The London Resort Development Consent Order

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Environmental Statement
Volume 2: Appendices

Appendix 18.3 – Geotechnical and Geo-environmental Interpretive Report

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Planning Act 2008
The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009
Regulation 5(2)(a)
The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
Regulation 12(1)

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London Paramount Entertainment Resort

Geotechnical and Geo-Environmental Interpretative Report

London Resort Company Holdings

November 2015

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Glossary of Terms

Abbreviation	Definition
ALNonS	UK Non-statutory Environmental Quality Standards for the Protection of Aquatic Life (Surface Water)
ALS	UK Statutory Environmental Quality Standards for the Protection of Aquatic Life (Surface Water)
AOD	Above Ordnance Datum
Atkins	Atkins Limited
bgl	Below ground level
BGS	British Geological Survey
BH	Borehole
BRE	Building Research Establishment
BS	British Standard
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
C4SL	Category 4 Screening Levels
CBR	California Bearing Ratio
CIRIA	Construction Industry Research and Information Association
CKD	Cement Kiln Dust
CLEA	Contaminated Land Exposure Assessment
CLR	Contaminated Land Report
CoC	Contaminant of Concern
CS	Characteristic Situation
CSM	Conceptual Site Model
CTRL	Channel Tunnel Rail Link
CWG	Criteria Working Group
DCO	Development Consent Order
DWS	UK Standards for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
EIA	Environmental Impact Assessment
EQS	Environmental Quality Standard
Fish	UK Standards for the Protection of Fisheries (Freshwater)
GAC	Generic Assessment Criteria
GE	Geotechnical Engineering Limited
GQRA	Generic Quantitative Risk Assessment
GSV	Gas Screening Value
HS1	High Speed 1 railway
km	Kilometre
Lafarge	Lafarge Cement UK
LOD	Limit of Detection
LPER	London Paramount Entertainment Resort
LQM	Land Quality Management Limited
LRCH	London Resort Company Holdings
MTBE	Methyl Tert Butyl Ether
NGR	National Grid Reference

Abbreviation	Definition
OS	Ordnance Survey
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyls
PE	Polyethylene
PID	Photo-Ionisation Detector
PPL	Potential Pollutant Linkage
ppm	Parts per million
PSD	Particle Size Distribution
PVC	Polyvinyl Chloride
RBCA	Risk Based Corrective Action
RTD	River Terrace Deposits
S4UL	Suitable for Use Level
SGV	Soil Guideline Values
SOM	Soil Organic Matter
SPT	Standard Penetration Test
SPZ	Source Protection Zone
SSAC	Site-Specific Assessment Criteria
SSV	Soil Screening Value
SVOC	Semi-Volatile Organic Compound
SWQ	UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
TCE	Trichloroethene
TP	Trial pit
TPH	Total Petroleum Hydrocarbon
UCS	Uniaxial Compressive Strength
UK WIR	UK Water Industry Research
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
WAC	Waste Acceptance Criteria
WEL	Workplace Exposure Limit
WHO	World Health Organisation Drinking Water Guidelines
WML	Waste Management Licence
WS	Windowless sample
WSV	Water Screening Value

Executive Summary

Introduction

Atkins Ltd (Atkins) has been commissioned by London Resort Company Holdings (LRCH) to produce a geotechnical and geo-environmental interpretative report for the proposed London Paramount Entertainment Resort (LPER). This report uses the background information obtained during the Phase 1 reports [1] [2], together with the 2015 ground investigation, to provide a geotechnical interpretation of the ground conditions at the proposed site and an assessment of geo-environmental risks. The 'Site' refers to the potential development area, as defined by the Development Consent Order (DCO) limits. For this assessment the site was split into nine 'zones' (Zones 1 to 9), following the approach adopted within the Phase 1 reports, based on ownership and historical and current uses..

This report contains assessments for Zones 1, 2, 3, 5 and part of Zone 7 only. Due to a reduction in the ground investigation scope, at the request of LRCH, together with several access related issues out of the control of Atkins, the remaining zones / areas were not investigated as part of the 2015 works. The zones are summarised individually within this report

Within this Executive Summary, synopses of both the geo-environmental and geotechnical assessments are provided on a zone by zone basis. Detailed descriptions and assessments of each of the zones are provided in the main body of the report.

Ground Investigation

A ground investigation for the Site was undertaken by Ground Engineering Ltd. (GE) between 8th June and 3rd July 2015. Technical supervision was provided by Atkins on behalf of LRCH. The exploratory holes undertaken as part of this ground investigation included 5 No. trial pits, 13 No. boreholes and 5 No. window sample boreholes across the five zones investigated. These exploratory holes were carried out in accordance with the Atkins Specification [3].

The 2015 ground investigation was designed by Atkins based on the findings of the desk studies [1] [2], the current use of the Site, the proposed development plans for the Site as understood at that time, and the requirement to gain relevant geotechnical and geo-environmental information. The laboratory testing results and post investigation monitoring data obtained have been used to inform the geotechnical and geo-environmental assessments within this report.

Ground Conditions

The stratigraphy of the Swanscombe Peninsula, the northern section of the Site, comprises Cement Kiln Dust (CKD) and Made Ground overlying Alluvium. The Alluvium has three distinct Peat beds which merge into two beds in Zone 2. Beneath the Alluvium are two terraces of River Terrace Deposits (RTD), associated with the historical movement of the River Thames. The Chalk bedrock underlies these superficial deposits and has a flat, uniform morphology which gradually increases in elevation from the southern edge of Zone 2 to the chalk spines in Zone 5.

Zone 7 is located on the edge of the Chalk downlands. The northern part comprises the in-filled Southfleet Pit, which has been excavated into the Chalk. Towards the mid-section of Zone 7, which is adjacent to the Ebbsfleet River, the Alluvium overlies RTD. Only one visible river terrace has been recorded, however more may be present. The Alluvium extends southwards beyond the RTD to lie directly on top of the Chalk bedrock. In the southern most section of Zone 7, Head Deposits can be found (located past Spring Head Nurseries).

Groundwater

Groundwater within both the Chalk and RTD deposits is generally moving towards the River Thames to the north, with some easterly movement in the southern part of Zone 7 associated with the nearby River Ebbsfleet. A discontinuous perched water body was present across Zones 1 and 2 within the Made Ground and CKD deposits.

Risk Assessment Summaries

Zone 1

Geotechnical Summary

The geotechnical constraints identified during the ground investigation were:

- Aggressive ground conditions (including CKD);
- Buried services and foundations;
- Excavation collapse;
- High groundwater;
- Shrink-swell clays;
- Weak bearing materials; and
- Weak compressible ground.

Much of Zone 1 is covered by a variable layer of Made Ground, largely comprising CKD. The use of CKD will require further investigation to determine its properties and behaviour as an earthwork material and on-site trials are recommended. The remaining Made Ground is unlikely to be suitable for re-use and will require treatment and/or removal.

Cuttings are not expected to be constructed in this zone, however embankments and excavations are likely. The stability of embankments constructed in this zone will depend on the underlying material. The Alluvium in this area is likely to compress when a large load (i.e. the embankment) is placed on top of it. This is particularly likely due to the presence of compressible Peat.

Conventional excavation plant is likely to be adequate for excavations in Zone 1, except where hard materials (such as concrete) are encountered in the Made Ground. The stability of temporary excavations is expected to be high in the CKD and low when the Alluvium is encountered, particularly due to the presence of weak, saturated Peat. The high groundwater level encountered in this zone, may cause flooding of the excavations and is particularly hazardous due to the high alkalinity of CKD leachate.

In terms of foundations, lightly loaded structures may be founded in the superficial strata depending on the settlement tolerances. However it is anticipated that the majority of structures in Zone 1 will require a piled foundation option, where the piles extend into the competent Chalk which is approximately 32m below the existing ground level.

Geo-Environmental Summary

The primary source of contamination in Zone 1 is the CKD and river dredging in-fill material which overlies the majority of the zone.

The ground investigation data did not record any exceedances of the human health generic screening criteria within either the soils or the groundwater within Zone 1. The highly alkaline nature of the CKD presents a risk to human health. Elevated pH was encountered within the superficial deposits and the perched water, which could cause adverse effects on human health should it come into contact with future workers or site visitors. Asbestos was identified within three samples taken from BH101, though when quantified was found to be below the threshold limit for hazardous waste.

A number of contaminants were found to exceed the generic screening criteria within the leachate, perched water and groundwater samples taken from Zone 1. However, it appears that Alluvium is providing a level of protection between the perched water and the deeper Chalk/RTD aquifers, as generally fewer contaminants were encountered within the deeper groundwater. In addition, those contaminants that were encountered in the deeper groundwater in Zone 1 were also largely found in the groundwater in other zones of the Site, even those situated at a distance such as Zone 7. Therefore, it is likely that these contaminants are indicative of wider groundwater quality in the area of the Site rather than attributable to specific zonal activity.

The worst-case ground gas scenario monitored indicates the zone would likely be classified as Characteristic Situation (CS) 2 due to elevated methane within BH101. However, this does not comprise a full ground gas risk assessment and additional data would be required to assess the zone fully.

Some risks to water supply pipes were identified due to potentially corrosive conditions within the soils.

Zone 2

Geotechnical Summary

The geotechnical constraints identified during the ground investigation were:

- Aggressive ground conditions (including CKD);
- Buried services and foundations;
- Excavation collapse;
- High groundwater;
- Shrink-swell clays;
- Weak bearing materials; and
- Weak compressible ground.

Much of Zone 2 is covered by a variable layer of Made Ground, largely comprising CKD. The use of CKD will require further investigation into its properties and behaviour as an earthwork material and on-site trials are recommended. The remaining Made Ground is unlikely to be suitable for re-use and will require treatment and/or removal.

Cuttings, embankments and excavations are likely to be required in this Zone. Cuttings are achievable in the CKD, however cuttings within the Alluvium are not recommended due to the weak, saturated Peat and clay beds.

The stability of the embankment will depend on the topography of the ground and the underlying material. The Alluvium in this area is likely to compress when a large load (i.e. the embankment) is placed on top of it. This is particularly likely due to the presence of compressible Peat.

Excavations may be required in Zone 1 for buried services, temporary works and shallow foundations. Conventional excavation plant is likely to be adequate for excavations in Zone 1, except where hard materials (such as concrete) are encountered in the Made Ground.

The stability of temporary excavations is expected to be high in the CKD and low when the Alluvium is encountered, particularly due to the presence of weak, saturated Peat. Depending on how deep the excavation is expected to go, encountered groundwater may cause flooding of the excavations and is particularly hazardous due to the high alkalinity of CKD leachate.

In terms of foundations, lightly loaded structures may be founded in the superficial strata depending on the settlement tolerances, however it is anticipated that the majority of structures in Zone 2, in particular those with heavily loaded foundations, will require a piled foundation option. The piles will need to extend into the competent Chalk, which is approximately 32m below the existing ground level.

Geo-Environmental Summary

The main sources of contamination identified within Zone 2 are the former and current landfills used for the deposition of CKD: North Pit (not currently permitted) and South Pit Phase 1 (including Surge Pile) and Phase 3. In addition, there is a former sewage works and historical cement works and gasworks within the zone.

There were three exceedances of chromium (total) above the screening criteria within the Made Ground/CKD materials in BH203 and BH204 at depths from 1.0 to 3.6m bgl; these are not considered likely to cause significant risk to human health as there were no concentrations of the more toxic hexavalent chromium above the limit of detection (LOD) in any soil sample analysed. No exceedances of the human health screening criteria were found within the water samples taken from Zone 2. The highly alkaline pH of CKD presents a risk to human health. Elevated pH was encountered within the superficial deposits and the perched water, which could cause effects to human health should it come into contact with future workers or site visitors. Asbestos was identified within six samples taken from across the zone, though when quantified was found to be below the threshold limit for hazardous waste.

The controlled waters risk assessment for Zone 2 indicated that concentrations of contaminants – notably heavy metals and inorganics – were elevated above generic screening criteria and could indicate a significant risk to aquifers below the site and the River Thames. Samples taken from the perched water within the Made Ground showed more exceedances than those samples taken from the deeper groundwater within the Chalk or RTD, indicating the Alluvium is providing some level of protection to the deeper aquifers. Additionally, the contaminants encountered within the deeper aquifers under Zone 2 were also found in Zones 1, 5 and 7, indicating that the exceedances may be related to wider groundwater quality. However, within the former North Pit area, where the Alluvium was stripped out during previous phases of operation; deeper groundwater quality was not able to be assessed during this investigation due to the limited scope.

The ground gas risk assessment indicates the zone is likely to be classified as CS2 due to elevated concentrations of methane and carbon dioxide. Such a classification requires some level of ground gas protection to be installed within buildings established on the zone. Carbon monoxide and hydrogen sulphide were also found above the occupational workplace guidelines, with hydrogen sulphide encountered at concentrations up to 1000 times the long term exposure limit in one borehole in Zone 2.

The indicative property/services risk assessment suggested that there would likely be some risks to services laid at the Site due to ground conditions, including contaminated soils and the highly corrosive nature of CKD deposits.

Zone 3

Geotechnical Summary

The geotechnical constraints identified during the ground investigation were:

- Aggressive ground conditions (including CKD);
- Buried services and foundations;
- Excavation collapse;
- High groundwater;
- Shrink-swell clays;
- Weak bearing materials; and
- Weak compressible ground.

No ground investigation was carried out in Zone 3A, however it is expected to have similar ground conditions to Zones 1 and 2 comprising Made Ground (possibly with CKD in the eastern section) overlying Alluvium and Peat. Zone 3B is covered in a variable layer of Made Ground largely comprising chalk, brick and flint gravel (CTRL spoil) and CKD. The Made Ground may need to be removed prior to construction.

Cuttings are not expected to be constructed in this zone, however embankments and excavations are likely. The stability of embankments constructed in this zone will depend on the underlying material. The Alluvium and structureless Chalk expected in this area are likely to compress when a large load (i.e. the embankment) is placed on top of them. This is particularly likely due to the possible presence of compressible Peat in Zone 3A.

Conventional excavation plant is likely to be adequate for excavations in Zone 3, except where hard materials (such as concrete) are encountered in the Made Ground. The stability of temporary excavations is expected to be high in the CKD and Chalk, and low if Alluvium is encountered. The high groundwater level expected in Zone 3A, may cause flooding of the excavations.

Based on our understanding of the ground conditions, it is likely that deep foundations (piles) will be required in Zone 3A to bypass the weak superficial deposits, namely the Alluvium and Peat. Subject to loading, it is envisaged that all piles shall terminate in the competent Chalk, depths of which shall be confirmed in the design stage. In Zone 3B, shallow foundations such as rafts or pads may be suitable for low-load structures as they will be built directly on the Chalk. Deeper foundations into the Chalk may be required for higher load structures.

Geo-Environmental Summary

The key sources of contamination identified within Zone 3 were the historical industrial uses including a former cement works, whiting works, other industrial uses. Infilled pits, including Lover's Lane Pit and Swanscombe Cement Landfill, are also noted as being key contamination sources.

Very limited investigation was completed in Zone 3; comprising only two trial pits. A controlled waters assessment was unable to be completed.

There were no exceedances of the human health generic screening criteria within Zone 3. No asbestos was encountered in any of the four samples analysed.

The indicative property/services risk assessment suggested that there would likely be some risks to services laid at the Site due to ground conditions, including contaminated soils.

Zone 5

Geotechnical Summary

The geotechnical constraints identified during the ground investigation are:

- Buried services and foundations;
- Chalk dissolution features;
- Excavation collapse;
- Historical works;
- Rockfall;
- Variable rockhead; and
- Weak bearing materials.

The whole of Zone 5 is expected to be covered in Made Ground overlying Chalk bedrock, however no ground investigation was conducted in Zone 5A to confirm this. In Zone 5B, the Made Ground largely comprises sandy silt of Chalk origins (CTRL spoil). The Made Ground may need to be removed prior to construction.

Cuttings are not expected to be constructed in this zone, however embankments and excavations are likely. The stability of embankments constructed in this zone will depend on the underlying material. As the embankments will be built directly on the Chalk bedrock, settlement is expected to be low except where structureless Chalk is encountered.

Conventional excavation plant is likely to be inadequate for excavations in Zone 1, due to the hard Chalk expected to be encountered. Competent Chalk, as expected in Zone 5A, is a relatively good material in which to make excavations as it will stand at steep cutting angles, as can be seen from the faces of cliffs. Structureless Chalk however, as expected in Zone 5B may have little cohesion and collapse of the excavation is probable.

In Zone 5, shallow foundations such as rafts or pads may be suitable for low-load structures as they will be built directly on the Chalk. Deeper foundations embedded into competent Chalk may be required for higher load structures.

Geo-Environmental Summary

The key source of contamination identified for Zone 5B was the infilled land within the former chalk quarry.

Very limited investigation was completed in Zone 5; investigation points comprised 2 No. boreholes. No investigation was undertaken in Zone 5A during this assessment.

There were no exceedances of the human health generic screening criteria within either the soils or the groundwater within Zone 5. Asbestos was detected in one sample but at a concentration below the hazardous waste threshold.

The controlled waters risk assessment identified contaminants which exceeded the relevant screening criteria, though groundwater quality was generally better than noted within the zones on Swanscombe Peninsula to the north. However, the contaminants encountered within Zone 5 were also encountered within Zones 1, 2 and 7, indicating that these may represent a wider groundwater quality issue.

The initial ground gas risk assessment indicates that the zone would be classified as CS2, which would require some protective measures to be installed within buildings established on the zone. However, these boreholes were installed within the Chalk and are therefore unlikely to provide an indication of the worst-case ground gas generation potential of the Made Ground situated near the surface.

The indicative property/services risk assessment suggested that there would likely be some risks to services laid at the Site due to ground conditions, including corrosive conditions within the soils.

Zone 7

Geotechnical Summary

The geotechnical constraints identified during the ground investigation are:

- Buried services;
- Historical works;
- Variable rockhead;
- Weak compressive ground; and
- Weak bearing materials.

Much of Zone 7 is covered by a variable layer of Made Ground, largely comprising silt and clay, underlain by Alluvium or Head deposits. The Made Ground may need to be removed prior to construction.

The proposed scheme is likely to require cuttings, embankments and excavations in Zone 7. Cuttings within the Alluvium and Head Deposits are likely to be unstable and may require reinforcement.

Embankment stability will depend on the topography of the ground and the underlying material. The Alluvium in this area is likely to compress when a large load (i.e. the embankment) is placed on top of it.

Conventional excavation plant is likely to be adequate for excavations in Zone 1, except where hard materials (such as concrete) are encountered in the Made Ground. The stability of temporary excavations is expected to be low in the Alluvium and Head deposits, as these deposits are weak. Depending on how deep the excavation is expected to go, groundwater may cause flooding of the excavations if encountered.

Based on our understanding of the ground conditions in this zone, it is likely that shallow foundations such as rafts or pads will be suitable for low load structures, however deeper foundations will be required for higher load structures. The deep foundations will need to be embedded in competent Chalk, bypassing the weaker superficial deposits.

Geo-Environmental Summary

The key sources of contamination identified for Zone 7 include the CKD waste deposited within Southfleet Quarry, the former cement works wash mills, the former petrol station and the miniature rifle range. Investigation was only completed in the southern portion of the zone and, notably, Southfleet landfill was unable to be investigated due to ownership and access issues.

There were no exceedances of the human health generic screening criteria within either the soils or the groundwater within Zone 5. Asbestos was detected in one sample below the hazardous waste threshold.

The controlled waters risk assessment identified contaminants which exceeded the relevant screening criteria, though groundwater quality was generally better than noted within the zones in Swanscombe Peninsula to the north. However, the contaminants encountered within Zone 7 were also encountered within Zones 1, 2 and 5, indicating that these may suggest a groundwater quality issue within the wider area of the Site rather than attributable to specific zonal activities.

The initial ground gas risk assessment indicates that the zone would be classified as CS2, which would require some protective measures to be installed within buildings established on the zone. However, Southfleet landfill was not able to be assessed under this investigation although it is known to have a significant landfill gas regime which is managed by an active gas control system.

The indicative property/services risk assessment suggested that there would likely be some risks to services laid at the Site due to ground conditions, including slightly corrosive conditions within the soils in the zone.

Conclusions and Recommendations

Additional investigation would be required across the entirety of the Site in order to assess fully the potential geotechnical and geo-environmental risks associated with the proposed London Paramount Entertainment Resort development.

1. Introduction

1.1. Background

Atkins Ltd (Atkins) has been commissioned by London Resort Company Holdings (LRCH) to produce a geotechnical and geo-environmental interpretative report for the proposed London Paramount Entertainment Resort (LPER). This report uses the background information obtained during the desk study [1] [2], together with the 2015 ground investigation, to provide a geotechnical interpretation of the ground conditions at the proposed site and an assessment of geo-environmental risk.

The 4.5 square kilometre (km^2) area of the proposed LPER, herein referred to as the 'Site', comprises the Swanscombe Peninsula, the A2 highway and proposed resort access road. The majority of the Site is situated within the Swanscombe Peninsula itself, a triangular landmass in a meander of the River Thames. The peninsula measures roughly 2km north to south, by 2km east to west, comprising an area of low lying marshland. Extending south-easterly, out of the peninsula, the Site also covers an approximately 5km long area comprising Bamber Pit and Southfleet Pit, part of the A2 highway and a resort access corridor for the proposed development.

Please refer to Appendix A.1 for the location of the Site, and Appendix A.2 for a site boundary plan.

1.2. Location

The Site is located in Swanscombe and Northfleet, Kent and has been split into nine zones for the purposes of assessing ground conditions (see Appendix A.2). Zones 1 to 5 are located within the Swanscombe Peninsula, whilst Zones 6 to 9 are located south of the peninsula. Table 1-1 summarises the locations and sizes of each zone. More detailed descriptions of each zone can be found in their respective chapters.

Table 1-1 Zone Locations and Descriptions

Zone	National Grid Reference (Centred on)	Area (ha)	Information
1	TQ 60711 76301 (560711E, 176301N)	53	Comprises the northernmost part of the Site and forms the tip of the peninsula with the River Thames adjacent to the north, west and east. The western section of Zone 1 is partially located in the Borough of Dartford, whilst the eastern section is partly located in the Borough of Gravesham. Zone 1 is located to the north of Zones 2 and 4.
2	TQ 60437 75636 (560437E, 175636N)	58	Located south of Zone 1 and west of Zone 4 on the Swanscombe Peninsula, and partially located over the HS1 (previously called CTRL) tunnel. This zone is within the Borough of Dartford.
3	TQ 59858 75376 (559858E, 175376N)	37.5	Located in the south-western corner of the peninsula, to the east of the Ingress Park residential development. This zone is located within the Dartford Borough Council administrative area.
4	TQ 60860 75505 (560860E, 175505N)	41	Located in the eastern part of Swanscombe Peninsula. This zone is located within the Gravesham Borough Council administrative area on its eastern side, and the Dartford Borough Council administrative area on its western side.
5	TQ 60218 75034 (560218E, 175034N)	18	Located at the southern edge of Swanscombe Peninsula, immediately north of the North Kent Line railway and west of the High Speed (HS) 1 railway line. This zone is located in the Dartford Borough Council administrative area.
6	TQ 61033 74282 (561033E, 174282N)	41	Located to the south of the Swanscombe Peninsula, with its eastern edge lying parallel to the HS1 rail line. This zone is located within the Gravesham Borough Council administrative area.
7	TQ 61443 73090 (561443E, 173090N)	72	Located to the north of the A2, with its eastern edge lying parallel to the HS1 rail line. The majority of Zone 7 is located within the Borough of Dartford except for the south-eastern section, which is located within the Borough of Gravesham. The River Ebbsfleet separates the two boroughs.

Zone	National Grid Reference (Centred on)	Area (ha)	Information
8	TQ 61560 72352 (561560E, 172352N)	63	Located in the far south-eastern part of the Site. The majority of Zone 8 is located within the Borough of Dartford, with the eastern part partially within the Borough of Gravesham. Watling Road forms the boundary between the two boroughs.
9	TQ 60212 72667 (560212E, 172667N)	68	Located towards the south-west of the Site, to the west of Zone 8. The zone is located within the Dartford Borough Council administrative area.

1.3. The Project

The proposed LPER is to be one of the largest entertainment resorts in Europe, and is expected to include:

- A theme park with two core areas and adjoining access hub;
- A theatre, cinema and indoor event space;
- Hotels and nightclubs;
- Food, beverage and retail outlets;
- A new resort access road between the A2 and the entertainment resort;
- Both land train and pedestrian routes between Ebbsfleet International Station and the resort;
- Multiple car parks;
- Enhancements to flood defence works;
- Landscaping including water features such as ponds and canals; and
- Back of house facilities including waste management and power generation.

1.4. Project Participants and Roles

The main participants involved with undertaking the geotechnical and geo-environmental investigation for the LPER are summarised below:

Table 1-2 Summary of LPER Participants and Roles for the Ground Investigation Works

Company	Role
Atkins Ltd. (Atkins)	Technical advisors to LRCH for: • ground engineering; and • contaminated land
Faithful + Gould Ltd.	Project Management
Geotechnical Engineering Ltd. (GE)	Ground Investigation Contractor (Contracted to Atkins)
London Resort Company Holdings Ltd. (LRCH)	Client
Savills plc.	Landowner liaisons (hired by LRCH)
Wessex Archaeology Ltd.	Archaeological Contractor (Consultants to LRCH)
1st Line Defence Ltd.	Unexploded Ordnance specialists (Sub-contracted to GE)

This study forms part of a number of surveys being undertaken to inform the development and support the Development Consent Order (DCO) for the development, and include archaeology, ecology and transportation surveys.

1.5. Aim and Scope of this Report

This report addresses the geotechnical and geo-environmental aspects of the proposed scheme. The purpose of this report is to:

- Provide a commentary on the ground investigation work undertaken;
- Present Atkins' interpretation of the geological and geomorphological units at the proposed Site;

- Present the generic quantitative geo-environmental risk assessments undertaken for the identified potential pollutant linkages (PPLs) at the Site;
- Provide a site-specific geotechnical and geo-environmental conceptual ground model to assist the design of the proposed resort;
- Make recommendations for values of geotechnical parameters and likely foundation types;
- Identify potential geohazards and any potentially significant land contamination PPLs, and provide recommendations for the design and construction of the LPER in order to avoid or mitigate these risks;
- Support the development of a remediation and earthworks strategy;
- Support the DCO submission, including the environmental statement chapter; and
- Support the masterplan design for the development.

This report builds upon previous desk study work, drawing together fieldwork and the supporting geotechnical and geo-environmental interpretation undertaken by Atkins. This report should be read in conjunction with the two Phase 1 reports completed by Atkins [1] [2].

1.6. Limitations and Exclusions

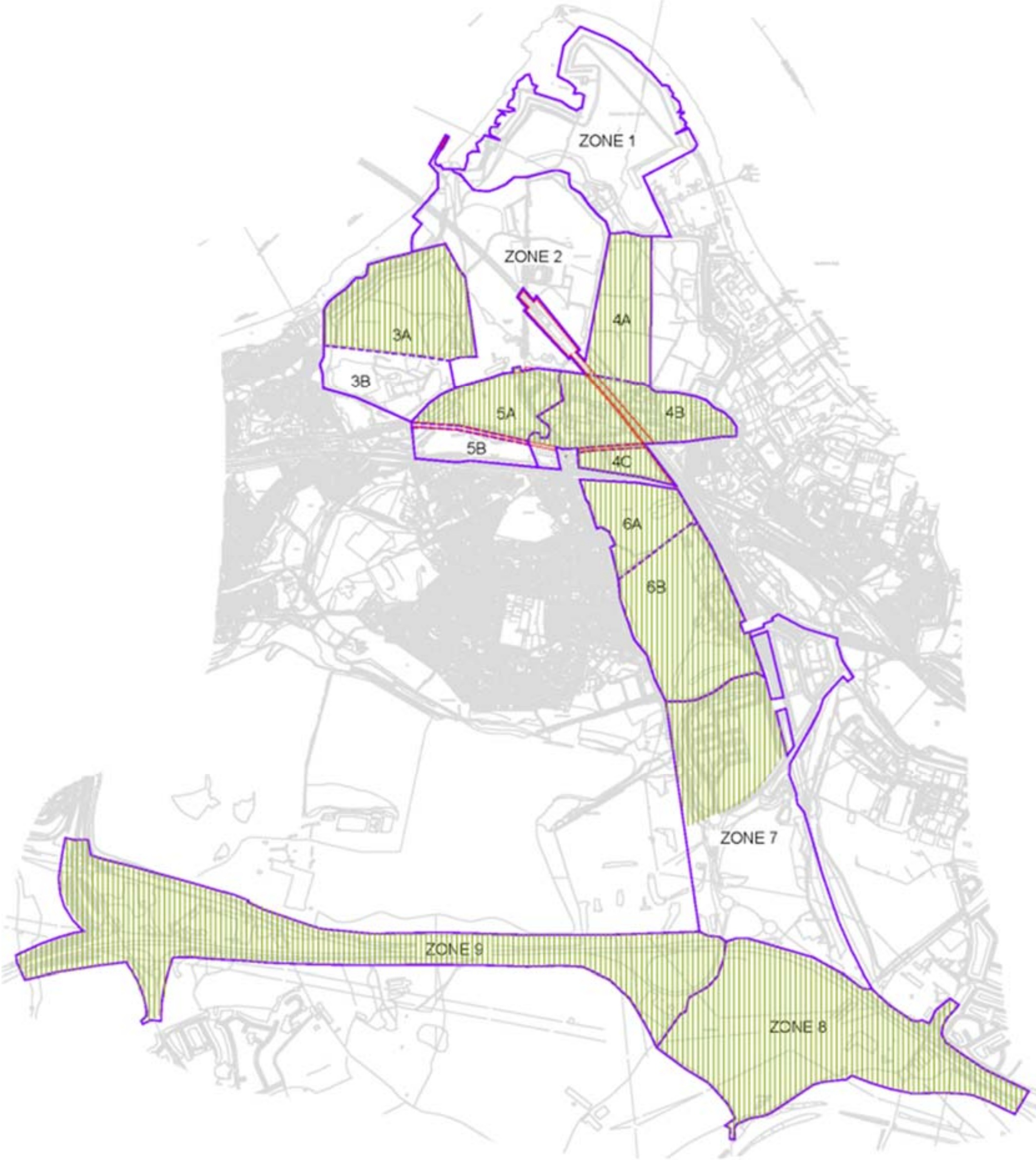
The assessment herein utilises data from a variety of sources and it is assumed that these data are accurate and complete. Atkins accepts no liability with regards to these data provided, nor any other third party data utilised within this assessment.

The report draws upon data from intrusive investigation and monitoring of a relatively small proportion of the sub-surface conditions at the Site. Inferences drawn from these assessments are subject to the inherent limitations of any such study. The areas assessed during this investigation were constrained by the presence of current buildings, utility services and market operations.

This report forms a preliminary, indicative assessment of ground conditions only, due to the reduced scope of ground investigation completed to date. Additionally, this phase of ground investigation was constrained by landownership, ecological and archaeological constraints and access issues; a significant number of investigation points proposed were unable to be completed. Notably Zones 4, 6 and 8 were inaccessible for intrusive works during this investigation and, as such, there are no current ground investigation data available for these zones. These zones have not been included within this report; please refer to the Phase 1 Reports [1] [2] for the preliminary risk assessments relevant to these zones as of the date of this report.

The hatched areas in Figure 1-1 below show the areas of the Site which were not investigated and are therefore not assessed within this report:

Figure 1-1 Areas Not Currently Investigated (2015)



It should be noted that within the areas investigated, the number of investigation points were limited in scope upon the client's instruction.

Receipt of HS1 data relating to the ground conditions at the Site remains pending and therefore has not been utilised within this report.

This report should be read in light of the legislation, statutory requirements and/or industry good practice applicable at the time of the works being undertaken. Any subsequent changes in this legislation, guidance or design may necessitate the findings provided herein to be reassessed.

2. Summary of Previous Risk Assessments

2.1. General

The following reports are relevant to the proposed scheme:

- Atkins Phase 1 Geo-Environmental and Geotechnical Risk Assessment [1];
- Atkins Phase 1 Geo-Environmental and Geotechnical Risk Assessment (A2 Corridor and Access Roadway) [2];
- 6 Alpha Associates Detailed Unexploded Ordnance (UXO) Risk Assessment – Paramount Resort, Kent [4]; and
- 6 Alpha Associates Detailed Unexploded Ordnance (UXO) Risk Assessment – Paramount Resort Extension, Kent [5].

The following sections provide a brief summary of the reports. For further details, the reader is directed to the original reports.

2.2. Atkins Phase 1 Geo-Environmental and Geotechnical Risk Assessment

This desk study report describes the geology and geotechnical constraints associated with the construction of the proposed resort in Zones 1 to 6 (see Appendix A.2), using information obtained from the following sources:

- Published topographic and geological maps and memoirs;
- Historical maps;
- Published technical papers;
- Environmental and ecological records and reports;
- Service drawings (overhead and underground);
- Preliminary unexploded ordnance (UXO) risk assessment carried out by 6 Alpha Associated ltd;
- Peter Brett associates natural cavities and mining cavities database search; and
- Engineering geology site walkovers carried out by Atkins in November 2014, March 2015 and May 2015.

Zones 1 to 5 are located in the Swanscombe Peninsula which has a rich history of industrial use. Zone 6 is located south of the peninsula with its eastern margin running parallel to the HS1 railway. Zone 6 has been extensively quarried and infilled with landfill waste. These zones will house the majority of the entertainment resort.

Zone 1 is located in the most northerly part of the Swanscombe Peninsula, which comprises Broadness Marsh. This zone has been used for the deposition of dredged material from the River Thames and for extensive landfilling with cement kiln dust (CKD) waste by Blue Circle/Lafarge Cement UK (Lafarge).

Zone 2, located in the north-western/central section of the Swanscombe Peninsula, historically comprised marshes prior to clay extraction in parts of the zone and subsequent landfilling of CKD wastes. Cement manufacture and a small gasworks were historically located in the south-western corner of the zone. The HS1 rail link crosses the middle of the zone and a disused sewage treatment works is also present in the centre of the zone.

Lafarge currently collect and treat leachate which is generated within Zones 1 and 2, which is highly alkaline and contains elevated concentrations of copper within Zone 1. The treated effluent from Zone 1 is discharged to the River Thames from Bell Wharf (located in Zone 2) and is subject to a current discharge consent issued by the Environment Agency, whereas leachate from Zone 2 is treated and then discharged to sewer. Within Zones 1 and 2, the general geological stratigraphy is Made Ground (CKD and river dredgings), overlying Alluvium interbedded with Peat. These beds in turn overlie River Terrace Deposits (RTD), with the White Chalk bedrock underlying the entire Site.

Zone 3, located on the western side of the Swanscombe Peninsula, mainly comprises undeveloped marshland in the northern part of the zone (Zone 3A), whilst the smaller southern part (Zone 3B) has historically been used for cement manufacture, a whiting works, Chalk extraction and landfilling, and currently supports a welding company. In Zone 3, the geological stratigraphy generally comprises Alluvium interbedded with Peat, overlying RTD and the White Chalk bedrock. In the south, Head Deposits are identified above the bedrock and Made Ground is present in the form of fill in a historical quarry.

Zone 4 is located in the eastern section of Swanscombe Peninsula and is split into three distinct sections, a northern section (Zone 4A) which is currently marsh and agricultural land (Botany Marshes); a central section (Zone 4B), formerly partially quarried, which comprises a series of commercial/industrial areas; and a southern section (Zone 4C) which comprises formerly quarried and partially in-filled open land, known as the Sportsfield. The HS1 rail line runs in a north-westerly to south-easterly orientation across the zone.

The general geological stratigraphy of Zone 4 can be split by the sub-sections. In sub-Zone 4A, Alluvium interbedded with Peat is found overlying RTD, all of which is underlain by the White Chalk bedrock. In Zones 4B and 4C, Made Ground is found directly overlying the White Chalk and towards the east of 4B, Head Deposits underlie the Made Ground.

Zone 5, located in the central section of the Swanscombe Peninsula, comprises industrial/commercial, retail and open space land uses on former Chalk quarried land between the Chalk spines of London Road, the North Kent Railway and Pilgrim's Road. Zone 5A, the northern section, comprises the western portion of Manor Way Business Park and the southern portion of the zone (Zone 5B) comprises an open area which is a partly in-filled former quarry.

Within Zone 5, the general geological stratigraphy consists of Made Ground over the White Chalk bedrock. On the western zone boundary, Head Deposits lie in-between the Made Ground and the Chalk, and on the northern boundary a thin bed of Alluvium is recorded.

Zone 6, located south of Swanscombe Peninsula, comprises predominantly in-filled former Chalk pits bordered to the east by the HS1 railway and to the west by Swanscombe town and High Street. The northern part of Zone 6 (Zone 6A) is known as Bamber Pit and is a permitted landfill within a former Chalk quarry.

Zone 6 is largely covered by Made Ground, consisting of landfill. Along the eastern boundary, Head deposits are found, and the BGS boreholes in Northfleet Landfill have identified possible RTD. The entire zone is underlain by the White Chalk bedrock. Along the small chalk spine on the partition between Zones 6A and 6B, Boyn Hill Gravel has been recorded.

Where Alluvium and/or Peat is present, there is a risk of ground gas generation from these deposits.

2.3. Atkins Phase 1 Geo-Environmental and Geotechnical Risk Assessment (A2 Corridor and Access Roadway)

This desk study report describes the geology and geotechnical constraints associated with the construction of the proposed resort in Zones 7 to 9 (see Appendix A.2), using information obtained from the following sources:

- Published topographic and geological maps and memoirs;
- Historical maps;
- Published technical papers;
- Environmental and ecological records and reports;
- Service drawings (overhead and underground);
- Preliminary UXO risk assessment carried out by 6 Alpha Associated Ltd; and
- Peter Brett Associates Natural Cavities and Mining Cavities database search.

Zones 7 to 9 are located south of the Swanscombe Peninsula and shall be the location of the new transport routes and car parking for the entertainment resort.

Zone 7, located directly south of Zone 6, historically comprised open land which was used for excavation of Chalk (Southfleet Pit) followed by infilling with CKD and Thanet Formation overburden. A petrol station (now demolished) was formerly present in the southern part of the zone, former Portland Cement Works wash mills were located in the north-eastern area, and Springfield Nurseries are located in the south-eastern corner. The River Ebbsfleet begins at the very south-eastern corner of the zone and flows north towards the River Thames.

Within Zone 7, the general geological stratigraphy consists of Made Ground (primarily landfill) over superficial deposits of Alluvium, floodplain deposits and Head. These deposits overlie the Thanet Formation and White Chalk.

Zone 8 is located in the south-western part of the Site and comprises agricultural land, roads, a former railway, residential properties, Pepperhill Recycling Centre, a garden centre and HS1 infrastructure. Zone 8 is of archaeological importance due to the Roman city of Vagniacae, which was located across the majority of the zone.

Within Zone 8 the general geological succession of superficial deposits is Made Ground over Head Deposits in localised regions, while only topsoil covers the bedrock in other areas. The bedrock succession consists of Thanet Formation over much of the zone, overlying the Bullhead Beds in localised areas. These units are both underlain by undifferentiated White Chalk bedrock.

Zone 9 is located in the south-western part of the Site and primarily comprises part of the A2 (Watling Street), a large six-lane main road, and associated slip roads. The geological succession in this zone comprises localised Made Ground and Head Deposits at the top of the succession, overlying London Clay, Lambeth Group and Thanet Formation across the majority of the area. This succession is underlain by Undifferentiated White Chalk bedrock. In some areas, the Chalk is found very close to the surface, where the other deposits thin out, leaving just a layer of topsoil over the Chalk.

2.4. 6 Alpha Associates UXO Risk Assessment

The 6 Alpha reports for Zones 1 to 6 [4] and Zones 7 to 9 [5] classify the Site as having a high risk of UXO occurrence. The majority of the Site was undeveloped during World War II, and therefore was not a primary target. Some land uses across the Site may have been secondary targets however, including Portland Cement Works, New Northfleet Paper Mills, pumping stations and a railway station.

It was considered that any bombs that did fall on the Site, may have gone unnoticed. Subsequent development across parts of the Site reduce the risk, as any UXO encountered would have been removed. Many parts of the Site are still relatively undeveloped however, which may mean that the probability of encountering an UXO is significantly higher.

3. Ground Investigation

3.1. Introduction

The scope of the ground investigation was developed according to the need for geotechnical and geo-environmental information within:

- Specific areas of the Site and to provide general coverage;
- Current and historical potentially contaminative site uses;
- Known areas of CKD deposition; and
- The areas of proposed development as understood at the time of the investigation.

The overall objectives of the investigation were to:

- To provide an improved ground model for the Site; and
- To fill in data gaps from historical ground investigations.

The Site was significantly constrained at the time of the ground investigation due to a number of factors including ownership and accessibility issues.

The rationale and scope for both the geotechnical and geo-environmental sampling and analysis is given in Table B-1 in Appendix B along with an exploratory hole location plan.

3.2. Ground Investigation Rationale

The 2015 intrusive ground investigation was designed based on the findings of the Phase 1 Risk Assessments [1] [2] following a review of available historical land use information and data from various sources. The current use of the Site, the proposed development plans for the Site as understood at that time and the requirement to gain relevant geotechnical information, were also taken into account during the design of ground investigation.

The exploratory holes were undertaken to provide the following information:

- An assessment of the groundwater and perched water regime;
- An assessment of the of the ground gas regime;
- Determination of the thickness of the CKD and Made Ground; and
- Data to develop the ground model for foundation and earthworks design.

Table B-1 in Appendix B outlines each exploratory hole location along with its initial proposed depth and geotechnical and geo-environmental rationale; only those locations completed as part of this investigation are included. Please see the individual zone investigation summary tables in their respective chapters for details of the investigation works completed.

3.3. Health and Safety

Although the works were not notifiable under the Construction (Design and Management) (CDM) Regulations 2015, the works were undertaken in accordance with the regulations. During the ground investigation, Personal Protective Equipment (PPE) was worn whilst on-site and in the site compound. This comprised high visibility trousers, long-sleeved high visibility tops, hard hats, steel toe-capped boots, safety goggles and gloves.

During the ground investigation, asbestos was detected in several samples of Made Ground by the GE's laboratory. This resulted in full asbestos suits, gloves and masks being worn by all members of staff working in or by the Made Ground.

3.4. Service Clearance

Prior to any intrusive works, available service plans provided by GE were consulted and service clearance was undertaken at each intrusive location by a suitably qualified person with a CAT and Genny. Inspection pits were completed to a depth of approximately 1.2 m bgl, where possible, within the borehole locations in advance of drilling to check for the absence of below ground services and obstructions. Anecdotal evidence from Lafarge and CMS-Enviro (advisers to Lafarge on landfill management) was also utilised where appropriate and the majority of the locations across Zones 1 and 2 were reviewed by a representative from CMS-Enviro prior to being advanced. All investigation locations were undertaken under Permit to Dig documentations provided and issued by GE as the Principal Contractor.

3.5. Ground Investigation Scope

A ground investigation for the Site was undertaken by GE between 8th June and 3rd July 2015. Technical supervision was provided by Atkins on behalf of LRCH. The exploratory holes undertaken as part of this ground investigation were carried out in accordance with Atkins' Specification [3], which included a schedule of their number and target depths. The exploratory holes have been numbered based on the type of intrusive investigation undertaken (borehole, windowless sample or trial pit) and the zone the exploratory hole was conducted in, e.g. WS203 represents a windowless sample undertaken in Zone 2.

UXO and archaeology specialists were present at each exploratory hole location during the ground investigation, to mitigate the risk of encountering buried UXO or items of archaeological significance.

Some of the proposed exploratory holes could not be completed due to access issues associated with landowner agreements in Zones 4, 6, 7 and 8, and hard strata encountered or anticipated in Zones 2, 3 and 5. Given the reduction in scope, Atkins extended some of the borehole depths and adjusted the originally proposed methodology where necessary to gain the maximum amount of information possible. Table 3-1 below summarises the numbers of each type of exploratory hole successfully completed, the locations of which are shown in Appendix B.1.

The factual report for the ground investigation was provided by GE [6].

Table 3-1 Summary of Exploratory Holes by Zone

Zone	Trial Pit	Windowless Sample/Rotary	Cable Percussive with Rotary Follow-on
1	0	2	1
2	1	5	3
3	2	0	0
5	0	2	0
7	2	6	0
Total	**5**	**15**	**4**

3.5.1. Trial Pits

Five machine excavated trial pits were completed across the Site using a ten tonne tracked excavator. They were logged from arisings without man-entry. Photographs and disturbed samples were taken (both geotechnical and geo-environmental) and *in situ* tests were attempted (shear vane and hand penetrometer tests). Further details on *in situ* testing are given in Section 3.5.3. Each trial pit was backfilled and compacted in sequence with the arisings, with the topsoil being placed last.

All the trial pits were 0.6 m wide and between 2.8 m and 3.5 m long. TP201 was excavated to 1.9 m bgl and TP301 to 2.4 m bgl. Both of these trial pits were terminated before reaching the scheduled depth due to encountering hard strata (large concrete boulders) that could not be excavated.

TP701 and TP702 were terminated early (at 3.3 m and 3.4 m bgl respectively) due to encountering a water drainage pipe surrounded by loose, collapsible gravel. The drainage pipe was not damaged during excavation.

3.5.2. Boreholes

3.5.2.1. Windowless Sampling/Rotary Boreholes

A total of 15 No. windowless sample boreholes were conducted, five of which used a Terrier rig to a maximum depth of 12m bgl, using 128mm diameter casing. The remaining ten were conducted using a Pioneer rig to a maximum depth of 29.95m bgl using 128mm to 140mm sized casings, where rotary was used to advance boreholes. Some of the windowless sample boreholes in Zone 7 were continued to depths of up to 29.85m bgl, without the use of rotary techniques, due to the presence of weak Chalk.

In-situ Standard Penetration Tests (SPT) were carried out in all boreholes. Where possible, cores were retrieved, these were then split, photographed, logged and sub-sampled at the main site compound. Disturbed (both geotechnical and geo-environmental) and undisturbed samples were taken.

Windowless samples (with 'WS' identifier) were not scheduled to go deeper than the Alluvium as they were primarily used to confirm the thickness of the CKD present within these areas and to take samples from this material, as well as installing standpipe piezometers. WS201 (a to h) and WS301 (a, b and c) were terminated at shallow depths (less than 1.5m) as hard strata was encountered.

Information on groundwater was obtained from the drilling records and standpipes, which were installed in all of the boreholes.

After completion, each borehole was installed with a groundwater and gas monitoring installation. WS201 (a to h) and WS301 (a, b and c) were backfilled with arisings and bentonite as they were too shallow for installations.

3.5.2.2. Cable Percussion with Rotary Follow-on

A total of 4 No. cable percussive boreholes were conducted using a light cable percussive (shell and auger) rig to a maximum depth of 60.2m bgl using 300mm casings. 250mm sacrificial grouted casing was used in all cable percussive boreholes in areas with suspected CKD. This was used to stop the potential contamination of the chalk aquifer with CKD leachate. Rotary drilling techniques were used to advance boreholes when bedrock was encountered using a Pioneer rig or a Geobore 'S' rig.

Boreholes BH101, BH202, BH203 and BH204 were carried out to depths of 60.2m, 32.0m, 40.65m and 20.1m respectively.

In situ SPTs were carried out in all boreholes and disturbed (both geotechnical and geo-environmental) and undisturbed samples were taken. The samples were logged and sampled during the drilling by an Engineer and sub-sampled at the site compound.

After completion, each borehole was installed with a groundwater and gas monitoring installation.

3.5.3. *In Situ* Testing

In situ tests were undertaken to assist in determining geo-environmental and geotechnical parameter values and aid correlation with laboratory tested samples and technical literature. Table 3-2 below summarises the *in-situ* tests conducted during this ground investigation.

Table 3-2 Summary of the *In Situ* Tests Conducted across the Site

In Situ Test	Number of Tests Carried Out	Commentary
Falling Head Permeability Test	18	Falling head permeability tests were carried out in accordance with BS EN ISO 22475-1.
Standard Penetration Test	176	SPTs were carried out in accordance with BS EN ISO 22476-3+A1:2011 at 1 m depth intervals until 10 m depth was reached, then at 1.5 m intervals thereafter, 3 m in rotary. This was to provide an estimate of shear strength and relative density.

3.5.4. Installations

Information on groundwater levels and ground gas concentrations was obtained from drilling records and borehole standpipes, which were installed in 18 No. boreholes (see Table 3-3). Each of the boreholes were backfilled with bentonite up to the required response zone, where granular sand filter (2-5mm) was deposited. A bentonite seal, concrete and raised helmet covers were then installed above the response zone. The installations themselves comprised slotted standpipes with a diameter of 50 mm and a geosock (i.e. wrapped in geotextile).

The boreholes were monitored during the fieldwork period by GE where possible and in the post-fieldwork period at fortnightly intervals for a total of two months. Samples were taken from each installation where groundwater/leachate was present. Each installation was appropriately developed prior to sampling by purging three times the well volume.

