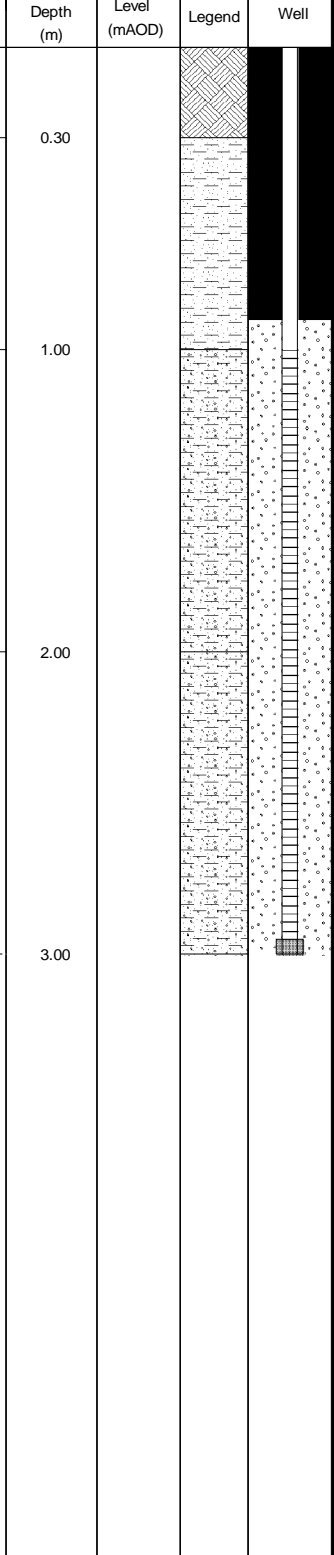
STRATA RECORD

Description

Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)	0.30	Legend	Well
Stiff high strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.			
Stiff high strength dark brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	1.00	Legend	Well
Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00		
End of Window Sample at 3.00 m		3.00	

Logged By: GCB | Checked By: DCB

Driller:



Remarks and Water Observations

- No groundwater encountered.
- Gas monitoring well installed as shown.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS5

Stratum description are based solely on field observations and in situ tests and are subject to amendment following receipt of laboratory test results



SEDIMENT SAMPLING RECORD

BH No. **WS5**

Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked windoe sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane
		75.0 85.0 70.0
		90.0 110.0 95.0
		110.0 100.0 90.0

Groundwater

STRATA RECORD

Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)

Stiff high strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.

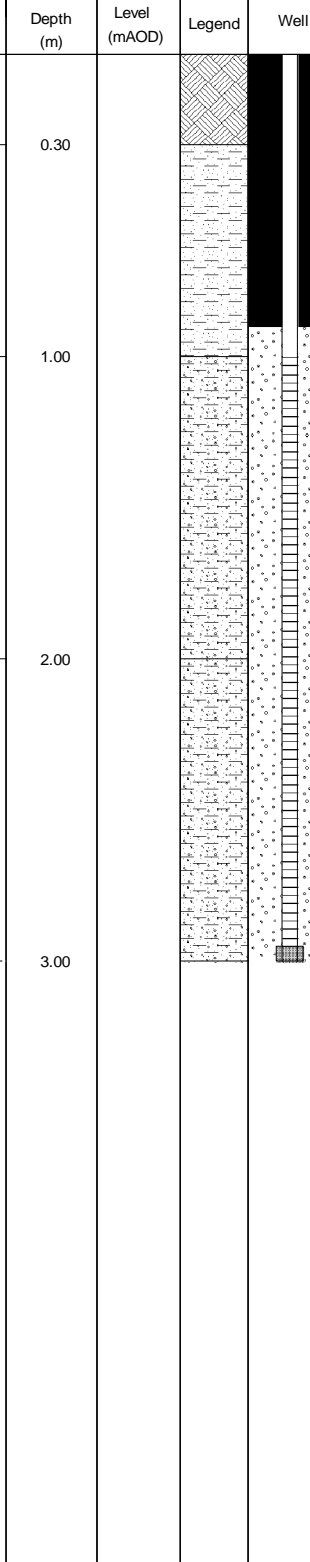
Stiff high strength dark brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

End of Window Sample at 3.00 m

Logged By: GCB | Checked By: DCB

Driller:



Remarks and Water Observations

1. No groundwater encountered.
2. Gas monitoring well installed as shown.

GL (mAOD)

-
Easting:
-
Northing:
-

Fig. No.

WS5



WINDOW SAMPLING RECORD

BH No. **WS5**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method: Tracked window sampler

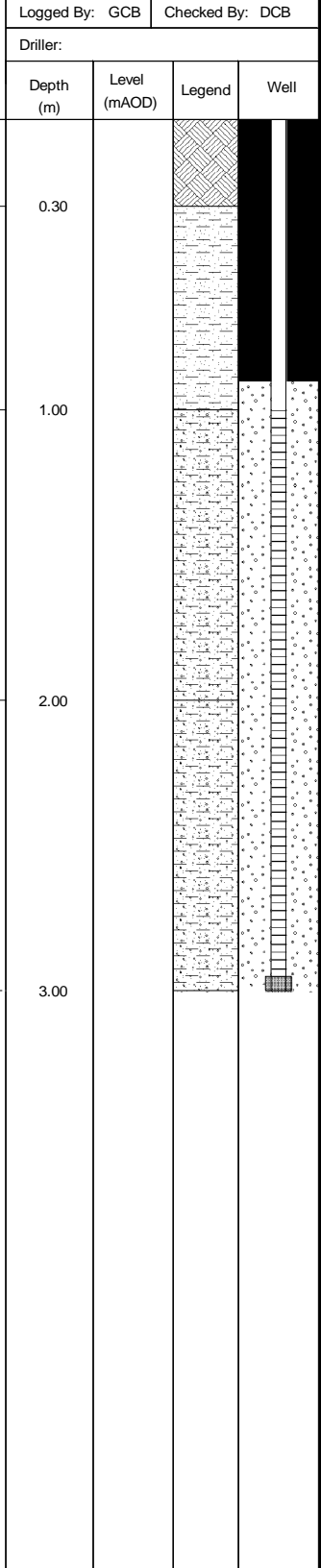
Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane	Groundwater
		75.0 85.0 70.0	
		90.0 110.0 95.0	
		110.0 100.0 90.0	

STRATA RECORD

Description		Depth (m)	Level (mAOD)	Legend	Well
Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)					
Stiff high strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.		0.30			
Stiff high strength dark brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.		1.00			
Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.		2.00			
End of Window Sample at 3.00 m		3.00			



Remarks and Water Observations
 1. No groundwater encountered.
 2. Gas monitoring well installed as shown.

GL (mAOD)
-
Easting:
-
Northing:
-

Fig. No.

WS5



DRAFT WINDOW SAMPLING RECORD

BH No. **WS5**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates: 22/08/2011

Method: Tracked window sampler

Scale 1:25

SAMPLE DETAILS

Groundwater

STRATA RECORD

Logged By: GCB Checked By: DCB

Driller:

Type	Depth From - To(m)	(N) Shear vane	Description	Depth (m)	Level (mAOD)	Legend	Well
		75.0 85.0 70.0	Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)	0.30			
			Stiff high strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.	1.00			
		90.0 110.0 95.0	Stiff high strength dark brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00			
		110.0 100.0 90.0	Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	3.00			
			End of Window Sample at 3.00 m				

Remarks and Water Observations

- No groundwater encountered.
- Gas monitoring well installed as shown.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS5



WINDOW SAMPLING RECORD

BH No. **WS5**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane	Groundwater
		75.0 85.0 70.0	
		90.0 110.0 95.0	
		110.0 100.0 90.0	

STRATA RECORD

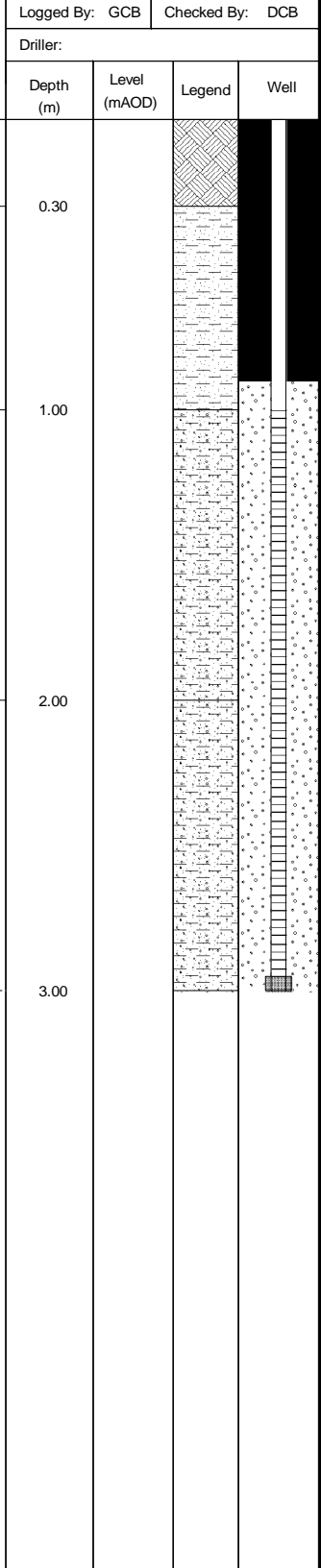
Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)

Stiff high strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.

Stiff high strength dark brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

End of Window Sample at 3.00 m



Remarks and Water Observations

- No groundwater encountered.
- Gas monitoring well installed as shown.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS5



WINDOW SAMPLING RECORD

BH No. **WS5**

Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane [PID (ppm)]

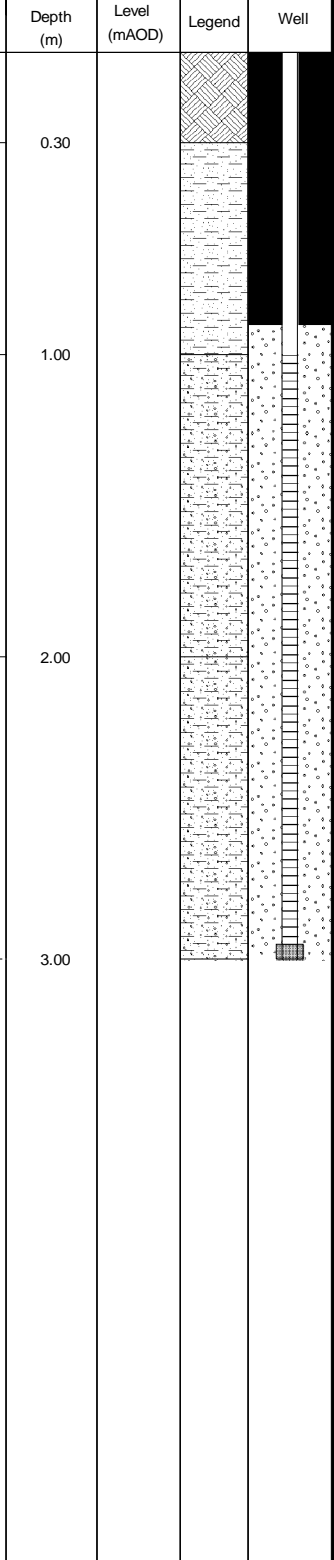
Groundwater

STRATA RECORD

Description

Logged By: **GCB** | Checked By: **DCB**

Driller:



Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)

Stiff high strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.