Table 3-3 Groundwater and Gas Monitoring Standpipes across the Site

Exploratory Hole Number	Response Zone Depth (m bgl)	Geology at Response Zone
BH101	40.5 – 24.5	Chalk
BH201	6.5 – 1.4	Made Ground
BH202	31.5 – 20.5	Chalk
BH203	11.5 – 8.7	RTD
BH204	12.2 – 6.8	Alluvium / RTD
BH501	19.5 – 12.5	Chalk
BH502	19.5 – 11.0	Made Ground / Chalk
BH703	9.5 – 7.0	RTD / Chalk
BH704	4.7 – 1.2	Alluvium
BH705	19.5 – 3.7	Chalk
BH706	29.3 – 8.5	Chalk
BH707	19.5 – 10.5	Chalk
BH708	29.5 – 10.0	Chalk
WS101	6.0 – 1.3	Made Ground
WS102	5.22 – 1.3	Made Ground
WS202	11.0 – 2.8	Made Ground
WS203	4.0 – 1.3	Made Ground
WS204	8.9 – 1.5	Made Ground

3.6. Geotechnical Laboratory Testing

Laboratory tests were scheduled on some of the samples obtained from the exploratory holes for general geotechnical classification and to determine the strength, compressibility and compaction properties, and the chemical aggressivity of the strata, see Table 3-4.

Table 3-4 Summary of Geotechnical Laboratory Testing

Laboratory Test	Number of Tests Carried Out	Standard
Natural water content	81	BS EN ISO 17892-1:2014
Natural moisture content	47	BS EN ISO 17892-1:2014 [Part 2:3.2]
Saturated moisture content	19	BS EN ISO 17892-1:2014 [Part 2:3.3]
Liquid limit, plastic limit and plasticity index	74	BS EN ISO 17892-1:2014 [Part 2:4.3, 5.3 and 5.4]
Linear shrinkage tests	1	BS EN ISO 17892-1:2014 [Part 2:6.5]
Bulk density by linear measurement	5	BS EN ISO 17892-2:2014-5.1
Bulk density by immersion in fluid method	2	BS EN ISO 17892-2:2014-5.2
Particle size distribution by wet sieving	84	BS EN ISO 17892-1:2014 [Part 2:9.2]
Particle size distribution by Sedimentation by pipette	30	BS EN ISO 17892-1:2014 [Part 2:9.4]
Particle size distribution by Sedimentation by hydrometer	28	BS EN ISO 17892-1:2014 [Part 2:9.5]
Organic matter content	12	In-house methods

Laboratory Test	Number of Tests Carried Out	Standard
BRE SD1 Sulphate tests	7	In-house methods
Dry density/moisture content relationship using 2.5 kg rammer	3	BS EN ISO 17892-1:2014 [Part 4:3.2 and 3.3/3.4]
One-dimensional consolidation properties, test period 5 days	2	BS EN ISO 17892-1:2014 [Part 5:3]
Shear box test	4	BS EN ISO 17892-1:2014 [Part 7:4]
Permeability by triaxial cell	2	BS EN ISO 17892-1:2014 [Part 6:6]
Unconsolidated undrained triaxial compression single stage test	7	BS EN ISO 17892-1:2014 [Part 7:8]
Unconsolidated undrained triaxial compression multi stage test	1	BS EN ISO 17892-1:2014 [Part 7:9]
Consolidated drained triaxial compression test	4	BS EN ISO 17892-1:2014 [Part 8:4, 5, 6 and 8] and Head (1986)
consolidated undrained multistage triaxial compression test	1	BS EN ISO 17892-1:2014 [Part 8:4, 5, 6 and 7] and Head (1986)
Uniaxial compressive strength	7	ISRM (1981)
Single measurement of point load strength	31	ISRM (1981)
Split and describe	5	BS5930:2010

3.7. Geo-Environmental Laboratory Testing

3.7.1. Introduction

Investigation locations were placed in accordance with the rationale as outlined in the specification provided by Atkins [3].

A number of points were positioned within areas of the Swanscombe Peninsula which are currently under active Environmental Permits, including South Pit and Surge Pile Phases 1 and 3. Appropriate permissions were gained from the Environment Agency prior to undertaking this work [7] [8] after submission of an Application for Approval [7]. These were chosen to determine the thickness of any CKD deposits and to gain additional leachate/perched water and ground gas information.

Some zones of the Site were inaccessible during the ground investigation, including those within former and current industrial estates where it is considered that there is potential for contamination.

3.7.2. Geo-Environmental Analytical Testing

Soil sampling was undertaken at regular intervals at each investigation location, and at points informed by visual and olfactory indicators of potential contamination. Headspace screening of soils of volatile organic compounds (VOCs) using a photo-ionisation detector (PID) was undertaken for each environmental sample.

Sampling of soils was generally undertaken at the following frequency:

- Three depths within the top 1m (approximately 0.3m bgl, 0.5m bgl and 1.0m bgl);
- Every 0.5m within the Made Ground/fill to the base;
- At 0.5m intervals within the top 1m of natural strata;
- At 1.0m intervals within the natural strata and at each change of strata to 5.0m into the underlying Chalk; and
- Where visual/olfactory indications of contamination were noted.

Sample selection for analysis was designed to ensure a suitable spread of data, both laterally and vertically, which also included natural strata and sufficient sampling from within each type of below-ground material to determine its chemical quality as far as possible, considering the reduced scope of investigation. All soil samples taken during the ground investigation were scheduled for asbestos screening and identification.

The Waste Acceptance Criteria (WAC) testing was undertaken on a variety of below-ground materials from across the Site, including Made Ground, CKD, and RTDs.

Soil samples were analysed for potential contaminants of concern (CoCs) based on the findings of the Phase 1 risk assessments [1] [2]. All soil samples (outwith a number of samples analysed for asbestos only to aid in geotechnical laboratory testing) were analysed for the following suite of environmental determinands (Suite E):

- Heavy metals and metalloids (aluminium, antimony, arsenic, barium, beryllium, boron, cadmium, chromium (hexavalent and total), copper, iron, lead, manganese, mercury, molybdenum, nickel, phosphorus, selenium, vanadium, zinc, calcium, magnesium and potassium)
- asbestos (identification and if identified, subsequent quantification);
- pH;
- Electrical conductivity;
- Sulphate and sulphide;
- Soil organic matter (SOM);
- Ammoniacal nitrogen;
- Nitrate and nitrite;
- Chloride;
- Nitrogen;
- Cyanide (total, free and complex);
- Speciated Polycyclic Aromatic Hydrocarbons (PAHs);
- Total phenols;
- Total Petroleum Hydrocarbons Criteria Working Group (UK) (TPH CWG);
- Monoaromatics (benzene, toluene, ethylbenzene, p & m-xylene, o-xylene (BTEX) and methyl tert butyl ether (MTBE));
- 56 VOCs; and
- 55 Semi-Volatile Organic Compounds (SVOCs).

Groundwater and perched water/leachate monitoring wells were suitably developed prior to sampling being undertaken by purging at least three well volumes. Sampling was undertaken using new bailers for each location and groundwater levels were recorded both during the fieldwork period and during subsequent monitoring rounds.

Groundwater samples were submitted for analysis of the following (Suite F):

- pH;
- Electrical conductivity;
- Cyanide (total, free and complex);
- Sulphate and sulphide;
- Chloride;
- Ammoniacal nitrogen;
- Nitrate and nitrite;
- Chemical and biological oxygen demand;
- Nitrogen;
- Total phenols;
- PAHs;
- Heavy metals and metalloids (same as soil suite);
- Monoaromatics (BTEX, MTBE);
- TPH CWG;
- 56 VOCs; and
- 55 SVOCs.

Refer to Table 3-5 for a summary of the number of tests carried out for each contamination suite.

Table 3-5 Summary of Geo-Environmental Laboratory Testing

Laboratory Test	Number of Samples Analysed	Standard
Suite E (Soil samples Schedule S1.20.3)	65	BS10175:2011
Suite F (Water samples Schedule S1.20.3)	71	BS10175:2011
Suite I (Stable, non-reactive hazardous waste in non-hazardous waste landfill Schedule S1.20.5)	4	BS10175:2011

Additional soil-derived leachate samples were scheduled from Zones 1 and 2 to facilitate controlled waters risk assessments.

A total of 15 soil-derived leachate samples were analysed from various site investigation locations at varying depths in order to provide a lateral and vertical spread of data across a number of below-ground materials, notably to assess the potential for CKD deposits to leach into natural strata below. Leachate samples were analysed for the following suite of determinands:

- PAHs;
- Heavy metals and metalloids (including arsenic, barium, beryllium, boron, cadmium, chromium, copper, Lead, mercury, nickel, selenium, vanadium and zinc);
- BTEX; and
- TPH CWG.

3.7.3. Quality Assurance/Quality Control

Samples were analysed by i2 Analytical, a laboratory accredited to ISO17-25:2-005 and MCERTS, under appropriate chain of custody documentation. Duplicate groundwater samples were collected from 2 No. boreholes during the second, third and fourth monitoring rounds.

There was generally good agreement between the original and duplicate samples, with the following exceptions identified when compared to either sets of generic assessment criteria as outlined in Section 5.5.2:

- BH101 (29/07/15): ammoniacal nitrogen and phenol exceeded within the duplicate and not the original sample;
- BH204 (27/08/15): chloride, copper and selenium exceeded in the duplicate and not the original sample; iron and mercury exceeded in the original sample and not the duplicate;
- WS203 (29/07/15): aluminium, copper, and iron exceeded in the original sample and not the duplicate;
- BH501 (26/08/15): copper exceeded in the original and not the duplicate; and
- BH706 (14/08/15): iron exceeded in the original sample and not the duplicate.

However, when the results for these specific compounds were compared with other results for the same borehole location taken on different days, only the following exceedances were recorded over the entire monitoring period:

- BH204: chloride and selenium; and
- WS203: iron.

Therefore, the majority of the discrepancies between the original and duplicate samples are potentially suggestive of temporal variation in groundwater or inconsistencies with sampling techniques. There were a significant number of exceedances of these three compounds within other boreholes across the Site over each monitoring round, and these discrepancies are therefore not considered likely to change materially the risk assessments presented herein.

3.8. Archaeological Investigation

An archaeological investigation was carried out by Wessex Archaeology on behalf of LRCH at the same time as the geotechnical and geo-environmental ground investigation. The information gained during the archaeological investigation will be available in a separate report provided by Wessex Archaeology (currently in production and to be issued under separate cover).

4. Geotechnical Parameter Derivation

4.1. Introduction

The following sections summarise the derivation of the geotechnical parameters. The geotechnical parameter values for each geological unit are provided in Sections 7 to 13 of this report. A summary of the geotechnical testing is presented in Section 3.6.

4.2. Characteristic Values of Geotechnical Parameters

Values of geotechnical parameters are expressed in terms Characteristic Values, which are defined in BSI BS EN 1997-1 as:

> *"(1)P The selection of characteristic values for geotechnical parameters shall be based on results and derived values from laboratory and field tests, complemented by well-established experience.*
>
> *(2)P The characteristic value of a geotechnical parameter shall be selected as a cautious estimate of the value affecting the occurrence of the limit state."*

Note: "P" denotes that the clause is a Principal of BSI BS EN 1997-1 which means that no alternative method may be used.

4.2.1. Classification and index properties

Classification and index tests do not provide engineering parameters directly but are used to classify soils, identifying trends, strata changes and applying empirical correlations to obtain estimates of other parameters. The classification tests undertaken during this ground investigation comprise Atterberg Limit determinations, moisture content tests and particle size distribution (PSD) gradings. These tests were carried on disturbed and undisturbed samples.

The results are plotted against depth for each geological unit. If a change with depth is noted, more than one characteristic value may be provided for each geological unit.

Natural Moisture Content and Atterberg Limits

The Atterberg Limits is the range of water content over which the soil exhibits plastic behaviour, defined as the liquid limit (w_L) and the plastic limit (w_P), respectively. The water content range itself is defined as the plasticity index (I_P), i.e.:

$$I_P = W_L - w_P$$

Particle Size Distribution

Wet sieving particle size distribution tests were carried out to determine the grading of coarse materials. In order to establish the proportion of the <0.063mm particles, hydrometer tests were carried out on tested samples with >15% clay and silt. The results are plotted as a grading curve with a characteristic grading envelope.

Bulk and Dry Density

Values of bulk and dry density have been determined from laboratory tests on undisturbed U100 driven samples.

4.2.2. Strength

Standard Penetration Tests

Standard Penetration Tests (SPTs) were carried out in all boreholes, which have been plotted against depth below ground level. The N-values derived from SPT results can be correlated with engineering soil parameters by means of established empirical relationships and site specific correlations where these can be established. Table 4-1 below summarises the properties that can be derived from SPT test results [9].

Table 4-1 Determination of Parameters from SPT Results (after CIRIA Report CI43)

Parameter	Material Type		
	Granular Soil	Cohesive Soil	Chalk
φ'	✓		
c_u		✓	
E_u		✓	
E'	✓	✓	✓
m_v		✓	

Where SPT's met refusal (>50 blows for less than 300mm penetration), the results have been extrapolated to give an N value for the full test drive of 300mm using the equation [9]:

$$N = \frac{blows\ during\ test\ drive\ (100)}{penetration\ during\ test\ drive\ (mm)} \times 300$$

Undrained Shear Strength
The undrained shear strength (c_u) has been assessed using the following:

- SPTs; and
- Unconsolidated, undrained triaxial tests.

The undrained shear strength results derived from each of the above tests are plotted against depth below ground level for each geological unit. If a change with depth is noted, more than one characteristic value may be provided for each geological unit.

In cohesive soils it is possible to correlate SPT 'N' values to undrained shear strength using the following relationship proposed by Stroud and Butler (1975) [9]:

$$c_u = f_1 \ x\, N$$

The value of f_1 is determined by the characteristic plasticity index and obtained from the Stroud and Butler (1975) figure of f_1 plotted against plasticity index [9].

Laboratory undrained unconsolidated triaxial tests directly provide a peak undrained shear strength value.

Point Load and Uniaxial Compressive Strength
Uniaxial Compressive Strength (UCS) may be directly determined by UCS tests. It is also possible to determine UCS by c_u, using the following equation:

$$UCS = 2. c_u$$

Point load strength may be determined by using the point load test. The relationship between UCS and point load can be summarised thus:

$$UCS = \ Point\ Load\ \times K$$

Where K is a correlation factor.

Effective Shear Strength (C' and φ')
Effective angle of shearing resistance has been obtained from s' – t' plots derived from effective stress triaxial tests. Note that the characteristic value for effective cohesion (c') is a best estimate of the data set rather than a design value. Therefore, it may not be appropriate to use this value as a design parameter in all situations. This is particularly important in earthwork slopes.

Effective angle of friction for granular material can be obtained indirectly from SPT ‘N’ values using Figure 36a in CIRIA Report C143 (taken from Peck et al. 1974) [9].

4.2.3. Concrete Classification

Chemical tests on potentially aggressive ground/water have been conducted to determine the type of concrete which will be needed for foundation design. The results of these tests have been correlated with the tables in the BRE Special Digest 1:2005 [10] to determine the Design Sulphate Class (DS) of each unit.

5. Geo-Environmental Risk Assessment

5.1. Introduction

The Site both contains a number of current and historical potentially contaminative site uses, including CKD (hazardous waste) tips, historical landfills, former cement works, former gasworks, former sewage works, a historical tar distillery, industrial estates, infilled pits, petrol stations and a number of other land uses. A land contamination risk assessment has been undertaken, based on the findings of the recent ground investigation, to assess risks to human health, controlled waters and property receptors associated with the proposed entertainment resort development.

The scope of the ground investigation was limited due to a number of factors, including a number of zones being inaccessible at the site of the investigation. As such, the assessments herein are indicative and preliminary only and more data will be required to inform a more comprehensive risk assessment. Only those zones investigated are included within the following chapters.

These risk assessments have been presented on a zone by zone basis, where the potential land contamination regime and its effects has been evaluated through the identification and assessment of Source-Pathway-Receptor relationships. Where all three are identified in direct relation to each other, they are termed a PPL, informed by the conceptual site model (CSM). Based on the current Masterplan, the 'theme park' area is located largely within Zone 2, with the remainder of the core resort extending into Zones 3, 4 and 5. Zones 6 to 9 are predominantly for transportation links from the existing infrastructure, such as the A2.

CLR11 [11] provides a technical framework for the development of CSMs and the application of risk assessment to consider whether PPLs are significant and require management or mitigation. The risk assessments below will approach the PPLs from the proposed end-use scenario for each zone in order to address the potential future risks associated with the resort development.

5.2. Relevant Policy Framework

This report has been prepared in line with the National Planning Policy Framework 2012 [12], which has replaced Planning Policy Statement 23 [13] and states:

- The site should be suitable for its new use, taking account of ground conditions and land instability, including that from natural hazards or former activities and pollution arising from previous uses;
- The development is suitable for its location, i.e. unacceptable risks from pollution and land stability are prevented and that unacceptable risks to human health, buildings and the environment are mitigated; and
- Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.

Best practice guidance is given by the Environment Agency and Defra in CLR11 [11], which follows the approach outlined in the Guidelines for Environmental Risk Assessment and Management [14]. CLR11 provides a technical framework for application of a risk management process when dealing with land affected by contamination. The assessment framework and guidance given within these documents have been applied within the assessments herein.

5.3. Geo-Environmental Conceptual Site Models

Within the Phase 1 Risk Assessments [1] [2], CSMs were developed for each zone, which identify PPLs (source-receptor-pathway relationships) for the Site in its current state and which assigned a qualitative ranking of potential significance (prior to investigation and any mitigation). Based on these preliminary CSMs along with other influencing factors, the ground investigation was designed and implemented.

Each preliminary CSM is given in each zone's chapter and assessed therein. The risk categorisations presented on the zone-specific preliminary CSMs are based on an assessment of the potential consequence of each PPL occurring, along with the likelihood that each PPL will occur, in accordance with the framework provided in Construction Industry Research and Information Association (CIRIA) 552 (C552) [15].

Contaminated land risk is a function of the probability and the consequence and is defined using the risk matrix in Table 5-1.

Table 5-1 Estimation of the Level of Risk by Comparison of Consequence and Probability

		Consequence			
		Severe	**Medium**	**Mild**	**Minor**
Probability	**High likelihood**	Very High Risk	High Risk	Moderate Risk	Moderate/Low Risk
	Likely	High Risk	Moderate Risk	Moderate/Low Risk	Low Risk
	Low likelihood	Moderate Risk	Moderate/Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk	Very Low Risk

The description of the classified risks as per C552 [15]:

- **Very High:** There is a high probability that severe harm could arise to a designated receptor from an identified hazard, or there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability.
- **High:** Harm is likely to arise to a designated receptor. Realisation of the risk is likely to present a substantial liability.
- **Moderate:** It is possible that harm could arise to a designated receptor. However, it is either relatively unlikely that any such harm would be severe or, if any harm were to occur, it is more likely that the harm would be relatively mild.
- **Low:** It is possible that harm could arise to a designated receptor, but it is likely that this harm, if realised, would be mild.
- **Very Low:** There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

5.4. Human Health Generic Quantitative Risk Assessment

5.4.1. Introduction

A generic quantitative risk assessment (GQRA) has been undertaken using the currently available data for each zone. A human health GQRA has been undertaken on soils and groundwater data to assess the PPLs in relation to human health receptors. A commercial land use has been assumed for the assessment.

5.4.2. Assessment Methodology - Soils

Detailed guidance on human health risk assessment is available in CLEA framework documents Science Report (SR) 2 [16], SR3 [17], SR4 [18] and the CLEA software. Atkins' GQRA for identified human receptors has compared soil concentration data with generic assessment criteria (GAC) to quantify and estimate the potential risk posed by the contaminant concentrations detected. The GAC considered include:

- Soil Guideline Values (SGVs), published by the Environment Agency in 2009-2010. Soil concentrations at or below the SGV are considered to represent a minimal risk to health after long-term exposure. SGVs have been published for arsenic, cadmium, mercury (elemental, methyl, inorganic), nickel, selenium, BTEX, phenols and dioxins, furans and dioxin-like polychlorinated biphenyls (PCB) substances for residential with the consumption of homegrown produce, allotments and commercial land uses. The SGVs have been developed for a sandy loam soil with 6% SOM content;
- Soil Screening Values (SSVs), developed by Atkins. Atkins has derived a set of over 60 SSVs to supplement the SGVs using the CLEA framework documents and CLEA software. Atkins-derived SSVs are available for the CLEA standard land uses listed above and a residential without the consumption of homegrown produce land use. SSVs have also been derived for a sandy soil with 1% SOM and for non-SR3 land uses of parks, playing fields and open spaces; and
- Category 4 Screening Levels (C4SLs), published by Defra in March 2014 [19]. Six contaminants were assessed comprising arsenic, benzene, benzo(a)pyrene, cadmium, hexavalent chromium and lead. These values were designed to support the revised Part 2A Statutory Guidance for contaminated land published in 2012 [20] which divides contaminated land into four categories ranging from Category 4 (low risk) to Category 1 (significant/high risk). Land in Categories 1 and 2 are likely to be determined as Contaminated

Land whereas land in Category 3 and 4 cannot be determined. C4SLs represent levels of contamination which are considered to be of low toxicological concern (usually at a higher level than minimal risk) and lie comfortably within Category 4. As such, concentrations of contaminants which do not exceed the C4SL cannot be determined as contaminated land.

Atkins is currently evaluating the SSVs with respect to the C4SL guidance and other newly published technical updates. Whilst conclusions are being drawn and in the absence of publication of C4SLs for other substances, soil data at the Site have been screened against C4SLs for the six substances and the SGV/SSVs where no C4SL is available.

The Atkins SSV/Water Screening Values (WSVs) for trichloroethene (TCE) has been withdrawn due to new toxicological data becoming available which indicate that the SSV and WSV are no longer sufficiently conservative. LQM has developed a screening value for TCE[1] at 1% SOM (an 'LQM/CIEH Suitable 4 Use Level' (S4UL)), using exposure settings in accordance with those adopted in the formation of the C4SLs. For generic screening purposes this is considered a reasonably precautionary approach.

A representative SOM value has been calculated based on the average of the results in the analytical data. The average SOM value calculated for the current analytical data is 0.54% and, as such, the more conservative 1% SOM sandy soil SSVs have been used in this data screening. The average SOM was also calculated for each zone to ensure appropriate SSVs were chosen and all averages were below 1%. A full list of the SSVs used in this assessment is presented in Appendix D.

For the human health risk assessment, usual practice is to consider only those contaminants encountered within the top 1 m. The exceptions are those contaminants where inhalation of vapours is a key exposure pathway; for these, samples from all depths have been included within the assessment. The screening spreadsheets contain samples from all depths but only those within the top metre have been considered within the applicable assessments. However, within Zone 2, significant quantities of the current below-ground material will be moved elsewhere within Swanscombe Peninsula during future redevelopment works; therefore, within Zone 2, all samples from all depths have been included within the human health risk assessment. Should the masterplan and associated levels for the development change significantly, this approach is liable to require readdressing.

5.4.3. Assessment Methodology – Groundwater

In order to assess the potential risk to site users from contaminants which may be present in groundwater, the data have been screened against appropriate GAC. Atkins has derived generic WSVs, using the Risk Based Corrective Action (RBCA) model [21] developed by Groundwater Services Inc. These values allow an assessment of the risk to human health receptors via inhalation of vapours derived from volatile contaminants in groundwater (or perched water) based on a sandy loam soil type and groundwater being present at a depth of 1 m bgl. Perched water/leachate was encountered between 1.1 m and 7.95 m bgl. The WSVs are considered a reasonable initial screening tool to assess potential risks to human health via inhalation of groundwater derived vapours.

With respect to potential risks to human health from groundwater, the only relevant pathways are considered to be via the inhalation of vapours; indoors and outdoors. Therefore, only those organic contaminants with the potential to volatilise have been considered in this assessment.

The modelling used to develop assessment criteria estimates the concentration of contaminant in the vapour phase which may have derived from a water source. At the vapour saturation limit, the concentration of contaminant in the vapour phase cannot increase. In some cases, the vapour saturation limit is exceeded. In such instances, theoretically, the vapour concentration will never be high enough to cause an unacceptable risk to human health for that given scenario. Those contaminants for which this is the case do not have a WSV. A full list of the WSVs used in this assessment is presented in Appendix D.

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5.5. Controlled Waters Generic Quantitative Risk Assessment

5.5.1. Introduction

The controlled waters GQRA has been designed to assess the potential risks posed to the identified controlled waters receptors from the migration of contaminants from identified potential sources.

5.5.2. Assessment Methodology

To assess potential risks to the identified controlled waters receptors, soil-derived leachate, and perched water/groundwater concentrations were screened against pertinent criteria. The screening criteria for controlled waters risk assessments are dependent on the nature of the principal receptor. The nearest surface water body is the River Thames, located along the northern edge of the Site. Groundwater flow is noted to be towards the River Thames and is tidally influenced. The site is variably situated above both Secondary (undifferentiated) and Secondary A superficial aquifers, and the entire site is underlain by a Principal Chalk aquifer. There are known potable water supply groundwater abstractions within the area of the peninsula and the Site is variably within Groundwater Source Protection Zones (SPZs). Therefore, both surface water and groundwater are considered to be key controlled waters receptors and soil-derived leachate and groundwater data from the recent investigation were screened against the following criteria in order of preference within each category (where the first is unavailable, the next source on the list was utilised):

Surface Water (EQS):

- UK Standards for the Protection of Surface Water Quality (Water Framework Directive) (SWQ);
- UK Statutory Environmental Quality Standards for the Protection of Aquatic Life (Surface Water) (ALS);
- UK Non-statutory Environmental Quality Standards for the Protection of Aquatic Life (Surface Water) (ALNonS); and
- UK Standards for the Protection of Fisheries (Freshwater) (Fish).

Groundwater::

- UK Standards for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations) (DWS); and
- World Health Organisation Drinking Water Guidelines (WHO).

For certain standards the hardness of the receiving water needs to be taken into account to select the appropriate criteria. The Thames Water website was consulted [22] to determine water hardness in the area of the site and the hardness was given as ‘Hard’, which equates to approximately 338 mg/L $CaCO_3$; this value was used for the selection of the screening criteria where needed.

While there are no screening criteria for a number of the specific PAH compounds, the value for naphthalene – as one of the more toxic PAH compounds – was used as a marker value in this assessment.

In addition, there are no current screening criteria for individual TPH bands within the CWG. As such, individual TPH fractions have been screened against the, now withdrawn, UK drinking water standard of 0.01 mg/L.

Where the laboratory limit of detection (LOD) exceeded the guideline values and the concentrations detected of a compound were not found above this LOD, these were not considered as exceedances within the assessment.

5.6. Ground Gas Risk Assessment

5.6.1. Introduction

Guidance within CIRIA Report C665 [23] and the Ground Gas Handbook [24] has been used to assess the ground gas regime beneath the Site. CIRIA C665 considers two scenarios (Situation A and B). Situation A (modified Wilson & Card) is appropriate to high rise housing and housing with ground bearing slabs or rafts while Situation B (the National House Building Council ‘traffic light’ system) assumes a low rise housing development. Based on the proposed development for the Site, the assessment approach outlined by Situation A, developed by Wilson & Card and incorporated into CIRIA C665, has been adopted. This approach uses gas screening values (GSVs) and maximum gas concentrations, in order to classify a site’s gas regime in terms of potential risks to users/residents from gas generation.

A recent update to the guidance has been issued [25] since the date of the ground investigation design. This has been reviewed and it is considered that the methods herein remain valid in light of this updated guidance.

5.6.2. Methodology

The modified Wilson & Card methodology considers both concentrations of methane and carbon dioxide to generate GSVs for the Site. These GSVs can then be used to assess the risk posed to proposed users/residents by gassing sites. To calculate the GSV, the following equation is used:

GSV (l/hr of gas) = borehole flow rate (l/hr) x gas concentration (%)

Using the GSVs and the maximum borehole concentrations, each borehole has been assessed in terms of recommended building protection measures appropriate for mitigating potential gas risk. Where appropriate, steady state gas concentrations were also considered for use within the calculations of the GSV as per recent guidance. This is detailed in each zone's assessment.

The modified Wilson & Card characteristic situations are shown below in Table 5–2 below:

Table 5–2 Modified Wilson & Card Characteristic Situations

Characteristic Situation (CIRIA R149)	Risk Classification	GSV (CH_4 or CO_2) (l/hr)	Additional Factors	Typical Source of Generation
1	Very low	<0.07	Typically $CH_4 \leq 1\%$ and/or $CO_2 \leq 5\%$ Otherwise, consider increase to CS2.	Natural soils with low organic content; 'typical' Made Ground
2	Low	0.07-0.7	Borehole flow rate not to exceed 70 l/hr. Otherwise, consider increase to CS3.	Natural soil, high peat/organic content; 'typical' Made Ground
3	Moderate	0.7-3.5	-	Old landfill, inert waste; flooded mine working
4	Moderate to high	3.5-15	Quantitative risk assessment required to evaluate scope of protective measures	Mine working susceptible to flooding; completed landfill
5	High	15-70	-	Unflooded, inactive shallow mine working
6	Very high	>70	-	Recent landfill

Most of the environmental benchmarks available in risk assessment for the release to air of hydrogen sulphide and carbon monoxide are based on occupational exposure data (workplace exposure limits (WELs)). Although this does not directly relate to the applicable human health receptor for this assessment, WELs have been used in the first instance, as a qualitative measure, where concentrations of hydrogen sulphide and carbon monoxide are above zero [26].

The exposure limits utilised are detailed in Table 5-3 below:

Table 5-3 Workplace Exposure Limits: CO and H_2S

Substance	Workplace Exposure Limit	
	Long-term Exposure Limit (8 hr TWA Reference Period) (ppm)	Short-term Exposure Limit (15 min Reference Period) (ppm)
Carbon monoxide	30	200
Hydrogen sulphide	5	10

5.6.3. Generation of Gas Screening Values

The GSVs have been calculated as follows:

- Methane GSV: Calculated using the initial (peak) concentration of methane because the worst possible consequence of methane build-up is an instantaneous explosion, with the potential for considerable loss of life and property, which could occur at any time.
- Carbon dioxide GSV: Calculated using the steady state concentration of carbon dioxide because, although the worst possible consequences of carbon dioxide build up is death, the event would require exposure over an extended period, compared to an instantaneous methane explosion. As a result, the event could be more easily mitigated against by the actions of an affected person(s) – for example, by increasing ventilation within the space if they felt drowsy or nauseous.

The GSVs for the site have been calculated for each individual borehole using discrete spot monitoring of the boreholes installed during the 2015 investigation and utilising ground gas data available from historical sources where available.

5.7. Property/Services Indicative Risk Assessment

5.7.1. Introduction

Contaminants present on the Site can pose a risk to property and services, for example, via chemically aggressive ground impacting on placed concrete or water supply pipes installed across the Site. A general assessment of these risks is presented below; it should be noted that this is not a detailed assessment of the risks to property/services and should be used for indicative purposes only.

5.7.2. Methodology

The UK Water Industry Research (UK WIR) has issued guidance for the selection of water supply pipes for brownfield sites [27] along with guidance published by Water UK about the assessment of contaminated land within this context [28]. The guidance covers the assessment of chemical contamination and subsequent selection of suitable products for water pipes.

The chemical parameters generally considered within such an assessment are: VOCs, BTEX, MTBE, sVOCs, phenols, mineral oils (TPHs) and corrosive factors such as pH.

5.8. Historical Data

No additional historical data beyond that available for the Phase 1 reports [1] and [2] were obtainable at the time of this report for assessment, including data from previous Halcrow investigations and HS1. Some data from the ongoing monitoring programme undertaken by Lafarge within Zones 1 and 2 were made available and has been incorporated into the assessments herein.

For these data, the concentrations of analytes marked as “total” were given precedence over those marked with other methods, such as ‘filtered’ or ‘ultra low’; this was considered a suitably conservative approach for the assessment. Where a compound was not analysed as part of our groundwater analysis suite (see Section 3.7.2) and/or there was no available relevant screening criteria, these were not included within the screening spreadsheets, given in Appendices E.1 and E.2.

6. Ground Conditions

6.1. General

This section of the report describes the ground conditions at the Site, based on historical information gained during the desk study phase of this project used in conjunction with the data obtained during the ground investigation. This has been used to to provide descriptions of the geology and provide geotechnical parameters in Chapters 7 to 13 of this report and to aid in the geotechnical and geo-environmental risk assessments in Chapters 15 to 19.

6.2. Regional Geology

The Site is situated on the edge of the London Basin in the North Downs; on the northern edge of the Wealden anticline. This is the faulted region of the London platform with faults trending approximately east to west dissecting the bedrock. The Site is situated in a down thrown block between two normal faults trending east to west.

The Site's regional geology comprises the bedrock geology of the Cretaceous White Chalk which outcrops around the edge of the London Basin. Towards the centre of the London Basin, the Thanet Sand, Lambeth Group and Thames Group can be found. Superficial deposits in the London Basin, primarily comprise Alluvium and RTDs from the Quaternary fluctuations of the River Thames.

6.3. Local Geology

The stratigraphy of the Site is outlined in Table 6-1 below with descriptions based on the ground investigation and BGS maps and memoirs [29] [30] [31] [32] [33] [34]. During the ground investigation, the following strata were encountered: Made Ground, Head Deposits, Alluvium, Peat, RTDs and White Chalk.

Table 6-1 Stratigraphy of the Site

Type	Period	Series	Group	Strata*	Description**
Superficial	Quaternary	Holocene	-	**Made Ground**	Man-made deposit with variable composition including but not limited to: landfill, CKD and crushed chalk.
				Head	Slope deposit comprising medium dense silty, sandy flint and chalk gravel to silty gravelly sand in Zone 7. May be variable across the Site.
				Alluvium	On the Peninsula it is very soft to firm silty clay which is often organic and contains peat beds. In Zone 7, it is very loose gravelly, clayey sand to gravelly, sandy clay.
				Peat	Very soft to soft spongy and fibrous, with some pockets of clay.
				RTDs	Largely comprising beds of loose to dense gravelly sand and sandy gravel, with some sandy, gravelly clay observed in Zones 2 and 7.
Bedrock	Palaeogene	Eocene	Thames Group	London Clay Formation	BGS description: Poorly laminated, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt and silt, with some layers of sandy clay. Commonly contains thin beds of carbonate concretions, shells and disseminated pyrite [34].
				Harwich Formation	BGS description: Typically comprises glauconitic silty or sandy clays, silts and fine- to coarse-grained glauconitic sands, some gravelly, varying to flint gravel beds. Thin beds of grey clay occur in some parts, as do shell-rich beds and thin beds of argillaceous limestone [34].
		Palaeocene/ Eocene	Lambeth Group	Woolwich and Reading Bed Formation	BGS description: Glauconitic sands at base (Bottom Bed), overlain by grey clays and sands with brackish fauna (Woolwich Beds), and interleaved red and variegated clays and sands (Reading Beds) [34].

Type	Period	Series	Group	Strata*	Description**
		Palaeocene		Thanet Formation	BGS description: Glauconite-coated, nodular flint at base (Bullhead Bed), overlain by pale yellow-brown, fine-grained sand that can be clayey and glauconitic. Rare calcareous or siliceous sandstones [34].
	Cretaceous	Upper Cretaceous	White Chalk Group	**Undifferentiated White Chalk**	Structureless chalk comprising white to off-white sandy, silty gravel to gravelly, sandy silt overlying competent chalk of fractured white to off-white chalk with frequent marl laminae and beds of nodular flint.

*in **bold** if encountered during the ground investigation.

**taken from the BGS Lexicon of Named Rock Units [34].

The Swanscombe Peninsula primarily comprises Made Ground of CKD and river dredgings overlying Alluvium which contains at least two to three thick beds of Peat. Underlying the Alluvium are RTDs which overlie the Undifferentiated White Chalk Group. Quarrying has occurred in in south of Zone 2, as well as Zones 4 and 5, resulting in Made Ground directly overlying the White Chalk in these areas. No ground investigation was undertaken in these zones to confirm this.

According to historical sources, Zone 6 primarily comprises landfill overlying White Chalk, with some RTD to the west and Head Deposits to the east; however this was not confirmed during the ground investigation as access constraints prevented intrusive investigation.

The River Ebbsfleet runs along the east of Zone 7 resulting the in deposition of RTD and Alluvium in this area, as confirmed during the ground investigation. Made Ground and the bedrock in Zones 8 and 9 is expected to be Thanet Sand Formation overlying the White Chalk. An exception is where quarrying has taken place, in these areas, Made Ground directly overlies the Chalk. Along the A2 bypass, along the southern boundary of the Site, a localised section of Lambeth Group and London Clay Formation is present. No ground investigation was conducted in Zones 8 and 9, therefore the presence of these units was not confirmed.

6.4. Topography, Geomorphology and Geography

The topography and associated geomorphology and geography of each zone is summarised in Table 6-2 below. This information has been taken from topographic maps, aerial photographs, site walkovers and the ground investigation.

Table 6-2 Zone Topography, Geomorphology and Geography

Zone	Commentary
1	Zone 1 is located at the tip of the Swanscombe Peninsula, a triangular landmass in a meander of the River Thames, and comprises an area of low lying marshland (Broadness Marsh). A flood defence berm (embankment) approximately 8m AOD is located along the eastern and northern sides of this zone.
2	Zone 2 is located approximately in the centre of Swanscombe Peninsula and comprises an artificial landscape of CKD mounds and depressed leachate lagoons. A flood defence berm approximately 8m AOD is located along the western edge of this zone.
3	The northern part of the zone, Zone 3A, is known as both Black Duck Marsh and Swanscombe Marshes (referred to as Swanscombe Marshes herein). It largely comprises marshland with surface water drains running across much of the area. A flood defence berm is present along the north-western edge. Zone 3B comprises flat Made Ground with mounds of crushed glass and other materials across the Site. A road is also being constructed along the south western boundary of the zone, which is slightly raised.
4	In the Northfleet Industrial Estate, a vertical Chalk spine runs along the southern boundary of Zone 4B (Galley Hill Road) which decreases in height towards to east. At its highest, the Chalk face reaches an elevation of 19.2m AOD. The Chalk spine continues from Northfleet Industrial Estate to run along the southern border of Kent Kraft Industrial Estate. Another Chalk spine runs parallel to the first, to the south, and carries the North Kent Line railway.

Zone	Commentary
5	Zone 5 occupies an area which exhibits a long history of anthropogenic influences. Zone 5A is a fairly flat industrial site leading up to chalk spine which houses the A226. The northern boundary of the zone corresponds with the edge of the alluvial plain, as the surface of the Chalk dips below the Alluvium. South of the A226 is Zone 5B, a slightly infilled quarry which is approximately 15m below the top of the chalk spine. The southern edge of the quarry ends in another chalk face with the Swanscombe line railway on top of it.
6	Throughout Zone 6, Chalk has been removed in multiple excavations and chalk spines have been left along the northern boundary of the zone and between sub-Zones 6A and 6B. The northern spine carries a railway and has a backfilled manmade tunnel running underneath it. A ridge bounds the southern boundary of Zone 6. Two large mounds approximately 25m^2 are located 50 m west of Ebbsfleet International Station, in the south-eastern part of the zone, this is a Site of Special Scientific Interest area. Elevation decreases from 27m AOD to 4m towards the east.
7	The topography of Zone 7 dips from 20m AOD to 0m AOD towards the east, likely due to fluvial erosion by the Ebbsfleet River, which crosses the eastern part of the zone.
8	Zone 8 is predominantly agricultural land, with some artificial and worked ground associated with the A2 road and a disused railway line. Elevations in this zone vary between 9m AOD in the north-eastern corner to 32 m AOD in the south.
9	Zone 9 is located to the west of Zone 8 and forms an approximately 1 km long belt encompassing an area of the A2 corridor between the Bean and Northfleet junctions. Elevations vary across the Site, with a minimum of approximately 15m AOD and a maximum of 80m AOD. The approximate centre of the zone is situated on a large hill, which slopes off to the east and west.

6.5. Hydrology and Hydrogeology

6.5.1. Hydrology

The River Thames is located along the northern boundary of the Site, surrounding Swanscombe Peninsula on three sides. Zones 1, 2, 3 and 4 were historically wetlands associated with the River Thames; however, due to flood protection measures and the deposition of Made Ground, much of the wetlands no longer exist. Surface water drains, leachate lagoons and marshland are present across Zones 1, 2 and 3.

The River Ebbsfleet passes through the south-eastern corner of the Site (eastern edge of Zone 7) and flows north towards the Thames. The River Ebbsfleet begins at Springhead, in the south-eastern corner of Zone 7, at a Chalk-derived spring. It is heavily modified and has been classified by the Environment Agency as being of moderate potential for current ecological quality. Much of the river is under a dense vegetation cover, meaning it is not visible by aerial imagery. During the ground investigation, the river was only observed by Springhead Nurseries in Zone 7.

The Swanscombe Peninsula is primarily at a low risk of flooding due to the flood defence berms surrounding the edge of the peninsula. However, outside of the berms flood-risk is classified as high. East of Zone 7 is at high risk of flooding from the Ebbsfleet River. The remainder of the Site has a very low to no risk of flooding from fluvial sources [35].

6.5.2. Hydrogeology

The Alluvium, Head Deposits and RTD across the northern portion of the Site (covering Zones 1 and 2, the majority of Zone 3, the northern half of Zone 4 and the eastern edge of Zones 6 and 7) are classified as Secondary (undifferentiated) Aquifers [35]. The remainder of the Site is not classified as having a superficial aquifer.

The Chalk bedrock underlying the entire Site is classified as a Principal Aquifer, which according to the BGS [36] is up to 450m thick and yields 50 to 100l/s of water from large diameter boreholes and up to 300l/s from adited systems. This system is expected to provide hard to very hard, good quality water. The BGS Hydrogeological Map for this region [37], suggests that regional groundwater flow in the area is northwards towards the River Thames, although the map is dated from 1968 and is out of date.

6.5.3. Installations and Monitoring

Groundwater and perched water/leachate levels were monitored between 15th June 2015 and 26th August 2015 as part of the ground investigation. The recorded levels are presented in Table 6-3.

Groundwater within the Chalk aquifer is generally moving from south to north, towards the River Thames. Some easterly groundwater movement is noted within the Chalk boreholes in Zone 7, related to the presence of the Ebbsfleet River along the eastern boundary of the zone. Groundwater within the limited RTD boreholes is moving north to north-west. Perched water is present within isolated pockets within Zones 1 and 2; with no evidence of a continuous perched water body across the zones. Please refer to Appendix C for groundwater contour plans.

The groundwater within the Chalk and RTD in the northern part of the peninsula was found to be saline, with some saline conditions also encountered within shallow perched water.

Table 6-3 Groundwater and Perched Water/Leachate Level Monitoring

Borehole ID	Depth to Groundwater																			
	17/06/15		19/06/15		22/06/15		26/06/15 – 29/06/15		02/07/15		09/07/15		14/07/15 – 20/07/15		28/07/15 – 29/07/15		12/08/15 – 13/08/15		26/08/15	
	m bgl	m AOD	m bgl	m AOD	m bgl	m AOD	m bgl	m AOD	m bgl	m AOD	m bgl	m AOD	m bgl	m AOD	m bgl	m AOD	m bgl	m AOD	m bgl	m AOD
Groundwater (Chalk)																				
BH101									3.83	1.198			5.26	-0.232	3.99	1.038	4.98	0.048	5.04	-0.012
BH202	3.25	0.996	3.9	0.346	3.58	0.666	3.26	0.986					3.39	0.856	3.85	0.396	3.29	0.956	3.69	0.556
BH501											12.35	0.679	11.73	1.299	11.76	1.269	-		11.73	1.299
BH502											12.30	0.954	12.22	1.034	12.02	1.234	12.09	1.164	11.59	1.664
BH703	4.59	2.458	4.62	2.428	4.59	2.458	4.62	2.428					4.77	2.278	4.67	2.378	4.73	2.318	4.74	2.308
BH705							2.60	2.981					2.76	2.821	2.71	2.871	2.77	2.811	2.77	2.811
BH706	6.14	3.031	6.14	3.031	6.16	3.011	6.22	2.951					6.43	2.741	6.40	2.771	6.46	2.711	6.43	2.741
BH707	10.64	3.732	10.7	3.672	10.73	3.642	10.76	3.612					11.03	3.342	11.02	3.352	11.03	3.342	11.05	3.322
BH708											15.95	3.855	16.03	3.775	16.02	3.785	16.12	3.685	15.93	3.875
Groundwater (RTD)																				
BH203											3.20	0.581	2.37	1.411	2.86	0.921	2.82	0.961	2.89	0.891
BH204									2.92	1.033			2.50	1.453	2.80	1.153	3.08	0.873	2.88	1.073
BH704							DRY	DRY					4.33	2.469	4.21	2.589	4.29	2.509	4.24	2.559
Perched Water/Leachate																				
BH201											3.80	1.424	3.83	1.394	3.81	1.414	3.92	1.304	3.90	1.324
WS101											3.50	5.599	3.31	5.789	3.65	5.449	3.66	5.439	3.78	5.319
WS102									3.06	5.411			3.29	5.181	3.49	4.981	3.98	4.491	3.54	4.931
WS202									7.65	1.772			7.65	1.772	7.26	2.162	7.95	1.472	7.16	2.262
WS203									1.10	1.523			1.14	1.483	1.23	1.393	1.56	1.063	1.27	1.353
WS204											DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY

Note: where boreholes were monitored more than once within a couple of days, only the dip data from the latter monitoring round has been included in the table above.

6.6. Indications of Potential Contamination

A number of visual and olfactory indicators of contamination were noted during the intrusive investigation. In addition, preliminary screening for VOC vapours present within the unsaturated soils was undertaken using a PID (MiniRAE 2000 VOC detector or similar), capable of measuring VOC concentrations in parts per million (ppm). The results of the PID screening provided an initial indication of the presence of volatile compounds within the soil samples. While this method is non-selective and does not identify specific compounds, PID screening helps to ascertain where volatile compounds may be identified during subsequent laboratory analysis. All indications of potential contamination were noted within the Made Ground; please see Section 7.1 of this report for further details.

6.7. Conceptual Ground Model

Following the recent ground investigation, two cross-sections have been produced (see Appendix F) detailing the ground conditions of the Site, including the stratigraphy and geomorphology. These cross-sections are based on the historical results and supplemented by the data from the ground investigation.

From these cross sections, it is evident that the stratigraphy of the Swanscombe Peninsula comprises CKD and Made Ground overlying Alluvium. The Alluvium has three distinct Peat beds which merge into two beds in Zone 2. Beneath the Alluvium are two terraces of RTD, associated with the historical movement of the River Thames. The Chalk bedrock underlies these superficial deposits and has a flat, uniform morphology which gradually increases in elevation from the southern edge of Zone 2 to the chalk spines in Zone 5.

Zone 7 is located on the edge of the Chalk downlands, of which in the northern part of Zone 7, Made Ground comprising landfill, infills Southfleet Pit which has been excavated into the Chalk. Towards the mid-section of Zone 7, which is adjacent to the Ebbsfleet River, the Alluvium overlies RTD. Only one visible river terrace has been recorded, however more may be present. The Alluvium extends southwards beyond the RTD to lie directly on top of the Chalk bedrock. In the southernmost section of Zone 7 Head Deposits can be found (located past Spring Head Nurseries).

Further information on each stratum is given in Sections 8 to 13 of this report.

7. Made Ground

7.1. Location and Thicknesses

Made Ground is found across the entire Site. In Zone 1, the thickness of the Made Ground was found to be between 4.7 m and 6.8 m and thickens towards the edge of the Peninsula. This was based on historical records and the recent ground investigation. In Zone 2, the thickness of the Made Ground was shown to be between 2.3m and 10.8m, which thickens towards the north of the zone.

Exploratory holes in Zone 3 suggests that the thickness of the Made Ground in this area is over 3m; however as the trial pits did not penetrate the base of this unit, the full thickness cannot be verified. The Made Ground in Zone 5B has been shown to be up to 11.75m thick, based on one borehole installed during the ground investigation.

The thickness of Made Ground in Zone 7 is between 1.2m to 7.7m, however is typically 1.5m thick. Along the eastern edge of the Zone, the Made Ground is very thin (1.2m), thickening to 7.7m towards the middle of the zone.

7.2. Geomaterials

7.2.1. Zones 1 and 2

The Made Ground which makes up the majority of Zones 1 and 2 is heterogeneous in its composition and spatially. It can be described as very soft to firm, brown, mottled black, grey, reddish brown, orange and white, slightly sandy, gravelly clay to silt with a matrix of CKD. Large beds and lenses of CKD have also been noted throughout the two zones, particularly in Zone 2, which has been described in more detail in Section 8 of this report.

Beds of loose off-white and dark brownish-grey mottled orange, slightly sandy gravel, cobbles and boulders have also been observed. The gravel, cobbles and boulders comprise poorly cemented CKD, chalk, flint, concrete and clinker. Other man-made materials, such as plastic and metal, have also been found.

These descriptions largely match those in the historical borehole logs, however ‘river dredgings’ underlying the CKD are mentioned in ten historical boreholes in Zone 1. Due to the reduced ground investigation in this area, the presence of river dredgings was not confirmed during the ground investigation.

7.2.2. Zones 3 and 5B

Zones 3 and 5B have historically been infilled with excavated material from the construction of the HS1 tunnel. The deposited material has been identified in the ground investigation as largely comprising poorly cemented/weak to firm, orangish brown, to brownish grey to light grey to off-white, gravelly, fine to coarse sand to sandy, gravelly, silt to silty, sandy gravel. The gravel consists primarily of chalk, with some flint, sandstone and weakly cemented silt.

There are no historical borehole records in these areas with which to compare to these results.

7.2.3. Zone 7

The Made Ground in Zone 7 comprises firm dark brown to dark grey, locally mottled, white, sandy, gravelly, locally clayey silt which is underlain by soft to firm, yellowish brown, slightly sandy and gravelly clay. The gravel consists of chalk and flint. Historical logs also note the presence of clayey to silty sand.

7.3. Groundwater

Perched water strikes were encountered in the Made Ground during drilling, particularly in Zone 1. In Zone 1, the perched water was encountered at levels of between 2.01m and 7m AOD, with a typical level of 5m AOD in the ground investigation logs and historical logs. In Zone 2, only boreholes BH202 and WS203 encountered perched water in the Made Ground at 1.1m and 0.6m AOD.

7.4. Indications of Contamination

Table 7-1 below details the visual and olfactory observations made during the intrusive works and the maximum positive PID readings, where available.

Table 7-1 Visual and Olfactory Observations and PID Readings

Location	Depth (m bgl)	Observations	Maximum PID Reading (ppm)
BH101	0.0 – 1.0	Rags, wood, concrete fragments (from 0.0 – 0.4m bgl), brick and charcoal.	< 0.1
	1.0 – 1.4	Rare brick and concrete, poorly cemented CKD (from 1.2 – 1.4m bgl).	< 0.1
	1.4 – 3.0	Clay piping. Hydrocarbon odour noted. Strong odour noted from 2.65 – 2.80 m bgl. Perched water sample taken.	3.5
	3.0 – 4.7	Clinker, ash and CKD.	< 0.1
	39.6 – 39.7	Wisps of rare black staining.	-
BH201	0.0 – 0.35	Possible CKD.	-
	0.35 – 0.7	CKD.	-
	0.7 – 1.2	Brick, concrete, clinker. Rare ceramics, glass, and metal fragments.	-
	1.2 – 1.6	Cobbles and boulders of brick and brick masonry. Frequent wood fragments.	< 0.1
	1.6 – 1.7	Strongly cemented concrete.	< 0.1
	1.7 – 2.2	Brick and poorly cemented CKD.	< 0.1
	2.2 – 2.7	Dark blue with brown specks. Brown, poorly cemented CKD. Dark blue colouring. CKD.	< 0.1
	2.7 – 4.05	Clinker, black speckled, poorly cemented CKD. Potential asbestos woven textile at 3.05 – 3.25m bgl.	< 0.1
	4.05 – 4.45	CKD with rare clinker.	< 0.1
	4.45 – 5.6	CKD with bricks. Black specks. Brown CKD matrix from 4.9 – 5.6.	< 0.1
	5.6 – 6.5	CKD with rare black specks. Potential asbestos woven textile at 6.05m bgl.	< 0.1
	6.5 – 7.7	Potential asbestos woven textile at 6.5m bgl and 7.2m bgl. Strong organic odour.	< 0.1
	7.7 – 9.7	Grey staining.	< 0.1
BH202	0.0 – 3.7	CKD.	< 0.1
	3.7 – 4.9	Vitreous clinker.	< 0.1
	4.9 – 8.0	CKD.	1.5
BH203	0.0 – 0.6	Possible CKD, rare wood and metal wire fragments.	< 0.1
	0.6 – 0.8	Concrete.	< 0.1
	0.8 – 2.4	Bricks, concrete, rare cloth pieces and wood fragments.	0.7
	2.4 – 3.8	Bricks and concrete.	0.5
	3.8 – 4.2	Mottled black silty clay with potential hydrocarbon odour.	-
	4.2 – 5.4	Slight organic odour.	1.0
BH204	0.0 – 0.8	Brick and concrete fragments. Rare fibrous textile fragments from 0.2 – 1.2m bgl.	0.5
	0.9 – 2.3	Bricks and concrete fragments.	0.8
	3.3 – 7.3	Slight organic odour. Rare wood fragments from 6.0 – 6.7m bgl.	0.6
BH501	7.2 – 8.25	Coarse gravel-sized pockets of black ash, rare wood fragments, coal, bricks, rare ceramics.	2.8
	8.25 – 9.0	Brick fragments.	< 0.1
	9.0 – 9.95	Concrete gravels from 9.15 – 9.2m bgl.	< 0.1
	10.7 – 11.9	Rare concrete fragments.	< 0.1
BH502	1.8 – 5.5	Frequent pockets of gravelly sands where gravels are fine brick fragments.	0.8

Location	Depth (m bgl)	Observations	Maximum PID Reading (ppm)
	7.5 – 7.6	Cement odour.	-
	7.9 – 8.7	Red, yellow and black ashy brick and cement gravel with low brick content.	0.4
	8.7 – 9.15	Coarse brick and coal gravels, rare black slate. 9.05 – 9.15m bgl brick and mortar.	0.4
	10.7 – 10.9	Coarse gravel of purple stained quartzite.	0.3
	10.9 – 11.15	Rare medium gravel sized pockets of black ashy silt.	0.3
BH703	1.2 – 1.6	Rare wood fragments.	< 0.1
BH705	0.0 – 0.5	Bricks, geotextile membrane across pit at 0.5m bgl.	< 0.1
BH707	0.0 – 0.1	Bricks and tiles.	-
	0.1 – 1.2	Granite and tile gravels.	< 0.1
	1.2 – 2.55	Rare fine to medium sized pockets of ash, gravels of rare brick and concrete. Cobble of concrete at 1.55-1.65 m bgl.	< 0.1
	2.55 – 3.7	Rare wood fragments, rare fine to medium gravel sized pockets of ash, gravels of brick.	< 0.1
	3.7 – 4.7	Rare fine to medium sized pockets of ash.	< 0.1
	6.4 – 6.5	Cobble of concrete.	-
BH708	0.05 – 1.2	Tile fragments.	< 0.1
	1.2 – 1.7	Rare ceramics. Organic odour.	< 0.1
	1.7 – 3.4	Rare concrete and brick, concrete cobble at 2.1 – 2.2m bgl. Organic odour.	< 0.1
	3.4 – 4.7	Rare ceramics.	< 0.1
	5.9 – 6.5	Organic odour.	-
TP201	0.0 – 0.35	Concrete gravels, possible CKD.	< 0.1
	0.35 – 0.7	CKD.	< 0.1
	0.7 – 1.2	Bricks, concrete, and clinker with high cobble content of brick. Ceramics, glass and metal fragments, rare fragments of grey plastic ducting.	0.1
	1.2 – 1.6	Cobbles and boulders of brick and brick masonry, frequent wood fragments.	< 0.1
	1.6 – 1.9	Strongly cemented concrete.	0.3
TP301	0.0 – 1.7	Brick, brick masonry and concrete. Possible CKD.	0.4
	1.7 – 2.2	Cobbles and boulders of concrete, frequent fragments of black plastic coated fibrous textile. Rare glass fragments, plastic coated electric cable, plastic and wood. Two small fragments of carpet at 2.1m bgl.	< 0.1
	2.4	Concrete slab.	< 0.1
TP302	0.0 – 1.2	Steel reinforcement bar and scaffolding pole with square footing at 0.2m bgl. Possible CKD.	0.6
	1.2 – 1.6	Brick, concrete, rare wood fragments. Possible CKD.	0.4
	1.6 – 2.2	Rare brick, wood, and polythene fragments. Possible CKD.	0.1
	2.2 – 3.5	Wooden fence posts, steel plates.	0.1
TP701	0.0 – 0.4	Rare brick, polythene sheeting.	0.5
	0.4 – 0.9	Bricks.	0.5
	0.9 – 2.0	Rare brick, polythene fragments, green packing tape in pit at 0.9m bgl.	0.5
TP702	1.1 – 1.6	Brick cobbles, strong hydrocarbon odour.	0.2
WS101	1.2 – 1.95	CKD.	< 0.1
	1.95 – 5.3	CKD.	5.6
	5.3 – 6.0	CKD.	4.5
WS102	0.5 – 5.2	CKD.	< 0.1
WS202	0.5 – 1.6	CKD.	< 0.1

Location	Depth (m bgl)	Observations	Maximum PID Reading (ppm)
	1.6 – 2.1	CKD, coal gravels.	< 0.1
	2.1 – 11.1	CKD. White staining at 7.5 m bgl. Greenish grey staining at 8.7m bgl.	1.5
WS203	0.0 – 0.5	Brick and concrete.	0.6
	0.5 – 0.85	Concrete	< 0.1
	0.85 – 4.1	CKD.	0.5
WS204	0.5 – 1.2	CKD.	0.8
	1.2 – 5..8	CKD. Coarse gravel sized black staining at 2.8 m bgl.	< 0.1
WS301	0 – 0.5	Rare ash. Rare coarse gravel sized glass fragments.	< 0.1
	0.5 – 1.65	Rare ash. CKD.	< 0.1

7.5. Geotechnical Parameters and Preliminary Engineering Considerations – Zones 3 and 5

This section provides the geotechnical material properties of the Made Ground in Zones 3 and 5 (CTRL fill), including classification and index properties, undrained shear strength, effective shear strength, consolidation, stiffness, permeability and chemistry.

7.5.1. Classification and Index Properties

Natural Moisture Content

The moisture contents for Made Ground in Zones 3 and 5 were determined from 21 samples. The results range from 13.4 to 39.4% and are plotted against depth below ground level in Graph F3.1.

Atterberg Limits

Atterberg limits tests were carried out on 11 samples of the Made Ground in Zones 3 and 5. The results of the Atterberg limits tests are plotted on a plasticity chart in Graph F4.1 and on Graph F5.1 in Appendix G. Based on the plasticity chart, the Made Ground in this area is classified as a low plasticity clay and silt to intermediate plasticity silt (CL, ML and MI).

The plastic limit results for Made Ground in Zones 3 and 5 (CTRL spoil) ranged from 17 to 32%. The results broadly decrease with depth, with a characteristic value of 28%. The liquid limit results ranged from 27 to 43%. The results do not vary with depth, resulting in a characteristic value of 36%. The plasticity index results for Made Ground in Zones 3 and 5 ranged from 4 to 26%, with a characteristic value of 10%. The results do not vary with depth.

Particle Size Distribution

Particle size distribution determinations were carried out on 13 samples of Made Ground and grading curves are presented in Graph F6.1 in Appendix G. The samples overall have a highly variable grading with the characteristic grading curve of a slightly silty gravelly SAND to sandy gravelly SILT, which is consistent with the literature.

7.5.2. Standard Penetration Test

Twenty-three SPTs were undertaken in the Made Ground in Zones 3 and 5, supplemented by two historical SPT results. The SPT ‘N’ value for the Made Ground in this area ranged from 1 to 45 which have been plotted against depth below ground level in Graph F7.1 in Appendix G. These results indicate that the Made Ground is very loose to very dense and is variable with depth.

7.5.3. Soil Chemistry

Eleven sets of BRE testing was undertaken for the Made Ground in Zones 3 and 5. The characteristic results have been assessed using the method in the Building Research Establishment’s Special Digest’s report on Concrete in Aggressive Ground [10], where the characteristic value depends on the number of samples tested. Using the BRE Special Digest report [10] the Made Ground in Zones 5 and 7 has been classed as having a Design Sulphate (DS) Class of DS-2 and an ACEC class of AC-2 for brownfield sites with no pyrite.

7.5.4. Summary

Table 7-2 below presents a summary of the geotechnical properties for the Made Ground in Zones 3 and 5.

Table 7-2 Summary of Geotechnical Properties for Made Ground in Zones 3 and 5

Test	Unit	No of Results	Result Range	Characteristic Value	Comments	Graph
Moisture Content (W)	%	21	13.4 – 39.4	-		F3.1
Atterbergs	-	11	CL and MI			F4.1
Plastic Limit (W_P)	%	11	17 – 32	28		F5.1
Liquid Limit (W_L)	%	11	27 – 43	36		F5.1
Plasticity Index (I_P)	%	11	4 – 26	10		F5.1
SPT N- value	-	25	1 – 45	Very loose to very dense		F7.1
DS Class	-	11	DS-2		Based on the assumptions of mobile groundwater and Brownfield site with no pyrite	-
ACEC	-	11	AC-2			-

7.6. Geotechnical Parameters and Preliminary Engineering Considerations – Zone 7

This section provides the geotechnical material properties of the Made Ground in Zone 7, including classification and index properties, undrained shear strength, effective shear strength, consolidation, stiffness, permeability and chemistry.

7.6.1. Classification and Index Properties

Natural Moisture Content

The moisture contents for Made Ground in Zone 7 were determined from 15 samples. The results range from 6.7 to 27.7% and are plotted against depth below ground level in Graph F3.2.

Atterberg Limits

Atterberg limits tests were carried out on eight samples of the Made Ground in Zone 7. The results of the Atterberg limits tests are plotted on Graphs F4.2 and F5.2 in Appendix G. Based on the plasticity chart, the Made Ground in this area is classified as a low to intermediate plasticity clay (CL and CI).

The plastic limit results for Made Ground in Zone 7 ranged from 17 to 25%. The results do not vary with depth, resulting in a characteristic value is 19%. The liquid limit results ranged from 28 to 52%, with a characteristic value of 38%. The liquid limit in this unit does not vary with depth. The plasticity index results for Made Ground in Zone 7 ranged from 9 to 27%, with a characteristic value of 19%. The results do not vary with depth.

Particle Size Distribution

Particle size distribution determinations were carried out on eight samples of Made Ground and grading curves are presented in Graph F6.2 in Appendix G. The samples overall have a highly variable grading with the characteristic grading curve of a slightly silty gravelly SAND to sandy gravelly SILT, which is consistent with the literature.

7.6.2. Standard Penetration Test

Fourteen SPTs were undertaken in the Made Ground in Zones 7, supplemented by 73 historical SPT results. The SPT 'N' value for the Made Ground in this area ranged from 4 to 54 (from both the ground investigation and historical results) which have been plotted against depth below ground level in Graph F7.2 in Appendix G. These results indicate that the Made Ground is soft to very stiff.

7.6.3. Soil Chemistry

Sixteen sets of BRE testing was undertaken for the Made Ground in Zone 7. The characteristic results have been assessed using the method in the Building Research Establishment's Special Digest's report on Concrete in Aggressive Ground [10], where the characteristic value depends on the number of samples tested. Using the BRE Special Digest report [10] the Made Ground in Zones 5 and 7 has been classed as having a Design Sulphate (DS) Class of DS-2 and an ACEC class of AC-2 for brownfield sites with no pyrite.

7.6.4. Summary

Table 7-3 below presents a summary of the geotechnical properties for the Made Ground in Zone 7.

Table 7-3 Summary of Geotechnical Properties for Made Ground in Zone 7

Test	Unit	No of Results	Result Range	Characteristic Value	Comments	Graph
Moisture Content (W)	%	15	6.7 – 27.7	-		F3.2
Atterbergs	-	8	CL and CI			F4.2
Plastic Limit (W_P)	%	8	17 – 25	19		F5.2
Liquid Limit (W_L)	%	8	28 – 52	38		F5.2
Plasticity Index (I_P)	%	8	9 – 27	19		F5.2
SPT N- value	-	87	4 – 54	Soft to very stiff		F7.2
DS Class	-	16	DS-2		Based on the assumptions of mobile groundwater and Brownfield site with no pyrite	-
ACEC	-	16	AC-2			-

8. Cement Kiln Dust

8.1. Location and Thicknesses

The CKD is located primarily in Zones 1 and 2. Zone 1 in entirely covered in CKD according to historical borehole logs and information gained during the ground investigation. In this area, the thickness of the CKD is expected to be between 3.7m and 6.8m, with the thicknesses increasing towards the edge of the peninsula. No CKD is expected along the water's edge.

In Zone 2, the CKD is largely located in the northern part and just south of the HS1 tunnel. In this zone, the thickness of the CKD has been recorded as being between 3.25m and 10.8m thick. No CKD is expected above the HS1 tunnel and within the sewage treatment works perimeter.

8.2. Geomaterials

From the results of the ground investigation, the CKD comprises loose to cemented light brown to grey silty fine sand to fine sandy silt. The Made Ground that the CKD makes up, also consists of gravel, cobbles, clinker, ash and other man-made products described in Section 7 of this report.

8.3. Groundwater

In Zone 1, the perched groundwater was encountered at between 2.01m and 7m AOD, with a typical level of 5m AOD in the ground investigation logs and historical logs. In Zone 2, only boreholes BH202 and WS203 encountered perched groundwater in the CKD at 1.1m and 0.6m AOD.

8.4. Geotechnical Parameters and Preliminary Engineering Considerations

This section summarises the geotechnical material properties of the CKD, including classification and index properties, undrained shear strength, effective shear strength, consolidation, stiffness, permeability and chemistry.

8.4.1. Classification and Index Properties

Bulk Density and Dry Density

Bulk densities were determined from seven undisturbed samples (three from Atterberg limit and moisture content tests, and four from triaxial tests). The results range from 1.35 to 1.7Mg/m^3. Graphs F1.1 and F2.1 in Appendix G presents the bulk density data and, based on these graphs, the characteristic bulk density value for the CKD is 1.4Mg/m^3.

Dry densities were determined from seven undisturbed samples (three from Atterberg limit and moisture content tests, and four from triaxial tests). The results range from 0.61 to 1.14Mg/m^3. Graphs F1.1 and F2.1 in Appendix G present the dry density data and, based on these graphs the characteristic dry density value for the CKD is 0.9Mg/m^3. Historical reports gave maximum dry density values in the range of 1.10 to 1.30Mg/m^3 in the CKD, which correlate with the results from the ground investigation [38].

For both bulk and dry densities, the values were higher from the triaxial tests, than from the Atterberg limit and moisture content tests. This is likely due to the different testing techniques.

Natural Moisture Content

Moisture content tests were carried out on 22 samples of CKD. The results were between 20.7 and 111% and are plotted against depth below ground level in Graph F3.3. This shows that the moisture content is variable with depth, which is consistent with historical reports [38].

The historical geotechnical reports give a moisture content range of between 15 and 96% for the CKD [38] which largely agrees with the results obtained during the ground investigation. The historical data were not plotted on the graphs as the raw data were not available during the time of writing this report.

Atterberg Limits

Atterberg limits tests were carried out on 14 samples of the CKD, of which seven were proven to be non-plastic. The results of the remaining four Atterberg limits tests are plotted on Graphs F4.3 and F5.3 in Appendix G. Based on the plasticity chart, the CKD is classified as a high to very high plasticity silt and high to very high plasticity clay (ML, MH, MV, CH and CV).

The plastic limit results ranged from 23 to 65%. The liquid limit results ranged from 27 to 97%. The plasticity index results ranged from 4 to 28% with an additional result of 49%, which is considered anomalous.

8.4.2. Standard Penetration Test

A total of 40 standard penetration tests (SPTs) were undertaken in the CKD in Zones 1 and 2. The SPT 'N' value for the CKD ranged from 1 to 74, with one result at 95. The SPT 'N' results have been plotted against depth below ground level in Graph F7.3 in Appendix G. These results indicate that the CKD is highly variable, however the presence of gravel within the unit is likely to account for the higher N-values. No historical data were available to compare these results with.

8.4.3. Undrained Shear Strength (c_u)

The undrained shear strength (c_u) has been assessed using the following:

- 40 standard penetration tests (SPT); and
- Four unconsolidated undrained triaxial tests.

Standard Penetration Tests

Forty SPT's were carried out in 10 boreholes. In cohesive soils it is possible to correlate SPT 'N' values to undrained shear strength using the following relationship proposed by Stroud & Butler [9]:

$$c_u = f_1 \times N$$

The value of f_1 is determined by the characteristic plasticity index which is approximately 10% for the CKD. This corresponds to an f_1 of 7. The undrained shear strength results based on SPT values are plotted against depth in Graph F8.1 in Appendix G.

The results ranged from 7 kPa to 665 kPa with a characteristic value of approximately 30 kPa which increases by roughly 20kPa per every metre below ground level (30+20z).

Unconsolidated Undrained Triaxial Tests

Four Unconsolidated Undrained Triaxial Tests were undertaken in the CKD, which gave results of between 27 and 640 kPa. No correlation with depth was observed, therefore a characteristic value cannot be determined. The tests were carried out between 2m and 6.7m bgl. The results are plotted against depth below ground level on Graph F8.1 in Appendix G.

8.4.4. Effective Shear Strength (c' and φ')

Four shearbox tests were carried out to determine effective shear strength parameters of the CKD in WS102, WS202 and WS203 between 1.2m and 10m bgl. The results are as follows:

c' = 0 – 10kPa   Φ' = 34.5 – 38º

From these results, the following characteristic parameters have been determined:

c' = 0kPa   Φ' = 36.5º

8.4.5. Soil Chemistry

Fourty-eight sets of BRE testing were undertaken for the CKD. The characteristic results have been assessed using the method in the Building Research Establishment's Special Digest's report on Concrete in Aggressive Ground [10], where the characteristic value depends on the number of samples tested. Using the BRE Special Digest report [10] the CKD has been classed as having a DS Class of AC-5m and an ACEC class of AC-5m for brownfield sites with no pyrite.

8.4.6. Summary

Table 8-1 below presents a summary of the geotechnical properties for the CKD. These results have been discussed in more detail in Sections 8.4.1 to 8.4.5 of this report.

Table 8-1 Summary of Geotechnical Properties for CKD

Test	Unit	No of Results	Result Range	Characteristic Value	Comments	Graph
Dry Density	Mg/m^3	3	0.81 – 1.14	0.9		F1.1 F2.1
Bulk Density	Mg/m^3	3	1.45 – 1.7	1.5		F1.1 F2.1
Moisture Content (W)	%	9	20.7 – 111	-	Highly variable results	F3.3
Atterbergs	-	9	ML, MH, MV, CH, CV			F4.3
Plastic Limit (W_P)	%	7	23 – 65	-		F5.3
Liquid Limit (W_L)	%	12	27 – 97	-		F5.3
Plasticity Index (I_P)	%	7	4 – 28	-		F5.3
SPT N-value		36	1 - 74	Very soft to hard		F7.3
Undrained Shear Strength (c_u) (from SPT N-values)	kPa	38	7 – 665	-	The results are too variable to determine a characteristic value.	F8.1
Undrained Shear Strength (c_u) (from Unconsolidated Undrained Triaxial Tests)	kPa	4	27 – 640	-	The results are too variable to determine a characteristic value.	F8.1
Effective Shear Stress c’	kPa	4	0 – 10	0		-
Effective Shear Stress Φ’	o		34.5 – 38	36.5		
DS Class	-	48	DS-5m		Based on the assumptions of mobile groundwater and Brownfield site with no pyrite.	-
ACEC	-	48	AC-5m			-

9. Alluvium

9.1. Location and Thicknesses

Alluvium was found in all of the boreholes in Zones 1 and 2 on the Swanscombe Peninsula. Looking at historical data, it is also expected to be located in Zones 3A and 4A on the peninsula, however this was not confirmed during the ground investigation. This unit has a recorded thickness of between 4.35m and 12.3m in the boreholes conducted during this investigation and historical borehole logs, and is expected to be variable across the Site due to working and disturbance of the ground.

Alluvium was also found in boreholes along the eastern edge of Zone 7 parallel to the Ebbsfleet River. At this locality, the thickness of the Alluvium ranges from 3.1m to 3.7m.

9.2. Geomorphology

The Alluvium on the Swanscombe Peninsula is fairly planar across Zones 1 and 2 at approximately 1m AOD, thinning out to the south (Zone 5A). This is also the case in Zone 7, where Alluvium is present parallel to the Ebbsfleet River. It has a planar geomorphology at an elevation of approximately 0m AOD.

9.3. Geology

9.3.1. Swanscombe Peninsula (Zones 1 and 2)

The Alluvium on Swanscombe Peninsula is fairly homogenous, comprising very soft to firm grey mottled brown to brownish grey to greyish brown mottled black to off-white silty clay with some rare partly decomposed fibrous organic material with an organic odour. In borehole BH204, it is also described as being slightly sandy and gravelly in its lower part. The gravel comprises angular and subangular fine to coarse chalk and flint. Historical borehole records support this description, with the majority of the logs describing a very soft to stiff grey to greenish grey, slightly organic silty clay to clay.

The Alluvium on Swanscombe Peninsula is interbedded with thick to thin beds of Peat, which are discussed in Section 10 of this report.

9.3.2. Zone 7

The Alluvium in Zone 7 changes somewhat along the course of the Ebbsfleet River towards the north. In BH701 it is described as very loose brown slightly gravelly clayey fine and medium sand which overlies very soft to soft light greyish brown and orangish brown slightly gravelly slightly sandy clay. The sand appears to be local as it does not appear in TP701 or TP702, however this may be due to the worked ground overlying the Alluvium. In these trial pits, soft to firm orangish brown, mottled grey silty clay is present.

9.4. Groundwater

Groundwater was encountered in three boreholes in the Alluvium across the Site. In the Swanscombe Peninsula area, groundwater was encountered in BH101 at -8.87m AOD (13.9m bgl) and in BH203 at -4.8m AOD (8m bgl). In Zone 7, groundwater was encountered at 10.1 m AOD (4.2m bgl) in BH704.

9.5. Geotechnical Parameters and Preliminary Engineering Considerations – Swanscombe Peninsula (Zones 1 and 2)

This section summarises the geotechnical material properties of the Alluvium on Swanscombe Peninsula, including classification and index properties, undrained shear strength, effective shear strength, consolidation, stiffness, permeability and chemistry.

9.5.1. Classification and Index Properties

Natural Moisture Content

Moisture content tests were carried out on four samples of Alluvium on the Swanscombe Peninsula. The results were between 11.8 and 75%. Moisture content is plotted against depth below ground level in Graph

F3.4 in Appendix G. Published literature gives a moisture content range of between 70 and 169% for the Alluvium on Swanscombe Peninsula [39] which is much higher than the results obtained during the ground investigation. However, these results may include the Peat which has been separated out and discussed in Section 10 of this report.

Atterberg Limits

Atterberg limits tests were carried out on two samples of the Alluvium on Swanscombe Peninsula. The results of the Atterberg limits tests are plotted on Graphs F4.4 and F5.4 in Appendix G. One result shows the Alluvium is classified as a low plasticity clay (CL), the other as extremely high plasticity clay (CE).

The plastic limit results were 12 and 38%, due to the lack of data, a characteristic value cannot be determined and no historical values are available for comparison.

The liquid limit results were 22 and 91%, due to the lack of data, a characteristic value cannot be determined. These results are lower than those recorded in historical reports for Swanscombe Peninsula, which range from 100 to 198% [39], which are more characteristic of Peat.

The plasticity index results were 10 and 53%, due to the lack of data, a characteristic value cannot be determined. Published literature gives a plasticity index range of between 70 and 138% for the Alluvium on Swanscombe Peninsula, which is much higher than the results from the ground investigation, which is attributed to the inclusion of Peat.

Particle Size Distribution

One particle size distribution determination was carried out on a sample of Alluvium from the Swanscombe Peninsula and the grading curve is presented in Graph F6.3 in Appendix G. The grading shows that this unit is a silty sandy GRAVEL, which is consistent with the literature.

9.5.2. Standard Penetration Test

A total of five SPTs were undertaken in the Alluvium on the Swanscombe Peninsula, supplemented by 15 historical SPT results. The SPT 'N' value for the Alluvium ranged from 1 to 33, with the most recent test results recording values of 7 to 33. The SPT 'N' results have been plotted against depth below ground level in Graph F7.4 in Appendix G. These results indicate that the Alluvium is very soft to very stiff, however the presence of gravel within the unit is likely to account for the higher N-values. If the gravel is discounted, the results show that the Alluvium is in fact very soft to firm.

9.5.3. Undrained Shear Strength (c_u)

The undrained shear strength (c_u) has been assessed using the following:

- 20 SPT; and
- 1 undrained triaxial test.

The undrained shear strength results are plotted against depth in Graph F8.2 in Appendix G.

Standard Penetration Tests

Undrained shear strength (c_u) of the Alluvium in Swanscombe Peninsula has been assessed using the five SPT results (from three boreholes), supplemented by 15 historical SPT results (from four boreholes). The following relationship, proposed by Stroud & Butler [9], was used to convert the SPT N-values to c_u:

$$c_u = f_1 \times N$$

The value of f_1 is determined by the characteristic plasticity index however this value has not been able to be determined from the test results of the Alluvium on Swanscombe Peninsula. The variability of f_1 decreases with an increase in plasticity index, reaching a constant of approximately 4.5 for plasticity indices of above 28%, therefore a value of 4.5 has been applied here.

The undrained shear strength results based on SPT values are plotted against depth in Graph F8.2 in Appendix G. The results ranged from 4.5 to 58.5kPa (discounting the higher values affected by gravel) with a characteristic value of approximately 10kPa which increases approximately 3.5kPa per metre with depth.

Unconsolidated Undrained Triaxial Tests

C_u has been determined from one undrained triaxial tests in BH204. The results show that the c_u of the Alluvium in this sample is 26kPa.

9.5.4. Permeability and Infiltration

The determination of permeability of the Alluvium has been undertaken on two samples in a triaxial cell. The samples were taken at 3.3 to 3.75m bgl and 5.2 to 5.65m bgl in BH204.

Table 9-1 Variable Head Permeability Test Results for Alluvium (determined by Atkins)

Exploratory Hole ID	Type of Test	Depth of Test Zone (m)	Permeability (m/s)
BH204	Constant Head (Triaxial)	3.3 – 3.75	3.0×10^{-10}
BH204		5.2 – 5.65	5.9×10^{-11}

The results above correspond with the coefficient of permeability of an unfissured clay.

9.5.5. Soil Chemistry

Fourteen sets of BRE testing were undertaken for the Alluvium on Swanscombe Peninsula. The characteristic results have been assessed using the method in the Building Research Establishment's Special Digest's report on Concrete in Aggressive Ground [10], where the characteristic value depends on the number of samples tested. Using the BRE Special Digest report [10] the Alluvium has been classed as having a DS Class of DS-4 and an ACEC class of AC-4 for natural ground with no pyrite.

9.5.6. Summary

Table 9-2 below presents a summary of the geotechnical properties for the Alluvium on Swanscombe Peninsula. These results have been discussed in more detail in Sections 9.5.1 to 9.5.5 of this report.

Table 9-2 Summary of Geotechnical Properties for Alluvium on the Swanscombe Peninsula

Test	Unit	No of Results	Result Range	Characteristic Value	Comments	Graph
Moisture Content (W)	%	5	11.8 – 75.2	75-20z		F3.4
Atterbergs	-	2	CL and CE			F4.4
Plastic Limit (W_P)	%	2	12 – 38	-	Only two points therefore a characteristic value cannot be determined.	F5.4
Liquid Limit (W_L)	%	2	22 – 91	-		F5.4
Plasticity Index (I_P)	%	2	10 – 53	-		F5.4
SPT N-value	-	20	1 – 33	Very soft to firm		F7.4
Undrained Shear Strength (C_u) (from SPT N-values)	kPa	20	4.5 – 58.5	10		F8.2
Undrained Shear Strength (c_u) (from triaxials)	kPa	1	26			F8.2
Organic Matter	%	5	0.4 – 9.8	-		-
DS Class	-	14	DS-4		Based on the assumptions of mobile groundwater and Natural ground with no pyrite.	-
ACEC	-	14	AC-4			-

9.6. Geotechnical Parameters and Preliminary Engineering Considerations – Zone 7

This section summarises the geotechnical material properties of the Alluvium in Zone 7, including classification and index properties, undrained shear strength, effective shear strength and chemistry.

9.6.1. Classification and Index Properties

Natural Moisture Content

Moisture content tests were carried out on seven samples of Alluvium from Zone 7. The results were between 16 and 24.6%, with a characteristic value of 22% (see Graph F3.5).

Atterberg Limits

Atterberg limits tests were carried out on seven samples of the Alluvium from Zone 7, two of which were determined as non-plastic. The results of the remaining five tests are plotted on Graphs F4.5 and F5.5 in Appendix G. Based on the plasticity chart, the Alluvium is classified as a low plasticity clay (CL).

The plastic limit results ranged from 19 to 22% in Zone 7. The results appear to be homogeneous with depth resulting in a characteristic value of 20%. No historical values are available for comparison.

The liquid limit results ranged from 30 to 35% in Zone 7, with a characteristic value of 33%. The liquid limit in this unit is largely homogenous with depth. No historical values are available for comparison.

The plasticity index results ranged from 8 to 15% in Zone 7, with a characteristic value of 14%. No historical values are available for comparison.

9.6.2. Particle Size Distribution

Particle size distribution determinations were carried out on four samples of Alluvium and grading curves are presented in Graph F6.4 in Appendix G. The samples have a reasonably consistent grading with the characteristic grading curve of a very slightly gravely slightly clayey sandy SILT, which is consistent with the literature.

9.6.3. Standard Penetration Test

A total of three SPTs were undertaken in the Alluvium in Zone 7, supplemented by two historical SPT results. The SPT 'N' value for the Alluvium ranged from 3 to 5. The SPT 'N' results have been plotted against depth below ground level in Graph F7.5 in Appendix G. These results indicate that the Alluvium is very soft.

9.6.4. Undrained Shear Strength (c_u)

The c_u has been assessed for the Alluvium in Zone 7 using the three SPT results (from one borehole), supplemented by two historical SPT results.

The value of f_1 is determined by the characteristic plasticity index which is 14% for the Alluvium. This corresponds to an f_1 of 7. The undrained shear strength results based on SPT values are plotted against depth in Graph F8.3 in Appendix G. The results ranged from 14 to 35kPa.

9.6.5. Soil Chemistry

Three sets of BRE testing was undertaken for the Alluvium in Zone 7. The characteristic results have been assessed using the method in the Building Research Establishment's Special Digest's report on Concrete in Aggressive Ground [10], where the characteristic value depends on the number of samples tested. Using the BRE Special Digest report [10] the Alluvium in Zone 7 has been classed as having a DS Class of DS-1 and an ACEC class of AC-1 for natural ground with no pyrite.

9.6.6. Summary

Table 9-3 below presents a summary of the geotechnical properties for the Alluvium in Zone 7. These results have been discussed in more detail in Sections 9.6.2 to 9.6.5 of this report.

Table 9-3 Summary of Geotechnical Properties for Alluvium in Zone 7

Test	Unit	No of Results	Result Range	Characteristic Value	Comments	Graph
Moisture Content (W)	%	7	16 – 24.6	22		F3.5
Atterbergs	-	4	CL			F4.5
Plastic Limit (W_P)	%	4	19 – 22	20		F5.5
Liquid Limit (W_L)	%	4	30 – 35	33		F5.5

Test	Unit	No of Results	Result Range	Characteristic Value	Comments	Graph
Plasticity Index (I_P)	%	4	8 – 15	14		F5.5
SPT N-values	-	5	3 – 5	Very soft		F7.5
Undrained Shear Strength (c_u) (from SPT N-values)	kPa	5	14 – 35	-	To variable to determine a characteristic value.	F8.3
DS Class	-	3	DS-1		Based on the assumptions of mobile groundwater and Natural ground with no pyrite.	-
ACEC	-	3	AC-1			-

10. Peat

10.1. Location and Thicknesses

Peat was encountered in boreholes in Zone 1 and the northern section of Zone 2 on the Swanscombe Peninsula, however it is also expected to be encountered in Zones 3A and 4A based on the desk study. Three distinct beds have been noted within the Alluvium in Zone 1, each between 0.9m and 1.9m thick, which merged to form two thicker beds in Zone 2 (1.2m and 2.6m).

10.2. Geomorphology

The Peat on the Swanscombe Peninsula is fairly planar across Zones 1 and 2. The three beds were recorded at approximately -2m AOD, -5m AOD and -7.5m AOD, the upper two beds join to make one thick bed by BH204 in the south of Zone 2 (see Appendix F).

10.3. Geology

The Peat is interbedded with the Alluvium described in Section 9 of this report. The Peat itself is noted as comprising very soft to soft spongy brown fibrous peat with some pockets of soft brown silty clay. This matches the descriptions in the historical borehole records.

10.4. Groundwater

Groundwater was not noted in this unit due to the use of flush methods during drilling, however due to the nature of Peat, it is expected to be saturated and contain perched groundwater.

10.5. Geotechnical Parameters and Preliminary Engineering Considerations

This section summarises the geotechnical material properties of the Peat, including classification and index properties, undrained shear strength, effective shear strength, consolidation, stiffness, permeability and chemistry.

10.5.1. Classification and Index properties

Bulk Density and Dry Density

Bulk and dry densities were determined from the following undisturbed samples:

- 14 triaxial tests; and
- 14 oedometer tests.

The results show that the Peat has a bulk density of between 1.09 to 1.69Mg/m^3, with a characteristic value of approximately 1.6 Mg/m^3. Graphs F1.2 and F2.2 in Appendix G present these data.

The results show that the Peat has a dry density of 0.33 to 1.06Mg/m^3, with a characteristic value of 1Mg/m^3. Graph F1.2 and F2.2 in Appendix G presents the dry density data.

Natural Moisture Content

Moisture content tests were carried out on 43 samples of Peat. The results were between 17 and 155% and are plotted against depth below ground level in Graph F3.6 in Appendix G. No published literature is available to compare with these results.

Atterberg Limits

Atterberg limits tests were carried out on seven samples of the Peat, of which one was determined as non-plastic. The results of the remaining tests are plotted on Graphs F4.6 and F5.6 in Appendix G. Based on the plasticity chart, the Peat is classified as a very high to extremely high plasticity clay (CV and CE).

The plastic limit results ranged from 20 to 42%, with one additional result of 109%, with a characteristic value of approximately 35%.

The liquid limit results ranged from 24 to 91%, with one additional result of 209%, with a characteristic value of 80%.

The plasticity index results ranged from 27 to 52%, with one additional results of 109%, with a characteristic value of 42%.

Particle Size Distribution

Particle size distribution determinations were carried out on one sample of Peat and the grading curve is presented in graph F6.5 in Appendix G, which indicates that the Peat is a slightly gravelly slightly silty SAND, which is not consistent with the literature. However further tests are recommended to determine fully the particle size distribution of the Peat.

10.5.2. Standard Penetration Test

A total of 11 SPTs were undertaken in the Peat in Zones 1 and 2. No historical SPT results were available for this unit. The SPT 'N' value for the Peat ranged from 1 to 8 with one additional result of 20 which have been plotted against depth below ground level in Graph F7.6 in Appendix G. These results indicate that the Peat is very soft to stiff.

10.5.3. Undrained Shear Strength (c_u)

The undrained shear strength (c_u) has been assessed using the following:

- 11 SPT; and
- three undrained triaxial tests.

The undrained shear strength results are plotted against depth in Graph F8.4 in Appendix G.

Standard Penetration Tests

In cohesive soils it is possible to correlate SPT 'N' values to undrained shear strength using the following relationship proposed by Stroud & Butler [9]:

$$c_u = f_1 \times N$$

The value of f_1 is determined by the characteristic plasticity index, which has been determined as 42% and an f_1 of 4.5 has been derived. The results ranged from 4.5 kPa to 90kPa with a characteristic value of approximately 10kPa.

Unconsolidated Undrained Triaxial Tests

Shear strength has been determined from three undrained triaxial tests in BH101 and BH204. The results show that the c_u of the Peat in this area ranges from 10 to 26kPa.

10.5.4. Effective Shear Strength (c' and φ')

Three consolidated undrained triaxial tests were carried out to determine effective shear strength parameters of the Peat in BH202 between 8.2m and 16m bgl. Graph F10.1 in Appendix G shows that the results for the peak effective shear strength on a plot of t vs s', and a linear fit to the data gives the following values:

c' = 35 kPa Φ' = 20.4°

Two consolidated drained triaxial tests were also undertaken in the Peat (BH101 between 5.2m and 9.2m bgl), the results gave the following parameters:

c' = 5.2 – 12kPa Φ' = 18 – 26.5°

10.5.5. Consolidation

Two consolidation tests and three consolidated drained triaxial tests were carried out on samples of Alluvial Peat in BH101 and BH202. The coefficients of compressibility (m_v) and consolidation (c_v) are shown in Table 10-1 below.

Table 10-1 m_v and c_v for Peat

Borehole	Depth (m bgl)	M_v (m^2/MN)	C_v (m^2/MN)	Pressure Range (kPa)
BH101	7.35	0.764 – 1.665	0.01 – 0.52	150 – 300
BH101	12.1	0.385 – 1.060	0.02 – 0.32	240 – 480
BH202	8.2 – 8.6	1.44 – 2.71	0.03 – 0.44	380 – 620
BH202	13.0 – 13.45	0.69 – 1.45	0.09 – 1.14	480 – 870
BH202	16.0 – 16.45	0.4 – 0.94	0.16 – 0.20	460 – 940

10.5.6. Organic Matter

One organic matter test was undertaken for the Peat, this was completed on a sample at 14m bgl in BH202. The result showed the Peat had 7.8% organic content in this sample.

10.5.7. Soil Chemistry

Three sets of BRE testing was undertaken for the Peat. The characteristic results have been assessed using the method in the Building Research Establishment's Special Digest's report on Concrete in Aggressive Ground [10], where the characteristic value depends on the number of samples tested. Using the BRE Special Digest report [10] the Peat has been classed as having a DS Class of DS-3 and an ACEC class of AC-3 for natural ground with no pyrite.

10.5.8. Summary

Table 10-2 below presents a summary of the geotechnical properties for Peat. These results have been discussed in more detail in Sections 10.5.1 to 10.5.7 of this report.

Table 10-2 Summary of Geotechnical Properties for Peat

Test		Unit	No of Results	Result Range	Characteristic Value	Comments	Graph
Dry Density		Mg/m^3	28	0.87 – 0.91	1		F1.2 F2.2
Bulk Density		Mg/m^3	28	1.09 – 1.69	1.6		F1.2 F2.2
Moisture Content (W)		%	43	17 – 155	-	There is a high variability of results, therefore a characteristic value could not be determined.	F3.6
Atterbergs		-	5	CV and CE			F4.6
Plastic Limit (W_P)		%	5	20 – 42	35		F5.6
Liquid Limit (W_L)		%	5	24 – 91	80		F5.6
Plasticity Index (I_P)		%	5	27 – 52	42		F5.6
SPT N-values		-	11	1 – 8	Very soft		F7.6
Undrained Shear Strength (c_u) (from SPT N-values)		kPa	11	4.5 – 90	10		F8.4
Undrained Shear Strength (c_u) (from triaxials)		kPa	3	10 - 11	-	Too few points to determine a characteristic value.	F8.4
Effective Shear Strength	c'	kPa	5	5.2 – 35	-	There is a high variability of results, therefore a characteristic value could not be determined.	F10.1
	Φ'	°	5	18 – 26.5	-		
Consolidation (c_v)		m^2/MN	5	0.01 – 1.14	-		-
Compressibility (m_v)		m^2/MN	5	0.4 – 2.71	-		-
Organic Content		%	1	7.8			-

Test	Unit	No of Results	Result Range	Characteristic Value	Comments	Graph
DS Class	-	3		DS-3	Based on the assumptions of mobile groundwater and Natural ground with no pyrite.	-
ACEC	-	3		AC-3		-

11. River Terrace Deposits

11.1. Location and Thicknesses

RTDs were found underlying the Alluvium across Zones 1 and 2, as well as along the eastern edge of Zone 7 along the Ebbsfleet Rivers course. Based on the desk study, it is expected that RTD will also be found in Zones 3A and 4A.

The thickness of the deposits on the Swanscombe Peninsula is approximately 9 m which thins out towards the south. In Zone 7, the RTD are approximately 3 to 5m thick.

11.2. Geomorphology

Two terraces are located on Swanscombe Peninsula, inferred from local borehole data. In Zone 1, the first terrace is at approximately -11m AOD which dips to approximately -14m AOD and thins out in the north of Zone 2 but continues across the whole zone. The second terrace is located at approximately -5m AOD in the south of Zone 2, and thins out towards Zone 5A.

In Zone 7, two possible terraces have been noted in cross-section D-D' (see Appendix F), one at 0m AOD and one at approximately 8m AOD. Unfortunately a quarry and subsequent landfill are located between the two terraces, so the boundary cannot be identified.

11.3. Geology

11.3.1. Swanscombe Peninsula (Zones 1 and 2)

The RTD on Swanscombe Peninsula are fairly variable across the Site comprising primarily of gravel and sand with some clay towards the southern edge of Zone 2. Beds of loose to dense brownish grey, gravelly, locally silty sand; and loose to medium dense greyish brown to orangey brown to dark blue to off-white slightly silty, sandy gravel. Less sand is noted in Zone 2 than in Zone 1. In BH204, the RTD are described as very soft brownish grey and light grey, slightly sandy, gravelly clay with a medium cobble content.

On the Swanscombe Peninsula, the gravel and cobbles largely comprise subangular to rounded, fine to coarse flint and some chalk.

11.3.2. Zone 7

The RTD in Zone 7 are very varied, comprising medium dense light yellowish brown slightly sandy silt to clayey sand. This overlies dense to medium dense beds of dark grey to yellowish brown slightly silty, clayey gravel and sand.

In Zone 7, the gravel largely comprises angular to subrounded, fine to coarse flint and some chalk.

11.4. Groundwater

Groundwater was not recorded in the RTD during the ground investigation, largely due to the flush methods used during the drilling process.

11.5. Geotechnical Parameters and Preliminary Engineering Considerations – Swanscombe Peninsula (Zones 1 and 2)

This section summarises the geotechnical material properties of the RTD on Swanscombe Peninsula, including classification and index properties, undrained shear strength, effective shear strength, stiffness and permeability.

11.5.1. Classification and Index properties

Natural Moisture Content

Moisture content tests were carried out on four samples of RTD from the Swanscombe Peninsula. The results were between 12.3 and 20.6% and are plotted against depth below ground level in Graph F3.7 in Appendix G. No historical data are available to compare these results to.

Atterberg Limits

Atterberg limits tests were carried out on three samples of the cohesive fraction of the RTD from Swanscombe Peninsula. The results of the Atterberg limits tests are plotted on Graphs F4.7 and F5.7 in Appendix G. Based on the plasticity chart, the RTD are classified as a low plasticity clay (CL).

The plastic limit results ranged from 14 to 19 on the Swanscombe Peninsula. The results general increase with depth, resulting in a characteristic value of approximately 15%. No historical data are available to compare these results with.

The liquid limit results ranged from 23 to 28%, with a characteristic value of 25%. No historical data are available to compare these results with.

The plasticity index results ranged from 9 to 10%, with a characteristic value of 9%. No historical data are available to compare these results with.

Particle Size Distribution

PSD determinations were carried out on six samples of RTD from the Swanscombe Peninsula which are presented as grading curves in Graph F6.6 in Appendix G. The samples do not have a consistent grading with two envelopes identified. The envelopes show that this deposits varies from a slightly gravelly, sandy SILT, to a sandy GRAVEL.

11.5.2. Standard Penetration Test

A total of 12 SPTs were undertaken in the RTD on Swanscombe Peninsula, supplemented by 49 historical SPT results. The SPT 'N' value for the RTD in this area ranged from 3 to 86 with the most recent data recording results of between 5 and 40, which have been plotted against depth below ground level in Graph F7.7 in Appendix G. These results indicate that the RTD is very loose to very dense and broadly increases with depth.

11.5.3. Undrained Shear Strength (c_u)

The undrained shear strength (c_u) has been assessed using one unconsolidated undrained triaxial compression test in BH204. The test result gave an undrained shear strength value of 21kPa at 10m bgl.

11.5.4. Effective Stress

For granular soils, it is possible to estimate the friction angle (Φ') of the soil using the SPT values. For the RTD on Swanscombe Peninsula, the characteristic friction angle has been determined to be approximately 37° (see Graph F9.1 in Appendix F). Due to the variability of the RTD between a sand and a gravel, this value should not be used for design as the characteristic range is likely to be significantly greater.

11.5.5. Permeability and Infiltration

The determination of permeability of the RTD has been undertaken on two samples in a triaxial cell. The samples were taken at 8.7 to 11.5m bgl and 12.2 to 6.8m bgl in BH203 and BH204 respectively.

Table 11-1 Variable Head Permeability Test Results for the RTD (determined by Atkins)

Exploratory hole ID	Type of test	Depth of test zone (m)	Permeability (m/s)	
			Time Lag Method	General Approach Method
BH203	Falling	11.5 – 8.7	9.68×10^{-5}	1.73×10^{-4}
BH204	Falling	12.2 – 6.8	6.63×10^{-5}	5.97×10^{-5}

The test results indicate a coefficient of permeability corresponding to that of a clean to very fine sand.

11.5.6. Summary

Table 11-2 below presents a summary of the geotechnical properties for the RTD. These results have been discussed in more detail in Sections 11.5.1 to 11.5.4 of this report.

Table 11-2 Summary of RTD Geotechnical Properties on Swanscombe Peninsula

Test	Unit	No of Results	Result Range	Characteristic Value	Comments	Graph
Moisture Content (W)	%	4	12.3 – 20.6	-	Too few results were available to determine a characteristic value.	F3.7
Atterbergs	-	5	CL			F4.7
Plastic Limit (W_P)	%	4	14 – 19	15		F5.7
Liquid Limit (W_L)	%	4	23 – 28	25		F5.7
Plasticity Index (I_P)	%	4	9 – 10	9		F5.7
SPT N-values	-	61	3 – 86	Very loose to very dense		F7.7
Undrained Shear Strength (c_u) (from Triaxials)	kPa	1	21			-
Friction Angle (Φ) (from SPT N-values)	°	61	28 – >44	37		F9.1

11.6. Geotechnical Parameters and Preliminary Engineering Considerations – Zone 7

11.6.1. Classification and Index properties

Bulk Density and Dry Density

Bulk and dry densities were determined from one sample from BH204 at 10m bgl. The results are as follows:

Dry Density: 1.73Mg/m^3
Bulk Density: 2.14mMg/m^3

Natural Moisture Content

Moisture content tests were carried out on four samples of RTD in Zone 7. The results were between 17.4 and 23.7% and are plotted against depth below ground level in Graph F3.8 in Appendix G No historical data are available to compare these results with.

Atterberg Limits

Atterberg limit tests were carried out on one sample of the clay fraction of the RTD in Zone 7 and are presented in Graphs F4.8 and F5.8. The test classifies the RTD as a low plasticity clay (CL), with the following parameters:

- Plastic Limit – 21%;
- Liquid Limit – 35%; and
- Plasticity Index – 14%.

No historical data are available to compare these results with.