Stiff high strength dark brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

End of Window Sample at 3.00 m

Remarks and Water Observations

1. No groundwater encountered.
2. Gas monitoring well installed as shown.

GL (mAOD)

-

Easting:

-

Northing:

-

Fig. No.

WS5



DRAFT WINDOW SAMPLING RECORD

BH No. **WS26**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates: 22/08/2011

Method: Tracked window sampler

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane	Groundwater

STRATA RECORD

Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)

Stiff high strength light to brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.

Stiff high strength dark brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

Stiff medium strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.

End of Window Sample at 4.00 m

Logged By: GCB | Checked By: DCB

Driller:

Depth (m)	Level (mAOD)	Legend	Well
0.30			
1.00			
2.00			
4.00			

Remarks and Water Observations

- No groundwater encountered.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS26

Stratum description are based solely on field observations and in situ tests and are subject to amendment following receipt of laboratory test results



SEDIMENT SAMPLING RECORD

BH No. **WS26**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane
		N=15 (3,3/3,3,4,5)
		N=13 (2,3/3,3,3,4)
		N=12 (3,2/3,2,3,4)
		N=13 (3,2/3,3,3,4)

Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD)	Legend	Well
Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)	0.30			
Stiff high strength light to brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.	1.00			
Stiff high strength dark brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00			
Stiff medium strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	4.00			
End of Window Sample at 4.00 m				

Logged By: GCB | Checked By: DCB

Driller:

Remarks and Water Observations

1. No groundwater encountered.

GL (mAOD)

-
Easting:
-
Northing:
-

Fig. No.

WS26



WINDOW SAMPLING RECORD

BH No. **WS26**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method: Tracked window sampler

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane
		N=15 (3,3/3,3,4,5)
		N=13 (2,3/3,3,3,4)
		N=12 (3,2/3,2,3,4)
		N=13 (3,2/3,3,3,4)

Groundwater

STRATA RECORD

Description		Depth (m)	Level (mAOD)	Legend	Well
Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)		0.30			
Stiff high strength light to brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.		1.00			
Stiff high strength dark brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.		2.00			
Stiff medium strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.		4.00			
----- End of Window Sample at 4.00 m					

Logged By: GCB Checked By: DCB

Driller:

Remarks and Water Observations

1. No groundwater encountered.

GL (mAOD)

-
Easting:
-
Northing:
-

Fig. No.

WS26



DRAFT WINDOW SAMPLING RECORD

BH No. **WS26**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates: 22/08/2011

Method: Tracked window sampler

Scale 1:25

SAMPLE DETAILS

Groundwater

STRATA RECORD

Logged By: GCB | Checked By: DCB

Driller:

Type	Depth From - To(m)	(N) Shear vane	Description	Depth (m)	Level (mAOD)	Legend	Well
			Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)	0.30			
		N=15 (3,3/3,3,4,5)	Stiff high strength light to brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.	1.00			
		N=13 (2,3/3,3,4)	Stiff high strength dark brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00			
		N=12 (3,2/3,2,3,4)	Stiff medium strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	4.00			
		N=13 (3,2/3,3,4)	End of Window Sample at 4.00 m	4.00			

Remarks and Water Observations

- No groundwater encountered.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS26



WINDOW SAMPLING RECORD

BH No. **WS26**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane
		N=15 (3,3/3,3,4,5)
		N=13 (2,3/3,3,4)
		N=12 (3,2/3,2,3,4)
		N=13 (3,2/3,3,4)

Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD)	Legend	Well
Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)	0.30			
Stiff high strength light to brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.	1.00			
Stiff high strength dark brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00			
Stiff medium strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	4.00			
End of Window Sample at 4.00 m				

Logged By: GCB Checked By: DCB

Driller:

Remarks and Water Observations

- No groundwater encountered.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS26



WINDOW SAMPLING RECORD

BH No. **WS26**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Groundwater

STRATA RECORD

Logged By: **GCB** Checked By: **DCB**

Driller:

Type	Depth From - To(m)	(N) Shear vane [PID (ppm)]	Description	Depth (m)	Level (mAOD)	Legend	Well
		N=15 (3,3/3,3,4,5)	Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)	0.30		[Pattern]	
			Stiff high strength light to brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.			[Pattern]	
		N=13 (2,3/3,3,4)	Stiff high strength dark brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	1.00		[Pattern]	
		N=12 (3,2/3,2,3,4)	Stiff medium strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00		[Pattern]	
		N=13 (3,2/3,3,3,4)	----- End of Window Sample at 4.00 m	4.00		[Pattern]	

Remarks and Water Observations

1. No groundwater encountered.

GL (mAOD)

-
Easting:
-
Northing:
-

Fig. No.

WS26



DRAFT WINDOW SAMPLING RECORD

BH No. **WS34**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates: 22/08/2011

Method: Tracked window sampler

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane	Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD)	Legend	Well
Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)	0.30			
Firm medium strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.	1.00			
Stiff medium strength darker brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00			
Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	4.00			
End of Window Sample at 4.00 m				

Remarks and Water Observations

- No groundwater encountered.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS34

Stratum description are based solely on field observations and in situ tests and are subject to amendment following receipt of laboratory test results



SEDIMENT SAMPLING RECORD

BH No. **WS34**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane
		N=13 (4,3/3,3,3,4)
		N=15 (3,3/3,4,4,4)
		N=8 (1,2/2,2,2,2)
		N=12 (2,2/2,3,3,4)

Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD)	Legend	Well
Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)	0.30			
Firm medium strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.	1.00			
Stiff medium strength darker brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00			
Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	4.00			
End of Window Sample at 4.00 m				

Remarks and Water Observations

1. No groundwater encountered.

GL (mAOD)
-
Easting:
-
Northing:
-

Fig. No.

WS34



WINDOW SAMPLING RECORD

BH No. **WS34**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method: Tracked window sampler

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane
		N=13 (4,3/3,3,3,4)
		N=15 (3,3/3,4,4,4)
		N=8 (1,2/2,2,2,2)
		N=12 (2,2/2,3,3,4)

Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD)	Legend	Well
Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)	0.30			
Firm medium strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.	1.00			
Stiff medium strength darker brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00			
Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	4.00			
End of Window Sample at 4.00 m				

Remarks and Water Observations

- No groundwater encountered.

GL (mAOD)
-
Easting:
-
Northing:
-

Fig. No.

WS34



DRAFT WINDOW SAMPLING RECORD

BH No. **WS34**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates: 22/08/2011

Method: Tracked window sampler

Scale 1:25

SAMPLE DETAILS

Groundwater

STRATA RECORD

Logged By: GCB | Checked By: DCB

Driller:

Type	Depth From - To(m)	(N) Shear vane	Description	Depth (m)	Level (mAOD)	Legend	Well
		N=13 (4,3/3,3,3,4)	Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)	0.30			
			Firm medium strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.	1.00			
		N=15 (3,3/3,4,4,4)	Stiff medium strength darker brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00			
		N=8 (1,2/2,2,2,2)	Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	4.00			
		N=12 (2,2/2,3,3,4)	End of Window Sample at 4.00 m				

Remarks and Water Observations

- No groundwater encountered.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS34



WINDOW SAMPLING RECORD

BH No. **WS34**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane
		N=13 (4,3/3,3,3,4)
		N=15 (3,3/3,4,4,4)
		N=8 (1,2/2,2,2,2)
		N=12 (2,2/2,3,3,4)

Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD)	Legend	Well
Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)	0.30			
Firm medium strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.	1.00			
Stiff medium strength darker brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00			
Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	4.00			
End of Window Sample at 4.00 m				

Logged By: GCB | Checked By: DCB

Driller:

Remarks and Water Observations

- No groundwater encountered.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS34



WINDOW SAMPLING RECORD

BH No. **WS34**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Groundwater

STRATA RECORD

Logged By: **GCB** | Checked By: **DCB**

Driller:

Type	Depth From - To(m)	(N) Shear vane [PID (ppm)]	Description	Depth (m)	Level (mAOD)	Legend	Well
		N=13 (4,3/3,3,3,4)	Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)	0.30			
			Firm medium strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.	1.00			
		N=15 (3,3/3,4,4,4)	Stiff medium strength darker brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00			
		N=8 (1,2/2,2,2,2)	Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	4.00			
		N=12 (2,2/2,3,3,4)	----- End of Window Sample at 4.00 m				

Remarks and Water Observations

1. No groundwater encountered.

GL (mAOD)

-
Easting:
-
Northing:
-

Fig. No.

WS34



DRAFT WINDOW SAMPLING RECORD

BH No. **WS38**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method: Tracked window sampler

Scale **1:25**

SAMPLE DETAILS

Groundwater

STRATA RECORD

Logged By: GCB Checked By: DCB

Driller:

Type	Depth From - To(m)	(N) Shear vane	Description	Depth (m)	Level (mAOD)	Legend	Well
			Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)	0.30			
			Firm medium strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.	1.00			
			Stiff medium strength darker brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00			
			Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	3.00			
			End of Window Sample at 3.00 m				

Remarks and Water Observations

- No groundwater encountered.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS38

Stratum description are based solely on field observations and in situ tests and are subject to amendment following receipt of laboratory test results



SEDIMENT SAMPLING RECORD

BH No. **WS38**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane
		N=12 (2,3/3,3,3,3)
		N=17 (5,4/4,4,4,5)
		N=13 (3,2/3,3,3,4)
		N=12 (3,3/3,3,3,3)

Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD)	Legend	Well
Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)	0.30			
Firm medium strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.	1.00			
Stiff medium strength darker brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00			
Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	3.00			
End of Window Sample at 3.00 m				

Remarks and Water Observations

1. No groundwater encountered.

GL (mAOD)
-
Easting:
-
Northing:
-

Fig. No.

WS38



WINDOW SAMPLING RECORD

BH No. **WS38**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
22/08/2011

Method: Tracked window sampler

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane
		N=12 (2,3/3,3,3,3)
		N=17 (5,4/4,4,4,5)
		N=13 (3,2/3,3,3,4)
		N=12 (3,3/3,3,3,3)

Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD)	Legend	Well
Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)	0.30			
Firm medium strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.	1.00			
Stiff medium strength darker brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00			
Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	3.00			
End of Window Sample at 3.00 m				

Remarks and Water Observations

- No groundwater encountered.

GL (mAOD)

-
Easting:
-
Northing:
-

Fig. No.

WS38



DRAFT WINDOW SAMPLING RECORD

BH No. **WS38**
Sheet 1 of 1

Site: Monkton Fell, South Tyneside

Contract No: **C4220**

Client: Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates: 22/08/2011

Method: Tracked window sampler

Scale 1:25

SAMPLE DETAILS

Groundwater

STRATA RECORD

Logged By: GCB Checked By: DCB

Driller:

Type	Depth From - To(m)	(N) Shear vane	Description	Depth (m)	Level (mAOD)	Legend	Well
			Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)	0.30			
			Firm medium strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.	1.00			
		N=12 (2,3/3,3,3,3)	Stiff medium strength darker brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00			
		N=17 (5,4/4,4,4,5)	Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	3.00			
		N=13 (3,2/3,3,3,4)	End of Window Sample at 3.00 m				
		N=12 (3,3/3,3,3,3)					

Remarks and Water Observations

- No groundwater encountered.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS38



WINDOW SAMPLING RECORD

BH No. **WS38**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Groundwater

STRATA RECORD

Logged By: GCB Checked By: DCB

Driller:

Type	Depth From - To(m)	(N) Shear vane	Description	Depth (m)	Level (mAOD)	Legend	Well
			Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)				
			Firm medium strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.	0.30			
		N=12 (2,3/3,3,3,3)					
			Stiff medium strength darker brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	1.00			
		N=17 (5,4/4,4,4,5)					
			Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.	2.00			
		N=13 (3,2/3,3,3,4)					
			End of Window Sample at 3.00 m	3.00			
		N=12 (3,3/3,3,3,3)					

Remarks and Water Observations

1. No groundwater encountered.

GL (mAOD)

Easting:

Northing:

Fig. No.

WS38



WINDOW SAMPLING RECORD

BH No. **WS38**
Sheet 1 of 1

Site: **Monkton Fell, South Tyneside**

Contract No: **C4220**

Client: **Taylor Wimpey (NE) Ltd and Barratt Homes Ltd**

Dates: **22/08/2011**

Method: **Tracked window sampler**

Scale **1:25**

SAMPLE DETAILS

Type	Depth From - To(m)	(N) Shear vane [PID (ppm)]
		N=12 (2,3/3,3,3,3)
		N=17 (5,4/4,4,4,5)
		N=13 (3,2/3,3,3,4)
		N=12 (3,3/3,3,3,3)

Groundwater

STRATA RECORD

Description	
<p>Firm friable dark brown sand CLAY of low plasticity (field test) No rootlets present. . (TOPSOIL)</p>	<p>0.30</p>
<p>Firm medium strength light to medium brown sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone, sandstone and mudstone.</p>	<p>1.00</p>
<p>Stiff medium strength darker brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.</p>	<p>2.00</p>
<p>Stiff high strength grey brown sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse, subangular to subrounded of limestone and sandstone.</p>	<p>3.00</p>
<p>----- End of Window Sample at 3.00 m</p>	

Depth (m)	Level (mAOD)	Legend	Well
0.30			
1.00			
2.00			
3.00			

Remarks and Water Observations

1. No groundwater encountered.

GL (mAOD)
-
Easting:
-
Northing:
-

Fig. No.

WS38



TRIAL PIT RECORD

TP No. **HDTP1**
Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
16/06/2011

Method : Hand dug trial pit

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²

Groundwater

STRATA RECORD

Description

Logged By: DDB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
0.25		

Friable dark grey very sandy slightly organic CLAY with many rootlets. (Topsoil).

End of Trial Pit at 0.25 m

Remarks and Water Observations

GL (m AOD)
-
Easting:
431875.00
Northing:
563254.00

Fig. No.
HDTP1



TRIAL PIT RECORD

TP No. **HDTP2**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
-

Method : Hand dug trial pit

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²
------	-----------------------	--------------------------------------

Groundwater

STRATA RECORD

Description

Logged By: DDB

Checked By:

Depth (m)	Level (mAOD) PID (ppm)	Legend
--------------	---------------------------------	--------

Friable dark grey very sandy slightly organic CLAY with many rootlets. (Topsoil).

0.25

End of Trial Pit at 0.25 m

Remarks and Water Observations

GL (m AOD)

-
Easting:
431924.00
Northing:
563193.00

Fig. No.

HDTP2



TRIAL PIT RECORD

TP No. **HDTP3**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
-

Method : Hand dug trial pit

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark grey very sandy slightly organic CLAY with many rootlets. (Topsoil). End of Trial Pit at 0.25 m	0.25		

Logged By: DDB

Checked By:

Remarks and Water Observations

GL (m AOD)

-
Easting:
431935.00
Northing:
563083.00

Fig. No.

HDTP3



TRIAL PIT RECORD

TP No. **HDTP4**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
-

Method : Hand dug trial pit

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark grey very sandy slightly organic CLAY with many rootlets. (Topsoil). End of Trial Pit at 0.25 m	0.25		

Logged By: DDB

Checked By:

Remarks and Water Observations

GL (m AOD)

-
Easting:
431849.00
Northing:
563163.00

Fig. No.

HDTP4



TRIAL PIT RECORD

TP No. **HDTP5**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
-

Method : Hand dug trial pit

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark grey very sandy slightly organic CLAY with many rootlets. (Topsoil). End of Trial Pit at 0.25 m	0.25		

Logged By: DDB

Checked By:

Remarks and Water Observations

GL (m AOD)

-
Easting:
431865.00
Northing:
563061.00

Fig. No.

HDTP5



TRIAL PIT RECORD

TP No. **HDTP6**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
-

Method : Hand dug trial pit

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²

Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark grey very sandy slightly organic CLAY with many rootlets. (Topsoil). ----- End of Trial Pit at 0.25 m	0.25		

Logged By: DDB

Checked By:

Remarks and Water Observations

GL (m AOD)

-
Easting:
431780.00
Northing:
563116.00

Fig. No.

HDTP6



TRIAL PIT RECORD

TP No. **HDTP7**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
-

Method : Hand dug trial pit

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark grey very sandy slightly organic CLAY with many rootlets. (Topsoil). ----- End of Trial Pit at 0.25 m	0.25		

Logged By: DDB

Checked By:

Remarks and Water Observations

GL (m AOD)

-
Easting:
431729.00
Northing:
563050.00

Fig. No.

HDTP7



TRIAL PIT RECORD

TP No. **HDTP8**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
-

Method : Hand dug trial pit

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark grey very sandy slightly organic CLAY with many rootlets. (Topsoil). End of Trial Pit at 0.25 m	0.25		

Logged By: DDB

Checked By:

Remarks and Water Observations

GL (m AOD)

-
Easting:
431651.00
Northing:
562990.00

Fig. No.

HDTP8



TRIAL PIT RECORD

TP No. **HDTP9**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
-

Method : Hand dug trial pit

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark grey very sandy slightly organic CLAY with many rootlets. (Topsoil). End of Trial Pit at 0.25 m	0.25		

Logged By: DDB

Checked By:

Remarks and Water Observations

GL (m AOD)

-
Easting:
431772.00
Northing:
562988.00

Fig. No.

HDTP9



TRIAL PIT RECORD

TP No. **HDTP10**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
-

Method : Hand dug trial pit

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark grey very sandy slightly organic CLAY with many rootlets. (Topsoil). End of Trial Pit at 0.25 m	0.25		

Logged By: DDB

Checked By:

Remarks and Water Observations

GL (m AOD)

-
Easting:
431782.00
Northing:
562833.00

Fig. No.

HDTP10



TRIAL PIT RECORD

TP No. **HOTP11**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
-

Method : Hand dug trial pit

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	

Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark grey very sandy slightly organic CLAY with many rootlets. (Topsoil). End of Trial Pit at 0.25 m	0.25		

Logged By: DDB

Checked By:

Remarks and Water Observations

GL (m AOD)

-
Easting:
431850.00
Northing:
562864.00

Fig. No.

HOTP11



TRIAL PIT RECORD

TP No. **HDTP12**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
-

Method : Hand dug trial pit

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²

Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark grey very sandy slightly organic CLAY with many rootlets. (Topsoil). ----- End of Trial Pit at 0.25 m	0.25		

Logged By: DDB

Checked By:

Remarks and Water Observations

GL (m AOD)

-
Easting:
431736.00
Northing:
562707.00

Fig. No.

HDTP12



TRIAL PIT RECORD

TP No. **HDTP13**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
-

Method : Hand dug trial pit

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark grey very sandy slightly organic CLAY with many rootlets. (Topsoil). ----- End of Trial Pit at 0.25 m	0.25		

Logged By: DDB

Checked By:

Remarks and Water Observations

GL (m AOD)

-
Easting:
431894.00
Northing:
562780.00

Fig. No.

HDTP13



TRIAL PIT RECORD

TP No. **HOTP14**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
-

Method : Hand dug trial pit

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark grey very sandy slightly organic CLAY with many rootlets. (Topsoil). End of Trial Pit at 0.25 m	0.25		

Logged By: DDB

Checked By:

Remarks and Water Observations

GL (m AOD)

-
Easting:
431844.00
Northing:
562676.00

Fig. No.

HOTP14



TRIAL PIT RECORD

TP No. **HDTP15**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
-

Method : Hand dug trial pit

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark grey very sandy slightly organic CLAY with many rootlets. (Topsoil). End of Trial Pit at 0.25 m	0.25		

Logged By: DDB

Checked By:

Remarks and Water Observations

GL (m AOD)

-
Easting:
431765.00
Northing:
562586.00

Fig. No.

HDTP15



TRIAL PIT RECORD

TP No. **HDTP16**

Sheet 1 of 1

Site : Monkton Fell, South Tyneside

Contract No:
C4220

Client : Taylor Wimpey (NE) Ltd and Barratt Homes Ltd

Dates:
-

Method : Hand dug trial pit

Scale 1:25

SAMPLE DETAILS

Type	Depth From - To(m)	Vane Results kN/m ²	Groundwater

STRATA RECORD

Description	Depth (m)	Level (mAOD) PID (ppm)	Legend
Friable dark grey very sandy slightly organic CLAY with many rootlets. (Topsoil). End of Trial Pit at 0.25 m	0.25		

Logged By: DDB

Checked By:

Remarks and Water Observations

GL (m AOD)

-
Easting:
431967.00
Northing:
562670.00

Fig. No.

HDTP16



APPENDIX C

LABORATORY TEST RESULTS



2139

Certificate of Analysis



Date: 29/06/2011

Certificate Number: 11-50849

Client: Sirius Geotechnical & Environmental
Russel House
Suite 2
Mill Road
Langley Moor
DH7 8HJ

Our Reference: 11-50849

Client Reference: C4220

Contract Title: Monkton Fell SouthTyneside

Description: 14 soil samples


Date Received: 21/06/2011

Date Started: 21/06/2011

Date Completed: 29/06/2011

Test Procedures: Identified by prefix DETSn, details available upon request.

Notes: Observations and interpretations are outside the scope of UKAS accreditation


Approved By: Mark Hughes, Contracts Manager

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Information in Support of the Analytical Results

Analysis

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425um sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample.

Key

- * Denotes test not included in laboratory scope of accreditation
- # Denotes test that holds MCERTS accreditation, however, MCERTS accreditation is only implied if the report carries the MCERTS logo
- \$ Denotes tests completed by an approved subcontractor
- I/S Denotes insufficient sample to carry out test
- U/S Denotes that the sample is not suitable for testing

Deviating Samples

The laboratory cannot be held responsible for the integrity of sample(s) received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating.

Deviating Sample Criteria is based upon the UKAS note "Guidance on Deviating Samples".