Particle Size Distribution

PSD determinations were carried out on eight samples of RTD from the Swanscombe Peninsula which are presented as grading curves in Graph F6.7 in Appendix G. The samples do not have a consistent grading with two envelopes identified. The envelopes show that these deposits vary from a slightly silty SAND to a sandy GRAVEL.

11.6.2. Standard Penetration Test

19 SPTs were undertaken in the RTD in Zone 7, no historical SPT results were available to supplement the data. The SPT ‘N’ values for the RTD in this area ranged from 2 to 47 which have been plotted against depth below ground level in Graph F7.8 in Appendix G. These results indicate that the RTD is very loose to very dense and is highly variable. The variability within the results is likely to be associated with the heterogeneous nature of the RTD.

11.6.3. Effective Stress

For granular soils, it is possible to estimate the friction angle (Φ’) of the soil using the SPT values. In Zone 7, the RTD have been given a characteristic value of 37º (see Graph F9.2). Due to the variability of the RTD between a sand and a gravel, this value should not be used for design as the characteristic range is likely to be significantly greater.

11.6.4. Summary

Table 11-3 below presents a summary of the geotechnical properties for the RTD in Zone 7. These results have been discussed in more detail in Sections 11.6.1 to 11.6.3 of this report.

Table 11-3 Summary of RTD Geotechnical Properties in Zone 7

Test	Unit	No of Results	Result Range	Characteristic Value	Comments	Graph
Dry Density	Mg/m^3	1	1.73			-
Bulk Density	Mg/m^3	1	2.14			-
Moisture Content (W)	%	5	17.4 – 23.7	-	Too few results were available to determine a characteristic value.	F3.8
Atterberg	-	1	CL			F4.8
Plastic Limit (W_P)	%	1	21			F5.8
Liquid Limit (W_L)	%	1	35			F5.8
Plasticity Index (I_P)	%	1	14			F5.8
SPT N-values	-	19	2 – 47	Very loose to very dense		F7.8
Friction Angle (Φ) (from SPT N-values)	º	19	28 – 40	37		F9.2

12. Head Deposits

12.1. Location and Thicknesses

Head Deposits were found during the ground investigation along the base of a slope on the southern boundary of Zone 7. In this location, the Head Deposits were between 2m and 6.3m thick, thickening towards the south.

Historical borehole logs and geological maps [30] [31] [32] [33] also note that Head Deposits are present within Zone 3B, 4B, 6 and 8, this was not confirmed during the ground investigation.

12.2. Geomorphology

During the ground investigation, Head Deposits were only encountered in Zone 7 as described above..

12.3. Geology

Head Deposits found in Zone 7 comprise of medium dense, dark grey, brown and white, silty, sandy, angular to subrounded, fine to coarse flint and chalk gravel. Underlying this is medium dense, yellowish brown, mottled, light brown, silty, gravelly, fine to medium sand.

12.4. Groundwater

Groundwater was not recorded in the Head Deposits during the ground investigation, largely due to the flush methods used during drilling.

12.5. Geotechnical Parameters and Preliminary Engineering Considerations

This section provides the geotechnical material properties of the Head Deposits, including classification and index properties, as well as undrained shear strength.

12.5.1. Classification and Index Properties

Bulk Density and Dry Density

Bulk densities were determined from one undisturbed sample. The result for this sample was 1.96 Mg/m^3. The dry density was also determined with a result of 1.58Mg/m^3.

Natural Moisture Content

Moisture content tests were carried out on seven samples of Head Deposits. The results were between 10.1 and 24.6% and are plotted against depth below ground level in Graph F3.9 in Appendix G. This graph shows that the characteristic value is approximately 15%.

Atterberg Limits

Atterberg limits tests were carried out on five samples of the Head. The results of the Atterberg limits tests are plotted on Graphs F4.9 and F5.9 in Appendix G. Based on the plasticity chart, the Head Deposits are classified as a low plasticity clay (CL).

The plastic limit results ranged from 15 to 24%. The results do not vary with depth, leading to a characteristic value of 19%. The liquid limit results ranged from 25 to 38%, with a characteristic value of 35%. The liquid limit in this unit does not vary considerably with depth. The plasticity index results ranged from 10 to 18%, with a characteristic value of 14%.

Particle Size Distribution

PSD determinations were carried out on three samples of Head Deposits and grading curves are presented in Graph F6.8 in Appendix G. The samples have a consistent grading with the characteristic grading curve of a slightly silty SAND and GRAVEL.

12.5.2. Standard Penetration Test

A total of five SPTs were undertaken in the Head Deposits. The SPT ‘N’ value for the Head Deposits in this area ranged from 7 to 23 which have been plotted against depth below ground level in Graph F7.9 in Appendix G. These results indicate that the Head Deposits are loose to medium dense and broadly decrease with depth. This is uncharacteristic of the stratum, and supplementary data will be required to confirm this trend.

12.5.3. Undrained Shear Strength (c_u)

One undrained triaxial test was undertaken in the Head Deposits. The test gave a result of 21kPa.

12.5.4. Effective Stress

For granular soils, it is possible to estimate the friction angle (Φ’) of the soil using the SPT values. For the Head Deposits, the characteristic friction angle has been determined to be approximately 31º (see Graph F9.3). Due to the variability of the Head Deposits between a sand and a gravel, this value should not be used for design as the characteristic range is likely to be significantly greater.

12.5.5. Soil Chemistry

One set of BRE testing was undertaken for the Head Deposits. The characteristic results have been assessed using the method in the Building Research Establishment’s Special Digest’s report on Concrete in Aggressive Ground [10], where the characteristic value depends on the number of samples tested. Using the BRE Special Digest report [10] the Head Deposits has been classed as having a DS Class of DS-1 and an ACEC class of AC-1.

It is important to note that the results have been determined from only one set of data. The results, therefore, may not be representative of the whole unit. Further testing may be required.

12.5.6. Summary

Table 12-1 below presents a summary of the geotechnical properties for the Head Deposits. These results have been discussed in more detail in Sections 12.5.1 to 12.5.4 of this report.

Table 12-1 Summary of Geotechnical Properties for the Head Deposits

Test	Unit	No of Results	Result Range	Characteristic Value	Comments	Graph
Dry Density	Mg/m^3	1	1.58			-
Bulk Density	Mg/m^3	1	1.96			-
Moisture Content (W)	%	7	10.1 – 24.6	15		F3.9
Atterbergs	-	5	CL			F4.9
Plastic Limit (W_P)	%	5	15 – 24	19		F5.9
Liquid Limit (W_L)	%	5	25 – 38	35		F5.9
Plasticity Index (I_P)	%	5	10 – 18	14		F5.9
SPT N-values	-	5	7 – 23	Loose to medium dense		F7.9
Friction Angle (Φ) (from SPT N-values)	º	5	29 – 34	31		F9.3
Undrained Shear Strength (c_u) (from Triaxials)	kPa	1	21			-
DS Class	-	1	DS-1		Based on the assumptions of mobile groundwater and Natural ground with no pyrite	-
ACEC	-	1	AC-1			-

13. White Chalk Group

13.1. Location and Thicknesses

The White Chalk underlies the whole of the Site. The thickness of this unit as a whole is unknown, but is expected to be over 100m which can be subdivided into a weathered structureless Chalk overlying Competent Chalk. The thickness of the structureless Chalk is variable, but is anticipated to be approximately 10m in Zone 1 and the north of Zone 2 decreasing in Zones 5A and 5B. In Zone 7, the structureless Chalk is predicted to range from 2 to 10m in thickness (see Appendix F).

13.2. Geomorphology

Based on the boreholes conducted during the ground investigation, the rockhead's profile is at approximately -15m AOD in Zone 1 and the northern section of Zone 2 (BH101 and BH203), rising to approximately 0m AOD in Zone 5. Vertical Chalk spines at approximately 20m AOD are located in Zone 5. In Zone 7, the rockhead is expected to range from approximately -12m AOD in the north of the zone (the location of the Southfleet Landfill), rising to roughly 10 m AOD in the south.

13.3. Geology

The White Chalk has been noted to comprise of two distinct layers: firstly the weathered 'structureless Chalk' which is followed by 'competent Chalk'. These have been described separately in the following sections.

13.3.1. Structureless Chalk

The White Chalk in this area has been weathered chemically by groundwater, and mechanically by periglacial and fluvial processes, resulting in a zone of what is termed as 'structureless Chalk'. Appendix F (cross-sections through the Site), show the boundary between the weathered and unweathered (competent) Chalk broadly follows the rockhead geomorphology.

In the boreholes conducted during the ground investigation, the structureless Chalk was retrieved as white to off-white sandy, silty, fine to coarse gravel with some cobbles (CIRIA Grade Dc), to slightly sandy gravelly silt (CIRIA Grade Dm). The gravel largely comprise fine to coarse, very weak, medium to high density chalk with some flint.

13.3.2. Competent Chalk

Underlying the weathered structureless Chalk is Chalk which has some structure and has little to no weathering; thus is termed 'Competent Chalk'.

The Chalk excavated during the ground investigation is white with frequent grey marl wisps and laminae, extremely to very weak, with a low to high density. Bands of nodular flint, recovered as gravel, has also been noted within this unit. Density appears to increase with depth.

Fractures within the Chalk were argely subhorizontal (10º to 20º) with some subvertical (20º to 70º), closely and medium spaced, planar, rarely undulating, smooth to rough, often infilled (between 2mm and 15mm) with grey marl and occasionally with white silt and gravel. The fractures are also frequently stained orange. The CIRIA Grade for the Chalk ranges from B2 to C4.

13.4. Groundwater

Groundwater was not recorded in the White Chalk due to the flush methods utilised during drilling. However, the desk study notes that the White Chalk is the Principal Aquifer in this region and therefore is anticipated to be fully saturated.

13.5. Geotechnical Parameters and Preliminary Engineering Considerations

This section provides the geotechnical material properties of the White Chalk, including classification and index properties, undrained shear strength, effective shear strength, consolidation, stiffness, permeability and chemistry.

13.5.1. Classification and Index Properties

Bulk Density and Dry Density

Bulk densities were determined from five undisturbed samples of structureless Chalk. The results ranged from 1.8 to 1.98Mg/m^3. Graphs F1.3 and F2.3 in Appendix G present the bulk density data and, based on these plots, the characteristic bulk density value for the structureless Chalk is 1.95Mg/m^3.

For Competent Chalk, bulk densities were taken from 21 undisturbed samples. The results range from 1.75 to 2.02 Mg/m^3 with a characteristic value of 1.95 Mg/m^3.

Dry densities were determined from five undisturbed samples of structureless Chalk. The results ranged from 1.47 to 1.57Mg/m^3. Graphs F1.4 and F2.4 in Appendix G present the dry density data and, based on this plots the characteristic dry density value for the structureless Chalk is 1.5Mg/m^3.

For Competent Chalk, dry densities were taken from 14 undisturbed samples. The results range from 1.43 to 1.68Mg/m^3 with a characteristic value of 1.5Mg/m^3. Published literature gives a dry density range of 1.35 to 1.61Mg/m^3 for the White Chalk in Northfleet [40]. These results are very similar to those from the ground investigation.

Natural Moisture Content

Moisture content was determined from six samples of structureless Chalk, the results of which are presented in Graph F3.10 in Appendix F. The results ranged from 20 to 32%, no characteristic value could be determined.

Moisture content tests were carried out on 21 samples of Competent Chalk. The results ranged from 8.5 to 32%, with a characteristic value of 26%. Moisture content values are presented in Graph F3.11 in Appendix G of this report.

13.5.2. Standard Penetration Test

A total of 88 SPTs were undertaken in the structureless Chalk, supplemented by 19 historical SPT results. The SPT 'N' values for the structureless Chalk across Zones 1, 2, 5 and 7 ranged from 2 to 158 (from the ground investigation and historical SPT results) which have been plotted against depth below ground level in Graph F7.10 in Appendix G. These results indicate that the structureless Chalk is very weak to moderately weak and largely increases with depth.

A total of 11 SPTs were undertaken in the Competent Chalk, supplemented by 151 historical SPT results. The SPT 'N' values for the Competent Chalk across Zones 1, 2, 5 and 7 ranged from 10 to 146 (from the ground investigation and historical SPT results) which have been plotted against depth below ground level in Graph F7.11 in Appendix G. These results indicate that the Competent Chalk is very weak to moderately weak and largely increases with depth.

13.5.3. Uniaxial Compressive Strength

The UCS of the Competent Chalk was determined using seven undisturbed samples between 19.3 and 58.44m bgl in Zones 1, 2 and 5. The results are presented in Graph F11.1 in Appendix G of this report. The UCS of the Chalk ranged from 2 to 3.6MPa with a characteristic value of approximately 2.7MPa, suggesting the Chalk is a weak rock.

Published literature for UCS of the White Chalk is given for Northfleet and is described in terms of dry and saturated UCS. The Dry UCS has a range of 4.8 to 6.2MPa, and saturated UCS has a range of 1.4 to 2.2MPa [40]. Overall, these results agree with those from the ground investigation.

13.5.4. Point Load Strength

The point load strength ($Is_{(50)}$) of the Competent Chalk was determined using 44 undisturbed samples between 14.4 and 60m bgl in Zones 1, 2 and 5, and gave a result ranging from 0.03 to 0.38MPa.

The point load strength results have been converted to UCS by using a conversion factor of 10 based on Bowden et al (1998) [41]. The equivalent UCS results ranged from 0.3 to 3.8MPa, which indicate that the Competent Chalk is a very weak to weak rock (see Graph F11.1 in Appendix F).

13.5.5. Porosity

Nineteen samples of the Competent Chalk underwent the immersion in water test to determine the porosity of the Chalk. The results ranged from 38 to 47%, with a characteristic value of 44%, as shown in Graph 12.1 in Appendix F.

13.5.6. Soil Chemistry

Ten sets of BRE testing was undertaken for the structureless Chalk. The characteristic results have been assessed using the method in the Building Research Establishment's Special Digest's report on Concrete in Aggressive Ground [10], where the characteristic value depends on the number of samples tested. Using the BRE Special Digest report [10] the structureless Chalk has been classed as having a DS Class of DS-2 and an ACEC class of AC-2 for natural ground with no pyrite.

13.5.7. Summary

Table 13-1 below presents a summary of the geotechnical properties for the White Chalk. These results have been discussed in more detail in Sections of this report.

Table 13-1 Summary of Geotechnical Properties of the White Chalk

	Test	Unit	No of Results	Result Range	Characteristic Value	Comments	Graph
Structureless Chalk	Dry Density	Mg/m^3	4	1.47 – 1.52	1.5		F1.3 F2.3
	Bulk Density	Mg/m^3	4	1.92 – 1.95	1.95		F1.3 F2.3
	Moisture Content (W)	%	6	20 – 32	-		F3.10
	SPT N-values	-	107	2 – 158	Very weak to moderately weak		F7.10
	DS Class	-	10		DS-2	Based on the assumptions of mobile groundwater and Natural ground with no pyrite.	-
	ACEC	-	10		AC-2		-
Competent Chalk	Dry Density	Mg/m^3	13	1.43 – 1.68	1.55		F1.4 F2.4
	Bulk Density	Mg/m^3	13	1.75 – 2.02	1.92		F1.4 F2.4
	Moisture Content (W)	%	21	8.5 – 32	26		F3.11
	SPT N-values	-	162	10 – 146	Very weak to moderately weak		F7.11
	Uniaxial Compressive Strength	MPa	6	2 – 3.6	2.7 Weak rock		F11.1
	Point Load Strength	MPa	44	0.03 – 0.38	-	Unable to determine a characteristic value due to the high range of results.	-
	Uniaxial Compressive Strength (from Point Load Strength)	MPa	44	0.3 – 3.8	Very weak rock to weak rock	Conversion factor = 10	F11.1
	Porosity	%	19	38 – 47	44		F12.1

14. Geotechnical Parameters

Table 14-1 below summarises the characteristic geotechnical parameters of the strata, as determined from the laboratory testing and our experienced engineering judgement.

Table 14-1 Geotechnical Properties of the Strata across the Site

Stratum	Bulk Density (Mg/m^3)	c_u (kPa)	c' (kPa)	Φ' (º)	UCS (MPa)	m_v (m^2/MN)	c_v (m^2/MN)
CKD	1.5	-	0	35	-	-	-
Alluvium (Swanscombe Peninsula)	1.9	< 25	0	25	-	-	-
Peat	1.6	< 25	5	30	-	0.4 – 2.71	0.01 – 1.14
Alluvium (Zone 7)	1.9	< 50	0	25	-	-	-
RTD (Swanscombe Peninsula)	2.1	25	0	35	-	-	-
RTD (Zone 7)	2.1	25	0	35	-	-	-
Head Deposits	1.9	25	0	25	-	-	-
Structureless Chalk	2.1	-	0	34	-	-	-
Competent Chalk	2.1	-	20	39	2.7	-	-

Zone 1

15. Zone 1 Geotechnical and Geo-Environmental Risk Assessment

15.1. Introduction and Background

Zone 1 is located in the northernmost part of the Swanscombe Peninsula and is centred on approximate NGR 560711, 176301 (TQ 60711 76301). Zone 1 is adjacent and to the north of Zones 2 and 4 and forms the tip of the peninsula with the River Thames adjacent to the north, north-west and north-east. Zone 1 is partially located in the Borough of Dartford, in the western part of the Site and partly located in the Borough of Gravesham, in the eastern part of the Site. Zone 1 has an approximate area of 0.53km^2, which is largely accessible to the public.

Zone 1 is referred to as 'Broadness Salt Marsh' and labelled as such on current topographical maps. The zone is generally low lying and with an undulating topography due to historical landfilling (Broadness Landfill), predominantly with CKD, and has an elevation ranging from approximately 7 to 9m AOD. The zone is now characterised by scrubland with some un-manned industrial uses.

Zone 1 was open marshland until approximately 1970, when the surface water features and salt marshes were infilled with waste by-products from the adjacent cement industry (predominantly CKD) by Lafarge (formerly Blue Circle Industries Ltd.) and, it is understood, dredgings from the River Thames. Broadness Landfill started accepting waste before the introduction of landfill licensing in the mid-1970s. The actual date that deposition of CKD waste commenced at Broadness is unknown.

The zone is currently owned and operated by Lafarge whose land holdings extend into the adjacent Zone 2. A leachate management compound in the north-eastern section of the zone is operated by a sub-contractor to Lafarge and treats leachate from the Broadness Landfill which is collected via a series of four pumping stations and associated collection pipework.

For additional details about the zone, please refer to the Phase 1 report [1].

15.2. Zone-Specific Site Investigation Summary

Two shallow boreholes were installed within the superficial deposits in Zone 1 for perched water and ground gas monitoring. A deep borehole was also installed to monitor groundwater within the Chalk aquifer. Table 15-1 below summarises the findings of the ground investigation in Zone 1.

Table 15-1 Summary of Zone 1 Ground Investigation

Location	Final Depth (m bgl)	Depth (m bgl)	Strata Encountered	Notes
BH101	60.2	0.0 – 4.7	Made Ground comprising sandy gravelly clays with rags, wood, concrete, brick, charcoal, clinker, ash and CKD.	A hydrocarbon odour was noted between 1.4 to 2.4 m bgl. A 'strong odour' was noted in the driller's description from 2.65 – 2.80 m bgl.
		4.7 – 16.0	Alluvium/Peat (interbedded).	
		16.0 – 20.8	RTD.	
		20.8 – >60.2	White Chalk.	Numerous flint gravels.
WS101	6.45	0.0 – 6.00	Made Ground comprising sandy silt and silty sand CKD with some sandstone gravels.	
		6.00 – >6.45	Alluvium.	
WS102	5.22	0.0 – >5.22	Made Ground comprising silty sand and sandy silt CKD with some sandstone gravels and rare gravel sized black pockets.	

15.3. Former Investigations

A full summary of historical information is available in the Phase 1 report [1]. In general, 16 No. trial pit logs from the HS1 investigation and 15 No. borehole logs from a Broadness Marsh investigation [42] undertaken in support of the leachate treatment system present within Zone 1 were reviewed. CKD was encountered in the large majority of the investigation points at thicknesses up to 7.6m and pH within the CKD deposits ranged from 12.6 to 13.1. River dredgings were recorded below the CKD up to 6.0m thick.

15.4. Zone 1 Geotechnical Considerations

The design details of the proposed scheme are not known, except for general descriptions of the proposed site usage. The commentary given below sets out some of the geotechnical considerations which should be taken into account as the designs are developed with further investigations and geotechnical design being required as appropriate.

15.4.1. Earthworks

Much of Zone 1 is covered by a variable layer of Made Ground, largely comprising CKD, as described in Section 8 of this report. The use of CKD will required further investigation as to its properties and behaviour as an earthwork material and on-site trials are recommended. The remaining Made Ground is unlikely to be suitable for re-use and will require treatment and/or removal.

Cuttings and Embankments

Cuttings are achievable in the CKD, however cuttings within the Alluvium are not recommended due to the weak, saturated Peat and clay beds.

During the construction of the cutting, unloading of the surface material may cause heave of the underlying plastic clays and peat, particularly if they are over-consolidated. The majority of the heave is expected to take place shortly after the excavation, however an increase in pore water pressures over time may result in long-term heave. The effect of the heave can be mitigated by using the following techniques:

- A controlled rate of cutting;
- Installation of sand drains; or
- Replacing the upper part of the cutting surface with granular fill.

Where the embankments are to be constructed on sloping ground, there may be a risk of a slip developing, therefore benches or steps will need to cut into the existing ground where necessary to key-in the new construction.

The stability of the embankment will also depend on the underlying material. The Alluvium in this area is likely to compress when a large load (i.e. the embankment) is placed on top of it. This is particularly likely due to the presence of compressible Peat. The effect of the Alluvium can be mitigated by using the following techniques:

- Excavation and replacement; or
- Staged construction or controlled rate of filling.

Excavations

Excavations may be required in Zone 1 for buried services, temporary works and shallow foundations. Conventional excavation plant is likely to be adequate for excavations in Zone 1, except where hard materials (such as concrete) are encountered in the Made Ground.

The stability of temporary excavations is expected to be high in the CKD and low when the Alluvium is encountered, particularly due to the presence of weak, saturated Peat. The high groundwater level encountered in this zone, may cause flooding of the excavations and is particularly hazardous due to the high alkalinity of CKD leachate.

15.4.2. Trafficability

The trafficability of Zone 1 is likely to vary over the year, as prolonged wet weather will create poor trafficability across much of the Site. During the ground investigation, which was carried out in the summer, access roads and tracks were available and were of good condition.

The CKD is particularly hazardous when wet as the leachate has been confirmed as having a pH of over 12. This high alkalinity is corrosive to vehicles, therefore the trafficability of this unit is low. Vehicles which have encountered CKD will also need to be washed to avoid the contamination of other areas.

15.4.3. Foundations

Lightly loaded structures may be founded in the superficial strata depending on the settlement tolerances. However it is anticipated that the majority of structures in Zone 1 will require a piled foundation option, where the piles extend to the competent Chalk which is approximately 32m below existing ground level.

The presence of hardgrounds and flints within the Chalk will be unsuitable for driven piles and potentially unsuitable for continuous flight auger (CFA) piles. The pile design method should take into account that is likely that bored piles will be necessary. Piling works may destabilise dissolution features and care must be taken not to rely on end-bearing piles which might be underlain by a loosely infilled dissolution feature.

Any piling design should consider the potential for piling to create a pathway for any existing or potential contamination to travel in the Chalk aquifer.

15.4.4. Pavement Design

The Highways Agency design guidance for road pavement foundations [43] provides long term equilibrium California Bearing Ratio (CBR) values under road pavements in clays based on plasticity index. These CBR values assume a high water table and do not take into account seasonal variability.

For CKD with a typical plasticity index of 10%, a CBR of 3% is possible for a use with a thin pavement, or increased to 6% if a thick pavement is used. For Alluvium (clay) with a typical plasticity index of 31.5%, a CBR of 3% is possible for a use with a thin pavement, or increased to 4% if a thick pavement is used. These results will need to be confirmed by *in situ* Plate-load Tests.

15.4.5. Geotechnical Constraints

Cement Kiln Dust

CKD covers the majority of Zone 1, as confirmed during the ground investigation. The geotechnical properties of this material (see Section 8 of this report) suggest that this material can be utilised for earthwork use, however the CKD may require treatment to reduce the potential for leachate, which typically has a pH of 12.

Aggressive Ground Conditions

The groundwater in Zone 1 is saline due to the brackish water of the River Thames. The salinity of the water will increase the rate of corrosion of buried steel and concrete, such as that used for foundations.

Within this zone, the following BRE1 classifications have been determined:

Table 15-2 BRE Classifications for Zone 1

Stratum	DS Class	ACEC
CKD	DS-5m	AC-5m
Alluvium	DS-4	AC-4
Peat	DS-3	AC-3

Excavation Collapse

Due to the weak bearing capacity of the Peat within the Alluvium, collapse of excavations in this soil may occur.

Groundwater

High groundwater levels (1.1m bgl) were encountered in BH101 during the ground investigation. This may lead to flooding of excavations and instability of the ground, consideration should be given to dewatering during construction.

The groundwater monitoring installations from the ground investigation provide some indicative data on how the groundwater levels change daily and seasonally, however further monitoring is required. Note that values will vary on a year by year basis due to the longer term variation in weather conditions and daily due to tidal fluctuations.

Shrink-Swell Clays
The clay which makes up the Alluvium and Peat has the potential for shrink-swell due to its high liquid limits and plasticity indices. Shrink-swell is also likely in this zone due to the tidal groundwater fluctuations. Shrink-swell is problematic as it results in ground movement which will negatively affect foundations and services.

Weak Bearing Materials
Construction of foundations upon weak bearing strata can result in bearing capacity failure. In Zone 1, the Alluvium and Peat have weak bearing capacities, as does the structureless Chalk. The structureless Chalk with a CIRIA grade of Dc has a low bearing capacity due to weathering reducing its strength and structure, resulting in a coarse granular soil.

Weak Compressible Ground
Loading of compressible soils and unconsolidated materials can cause excessive settlements. Materials such as Peat within areas of Alluvium in Zone 1, are particularly vulnerable. Settlement due to self-weight, drainage and external loading is high in peat and is likely to extend over several years.

15.5. Zone 1 Geotechnical Risk Assessment

The Geotechnical Risk Register is presented in Appendix H. It comprises an initial assessment of the geotechnical hazards expected in Zone 1, prior to the application of mitigation measures. The Risk Register also shows how the risk of the hazards can be reduced by the application of mitigation measures.

In most cases the mitigation measures will be sufficient to reduce the risk to low. In some cases the risk may be reduced but a significant residual risk remains which must be managed.

Prior to implementation of the proposed mitigation measures, the risks considered to be Substantial are:

- Aggressive ground conditions;
- Buried foundations;
- Buried services;
- CKD;
- Weak compressive ground; and
- Weak bearing materials

The remaining risks are rated as moderate.

15.5.1. Mitigation Measures

The mitigation measures considered are those that may be applied during design or construction, as appropriate, to mitigate the hazard identified and, in most cases, to render the risk insignificant. Mitigation measures considered appropriate for the Substantial risks listed above include:

- Consideration of geotechnical issues during preliminary and detailed design;
- Further ground investigation to obtain a better understanding of the ground conditions in this zone;
- Planned methodology for any planned earthworks;
- Removal or treatment of the Made Ground; and
- Treatment of the CKD to control leachate and allow for use as an earthwork material.

15.5.2. Residual Risk

Following risk identification, assessment and the application of recommended mitigation/avoidance measures most risks have been assessed to be low. However, it should be recognised that some residual risks remain.

15.6. Geo-Environmental Risk Assessment

15.6.1. Preliminary Conceptual Site Model

The key potential source of contamination identified for Zone 1 is the landfill comprising the majority of the zone and used for the deposition of CKD and previously for river dredgings.

The primary exposure pathways that are considered applicable are:

- Inhalation, ingestion and/or dermal contact with contaminants in soil and soil-derived dust/fibres;
- Inhalation of soil- or groundwater-derived vapours;
- Migration and accumulation of ground gases, followed by inhalation or ignition, causing asphyxiation and/or explosion;
- Leaching from CKD/waste materials to groundwater followed by lateral migration of contamination within groundwater;
- Contaminant migration into drinking water pipes/supply to buildings and subsequent ingestion;
- Leaching/migration of contaminants from soils;
- Direct surface water run-off and sub-surface flow to surface waters;
- Lateral migration of contaminated groundwater; and
- Vertical migration of contaminated groundwater.

The potential receptors identified are:

- The Secondary (undifferentiated) Aquifer within the superficial deposits beneath the zone;
- The Principal Aquifer within the bedrock beneath the zone;
- The River Thames adjacent to the north, west and east of Zone 1;
- Potential services within Zone 1 as part of the proposed development; and
- Zone visitors and workers.

15.6.2. Proposed Development

Broadness Marsh is not proposed for significant development in relation to the final entertainment resort; rather, it is to be restored as open land with restricted/controlled public access along specific rights of way. It is a potential location for a waste water treatment facility for the development.

15.6.3. Previous Investigations

Borehole records and other data were reviewed as part of the Phase 1 report [1] and no additional data were made available at the time of writing this report.

15.6.4. Human Health

Soil samples collected during the 2015 ground investigation were screened against Atkins' SSVs/C4SLs/S4ULs for a commercial land use, based on 1% SOM. A total of 11 soil samples were analysed from within Zone 1 at depths ranging from 0.5 to 21m bgl. The locations of the investigation points are presented on 5134008-PHASE2-FIGURE001 (Rev. A).

The data screening spreadsheets are summarised below and presented in full in Appendix E.3.

There were no exceedances of the applicable screening criteria within any of the three samples analysed from within the top metre of the zone. There were three exceedances of chromium (total) within the three Made Ground/CKD materials in BH101 from 1.5 to 4.0m bgl. However, these are not considered likely to indicate significant risk to human health as they were from samples taken from below 1 m bgl and there were no concentrations of hexavalent chromium encountered above the LOD in any soil sample analysed during the ground investigation, and hexavalent chromium is considered more toxic and is therefore a contaminant of more concern.

Elevated pH values were found within a number of samples taken from Zone 1, with a maximum of 12.4 in a sample from WS101 at 3.7m bgl, due to the presence of CKD deposits across significant portions of the zone. Should this material become airborne or moistened, it can cause superficial burns to skin and damage eyes.

The data from groundwater monitoring were compared to the WSVs for the commercial land use scenario.

There were no exceedances of the WSVs for any of the contaminants analysed within the groundwater samples from the Site. Screening results are seen in Appendix E.5. pH was found to be elevated in perched water samples from WS102 only, indicating likely impact from CKD deposits. Should future workers come into contact with alkaline groundwater, burns to skin could occur.

Asbestos, including chrysotile and crocidolite loose fibres, was identified within the Made Ground materials in the three samples from BH101 taken from depths between 0.5 to 2.0m bgl. Quantification analysis of these samples was undertaken to determine the percentage of asbestos by weight within the samples, with ≥0.1%

of asbestos fibres within a single soil sample indicating a potential hazardous waste classification [44]. The quantification analysis results reveal that no asbestos was present over the laboratory LOD (< 0.001%).

As quantification analysis is undertaken after the initial identification analysis, any asbestos fibres removed from the untouched sample on the identification slide would not then be replaced into the soil matrix. In addition, Made Ground is highly variable in nature and individual subsamples taken from the same sample can give differing results. Due to the nature of the Made Ground at the Site, it is possible that there are unconfirmed quantities of asbestos present within other areas of the Site which may exceed the hazardous waste threshold.

Table 15-3 below summarises the asbestos identified in the soils within Zone 1.

Table 15-3 Summary of Asbestos Identification and Quantification (Zone 1)

Location	Depth (m bgl)	Asbestos Type	Quantification (%)
BH101	0.5	Chrysotile – loose fibres	< 0.001%
BH101	1.5	Chrysotile – loose fibres Crocidolite – loose fibres	< 0.001%
BH101	2.0	Chrysotile – loose fibres	< 0.001%

15.6.5. Controlled Waters

15.6.5.1. Soil-Derived Leachate

Table 15-4 present identified exceedances of the relevant screening criteria within the leachate samples taken from the soils collected during the 2015 ground investigation. Screening spreadsheets are provided in Appendix E.4; see screening spreadsheet for sources of screening criteria.

Table 15-4 Soil-Derived Leachate Exceedances of the Screening Criteria (Zone 1)

Compound	DWS	EQS	No. of samples	Min. Value	Max. Value	No. of Exceed.	Locations of Exceed
Copper (µg/L)	2000	5 µg/L	5	1.1	6.6	1	**BH101, 7.0 m bgl**

Notes: **BOLD** indicates location of maximum exceedance

There was only one leachate sample out of five samples analysed where results exceeded the relevant screening criteria for any contaminant: copper within BH101. The concentration was in the same order of magnitude as the screening criteria for the protection of surface water quality and is not considered to be significant.

15.6.5.2. Perched Water

Table 15-5 presents the exceedances of the relevant screening criteria within the perched water samples taken from WS101 and WS102 during the 2015 ground investigation. Screening spreadsheets are provided in Appendix E.4; see screening spreadsheet for sources of screening criteria.

Table 15-5 Perched Water Exceedances of the Screening Criteria (Zone 1)

Compound	DWS	EQS	No. of samples	Min. Value	Max. Value	No. of Exceed.	Locations of Exceed.
pH	6.5 – 9.5	6.0 – 9.0	8	7.7	12.8	4	**WS102** (14/07/15, **29/07/15, 12/08/15**, 27/08/15)
Electrical conductivity (µS/cm)	2500	No EQS	8	17,000	120,000	8	**WS101 (14/07/15**, 29/07/15, 12/08/15, 27/08/15) WS102 (14/07/15, 29/07/15, 12/08/15, 27/08/15)
Sulphate (µg/L)	250000	400000	8	455,000	11,000,000	8	**WS101** (14/07/15, 29/07/15, **12/08/15**, 27/08/15) WS102 (14/07/15, 29/07/15, 12/08/15, 27/08/15)

Compound	DWS	EQS	No. of samples	Min. Value	Max. Value	No. of Exceed.	Locations of Exceed.
Chloride	250	250	8	1,900	29,000	8	**WS101** (14/07/15, **29/07/15**, 12/08/15, 27/08/15) WS102 (14/07/15, 29/07/15, 12/08/15, 27/08/15)
Ammoniacal nitrogen (µg/L)	390	780	8	1,700	450,000	8	**WS101** (14/07/15, 29/07/15, **12/08/15**, 27/08/15) WS102 (14/07/15, 29/07/15, 12/08/15, 27/08/15)
Nitrite (µg/L)	500	No EQS	8	36	970	4	**WS102** (14/07/15, 29/07/15, **12/08/15**, 27/08/15)
Total phenols (µg/L)	No DWS	7.7	8	< 10	1000	2	**WS101 (29/07/15)** WS102 (29/07/15)
Aluminium	0.2	No EQS	8	< 0.001	25.7	4	**WS102** (14/07/15, **29/07/15**, 12/08/15, 27/08/15)
Antimony (µg/L)	5.0	No EQS	8	< 0.4	5.3	1	**WS102 (14/07/15)**
Arsenic (µg/L)	10	25	8	< 0.15	55.3	6	**WS101 (15/07/15**, 12/08/15) WS102 (14/07/15, 29/07/15, 12/08/15, 27/08/15)
Cadmium (µg/L)	5	0.2	8	< 0.02	1.8	3	**WS101** (15/07/15, **12/08/15**, 27/08/15)
Chromium (total) (µg/L)	50	15	8	7.4	55	4	WS101 (12/08/15) **WS102 (14/07/15**, 29/07/15, 12/08/15)
Copper (µg/L)	2000	5	8	1.8	66	6	WS101 (15/07/15, 12/08/15) **WS102** (14/07/15, 29/07/15, **12/08/15**, 27/08/15)
Iron (mg/L)	0.2	1	8	0.0014	0.59	3	WS101 (29/07/15) **WS102** (29/07/15, **27/08/15**)
Lead (µg/L)	10	7.2	8	< 0.2	35	4	WS101 (27/08/15) **WS102** (29/07/15, 12/08/15, **27/08/15**)
Manganese (µg/L)	50	No EQS	8	0.38	89	2	**WS101 (12/08/15**, 27/08/15)
Mercury (µg/L)	1	0.05	8	< 0.05	1.44	3	WS101 (15/07/15) **WS102 (29/07/15**, 27/08/15)
Molybdenum (µg/L)	70	No EQS	8	0.22	100	2	**WS102** (29/07/15, **12/08/15**)
Nickel (µg/L)	20	20	8	< 0.5	26	1	WS101 (15/07/15)
Selenium (µg/L)	10	No EQS	8	< 0.6	120	6	WS101 (15/07/15, 12/08/15) **WS102** (14/07/15, 29/07/15, 12/08/15, **27/08/15**)
TPH Aliphatic >C12-C16 (µg/L)	10	No EQS	8	< 10	12	1	**WS101 (15/07/15)**
TPH Aliphatic >C16-C21 (µg/L)	10	No EQS	8	< 10	520	2	WS101 (15/07/15) **WS102 (14/07/15)**
TPH Aliphatic >C21-C35 (µg/L)	10	No EQS	8	< 10	1300	2	WS101 (15/07/15) **WS102 (14/07/15)**
TPH Aliphatic (Total) (µg/L)	10	No EQS	8	< 10	1800	2	WS101 (15/07/15) **WS102 (14/07/15)**

Notes: **BOLD** indicates location of maximum exceedance.

There were a number of exceedances of the relevant screening criteria within the perched water samples taken from the Site, including heavy metals and aliphatic TPH fractions. pH was shown to be elevated to 12.8 in samples from WS102, which is expected due to the presence of CKD deposits in this area of the zone. However, pH within the groundwater (see below) was not found to be elevated above either the DWS or EQS, indicating that the Alluvium is likely forming a low-permeability barrier between the perched water and groundwater bodies. Sulphates would also be expected to be elevated due to the nature of CKD as a by-product of the cement industry.

A number of the exceedances can be attributed to the local saline conditions due to proximity to the River Thames, including electrical conductivity, sulphate, nitrate and chloride.

Other exceedances were found to be either marginal or to only occur a small number of times in a singular location, including antimony, manganese, molybdenum and nickel, and are therefore are not considered to be indicative of a widespread issue. Phenol was also only found to exceed the screening criteria in both boreholes during one monitoring round only.

TPH bands that were found to exceed the guideline values only exceeded within the first monitoring round from both boreholes only; all subsequent monitoring rounds did not show any TPH concentrations above the LOD. Therefore, this is considered likely to be representative of conditions within the borehole related to drilling and installation, rather than the perched water regime across the zone as a whole.

Based on the above, perched water within WS101 and WS102 appear to potentially be from differing sources; exceedances were of a greater magnitude in samples from WS102, and the pH values in WS102 were all highly elevated whereas in WS101 they were not, indicating WS102 is impacted by CKD deposits within the area of the borehole.

Heavy metals and other inorganics were present at concentrations with potential to impact upon controlled waters receptors identified for the zone.

15.6.5.3. Groundwater

Table 15-6 presents the exceedances of the relevant screening criteria within the groundwater samples taken from BH101 during the 2015 ground investigation, which is screened in the Chalk. Where duplicate samples also exceeded the screening criteria, these are counted as an exceedance. Screening spreadsheets are provided in Appendix E.4; see screening spreadsheet for sources of screening criteria.

Table 15-6 Groundwater Exceedances of the Screening Criteria (Zone 1)

Compound	DWS	EQS	No. of samples	Min. Value	Max. Value	No. of Exceed.	Locations of Exceed.
Electrical conductivity (µS/cm)	2500	No EQS	5	6,000	18,000	5	**BH101** (15/07/15, 29/07/15 (plus duplicate), 12/08/15, **27/08/15**)
Sulphate (µg/L)	250000	400000	5	327,000	680,000	5	**BH101** (15/07/15, 29/07/15, 12/08/15, **27/08/15**)
Chloride (mg/L)	250	250	5	1,900	7,100	5	**BH101** (15/07/15, 29/07/15 (plus duplicate), 12/08/15, **27/08/15**)
Ammoniacal nitrogen (µg/L)	390	780	5	< 15	3,900	4	**BH101** (15/07/15, 29/07/15 (duplicate only), 12/08/15, **27/08/15**)
Total phenols (µg/L)	No DWS	7.7	5	< 10	280	2	**BH101** (15/07/15, **29/07/15 (duplicate only)**)
Iron (mg/L)	0.2	1	5	< 0.004	6.8	3	**BH101** (15/07/15, **29/07/15** (plus duplicate))

Compound	DWS	EQS	No. of samples	Min. Value	Max. Value	No. of Exceed.	Locations of Exceed.
Manganese (µg/L)	50	No EQS	5	230	800	5	**BH101 (15/07/15**, 29/07/15 (plus duplicate), 12/08/15, 27/08/15)
Mercury (µg/L)	1	0.05	5	< 0.05	0.94	3	**BH101** (29/07/15 (plus duplicate), **12/08/15**)
Nickel (µg/L)	20	20	5	6.8	21	2	**BH101** (**29/07/15** (plus **duplicate**))
Selenium (µg/L)	10	No EQS	5	41	94	5	**BH101 (15/07/15**, 29/07/15 (plus duplicate), 12/08/15, 27/08/15)

Notes: **BOLD** indicates location of maximum exceedance.

In general, the compounds found to exceed the screening criteria within the perched water were not found within the groundwater below the Site (i.e. aluminium, arsenic, cadmium, chromium (total)) and where exceedances were noted within both perched and groundwater, they were of different magnitudes, indicating the two groundwater bodies are likely not in continuity. No quantifiable TPH concentrations were found within the groundwater samples and elevated pH encountered within the perched water in WS102 was not found within the groundwater samples. Phenols were only encountered during two out of four monitoring rounds, and from one of those within the duplicate sample only, and nickel was found in one monitoring round only from one borehole, so these are not considered likely to indicate significant contamination.

A number of these compounds were also found to exceed within the deeper groundwater samples taken from other zones, including mercury, selenium, iron, manganese and ammoniacal nitrogen. Due to the large geographic area of the zone and the Site as a whole, exceedances of these compounds would potentially be indicative of widespread water quality within the area of the Site, rather than attributable to on-site activities themselves.

Again, a number of the exceedances can be related to saline intrusion within the groundwater from the River Thames, including electrical conductivity, sulphates, chloride and nitrite.

15.6.5.4. Other Data Sources

One borehole – installed by Lafarge as part of their monitoring programme for the permitted landfill areas within Zone 2 – is located within Zone 1. EW7 is located in close proximity to BH101 and is screened within the RTDs. Regular monitoring of this borehole has been undertaken since April 2014 and the data obtained have been screened against the same generic criteria as utilised above, for those contaminants analysed. This borehole is screened in the RTDs, whereas BH101 above is screening in the Chalk. While they are likely in some continuity, there was some putty Chalk encountered which could potentially act as a partial barrier between the two water bodies.

The following contaminants have exceeded the relevant screening criteria, with the maximum and minimum concentrations during the monitoring period:

Table 15-7 Groundwater Exceedances of the Screening Criteria (Historical Data)

Compound	DWS	EQS	Min. Value (Date)	Max. Value (Date)
Boron (mg/L)	1	7	1.45 (12/11/14)	2.19 (03/09/14)
Iron (mg/L)	0.2	1	n/a	6.8 (09/09/14)
Lead (mg/L)	0.01	0.0072	< 0.006 (multiple)	0.026 (02/04/14)
Manganese (mg/L)	0.05	No EQS	0.763 (06/08/14)	1.04 (02/04/14)
Mercury (mg/L)	0.001	0.00005	< 0.0001 (multiple)	0.00016 (02/04/14)
Sodium (mg/L)	200	No EQS	2990 (02/07/14)	4040 (03/09/14)
Electrical Conductivity (µS/cm)	2500	No EQS	16700 (12/11/14)	18900 (04/06/14)
Ammoniacal Nitrogen (mg/L)	0.39	0.78	8.94 (17/02/15)	15.6 (02/04/14)
Chloride (mg/L)	250	250	6640 (06/01/15)	7170 (07/05/14)
Sulphate (mg/L)	250	400	699 (02/04/14)	798 (07/05/14)

Compound	DWS	EQS	Min. Value (Date)	Max. Value (Date)
Selenium (mg/L)	0.01	No EQS	< 0.0016 (multiple)	0.123 (03/12/14)

In general, a number of these compounds can be again attributed to the saline nature of groundwater below the Site, including chloride, sodium, and electrical conductivity. The contaminants encountered exceeding the screening criteria were generally similar to those encountered within the Chalk borehole BH101 and the two perched water boreholes, WS101 and WS102.

15.6.6. Ground Gas Assessment

Below are the findings from the ground investigation monitoring data, both historical and current.

Table 15-8 Ground Gas Monitoring Results (Zone 1)

Borehole ID	Response Zone (m bgl) (strata)	Worst Case Measured Concentrations				Maximum Borehole Flow Rate (l/hr)
		CH_4 (%)	**CO_2 (%)**	**CO (ppm)**	**H_2S (ppm)**	
2015 Locations						
BH101	24.5 – 40.5 (Chalk)	5.3	0.6	8	< 1	-0.6
WS101	1.3 – 6.0 (Made Ground)	0.2	< 0.1	< 1	< 1	< 0.1
WS102	1.3 – 5.22 (Made Ground)	< 0.1	< 0.1	1	< 1	< 0.1
Historical Locations						
EW7	18.0 – 22.0 (River Terrace Deposits/Chalk)	0.1	0.2	0	0	-

Atmospheric pressures ranged from 999 to 1026 mbar during the recent ground gas monitoring period, with pressure falling on the first and fourth monitoring rounds undertaken on 14-15th July and 26th August 2015. Flow was either negative or below the instrument's limit of detection during each monitoring round.

Methane was present in BH101 at concentrations ranging from < 0.1% v/v to 5.3% v/v, with the maximum carbon dioxide concentration of 0.6% v/v being found on the same date, 29th July 2015.

Ground gas concentrations within the two other boreholes were lower, with neither gas (carbon dioxide or methane) being detected above the limit of detection in WS102 and only very small concentrations of methane detected in WS101.

A summary of the modified Wilson and Card gas risk assessment is given below in Table 15-9. Where flow readings were either not available or taken as 0.0 l/hr, a value of 0.1 l/hr has been substituted to calculate the GSVs. There are not enough data currently available to discount the negative flow rate observed in BH101 during one round of monitoring, and therefore it will be considered possible that this same flow rate could occur as a similar positive out-flow under different conditions.

As the maximum methane concentration in BH101 was not repeated in that borehole during the monitoring period, with other rounds showing a maximum of 0.3% v/v or being below the limit of detection, nor were similar concentrations duplicated in other boreholes within Zone 1, it is considered this may be a highly conservative value to utilise for the risk assessment below. Therefore, it is proposed to use the steady-state methane concentration from this same round, with a value of 2.3% v/v.

Table 15-9 Ground Gas Risk Assessment (Zone 1)

Monitoring Location	Worst Case Measured Concentrations (%)		Maximum Borehole Flow Rate (l/hr)	Maximum Calculated GSV (l/hr)	Applicable CS
	CH_4	**CO_2**			

2015 Locations					
BH101	2.3	0.6	0.6	0.0138	CS2
WS101	0.2	< 0.1	0.1	0.0002	CS1
WS102	< 0.1	< 0.1	0.1	0.0001	CS1
Historical Locations					
EW7	0.1	0.2	0.1	0.0002	CS1
Worst Case (over all boreholes)					
-	2.3	0.6	0.6	0.0138	CS2

An examination of the GSV calculation using the worst-case methane concentration produces the same CS, as the methane concentration is above the threshold for elevation from CS1 to CS2 of 1% v/v using either the peak or steady state concentrations.

15.6.7. Property/Services

15.6.7.1. Water Supply Pipes

The table below gives a summary of the maximum values for each contaminant encountered within soils. As the final plans for service placement at the zone are currently unconfirmed, all concentrations up to 4m bgl have been included in this assessment:

Table 15-10 Comparison of UK WIR Threshold Concentrations to Site-Specific Values (Zone 1)

Parameter Group	UK WIR Threshold Value (mg/kg)			Maximum Value found On-site
	PE Pipe	PVC Pipe	Metal Pipes	
VOCs	0.5	0.125	Pass	< 0.056
BTEX + MTBE	0.1	0.03	Pass	< 0.006
sVOCs (excluding PAHs)	2.0	1.4	Pass	< 6.55
C5-C10 (aliphatic and aromatic hydrocarbons)	2.0	-	Pass	< 0.6
C11-C20 (aliphatic and aromatic hydrocarbons)	10.0	-	Pass	<190.7
C21-C35 (aliphatic and aromatic hydrocarbons)	500.0	-	Pass	750
Phenols (from sVOCs)	2.0	0.4	Pass	< 0.2
Cresols and chlorinated phenols (from sVOCs)	2.0	0.04	Pass	< 0.7
Nitrobenzene	0.5	0.4	Pass	< 0.3
Corrosive	Pass	Pass	Wrapped Steel: pH<7, conductivity >40μs/cm Wrapped Iron: pH<5, conductivity >40μs/cm Copper: pH<5 or >8	pH: 12.4 Conductivity: 27,000μS/cm

In light of the results above, it is considered that neither low-density polyethylene (PE) pipe nor polyvinyl chloride (PVC) pipe should be used for any water supply pipes at the Site due to hydrocarbon concentrations within the surficial deposits within the zone, and when taking into account the corrosive nature of the soils (elevated pH values due to CKD presence), plain copper pipes would also not be considered suitable. Barrier (PE-Al-PE) pipe, wrapped steel or wrapped iron would potentially be suitable materials and, as a matter of good practice and due to the variable nature of the Made Ground present across the zone, it is recommended that all services laid are placed within a corridor of 'clean' fill.