Key

- ! Denotes sample may be deviating due to one or more of the following
- 1 Sample not received in appropriate containers
- 2 Sample exceeded holding times
- 3 Sample received without a Date Sampled
- 4 Sample received without a Time Sampled (Waters only)
- n/a Denotes sample is not deviating

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month

Liquids - 2 weeks

Asbestos (test portion) - 6 months

Our Ref: 11-50849
Client Ref: C4220
Contract Title: Monkton Fell SouthTyneside

Sample ID	Depth	Sample No	Completed	Matrix Description
TP1	0.00-0.25	337644	29/06/2011	brown sandy CLAY frequent rootlets
TP3	0.00-0.25	337645	29/06/2011	brown slightly gravelly sandy CLAY frequent rootlets
TP4	0.00-0.25	337646	29/06/2011	brown gravelly sandy CLAY frequent rootlets
TP5	0.00-0.25	337647	29/06/2011	brown sandy CLAY frequent rootlets
TP7	0.00-0.25	337648	29/06/2011	dark brown sandy CLAY frequent rootlets
TP8	0.00-0.25	337649	29/06/2011	dark brown sandy CLAY frequent rootlets
TP9	0.00-0.25	337650	29/06/2011	dark brown gravelly sandy CLAY frequent rootlets
TP10	0.00-0.25	337651	29/06/2011	dark brown gravelly sandy CLAY odd rootlets
TP11	0.00-0.25	337652	29/06/2011	dark brown slightly gravelly sandy CLAY
TP12	0.00-0.25	337653	29/06/2011	brown sandy CLAY
TP13	0.00-0.25	337654	29/06/2011	dark brown sandy CLAY odd rootlets
TP14	0.00-0.25	337655	29/06/2011	dark brown slightly gravelly sandy CLAY
TP15	0.00-0.25	337656	29/06/2011	dark brown sandy CLAY frequent rootlets
TP16	0.00-0.25	337657	29/06/2011	brown sandy CLAY frequent rootlets

Summary of Chemical Analysis

Soil Samples

Our Ref: 11-50849

Client Ref: C4220

Contract Title: Monkton Fell SouthTyneside

			Lab No.	337644	337645	337646	337647	337648
			Sample ID	TP1	TP3	TP4	TP5	TP7
			Depth	0.00-0.25	0.00-0.25	0.00-0.25	0.00-0.25	0.00-0.25
			Sample Ref					
			Sample Type					
			Sampling Date	16/06/2011	16/06/2011	16/06/2011	16/06/2011	16/06/2011
			Sample Time					
Test	Units	DETSxx						
Deviating Sample				!,2	!,2	!,2	!,2	!,2
Arsenic	mg/kg	DETS 042#		21	17	21	18	20
Cadmium	mg/kg	DETS 042#		1.0	0.9	1.2	1.0	1.1
Chromium	mg/kg	DETS 042#		30	32	28	39	47
Copper	mg/kg	DETS 042#		91	57	73	60	70
Lead	mg/kg	DETS 042#		170	140	170	150	130
Mercury	mg/kg	DETS 081#		0.37	0.42	0.34	0.31	0.24
Nickel	mg/kg	DETS 042#		30	26	27	29	30
Selenium	mg/kg	DETS 042#		1.1	< 0.5	< 0.5	0.8	0.6
Zinc	mg/kg	DETS 042#		110	100	120	98	110
Sulphur (free)	mg/kg	DETS 049#		6.4		< 0.8		2.2
Total Sulphate as SO4	%	DETS 075#		0.09	0.09	0.06	0.09	0.06
Sulphate Aqueous Extract as SO4	mg/l	DETS 076#		72	34	34	39	26
Total Organic Carbon	%	DETS 002#		8.1	7.9	6.1	9.4	6.1
pH		DETS 008#		6.0	5.8	6.0	5.2	5.7
Acenaphthene	mg/kg	DETS 050		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	DETS 050		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	DETS 050		< 0.1	0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	DETS 050		< 0.1	0.3	0.3	0.4	0.2
Benzo(a)pyrene	mg/kg	DETS 050		0.2	0.3	0.2	0.4	0.5
Benzo(b)fluoranthene	mg/kg	DETS 050		0.2	0.2	0.1	0.1	0.2
Benzo(k)fluoranthene	mg/kg	DETS 050		< 0.1	< 0.1	< 0.1	< 0.1	0.2
Benzo(g,h,i)perylene	mg/kg	DETS 050		0.2	0.3	0.3	0.2	0.3
Chrysene	mg/kg	DETS 050		0.3	0.4	0.5	0.7	0.4
Dibenzo(a,h)anthracene	mg/kg	DETS 050		0.1	0.2	0.1	0.1	0.2
Fluoranthene	mg/kg	DETS 050		0.6	0.5	0.3	0.4	0.4
Fluorene	mg/kg	DETS 050		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	mg/kg	DETS 050		0.3	0.4	0.3	0.4	0.3
Naphthalene	mg/kg	DETS 050		< 0.1	< 0.1	< 0.1	< 0.1	0.2
Phenanthrene	mg/kg	DETS 050		0.3	0.5	0.2	0.3	0.6
Pyrene	mg/kg	DETS 050		0.3	0.9	0.5	0.6	0.5
PAH	mg/kg	DETS 050		2.8	4.5	2.7	4.0	4.3
Phenol - Monohydric	mg/kg	DETS 067#		< 0.3	0.6	< 0.3	0.5	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref: 11-50849

Client Ref: C4220

Contract Title: Monkton Fell SouthTyneside

			Lab No.	337649	337650	337651	337654	337655
			Sample ID	TP8	TP9	TP10	TP13	TP14
			Depth	0.00-0.25	0.00-0.25	0.00-0.25	0.00-0.25	0.00-0.25
			Sample Ref					
			Sample Type					
			Sampling Date	16/06/2011	16/06/2011	16/06/2011	16/06/2011	16/06/2011
			Sample Time					
Test	Units	DETSxx						
Deviating Sample				!,2	!,2	!,2	!,2	!,2
Arsenic	mg/kg	DETS 042#		19	19	17	18	18
Cadmium	mg/kg	DETS 042#		1.1	1.5	1.0	1.1	1.1
Chromium	mg/kg	DETS 042#		42	42	39	36	37
Copper	mg/kg	DETS 042#		98	95	59	50	56
Lead	mg/kg	DETS 042#		340	190	130	120	130
Mercury	mg/kg	DETS 081#		0.26	0.28	0.19	0.17	0.27
Nickel	mg/kg	DETS 042#		24	32	25	23	23
Selenium	mg/kg	DETS 042#		0.7	0.7	0.9	< 0.5	0.7
Zinc	mg/kg	DETS 042#		120	230	120	120	130
Sulphur (free)	mg/kg	DETS 049#			3.0		3.7	< 0.8
Total Sulphate as SO4	%	DETS 075#		0.07	0.08	0.07	0.07	0.06
Sulphate Aqueous Extract as SO4	mg/l	DETS 076#		30	35	21	48	42
Total Organic Carbon	%	DETS 002#		8.0	6.4	5.7	5.7	4.5
pH		DETS 008#		6.1	7.2	6.3	6.4	7.0
Acenaphthene	mg/kg	DETS 050		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	DETS 050		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	DETS 050		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	DETS 050		0.3	0.3	< 0.1	0.1	0.3
Benzo(a)pyrene	mg/kg	DETS 050		0.3	0.5	0.2	0.2	0.3
Benzo(b)fluoranthene	mg/kg	DETS 050		0.7	1.1	0.3	0.3	0.5
Benzo(k)fluoranthene	mg/kg	DETS 050		0.1	0.2	< 0.1	< 0.1	0.1
Benzo(g,h,i)perylene	mg/kg	DETS 050		0.1	< 0.1	< 0.1	0.4	0.4
Chrysene	mg/kg	DETS 050		0.4	0.1	0.1	0.1	0.2
Dibenzo(a,h)anthracene	mg/kg	DETS 050		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	DETS 050		0.5	0.4	0.2	0.2	0.7
Fluorene	mg/kg	DETS 050		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	mg/kg	DETS 050		0.1	< 0.1	< 0.1	0.2	0.2
Naphthalene	mg/kg	DETS 050		0.2	< 0.1	< 0.1	0.1	< 0.1
Phenanthrene	mg/kg	DETS 050		0.4	0.2	0.1	0.2	0.3
Pyrene	mg/kg	DETS 050		0.4	0.3	0.1	0.2	0.6
PAH	mg/kg	DETS 050		3.6	3.2	< 1.6	2.1	3.7
Phenol - Monohydric	mg/kg	DETS 067#		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref: 11-50849

Client Ref: C4220

Contract Title: Monkton Fell SouthTyneside

Lab No.	337656	337657
Sample ID	TP15	TP16
Depth	0.00-0.25	0.00-0.25
Sample Ref		
Sample Type		
Sampling Date	16/06/2011	16/06/2011
Sample Time		

Test	Units	DETSxx		
Deviating Sample			!,2	!,2
Arsenic	mg/kg	DETS 042#	20	24
Cadmium	mg/kg	DETS 042#	1.0	1.2
Chromium	mg/kg	DETS 042#	41	50
Copper	mg/kg	DETS 042#	73	71
Lead	mg/kg	DETS 042#	140	160
Mercury	mg/kg	DETS 081#	0.25	0.33
Nickel	mg/kg	DETS 042#	27	28
Selenium	mg/kg	DETS 042#	1.6	1.1
Zinc	mg/kg	DETS 042#	150	130
Sulphur (free)	mg/kg	DETS 049#	12	5.9
Total Sulphate as SO4	%	DETS 075#	0.14	0.14
Sulphate Aqueous Extract as SO4	mg/l	DETS 076#	150	160
Total Organic Carbon	%	DETS 002#	11	7.4
pH		DETS 008#	6.9	6.2
Acenaphthene	mg/kg	DETS 050	< 0.1	< 0.1
Acenaphthylene	mg/kg	DETS 050	< 0.1	< 0.1
Anthracene	mg/kg	DETS 050	0.2	< 0.1
Benzo(a)anthracene	mg/kg	DETS 050	0.9	< 0.1
Benzo(a)pyrene	mg/kg	DETS 050	0.9	0.1
Benzo(b)fluoranthene	mg/kg	DETS 050	1.4	0.3
Benzo(k)fluoranthene	mg/kg	DETS 050	0.4	< 0.1
Benzo(g,h,i)perylene	mg/kg	DETS 050	0.5	< 0.1
Chrysene	mg/kg	DETS 050	0.8	< 0.1
Dibenzo(a,h)anthracene	mg/kg	DETS 050	< 0.1	< 0.1
Fluoranthene	mg/kg	DETS 050	1.2	0.2
Fluorene	mg/kg	DETS 050	0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	mg/kg	DETS 050	0.6	< 0.1
Naphthalene	mg/kg	DETS 050	0.3	< 0.1
Phenanthrene	mg/kg	DETS 050	1.0	0.2
Pyrene	mg/kg	DETS 050	1.0	0.2
PAH	mg/kg	DETS 050	9.5	< 1.6
Phenol - Monohydric	mg/kg	DETS 067#	0.4	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref: 11-50849

Client Ref: C4220

Contract Title: Monkton Fell SouthTyneside

Lab No.	337652	337653
Sample ID	TP11	TP12
Depth	0.00-0.25	0.00-0.25
Sample Ref		
Sample Type		
Sampling Date	16/06/2011	16/06/2011
Sample Time		

Test	Units	DETSxx		
Deviating Sample			n/a	n/a
Dichlorvos	mg/kg	DETSM-138*	< 0.1	< 0.1
Mevinphos	mg/kg	DETSM-138*	< 0.1	< 0.1
Demeton-O	mg/kg	DETSM-138*	< 0.1	< 0.1
Ethoprop	mg/kg	DETSM-138*	< 0.1	< 0.1
Naled	mg/kg	DETSM-138*	< 0.1	< 0.1
Phorate	mg/kg	DETSM-138*	< 0.1	< 0.1
Demeton-S	mg/kg	DETSM-138*	< 0.1	< 0.1
Diazinon	mg/kg	DETSM-138*	< 0.1	< 0.1
Disulfoton	mg/kg	DETSM-138*	< 0.1	< 0.1
Methylparathion	mg/kg	DETSM-138*	< 0.1	< 0.1
Ronnel	mg/kg	DETSM-138*	< 0.1	< 0.1
Fenthion	mg/kg	DETSM-138*	< 0.1	< 0.1
Chlopyrifos	mg/kg	DETSM-138*	< 0.1	< 0.1
Trichlorinate	mg/kg	DETSM-138*	< 0.1	< 0.1
Merphos	mg/kg	DETSM-138*	< 0.1	< 0.1
Stirofos	mg/kg	DETSM-138*	< 0.1	< 0.1
Tokuthion	mg/kg	DETSM-138*	< 0.1	< 0.1
Fensulfothion	mg/kg	DETSM-138*	< 0.1	< 0.1
Bolstar	mg/kg	DETSM-138*	< 0.1	< 0.1
Azinphos methyl	mg/kg	DETSM-138*	< 0.1	< 0.1
Coumaphos	mg/kg	DETSM-138*	< 0.1	< 0.1
alpha-BHC	mg/kg	DETSM-139*	< 0.1	< 0.1
gamma-BHC (Lindane)	mg/kg	DETSM-139*	< 0.1	< 0.1
beta-BHC	mg/kg	DETSM-139*	< 0.1	< 0.1
delta-BHC	mg/kg	DETSM-139*	< 0.1	< 0.1
Heptachlor	mg/kg	DETSM-139*	< 0.1	< 0.1
Aldrin	mg/kg	DETSM-139*	< 0.1	< 0.1
Heptachlor epoxide	mg/kg	DETSM-139*	< 0.1	< 0.1
gamma-Chlordane	mg/kg	DETSM-139*	< 0.1	< 0.1
Endosulphan I & Alpha-chlorodane	mg/kg	DETSM-139*	< 0.1	< 0.1
4,4-DDE	mg/kg	DETSM-139*	< 0.1	< 0.1
Dieldrin	mg/kg	DETSM-139*	< 0.1	< 0.1
Endrin	mg/kg	DETSM-139*	< 0.1	< 0.1
Endosulphan II & 4,4-DDD	mg/kg	DETSM-139*	< 0.1	< 0.1
Endrin aldehyde	mg/kg	DETSM-139*	< 0.1	< 0.1
4,4-DDT	mg/kg	DETSM-139*	< 0.1	< 0.1
Endosulphan sulphate	mg/kg	DETSM-139*	< 0.1	< 0.1
Methoxychlor	mg/kg	DETSM-139*	< 0.1	< 0.1
Endrin ketone	mg/kg	DETSM-139*	< 0.1	< 0.1

Appendix A - Details of Analysis

Method details are shown only for those determinants listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS.

No Recovery Factors are used in the determination of results. Results reported assume 100% recovery

Full method statements are available on request.

<u>Method</u>	<u>Name of Parameter</u>	<u>Units</u>	<u>Limit of Detection</u>	<u>Sample Preparation</u>	<u>Sub-Contracted</u>	<u>UKAS</u>	<u>MCERTS</u>
DETS 002	Organic Matter	%	0.01	Air Dried	No	Yes	Yes
DETS 003	Loss on Ignition	%	0.01	Air Dried	No	Yes	Yes
DETS 004	Total Sulphate	%	0.01	Air Dried	No	Yes	Yes
DETS 075	Total Sulphate	%	0.01	Air Dried	No	Yes	Yes
DETS 004	Water Soluble Sulphate	mg/l	10.00	Air Dried	No	Yes	Yes
DETS 076	Water Soluble Sulphate	mg/l	10.00	Air Dried	No	Yes	Yes
DETS 006	Chloride	mg/kg	0.01	Air Dried	No	Yes	Yes
DETS 008	pH	pH Units	0.10	Air Dried	No	Yes	Yes
DETS 042	Selenium	mg/kg	0.50	Air Dried	No	Yes	Yes
DETS 019	Ammonia	mg/kg	0.02	Air Dried	No	Yes	Yes
DETS 020	Boron (Water Soluble)	mg/kg	0.20	Air Dried	No	Yes	Yes
DETS 024	Sulphide	mg/kg	10.00	Air Dried	No	Yes	Yes
DETS 042	Antimony	mg/kg	1.00	Air Dried	No	No	No
DETS 042	Arsenic	mg/kg	0.20	Air Dried	No	Yes	Yes
DETS 042	Barium	mg/kg	1.50	Air Dried	No	Yes	Yes
DET S 042	Beryllium	mg/kg	0.20	Air Dried	No	Yes	Yes
DETS 042	Cadmium	mg/kg	0.10	Air Dried	No	Yes	Yes

DETS 042	Cobalt	mg/kg	0.70	Air Dried	No	Yes	Yes
DETS 042	Copper	mg/kg	0.20	Air Dried	No	Yes	Yes
DETS 042	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETS 042	Iron	mg/kg	1.00	Air Dried	No	Yes	No
DETS 042	Lead	mg/kg	0.30	Air Dried	No	Yes	Yes
DETS 042	Manganese	mg/kg	20.00	Air Dried	No	Yes	Yes
DETS 081	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETS 042	Molybdenum	mg/kg	0.40	Air Dried	No	Yes	Yes
DETS 042	Nickel	mg/kg	0.20	Air Dried	No	Yes	Yes
DETS 042	Thallium	mg/kg	1.00	Air Dried	No	No	No
DETS 042	Vanadium	mg/kg	0.80	Air Dried	No	Yes	Yes
DETS 042	Zinc	mg/kg	1.00	Air Dried	No	Yes	Yes
DETS 049	Sulphur (Free)	mg/kg	0.50	As Received	No	Yes	Yes
DETS 050	PAH	mg/kg	0.10	As Received	No	Yes	No
DETS 051	TPH (C10 - C40)	mg/kg	20.00	As Received	No	Yes	Yes
DETS 052	PCB	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzne	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 067	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes

DETS 067	Easily Liberatable Cyanide	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 067	Complex Cyanide	mg/kg	0.30	Air Dried	No	Yes	No
DETS 067	Total Cyanide	mg/kg	0.40	Air Dried	No	Yes	Yes
DETS 067	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETS 068	VOC	mg/kg	0.01	As Received	No	No	No



LABORATORY REPORT



4043

Contract Number: PSL11/2208

Client's Reference:

Report Date: 22 September 2011

Client Name: Sirius Durham
Suite 2, Russel House
Mill Road
Langley Moor
Durham
DH7 8HJ

For the attention of: Dave Brookes

Contract Title: Monkton Fell

Date Received: 06-September-11
Date Commenced: 06-September-11
Date Completed: 22-September-11

Notes: Observations and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:





R Gunson
(Director)

A Watkins
(Director)

M Beastall
(Laboratory Manager)

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Depth m	Description of Sample
TP1		D	0.80	Dark brown mottled pale brown very gravelly sandy very silty CLAY.
TP5		B	0.90	Brown gravelly sandy CLAY.
TP9		D	0.90	Dark brown mottled grey gravelly sandy CLAY.
TP11		D	0.90	Dark brown mottled grey gravelly sandy CLAY.
TP17		D	0.70	Dark brown mottled grey gravelly slightly sandy CLAY.
TP18		D	0.90	Dark brown mottled grey gravelly sandy CLAY.
TP21		B	0.80	Dark brown mottled grey gravelly slightly sandy CLAY.
TP24		D	0.60	Brown mottled grey gravelly sandy CLAY.
TP30		D	1.10	Dark brown mottled grey gravelly sandy CLAY.
TP32		D	0.80	Brown mottled grey gravelly slightly sandy CLAY.
TP35		D	0.90	Dark brown mottled grey gravelly sandy CLAY.
TP39		D	0.80	Brown mottled grey gravelly sandy CLAY.
TP40		B	0.70	Dark brown mottled grey gravelly sandy CLAY.
TP43		D	1.30	Dark brown mottled grey gravelly sandy CLAY.
TP46		D	0.80	Dark brown mottled grey gravelly sandy CLAY.

 Professional Soils Laboratory	Compiled by	Date	Checked by	Date	Approved by	Date
		21/09/11		22/09/11		22/09/11
	MONKTON FELL.					Contract No:
					Client Ref:	C4220




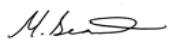
SUMMARY OF SOIL CLASSIFICATION TESTS

(B.S. 1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Depth m	Moisture Content % <small>Clause 3.2</small>	Bulk Density Mg/m ³ <small>Clause 7.2</small>	Dry Density Mg/m ³ <small>Clause 7.2</small>	Particle Density Mg/m ³ <small>Clause 8.</small>	Liquid Limit % <small>Clause 4.3/4.4</small>	Plastic Limit % <small>Clause 5.</small>	Plasticity Index % <small>Clause 6.</small>	% Passing .425mm	Remarks
TP1		D	0.80	18				41	17	24	78	Intermediate plasticity CI.
TP5		B	0.90	17				38	17	21	71	Intermediate plasticity CI.
TP9		D	0.90	20				50	20	30	83	Intermediate plasticity CI.
TP11		D	0.90	20				47	20	27	80	Intermediate plasticity CI.
TP17		D	0.70	24				59	21	38	81	High plasticity CH.
TP18		D	0.90	21				49	20	29	78	Intermediate plasticity CI.
TP21		B	0.80	22				56	20	36	84	High plasticity CH.
TP24		D	0.60	22				49	18	31	87	Intermediate plasticity CI.
TP30		D	1.10	17				46	19	27	85	Intermediate plasticity CI.
TP32		D	0.80	25				67	25	42	80	High plasticity CH.
TP35		D	0.90	20				52	21	31	78	High plasticity CH.
TP39		D	0.80	21				50	20	30	85	Intermediate plasticity CI.
TP40		B	0.70	22				50	19	31	82	Intermediate plasticity CI.
TP43		D	1.30	21				48	19	29	86	Intermediate plasticity CI.
TP46		D	0.80	23				55	22	33	84	High plasticity CH.