15.6.8. Updated Conceptual Site Model (Zone 1)

The sources, pathways and receptors identified above in Section 15.6.1 have been updated based on the results of the GQRA and the subsequent CSM is presented in Table 15-11.

Based on the current soils analysis data, there are no exceedances within the top metre of material of the Atkins' SSVs (or other pertinent screening criteria) for human health using a commercial land use scenario. Additionally, there were no exceedances of the Atkins WSVs for the protection of human health in relation to inhalation of vapours from groundwater below the Site. Asbestos was positively identified in three samples from the near-surface materials in BH101, though subsequent quantification analysis did not find any asbestos above the laboratory LOD.

The controlled waters risk assessment identified potentially significant pollutant linkages, notably for heavy metals and inorganics, with some heavy metals found above the relevant screening criteria within both the perched water and groundwater below the Site, though generally varying somewhat in magnitude between both water bodies. pH was elevated, as expected, due to the deposition of CKD at levels up to 12.4 within WS102, which can mobilise heavy metals into groundwater bodies as evidenced here within the perched water samples. The only compound to exceed the screening criteria within the leachate sample was copper, which was also encountered in the perched water though not the groundwater below.

While contaminants present in the perched water are currently managed through the operating leachate control and treatment system in place in Zone 1, those contaminants within the groundwater could impact upon controlled waters receptors, as the zone is located variably within a groundwater SPZ and groundwater within the River Terrace and Chalk aquifer would contribute base flow to the adjacent River Thames. However, dilution upon entry into the River Thames would be significant, and there were not a large number of contaminants found to exceed the relevant criteria. Based on the data available, it would appear that the alluvial layer is likely providing a barrier between the perched water/leachate within the CKD deposits and the groundwater below in the RTDs and Chalk, as elevated pH was not encountered in either.

The ground gas risk assessment based on the data available indicatives the Site is likely to be classified as a CS2, which requires some level of protective measures to be installed within buildings established within the zone; however, Zone 1 is not proposed for significant infrastructure based on the currently understood masterplan. Additional ground gas data would be required for a full risk assessment to be undertaken.

The indicative property/services risk assessment suggested that there would likely be some risks to services laid at the Site due to ground conditions, including some contaminants within the soils and corrosive conditions.

Based on the above, an updated tabular CSM from the Phase 1 Report is presented below. These conclusions are preliminary only due to the limited ground investigation completed during this phase of works; additional assessment will be required in order to assess fully risks across the entirety of Zone 1.

Table 15-11 Updated Conceptual Site Model (Zone 1)

Sources	Receptor	Potential Pathway	Potential Consequence	Likelihood	Classification of Risk
Contaminants in soil/groundwater, originating from the following Zone 1 sources: • Contamination resulting from Broadness Landfill which received CKD and other deposits. *Contaminants include highly alkaline pH, metals and other contaminants.*	Human health – zone visitors and workers	Inhalation, ingestion and/or dermal contact with contaminants in soil and soil-derived dust/fibres	**Medium**	**Low Likelihood** The highly alkaline pH of the CKD may present a risk to human health and asbestos was detected within a number of samples from BH101 (including some within the top 0.5 m bgl), though exposure is likely to be limited based on the proposed end use. There were no exceedances of any of the screening criteria for a commercial development. This area of the Site is proposed to be restored as open land and access from the public will be limited..	**Moderate/Low Risk**
		Inhalation of soil- or groundwater-derived vapours	**Medium**	**Unlikely** No exceedances of any of the screening criteria for a commercial development.	**Low Risk**
		Migration and accumulation of ground gases, followed by inhalation or ignition, causing asphyxiation and/or explosion	**Severe**	**Low likelihood** The Site is characterised as CS2, based on currently available ground gas monitoring data. This requires some level of protection to be installed within any buildings established within the zone. However, Zone 1 is not proposed for significant development based on the masterplan as is currently understood.	**Moderate Risk**
		Contaminant migration into drinking water pipes/supply to buildings and subsequent ingestion	**Mild**	**Low likelihood** There were some exceedances of the threshold values for the placement of water supply pipes, such as hydrocarbons. These in combination with the corrosive nature of the soils at the Site indicate that specific water supply pipes (plastic and plain metal) would likely be unsuitable for use. All services should be laid in a corridor of clean fill as is standard in brownfield sites.	**Low Risk**
	Controlled waters – River Thames	Leaching/migration of contaminants from soils Lateral migration of contaminated groundwater	**Medium**	**Low likelihood** Leaching of contaminants – largely heavy metals - is occurring into the perched water/leachate below the Site. In addition, this shallow water is generally found to have elevated pH values	**Moderate/Low Risk**

Sources	Receptor	Potential Pathway	Potential Consequence	Likelihood	Classification of Risk
		Direct surface water run-off and sub-surface flow to surface waters		when situated within CKD deposits. Leachate collection and treatment measures are in place, with an active discharge consent to discharge the leachate at the end of the jetty. Without the continued operation of the leachate collection and treatment measures, there would likely be migration of contamination into the River Thames. Dilution would be significant upon entry into the River Thames as a major water body in the area of the Site.	
	Controlled waters – Secondary (undifferentiated) and Principal aquifer beneath the Site	Leaching/migration of contaminants from soils	**Medium**	**Likely** While a number of exceedances were found within the shallow perched water/leachate, exceedances of only a small number of contaminants were noted within the deeper groundwater body at BH101. Alluvium does appear to be creating some level of separation between the perched water and groundwater based on the pH levels of both water bodies and the presence of different contaminants in each water body, potentially indicating little connectivity between the two. Mercury and manganese were found to exceed the screening criteria within the groundwater across all zones investigated in 2015, therefore potentially indicating these are present in the wider area and may not be attributable to site activities. However, the limited amount of data available to date is not able to discount risks to deeper aquifers from contaminants in the perched water.	**Moderate Risk**
		Vertical migration to the Principal aquifer beneath the Site	**Medium**		
	Property/ services in the form of water supply pipes	Chemical attack on and subsequent ingress into water supply pipes	**Medium**	**Low likelihood** While some contaminants were present within the surficial materials of the zone which were in exceedance of the guideline values for the placement of water supply pipes, through selection of appropriate pipe materials and installation within a corridor of clean fill these risks can be mitigated.	**Moderate/Low Risk**
		Migration and accumulation of ground gases, followed by inhalation or ignition, causing explosion	**Severe**	**Low likelihood** The Site is characterised as CS2, based on currently available ground gas monitoring data. This requires some level of protection to be installed within any buildings established within the zone. However, Zone 1 is not proposed for significant development based on the masterplan as is currently understood.	**Moderate Risk**

Zone 2

16. Zone 2 Geotechnical and Geo-Environmental Risk Assessment

16.1. Introduction and Background

Zone 2 is located in the centre of the wider site in the north-western section of the Swanscombe Peninsula and is approximately centred on NGR 560437, 175636. The Site has an approximate area of 0.58km^2 and is located within the Borough of Dartford.

The ground elevation is highly variable across the zone, with an undulating land surface ranging from approximately 1m AOD to 6m AOD due to landfilling. Zone 2 was previously marshes prior to phased landfilling with wastes from the adjacent cement industry, predominantly comprising CKD. The area was divided into several permitted landfills, as a result of the phased infilling, known as 'North Pit' and 'South Pit and Surge Pile'. All of these landfills were constructed on a 'dilute and disperse' basis i.e. there is no formal engineered containment to any of the landfilled areas. North Pit landfill was a former clay pit and the first area within Zone 2 to be landfilled with CKD waste. The waste management licence (WML) for this area was handed back pre-1994 and there is currently no ongoing monitoring or management of this area.

The South Pit and Surge Pile landfill is divided into Phase 1, Phase 2 and Phase 3. Phase 1 was a former clay pit and Phase 3 was a land raise with CKD wastes deposited on the existing ground surface. The zone is currently owned and managed by Lafarge and has been generally restored with soil cover. The zone is currently disused scrub land, characterised by undulating topography, grass/scrub with some small trees. The EPs for the South Pit and Surge Pile landfills are still active and this area of the zone is currently in the aftercare phase. Phase 2 of South Pit and Surge Pile was not subject to landfilling.

The western part of Zone 2 was historically used as a tramway between a cement works (located in the south-western corner of the zone and the north of Zone 5) and Bell Wharf (located in the north-western section of the zone). There were a number of 'cement pits' located between the tramway tracks. The cement works in the south-western part of Zone 2 included buildings and railway tracks/siding. A gasworks was located in the south-western corner of Zone 2, believed to be associated with the cement works.

For additional details about the Zone, please refer to the Phase 1 report [1].

16.2. Zone-Specific Site Investigation Summary

3 No. windowless sample boreholes, 4 No. cable percussion with rotary follow-on boreholes, and 1 No. trial pit with rotary follow on borehole were completed within Zone 2. Table 16-1 below summarises the findings of the ground investigation in Zone 2.

Table 16-1 Summary of Zone 2 Ground Investigation

Location	Final Depth (m bgl)	Depth (m bgl)	Strata Encountered	Notes
BH201	9.70	0.0 – 6.5	Made Ground comprising gravels, cobbles and boulders of brick, brick masonry, and concrete with rare glass, metal, and plastic fragments. Gravels are coarse flints.	CKD and suspected CKD noted.
		6.5 – >9.7	RTDs.	Alluvium likely stripped out during former operations of North Pit.
BH202	32.0	0.0 – 8.0	Made Ground comprising gravelly silt and silty gravel with CKD.	Including distinct layer of water-containing gravels (mudstone, flint and clinker) from 3.7 – 4.9m bgl.
		8.0 – 18.1	Alluvium/Peat (interbedded).	
		18.1 – 20.0	RTDs.	Thin band with silts.
		20.0 – >32.0	White Chalk.	With frequent flints.

Location	Final Depth (m bgl)	Depth (m bgl)	Strata Encountered	Notes
BH203	40.65	0.0 – 3.8	Made Ground comprising gravelly clays and clayey gravels with brick and concrete.	No CKD was encountered during drilling.
		3.8 – 8.7	Alluvium.	Slight organic/hydrocarbon odour from 3.8-4.2. Slight organic odour from 4.2-5.4.
		8.7 – 11.6	RTDs.	
		11.6 – >40.65	White Chalk.	Frequent flints.
BH204	20.1	0.0 – 2.3	Made Ground comprising gravels with some concrete and brick.	No CKD was encountered during drilling.
		2.3 – 7.3	Alluvium.	
		7.3 – 11.8	RTDs.	Potentially Alluvium with some gravels as not a distinct strata of sands and gravels typical of RTDs.
		11.8 – >20.1	White Chalk.	
WS202	12.0	0.0 – 11.1	Made Ground comprising CKD with some rare coal and peat, and some reddish brown staining.	
		11.1 – >12.0	Alluvium.	
WS203	4.5	0.0 – 4.1	Made Ground comprising CKD with some black sand and soft brown clay pockets.	
		4.1 – >4.5	Alluvium.	
WS204	8.9	0.0 – >s8.9	Made Ground comprising CKD with rare black pockets and some black staining.	

BH202, BH203 and BH204 punctured through the Alluvium and were installed with a sacrificial casing to the base of the Alluvium to ensure a preferential pathway was not created for any contamination within shallow perched water in the Made Ground.

TP201 was completed to advance an investigation location where significant obstructions inhibited drilling using the windowless sampling rig. It was then utilised as a starter pit for BH201 using a rotary drilling rig. Some brick masonry, clinker, rare ceramics, glass and metals were encountered within the CKD deposits at this location.

16.3. Former Investigations

A full summary of historical information is available in the Phase 1 report [1]. A previous investigation was undertaken by Halcrow in 2004 [45] which included 6 No. trial pits, 4 No. window sampling locations and 2 No. boreholes within Zone 2. The original data was unavailable and therefore was not able to be reassessed within this report. The conclusions of this report indicate that there were some isolated elevated concentrations of heavy metals within the top metre when assessed based on a residential end use, and one potential hotspot of “possible oil” located on the western edge of Zone 2, with elevated concentrations of petroleum hydrocarbons. PAH concentrations from this same location were noted as “not elevated”. Significant risks to site users were not identified during this risk assessment.

The groundwater risk assessments undertaken indicated that there was no likely risk to surface water within the nearby Swanscombe Marshes from concentrations of TPHs, VOCs and sVOCs within the groundwater beneath the western edge of Zone 2.

Only one ground gas monitoring point was utilised within this assessment and no methane or carbon dioxide was recorded over the trigger values for elevation above CS1.

16.4. Zone 2 Geotechnical Considerations

The design details of the proposed scheme are not known, except for general descriptions of the proposed site usage. The commentary given below sets out some of the geotechnical considerations which should be taken into account as the designs are developed with further investigations and geotechnical design being required as appropriate.

16.4.1. Earthworks

Much of Zone 2 is covered by a variable layer of Made Ground, largely comprising CKD, as described in Section 8 of this report. The use of CKD will require further investigation of its properties and behaviour as an earthworks material and on-site trials are recommended. The remaining Made Ground is unlikely to be suitable for re-use and will require treatment and/or removal.

Cuttings and Embankments

Cuttings are achievable in the CKD, however cuttings within the Alluvium are not recommended due to the weak, saturated Peat and clay beds.

During the construction of the cutting, unloading of the surface material may cause heave of the underlying plastic clays and peat, particularly if they are over-consolidated. The majority of the heave is expected to take place shortly after the excavation, however an increase in pore water pressures over time may result in long-term heave. The effect of the heave can be mitigated by using the following techniques:

- A controlled rate of cutting;
- Installation of sand drains; or
- Replacing the upper part of the cutting surface with granular fill.

Where the embankments are to be constructed on sloping ground, there may be a risk of a slip developing, therefore benches or steps will need to cut into the existing ground where necessary to key-in the new construction.

The stability of the embankment will also depend on the underlying material. The Alluvium in this area is likely to compress when a large load (i.e. the embankment) is placed on top of it. This is particularly likely due to the presence of compressible Peat. The effect of the Alluvium can be mitigated by using the following techniques:

- Excavation and replacement; or
- Staged construction or controlled rate of filling.

Excavations

Excavations may be required in Zone 2 for buried services, temporary works and shallow foundations. Conventional excavation plant is likely to be adequate for excavations in Zone 2, except where hard materials (such as concrete) are encountered in the Made Ground.

The stability of temporary excavations is expected to be high in the CKD and low when the Alluvium is encountered, particularly due to the presence of weak, saturated Peat. Depending on how deep the excavation is expected to go, encountered groundwater may cause flooding of the excavations and is particularly hazardous due to the high alkalinity of CKD leachate. Draining of the excavations may need to be conducted.

16.4.2. Trafficability

The trafficability of Zone 2 is likely to vary over the year, as prolonged wet weather will create poor trafficability across much of the Site. During the ground investigation, which was carried out in the summer, access roads and tracks were available and were of good condition.

The CKD is particularly hazardous when wet as the leachate has been confirmed as having a pH of over 12. This high alkalinity is corrosive to vehicles, therefore the trafficability of this unit is low. Vehicles which have encountered CKD will also need to be washed to avoid the contamination of other areas.

16.4.3. Foundations

Lightly loaded structures may be founded in the superficial strata depending on the settlement tolerances. However it is anticipated that the majority of structures in Zone 2, in particular those with heavily loaded foundations, will require a piled foundation option, where the piles extend into the competent Chalk which is approximately 32m below existing ground level.

The presence of hardgrounds and flints within the Chalk will be unsuitable for driven piles and potentially unsuitable for continuous flight auger (CFA) piles. The pile design method should take into account that is likely that bored piles will be necessary. Piling works may destabilise dissolution features and care must be taken not to rely on end-bearing piles which might be underlain by a loosely infilled dissolution feature.

Any piling design should consider the potential for piling to create a pathway for any existing or potential contamination to travel in the Chalk aquifer.

16.4.4. Pavement Design

The Highways Agency design guidance for road pavement foundations [43] provides long term equilibrium CBR values under road pavements in clays based on plasticity index. These CBR values assume a high water table and do not take into account seasonal variability.

For CKD with a typical plasticity index of 10%, a CBR of 3% is possible for a use with a thin pavement, or increased to 6% if a thick pavement is used. For Alluvium (clay) with a typical plasticity index of 31.5%, a CBR of 3% is possible for a use with a thin pavement, or increased to 4% if a thick pavement is used. These results will need to be confirmed by *in situ* Plate-load Tests.

16.4.5. Geotechnical Constraints

Cement Kiln Dust

CKD covers the majority of Zone 1, as confirmed during the ground investigation. The geotechnical properties of this material (see Section 8 of this report) suggest that this material can be utilised for earthwork use, however the CKD may require treatment to reduce the potential for leachate, which typically has a pH of 12.

Aggressive Ground Conditions

The groundwater in Zone 2 is saline due to the brackish water of the River Thames. The salinity of the water will increase the rate of corrosion of buried steel and concrete, such as that used for foundations.

Within this zone, the following BRE1 classifications have been determined:

Table 16-2 BRE Classifications for Zone 2

Stratum	DS Class	ACEC
CKD	DS-5m	AC-5m
Alluvium	DS-4	AC-4
Peat	DS-3	AC-3

Excavation Collapse

Due to the weak bearing capacity of the Peat within the Alluvium, collapse of excavations in these strata may occur.

Groundwater

High groundwater levels (3.2m bgl) were encountered in BH202 during the ground investigation. This may lead to flooding of excavations and instability of the ground consideration should be given to dewatering schemes during construction.

The groundwater monitoring installations from the ground investigation provide some indicative data on how the groundwater levels change daily and seasonally, however further monitoring is required. Note that values will vary on a year by year basis due to the longer term variation in weather conditions and daily due to tidal fluctuations.

Shrink-Swell Clays

The clay which makes up the Alluvium and Peat has the potential for shrink-swell due to its high liquid limits and plasticity indices. Shrink-swell is also likely in this zone due to the tidal groundwater fluctuations. Shrink-swell is problematic as it results in ground movement which will negatively affect foundations and services.

Weak Bearing Materials

Construction of foundations upon weak bearing strata can result in bearing capacity failure. In Zone 2, the Alluvium and Peat have weak bearing capacities, as does the structureless Chalk. The structureless Chalk with a CIRIA grade of Dc has a low bearing capacity due to weathering reducing its strength and structure, resulting in a coarse granular soil.

Weak Compressible Ground

Loading of compressible soils and unconsolidated materials can cause excessive settlements. Materials such as Peat within areas of Alluvium in Zone 2, are particularly vulnerable.

16.5. Zone 2 Geotechnical Risk Assessment

The Geotechnical Risk Register is presented in Appendix H. It comprises an initial assessment of the geotechnical hazards expected in Zone 2, prior to the application of mitigation measures. The Risk Register also shows how the risk of the hazards can be reduced by the application of mitigation measures. It does not consider the Site in terms of any specific development proposals.

In most cases the mitigation measures will be sufficient to reduce the risk to low. In some cases the risk may be reduced but a significant residual risk remains which must be managed.

Prior to implementation of the proposed mitigation measures, the risks considered to be substantial are:

- Aggressive ground conditions;
- Buried foundations;
- Buried services;
- CKD;
- Weak compressive ground; and
- Weak bearing materials.

The remaining risks are rated as moderate.

16.5.1. Mitigation Measures

The mitigation measures considered are those that may be applied during design or construction, as appropriate, to mitigate the hazard identified and, in most cases, to render the risk insignificant. Mitigation measures considered appropriate for the substantial risks listed above include:

- Consideration of geotechnical issues during preliminary and detailed design;
- Further ground investigation to obtain a better understanding of the ground conditions in this zone;
- Planned methodology for any planned earthworks;
- Removal or treatment of the Made Ground; and
- Treatment of the CKD to control leachate and allow for use as an earthwork material.

16.5.2. Residual Risk

Following risk identification, assessment and the application of recommended mitigation/avoidance measures most risks have been assessed to be low. However, it should be recognised that some residual risks remain.

16.6. Zone 2 Geo-Environmental Risk Assessment

16.6.1. Preliminary Conceptual Site Model

The potential sources in Zone 2 identified from the background searches, data review and site walkover observations for the Site are as follows:

- North Pit landfill, where CKD was deposited under WML P/1/11 and is not currently monitored or maintained;
- South Pit and Surge Pile Phase 1 which was infilled with CKD and general waste under permit WML P/1/11A; and
- South Pit and Surge Pile Phase 3 which was infilled with CKD and is currently classified as a hazardous waste landfill under EPR/RP3039SZ.

South Pit and Surge Pile Phase 2 was not considered a potential source because though it was permitted, no waste was deposited in this area. Other sources include:

- Derelict sewage works and operational sewage pumping station;
- Bell wharf and associated storage tanks;
- Cement works and associated infrastructure (electricity substation, railway sidings, former cement pits and associated tanks between bell wharf and the former cement works); and
- Former gasworks.

The primary exposure pathways that are considered applicable are:

- Inhalation, ingestion and/or dermal contact with contaminants in soil and soil-derived dust/fibres;
- Inhalation of soil- or groundwater-derived vapours;
- Migration and accumulation of ground gases, followed by inhalation or ignition, causing asphyxiation and/or explosion;
- Contaminant migration into drinking water pipes/supply to buildings and subsequent ingestion;
- Leaching from CKD/waste materials to groundwater followed by lateral migration of contamination within groundwater;
- Leaching/migration of contaminants from soils to controlled waters receptors;
- Direct surface water run-off and sub-surface flow to surface waters;
- Lateral migration of contaminated groundwater; and
- Vertical migration of contaminated groundwater.

The potential receptors identified are:

- The Secondary (undifferentiated) Aquifer within the superficial deposits beneath the zone;
- The Principal aquifer within the bedrock beneath the zone;
- The River Thames adjacent to the north-west;
- Buildings and services within this Zone as part of the proposed development; and
- Zone visitors and workers.

16.6.2. Proposed Development

Zone 2 is proposed to be developed as the core of the entertainment resort, with two principal areas and a connecting hub. The core is to include numerous themed rides and other associated leisure buildings and infrastructure.

16.6.3. Human Health

Soil samples collected during the 2015 ground investigation were screened against Atkins' SSVs/C4SLs/S4ULs for a commercial land use, based on 1% SOM. A total of 28 soil samples were analysed from within Zone 2 at depths ranging from 0.5 to 21.6m bgl. The locations of the investigation points are presented in 5134008-PHASE2-FIGURE001 (Rev. A). For Zone 2, all sample depths were included within the human health risk assessment due to the proposals to cut significant quantities of material from the infilled areas for likely placement elsewhere across Zone 1 and Zone 2.

The data screening spreadsheets are summarised below and presented in full in Appendix E.3.

There were three exceedances of chromium (total) above the screening criteria within the Made Ground/CKD materials in BH203 and BH204 at depths from 1.0 to 3.6 m bgl; these are not considered likely to cause significant risk to human health as there were no concentrations of hexavalent chromium encountered above the LOD in any soil sample analysed during the ground investigation and hexavalent chromium is considered more toxic and is therefore a contaminant of more concern. Otherwise, there were no exceedances of the applicable screening criteria within any of the samples analysed from the top metre of Zone 2.

Elevated pH values were found within a number of soil samples taken from the zone, with a maximum of 12.7 in the sample from WS203 at 2.25 m bgl. This is due to the presence of CKD deposits across significant portions of Zone 1. Should this material become airborne or moistened, it can cause superficial burns to skin and damage eyes.

The data from groundwater monitoring were compared to the WSVs for the commercial land use scenario.

There were no exceedances of the WSVs for any of the contaminants analysed within the groundwater samples from the Site. Screening results are presented in Appendix E.5. pH was found to be elevated in perched water samples from BH201, WS202, WS203 and WS204, indicating likely impact from CKD deposits. Should future workers come into contact with alkaline groundwater, burns to skin could occur.

Asbestos, including chrysotile and amosite, was encountered within six soil samples, as summarised in Table 16-3 below. Quantification analysis completed on these samples showed the majority present at quantities below the LOD (<0.001%), with only one sample from WS203 at 2.25m bgl quantified at 0.08%. The sample at BH202 was taken from natural strata and was therefore retested as asbestos would not be anticipated at these depths, and the identification potentially indicated cross-contamination with other materials. The retested sample did not show a positive identification for asbestos.

Table 16-3 Summary of Asbestos Identification and Quantification (Zone 2)

Location	Depth (m bgl)	Asbestos Type	Quantification (%)
BH201	7.2	Amosite	< 0.001
BH202*	10.5	Chrysotile	< 0.001
BH204	1.0	Chrysotile	< 0.001
BH204	3.0	Chrysotile	< 0.001
BH204	3.6	Chrysotile	< 0.001
WS203	2.25	Chrysotile	0.08

Notes: * - potential false positive result

Asbestos was positively identified within the initial laboratory screen in a total of six samples from the Made Ground, with one being a potential false positive result based on subsequent retesting of the material. These samples were taken from various depths from a number of investigation locations. Quantification analysis of these samples was undertaken to determine the percentage of asbestos by weight within the samples, with ≥0.1% of asbestos fibres within a single soil sample indicating a potential hazardous waste classification [44]. The quantification analysis results reveal that no asbestos was present over the hazardous waste threshold, with only one sample being quantified above the LOD at 0.08%. As quantification analysis is undertaken after the initial identification analysis, any asbestos fibres removed from the untouched sample on the identification slide would not then be replaced into the soil matrix. In addition, Made Ground is highly variable in nature and individual subsamples taken from the same sample can give differing results. Both of these factors can lead to quantification analysis giving false negative results (subsequent non-detects in a sample where asbestos was first identified). Due to the nature of the Made Ground at the Site, it is possible that there are unconfirmed quantities of asbestos present within other areas of the Site which may exceed the hazardous waste threshold.

16.6.4. Controlled Waters

16.6.4.1. Soil-Derived Leachate

Table 16-4 presents identified exceedances of the relevant screening criteria within the soil-derived leachate samples taken from the soils collected during the 2015 ground investigation. Screening spreadsheets are provided in Appendix E.4; see screening spreadsheet for sources of screening criteria.

Table 16-4 Soil-Derived Leachate Exceedances of the Screening Criteria (Zone 2)

Compound	DWS	EQS	No. of samples	Min. Value	Max. Value	No. of Exceed.	Locations of Exceed. (depths in m bgl)
Naphthalene (µg/L)	No DWS	1.2	8	< 0.01	1.4	1	**BH202, 7.0**
Anthracene (µg/L)	No DWS	0.1	8	< 0.01	0.16	1	**BH202, 7.0**
Arsenic (µg/L)	10	25	8	< 1.1	20	2	**BH202, 11.5;** BH204, 6.7
Chromium (total) (µg/L)	50	15	8	0.7	180	1	**WS202, 6.7**
Copper (µg/L)	2000	5	8	2.4	21	3	BH202, 11.5; **BH204, 6.7**; WS202, 6.7
Selenium (µg/L)	10	No EQS	8	< 4.0	18	2	BH202, 7.0; **WS202, 6.7**
TPH Aliphatic >C10-C12 (µg/L)	10	No EQS	13	< 10	18	1	**BH203, 13.0**
TPH Aliphatic >C12-C16 (µg/L)	10	No EQS	13	< 10	170	1	**BH203, 13.0**
TPH Aliphatic >C16-C21 (µg/L)	10	No EQS	13	< 10	540	1	**BH203, 13.0**
TPH Aliphatic >C21-C35 (µg/L)	10	No EQS	13	< 10	1200	1	**BH203, 13.0**
TPH Aliphatics (Total) (µg/L)	10	No EQS	13	< 10	2000	1	**BH203, 13.0**
TPH Aromatic >C10-C12 (µg/L)	10	No EQS	13	< 10	200	2	BH202, 7.0; **BH203, 13.0**
TPH Aromatic >C12-C16 (µg/L)	10	No EQS	13	< 10	520	2	BH202, 7.0; **BH203, 13.0**
TPH Aromatic >C16-C21 (µg/L)	10	No EQS	13	< 10	1500	2	BH202, 7.0; **BH203, 13.0**
TPH Aromatic (Total) (µg/L)	10	No EQS	13	< 10	2300	2	BH202, 7.0; **BH203, 13.0**

Notes: **BOLD** indicates location of maximum exceedance

There are a number of leachate samples where results exceeded the relevant screening criteria for heavy metals, spread across a number of investigation locations. In addition, naphthalene and anthracene also exceeded the applicable criteria within one sample, though these were the same order of magnitude as the criteria value. A number of TPH fractions within two samples from BH202 and BH203 were over two orders of magnitude higher than the screening criteria.

Table 16-5 presents the exceedances of the relevant screening criteria within the perched water samples taken from BH201, WS202, WS203 and WS204 during the 2015 ground investigation. Where duplicate samples also exceeded the screening criteria, these are counted as an exceedance. Screening spreadsheets are provided in Appendix E.4; see screening spreadsheet for sources of screening criteria.

Table 16-5 Perched Water Exceedances of the Screening Criteria (Zone 2)

Compound	DWS	EQS	No. of samples	Min. Value	Max. Value	No. of Exceed.	Locations of Exceed.
pH	6.5 – 9.5	6.0 – 9.0	13	11.3	13.3	13	BH201 (15/07/15, 29/07/15, 12/08/15, 27/08/15) WS202 (14/07/15, 29/07/15, 12/08/15, 27/08/15) **WS203 (14/07/15**, 29/07/15 (and duplicate), 12/08/15, 27/08/15)
Electrical conductivity (µS/cm)	2500	No EQS	13	2,800	93,000	13	BH201 (15/07/15, 29/07/15, 12/08/15, 27/08/15) WS202 (14/07/15, 29/07/15, 12/08/15, 27/08/15) **WS203 (14/07/15**, 29/07/15 (and duplicate), 12/08/15, 27/08/15)
Cyanide (µg/L) (total and free)	50	1	13	< 10	13	1	**WS203 (12/08/15)**
Sulphate (µg/L)	250,000	400,000	13	342,000	17,000,000	13	BH201 (15/07/15, 29/07/15, 12/08/15, 27/08/15) **WS202 (14/07/15**, 29/07/15, 12/08/15, 27/08/15) WS203 (14/07/15, 29/07/15 (and duplicate), 12/08/15, 27/08/15)
Chloride (mg/L)	250	250	13	230	4,900	12	BH201 (15/07/15, 29/07/15, 12/08/15) WS202 (14/07/15, 29/07/15, 12/08/15, 27/08/15) **WS203** (14/07/15, **29/07/15** (and duplicate), 12/08/15, 27/08/15)
Ammoniacal nitrogen (µg/L)	390	780	13	190	56,000	12	BH201 (15/07/15, 12/08/15, 27/08/15) WS202 (14/07/15, 29/07/15, 12/08/15, 27/08/15) **WS203 (14/07/15**, 29/07/15 (and duplicate), 12/08/15, 27/08/15)
Nitrite (µg/L)	500	No EQS	13	640	3,500	13	BH201 (15/07/15, 29/07/15, 12/08/15, 27/08/15) **WS202 (14/07/15**, 29/07/15, 12/08/15, 27/08/15) WS203 (14/07/15, 29/07/15 (and duplicate), 12/08/15, 27/08/15)
Total phenols (µg/L)	No DWS	7.7	13	< 10	1,900	7	WS202 (14/07/15, 29/07/15, 27/08/15) **WS203 (14/07/15**, 29/07/15 (and duplicate), **27/08/15**)
Aluminium (mg/L)	0.2	No EQS	13	0.0609	0.802	9	BH201 (15/07/15, 29/07/15, 12/08/15, 27/08/15) WS202 (14/07/15, 27/08/15) **WS203 (14/07/15**, 12/08/15)
Antimony (µg/L)	5	No EQS	13	< 0.4	12	4	**BH201** (15/07/15, 29/07/15, **12/08/15**, 27/08/15)

Compound	DWS	EQS	No. of samples	Min. Value	Max. Value	No. of Exceed.	Locations of Exceed.
Arsenic (µg/L)	10	25	13	6.91	53.9	12	**BH201** (15/07/15, 29/07/15, **12/08/15**, 27/08/15) WS202 (14/07/15, 29/07/15, 12/08/15, 27/08/15) WS203 (29/07/15 (and duplicate), 12/08/15, 27/08/15)
Cadmium (µg/L)	5	0.2	13	< 0.02	0.44	4	WS202 (29/07/15) **WS203 (29/07/15**, 27/08/15)
Chromium (hexavalent) (µg/L)	No DWS	0.6	10	< 5.0	2,000	1	**WS202 (29/07/15)**
Chromium (total) (µg/L)	50	15	13	0.5	2,100	4	**WS202** (14/07/15, **29/07/15**, 12/08/15, 27/08/15)
Copper (µg/L)	2000	5	13	4.7	40	12	BH201 (15/07/15, 29/07/15, 12/08/15, 27/08/15) **WS202 (14/07/15**, 29/07/15, 12/08/15, 27/08/15) WS203 (14/07/15, 29/07/15, 12/08/15, 27/08/15)
Iron (mg/L)	0.2	1	13	< 0.004	0.29	2	**BH201 (29/07/15)** WS203 (29/07/15)
Mercury (µg/L)	1	0.05	13	< 0.05	8.83	9	BH201 (15/07/15, 29/07/15, 12/08/15, 27/08/15) WS202 (29/07/15) **WS203 (29/07/15** (and duplicate), 12/08/15, 27/08/15)
Molybdenum (µg/L)	70	No EQS	13	11	1,100	8	WS202 (29/07/15, 12/08/15, 27/08/15) **WS203** (14/07/15, 29/07/15 (and **duplicate**), 12/08/15, 27/08/15)
Nickel (µg/L)	20	20	13	3.5	1,700	9	WS202 (14/07/15, 29/07/15, 12/08/15, 27/08/15) **WS203** (14/07/15, 29/07/15 (and **duplicate**), 12/08/15, 27/08/15)
Selenium (µg/L)	10	No EQS	13	8.1	820	11	BH201 (15/07/15, 12/08/15) **WS202** (14/07/15, **29/07/15**, 12/08/15, 27/08/15) WS203 (14/07/15, 29/07/15, 12/08/15, 27/08/15)
Vanadium (µg/L)	No DWS	100	13	61	460	9	**BH201** (15/07/15, 29/07/15, **12/08/15**, 27/08/15) WS202 (29/07/15) WS203 (14/07/15, 29/07/15, 27/08/15)
TPH Aliphatic >C16-C21 (µg/L)	10	No EQS	13	< 10	650	1	WS203 (14/07/15)
TPH Aliphatic >C21-C35 (µg/L)	10	No EQS	13	< 10	1,200	1	WS203 (14/07/15)
TPH Aliphatic (total) (µg/L)	10	No EQS	13	< 10	1,800	1	WS203 (14/07/15)

Notes: **BOLD** indicates location of maximum exceedance

There were a significant number of exceedances of the relevant screening criteria within the perched water/leachate samples taken from the Site, including heavy metals, phenols and aliphatic TPH fractions. pH was shown to be elevated to 13.3 in samples from WS203, which is expected due to the presence of CKD deposits in this area of the zone. However, pH within the groundwater (see below) was not found to be elevated above either the DWS or EQS, indicating that the Alluvium is likely forming a low-permeability barrier between the perched water and groundwater bodies.

A number of the analytes exceeding the screening criteria could be attributed to the likely saline nature of the waters below the Site, including electrical conductivity, sulphate, chloride and nitrate. Sulphates would also be expected to be elevated due to the nature of CKD as a by-product of the cement industry.

Exceedances noted for iron, cyanide and the TPH fractions are not considered likely to be indicative of a significant issue within the zone, as they only occurred in one or two boreholes and during singular monitoring events only. Cadmium also does not appear to be a widespread concern within the perched water/leachate in Zone 2, with concentrations in the same order of magnitude as the screening value and only occurring during two monitoring rounds out of four.

A large number of heavy metals exceeded the relevant screening criteria, which is likely to be caused by the elevated pH of CKD deposits causing dissolution and mobilisation of heavy metals within the Made Ground. Chromium (and hexavalent chromium) were noted to be highly elevated within the leachate in WS202, as well as selenium; molybdenum and nickel were highly elevated in WS203 with concentrations two orders of magnitude above the screening criteria.

Quality of the perched water/leachate is generally slightly better in BH201, which is outside of the currently permitted areas within the former North Pit. Within this area, the Alluvium had been stripped out, with the Made Ground deposits being placed directly onto the RTD. The only maximum exceedances within BH201 were for arsenic and vanadium.

16.6.4.2. Groundwater

Table 16-6 presents the exceedances of the relevant screening criteria within the groundwater samples taken from BH202, BH203 and BH204 during the 2015 ground investigation. BH203 and BH204 were installed to target the RTDs, whereas BH202 was installed within the Chalk. Duplicate samples are considered as exceedances. Screening spreadsheets are provided in Appendix E.4; see screening spreadsheet for sources of screening criteria.

Table 16-6 Groundwater Exceedances of the Screening Criteria (Zone 2)

Compound	DWS	EQS	No. of samples	Min. Value	Max. Value	No. of Exceed.	Locations of Exceed.
Electrical conductivity (µS/cm)	2500	No EQS	14	1,600	14,000	7	**BH202** (29/07/15, **12/08/15, 27/08/15**) BH203 (15/07/15, 29/07/15, 13/08/15, 27/08/15)
Sulphate (µg/L)	250,000	400,000	14	72,500	1,090,000	7	BH202 (29/07/15, 12/08/15, 27/08/15) **BH203** (15/07/15, 29/07/15, 13/08/15, **27/08/15**)
Chloride (mg/L)	250	250	14	200	4,700	8	**BH202** (02/07/15, 14/07/15, 29/07/15, **12/08/15**, 27/08/15) BH203 (15/07/15, 27/08/15) BH204 (27/08/15)

Compound	DWS	EQS	No. of samples	Min. Value	Max. Value	No. of Exceed.	Locations of Exceed.
Ammoniacal nitrogen (µg/L)	390	780	14	150	5,400	12	BH202 (29/07/15, 12/08/15, 27/08/15) **BH203** (15/07/15, 29/07/15, 13/08/15, **27/08/15**) BH204 (15/07/15, 29/07/15, 13/08/15, 27/08/15 (and duplicate))
Nitrite (µg/L)	500	No EQS	14	6.6	1,300	3	BH202 (14/07/15, 29/07/15) **BH203 (15/07/15)**
Copper (µg/L)	2000	5	14	2.1	13	5	**BH202 (02/07/15)** BH203 (15/07/15, 29/07/15) BH204 (15/07/15, 27/08/15 (duplicate only))
Iron (mg/L)	0.2	1	14	0.012	3.1	6	**BH202** (**29/07/15**, 12/08/15) BH203 (27/08/15) BH204 (15/07/15, 29/07/15, 27/08/15)
Manganese (µg/L)	50	No EQS	14	70	1,800	14	BH202 (02/07/15, 14/07/15, 29/07/15, 12/08/15, 27/08/15) **BH203** (15/07/15, 29/07/15, 13/08/15, **27/08/15**) BH204 (15/07/15, 29/07/15, 13/08/15, 27/08/15 (and duplicate))
Mercury (µg/L)	1	0.05	14	< 0.05	1.37	8	BH202 (14/07/15, 12/08/15) **BH203** (**15/07/15**, 29/07/15, 13/08/15, 27/08/15) BH204 (15/07/15, 13/08/15)
Selenium (µg/L)	10	No EQS	14	3.4	56	8	**BH202** (14/07/15, 29/07/15, 12/08/15, **27/08/15**) BH203 (15/07/15, 29/07/15, 27/08/15) BH204 (27/08/15 (duplicate only))
Zinc (µg/L)	No DWS	40	14	< 0.5	150	2	**BH202** (**02/07/15**, 14/07/15)
TPH Aliphatic >C16-C21 (µg/L)	10	No EQS	14	< 10	48	1	BH202 (02/07/15)
TPH Aliphatic >C21-C35 (µg/L)	10	No EQS	14	< 10	110	1	BH202 (02/07/15)
TPH Aliphatic (total) (µg/L)	10	No EQS	14	< 10	160	1	BH202 (02/07/15)

Notes: **BOLD** indicates location of maximum exceedance.

Some of the same heavy metal contaminants were encountered within the perched water and groundwater, including copper, mercury and selenium, whereas there were also some additional contaminants present in the groundwater only, such as iron, manganese, and zinc. Iron and manganese were also found in the groundwater within Zone 1. Zinc was only encountered over two monitoring rounds from one borehole, and is therefore not considered likely to indicate significant risk. Similar TPH fractions were found within the perched water and the groundwater sample; however, TPH concentrations were found within the first monitoring round for BH202 only, and were not found in subsequent monitoring rounds. Elevated pH encountered within the perched water was not found within the groundwater samples.

A number of the exceedances can be related to saline intrusion within the groundwater from the River Thames, including electrical conductivity, sulphates, chloride and nitrite.

In general groundwater quality was significantly better than perched water/leachate as seen in the previous section, with fewer contaminants exceeding the screening criteria.

16.6.4.3. Other Data Sources

Eleven groundwater and ten leachate/perched water boreholes have been installed by Lafarge as part of their monitoring programme for the permitted landfill areas within Zone 2. Some of the boreholes are replacements drilled in order to decommission older boreholes within the zone, and the majority of the groundwater boreholes are installed within either the Alluvium or the RTDs, with the exception of SA5944 which is a Chalk borehole. Regular monitoring of these boreholes has been undertaken, with some having monitoring data since January 2006, and the data obtained have been screened against the same generic criteria as utilised above, for those contaminants analysed.

For brevity, Table 16-7 only shows the locations and dates of the maximum and minimum exceedances of the leachate/perched water above the screening criteria for the Lafarge boreholes. Full data screening can be seen in Appendix E.1:

Table 16-7 Perched Water Exceedances - Lafarge Boreholes (Historical Data)

Compound	**DWS**	**EQS**	Min. Value	Max. Value – Location **(Date)**	**Number of Samples**	**Number of Exceedances**
Boron (mg/L)	1	7	< 0.23	2.92 – **IW3b** (12/10/10)	136	16
Cadmium (mg/L)	0.005	0.0002	< 0.0003	0.029 – **IW3b** (01/10/06)	269	160
Chromium (mg/L)	0.05	0.015	< 0.0007	6.05 – **IW3AR** (03/09/14)	269	136
Chromium (hexavalent) (mg/L)	No DWS	0.0006	< 0.005	5.858 – **IW3BR** (04/06/14)	189	102
Cobalt (mg/L)	No DWS	0.003	3.98	12.6 – **IW3b** (IW3b – 28/09/06)	4	4
Copper (mg/L)	2	0.005	< 0.001	0.199 – **IW3BR** (07/05/14)	268	187
Cyanide (mg/L)	0.05	0.015	0.022 – **IW3AR** (17/02/15) (*only one sample)		1	1
Iron (mg/L)	0.2	1	< 0.03	0.39 – **IW1a** (04/03/10)	72	5
Lead (mg/L)	0.01	0.0072	< 0.002	0.31 – **IW3a** (18/05/06)	268	120
Manganese (mg/L)	0.05	No EQS	< 0.0026	18.9 – **IW3a** (12/01/10)	268	46
Mercury (mg/L)	0.001	0.00005	< 0.0001	0.0011 – **IW3b** (28/09/06)	262	39
Molybdenum (mg/L)	0.07	No EQS	0.011	1.24 – **IW3b** (08/12/11)	199	182
Nickel (mg/L)	0.02	0.02	< 0.0009	0.5 – **IW3a** (07/05/09)	268	243
Sodium (mg/L)	200	No EQS	2.2	6600 – **IW1a** (03/06/10)	267	252

Compound	DWS	EQS	Min. Value	Max. Value – Location (Date)	Number of Samples	Number of Exceedances
pH (pH units)	6.5 – 9.5	6.0 – 9.0	7.9	14 – **IW3a** (multiple dates)	269	249
Electrical conductivity (µS/cm)	2500	No EQS	1510	92000 – **IW3b** (27/02/06)	269	264
Ammoniacal nitrogen as N (mg/L)	0.39	0.78	< 0.27	279 – **IW3b** (12/01/10)	217	208
Ammonia as N (mg/L)	No DWS	0.021	14.7	52.8 – **IW3a** (05/06/08)	57	56
Chloride (mg/L)	250	250	75	14500 – **IW1a** (05/03/13)	228	201
Nitrite as NO_2 (mg/L)	0.5	No EQS	0.0296	16.75 – **IW3a** (02/12/08)	197	165
Sulphate as SO_4 (mg/L)	250	400	338	40500 – **IW1a** (07/08/08)	208	203
Fluoride as F (mg/L)	1.5	5	0.23	70.7 – **IW3a** (02/12/08)	199	184
Antimony (mg/L)	0.005	No EQS	< 0.001	0.869 – **IW3a** (08/01/14)	183	135
Selenium (mg/L)	0.01	No EQS	0.021	2180 – **IW3b** (01/10/06)	257	252
Arsenic (mg/L)	0.01	0.025	< 0.001	4.19 – **IW3b** (05/06/08)	262	249
Phenols (mg/L)	No DWS	0.0077	< 0.15	0.87 – **IW1a & IW1b** (08/12/11 & 13/06/12)	68	28
Benzene (µg/L)	1	8	0.61	1.08 – **IW3b** (28/09/06)	4	1
Uranium (µg/L)	0.015	No EQS	< 0.2	0.24 – **IW3a** (04/10/07)	4	1

Notes: Only the dates of the maximum exceedances per compound have been included.

The exceedances identified within the historical perched water?? samples comprised multiple heavy metals and metalloids, which could potentially be mobilised due to the highly alkaline conditions within the deposited CKD materials. The maximum recorded concentrations of many of these analysed compounds are a number of orders of magnitude above the screening criteria, indicating a potentially substantial risk. Exceedances occurred across all locations, though those monitoring wells located in South Pit Phase 3 had the largest number of maximum exceedances when compared to those in South Pit Phase 1. Additionally, the number of maximum exceedances occurring in 2014 or later is limited, with the majority occurring from 2006 to 2010, potentially indicating improving quality over time.

A number of compounds are not considered likely to indicate significant risk, due to only being detected in one monitoring round or in relatively few monitoring rounds when compared to the overall number of samples taken. These include benzene, uranium and iron. Boron, manganese and mercury were found to exceed in relatively fewer samples than other contaminants when the ratio of exceedances to total number of samples was interrogated, and elevated boron and manganese concentrations were not encountered within the perched water samples taken during the recent monitoring within the newly installed boreholes.

The following contaminants have exceeded the relevant screening criteria within the groundwater below the Site, with the maximum and minimum concentrations during the monitoring period from all relevant boreholes given:

Table 16-8 Groundwater Exceedances – Lafarge Boreholes (Historical Data)

Compound	DWS	EQS	Min. Value	Max. Value – Location (Date)	No. of samples	No. of Exceed.
Boron (mg/L)	1	7	< 0.0006	3.4 – **GW12** (14/04/09)	314	163
Cadmium (mg/L)	0.005	0.0002	< 0.0005	0.011 – **GW11** (09/11/06)	313	82
Chromium (mg/L)	0.05	0.015	< 0.002	0.071 – **EW1** (08/09/10)	359	14
Chromium (hexavalent) (mg/L)	No DWS	0.0006	< 0.005	0.04 – **GW11, GW12 & GW13** (09/10/08)	331	42
Copper (mg/L)	2	0.005	< 0.001	0.082 – **GW12** (26/01/06)	317	46
Iron (mg/L)	0.2	1	< 0.23	5.66 – **GW12** (03/09/14)	7	5
Lead (mg/L)	0.005	0.045	< 0.002	0.098 – **GW13** (21/01/06)	317	87
Manganese (mg/L)	0.05	No EQS	< 0.007	79.4 – **EW4** (12/11/14)	322	305
Mercury (mg/L)	0.001	0.00005	< 0.0001	0.1 – **GW12** (04/09/08)	314	75
Molybdenum (mg/L)	0.07	No EQS	< 0.002	4.77 – **EW3** (15/05/13)	317	21
Nickel (mg/L)	0.02	0.02	< 0.0009	0.933 – **EW3** (15/05/13)	317	38
Sodium (mg/L)	200	No EQS	0.015	24700 – **GW12** (11/12/12)	356	355
pH (pH units)	6.5 – 9.5	6.0 – 9.0	6.7	12.7 – **EW3** (12/06/13)	378	16
Electrical conductivity (µS/cm)	2500	No EQS	2160	103000 – **GW11** (21/01/15)	378	369
Ammoniacal nitrogen as N (mg/L)	0.39	0.78	0.28	92 – **EW3** (02/10/13)	378	336
Chloride (mg/L)	250	250	464	7290 – **EW3** (15/05/13)	376	376
Nitrite as NO_2 (mg/L)	0.5	No EQS	0.026	13.47 – **GW11** (05/06/08)	354	53
Sulphate as SO_4 (mg/L)	250	400	69.6	11400 – **EW3** (03/07/13)	376	344
Fluoride as F (mg/L)	1.5	5	< 0.1	6.2 – **EW3** (12/06/13 & 03/07/13)	354	12
Antimony (mg/L)	0.005	No EQS	< 0.001	0.035 – **EW3** (24/06/10)	210	2
Selenium (mg/L)	0.01	No EQS	< 0.001	1.68 – **EW3** (24/06/10)	372	190
Arsenic (mg/L)	0.01	0.025	< 0.001	0.161 – **EW3** (24/06/10)	174	78
Tribuyltin (µg/L)	No DWS	0.002	< 0.02	0.13 – **GW13** (28/09/06)	13	1
Triphenyltin (µg/L)	0.015	No EQS	< 0.02	1.05 – **GW13** (28/09/06)	13	1

Compound	DWS	EQS	Min. Value	Max. Value – Location (Date)	No. of samples	No. of Exceed.
Uranium (µg/L)	0.015	No EQS	< 0.001	1.8 – **SA5944** (28/09/06)	13	1

Notes: the dates of the maximum exceedances per compound have been included.

As with the recent investigation, there have historically been exceedances of multiple determinands, including a number of heavy metals/metalloids. Contaminants found to exceed the screening criteria were similar to those found in the leachate/perched water wells; however, water quality was generally better within the groundwater, as fewer compounds were found to be widespread over multiple locations and monitoring rounds. The ratio of exceedances to total number of samples was much lower for the large majority of the contaminants encountered within the groundwater, with antimony, tributyltin, triphenyltin, and uranium only being encountered within one or two samples. Boron, manganese, ammoniacal nitrogen and selenium were found to be the most widespread which, excluding boron, were also found to be elevated within the groundwater samples taken during current monitoring undertaken for the ground investigation.

Within the single Chalk borehole – SA5944 – groundwater quality was generally higher than the other boreholes installed in the Alluvium or the RTD, with a number of contaminants attributable to saline intrusion from the nearby River Thames, including sodium, electrical conductivity, chloride, nitrite and sulphate. Of those remaining which show significant numbers of exceedances (~ 10% or more of the total samples taken) – hexavalent chromium, ammoniacal nitrogen, lead, manganese, mercury, selenium and arsenic – a number were also found within the Chalk boreholes within nearby Zone 1 and other zones within the wider Site, indicating a widespread issue and not likely one caused by any specific zonal activity.

EW3 and EW5 – originally installed as Alluvium/RTD boreholes – showed indications of leachate incursion based on elevated pH values and number of maximum exceedances in EW3. EW5 was decommissioned in 2014 and replaced with EW5R, which does not indicate elevated pH values or as many heavy metals exceedances.

Table 16-9 Surface Water Exceedances - Lafarge (Historical Data)

Compound	EQS	Min. Value	Max. Value	No. of samples	No. of Exceed.	Locations of Exceedances
Barium (mg/L)	0.7	0.023	5	6	1	**SSW1 (06/09/07)**
Cadmium (mg/L)	0.0002	< 0.05	155	94	49	**SSW1 (18/08/06)**, SSW2, SSW3, SSW4, SSW5, Pond
Chromium (mg/L)	0.015	< 0.0007	8.2	250	51	SSW1, **SSW2 (01/01/01)**, SSW3
Chromium (hexavalent) (mg/L)	0.0006	< 0.005	0.03	183	47	**SSW1, SSW2, SSW3, SSW4, SSW5 (all multiple dates)**
Copper (mg/L)	0.005	< 0.009	0.022	27	5	SSW1, **SSW3 (04/09/13)**, SSW4, Pond
Lead (mg/L)	0.0072	< 0.002	120	60	26	SSW1, SSW2, **SSW3 (01/04/01)**
Iron (mg/L)	1	< 0.03	21.6	56	5	**SSW1 (01/10/02)**, SSW3
Manganese (mg/L)	0.05	< 0.004	2.3	57	16	SSW1, SSW2, **SSW3 (01/10/01)**
Silver (mg/L)	0.0005	0.000015	15	21	11	**SSW1, SSW2, SSW3, SSW4, SSW5 (all multiple dates)**
Sodium (mg/L)	200	13.9	3490	289	113	SSW2, SSW3, SSW4, **SSW5 (08/09/10)**, Pond
Nickel (mg/L)	0.02	0.0056	25	57	44	SSW1, **SSW2 (01/01/01)**, SSW3
Zinc (mg/L)	40	4.35	332	68	3	**SSW1 (01/10/02)**, SSW3
pH (pH units)	6.0 – 9.0	5.6	10.4	289	6	SSW1, SSW3, SSW4, **Pond (03/09/14)**
Electrical conductivity (µS/cm)	2500	92.5	21700	289	103	SSW2, **SSW3 (12/06/13)**, SSW4, SSW5, Pond
Ammoniacal nitrogen as N (mg/L)	0.78	0.027	6.39	289	40	SSW1, SSW2, SSW3, SSW4, **SSW5 (02/06/11)**, Pond

Compound	EQS	Min. Value	Max. Value	No. of samples	No. of Exceed.	Locations of Exceedances
Chloride (mg/L)	250	6.13	6400	289	139	SSW2, SSW3, SSW4, **SSW5 (08/09/10)**, Pond
Nitrite (mg/L)	0.5	0.102	4.91	193	25	SSW1, SSW2, SSW3, SSW4, SSW5, **Pond (03/07/13)**
Sulphate (mg/L)	400	< 1.3	4760	289	99	SSW2, **SSW3 (12/06/13)**, SSW4, SSW5, Pond
Selenium (mg/L)	0.01	< 0.001	0.188	67	23	SSW2, **SSW3 (06/06/11)**, SSW4, SSW5, Pond
Antimony (mg/L)	0.005	0.001	0.027	22	1	Pond (17/12/09)
Mercury (mg/L)	0.05	< 0.015	0.57	24	12	SSW1, SSW2, SSW3, **SSW4 (28/09/06)**, SSW5

Notes: **BOLD** indicates location of maximum exceedance. Only the dates of the maximum exceedances per compound have been included.

The exceedances of the screening criteria identified within historical surface water results across Zone 2 comprise metals and some inorganic parameters (pH and electrical conductivity). The majority of the monitoring points are situated in ditches running around the perimeter of South Pit Phases 2 and 3. As with the historical groundwater and leachate results, the maximum recorded concentrations were often orders of magnitude above the screening criteria.

A leachate collection and management system has recently been installed around the perimeter of South Pit Phase 3; monitoring results of the surrounding ditches are not yet available to assess the impact of leachate collection.

16.6.5. Ground Gas Assessment

Below are the findings from the ground investigation monitoring data, both historical and current.

Table 16-10 Ground Gas Monitoring Results (Zone 2)

Borehole ID	Response Zone (m bgl) (strata)	Worst Case Measured Concentrations				Maximum Borehole Flow Rate (l/hr)
		CH_4 (%)	CO_2 (%)	CO (ppm)	H_2S (ppm)	
2015 Locations						
BH201	1.4 – 6.5 (Made Ground)	0.1	< 0.1	1	< 1	0.4
BH202	20.5 – 31.5 (Chalk)	0.1	0.1	1	< 1	< 0.1
BH203	8.7 – 11.5 (RTD)	< 0.1	0.4	19	< 1	< 0.1
BH204	6.8 – 12.2 (Alluvium/RTD)	0.5	1.2	4	< 1	< 0.1
WS202	2.8 – 11.0 (Made Ground)	0.3	0.3	6	6	< 0.1
WS203	1.3 – 4.0 (Made Ground)	5.7	0.1	16	< 1	< 0.1
WS204	1.5 – 8.9 (Made Ground)	0.1	0.3	5	5	< 0.1
Historical Locations						
EW1	0.5 – 12.0 (Made Ground/Alluvium)	43.9	19.1	8	15	-
EW2	0.5 – 10.0 (Alluvium)	82	28.4	15	> 5000	-
EW3	0.5 – 10.0 (Made Ground/Alluvium)	87.1	25.8	531	27	-

Borehole ID	Response Zone (m bgl) (strata)	Worst Case Measured Concentrations				Maximum Borehole Flow Rate (l/hr)
		CH_4 (%)	CO_2 (%)	CO (ppm)	H_2S (ppm)	
EW4	12.0 – 16.0 (RTD)	0.7	3.8	7	2	-
EW5	21.0 – 24.0 (RTD/Chalk)	5.3	0.2	4	3	-
EW5R	19.5 – 23.5 (RTD Chalk)	0.1	0.2	0	0	-
EW6	16.0 – 20.0 (RTD/Chalk)	0.0	0.2	0	0	-
G12	Unknown (RTD)	45.1	27.0	14	2	-
IW1A	Unknown	2.4	0.6	6	1	-
IW1AR	3.0 – 13.0 (Made Ground)	0.0	0.1	1	4	-
IW1B	Unknown	1.3	0.2	7	1	-
IW1BR	3.0 – 11.8 (Made Ground)	0.3	0.2	1	5	-
IW1C	Unknown	0.2	0.2	7	5	-
IW1CR	3.0 – 12.0 (Made Ground)	0.1	0.1	1	6	-
IW3A	Unknown	0.2	0.2	7	4	-
IW3AR	3.0 – 11.8 (Made Ground)	0.6	0.1	32	10	-
IW3B	Unknown	0.7	0.2	16	34	-
IW3BR	3.0 – 10.2 (Made Ground)	0.7	0.2	15	6	-
IW3C	Unknown	0.3	0.1	12	1	-
IW3CR	3.0 – 8.8 (Made Ground)	0.4	0.1	17	7	-

Recorded atmospheric pressure ranged from 990 to 1023mbar during the recent ground gas monitoring period, within the boreholes within Zone 2. Flow was largely below the instrument's limit of detection during each monitoring round.

Elevated peak methane concentrations were only encountered in one borehole – WS203 – during three monitoring rounds undertaken in 2015. The monitoring undertaken from this borehole indicated methane concentrations between < 0.1% v/v to 5.7% v/v, all over the trigger point for CS2 of 1% v/v methane. Steady state methane concentrations at or above the trigger point were encountered during the first and final monitoring rounds.

Carbon dioxide was not found to be elevated about the CS2 trigger point of 5% v/v during any of the monitoring rounds in any borehole locations installed in 2015.

However, highly elevated concentrations of both methane and carbon dioxide were encountered within the Lafarge boreholes installed within Zone 2, including up to 87.1% v/v carbon dioxide in EW3 and 28.4% v/v methane in EW2. EW1, EW2 and EW3, all installed at least partially within the Alluvium, all showed consistently elevated concentrations of methane, with EW2 showing consistently elevated concentrations of carbon dioxide. G12, installed within the RTDs, showed elevated concentrations of methane until approximately 2010, when concentrations showed a notable decrease, with later monitoring showing a maximum of 6.4% v/v as opposed to the previous maximum of 45.1% v/v. Carbon dioxide was consistently encountered about the CS2 trigger point of 5% v/v in EW2 and G12 and more sporadically in EW1.

Carbon monoxide was found to be above the WELs within the Lafarge boreholes only; those boreholes installed as part of this 2015 ground investigation did not show any carbon monoxide concentrations above the 8-hour exposure reference concentration of 30ppm. However, the Lafarge boreholes did show some boreholes with consistent exceedances of both the 8-hour and 15-min exposure reference concentrations, with concentrations up to 531ppm in EW3. EW3 showed consistently elevated concentrations of carbon monoxide up to early 2013, when concentrations significantly dropped off to an average of approximately 10ppm. IW3AR only showed one exceedance of the 8-hour reference concentration during the first monitoring round only.

Hydrogen sulphide was also encountered above the WELs within a number of boreholes, notably within EW2 where concentrations were consistently above 1000ppm during monitoring undertaken from 2013 to 2014. EW1 only had one singular exceedance of the WELs. EW3 had a number of exceedances of the 8-hour reference concentration of 5ppm, while only two of the 15-minute reference concentration occurring in 2012, after which there were no exceedances of either WEL. Some other minor exceedances of the 8-hour reference concentration were noted within IW1BR, IW1C, IW1CR, IW3BR and IW3CR. IW3AR only showed one exceedance of the 8-hour reference concentration during all monitoring. IW3CR showed elevated hydrogen sulphide concentrations from November 2011 to December 2012, after which they decreased consistently to below the LOD.

Previous work completed by CMS-Enviro has shown that the CKD itself is not a significant source of ground gas generation, which is in agreement with results from the recent boreholes BH201, WS202 and WS204. WS203 did indicate some concentrations of methane above the trigger levels for CS1, though this borehole was very shallow and therefore in close proximity to the Alluvium below. The two historical boreholes installed directly in the alluvial deposits, EW1 and EW3, were those with the highest methane concentrations. All the 'IW' series boreholes installed within the permitted areas were installed as inspection wells within the CKD deposits, and none show consistent concentrations above the trigger levels for CS1 for either methane or carbon dioxide, notably within recently installed boreholes denoted with an 'R'.

A summary of the modified Wilson and Card gas risk assessment is given below in Table 16-11. Where flow readings were either not available or taken as 0.0l/hr, a value of 0.1l/hr has been substituted to calculate the GSVs.

Table 16-11 Ground Gas Risk Assessment (Zone 2)

Monitoring Location	Worst Case Measured Concentrations (%)		Maximum Borehole Flow Rate (l/hr)	Maximum Calculated GSV (l/hr)	Applicable CS
	CH_4	CO_2			
2015 Locations					
BH201	0.1	< 0.1	0.4	0.0004	CS1
BH202	0.1	0.1	< 0.1	0.0001	CS1
BH203	< 0.1	0.4	< 0.1	0.0004	CS1
BH204	0.5	1.2	< 0.1	0.0012	CS1
WS202	0.3	0.3	< 0.1	0.0003	CS1
WS203	5.7	0.1	< 0.1	0.0057	CS2
WS204	0.1	0.3	< 0.1	0.0003	CS1
Historical Locations					
EW1	43.9	19.1	0.1	0.0439	CS2
EW2	82	28.4	0.1	0.0820	CS2
EW3	87.1	25.8	0.1	0.0871	CS2
EW4	0.7	3.8	0.1	0.0038	CS1
EW5	5.3	0.2	0.1	0.0053	CS2
EW5R	0.1	0.2	0.1	0.0002	CS1

Monitoring Location	Worst Case Measured Concentrations (%)		Maximum Borehole Flow Rate (l/hr)	Maximum Calculated GSV (l/hr)	Applicable CS
	CH_4	CO_2			
EW6	0.0	0.2	0.1	0.0002	CS1
G12	45.1	27.0	0.1	0.0451	CS2
IW1A	2.4	0.6	0.1	0.0024	CS2
IW1AR	0.0	0.1	0.1	0.0001	CS1
IW1B	1.3	0.2	0.1	0.0013	CS1
IW1BR	0.3	0.2	0.1	0.0003	CS1
IW1C	0.2	0.2	0.1	0.0002	CS1
IW1CR	0.1	0.1	0.1	0.0001	CS1
IW3A	0.2	0.2	0.1	0.0002	CS1
IW3AR	0.6	0.1	0.1	0.0006	CS1
IW3B	0.7	0.2	0.1	0.0007	CS1
IW3BR	0.7	0.2	0.1	0.0007	CS1
IW3C	0.3	0.1	0.1	0.0003	CS1
IW3CR	0.4	0.1	0.1	0.0004	CS1
Worst Case (over all boreholes)					
	87.1	28.4	0.4	0.3484	CS2

Due to elevated concentrations of methane, carbon dioxide, carbon monoxide and hydrogen sulphide encountered within the ground gas (notably from the Lafarge boreholes), the zone is classified as CS2.

16.6.6. Property/Services

16.6.6.1. Water Supply Pipes

The table below gives a summary of the maximum values for each contaminant encountered within the zone. As the final plans for service placement at the zone are currently unconfirmed and materials from all depths may be placed near the surface due to the plans to undertake cutting of the infilled areas of the Site, all concentrations have been included in this assessment:

Table 16-12 Comparison of UK WIR Threshold Concentrations to Site Specific Values (Zone 2)

Parameter Group	UK WIR Threshold Value (mg/kg)			Maximum Value Found On-site
	PE Pipe	PVC Pipe	Metal Pipes	
VOCs	0.5	0.125	Pass	< 0.056
BTEX + MTBE	0.1	0.03	Pass	< 0.006
sVOCs (excluding PAHs)	2.0	1.4	Pass	<12.35
C5-C10 (aliphatic and aromatic hydrocarbons)	2.0	-	Pass	< 0.6
C11-C20 (aliphatic and aromatic hydrocarbons)	10.0	-	Pass	<191.9
C21-C35 (aliphatic and aromatic hydrocarbons)	500.0	-	Pass	390.0
Phenols (from sVOCs)	2.0	0.4	Pass	< 0.2
Cresols and chlorinated phenols (from sVOCs)	2.0	0.04	Pass	< 0.7
Nitrobenzene	0.5	0.4	Pass	< 0.3

Parameter Group	UK WIR Threshold Value (mg/kg)			Maximum Value Found On-site
	PE Pipe	PVC Pipe	Metal Pipes	
Corrosive	Pass	Pass	Wrapped Steel: pH<7, conductivity >40µs/cm Wrapped Iron: pH<5, conductivity >40µs/cm Copper: pH<5 or >8	pH: 12.7 Electrical conductivity: 33,000 µS/cm

In light of the results above, it is considered that neither low-density PE pipe nor PVC pipe should be used for any water supply pipes at the Site due to hydrocarbon concentrations within the surficial deposits within the zone, and when taking into account the corrosive nature of the soils (elevated pH values due to CKD presence), plain copper pipes would also not be considered suitable. Barrier (PE-Al-PE) Pipe, wrapped steel or wrapped iron would potentially be suitable materials and, as a matter of good practice and due to the variable nature of the Made Ground present at the Site, it is recommended that all services laid are placed within a corridor of ‘clean’ fill.

16.6.7. Updated Conceptual Site Model (Zone 2)

The sources, pathways and receptors identified in Section 16.6.1 have been updated based on the results of the GQRA, and the subsequent CSM is presented in Table 16-13.

Based on the current soils analysis data, there were three exceedances of the Atkins’ SSVs (or other pertinent screening criteria) for human health for chromium (total) using a commercial land use scenario. However, total chromium is of less toxicity than hexavalent chromium, which was not found over the limit of detection in any sample analysed during this ground investigation. It is not considered that the zone is contaminated with chromium as a whole. There were no other exceedances of any potential contaminants above the applicable screening criteria. Asbestos was positively identified in six samples from the near-surface materials across the zone (though one was potentially a false positive after retesting was carried out); subsequent quantification analysis found only one sample above the laboratory LOD at 0.08%.

There were no exceedances of the Atkins WSVs for the protection of human health in relation to inhalation of vapours from groundwater below the zone.

The controlled waters risk assessment identified potentially significant pollutant linkages, notably for heavy metals, with a number of heavy metals found above the relevant screening criteria within both the perched water and groundwater below the Site. pH was elevated as expected due to the deposition of CKD at levels up to 13.3, which can mobilise heavy metals into groundwater bodies. A number of contaminants found within leachate samples were not encountered in either perched water or groundwater, including a number of TPH fractions and two PAH compounds.

Assessment of historical water quality data in conjunction with current water monitoring results indicated the below.

Perched water/leachate

- A number of determinands exceeded during both historical and current monitoring, indicating a potentially significant risk to controlled waters receptors, including:
  - Chromium;
  - Copper;
  - Mercury;
  - Molybdenum;
  - Nickel;
  - Ammoniacal nitrogen;
  - Antimony;

  - Selenium;
  - Arsenic; and
  - Phenols.
- Out of these contaminants of concern, arsenic, chromium, copper and selenium were also encountered within the soil-derived leachate samples.
- Cadmium has not been consistently encountered in significant concentrations during current monitoring activities, whereas within the historical data there were a significant number of exceedances. Therefore, cadmium will remain a potential contaminant of concern.
- Cobalt, ammonia as N, fluoride, aluminium and vanadium were analysed within one set of data only (either historical or current), either current or historical. The number of exceedances encountered indicate all will remain as potential contaminants of concern.
- Lead, manganese and boron all exceeded in historical data but not in current data. The maximum exceedances all occurred in 2010 or earlier, and the ratio of exceedances to total number of samples in the historical data were low in the case of boron and manganese. Therefore, these compounds are not considered likely to indicate significant risk.
- No significant contamination with organic compounds was encountered within any of the samples analysed.

Groundwater

- Significantly more determinands were found to exceed within the historical Lafarge data when compared to the current monitoring results.
- Boron, cadmium, chromium (both total and hexavalent), lead, molybdenum, nickel and arsenic were all found within the historical groundwater samples but not during the 2015 monitoring round. Chromium (both total and hexavalent), molybdenum and nickel all exceeded in less than 15% of the total samples taken, and are therefore not considered likely to indicate a significant risk.
- A number of determinands exceeded during both historical and current monitoring, indicating a potentially significant risk to controlled waters receptors, including:
  - Copper;
  - Iron;
  - Manganese;
  - Mercury;
  - Ammoniacal nitrogen; and
  - Selenium.
- Out of these compounds, copper, mercury, selenium, and ammoniacal nitrogen were also encountered within the perched water/leachate.
- Fluoride was analysed during historical monitoring only; only 3% of the total samples taken were found to exceed the guideline values, and is therefore not considered to indicate a significant risk.
- No significant contamination with organic compounds was encountered within any of the samples analysed.

The key contaminants of concern potentially derived from Site activities which may impact upon controlled waters receptors in Zone 2 are considered to largely be heavy metals, notably including copper, mercury, and selenium and potentially chromium, molybdenum, nickel and arsenic. However, when comparing these groundwater results to those within other zones in the Site, copper, mercury, ammoniacal nitrogen and selenium, along with manganese and iron, were continually encountered within the groundwater and are therefore potentially present within the groundwater in the wider area of the Site rather than being attributed to site-specific activities themselves.

While the perched water within Phase 3 is currently managed through an operating leachate control system, BH201 and BH202 are located outside of this area and any leachate within these areas could potentially migrate laterally. Those contaminants within the groundwater could impact upon controlled waters receptors, as the zone is located variably within a groundwater SPZ and groundwater within the RTD and Chalk aquifer, which would contribute base flow to the adjacent River Thames though dilution, would be significant upon entry. Based on pH values and general water quality when compared between leachate/perched water samples and groundwater samples taken from deeper aquifers, it would appear that the Alluvium (where present) is providing a barrier between shallow perched water and deeper groundwater within the Chalk; however, within the area of BH201 the Alluvium has been stripped out during historical phases of work and deeper groundwater quality within this area was not assessed.

The ground gas risk assessment based on the data available indicates that the Site is likely to be classified as a CS2, which requires some level of protective measures to be installed within buildings established within the

Zone. This is due to highly elevated concentrations of methane, carbon dioxide and carbon monoxide. Concentrations of hydrogen sulphide gas were also highly elevated above the WEL.

The indicative property/services risk assessment suggested that there would likely be some risks to services laid at the Site due to ground conditions, including some contaminants within the soils and the highly corrosive nature of CKD deposits.

Based on the above, an updated tabular CSM from the Phase 1 Report is presented below. These conclusions are preliminary only due to the limited ground investigation completed during this phase of works: additional assessment will be required in order to assess fully risks across the entirety of Zone 2.

Table 16-13 Updated Conceptual Site Model (Zone 2)

Sources	Receptor	Potential Pathway	Potential Consequence	Likelihood	Classification of Risk
Potential contaminants in soil/groundwater, originating from <u>Zone 2</u> sources: • Contamination resulting from historical landfills such as South Pit and Surge Pile Phases 1 and 3 and North Pit Landfill, cement works, gasworks, railways, sewage works and other potentially contaminative land uses. • *Contamination includes highly alkaline pH, metals, some TPH fractions and other contaminants.*	Human health – zone visitors and workers.	Migration and accumulation of ground gases followed by inhalation or ignition, causing asphyxiation and/or explosion.	**Severe**	**Low likelihood** While the CKD and other Made Ground have not been shown to be a source of significant ground gas generation, significantly elevated concentrations of methane and carbon dioxide have been recorded in boreholes located on the zone from natural Alluvium and Peat deposits. These ground gases could accumulate within the proposed buildings to be developed within Zone 2. In addition, elevated carbon monoxide and hydrogen sulphide gases have been detected within boreholes in Zone 2.	**Moderate Risk**
		Inhalation, ingestion and/or dermal contact with contaminants in soil and soil-derived dust/fibres.	**Medium**	**Likely** While significant contamination was not found within the soils at the zone when compared to screening criteria for a commercial development, a number of samples were found to contain asbestos which could indicate a risk to human health if located within the near surface materials. The highly alkaline pH of the CKD material may present a risk to human health.	**Moderate Risk**
		Inhalation of soil- or groundwater-derived vapours.	**Medium**	**Unlikely** No exceedances of any of the screening criteria for a commercial development.	**Low Risk**
		Contaminant migration into drinking water pipes/supply to buildings and subsequent ingestion.	**Mild**	**Low likelihood** There were some exceedances of the threshold values for the placement of water supply pipes, such as hydrocarbons. These in combination with the corrosive nature of the soils at the zone indicate that specific water supply pipes (plastic and plain metal) would likely be unsuitable for use. All services should be laid in a corridor of clean fill as is standard in brownfield sites.	**Low Risk**
	Controlled waters – River Thames.	Leaching from CKD/waste materials to groundwater followed by lateral migration of contamination within groundwater.	**Medium**	**Low likelihood** Leachate and treatment measures are in place for Phase 3 of the South Pit and Surge Pile landfill. However, without the continued operation of the leachate collection and treatment measures, there would likely be contamination into controlled waters receptors. An upgrade and replacement of the leachate management system has recently been completed. A number of contaminants were present within the leachate, perched water and groundwater within Zone 2, notably heavy metals, which could potentially impact upon identified controlled waters receptors. However, dilution upon entering the River Thames would be significant.	**Moderate/Low Risk**
		Lateral migration of contaminated groundwater.	**Medium**		**Moderate/Low Risk**
		Direct surface water run-off and sub-surface flow to surface waters.	**Medium**		**Moderate/Low Risk**

Sources	Receptor	Potential Pathway	Potential Consequence	Likelihood	Classification of Risk
	Controlled waters – Secondary (undifferentiated) and Principal aquifer beneath the zone.	Leaching/migration of contaminants from soils to controlled waters receptors.	**Medium**	**Likely** There was no known remediation of the former gasworks located in Zone 2 and structures associated with the gasworks may remain *in situ*. However, due to the reduced scope of the ground investigation, significant investigation was unable to be completed within this area, and there could be unidentified areas of contamination related to the former gas works. Alluvium does appear to be creating some barrier between the perched water and groundwater based on the pH levels of both water bodies and the presence of different contaminants in each water body, potentially indicating limited connectivity between the two. In addition, contaminants encountered within the deeper groundwater appear to be present below a number of the other zones, indicating they may be found within the wider area of the zone and may not be attributable to specific zonal land uses.	**Moderate Risk**
		Vertical migration of contaminated groundwater.	**Medium**		**Moderate Risk**
	Property/ services in the form of water supply pipes.	Chemical attack on and subsequent ingress into water supply pipes.	**Medium**	**Low likelihood** While some contaminants were present within the surficial materials of the zone which were in exceedance of the guideline values for the placement of water supply pipes, through selection of appropriate pipe materials and installation within a corridor of clean fill these risks can be mitigated.	**Moderate/Low Risk**
		Migration and accumulation of ground gases followed by inhalation or ignition, causing explosion.	**Severe**	**Low likelihood** While the CKD and other Made Ground have not been shown to be a source of significant ground gas generation, significantly elevated concentrations of methane and carbon dioxide have been recorded in boreholes located across the zone from natural Alluvium and Peat deposits. These ground gases could accumulate within the proposed buildings to be developed within Zone 2. Hydrogen sulphide and carbon monoxide gases have been detected above the WELs within a number of boreholes in Zone 2.	**Moderate Risk**

Zone 3

17. Zone 3 Geotechnical and Geo-Environmental Risk Assessment

17.1. Introduction and Background

Zone 3 covers an area of approximately 0.38km^2 and is located in the western part of the Site, to the east of the Ingress Park residential development. The approximate NGR for the centre of the zone is TQ 59858 75376. Only the area designated as Zone 3B (see Appendix A.2) was available for investigation at this time.

The southern part of the zone comprises a works premises operated by 'Basic Engineering Co Ltd'; a welding company. The remainder of the zone comprises 'Swanscombe Marshes' (also referred to as 'Black Duck Marsh' in past literature), which is open marshland intersected by drainage channels. The elevation of the zone generally slopes from south to north, towards the River Thames, and ranges from approximately 0.1 to 7.5m AOD. The ground surface of the zone is uneven and comprises numerous drainage ditches.

The majority of the northern half of the zone (Zone 3A) has historically remained as marshland, with some use as sports fields. Within the southern half (Zone 3B), some unidentified buildings were historically present along the south-eastern boundary, small ponds were present across the central portion of the zone, chalk pits comprised the south-western part of the zone and a whiting works was present in the southern area. The whiting works was subsequently replaced with other buildings, likely related to the existing cement works in the area. 'Swanscombe Cement Landfill' (otherwise known as 'Lovers Lane Pit') was also present in the southern part of the zone.

For additional details about Zone 3, please refer to the Phase 1 report [1].

17.2. Zone-Specific Site Investigation Summary

The ground investigation within Zone 3 was limited initially due to the reduced scope and then by ground conditions. Within Lovers Lane Pit, where the two Zone 3 investigation points were proposed, obstructions within the ground meant that the windowless sample boreholes could not be advanced. Trial pits were completed in their stead. No controlled waters risk assessment or ground gas risk assessment was possible within Zone 3.

Table 17-1 below summarises the findings of the ground investigation in Zone 3.

Table 17-1 Summary of Zone 3 Ground Investigation

Location	Final Depth (m bgl)	Depth (m bgl)	Strata Encountered	Notes
TP301	2.4	0.0 – >2.4	Made Ground comprising silt with chalk, flint, brick gravels, including cobbles and boulders of concrete, brick and brick masonry, moving to gravels with a high cobble and boulder content with fibrous textile, wood and a plastic coated electric cable (fragment).	Possible CKD from 0.0 – 1.7m bgl, terminated on concrete slab. Two fragments of carpet found at 2.10m bgl.
TP302	3.5	0.0 – >3.5	Made Ground comprising silty gravels including cobbles and boulders of chalk, brick, plastic fragments, glass, wood, steel reinforcing bars and plates, and scaffolding poles.	Possible CKD from 0.0 – 2.2m bgl.

Potential CKD was found within the Made Ground materials in Zone 3, accompanied by characteristically elevated pH values.

17.3. Former Investigations

A full summary of historical information is available in the Phase 1 report [1]. A previous investigation was undertaken by Halcrow in 2004 [45] which included 10 No. boreholes, 30 No. window sample boreholes and 27 No. trial pits. A number of the boreholes were installed with ground gas and groundwater monitoring installations. Four areas (designated in the Halcrow report) from the assessment were located within Zone 3: Swanscombe Cement Works and Whiting Works (Area 1), Swanscombe Cement (Area 3), Swanscombe Marshes (Area 4) and Sea Wall (Area 5).

Human health, ground gas and controlled waters risk assessments were completed for each of the four areaa, the results of which were summarised in the Phase 1 report [1]. In general, no potentially significant pollutant linkages were found in relation to human health receptors. However, this assessment was undertaken assuming the investigated area of Swanscombe Peninsula would undergo a land raise, therefore breaking a number of potential pathways for exposure. There were exceedances of heavy metals within the top metre (when compared to residential screening criteria) and a small number of positive asbestos identifications.

In addition, no significant risks to controlled waters were identified when using a tiered assessment approach.

There were, however, identified risks in association with ground gas within the zone, including elevated methane and carbon dioxide concentrations.

17.4. Zone 3 Geotechnical Considerations

The design details of the proposed scheme are not known, except for general descriptions of the proposed site usage. The commentary given below sets out some of the geotechnical considerations which should be taken into account as the designs are developed with further investigations and geotechnical design being required as appropriate.

17.4.1. Earthworks

No ground investigation was carried out in Zone 3A, however it is expected to have similar ground conditions as Zones 1 and 2 comprising a variable bed of Made Ground (possibly with CKD) overlying Alluvium and Peat, RTD and Chalk. Zone 3B is covered in a variable layer of Made Ground largely comprising chalk, brick and flint gravel (CTRL spoil) and CKD.

Cuttings and Embankments

Cuttings are achievable in the CKD, however cuttings within the Alluvium are not recommended due to the weak, saturated Peat and clay beds.

During the construction of the cutting, unloading of the surface material may cause heave of the underlying plastic clays and peat, particularly if they are over-consolidated. The majority of the heave is expected to take place shortly after the excavation, however an increase in pore water pressures over time may result in long-term heave. The effect of the heave can be mitigated by using the following techniques:

- A controlled rate of cutting;
- Installation of sand drains; or
- Replacing the upper part of the cutting surface with granular fill.

Where an embankment is to be constructed on sloping ground, there may be a risk of a slip developing, therefore benches or steps will need to cut into the existing ground where necessary to key-in the new construction.

The stability of the embankment will also depend on the underlying material. The Alluvium in Zone 3A is likely to compress when a large load (i.e. the embankment) is placed on top of it. This is particularly likely due to the presence of compressible Peat. No Alluvium is expected in Zone 3B, however small amounts of settlement may occur in the underlying structureless Chalk. The effect of settlement can be mitigated by using the following techniques:

- Excavation and replacement; or
- Staged construction or controlled rate of filling.

Excavations

Excavations may be required in Zone 3 for buried services, temporary works and shallow foundations. Conventional excavation plant is likely to be adequate for excavations in this zone, except where hard materials (such as concrete and chalk) are encountered.

The stability of temporary excavations is expected to be high in the CKD and Chalk, and low when the Alluvium is encountered, particularly due to the presence of weak, saturated Peat. High groundwater in Zone 3A may cause flooding of the excavations and is particularly hazardous due to the high alkalinity of the CKD leachate.

17.4.2. Trafficability

The trafficability of Zone 3A is likely to vary over the year, as prolonged wet weather will create poor trafficability across much of the zone. During the ground investigation, which was carried out in the summer, access roads and tracks were available along the edge of the zone and were in good condition. However no access was available to the marshland. The marshland had much surface water reducing the trafficability of this area.

The CKD which may be present in this zone is particularly hazardous when wet as the leachate has been confirmed as having a pH of over 12. This high alkalinity is corrosive to vehicles, therefore the trafficability of this unit is low. Vehicles which have encountered CKD will also need to be washed to avoid the contamination of other areas.

In Zone 3B, a new road was being built along its south-western boundary. During the ground investigation this road was still in its early construction and was only accessible with a large vehicle such as a 4x4.

17.4.3. Foundations

Lightly loaded structures may be founded in the superficial strata depending on the settlement tolerances, however it is anticipated that the majority of structures in Zone 3 will be heavily loaded and will require a piled foundation option, where the piles extend to the competent Chalk which is expected to be approximately 32m below existing ground level in Zone 3A (to be confirmed), and approximately 4m below existing ground level in Zone 3B.

The presence of hardgrounds and flints with the Chalk will be unsuitable for driven piles and potentially unsuitable for continuous flight auger (CFA) piles. The pile design method should take into account that is likely that bored piles will be necessary. Piling works may destabilise dissolution features and care must be taken not to rely on end-bearing piles which might be underlain by a loosely infilled dissolution feature.

Any piling design should consider the potential for piling to create a pathway for any existing or potential contamination to travel in the Chalk aquifer.

17.4.4. Pavement Design

The Highways Agency design guidance for road pavement foundations [43] provides long term equilibrium CBR values under road pavements in clays based on plasticity index. Unfortunately no ground investigation was undertaken in Zone 3A to design the pavement in this area adequately.

In Zone 3B, the pavement will lie directly on top of the Chalk bedrock, except where subgrade is used. Plate-load tests are recommended to determine the CBR values for adequate pavement design.

17.4.5. Geotechnical Constraints

Cement Kiln Dust

CKD is likely present in Zone 3A. The geotechnical properties of this material (see Section 8 of this report) suggest that this material can be utilised for earthwork use, however the CKD may require treatment to reduce the potential for leachate, which typically has a pH of 12.

Aggressive Ground Conditions

The groundwater in Zone 3A is also likely to be saline due to the brackish water of the River Thames. The salinity of the water will increase the rate of corrosion of buried steel and concrete, such as that used for foundations.

Within this zone, the following BRE1 classifications for the Made Ground have been determined as DS-2 and AC-2.

Buried Foundations
Buried concrete, possibly foundations, were encountered during window sampling and in TP501. This may cause delays in excavation.

Buried Services
A buried outflow pipe, identified during the desk study, is expected in Zone 3A.

Excavation Collapse
Due to the weak bearing capacity of the Peat within the Alluvium expected in Zone 3A, collapse of excavations in this soil may occur.

Groundwater
High groundwater levels are expected in Zone 3A as it is currently a marshland with much surface water. This may lead to flooding of excavations and instability of the ground.

The groundwater monitoring would be necessary to adequately determine the groundwater regime in this zone, the values of which are likely to vary on a year by year basis due to the longer term variation in weather conditions and daily due to tidal fluctuations.

In Zone 3B, the groundwater is expected to be in the Chalk, however further ground investigation is needed to confirm this.

Shrink-Swell Clays
The clay which is likely to make up the Alluvium in Zone 3A, has the potential for shrink-swell, as determined by the high liquid limits and plasticity indices, as well as the volume change potential, in similar material in Zones 1 and 2. Shrink-swell is also likely in this zone due to the tidal groundwater fluctuations. Shrink-swell is problematic as it results in ground movement which will negatively affect foundations and services.

Weak Bearing Materials
Construction of foundations upon weak bearing strata can result in bearing capacity failure. In Zone 3A, the Alluvium and Peat are likely to have weak bearing capacities, as does any structureless Chalk located beneath the superficial deposits. The structureless Chalk, confirmed to be present in Zone 3B, with a CIRIA grade of Dc has a low bearing capacity due to weathering reducing its strength and structure, resulting in a coarse granular soil. The Made Ground in Zone 3B is also likely to have low bearing capacities due to its variable nature.

Weak Compressible Ground
Loading of compressible soils and unconsolidated materials can cause excessive settlements. Materials such as Peat within areas of Alluvium expected in Zone 3A, are particularly vulnerable.

17.5. Zone 3 Geotechnical Risk Assessment

The Geotechnical Risk Register is presented in Appendix H. It comprises an initial assessment of the geotechnical hazards expected in Zone 3, prior to the application of mitigation measures. The Risk Register also shows how the risk of the hazards can be reduced by the application of mitigation measures.

In most cases the mitigation measures will be sufficient to reduce the risk to low. In some cases the risk may be reduced but a significant residual risk remains which must be managed.

Prior to implementation of the proposed mitigation measures, the risks considered to be substantial are:

- Aggressive ground conditions;
- Buried foundations;
- Buried services;
- CKD;
- Weak compressive ground; and
- Weak bearing materials

The remaining risks are rated as moderate.

17.5.1. Mitigation Measures

The mitigation measures considered are those that may be applied during design or construction, as appropriate, to mitigate the hazard identified and, in most cases, to render the risk insignificant. Mitigation measures considered appropriate for the substantial risks listed above include:

- Consideration of geotechnical issues during preliminary and detailed design;
- Further ground investigation to obtain a better understanding of the ground conditions in this zone;
- Planned methodology for any planned earthworks; and
- Removal or treating of the CKD.

17.5.2. Residual Risk

Following risk identification, assessment and the application of recommended mitigation/avoidance measures most risks have been assessed to be low. However, it should be recognised that some residual risks remain.

17.6. Zone 3 Geo-Environmental Risk Assessment

17.6.1. Preliminary Conceptual Site Model

The key potential sources of contamination identified for the area of Zone 3 investigated were:

- Current and historical industrial uses of the zone (within the Made Ground and the natural ground), including the cement works to the south-east, which extended onto the zone, welding works (Basic Engineering Co Ltd in the southern part of the zone), the licensed Swanscombe Glass Recovery facility, whiting works (with tanks and silos), an electricity substation and conveyors;
- Contamination arising from the former landfill and pits, namely Swanscombe Cement Landfill which may have been infilled with CKD and other wastes, possibly including asbestos waste; and
- Alluvium and marshland present below significant portions of the Site potentially contributing to ground gas generation.

The primary exposure pathways that are considered applicable are:

- Inhalation, ingestion and/or dermal contact with contaminants in soil and soil-derived dust/fibres (indoors and outdoors);
- Inhalation of soil or groundwater-derived vapours (indoors and outdoors);
- Migration and accumulation of ground gases, followed by inhalation or ignition, causing asphyxiation and/or explosion;
- Contaminant migration into drinking water pipes/supply to buildings and subsequent ingestion;
- Leaching from CKD/waste soils to groundwater;
- Leaching/migration of contaminants from soils;
- Direct surface water run-off and sub-surface flow to surface waters;
- Lateral migration of contaminated groundwater; and
- Vertical migration of contaminated groundwater.

The potential receptors identified are:

- The Secondary (undifferentiated) Aquifer within the Alluvium and Head superficial deposits beneath the majority of the zone;
- The Principal Aquifer within the undifferentiated Seaford Chalk Formation and Newhaven Chalk Formation bedrock beneath the zone;
- The secondary and tertiary rivers across the zone;
- Property/services to be established in Zone 3 as part of the proposed development; and
- Zone visitors and workers.

17.6.2. Proposed Development

Zone 3 is proposed largely for the development of associated resort hotels and related infrastructure.

17.6.3. Human Health

Soil samples collected during the 2015 ground investigation were screened against Atkins' SSVs/C4SLs/S4ULs for a commercial land use, based on 1% SOM. A total of four soil samples were analysed from within Zone 3, at depths ranging from 0.5 to 3.0m bgl. The locations of the investigation points are presented in 5134008-PHASE2-FIGURE001 (Rev. A).

Asbestos was not encountered within any of the four samples analysed and there were no exceedances of the applicable screening criteria within any of the samples analysed from within the top metre of the zone. Additionally, there were no exceedances of the Atkins WSVs for the protection of human health in relation to inhalation of vapours from groundwater below the zone.

The data screening spreadsheets are presented in full in Appendix E.3.

17.6.4. Property/Services

17.6.4.1. Water Supply Pipes

The table below gives a summary of the maximum values for each contaminant encountered within the zone. As the final plans for service placement at the Zone are currently unconfirmed, all concentrations up to 4 m bgl have been included in this assessment:

Table 17-2 Comparison of UK WIR Threshold Concentrations to Site Specific Values (Zone 3)

Parameter Group	UK WIR Threshold Value (mg/kg)			Maximum Value Found On-site
	PE Pipe	PVC Pipe	Metal Pipes	
VOCs	0.5	0.125	Pass	< 0.056
BTEX + MTBE	0.1	0.03	Pass	< 0.006
sVOCs (excluding PAHs)	2.0	1.4	Pass	< 6.55
C5-C10 (aliphatic and aromatic hydrocarbons)	2.0	-	Pass	< 0.6
C11-C20 (aliphatic and aromatic hydrocarbons)	10.0	-	Pass	<48
C21-C35 (aliphatic and aromatic hydrocarbons)	500.0	-	Pass	205
Phenols (from sVOCs)	2.0	0.4	Pass	< 0.2
Cresols and chlorinated phenols (from sVOCs)	2.0	0.04	Pass	< 0.7
Nitrobenzene	0.5	0.4	Pass	< 0.3
Corrosive	Pass	Pass	Wrapped Steel: pH<7, conductivity >40µs/cm Wrapped Iron: pH<5, conductivity >40µs/cm Copper: pH<5 or >8	pH: 11.7 Electrical Conductivity: 1100 µS/cm

In light of the results above, it is considered that neither low-density PE pipe nor PVC pipe should be used for any water supply pipes at the Site due to hydrocarbon concentrations within the surficial deposits within the zone, and when taking into account the corrosive nature of the soils (elevated pH values due to CKD presence), plain copper pipes would also not be considered suitable. Barrier (PE-Al-PE) Pipe, wrapped steel or wrapped iron would potentially be suitable materials and, as a matter of good practice and due to the variable nature of the Made Ground present across the zone, it is recommended that all services laid are placed within a corridor of ‘clean’ fill.

17.6.5. Updated Conceptual Site Model (Zone 3)

The sources, pathways and receptors identified in Section 17.6.1 have been updated based on the results of the GQRA, and the subsequent CSM is presented overleaf in Table 17-3.

Based on the current soils analysis data, there are no exceedances of the Atkins' SSVs (or other pertinent screening criteria) for human health using a commercial land use scenario. However, due to ground conditions and the reduced scope ground investigation, the data from Zone 3 is not considered sufficient to undertake a robust risk assessment within this area and is indicative only. No controlled waters or ground gas risk assessments were possible at this time.

The indicative property/services risk assessment suggested that there would likely be some risks to services laid at the zone due to ground conditions, including some contaminants within the soils.

Based on the above, an updated tabular CSM from the Phase 1 Report is presented below. These conclusions are preliminary only due to the limited ground investigation completed during this phase of works; additional assessment will be required in order to assess fully risks across the entirety of Zone 3.

Table 17-3 Updated Conceptual Site Model (Zone 3)

Sources	Receptor	Potential Pathway	Potential Consequence	Probability	Classification of Risk
Potential contaminants in soil/groundwater on the zone, originating from the following sources, within the <u>industrial area</u>: • Contamination in the Made Ground and natural ground in the zone, resulting from current and historical industrial uses of the zone. *Various potential contaminants, including asbestos.* • Presence of historic landfill site • Alluvium/marshland present below a portion of the zone. *The main potential contaminant from this is ground gas.*	Human health – zone visitors and workers	Inhalation of vapours in outdoor and indoor air.	**Medium**	**Low likelihood** Vapour generation may be possible, resulting from the presence of former tanks, known "oil" contamination in the south-eastern corner of the zone and the presence of VOCs and SVOCs in the groundwater. These areas were unable to be investigated during the 2015 ground investigation and therefore a potential risk remains.	**Moderate/Low Risk**
		Migration of ground gases to confined spaces, leading to accumulation followed by inhalation or ignition, causing asphyxiation and/or explosion.	**Severe**	**Low likelihood** The gas generating potential of the former landfill/s and pits are considered to be relatively low due to their ages, and the anticipated nature of the fill materials. However, known ground gas exists at the zone, potentially related to the underlying Alluvium and/or marshland. No additional ground gas assessment was possible during the 2015 ground investigation.	**Moderate Risk**
		Inhalation, ingestion and dermal contact with contaminants in soil and soil-derived dust/fibres from areas free from hardstanding.	**Medium**	**Likely** A large proportion of this part of the zone is covered in softstanding, meaning there is a potential for soil-derived dusts/fibres to be present, where they can easily be inhaled, ingested and come into contact with people. While there were no exceedances of the relevant screening criteria during the 2015 ground investigation, due to the minimal amount of data available these risks cannot be discounted.	**Moderate Risk**
		Contaminant migration into drinking water pipes/supply to buildings to buildings and subsequent ingestion.	**Medium**	**Low likelihood** Some contaminants are present within the zone at levels above the threshold for the placement of water supply pipes, including elevated pH levels associated with CKD deposition.	**Moderate/Low Risk**
	Property/services in the form of water supply pipes	Migration of ground gases to confined spaces, leading to accumulation followed by inhalation or ignition, causing asphyxiation and/or explosion.	**Severe**	**Low likelihood** The gas generating potential of the former landfill/s and pits are considered to be relatively low due to their ages, and the anticipated nature of the fill materials. However, known ground gas exists at the zone, potentially related to the underlying alluvium and/or marshland. No additional ground gas assessment was possible during the 2015 ground investigation.	**Moderate Risk**

Sources	Receptor	Potential Pathway	Potential Consequence	Probability	Classification of Risk
		Chemical attack on and subsequent ingress into water supply pipes	**Medium**	**Low likelihood** While some contaminants were present within the surficial materials of the zone which were in exceedance of the guideline values for the placement of water supply pipes, through selection of appropriate pipe materials and installation within a corridor of clean fill these risks can be mitigated.	**Moderate/Low Risk**
	Controlled waters – River Thames	Leaching from contaminated soils to groundwater followed by lateral migration of contamination within groundwater	**Medium**	**Likely** The western part of the zone is thought to comprise Made Ground above the Principal aquifer bedrock. Therefore, any zone-derived contamination is likely to migrate into the Principal aquifer below. Where superficial deposits are present, it is predicted that contamination may leach into any shallower groundwater and subsequently vertically migrate into the Principal aquifer below. No controlled waters risk assessment was able to be undertaken during the 2015 ground investigation due to the reduced scope and constraining ground conditions encountered. In addition, areas of known contamination within the south-eastern corner of the zone were unable to be further investigated.	**Moderate Risk**
		Lateral migration of contaminated groundwater	**Medium**		**Moderate Risk**
		Direct surface water run-off and sub-surface flow to surface waters	**Medium**		**Moderate Risk**
	Controlled waters – Secondary (undifferentiated) and Principal aquifer beneath the zone.	Leaching/migration of contaminants from soils to controlled waters receptors	**Medium**		**Moderate Risk**
		Vertical migration of contaminated groundwater	**Medium**		**Moderate Risk**

Zone 5

18. Zone 5 Geotechnical and Geo-Environmental Risk Assessment

18.1. Introduction and Background

Zone 5 has an area of approximately 0.18km^2 and is located to the south of the wider Swanscombe Peninsula Site, immediately north of the North Kent Line railway and west of the HS1. The approximate NGR for the centre of the zone is TQ 60218 175034. Only Zone 5B, as described in the Phase 1 report and shown on Appendix A.2, was available for investigation at this time.

The zone is characterised by topography which comprises substantial chalk spines upon which the principal roads and rail links are located with industrial/retail and open space land uses between, in areas of former chalk quarrying. The chalk spines are, in places, some 16 to 20m above the intervening land at an approximate elevation of 28m AOD in the eastern part of Zone 5 and as low as 6m AOD at the entrance to Manor Way Business Park.

Zone 5B is an open area which is a partly in-filled former quarry off Crayland's Lane, to the south of London Road. In this section of the zone, there are a number of tunnels and associated roadways through the chalk spine upon which London Road is located.

Chalk pits have historically been present in the zone, which were then occupied by buildings associated with the former cement works and associated tanks and infrastructure. These were cleared and this area of the zone was used for infilling of Chalk spoil from the construction of the HS1 Thames Tunnel.

For additional details about Zone 5, please refer to the Phase 1 report [1].

18.2. Zone-Specific Site Investigation Summary

2 No. rotary boreholes were completed to 20.45m bgl within this area of Zone 5. Both boreholes were located within the area which was used for infilling of tunnelling spoil from the construction of HS1.