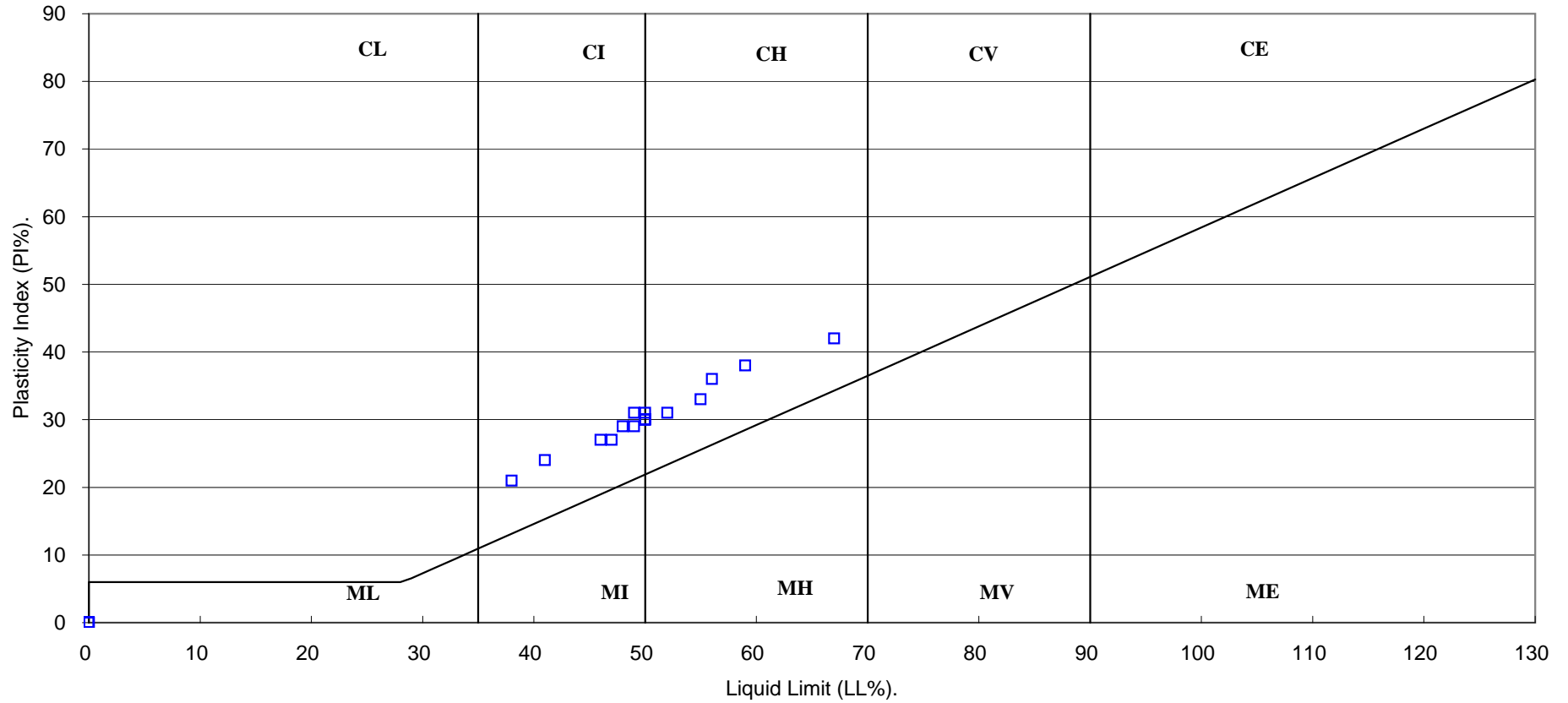
SYMBOLS : NP : Non Plastic

* : Liquid Limit and Plastic Limit Wet Sieved.

	Compiled by	Date	Checked by	Date	Approved by	Date
		21/09/11		22/09/11		22/09/11
	MONKTON FELL.					Contract No:
					Client Ref:	C4220

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.

(B.S.5930 : 1999)



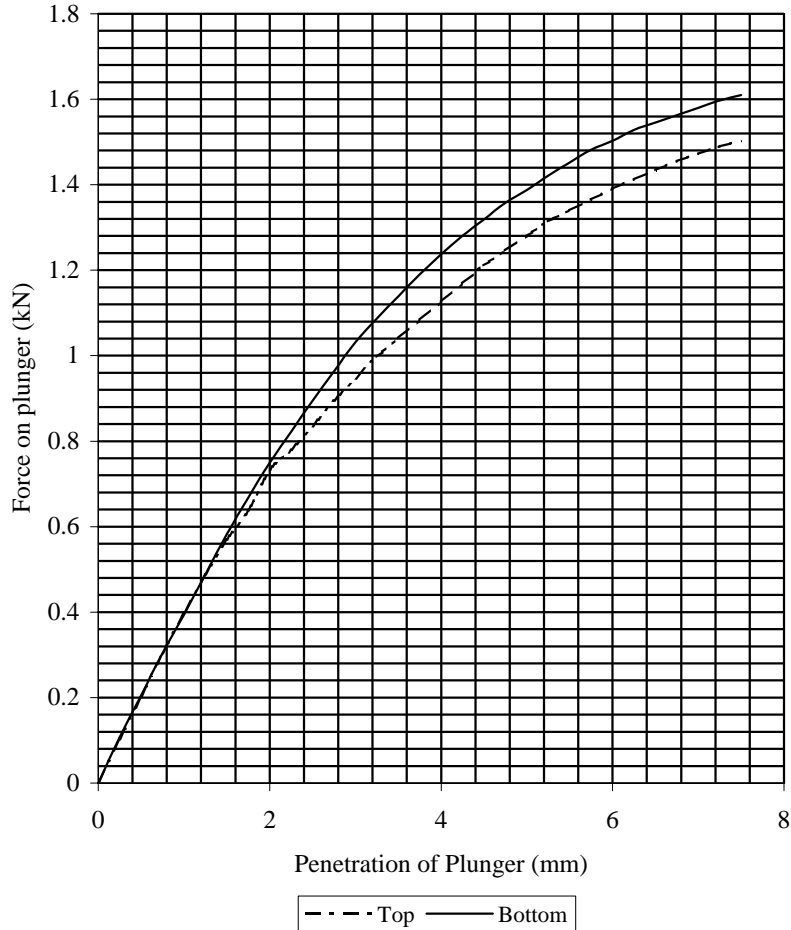
Compiled by	Date	Checked by	Date	Approved by	Date
<i>[Signature]</i>	21/09/11	<i>[Signature]</i>	22/09/11	<i>[Signature]</i>	22/09/11
MONKTON FELL.				Contract No:	PSL11/2208
				Client Ref:	C4220

California Bearing Ratio Test.

BS 1377 : Part 4 : 1990

Hole Number: **TP5** Depth (m): **0.90**

Sample Number: Sample Type: **B**



Initial Sample Conditions		Test Conditions		Method of compaction 2.5Kg Rammer			
Moisture Content:	17	Surcharge Kg:	4.20	Final Moisture Content %		C.B.R. Value %	
Bulk Density Mg/m3:	2.09	Soaking Time hrs	0	Sample Top	17	Sample Top	6.4
Dry Density Mg/m3:	1.78	Swelling mm:	0	Sample Bottom	17	Sample Bottom	6.9
Percentage retained on 20mm BS test sieve:	0	Remarks: See Summary of Soil Description.					

Checked by	Date	Approved By	Date
<i>H. S.</i>	22/09/11	<i>H. S.</i>	22/09/11

	MONKTON FELL.	Contract No. PSL11/2208
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ANALYTICAL TEST REPORT

Contract no: 43334
Contract name: Monkton Fell
Client reference: PSL11/2208
Clients name: Professional Soils Laboratory
Clients address: 5-7 Hexthorpe Road
Doncaster
DN4 0AG

Samples received: 07 September 2011

Analysis started: 07 September 2011

Analysis completed: 12 September 2011

Report issued: 13 September 2011

Notes: Opinions and interpretations expressed herein are outside the UKAS accreditation scope. Unless otherwise stated, Chemtech Environmental Ltd were not responsible for sampling. Methods, procedures and performance data are available on request. Results reported herein relate only to the material supplied to the laboratory. This report shall not be reproduced except in full, without prior written approval. Samples will be disposed of 6 weeks from initial receipt unless otherwise instructed.

Key: U UKAS accredited test
M MCERTS & UKAS accredited test
\$ Test carried out by an approved subcontractor
I/S Insufficient sample to carry out test
N/S Sample not suitable for testing

Approved by: *K Campbell*

Karan Campbell	John Campbell
Director	Director

Chemtech Environmental Limited

SOILS

Lab number			43334-1	43334-2	43334-3	43334-4	43334-5	43334-6
Sample id			TP 1	TP 5	TP 9	TP 11	TP 17	TP 24
Depth (m)			0.80	0.90	0.90	0.90	0.70	0.60
Test	Method	Units						
pH	CE004 ^M	units	8.6	8.6	8.4	8.1	8.1	8.3
Sulphate (2:1 water soluble)	CE049 ^U	g/l SO ₄	0.04	0.03	0.06	0.04	0.14	0.03

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SOILS

Lab number			43334-7	43334-8	43334-9	43334-10
Sample id			TP 30	TP 32	TP 39	TP 46
Depth (m)			1.10	0.80	0.80	0.80
Test	Method	Units				
pH	CE004 ^M	units	8.4	7.8	7.9	8.2
Sulphate (2:1 water soluble)	CE049 ^U	g/l SO ₄	0.09	0.08	0.07	0.07

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METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	STATUS	LOD	UNITS
CE004	pH	Based on BS 1377, pH Meter	M	-	units
CE049	Sulphate (2:1 water soluble)	Aqueous extraction, IC-COND	U	0.01	g/l SO ₄



APPENDIX D

GROUND GAS AND GROUNDWATER MONITORING RESULTS

Ground Gas and Groundwater Monitoring Record Sheet



JOB DETAILS:

Client:
Site: Monkton Lane, Monkton, South Tyneside
Date: 21/09/2011

Job No: C4220
Visit No: 2 of 4 over 3 months
Operator: **Project Manager:** DB

Monitoring Point	GAS CONCENTRATIONS												VOLATILES		FLOW DATA			Worst-credible GSVs		WELL AND WATER DATA					Comments	
	Methane (%v/v)		%LEL		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Methane (l/hr)	CO2 (l/hr)	Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)		Response Zone
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady	Peak	Steady	Peak	Steady										
WS1	ND	ND	ND	ND	1.3	1.3	ND	ND	ND	ND	20.2	20.2			-0.2	-0.2			#VALUE!	-0.0026	2.96					
WS2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	21.4	21.4			0.2	0.2			#VALUE!	#VALUE!	0.98					
WS3	ND	ND	ND	ND	0.3	0.3	ND	ND	ND	ND	20.9	20.9			0.1	0.1			#VALUE!	0.0003	2.48					
																			0	0						
																			0	0						
																			0	0						
																			0	0						
																			0	0						
																			0	0						
																			0	0						
																			0	0						
																			0	0						
																			0	0						
																			0	0						
																			0	0						
Max	0	0	0	0	1.3	1.3	0	0	0	0	21.4	21.4	0	0	0.2	0.2	0	0	#VALUE!	#VALUE!	2.96	0	0	0.00		
Min	0	0	0	0	0.3	0.3	0	0	0	0	20.2	20.2	0	0	-0.2	-0.2	0	0	#VALUE!	#VALUE!	0.98	0	0	0.00		
ND - Not detected																			Worst-possible GSVs							
NR - Not recorded																			0	0.0026						

METEOROLOGICAL AND SITE INFORMATION:

(Select correct box with X or enter data, as applicable)

State of ground: Dry Moist Wet Snow Frozen

Wind: Calm Light Moderate Strong

Cloud cover: None Slight Cloudy Overcast

Precipitation: None Slight Moderate Heavy

Time monitoring performed: Start End

Barometric pressure (mbar): 1009 Start 1009 End

Pressure trend: Falling Steady Rising

Air Temperature (Deg. C): 13 Before 13 After

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter: LMSX Multigas Analyser O2/20.4

Gas Range: CH4 CO2 O2

Gas Flow range:

Differential Pressure:

Date of last calibration: 01/09/2011

Date of next calibration:

PID:

Calibrated range:

Calibration gas:

Response time:

Accuracy:

Date of last calibration:

Date of next calibration:



APPENDIX E

SIRIUS GENERIC ASSESSMENT CRITERIA

SIRIUS GENERIC ASSESSMENT CRITERIA

LEGISLATIVE AND RISK ASSESSMENT FRAMEWORK

Under the Town and Country Planning Legislation, in order that a site may be redeveloped, the site needs to be suitable for its intended use. Part IIA of the Environmental Protection Act 1990 (EPA) provides a legal framework for identifying and dealing with contaminated land.

The Contaminated Land (England) Regulations 2000 were issued in accordance with the provision with the EPA. The regulations define Contaminated Land as land “in such condition, by reason of substances in, on, or under the land, that: significant harm is being caused, or pollution of controlled waters is being or is likely to be caused”.

In the UK the determination of whether land can be classified as contaminated land and whether land is suitable for its intended use are both based upon risk assessment. The methodology for undertaking such risk assessments has been published by DEFRA and the Environment Agency. This is based upon the concept of potential source-pathway-receptor relationships to determine whether there are pollutant linkages operating in a particular end use.

The framework for conducting site investigations, risk assessments and undertaking any necessary remedial works is presented in the Environment Agency report CLR11 “Model Procedures for the Management of Contaminated Land”. This presents a tiered approach to risk assessment: analysis of potential pollutant linkages via a Conceptual Site Model; comparison of contaminant concentrations with Soil Guideline Values or other Generic Assessment Criteria (Generic Quantitative Risk Assessment; GQRA); and, if required, a Detailed Quantitative Risk Assessment (DQRA) based on site-specific conditions.

Human Health

Where Soil Guideline Values (SGV) have been published by the Environment Agency, these have been used by Sirius as the basis for human health Generic Assessment Criteria (GAC).

For metals and metalloids, SGVs have been applied directly for the “Residential With Plant Uptake” and “Commercial” land uses as the SGVs are not sensitive to soil type nor soil organic matter content. For the “Residential Without Plant Uptake” land use, GAC values have been derived by Sirius using CLEA versions 1.04 and 1.06, the contaminant parameter values presented in the SGV reports and the relevant guidance presented in the Environment Agency Science Report SC050021 series. For organics, GAC values have been derived using the same approach for a sandy soil type at a range of SOM contents. The sandy soil type is conservative for the majority of soils (including made ground) encountered on historically contaminated sites.

In the absence of published SGVs, Sirius has normally derived GAC values using CLEA versions 1.04 and 1.06 and the authoritative parameter data presented in Nathanail *et al.* (2009) “The LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment”, 2nd edition, Land Quality Press, Nottingham.

Where neither SGVs nor authoritative third party reports were available, GAC values were derived by Sirius using the CLEA version 1.04 and 1.06 models in accordance with the guidance published by the Environment Agency in the SC050021 report series. Full details of the derivation of these GAC values can be provided upon request.

Controlled Waters

The Environment Agency’s “Methodology for the Derivation of Remedial Targets for Soil and Groundwater to Protect Water Resources”, R&D Publication 20, provides a framework for assessing the potential for pollution of controlled waters and for deriving remedial target concentrations in soil and groundwater. In relation to the standards for controlled waters, there are currently no generic groundwater nor surface water standards that are applicable to all sites. However, the UK Drinking Water Standards and the Environment Agency’s national Environmental Quality Standards (EQS) are considered appropriate assessment criteria for many cases.

Soil Leachability

A screening assessment has been carried out using leachability data obtained from tests performed on soils at the site, to assess the potential risks to local controlled waters, including groundwater. The Environment Agency’s Remedial Targets

Methodology recommends the use of the BS EN 12475 leachate methods and this is adopted by Sirius.

The results of the leachate analysis have been compared to relevant criteria derived from Environment Agency (2002) "Technical Advice to Third Parties on Pollution of Controlled Waters for Part IIA, EPA1990" and The Water Supply (Water Quality) Regulations 1989, as amended (2001 and 2007).

Buried Concrete

A generic assessment is made in relation to the potential impact on buried concrete by reference to BRE Special Digest No. 1; 3rd Edition (2005) "Concrete in Aggressive Ground".

SIRIUS HUMAN HEALTH GENERIC ASSESSMENT CRITERIA – SOILS

Parameter	Residential (mg/kg, unless otherwise stated)						Commercial / Industrial (mg/kg, unless otherwise stated)			Source
	With Plant Uptake			Without Plant Uptake			1% SOM	2.5% SOM	5% SOM	
	1% SOM	2.5% SOM	5% SOM	1% SOM	2.5% SOM	5% SOM				
Metals/Metalloids										
Arsenic (inorganic)	32			35			640			Arsenic SGV ^(a)
Boron	290			10300			190000			Sirius/LQM/CIEH ^(b)
Cadmium ^(c)	10			18			230			Cadmium SGV
Chromium (III) ^(d)	3000			3000			30000			Sirius/LQM/CIEH
Copper	200 ^(e)			6200			72000			See note ^(a)
Lead	450			450			750			SGV10 ^(f)
Mercury (inorganic) ^(g)	170			240			3600			Mercury SGV
Nickel	130			130			1800			Nickel SGV
Selenium	350			600			13000			Selenium SGV
Vanadium	74			190			3200			Sirius/LQM/CIEH
Zinc	450 ^(e)			40000			600000			See note ^(a)
Other Inorganics										
pH	<5			<5			<5			
Total Sulphate	2400			2400			2400			BRE (2005) ^(h)
Water-Soluble Sulphate	0.5 g/l			0.5 g/l			0.5 g/l			BRE (2005)
Free Cyanide	34			34			1400			Acute risk calc. ⁽ⁱ⁾
Organics										
PAHs										
Acenaphthene	200	460	840	1400	2400	3200	77000	93000	100000	Sirius/LQM/CIEH
Acenaphthylene	160	380	710	1400	2400	3200	77000	93000	100000	Sirius/LQM/CIEH
Anthracene	2200	4900	8200	19000	22000	23000	520000	540000	540000	Sirius/LQM/CIEH
Benzo(a)anthracene	3.3	4.9	5.8	4.1	5.5	6.2	91	96	98	Sirius/LQM/CIEH
Benzo(a)pyrene	0.83	0.94	1.0	1.0	1.0	1.0	14	14	15	Sirius/LQM/CIEH
Benzo(b)fluoranthene	5.6	6.5	7.0	7.0	7.3	7.4	100	100	100	Sirius/LQM/CIEH
Benzo(g,h,i)perylene	44	46	47	47	47	48	660	660	660	Sirius/LQM/CIEH
Benzo(k)fluoranthene	8.5	9.6	10	10	10	10	140	140	140	Sirius/LQM/CIEH

Parameter	Residential (mg/kg, unless otherwise stated)						Commercial / Industrial (mg/kg, unless otherwise stated)			Source
	With Plant Uptake			Without Plant Uptake			1% SOM	2.5% SOM	5% SOM	
	1% SOM	2.5% SOM	5% SOM	1% SOM	2.5% SOM	5% SOM				
Chrysene	6.1	8.1	9.1	9.0	9.8	10	140	140	140	Sirius/LQM/CIEH
Dibenz(a,h)anthracene	0.77	0.86	0.90	0.87	0.91	0.93	13	13	13	Sirius/LQM/CIEH
Fluoranthene	260	460	630	980	1000	1000	23000	23000	23000	Sirius/LQM/CIEH
Fluorene	160	370	660	1500	2200	2600	61000	67000	70000	Sirius/LQM/CIEH
Indeno(1,2,3-cd)pyrene	3.2	3.9	4.1	4.2	4.4	4.4	61	62	62	Sirius/LQM/CIEH
Naphthalene	0.68	1.6	3.2	0.7	1.7	3.3	110	270	540	Sirius/LQM/CIEH
Phenanthrene	92	200	330	820	920	960	22000	22000	23000	Sirius/LQM/CIEH
Pyrene	560	1000	1500	2300	2400	2400	54000	54000	55000	Sirius/LQM/CIEH
BTEX and related										
Benzene	0.054	0.11	0.20	0.11	0.21	0.38	16	30	52	Sirius/CLEA ^{II}
Toluene	92	210	410	260	570	1070	840	1900	3600	Sirius/CLEA
Ethylbenzene	42	100	200	70	160	320	510	1200	2400	Sirius/CLEA
Xylenes (total) ^(K)	20	47	92	22	52	100	470	1100	2200	Sirius/CLEA
1,2,4-trimethylbenzene	0.16	0.39	0.76	0.17	0.41	0.81	23	55	110	Sirius/CLEA/EIC ^(II)
Iso-propylbenzene	4.7	11	23	4.8	12	23	750	1800	3600	Sirius/CLEA/EIC
Propylbenzene	15	37	54	16	40	79	2200	5400	10400	Sirius/CLEA/EIC
Styrene	6.1	14	28	15	34	65	2000	4100	6900	Sirius/CLEA/EIC
TPH										
Aliphatic EC 5-6	17	28	47	29	53	93	2500	4300	7200	Sirius/LQM/CIEH
Aliphatic EC >6-8	36	77	150	70	160	300	5500	12000	22000	Sirius/LQM/CIEH
Aliphatic EC >8-10	8.8	22	42	18	44	88	1300	3200	6300	Sirius/LQM/CIEH
Aliphatic EC >10-12	43	110	210	90	220	440	6400	15000	29000	Sirius/LQM/CIEH
Aliphatic EC >12-16	350	850	1600	720	1600	2700	44000	73000	85000	Sirius/LQM/CIEH
Aliphatic EC >16-35	29000	48000	62000	44000	64000	74000	No GAC ^(III)	No GAC	No GAC	Sirius/LQM/CIEH
Aliphatic EC >35-44	29000	48000	62000	44000	64000	74000	No GAC	No GAC	No GAC	Sirius/LQM/CIEH
Aromatic EC >5-7	0.054	0.11	0.20	0.11	0.21	0.38	16	30	52	Set as benzene
Aromatic EC >7-8	92	210	410	610	1290	2300	35000	71000	120000	Sirius/LQM/CIEH

Parameter	Residential (mg/kg, unless otherwise stated)						Commercial / Industrial (mg/kg, unless otherwise stated)			Source
	With Plant Uptake			Without Plant Uptake			1% SOM	2.5% SOM	5% SOM	
	1% SOM	2.5% SOM	5% SOM	1% SOM	2.5% SOM	5% SOM				
Aromatic EC >8-10	14	34	68	32	78	150	2300	5400	10000	Sirius/LQM/CIEH
Aromatic EC >10-12	54	130	250	170	400	730	11000	23000	30000	Sirius/LQM/CIEH
Aromatic EC >12-16	140	300	520	1200	1600	1700	35000	37000	38000	Sirius/LQM/CIEH
Aromatic EC >16-21	250	480	710	1300	1300	1300	28000	28000	28000	Sirius/LQM/CIEH
Aromatic EC >21-35	890	1100	1200	1300	1300	1300	28000	28000	28000	Sirius/LQM/CIEH
Aromatic EC >35-44	890	1100	1200	1300	1300	1300	28000	28000	28000	Sirius/LQM/CIEH
Chlorinated Organics										
Chlorobenzene	0.14	0.31	0.61	0.14	0.31	0.61	33	75	150	Sirius/LQM/CIEH
Dichloromethane (DCM)	0.41	0.7	1.0	0.83	1.2	1.7	140	200	290	Sirius/CLEA/EIC
1,1-dichloroethane (DCA)	1.0	1.7	2.8	1.0	1.7	2.9	150	250	420	Sirius/CLEA/EIC
1,2-dichloroethane (DCA)	0.0022	0.0035	0.0055	0.0024	0.0037	0.0059	0.36	0.55	0.86	Sirius/LQM/CIEH
1,1-dichloroethene (DCE)	0.10	0.18	0.32	0.10	0.18	0.32	15	28	48	Sirius/CLEA/EIC
<i>cis</i> -1,2-dichloroethene (DCE)	0.05	0.08	0.14	0.05	0.09	0.19	7.7	14	24	Sirius/CLEA/EIC
<i>trans</i> -1,2-dichloroethene (DCE)	0.08	0.15	0.27	0.08	0.15	0.27	12	23	41	Sirius/CLEA/EIC
Pentachlorophenol	0.54	1.3	2.5	23	31	35	1200	1300	1400	Sirius/LQM/CIEH
1,1,1,2-tetrachloroethane	0.41	0.96	1.9	0.44	1.0	2	63	150	280	Sirius/LQM/CIEH
1,1,1,2,2-tetrachloroethane	0.78	1.7	3.2	1.1	2.4	4.4	160	330	600	Sirius/LQM/CIEH
Tetrachloroethene (PCE)	0.41	0.94	1.8	0.43	0.96	1.9	72	163	310	Sirius/LQM/CIEH
Tetrachloromethane	0.0078	0.017	0.033	0.0078	0.017	0.033	1.7	3.8	7.3	Sirius/LQM/CIEH
1,1,1-trichloroethane (TCA)	2.6	5.5	10	2.7	5.5	10	390	820	1500	Sirius/LQM/CIEH
1,1,2-trichloroethane (TCA)	0.30	0.64	1.2	0.36	0.76	1.4	51	110	200	Sirius/CLEA/EIC
Trichloroethene (TCE)	0.045	0.1	0.18	0.046	0.098	0.19	6.6	14	27	Sirius/LQM/CIEH
Trichloromethane	0.34	0.63	1.1	0.37	0.68	1.2	57	110	190	Sirius/LQM/CIEH
Vinyl Chloride	0.00024	0.00032	0.00045	0.00026	0.00034	0.00047	0.04	0.052	0.072	Sirius/LQM/CIEH
Miscellaneous Organics										
Carbon disulphide	0.047	0.094	0.17	0.047	0.094	0.17	7.1	14	27	Sirius/LQM/CIEH
Di-(2-ethylhexyl)-phthalate	280	610	1000	2700	2800	2800	85000	86000	86000	Sirius/CLEA/EIC