Table 18-1 Summary of Zone 5 Ground Investigation

Location	Final Depth (m bgl)	Depth (m bgl)	Strata Encountered	Notes
BH501	20.45	0.0 – 11.9	Made Ground comprising slightly sandy gravelly silt with rare ash, wood, ceramic, metal and brick. The gravel was angular to rounded, fine to coarse, flint, brick and chalk.	Some rare coal was encountered from 7.2 – 8.25m bgl
		11.9 – >20.45	White Chalk.	
BH502	20.45	0.0 – 11.75	Made Ground comprising slightly sandy gravelly silt with rare ash, wood, ceramic, metal and brick. Some coal noted from 8.7 – 9.15m bgl. The gravel was angular to rounded fine to coarse flint and chalk, with some brick.	Cement odour noted at 7.5 – 7.6m bgl.
		11.75 – >20.45	White Chalk.	

Both boreholes were screened within the Chalk and therefore the water samples obtained represent groundwater conditions.

18.3. Zone 5 Geotechnical Risk Assessment

The design details of the proposed scheme are not known, except for general descriptions of the proposed site usage. The commentary given below sets out some of the geotechnical considerations which should be taken into account as the designs are developed with further investigations and geotechnical design being required as appropriate.

18.3.1. Earthworks

The whole of Zone 5 is expected to be covered in Made Ground overlying Chalk bedrock, however no ground investigation was conducted in Zone 5A to confirm this. In Zone 5B, the Made Ground largely comprises sandy silt of Chalk origins (CTRL spoil).

Cuttings and Embankments

For embankments constructed on the Chalk it is expected that side slopes constructed to 1v:2.5h will maintain an adequate factor of safety depending on the height of the embankment and founding materials. Care must be taken to limit the contact of excavated and stockpiled chalk with groundwater and/or rainfall as water ingress may raise the liquidity index of the material to unworkable levels, and increase the risk of side slope instability.

The Chalk is expected to provide a good foundation for the embankments although localised soft areas may be present and these should be removed prior to any works. Appropriate permanent drainage measures may be required.

Where embankments are to be constructed on sloping ground, there may be a risk of a slip developing, therefore benches or steps will need to cut into the existing ground where necessary to key-in the new construction.

Any anticipated settlement should be reduced by using the following techniques:

- Excavation and replacement; or
- Staged construction or controlled rate of filling.

Gradients of 1:75v:1h are accepted for design of cuttings in White Chalk but it is recognised these slopes are often slackened for maintenance purposes. Shallower slope gradients (1v:3h) may be required where extensively weathered or structureless Chalk is identified, or where deep cuttings are to be formed.

Details of the recommended slope gradient shall be provided during the design phase, however the engineering properties of the Chalk are likely to be governed by a degree of weathering, presence and thickness of weaker layers, and the presence of fractures and fissures within the rock, their orientation, spacing, aperture, infill and roughness. A slope gradient of 1V:2H is assumed for any slopes within the Chalk with opportunity to steepen them to 1V:1H or 1.75V:1H at the later design stages to reflect the rock type and quality.

Where cutting slopes are formed of Chalk and superficial material it may be necessary to form a bench at the interface in order to accommodate a drainage channel and to slacken the above slope to gradient of 1V:3H.

Excavations

Excavations may be required in Zone 5 for buried services, temporary works and shallow foundations. Conventional excavation plant is likely to be inadequate for excavations in this zone due to the hard Chalk expected to be encountered.

Competent Chalk, as expected in Zone 5A is a relatively good material in which to make excavations as it will stand at steep cutting angles, as can be seen from the faces of cliffs. Structureless Chalk however, as expected in Zone 5B may have little cohesion and collapse of the excavation is probable. Based on boreholes BH501 and BH502 the groundwater is not expected to pose a concern for excavations. Orientation of any discontinuities will need to be observed based on the local cliff faces, as these may cause the excavation to weaken.

18.3.2. Trafficability

In Zone 5, the pavement is expected to lie directly on top of the Chalk bedrock, except where subgrade is used. Chalk can become slippery when wet so placed gravel is recommended to avoid churn of the ground and accidents.

18.3.3. Foundations

Based on our understanding of the ground conditions in this zone, it is likely that shallow foundations such as rafts or pads are suitable for low load structures, however deeper foundations such as piles may be required for higher load structures, to be embedded in Chalk.

Chalk is suitable for shallow foundations so long as the presence of dissolution features has been investigated and incorporated into the design where applicable. The structureless Chalk is sometimes known to produce large settlements, therefore construction procedures to reduce settlement should be considered. Where the weathered or structureless Chalk has a low shear strength, the material may need to be replaced with suitable granular fill.

The presence of hardgrounds and flints will be unsuitable for driven piles and potentially unsuitable for continuous flight auger (CFA) piles. The pile design method should take into account that is likely that bored piles will be necessary. Piling works may destabilise dissolution features and care must be taken not to reply on end-bearing piles which might be underlain by a loosely infilled dissolution feature.

Any piling design should consider the potential for piling to create a pathway for any existing or potential contamination to travel into the Chalk aquifer.

18.3.4. Pavement Design

It is estimated that the Chalk with have CBR values of 3% to 10%, although the structureless Chalk is likely to be less than 3% and some improvement will be required to provide a suitable excavation surface on which to place the prepared subgrade. The depth of improvement should be in line with the guidance given by design guidance for road pavement foundations [43].

18.3.5. Geotechnical Constraints

Buried Foundations

Zone 5A is currently an industrial site with a long history of industrial processes, therefore buried foundation from previous buildings are very likely to be present. If these are encountered, additional excavation equipment will be needed.

Buried Services

Buried service from the industrial estate are very likely to be present in Zone 5A. Damage to underground services can cause injury, significant disruption and environmental damage; as well as incurring considerable costs.

Chalk Dissolution Features

A Chalk dissolution feature was identified at the top of the southern chalk spine in Zone 5B which is clearly infilled with weaker soils. Dissolution features are particularly hazardous as they are generally hidden from view and can cause instability of overlying material or structures.

Rockfall

Incising of the chalk spine in Industrial Estate in Zone 4B was noted during the desk study and is very likely to be occurring in Zone 5A as well. Undercutting of the Chalk can make the overlying rock weak and vulnerable to collapse.

Weak Bearing Materials

Construction of foundations upon weak bearing strata can result in bearing capacity failure. The structureless Chalk with a CIRIA grade of Dc has a low bearing capacity due to weathering reducing its strength and structure, resulting in a coarse granular soil.

18.4. Zone 5 Geotechnical Risk Assessment

The Geotechnical Risk Register is presented in Appendix H. It comprises an initial assessment of the geotechnical hazards expected in Zone 5, prior to the application of mitigation measures. The Risk Register also shows how the risk of the hazards can be reduced by the application of mitigation measures

In most cases the mitigation measures will be sufficient to reduce the risk to low. In some cases the risk may be reduced but a significant residual risk remains which must be managed.

Prior to implementation of the proposed mitigation measures, the risks considered to be substantial are:

- Buried foundations;
- Buried services;
- Chalk dissolution features;
- Variable rockhead; and
- Weak bearing materials.

The remaining risks are rated as moderate.

18.4.1. Mitigation Measures

The mitigation measures considered are those that may be applied during design or construction, as appropriate, to mitigate the hazard identified and, in most cases, to render the risk insignificant. Mitigation measures considered appropriate for the substantial risks listed above include:

- Consideration of geotechnical issues during preliminary and detailed design;
- Further ground investigation to obtain a better understanding of the ground conditions in this zone; and
- Planned methodology for any planned earthworks.

18.4.2. Residual Risk

Following risk identification, assessment and the application of recommended mitigation/avoidance measures most risks have been assessed to be low. However, it should be recognised that some residual risks remain.

18.5. Zone 5 Geo-Environmental Risk Assessment

18.5.1. Preliminary Conceptual Site Model

The key potential sources of contamination identified for Zone 5 are the current and historical potentially contaminative land uses within the zone, the infilled land within Pilgrim's Pit and the former chalk quarry and Made Ground. The main source within Zone 5B was the infilled land within the former chalk quarry.

The primary exposure pathways that are considered applicable are:

- Inhalation of soil or groundwater-derived vapours;
- Inhalation, ingestion and/or dermal contact with contaminants in soil and soil-derived dust/fibres;
- Migration and accumulation of ground gases, followed by inhalation or ignition, causing asphyxiation and/or explosion;
- Contaminant migration into water supply pipes and subsequent ingestion;
- Leaching/migration of contaminants from soils; and
- Vertical migration of contaminated groundwater.

The potential receptors identified are:

- Zone workers and visitors;
- Buildings and services associated with the proposed development; and
- The Principal Aquifer within the Chalk.

18.5.2. Proposed Development

The proposed development in Zone 5A is expected to comprise part of the main resort complex which will include high rise building. Zone 5B is likely to include extra car parking facilities.

18.5.3. Human Health

Soil samples collected during the 2015 ground investigation were screened against Atkins' SSVs/C4SLs/S4ULs for a commercial land use, based on 1% SOM. A total of 15 soil samples were analysed from within Zone 5 at depths ranging from 0.5 to 11.3m bgl. However, only six of these were analysed for the full geo-environmental analytical suite listed in Section 3.7.2, whilst the remaining nine were analysed for the presence of asbestos only. The locations of the investigation points are presented in 5134008-PHASE2-FIGURE001 (Rev. A).

There were no exceedances of the applicable screening criteria in any of the samples taken from the zone (see Appendix E.3). The data from groundwater monitoring were compared to the WSVs for the commercial land use scenario and there were no exceedances of the WSVs. Screening results are presented in Appendix E.5.

Asbestos was detected in one sample in BH501 at 7.7m (Made Ground) and comprised chrysotile at <0.001%.

18.5.4. Controlled Waters

18.5.4.1. Groundwater

Table 18-2 presents the exceedances of the relevant screening criteria within the groundwater samples taken from BH501 and BH502 during the 2015 ground investigation, both installed in the Chalk. Where duplicates have exceeded the criteria they have been counted as exceedances. Screening spreadsheets are provided in Appendix E.4; see screening spreadsheet for sources of screening criteria.

Table 18-2 Groundwater Exceedances of the Screening Criteria (Zone 5)

Compound	DWS	EQS	No. of Samples	Min. Value	Max. Value	No. of Exceed.	Locations of Exceed.
Electrical conductivity (µS/cm)	2500	None	10	1,100	4,900	5	**BH502 (15/07/15**, 28/07/15, 13/08/15 (and duplicate), 26/08/15)
Sulphate as SO_4 (µg/L)	250,000	400,000	10	124,000	614,000	5	**BH502 (15/07/15**, 28/07/15, 13/08/15 (and duplicate), 26/08/15)
Chloride (mg/L)	250	250	10	60	1,300	5	**BH502 (15/07/15**, 28/07/15, 13/08/15 (and duplicate), 26/08/15)
Nitrate as NO_3 (µg/L)	50	None	10	70.5	154	10	BH501 (15/07/15, 28/07/15, 13/08/15, 26/08/15 (and duplicate)) **BH502 (15/07/15**, 28/07/15, 13/08/15 (and duplicate), 26/08/15)
Chromium (total) (µg/L)	50	15	10	0.3	22	4	**BH502** (28/07/15, **13/08/15** (and **duplicate**), 26/08/15)
Copper (µg/L)	2,000	5	10	3.7	11	3	**BH501** (15/07/15, **26/08/15**) BH502 (26/08/15)
Iron (µg/L)	0.2	1	10	< 0.004	0.39	2	**BH501 (15/07/15)** BH502 (15/07/15)
Lead (µg/L)	10	7.2	10	< 0.2	7.5	1	**BH501 (13/08/15)**
Mercury (µg/L)	1	0.05	10	< 0.05	0.47	7	BH501 (15/07/15, 28/07/15, 13/08/15) **BH502 (28/07/15**, 13/08/15 (and duplicate), 26/08/15)
Selenium (µg/L)	20	None	10	3.6	22	5	**BH502 (15/07/15**, 28/07/15, 13/08/15 (and duplicate), **26/08/15**)

Notes: **BOLD** indicates location of maximum exceedance.

There were exceedances of the relevant screening criteria by electrical conductivity, sulphate, chloride, nitrate, chromium, copper, iron, lead, mercury and selenium. The exceedances by electrical conductivity, sulphate, chloride and nitrate are considered to relate to proximity to potential saline intrusion from the nearby River Thames.

Mercury, iron and selenium were also encountered within groundwater samples taken from both Zone 1 and Zone 2, further north on the Swanscombe Peninsula. Copper was encountered in the groundwater below Zone 2 only, though only one sample point was installed within Zone 1. Iron and mercury were also encountered within the groundwater below Zone 7, indicating these compounds are potentially widespread within the Chalk aquifer in the wider area of the Site and may not be attributable to zonal activities.

Lead and iron only exceeded during one monitoring round for each, and the exceedances were largely marginal, therefore they are not considered likely to be indicative of a widespread issue related to these contaminants.

In general, groundwater within Zone 5 is of higher quality than that noted further north on Swanscombe Peninsula within Zones 1 and 2.

18.5.5. Ground Gas Assessment

Below are the findings from the recent ground gas monitoring undertaken from the 2 No. boreholes installed in Zone 5. It should be noted that these boreholes were installed within the Chalk, and are therefore not likely to provide an indication of the worst-case ground gas generation potential of the Made Ground situated near the surface.

Table 18-3 Ground Gas Monitoring Results (Zone 5)

Borehole ID	Response Zone (m bgl) (strata)	Worst Case Measured Concentrations				Maximum Borehole Flow Rate (l/hr)
		CH_4 (%)	**CO_2 (%)**	**CO (ppm)**	**H_2S (ppm)**	
2015 Locations						
BH501	12.5 – 19.5 (Chalk)	< 0.1	0.4	4	< 1	< 0.1
BH502	11.0 – 19.5 (Chalk)	1.8	1.6	< 1	< 1	< 0.1

Atmospheric pressures ranged from 1000 to 1018 mbar during the recent ground gas monitoring period, with pressure falling on the first and fourth monitoring rounds undertaken on 14-15th July and 26th August 2015.

Methane was encountered above the limit of detection in BH502 only, and during only half the monitoring rounds completed to date. The steady state concentrations were the same as the peak. Both monitoring rounds indicated methane present at concentrations above the trigger level for CS2 of 1% v/v.

Carbon dioxide was detected in both boreholes over the monitoring period, with the highest concentrations being encountered during the second and the fourth monitoring rounds. Concentrations ranged from 0.2 – 1.6% v/v, none of which are above the CS2 trigger level of 5% v/v.

No carbon monoxide was encountered above the applicable WELs, and no hydrogen sulphide was detected above the instrument's limit of detection.

A summary of the modified Wilson and Card gas risk assessment is given below in Table 16-11. Where flow readings were either not available or taken as 0.0 l/hr, a value of 0.1 l/hr has been substituted to calculate the GSVs.

Table 18-4 Ground Gas Risk Assessment (Zone 5)

Monitoring Location	**Worst Case Measured Concentrations (%)**		**Maximum Borehole Flow Rate (l/hr)**	**Maximum Calculated GSV (l/hr)**	**Applicable CS**
	CH_4	**CO_2**			
2015 Locations					

BH501	< 0.1	0.4	< 0.1	0.0004	CS1
BH502	1.8	1.6	< 0.1	0.0018	CS1
Worst Case (over all boreholes)					
	1.8	1.6	< 0.1	0.0018	CS1

In summary, no calculated GSVs were indicative of an assessment over CS1. While there were a small number of methane concentrations above the trigger level for CS2, when considered in conjunction with the low flow rates and the limited number of investigation points, these are considered unlikely to warrant elevation of the risk assessment to CS2 based on data available at this time. However, additional borehole installations within the Made Ground within the zone would be required to assess fully the risks from ground gas.

18.5.6. Property/Services

18.5.6.1. Water Supply Pipes

The table below gives a summary of the maximum values for each contaminant encountered within the zone. As the final plans for service placement at the zone are currently unconfirmed, all concentrations up to 4 m bgl have been included in this assessment:

Table 18-5 Comparison of UK WIR Threshold Concentrations to Site Specific Values (Zone 5)

Parameter Group	UK WIR Threshold Value (mg/kg)			Maximum Value Found On-site
	PE Pipe	PVC Pipe	Metal Pipes	
VOCs	0.5	0.125	Pass	<0.56
BTEX + MTBE	0.1	0.03	Pass	<0.006
sVOCs (excluding PAHs)	2.0	1.4	Pass	<6.55
C5-C10 (aliphatic and aromatic hydrocarbons)	2.0	-	Pass	<0.6
C11-C20 (aliphatic and aromatic hydrocarbons)	10.0	-	Pass	36.3
C21-C35 (aliphatic and aromatic hydrocarbons)	500.0	-	Pass	145
Phenols (from sVOCs)	2.0	0.4	Pass	<1
Cresols and chlorinated phenols (from sVOCs)	2.0	0.04	Pass	<0.7
Nitrobenzene	0.5	0.4	Pass	<0.3
Corrosive	Pass	Pass	Wrapped Steel: pH<7, conductivity >40µs/cm Wrapped Iron: pH<5, conductivity >40µs/cm Copper: pH<5 or >8	pH: 11.2 Conductivity: 1200µs/cm

In light of the results above, it is considered that plain copper pipes would not be suitable for use at the site due to the corrosive nature of the soils. Low-density PE pipe or PVC pipe could potentially be used for water supply pipes at the Site, though it should be noted this is based on a small number of samples from a small area and therefore additional assessment would be required. Barrier (PE-Al-PE) Pipe, wrapped steel or wrapped iron would potentially be suitable materials and, as a matter of good practice and due to the variable nature of the Made Ground present at the Site, it is recommended that all services laid are placed within a corridor of 'clean' fill.

18.5.7. Updated Conceptual Site Model (Zone 5)

The sources, pathways and receptors identified above in Section 18.5.1 have been updated based on the results of the GQRA and the subsequent CSM is presented overleaf in Table 18-6.

Based on the current soils analysis data, there are no exceedances of the Atkins' SSVs (or other pertinent screening criteria) for human health based on a commercial land use scenario. Additionally, there were no exceedances of the Atkins WSVs for the protection of human health in relation to inhalation of vapours from groundwater below the Site. Asbestos was positively identified in one sample at 7.7m, though subsequent quantification analysis did not find any asbestos above the laboratory LOD.

The controlled waters risk assessment identified exceedances of the selected screening criteria by electrical conductivity, sulphate, chloride, nitrate, copper, iron, mercury and selenium. A number of these exceedances are attributable to saline intrusion from the nearby River Thames, including electrical conductivity, sulphate, chloride and nitrate. Copper, iron, mercury and selenium were also encountered within groundwater samples taken from nearby Zones 1, 2 and Zone 7, potentially indicating a widespread issue with these contaminants in the wider area of the Site, rather than caused by zonal activities themselves.

None of the calculated GSVs indicated a risk higher than a CS1 from ground gas generation, which wouldn't require any gas protection measures to be installed in buildings established within the zone. There were a small number of methane concentrations above the trigger level for CS2 but, these when considered in conjunction with the low flow rates and the limited number of investigation points, are considered unlikely to warrant elevation of the risk assessment to CS2 based on the limited data available at this time. However, additional borehole installations within the Made Ground within the zone would be required to assess fully risks from ground gas and therefore these risks are not able to be disregarded.

The indicative property/services risk assessment suggested that there would likely be some risks to services laid at the zone due to ground conditions, including some contaminants and corrosive conditions within the soils.

Based on the above, an updated tabular CSM from the Phase 1 Report is presented below. These conclusions are preliminary only due to the limited ground investigation completed during this phase of works; additional assessment will be required in order to assess fully the risks across the entirety of Zone 5.

Table 18-6 Updated Conceptual Site Model (Zone 5)

Sources	Receptor	Potential Pathway	Potential Consequence	Probability	Classification of Risk
Potential contaminants in soil/groundwater, originating from the following <u>Zone 5A</u> sources: • Contamination in the Made Ground resulting from historical potentially contaminative land uses, the current potentially contaminative industrial sites, historical landfills and licensed waste sites. *Various potential contaminants possibly including heavy metals, sulphates and corrosives, SVOCs, landfill gas, leachate and asbestos.* • Contamination in the natural ground beneath the zone (Boyn Hill Gravel Member superficial deposits and undifferentiated Seaford Chalk Formation and Newhaven Chalk Formation bedrock), resulting from the potential sources listed above. *Various potential contaminants.*	Human health – zone workers and visitors	Inhalation of soil or groundwater-derived vapours.	**Medium**	**Low likelihood** Zone 5A was not available for intrusive investigation. Historical landfills were present towards the north-central portion of the zone. Furthermore, the Made Ground across this part of Zone 5 may also contribute to ground gas build up. The resulting gas concentrations from both of these sources are predicted to be low. Vapours may be present associated with volatile hydrocarbons due to the presence of fuel storage tanks, both historically and currently present across the zone and the historical industrial land uses.	**Moderate/Low Risk**
		Migration and accumulation of ground gases, followed by inhalation or ignition, causing asphyxiation and/or explosion.	**Severe**		**Moderate Risk**
		Inhalation, ingestion and/or dermal contact with contaminants in soil and soil-derived dust/fibres.	**Medium**	**Likely** The majority of the zone is covered in softstanding, indicating there is potential for soil-derived dusts/fibres to be present, where they can easily be breathed in, ingested and come into contact with people working, using and visiting the zone and its surrounding area. Heavy metals and asbestos have historically been present within the north-western portion of the zone; however, the extent of this contamination is unconfirmed.	**Moderate Risk**
	Property and buildings/services	Migration and accumulation of ground gases into confined spaces, followed by ignition, causing explosion.	**Severe**	**Unlikely** Historical landfills were present towards the north-central portion of the zone. Furthermore, the Made Ground across this part of Zone 5 may also contribute to ground gas build up. The resulting gas concentrations from both of these sources are predicted to be low and the chances of the identified pathway occurring is considered unlikely.	**Moderate/Low Risk**
	Controlled waters – groundwater receptors: Principal aquifer.	Leaching/migration of contaminants from soils.	**Medium**	**Likely** The majority of the zone does not comprise superficial deposits. The geological sequence is predominantly Made Ground above the Principal aquifer bedrock; so any zone-derived contamination is likely to migrate into	**Moderate Risk**

Sources	Receptor	Potential Pathway	Potential Consequence	Probability	Classification of Risk
		Vertical migration of contaminated groundwater.	**Medium**	the Principal aquifer below. Where patches of the Boyn Hill Gravel Member superficial deposits (Secondary 'A' aquifer) are present, these may also be impacted and/or act as a preferential migration pathway though this is considered to be more of an issue in the eastern section, where the zone falls within a SPZ. Land contamination assessment undertaken in 2004 within the north-western area of the zone did not indicate significant risks to controlled waters receptors [38]. However, large portions of the zone were not investigated during these works.	**Moderate Risk**
Potential contaminants in soil/groundwater (south of London Road), originating from the following <u>Zone 5B</u> sources: • Contamination in the Made Ground resulting from historical potentially contaminative land uses, the current potentially contaminative industrial sites and the historically infilled area. *Various potential contaminants.* • Contamination in the natural ground (Boyn Hill Gravel Member superficial deposits and undifferentiated Seaford Chalk Formation and Newhaven Chalk Formation	Human health – zone workers and visitors.	Inhalation of soil or groundwater-derived vapours.	**Mild**	**Low Likelihood** There were no exceedances of the SSVs or the WSVs by any contaminants analysed within soil and groundwater. However, this is based on limited data from a very small number of investigation locations and therefore risks aren't able to yet be fully assessed. Vapours may be present associated with volatile hydrocarbons due to the presence of fuel storage tanks, historically present across the south-western part of the zone which was not investigated.	**Low Risk**
		Migration of ground gases confined spaces, leading to accumulation followed by inhalation or ignition, causing asphyxiation and/or explosion.	**Severe**	**Low likelihood** Zone 5B was historically a chalk pit that has since been infilled, and it is considered that the ground gas generating potential and subsequent concentration of any ground gas would likely be low. Current gas monitoring also indicates a very low risk from ground gas generation; however, there were a limited number of investigation points place within the Chalk only, and therefore this assessment is not considered likely to represent the worst-case scenario for ground gas generation.	**Moderate Risk**

Sources	Receptor	Potential Pathway	Potential Consequence	Probability	Classification of Risk
bedrock), resulting from the potential sources listed above. *Various potential contaminants.*		Inhalation, ingestion and/or dermal contact with contaminants in soil and soil-derived dust/fibres.	**Medium**	**Low likelihood** Zone 5B is situated directly on the Chalk, indicating there is potential for soil-derived dusts/fibres to be present, where they can easily be breathed in, ingested and come into contact with people working, using and visiting the zone and its surrounding area. Heavy metals and asbestos have historically been present within the north-western portion of the zone; although the extent of this contamination is unconfirmed. There were no exceedances of the SSVs encountered during this current investigation from the two points completed; however, this is based on a limited number of sample points.	**Moderate/Low Risk**
		Contaminant migration into drinking water pipes/supply to buildings.	**Mild**	**Low likelihood** It is not considered likely there will be significant contamination encountered within the soils or groundwater within Zone 5B, and it is not believed this area is proposed for significant development under the masterplan as currently understood. However, this is based on a limited number of sample locations and these risks cannot be fully discounted.	**Low Risk**
	Property and buildings/services	Migration and accumulation of ground gases into confined spaces, followed by ignition, causing explosion.	**Severe**	**Low likelihood** Zone 5B was historically a chalk pit that has since been infilled and it is considered that the ground gas generating potential and subsequent concentration of any ground gas would likely be low. Current gas monitoring also indicates a very low risk from ground gas generation. However, there were a limited number of investigation points place within the Chalk only, and therefore this assessment is not considered likely to represent the worst-case scenario for ground gas generation.	**Moderate Risk**
	Controlled waters – groundwater receptors: Principal aquifer.	Leaching/migration of contaminants from soils.	**Medium**	**Low likelihood** Although there were minor exceedances of the screening criteria, these are not considered likely to be due to significant site-derived contamination. However, installation of additional monitoring wells is required to fully assess risks as the current investigation was reduced in scope.	**Moderate/Low Risk**
		Vertical migration of contaminated groundwater.	**Medium**		**Moderate/Low Risk**

Zone 7

19. Zone 7 Geotechnical and Geo-Environmental Risk Assessment

19.1. Introduction and Background

Zone 7 is located to the north of the A2 and is centred on approximate NGR TQ 61443 73090 (561443E, 173090N). Zone 7 has an approximate area of 0.72km. The majority of Zone 7 is located within the Borough of Dartford except for a small part (the south-eastern section) which is located within the Borough of Gravesham. The River Ebbsfleet separates the two boroughs.

Zone 7 is located to the south of Zone 6 and to the north of Zone 8. The zone is characterised by infrastructure which supports access to Ebbsfleet International Railway Station, including two large parking areas, roads, pavements, landscaped areas and roundabouts. In the south-eastern corner of the zone is Springhead Nurseries which has been located there for at least 150 years. The remainder of the zone comprises open/agricultural land, foundations of previous residential housing and a small area formerly used as a petrol station (now demolished and cleared), located off the southernmost roundabout.

The elevation of Zone 7 near the valley of the River Ebbsfleet is between 2 and 6m AOD. The north-western corner of the zone, close to both the Southfleet Pit and Northfleet landfills, is at an elevation of 26m AOD; the ground slopes from this corner down towards the south-east before levelling over the area of the car park, and slopes down again towards the railway. The north-eastern corner, adjacent to HS1, is situated at 7m AOD.

Zone 7 was open land until it was used for the excavation of chalk. Small-scale chalk excavations were shown on the earliest map edition dated 1865 and large-scale chalk excavation was first shown on the 1931 Ordnance Survey (OS) map edition. Chalk excavation primarily occurred in the northern part of Zone 7. The excavations were later infilled with reworked Thanet Formation and CKD as shown on the 1977 to 1982 OS map.

It should be noted that the northern portion of Zone 7 was unavailable for investigation during this phase of works.

For additional details about the zone, please refer to the Phase 1 report [1].

19.2. Zone-Specific Site Investigation Summary

A total of 6 No. boreholes and 2 No. trial pits were progressed within Zone 7. The majority of these boreholes are located to the south of the zone. BH703 was screened across RTD and Chalk, BH704 was screened in the Alluvium and BH705 to BH708 were screened in the Chalk.

Table 19-1 Summary of Zone 7 Ground Investigation

Location	Final Depth (m bgl)	Depth (m bgl)	Strata Encountered	Notes
BH703	10.2	0.0 – 3.25	Made Ground comprising sandy gravelly silt with rare wood and chalk and flint gravels.	Made Ground started to mix with the RTDs beyond 1.6m bgl.
		3.25 – 8.85	RTDs.	
		8.85 – >10.2	White Chalk.	
BH704	20.65	0.0 – 1.2	Made Ground comprising gravelly silt with rare rootlets.	
		1.2 – 4.9	Alluvium.	
		4.9 – >20.65	White Chalk.	Frequent flints, orange staining.
BH705	20.25	0.0 – 1.2	Made Ground comprising gravelly silt with some brick.	
		1.2 – 3.2	Head.	
		3.2 – >20.25	White Chalk.	Frequent flints, orange staining.

Location	Final Depth (m bgl)	Depth (m bgl)	Strata Encountered	Notes
BH706	29.8	0.0 – 1.2	Made Ground comprising clayey silt with rare rootlets and sandstone gravel.	
		1.2 – 8.25	RTDs.	
		8.25 – >29.8	White Chalk.	Frequent flints.
BH707	20.2	0.0 – 7.7	Made Ground comprising gravelly clays and silts with some brick, tile, granite, cobbles of concrete, rare ash.	
		7.7 – 10.3	RTDs.	
		10.3 – >20.2	White Chalk.	Some flints and orange staining.
BH708	29.95	0.0 – 4.7	Made Ground comprising gravelly clays, silts and sands with some tile, ceramics, peat, concrete and brick. Rare concrete cobbles.	Some localised red staining from 1.2 – 3.4m bgl. Organic odour noted at 1.2 – 1.m bgl.
		4.7 – 9.9	Head.	
		9.9 – >29.95	White Chalk.	Frequent flints and orange staining.
TP701	3.3	0.0 – 3.1	Made Ground comprising gravelly silty clays with rare plastic sheeting and brick.	Between 2.0m bgl and 3.1m bgl, Made Ground was mixed with reworked natural material. Plastic drainage pipe with gravel surround encountered at 2.5 – 2.8m bgl.
		3.1 – >3.3	Alluvium.	
TP702	3.4	0.0 – 2.8	Made Ground comprising silty clays, and gravelly sands, with some cobbles of brick and flint and chalk gravels. Frequent tree branches and roots.	Strong hydrocarbon odour noted at 1.1 – 1.6m bgl. Between 2.0m bgl and 2.8m bgl, the Made Ground was mixed with reworked natural material.
		2.8 – >3.4	Alluvium.	Black plastic drainage pipe with gravel surround encountered from 2.4 – 2.7m bgl.

19.3. Former Investigations

Details of any former works or available reports pertaining to the zone are summarised in the Phase 1 Report [2]. A document was prepared by Peter Brett and Associates [46] for addressing disturbed and contaminated land during the development of part of the Ebbsfleet Development, which indicated a baseline groundwater quality report had been completed. This report stated that groundwater below Southfleet Quarry (located in the northern portion of Zone 7 where no investigation was possible in 2015) was impacted by the former deposition of CKD, with evidence of elevated pH, potassium, sulphate, chloride and sodium.

The former petrol station has been through a number of stages of investigation, including two ground investigations, one detailed in a site decommissioning report [47] and one in an environmental assessment report [48], both undertaken by Arcadis. Some indications of contamination appear to have been encountered during these investigations and some potential risks to groundwater were identified. A detailed quantitative risk assessment undertaken in 2008 (also by Arcadis) [49] found that – based on a commercial land use with full hardstanding – there were no unacceptable risks to human health or controlled waters.

No additional information was made available prior to the date of this report.

19.4. Zone 7 Geotechnical Considerations

The design details of the proposed scheme are not known, except for general descriptions of the proposed site usage. Zone 7 is identified for development of the access road into the resort, the design of which is being undertaken by others. The commentary given below sets out some of the geotechnical considerations which should be taken into account as the designs are developed with further investigations and geotechnical design being required as appropriate.

19.4.1. Earthworks

Much of Zone 7 is covered by a variable layer of Made Ground, largely comprising silt and clay, underlain by Alluvium, RTD and/or Head Deposits over Chalk.

Cuttings and Embankments

For embankments constructed on the Chalk, it is expected that side slopes constructed to 1v:2.5h will maintain an adequate factor of safety depending on the height of the embankment and founding materials. Care must be taken to limit the contact of excavated and stockpiled chalk with groundwater and/or rainfall as water ingress may raise the liquidity index of the material to unworkable levels, and increase the risk of side slope instability.

The Chalk is expected to provide a good foundation for the embankments although localised soft areas may be present and these should be removed prior to any works. Appropriate permanent drainage measures may be required.

Where the embankment is to be constructed on sloping ground, there may be a risk of a slip developing, therefore benches or steps will need to cut into the existing ground where necessary to key-in the new construction.

The Alluvium or Head Deposits in this area are likely to compress when a large load (i.e. an embankment) is placed on top of it. The effect can be mitigated by using the following techniques:

- Excavation and replacement; or
- Staged construction or controlled rate of filling.

Gradients of 1:75v:1h are accepted for design of chalk slopes in White Chalk but it is recognised these slopes are often slackened for maintenance purposes. Shallower slope gradients (1v:3h) may be required where extenstively weathered or structureless Chalk is identified, or where deep cutting are to be formed.

Details of the recommended slope gradient shall be provided during the design phase, however the engineering properties of the Chalk are likely to be governed by a degree of weathering, presence and thickness of weaker layers and the presence of fractures and fissures within the rock, their orientation, spacing, aperture, infill and roughness. A slope gradient of 1V:2H is assumed for any slopes within the Chalk with opportunity to steepen them to 1V:1H or 1.75V:1H at the later design stages to reflect the rock type and quality.

Where cutting slopes are formed of Chalk and superficial material it may be necessary to form a bench at the interface in order to accommodate a drainage channel and to slacken the above slope to gradient of 1V:3H.

Excavations

Excavations may be required in Zone 7 for buried services, temporary works and shallow foundations. Conventional excavation plant is likely to be adequate for excavations in Zone 1, except where hard materials (such as concrete) are encountered in the Made Ground.

The stability of temporary excavations is expected to be low in the Alluvium and Head Deposits, as these deposits are weak. Depending on how deep the excavation is expected to go, groundwater may cause flooding of the excavations if encountered.

19.4.2. Trafficability

Much of Zone 7 is covered in dense vegetation which will need to be cut down for accessibility. Trafficability in this zone is expected to vary over the course of the year. During the ground investigation in the summer, the area was very dry and the ground retained a good trafficability. During wet weather, however, the ground is expected to become boggy, reducing its trafficability.

19.4.3. Foundations

Based on our understanding of the ground conditions in this zone, it is likely that shallow foundations such as rafts or pads are suitable for low load structures, however deeper foundations, such as piles, may be required for higher load structures, and will need to be embedded in the Chalk.

Chalk is suitable for shallow foundations so long as the presence of dissolution features has been investigated and incorporated into the design where applicable. The structureless Chalk is sometimes known to produce large settlements, therefore construction procedures to reduce settlement should be considered. Where the weathered or structureless Chalk has a low shear strength the material may need to be replaced with suitable granular fill.

The presence of hardgrounds and flints will be unsuitable for driven piles and potentially unsuitable for continuous flight auger (CFA) piles. The pile design method should take this into account, and it is likely that bored piles will be necessary. Piling works may destabilise dissolution features and care must be taken not to rely on end-bearing piles which might be underlain by a loosely infilled dissolution feature.

Any piling design should consider the potential for piling to create a pathway for any existing or potential contamination to travel in the chalk aquifer.

19.4.4. Pavement Design

The Highways Agency design guidance for road pavement foundations [43] provides long term equilibrium CBR values under road pavements in clays based on plasticity index. These CBR values assume a high water table and do not take into account seasonal variability.

For the Made Ground comprising of sandy silt, a CBR value of 1% is suggested for both thin and thick pavement. For Alluvium (clay) with a plasticity index of 14%, a CBR of 3% is possible for a use with a thin pavement, or increased to 6% if a thick pavement is used. These results will need to be verified by *in situ* plate-load tests.

It is estimated that the Chalk with have CBR values of 3% to 10%, although the structureless Chalk is likely to be less than 3% and some improvement will be required to provide a suitable excavation surface on which to place the prepared subgrade. The depth of improvement should be in line with the guidance given by design guidance for road pavement foundations [43].

19.4.5. Geotechnical Constraints

Buried Foundations

According to the desk study [2], historical buried foundations are possible at the location of New Barn Farm (561216E, 173199N) and the Ebbsfleet carpark buildings (561307E, 173724N). If these are encountered, additional excavation equipment will be needed.

Buried Services

Buried services related to Springhead Nurseries, the A2 and the railway are likely to present across Zone 7. Damage to underground services can cause injury, significant disruption and environmental damage; as well as incurring considerable costs.

Chalk Dissolution Features

The presence of RTD and Head Deposits overlying the Upper Chalk in this zone, are indicative of a high subsidence risk area, consequently the presence of Chalk dissolution features cannot be discounted. Dissolution features are particularly hazardous as they are generally hidden from view and can cause instability of overlying material or structures.

Historical Works

Historical works such as the abandoned and backfilled quarries in this zone, may contain hazardous materials and any poorly compacted material which is susceptible to settlement. Deneholes (historic mine workings) are present to the east of Zone 6 in Northfleet and may be present in or around Zone 7 as well.

Variable rockhead/Deep weathering profile

Due to the reduced ground investigation scope, the Chalk rockhead is unknown in much of Zone 7. The presence of the River Ebbsfleet in this zone has also created a variable bedrock surface due to fluvial erosion. Further ground investigation is required to determine the extent of the variability.

Weak Bearing Materials

Construction of foundations upon weak bearing strata can result in bearing capacity failure. In Zone 7, the Alluvium and Head Deposits have weak bearing capacities, as does the structureless Chalk. The structureless Chalk with a CIRIA grade of Dc has a low bearing capacity due to weathering reducing its strength and structure, resulting coarse granular soil.

Weak Compressible Ground

Loading of compressible soils and unconsolidated materials can cause excessive settlements. Materials such as Alluvium in Zone 7, are particularly vulnerable. Settlement due to self-weight, drainage and external loading is likely to extend over several years.

19.5. Zone 7 Geotechnical Risk Assessment

The Geotechnical Risk Register is presented in Appendix H. It comprises an initial assessment of the geotechnical hazards expected in Zone 7, prior to the application of mitigation measures. The Risk Register also shows how the risk of the hazards can be reduced by the application of mitigation measures.

In most cases the mitigation measures will be sufficient to reduce the risk to low. In some cases the risk may be reduced but a significant residual risk remains which must be managed.

Prior to implementation of the proposed mitigation measures, the risks considered to be substantial are:

- Buried services;
- Historical works;
- Variable rockhead;
- Weak compressive ground; and
- Weak bearing materials.

The remaining risks are rated as moderate.

19.5.1. Mitigation Measures

The mitigation measures considered are those that may be applied during design or construction, as appropriate, to mitigate the hazard identified and, in most cases, to render the risk insignificant. Mitigation measures considered appropriate for the substantial risks listed above include:

- Consideration of geotechnical issues during preliminary and detailed design;
- Further ground investigation to obtain a better understanding of the ground conditions in this zone; and
- Planned methodology for any planned earthworks.

19.5.2. Residual Risk

Following risk identification, assessment and the application of recommended mitigation/avoidance measures most risks have been assessed to be low. However, it should be recognised that some residual risks remain.

19.6. Zone 7 Geo-Environmental Risk Assessment

19.6.1. Preliminary Conceptual Site Model

The key potential sources of contamination identified for Zone 7 include the CKD waste deposited within Southfleet Quarry, the former cement works wash mills, the former petrol station and the miniature rifle range.

The primary exposure pathways that are considered applicable are:

- Inhalation of soil- or groundwater-derived vapours;

- Migration and accumulation of ground gases, followed by inhalation or ignition, causing asphyxiation and/or explosion;
- Leaching/migration of contaminants from soils;
- Direct surface water run-off and sub-surface flow to surface waters;
- Lateral migration of contaminated groundwater; and
- Vertical migration of contaminated groundwater.

The potential receptors identified are:

- Neolithic scheduled monument;
- The River Ebbsfleet which flows north along the eastern boundary of the zone towards the River Thames;
- The Secondary (undifferentiated) Aquifer within the Head deposits beneath the zone;
- The Secondary A Aquifer within the Alluvium and Thanet Formation;
- The Principal Aquifer within the Chalk;
- Buildings and structures as part of the proposed development; and
- Zone visitors and workers.

19.6.2. Proposed Development

The development within Zone 7 comprises the resort access road and local connecting infrastructure. From Ebbsfleet International Station a land train and pedestrian route are also to be constructed providing a connection to the resort.

19.6.3. Human Health

Soil samples collected during the 2015 ground investigation were screened against Atkins' SSVs/C4SLs/S4ULs for a commercial land use, based on 1% SOM. A total of 19 soil samples were analysed from within Zone 7 at depths ranging from 0.5 to 5.1m bgl, although only 17 of these were analysed for the full analytical suite detailed in Section 3.7.2. The locations of the investigation points are presented in 5134008-PHASE2-FIGURE001 (Rev. A).

There were no exceedances of the applicable SSVs or WSVs within soils.

Asbestos was detected in one soil sample at a depth of 2.35 to 2.45m bgl and comprised chrysotile at <0.001%.

The data screening spreadsheets are summarised below and presented in full in Appendices E.3 and E.5.

19.6.4. Controlled Waters

Table 19-2 presents the exceedances of the relevant screening criteria within the groundwater samples taken from boreholes in Zone 7 during the 2015 ground investigation. Duplicate samples are considered as exceedances. Screening spreadsheets are provided in Appendix E.4; see screening spreadsheet for sources of screening criteria.

Table 19-2 Groundwater Exceedances of the Screening Criteria (Zone 7)

Compound	DWS	EQS	No. of Samples	Min. Value	Max. Value	No. of Exceed.	Locations of Exceed.
Sulphate (µg/L)	250,000	400,000	20	113000	445000	8	**BH703** (**20/07/15**, 28/07/15, 13/08/15, 26/08/15) BH707 (20/07/15, 28/07/15, 14/08/15, 26/08/15)
Nitrate as NO_3 (mg/L)	50	No EQS	20	31.3	115	12	**BH705** (20/07/15, 28/07/15, **14/08/15**, 26/08/15) BH706 (20/07/15, 28/07/15, 14/08/15 (and duplicate), 26/08/15) BH708 (20/07/15, 13/08/15, 26/08/15)
Nitrite as NO_2 (mg/L)	500	No EQS	20	13	750	1	BH707 (14/08/15)
Copper (mg/L)	2000	5	20	< 0.5	15	2	**BH703** (**26/08/15**) BH706 (26/08/15)

Compound	DWS	EQS	No. of Samples	Min. Value	Max. Value	No. of Exceed.	Locations of Exceed.
Iron (mg/L)	0.2	1	20	0.006	0.85	6	BH703 (20/07/15) BH705 (20/07/15) **BH706** (**20/07/15**, 14/08/15) BH707 (20/07/15) BH708 (20/07/15)
Lead (µg/L)	10	7.2	20	< 0.2	23	5	**BH706** (20/07/15, 28/07/15, **14/08/15** (and duplicate), 26/08/15)
Manganese (µg/L)	50	No EQS	20	6.7	720	11	BH703 (20/07/15, 28/07/15, 13/08/15, 26/08/15) BH705 (28/07/15, 14/08/15) **BH707** (**20/07/15**, 28/07/15, 14/08/15, 26/08/15) BH708 (26/08/15)
Mercury (µg/L)	1	0.05	20	< 0.05	0.21	9	BH703 (20/07/15, 28/07/15, 13/08/15) BH705 (14/08/15) **BH706** (**14/08/15** (and duplicate)) BH707 (28/07/15, 14/08/15) BH708 (13/08/15)
Nickel (µg/L)	20	20	20	1.7	26	2	**BH707** (28/07/15, **14/08/15**)

Notes: **BOLD** indicates location of maximum exceedance

In general, groundwater quality within Zone 7 was better than within other zones within the larger development area. Some exceedances of the screening criteria could be attributed to saline intrusion from the River Thames – and at lower concentrations than the more northernmost zones, as would be expected – including sulphate, nitrate and nitrite. Nickel and copper only exceeded in a small number of boreholes over one or two monitoring rounds and are therefore not considered indicative of a wider issue.

Iron was only encountered during the first monitoring round, with the exception of BH706 where it was indicated in a second, and is also therefore not considered indicative of iron contamination. Lead exceeded the screening criteria within one borehole only (BH706) and all were within the same order of magnitude as the drinking water standard, which again is not considered indicative of widespread lead contamination.

Manganese and mercury exceedances of the screening criteria were found to be more widespread, with mercury exceedances also encountered in Zones 1, 2, and 5 and manganese in Zones 1 and 2, though all in higher concentrations than found in Zone 7.

This could potentially indicate the concentrations of mercury and manganese are related to a large, more widespread groundwater issue within the surrounding area than would be attributable to activities that have been undertaken on any of the individual zones.

19.6.5. Ground Gas Assessment

Below are the findings from the ground investigation monitoring data, both historical and current.

Table 19-3 Ground Gas Monitoring Results (Zone 7)

Borehole ID	Response Zone (m bgl) (strata)	Worst Case Measured Concentrations				Maximum Borehole Flow Rate (l/hr)
		CH_4 (%)	CO_2 (%)	CO (ppm)	H_2S (ppm)	
2015 Locations						
BH703	7.0 – 9.5 (Chalk)	< 0.1	0.4	< 1	< 1	< 0.1
BH704	1.2 – 4.7 (Alluvium)	< 0.1	9.2	< 1	< 1	< 0.1
BH705	3.7 – 19.5 (Chalk)	0.5	0.9	< 1	< 1	< 0.1

Borehole ID	Response Zone (m bgl) (strata)	Worst Case Measured Concentrations				Maximum Borehole Flow Rate (l/hr)
		CH_4 (%)	CO_2 (%)	CO (ppm)	H_2S (ppm)	
BH706	8.5 – 29.3 (Chalk)	0.1	0.2	< 1	< 1	< 0.1
BH707	10.5 – 19.5 (Chalk)	4.9	3.1	< 1	< 1	< 0.1
BH708	10.0 – 29.95 (Chalk)	< 0.1	4.1	4	< 1	1.6

Atmospheric pressures ranged from 986 to 1012mbar during the recent ground gas monitoring period, with pressure falling on the first and fourth monitoring rounds undertaken on 14-15th July and 26th August 2015.

Methane was often found below the instrument's limit of detection, with some low concentrations being encountered in BH705 and BH706. However, methane concentrations in BH707 were found above the 1% v/v threshold value for elevation to CS2, with a concentration of 4.9% v/v.

Carbon dioxide was encountered within each borehole, at concentrations ranging from 0.2% v/v in BH706 to 9.2% v/v in BH704. One borehole – BH704 – showed consistently elevated concentrations of carbon dioxide above the threshold value for elevation to CS2, located near to the River Ebbsfleet in the south-eastern edge of the zone.

Carbon monoxide was only found at low concentrations within one borehole (BH708) during the first monitoring round.

No hydrogen sulphide was found in any borehole above the limit of detection.

A summary of the modified Wilson and Card gas risk assessment is given in Table 19-4. Where flow readings were either not available or taken as 0.0l/hr, a value of 0.1l/hr has been substituted to calculate the GSVs. The steady state ground gas concentrations were also considered for use within the assessment; the assessment outcome would be the same utilising either concentration and therefore peak concentrations have been maintained for the below calculations.

Table 19-4 Ground Gas Risk Assessment (Zone 7)

Monitoring Location	Worst Case Measured Concentrations (%)		Maximum Borehole Flow Rate (l/hr)	Maximum Calculated GSV (l/hr)	Applicable CS
	CH_4	CO_2			
2015 Locations					
BH703	< 0.1	0.4	< 0.1	0.0004	CS1
BH704	< 0.1	9.2	< 0.1	0.0092	CS2
BH705	0.5	0.9	< 0.1	0.0009	CS1
BH706	0.1	0.2	< 0.1	0.0002	CS1
BH707	4.9	3.1	< 0.1	0.0049	CS1
BH708	< 0.1	4.1	1.6	0.0656	CS1
Worst Case (over all boreholes)					
	4.9	9.2	1.6	0.1472	CS2

Due to the concentrations of carbon dioxide consistently above 5% v/v in BH704, the zone is classified as CS2. It should be noted that this assessment was completed within the southern half of Zone 7 only; the northern half contains former landfills and gas risk within this area is likely to be more significant.

19.6.6. Property/Services

19.6.6.1. Water Supply Pipes

The table below gives a summary of the maximum values for each contaminant encountered within the zone. As the final plans for service placement at the zone are currently unconfirmed, concentrations from all samples taken from up to 4m bgl have been included in this assessment:

Table 19-5 Comparison of UK WIR Threshold Concentrations to Site-Specific Values (Zone 7)

Parameter Group	UK WIR Threshold Value (mg/kg)			Maximum Value Found On-site
	PE Pipe	PVC Pipe	Metal Pipes	
VOCs	0.5	0.125	Pass	<0.056
BTEX + MTBE	0.1	0.03	Pass	<0.006
sVOCs (excluding PAHs)	2.0	1.4	Pass	<6.55
C5-C10 (aliphatic and aromatic hydrocarbons)	2.0	-	Pass	<0.6
C11-C20 (aliphatic and aromatic hydrocarbons)	10.0	-	Pass	39.4
C21-C35 (aliphatic and aromatic hydrocarbons)	500.0	-	Pass	<18
Phenols (from sVOCs)	2.0	0.4	Pass	<1.0
Cresols and chlorinated phenols (from sVOCs)	2.0	0.04	Pass	<0.7
Nitrobenzene	0.5	0.4	Pass	<0.3
Corrosive	Pass	Pass	Wrapped Steel: pH<7, conductivity >40µs/cm Wrapped Iron: pH<5, conductivity >40µs/cm Copper: pH<5 or >8	pH: 8.3 Conductivity: 720 µs/cm

In light of the results above, it is considered that low-density PE pipe should not be used for any water supply pipes at the zone due to hydrocarbon concentrations within the surficial deposits within the zone, and when taking into account the slightly corrosive nature of the soils, plain copper pipes or wrapped steel would also not be considered suitable. Barrier (PE-Al-PE) pipe, PVC, or wrapped iron would potentially be suitable materials and, as a matter of good practice and due to the variable nature of the Made Ground present at the Site, it is recommended that all services laid are placed within a corridor of ‘clean’ fill.