Parameter	Residential (mg/kg, unless otherwise stated)						Commercial / Industrial (mg/kg, unless otherwise stated)			Source
	With Plant Uptake			Without Plant Uptake			1% SOM	2.5% SOM	5% SOM	
	1% SOM	2.5% SOM	5% SOM	1% SOM	2.5% SOM	5% SOM				
MTBE	23	40	70	28	48	81	4000	6900	12000	Sirus/CLEA/EIC
Phenol	180	290	392	310	420	510	3200 ^(b)			Phenol SGV
Methylphenols (cresols), total [o]	77	170	330	3900	5600	6800	160000	160000	160000	Sirus/CLEA/EIC
2,4-dimethylphenol (m-xylene)	18	41	78	140	300	500	14000	22000	27000	Sirus/CLEA/EIC

All values are rounded to 1 or 2 significant figures.

Notes:

[a] SGV reports comprise the SGV, TOX and supporting contaminant-specific reports published by the Environment Agency as part of the Science Report SC050021 series. SGV values are applied directly as the criteria are not sensitive to soil type nor SOM content. For the "Residential Without Plant Uptake" land use, GAC values have been derived by Sirius using CLEA version 1.06 and the published model parameter and chemical property data.

[b] Calculated by Sirius for sandy soil in CLEA version 1.06 using the toxicological, model parameter and chemical property data presented in Nathanail et al. (2009) "The LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment", 2nd edition, Land Quality Press, Nottingham.

[c] The SGV and GAC values for cadmium are based on data for soils having a pH value in the range 6-8. Caution should be applied in applying them at pH values outside this range, especially at pH values <5.

[d] GAC for Cr (III) also applied for total chromium, as hexavalent chromium does not persist to a significant extent in soils under normal conditions (further information can be provided upon request). A SSAC will be required for sites where historical information indicate that Cr (VI) was handled or generated on site, when analytical data demonstrate Cr (VI) is present or when soil conditions indicate that Cr (VI) will persist in situ.

[e] For the 'Residential with Plant Uptake' end-use, the GAC values for Cu and Zn are based on potential phytotoxic effects and have been set at the maximum allowable concentrations for sewage sludge-amended soils presented in the "Sludge (Use in Agriculture) Regulations" (SI 1263/1989). The equivalent GAC values for human health protection in this land-use are: Cu, 2300 mg/kg; Zn, 3700 mg/kg (LQM/CIEH values - Nathanail et al., 2009). The GAC values for the other land uses presented are human health-based criteria presented in Nathanail et al. (2009). In cases where soils in those land uses may be used for vegetation purposes, then the 'Residential with Plant Uptake' GAC values may be applied. However, for all cases where the GAC is set on the basis of potential phytotoxicity, alternative criteria will be derived where elevated natural background soil concentrations of these metals have been demonstrated.

[f] SGV10 has been retained as the most appropriate source of a GAC for lead, given the specific blood lead calculation methods and input data applied.

[g] The SGV for mercury is based on inorganic mercury which represents the most common form encountered within the environment. This is considered appropriate for most sites as: "...the SGV for inorganic mercury can normally be compared with chemical analysis for total mercury content because the equilibrium concentrations of elemental and methylmercury compounds are likely to be very low" (SC050021/Mercury SGV). Analysis and specific assessment for elemental or methylated forms of mercury will need to be considered if historical land use or site-specific factors indicate that these forms of mercury are likely to be present.

[h] BRE (2005) Special Digest 1, 3rd Edition "Concrete in aggressive ground". Sulphate is not considered to pose a potential risk to human health under normal circumstances – this GAC applies to construction cases only and is set at the upper limit for DS-1 Design Sulphate Class concrete.

[i] GAC calculated for acute risk. Further information can be provided upon request.

[j] Calculated by Sirius for all land uses using CLEA version 1.06 and the toxicological, model parameter and chemical property data published by the Environment Agency (Science Report SC050021 Series).

[k] For screening purposes, a single GAC has been set for total xylene. This is the lowest of the values calculated for the three individual xylene isomers.

[l] Calculated by Sirius for all land uses using CLEA version 1.06 and the toxicological, model parameter and chemical property data published by CL:AIRE in association with the AGS and EIC (December 2009).

[m] "No GAC" indicates that no value has been specified for this land use as the HCV cannot be exceeded at achievable soil concentrations.

[n] The GAC for Commercial/Industrial land use is based on the threshold protective of direct skin contact with phenol (See SR050021/Phenol SGV).

[o] For screening purposes, a single GAC has been set for total methylphenol. This is the lowest of the values calculated for the three individual methylphenol isomers.

[p] The Hazardous Waste (England and Wales) Regulations 2005. TOC content in itself does not represent a potential risk to human health. This GAC is provided for indicative assessment of disposal options, in the case that off-site landfill of soil is undertaken. This GAC is specified at the 'Inert' waste threshold and should be considered as for information purposes only.

[q] ICRCL (1986) Guidance Note 61/84, 2nd Edition, Notes on the Fire Hazards of Contaminated Land. Calorific value is not an indication of chronic human health risk but may be useful in assessment of the potential fire risk posed by made ground or natural soils containing elevated concentrations of potentially combustible organic matter.

CONTROLLED WATERS GAC (SCREENING) VALUES FOR FRESH WATER

Parameter	Generic Assessment Criterion (µg/l unless otherwise stated)
Metals/Metalloids	
Arsenic	50 ^(a) 10 ^(b)
Cadmium	5 ^(a, b)
Chromium ⁺	5-250 ^(a) 50 ^(b)
Lead ⁺	4-250 ^(a) 25 ^(b)
Mercury	1 ^(a, b)
Boron	2,000 ^(a) 1,000 ^(b)
Selenium	10 ^(b)
Copper ⁺	1-28 ^(a) 2,000 ^(b)
Nickel ⁺	50-200 ^(a) 20 ^(b)
Zinc ⁺	8-500 ^(a) 5,000 ^(b)
Inorganics	
Sulphate	400 mg/l ^(a) 250 mg/l ^(b)
Ammonia (NH ₃ as N)	15 ^(a)
Ammonium (as NH ₄ ⁺)	500 ^(b)
Organics	
Total TPH	10 ^(b)
Naphthalene	10 ^(a)
Benzo(a)pyrene	0.01 ^(b)
Benzo(b)fluoranthene*	0.1 ^(b)
Benzo(k)fluoranthene*	0.1 ^(b)
Benzo(ghi)perylene*	0.1 ^(b)
Indeno(1,2,3-cd)pyrene*	0.1 ^(b)
Sum PAH-4*	0.1 ^(b)
Benzene	30 ^(a) 1 ^(b)
Toluene	50 ^(a)
Ethylbenzene	20 ^(c) 300 ^(d)
Xylenes (sum)	30 ^(a)
MTBE	2,600 ^(f) 200 ^(e)
Phenol	30 ^(a) 0.5 ^(b)
Others	
Electrical Conductivity	2,500 µS/cm @ 20°C ^(b)
pH	6-9 pH units ^(g)

(a) Environment Agency (2002) Environment Agency technical advice to third parties on pollution of controlled waters for Part IIA of the EPA 1990. Freshwater Environmental Quality Standards (EQS).

(b) The Water Supply (Water Quality) (Amendment) Regulations 2001 and 2007.

(c) SEPA (2004) Environmental Quality Standards, Issue No 1, October 2004

(d) World Health Organisation (WHO) Guidelines for Drinking Water Quality, 1984. Health value.

(e) Based on a 5-fold dilution of the USEPA (1997) Drinking Water Advisory on MTBE value for taint, EPA-822-F-97-009. Full justification can be provided on request.

(f) EU Risk Assessment Report (2002) MTBE, 3rd Priority List, Volume 19. PNEC value for fresh and sea water life.

(g) The Surface Waters (Fishlife) (Classification) Regulations 1997.

+ Hardness related (Lowest values are applied in the absence of site-specific hardness data).

* The sum of all 4 individual PAHs marked with an asterisk (*)

CONTROLLED WATERS GAC (SCREENING) VALUES FOR SALT WATER

Parameter	Generic Assessment Criterion (µg/l unless otherwise stated)
Metals/Metalloids	
Arsenic	25 ^(a)
Cadmium	2.5 ^(a)
Chromium	15 ^(a)
Lead	25 ^(a)
Mercury	0.3 ^(a)
Boron	7,000 ^(a)
Selenium	10 ^(b)
Copper	5 ^(a)
Nickel	30 ^(a)
Zinc	40 ^(a)
Inorganics	
Sulphate	250 mg/l ^(a, b)
Ammonia (NH ₃ as N)	21 ^(a)
Organics	
Total TPH	10 ^(b)
Naphthalene	10 ^(a)
Benzo(a)pyrene	0.01 ^(b)
Benzo(b)fluoranthene*	0.1 ^(b)
Benzo(k)fluoranthene*	0.1 ^(b)
Benzo(ghi)perylene*	0.1 ^(b)
Indeno(1,2,3-cd)pyrene*	0.1 ^(b)
Sum PAH-4*	0.1 ^(b)
Benzene	30 ^(a)
Toluene	40 ^(a)
Ethylbenzene	20 ^(c)
Xylenes (sum)	30 ^(a)
MTBE	2,600 ^(d)
Phenol	30 ^(a)
Others	
Electrical Conductivity	2,500 µS/cm @ 20°C ^(b)
pH	6-9 pH units ^(e)

(a) Environment Agency (2002) Environment Agency technical advice to third parties on pollution of controlled waters for Part IIA of the EPA 1990. Saltwater EQS.

(b) The Water Supply (Water Quality) Regulations 1989 and (Amendment) 2001 and 2007.

(c) SEPA (2004) Environmental Quality Standards, Issue No 1, October 2004.

(d) EU Risk Assessment Report (2002) MTBE, 3rd Priority List, Volume 19. PNEC value for fresh and sea water life.

(e) The Surface Waters (Fishlife) (Classification) Regulations 1997.

* The sum of all 4 individual PAHs marked with an asterisk (*)