19.6.7. Updated Conceptual Site Model (Zone 7)

The sources, pathways and receptors identified above in Section 19.6.1 have been updated based on the results of the GQRA and the subsequent CSM is presented in Table 19-6.

Based on the current soils analysis data, there are no exceedances of the Atkins’ SSVs (or other pertinent screening criteria) for human health using a commercial land use scenario. Additionally, there were no exceedances of the Atkins WSVs for the protection of human health in relation to inhalation of vapours from groundwater below the Site. Asbestos was positively identified in one sample, though subsequent quantification analysis did not find any asbestos above the LOD.

The controlled waters risk assessment identified potentially significant pollutant linkages, notably for manganese and mercury, though evidence suggests that these contaminants may be present within the groundwater in the wider area of the entire development Site which suggests they are not zone-derived. Other exceedances noted within Zone 7, copper, iron and lead, were also encountered within groundwater from Zones 1, 2 and/or 5.

The ground gas risk assessment indicated a preliminary classification as CS2, which would require some protective measures to be installed within any buildings established across the zone as part of the proposed development. However, under the currently understood masterplan, Zone 7 is to be used as part of the access corridor and is not proposed for significant building construction.

The indicative property/services risk assessment suggested that there would likely be some risks to services laid at the zone due to ground conditions, including some contaminants and slightly corrosive conditions within the zone's soils.

Based on the above, an updated tabular CSM from the Phase 1 Report is presented below. These conclusions are preliminary only due to the limited ground investigation completed during this phase of works: additional assessment will be required in order to assess fully risks across the entirety of Zone 7, notably within the northern areas.

Table 19-6 Updated Conceptual Site Model (Zone 7)

Sources	Receptor	Potential Pathway	Potential Consequence	Likelihood	Classification of Risk
Potential contaminants in soil/groundwater on the zone, originating from the following <u>Zone 7</u> sources: • Contamination resulting from CKD deposition, former petrol station, former cement works and the miniature rifle range. *Potential contaminants include manganese.*	Zone workers, visitors and trespassers.	Inhalation of soil- or groundwater-derived vapours.	**Mild**	**Low likelihood** There were no exceedances of the SSVs or the WSVs in any sample taken from the zone to date. However, the northern section of the zone – containing Southfleet Landfill – was unable to be investigated during this phase of works and therefore these risks are not able to be fully discounted.	**Low Risk**
		Migration and accumulation of ground gases, followed by inhalation or ignition, causing asphyxiation and/or explosion.	**Severe**	**Unlikely** Some elevated concentrations of carbon dioxide were found within one of the boreholes across the zone – located near to the River Ebbsfleet along the south-eastern edge of the zone – which indicates the zone should be classified as CS2. Elevated methane concentrations were also found in the boreholes in the zone. However, Zone 7 is not proposed for significant building construction as part of the access corridor, thus reducing the risk. The northern portion of the zone was not investigated and risks within that area are likely to be more significant due to the Southfleet Landfill.	**Moderate/Low Risk**
	Neolithic scheduled monument.	Lateral migration of contaminated groundwater.	**Mild**	**Low likelihood** The pH of the groundwater was found to be between 7.0 and 7.9 (neutral), and would therefore be unlikely to impact upon archaeological receptors. However, this is based on investigation within the southern portion of Zone 7 only, with the northern portion – that which contains Southfleet Quarry/Landfill and may be impacted by former CKD deposition – not able to be investigated during this phase of works. Therefore, a risk remains.	**Low Risk**
	Controlled waters – River Ebbsfleet.	Leaching/migration of contaminants from soils. Lateral migration of contaminated groundwater. Direct surface water run-off and sub-surface flow to surface waters.	**Medium**	**Likely** There were a small number of exceedances of the selected screening criteria for manganese and mercury, though there is some evidence to suggest this contamination may be widespread in the wider area of the entire development site; it may not be attributable to zonal activities. The northern portion of the zone – containing Southfleet Quarry/Landfill – was not	**Moderate Risk**

Sources	Receptor	Potential Pathway	Potential Consequence	Likelihood	Classification of Risk
	Controlled waters – Secondary and Principal aquifers within the zone.	Leaching/migration of contaminants from soils into the underlying Secondary aquifers.	**Medium**	able to be investigated at this time and may pose additional risks to controlled waters.	
		Vertical migration to the Principal aquifer beneath the zone.	**Medium**		

20. Conclusions and Recommendations

20.1. Conclusions

20.1.1. General

Five of the zones across the Site, as defined within the Phase 1 reports [1] [2], were partially investigated during this phase of ground investigation; Zones 1, 2, 3, 5 and 7 and, of these, the investigations within Zone 1, Zone 3, and Zone 5 were particularly limited in scope. The ground investigation was initially reduced in scope at the request of the client and during the site works period access was severely limited due to land ownership issues, unrelated to and out of the control of Atkins, thus limiting the scope of the investigation further. As such, any conclusions drawn from data obtained during the recent intrusive investigation are to be considered preliminary only.

20.1.2. Geotechnical

The geological succession encountered in each zone is detailed in Table 20-1 below, as well as the geotechnical constraints identified within this report.

Table 20-1 Geology and Geotechnical Constraints Summary Table

Zone	Exploratory Holes	Geology	Geotechnical Constraints
1	BH101, WS101, WS102	• Made Ground including CKD • Alluvium with Peat • River Terrace Deposits • White Chalk	• Aggressive ground conditions • Buried foundations • Buried services • Cement Kiln Dust • Excavation collapse • High groundwater • Shrink-swell clays • Weak bearing materials • Weak compressible ground
2	BH201, BH202, BH203, BH204, WS202, WS203, WS204, TP201	• Made Ground including CKD • Alluvium with Peat • River Terrace Deposits • White Chalk	• Aggressive ground conditions • Buried foundations • Buried services • Cement Kiln Dust • Excavation collapse • High groundwater • Shrink-swell clays • Weak bearing materials • Weak compressible ground
3	WS301, WS302, TP301, TP302	• Made Ground • White Chalk	• Aggressive ground conditions • Buried foundations • Buried services • Cement Kiln Dust • Excavation collapse • High groundwater • Shrink-swell clays • Weak bearing materials • Weak compressible ground
5	BH501, BH502	• Made Ground • White Chalk	• Buried services foundations • Chalk dissolution features • Excavation collapse • Historical works • Rockfall • Variable rockhead • Weak bearing materials
7	BH703, BH704, BH705, BH706,	• Made Ground • Head Deposits • Alluvium	• Buried services • Historical works • Variable rockhead

Zone	Exploratory Holes	Geology	Geotechnical Constraints
	BH707, BH708, TP701, TP702	• River Terrace Deposits • White Chalk	• Weak compressive ground • Weak bearing materials

20.1.3. Geo-Environmental

Based on the available data, risks to human health from the areas investigated are considered to be limited. There were very few exceedances of the human health generic screening criteria in either soils or groundwater samples analysed from across the zones. There were a number of Made Ground samples (located across all zones investigated), which contained asbestos which will require further assessment and management during site redevelopment works to ensure there are no unacceptable risks to the future site operations. Large areas of the Site – including those around the former gasworks, Southfleet landfill and Manor Way Industrial Estate with historical tar distilleries and infilled lagoons – were not investigated and risks to human health from these areas are likely to be more significant.

Elevated pH within the soils and perched water impacted by the deposition of CKD within large areas of Swanscombe Peninsula could impact upon human health (i.e. burns, respiratory effects) if dusts become airborne or hydrated, or if direct contact is made with impacted water. There is the potential of asbestos to be present in the CKD as it was encountered in several of the soil samples.

The controlled waters risk assessment indicated that while a number of contaminants, notably heavy metals and inorganic parameters, were found at concentrations above the generic screening criteria for the protection of surface water (River Thames) and groundwater (Principal and Secondary aquifers below the Site), more contaminants generally exceeded the criteria within the perched water than the deeper groundwater, indicating the Alluvium situated between is providing some level of protection to the deeper aquifers. Additionally, those contaminants found within the deeper groundwater samples, excluding those likely caused by saline intrusion from the River Thames, were found across all zones rather than below one zone in particular. This could potentially be indicative of a wider groundwater quality issue in the area of the Site rather than one attributable to discrete zonal activities. Again, large areas of the Site were not investigated, including some with contaminative potential. Additionally, North Pit in Zone 2 was stripped of Alluvium during historical phases of operations and deeper groundwater quality within this area was not assessed.

There were some elevated concentrations of methane and carbon dioxide encountered across all the zones, indicating a classification of CS2 for each zone, which requires some protective measures to be installed within any buildings established on-site. Elevated carbon monoxide and hydrogen sulphide concentrations were also encountered within boreholes located with Zone 2 above WELs. These ground gas risk assessments are preliminary and additional investigation and monitoring would be required to fully assess risks from ground gas.

Within all zones, as brownfield sites, water supply pipes need to be chosen based on those contaminants present in the soils within the zones and corrosive conditions found across the majority.

20.2. Recommendations

Additional investigation and testing would be required across all zones to enable comprehensive risk assessments to be carried out and to fill in the current geo-environmental and geotechnical data gaps. These works would support the development of a robust earthworks strategy and for the development and, along with design recommendations, enable identified risks to be managed and mitigated, along with promoting materials re-use and the overall sustainability goals for the development.

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Appendices

Appendix A. Site Layout Plans

A.1. Site Location


N
0
500
Metres
River Thames
River Thames
Greenhithe
A226
A226
Swanscombe
B255
B255
Roman Rd
Watling St
A2260
A226
Google

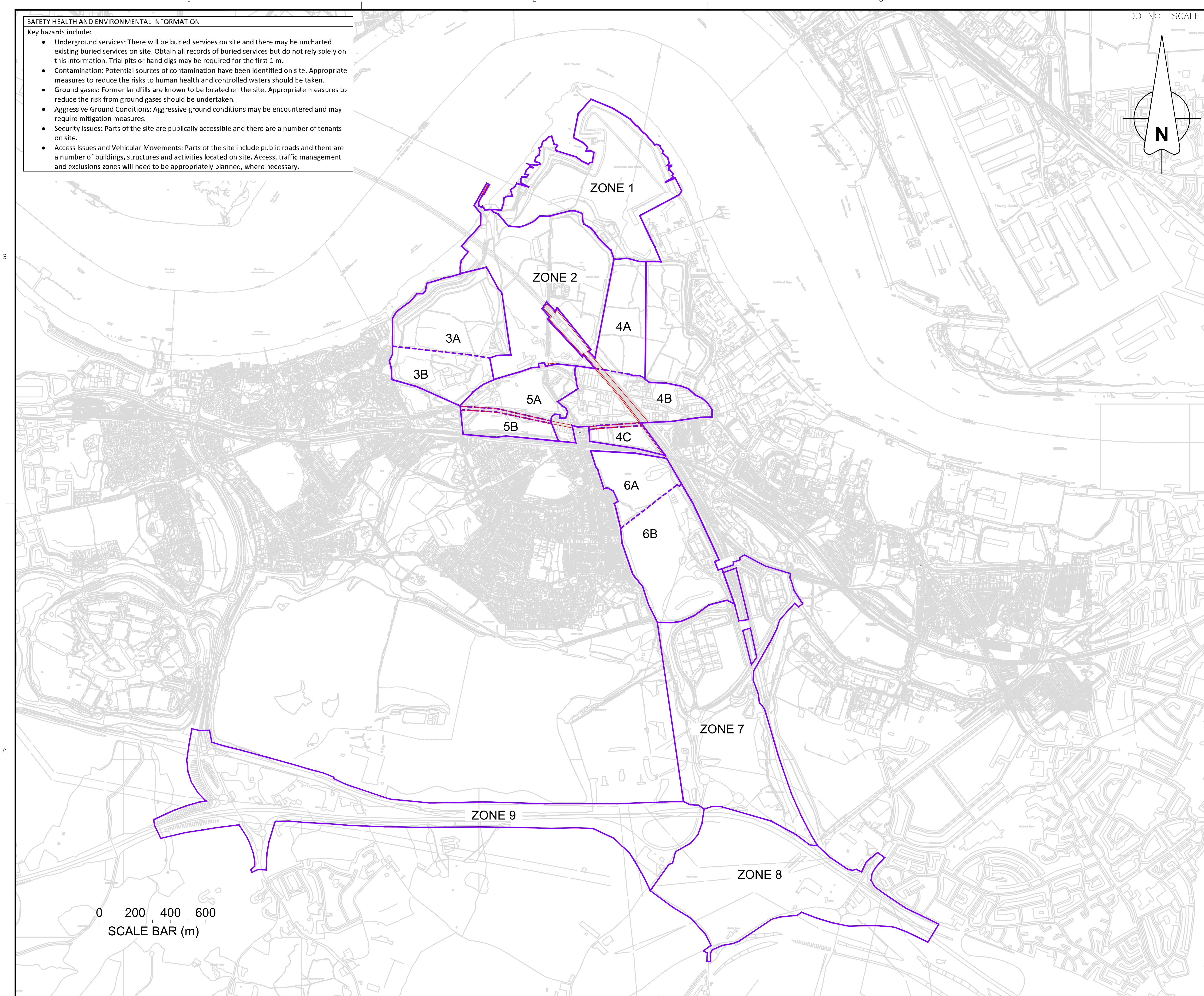

Aylesbury
St Albans
Harlow
Chelmsford
Witham
Clacton-on-Sea
Watford
Basildon
Southend-on-Sea
Canvey Island
Wembley
London
Grays
Dartford
Bracknell
Croydon
Rochester
Isle of Sheppey
Whitstable
Margate
Broadstairs
Woking
Farnborough
Guildford
Sevenoaks
Maidstone
Faversham
Canterbury
Tonbridge
Royal Tunbridge Wells
Ashford
Deal
Dover
Crawley
Horsham
Haslemere
Folkestone
Tenterden
Chichester
Worthing
Brighton
Lewes
Newhaven
Eastbourne
Hailsham
Hastings
Battle
Rye
Bognor Regis

A.2. Site Boundary Plan

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

Key hazards include:

- Underground services: There will be buried services on site and there may be uncharted existing buried services on site. Obtain all records of buried services but do not rely solely on this information. Trial pits or hand digs may be required for the first 1 m.
- Contamination: Potential sources of contamination have been identified on site. Appropriate measures to reduce the risks to human health and controlled waters should be taken.
- Ground gases: Former landfills are known to be located on the site. Appropriate measures to reduce the risk from ground gases should be undertaken.
- Aggressive Ground Conditions: Aggressive ground conditions may be encountered and may require mitigation measures.
- Security Issues: Parts of the site are publically accessible and there are a number of tenants on site.
- Access Issues and Vehicular Movements: Parts of the site include public roads and there are a number of buildings, structures and activities located on site. Access, traffic management and exclusions zones will need to be appropriately planned, where necessary.



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KEY:

- ZONE BOUNDARY
- SUB-ZONE BOUNDARY
- SITE BOUNDARY

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Purpose of issue	Rev	Date	Authorised
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LONDON RESORT COMPANY HOLDINGS

Project

PARAMOUNT PARK ENTERTAINMENT RESORT

Title

SITE LAYOUT PLAN

Original Scale	Drawn	Checked	Authorised	
1:20000	DH/ATP	LD	JS	A3
	Date 26.03.15	Date -	Date -	

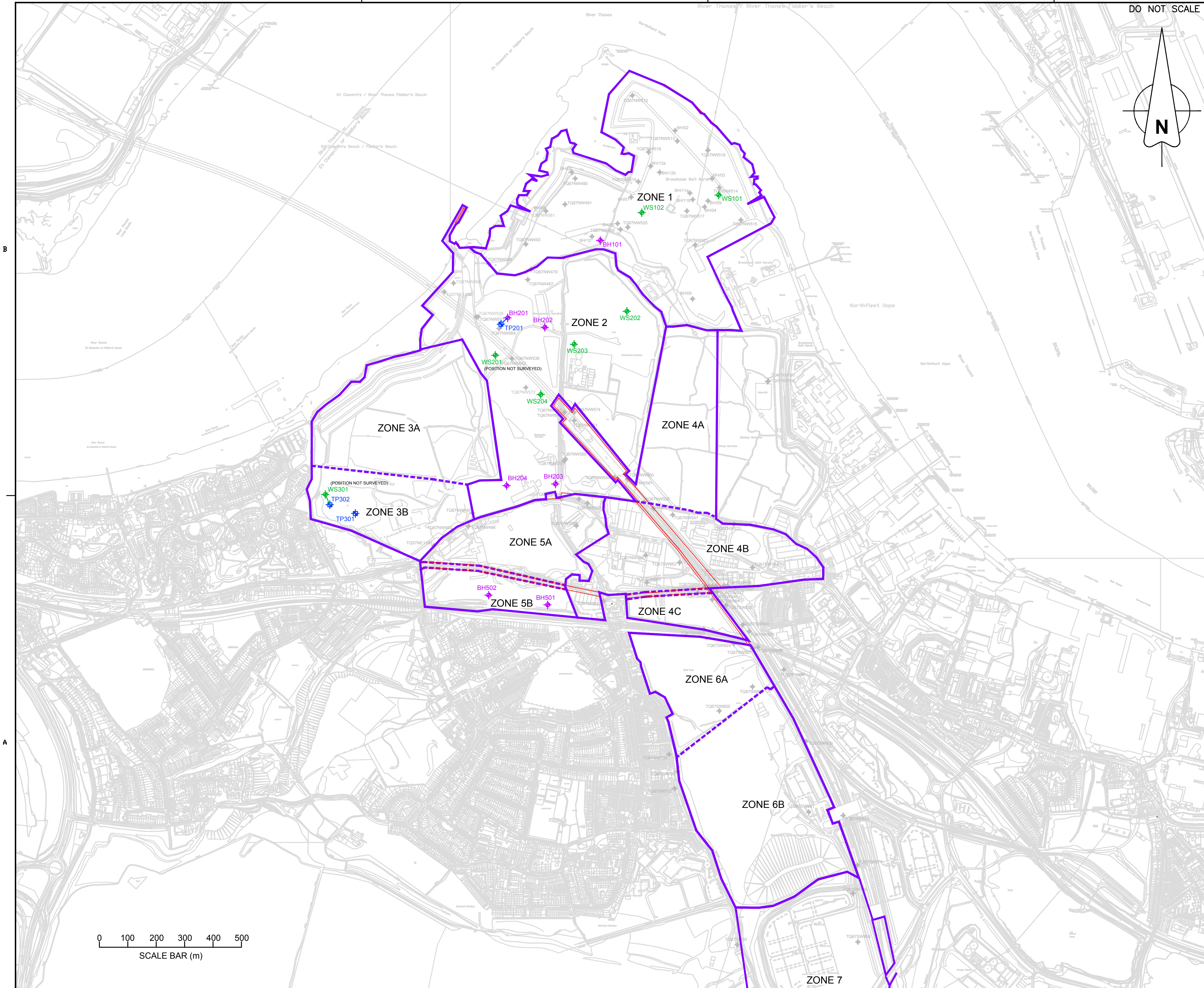
Drawing Number	Rev
5134008-ADD_PHASE1-FIGURE001	A

Job Dept. Sub Unique No.

Drawing Number 5134008-ADD_PHASE1-FIGURE001 Rev. A

Appendix B. Ground Investigation Plan

B.1. Exploratory Hole Location Plan



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LEGEND:

AS-BUILT EXPLORATORY HOLES (2015)

- BH101 BOREHOLE WITH STANDPIPE
- WS201 WINDOW SAMPLE WITH STANDPIPE
- TP301 TRIAL PIT

HISTORICAL EXPLORATORY HOLES

- TQ67NW521 HISTORICAL EXPLORATORY HOLE

NOTE:

1. AS-BUILT EXPLORATORY HOLE POSITIONS TAKEN FROM GEOTECHNICAL ENGINEERING LIMITED'S SURVEY ON 03 JULY 2015.
2. ZONES 7 - 9 CAN BE FOUND ON DRAWING NUMBER 5134008-PHASE2-FIGURE002.
3. EXPLORATORY HOLES WS201 AND WS301 WERE TERMINATED EARLY DUE TO REFUSAL ON HARD STRATUM. THEIR POSITIONS WERE NOT SURVEYED, BUT ARE SHOWN AS APPROXIMATE ON THIS DRAWING.
4. BASE MAP REPRODUCED BY PERMISSION OF ORDNANCE SURVEY ON BEHALF OF HMSO. © CROWN COPYRIGHT. ALL RIGHTS RESERVED. ORDNANCE SURVEY LICENCE NUMBER 0100040692.

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PARAMOUNT PARK ENTERTAINMENT RESORT

Title
AS-BUILT GROUND INVESTIGATION PLAN DRAWING 1 OF 2

Original Scale	Drawn	Checked	Authorised	
1:12500	ATP/JP Date 14.07.15	TR Date 15.07.15	JA Date 15.07.15	A3

Drawing Number	Rev
5134008-PHASE2-FIGURE001	A

Job Dept. Sub Unique No.

Drawing Number 5134008-PHASE2-FIGURE001 Rev. A

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

Key hazards include:

- Underground services: There will be buried services on site and there may be uncharted existing buried services on site. Obtain all records of buried services but do not rely solely on this information. Trial pits or hand digs may be required for the first 1 m.
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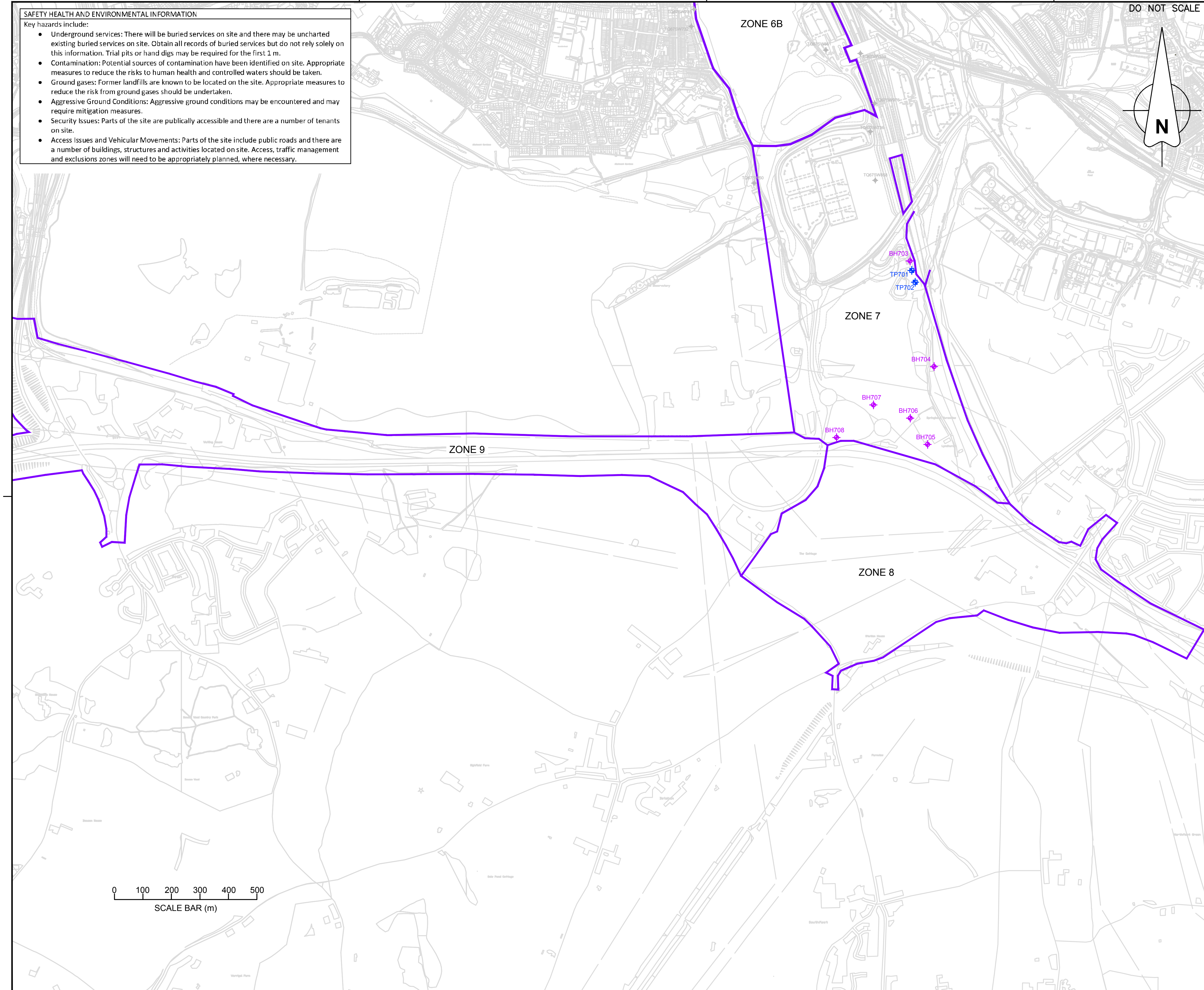
- Ground gases: Former landfills are known to be located on the site. Appropriate measures to reduce the risk from ground gases should be undertaken.
- Aggressive Ground Conditions: Aggressive ground conditions may be encountered and may require mitigation measures.
- Security Issues: Parts of the site are publically accessible and there are a number of tenants on site.
- Access Issues and Vehicular Movements: Parts of the site include public roads and there are a number of buildings, structures and activities located on site. Access, traffic management and exclusions zones will need to be appropriately planned, where necessary.



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AS-BUILT EXPLORATORY HOLES

BH604	BOREHOLE WITH STANDPIPE
WS201	WINDOW SAMPLE WITH STANDPIPE
TP301	TRIAL PIT

NOTE:

1. AS-BUILT EXPLORATORY HOLE POSITIONS TAKEN FROM GEOTECHNICAL ENGINEER LIMITED'S SURVEY ON 03 JULY 2015.
2. ZONES 1 - 6B CAN BE FOUND ON DRAWING NUMBER 5134008-PHASE2-FIGURE001.

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PARAMOUNT PARK ENTERTAINMENT RESORT

Title

AS-BUILT GROUND INVESTIGATION PLAN DRAWING 2 OF 2

Original Scale	Drawn	Checked	Authorised	
1:12500	ATP/JP, Date 14.07.15	-, Date -	-, Date -	A3

Drawing Number	Rev
5134008-PHASE2-FIGURE002	A

Job Dept. Sub Unique No.

Drawing Number 5134008-PHASE2-FIGURE002 Rev. A

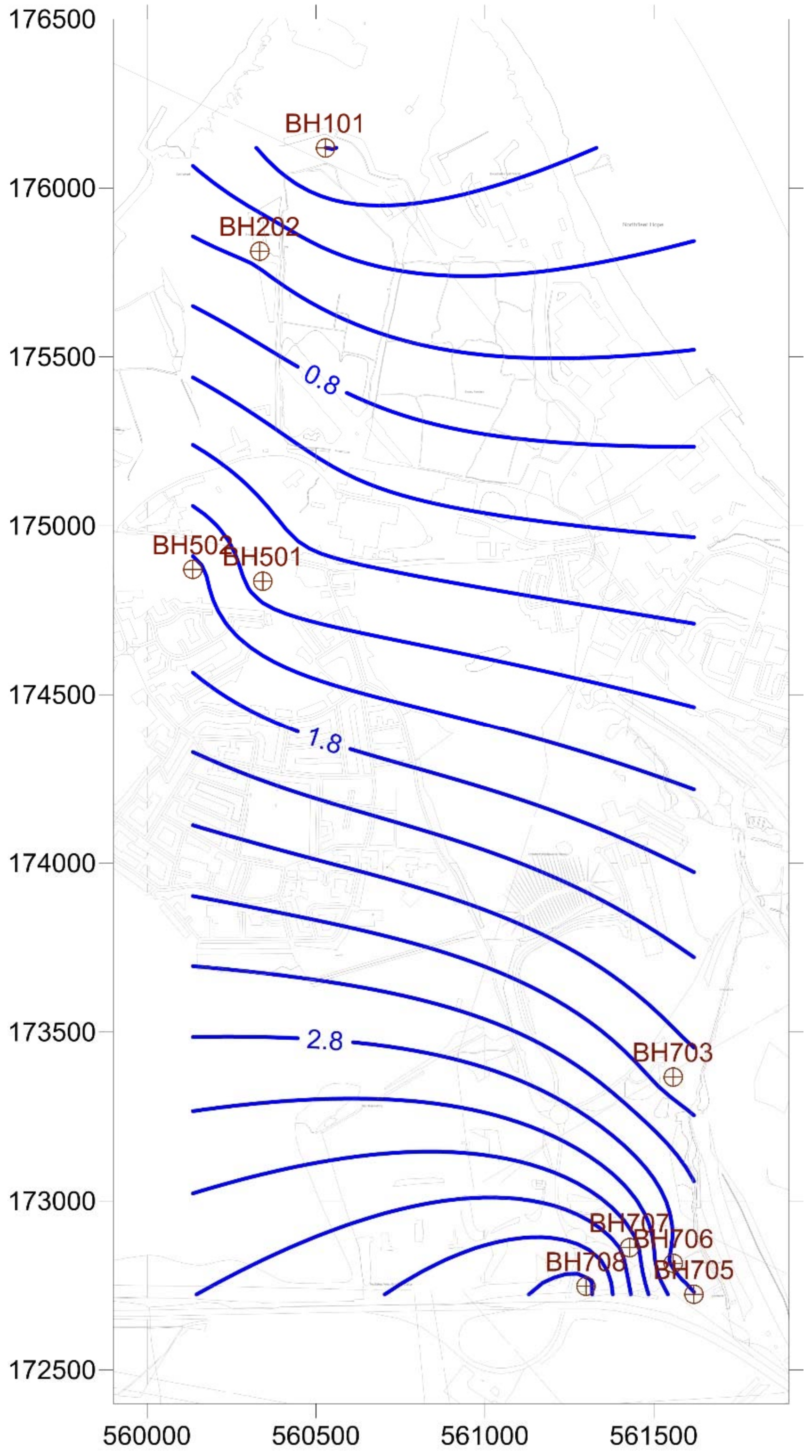
B.2. Ground Investigation Location and Rationale

Table B-1 Proposed Ground Investigation Locations and Rationale

Investigation Location	Proposed Depth (m bgl)	Geotechnical Rationale	Geo-Environmental Rationale
BH101	60	Geotechnical information on the superficial deposits and Chalk bedrock needed for foundation and earthwork design.	Located in area of previous CKD deposition. Assessment of the groundwater regime within the deeper Chalk aquifer, determination of thicknesses of CKD within this area.
WS101	10	Geotechnical information on the CKD needed for foundation and earthwork design.	Located in area of previous CKD deposition. Determination of thicknesses of CKD deposits, assessment of perched water/ground gas regime.
WS102	10	Geotechnical information on the CKD needed for foundation and earthwork design.	Located in area of previous CKD deposition. Determination of thicknesses of CKD deposits, assessment of perched water/ground gas regime.
TP201 / BH201	3.5 / 10	Geotechnical information on the superficial deposits and Chalk bedrock for foundation and earthwork design.	Located in the former North Pit. Determination of thicknesses of any CKD/Made Ground, confirmation of Alluvium removal during historical uses, assessment of perched water/ground gas regime.
BH202	15	Located in resort core, geotechnical information on the superficial deposits and Chalk bedrock needed for foundation and earthwork design.	Located down-gradient of the permitted South Pit CKD landfills within Zone 2. Assessment of any thicknesses of CKD deposits, groundwater regime in the Chalk aquifer.
BH203	15	Located in resort core, geotechnical information on the superficial deposits and Chalk bedrock needed for foundation and earthwork design.	Located up-gradient of the permitted South Pit landfills. Assessment of any Made Ground, groundwater regime in the RTD.
BH204	15	Located in resort core, geotechnical information on the superficial deposits and Chalk bedrock needed for foundation and earthwork design.	Located up-gradient of the permitted South Pit landfills. Assessment of any Made Ground, groundwater regime in the RTD.
WS202	10	Geotechnical information on the CKD needed for foundation and earthwork design.	Located in South Pit Phase 3. Assessment of thicknesses of CKD, perched water and ground gas regimes.
WS203	10	Geotechnical information on the CKD needed for foundation and earthwork design.	Located in South Pit Phase 3. Assessment of thicknesses of CKD, perched water and ground gas regimes.
WS204	10	Geotechnical information on the CKD needed for foundation and earthwork design.	Located in South Pit Phase 1. Assessment of thicknesses of CKD, perched water and ground gas regimes.
WS301 / TP301	10 / 3.5	Geotechnical information on the Made Ground needed for foundation design.	Located in Lover's Lane Pit. Assessment of types and thicknesses of Made Ground within this area.
WS302 / TP302	10 / 3.5	Geotechnical information on the Made Ground needed for foundation design.	Located in Lover's Lane Pit. Assessment of types and thicknesses of Made Ground within this area.

Investigation Location	Proposed Depth (m bgl)	Geotechnical Rationale	Geo-Environmental Rationale
BH501	10	Geotechnical information on the Chalk bedrock needed for foundation design.	Located in Crayland's Way. Assessment of type and thicknesses of Made Ground (spoil from HS1 tunnelling) situated over the Chalk and the Chalk aquifer.
BH502	10	Geotechnical information on the Chalk bedrock needed for foundation design.	Located in Crayland's Way. Assessment of type and thicknesses of Made Ground (spoil from HS1 tunnelling) situated over the Chalk and the Chalk aquifer.
BH703	10	Located near to proposed access road, geotechnical information on the superficial deposits and Chalk bedrock needed for earthwork design.	General information on soil, groundwater and ground gas regime within this zone.
BH704	10	Located near to proposed access road, geotechnical information on the superficial deposits and Chalk bedrock needed for earthwork design.	General information on soil, groundwater and ground gas regime within this zone.
BH705	10	Located near to proposed access road, geotechnical information on the superficial deposits and Chalk bedrock needed for earthwork design.	General information on soil, groundwater and ground gas regime within this zone.
BH706	10	Located near to proposed access road, geotechnical information on the superficial deposits and Chalk bedrock needed for earthwork design.	General information on soil, groundwater and ground gas regime within this zone.
BH707	10	Located near to proposed access road, geotechnical information on the superficial deposits and Chalk bedrock needed for earthwork design.	General information on soil, groundwater and ground gas regime within this zone.
BH708	10	Located near to proposed access road, geotechnical information on the superficial deposits and Chalk bedrock needed for earthwork design.	General information on soil, groundwater and ground gas regime within this zone.
TP701	3.5	Located near to proposed access road, geotechnical information on the superficial deposits and Chalk bedrock needed for earthwork design.	General information on soil, groundwater and ground gas regime within this zone.
TP702	3.5	Located near to proposed access road, geotechnical information on the superficial deposits and Chalk bedrock needed for earthwork design.	General information on soil, groundwater and ground gas regime within this zone.

Appendix C. Groundwater Contour Plans



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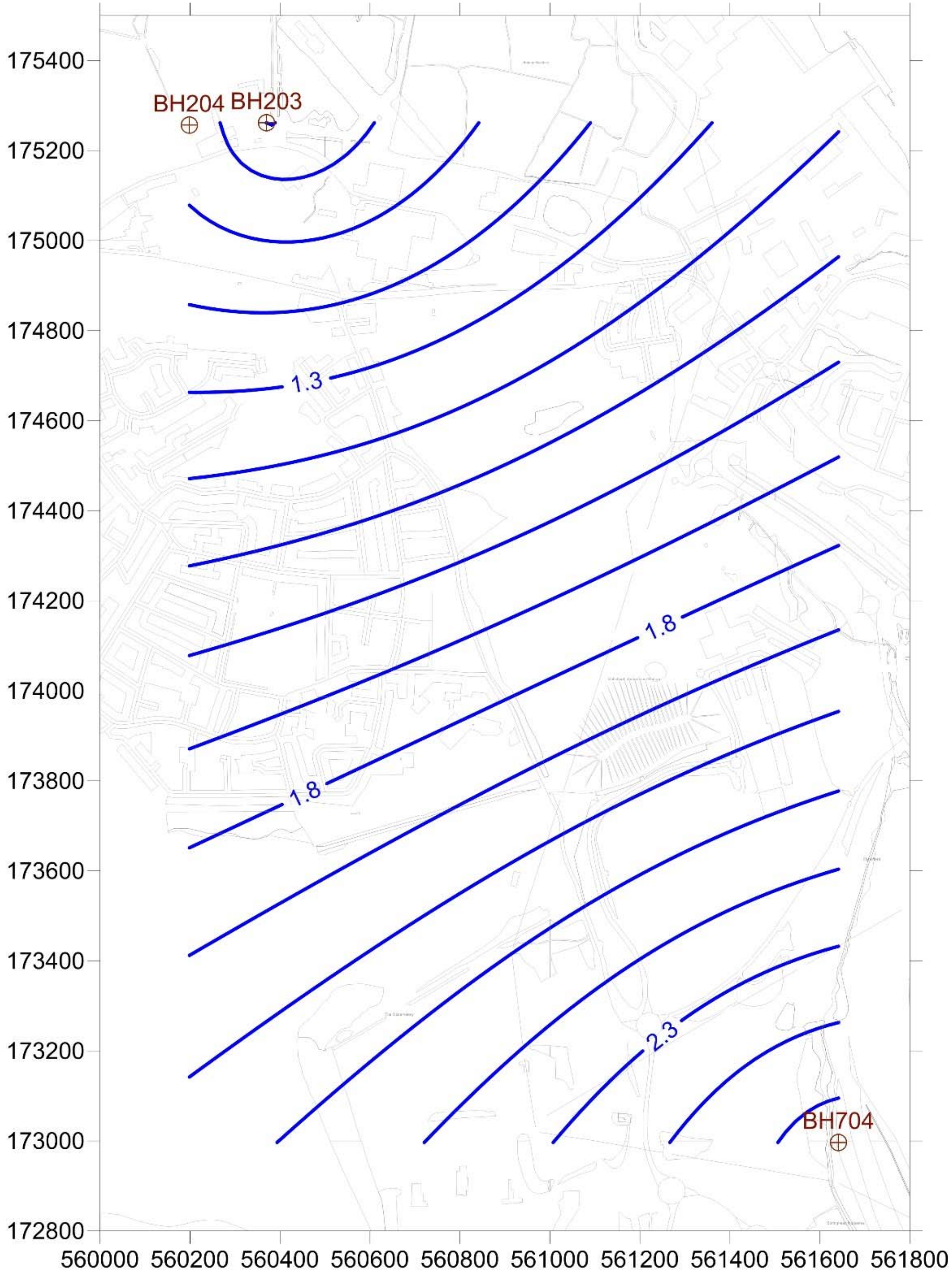
LONDON PARAMOUNT ENTERTAINMENT RESORT

Title
GROUNDWATER CONTOUR PLAN (CHALK BOREHOLES)

Original Scale NTS	Drawn DM	Checked	Authorised JS	A4
	Date 21/10/15	Date	Date	

Drawing Number 5134008-CONTOUR-01
Rev A

Drawing Number 5134008-CONTOUR-01 Rev. A



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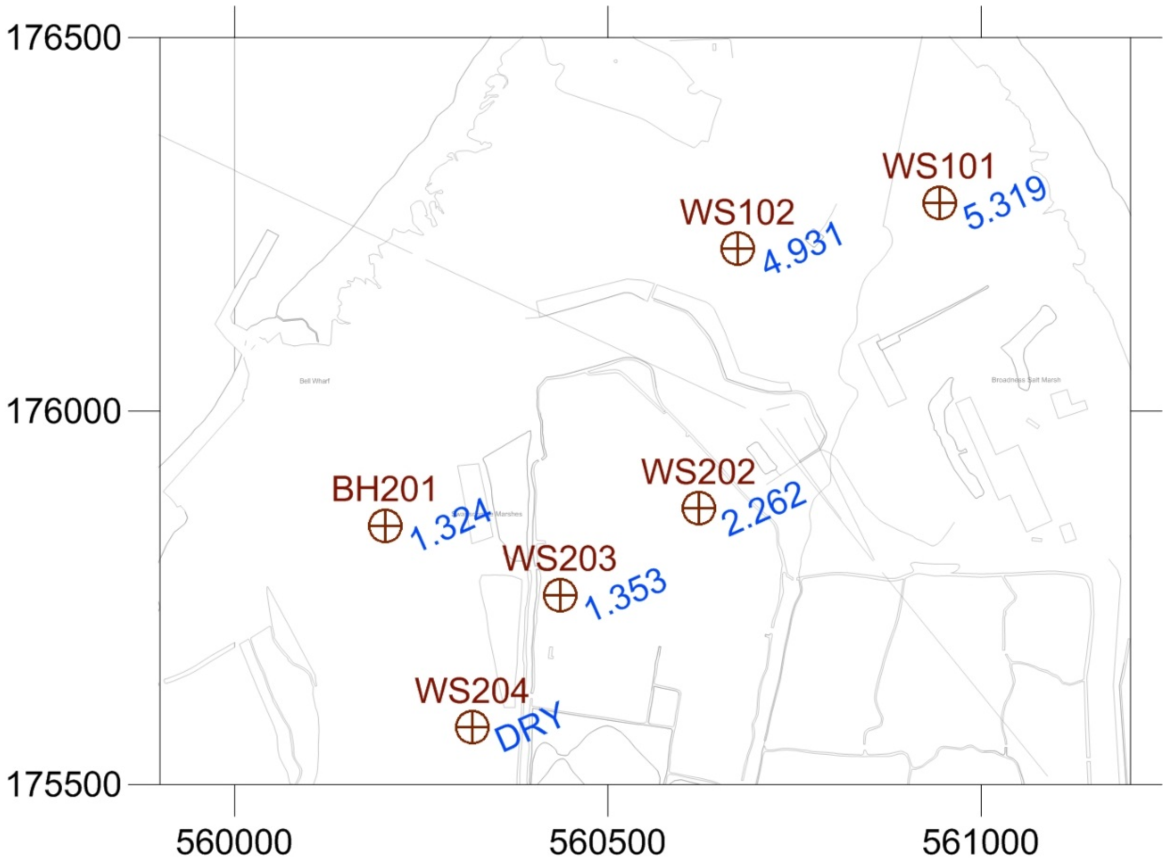
Title
GROUNDWATER CONTOUR PLAN
(RIVER TERRACE BOREHOLES)

Original Scale NTS	Drawn DM	Checked	Authorised JS	A4
	Date 21/10/15	Date	Date	

Drawing Number
5134008-CONTOUR-02
Rev
A

Drawing Number
5134008-CONTOUR-02
Rev.
A



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Drawing Number 5134008-CONTOUR-03 Rev. A

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Title
GROUNDWATER LEVELS (PERCHED WATER BOREHOLES)

Original Scale	Drawn	Checked	Authorised	
NTS	DM		JS	A4
	Date 21/10/15	Date	Date	

Drawing Number 5134008-CONTOUR-03
Rev A

Appendix D. SSVs/WSVs

Author	Atkins
Revision	4
Date	08/01/2015

Title **SSVs derived using CLEA for 1% SOM and sand soil type, Commercial land use**

Compound	SSV mg/kg	Notes
1,1,1-Trichloroethane	325	
1,1,1,2-Tetrachloroethane	52.4	
1,1,2,2-Tetrachloroethane	131	
1,1,2-Trichloroethane	42.5	
1,1-Dichloroethane	122	
1,1-Dichloroethene	12.6	
1,2-Dichloroethane	0.294	
1,2,4-Trimethylbenzene	175	
1,2-Dichloropropane	1.43	
2,4-Dichloro-o-cresol	55000	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 861 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
2,4-Dimethylphenol	35600	The dermal approach published by EIC has been followed. In the phenol SGV report, additional consideration was given to localised dermal effects. This may be applicable to phenol derivatives but has not been considered. The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 1330 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
2,4-Dinitrotoluene	3740	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 132 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
2,6-bis(1,1-dimethyl)-4-(1-methylpropyl)-phenol	2170	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 18.7 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
2,6-Dinitrotoluene	1850	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 271 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
2-Chloronaphthalene	60200	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 113 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
2-Methylphenol	187000	The dermal approach published by EIC has been followed. In the phenol SGV report, additional consideration was given to localised dermal effects. This may be applicable to phenol derivatives but has not been considered. Users must consider total exposure from all methylphenol isomers and not consider them in isolation. In line with the approach published by EIC when assessing total cresols, the lowest SSV of each methylphenol isomer may be chosen to compare to the total methylphenol concentration. The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 14200 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
3-Methylphenol	187000	The dermal approach published by EIC has been followed. In the phenol SGV report, additional consideration was given to localised dermal effects. This may be applicable to phenol derivatives but has not been considered. Users must consider total exposure from all methylphenol isomers and not consider them in isolation. In line with the approach published by EIC when assessing total cresols, the lowest SSV of each methylphenol isomer may be chosen to compare to the total methylphenol concentration. The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 25300 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.

Author Atkins
Revision 4
Date 08/01/2015

Title **SSVs derived using CLEA for 1% SOM and sand soil type, Commercial land use**

Compound	SSV mg/kg	Notes
4-Methylphenol	185000	The dermal approach published by EIC has been followed. In the phenol SGV report, additional consideration was given to localised dermal effects. This may be applicable to phenol derivatives but has not been considered. Users must consider total exposure from all methylphenol isomers and not consider them in isolation. In line with the approach published by EIC when assessing total cresols, the lowest SSV of each methylphenol isomer may be chosen to compare to the total methylphenol concentration. The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 25800 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Acenaphthene	109000	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 157 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Anthracene	536000	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 3.48 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Antimony	4830	
Arsenic	640	Value presented is the Environment Agency Arsenic SGV published in May 2009. The commercial assessment criterion will not change with soil type or SOM. The SGV is the lower of the oral or inhalation assessment criteria.
Barium	22100	
Benzene	13.1	Based on information within the Environment Agency Benzene SGV report published in March 2009.
Benzo(a)anthracene	131	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 1.71 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Benzo(a)pyrene	14.3	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 0.911 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Benzo(b)fluoranthene	142	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 1.22 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Benzo(g,h,i)perylene	1440	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 0.0187 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Benzo(k)fluoranthene	1430	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 0.686 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Beryllium	1010	
Biphenyl	71900	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 34.1 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Bis (2-ethylhexyl) phthalate	85200	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 8.66 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value. In line with the EIC report section 3.7, where the toxicity effects are the same, the potential additivity of phthalates should be considered by assessors when using the SSV for these substances. Guidance on additivity is provided in the Environment Agency for England and Wales SR2 document.
Bromobenzene	44.7	
Bromodichloromethane	0.907	

Author	Atkins
Revision	4
Date	08/01/2015

Title **SSVs derived using CLEA for 1% SOM and sand soil type, Commercial land use**

Compound	SSV mg/kg	Notes
Bromoform	347	
Butyl benzyl phthalate	941000	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 26.1 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value. In line with the EIC report section 3.7, where the toxicity effects are the same, the potential additivity of phthalates should be considered by assessors when using the SSV for these substances. Guidance on additivity is provided in the Environment Agency for England and Wales SR2 document.
Cadmium	230	Value presented is the Environment Agency Cadmium SGV published in July 2009. The commercial assessment criterion will not change with soil type or SOM.
Carbon disulphide	11.6	
Carbon tetrachloride	1.44	
Chlorobenzene	533	
Chloroethane	463	
Chloroform / Trichloromethane	48.0	
Chloromethane	0.480	
Chromium III	213000	
Chromium VI		The SSV for chromium VI has been temporarily withdrawn following a recent appraisal of the toxicological basis for this value and is pending further review.
Chrysene	14000	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 0.44 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Cis-1,2-dichloroethene	6.37	
Copper	109000	
Cyanide	34.0	Based on acute exposure for a 0-6 year old child, using 5th percentile bodyweight from CLR10. Information is not available in SR3 and supporting documents regarding the 5th percentile bodyweight of SR3 bodyweight data. It is not considered likely that new data would significantly affect the SSV.
DDD	984	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 49.9 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Dibenz(a,h)anthracene	14.3	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 0.00393 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Dibromochloromethane	9.83	
Dichloromethane	116	
Diethyl phthalate	377000	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 12.8 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value. In line with the EIC report section 3.7, where the toxicity effects are the same, the potential additivity of phthalates should be considered by assessors when using the SSV for these substances. Guidance on additivity is provided in the Environment Agency for England and Wales SR2 document.
Di-n-butyl phthalate	15400	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 4.62 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value. In line with the approach published by the EIC, the lower of the oral and inhalation assessment criteria has been selected. In line with the EIC report section 3.7, where the toxicity effects are the same, the potential additivity of phthalates should be considered by assessors when using the SSV for these substances. Guidance on additivity is provided in the Environment Agency for England and Wales SR2 document.
Di-n-octyl phthalate	89100	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 32.6 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value. In line with the EIC report section 3.7, where the toxicity effects are the same, the potential additivity of phthalates should be considered by assessors when using the SSV for these substances. Guidance on additivity is provided in the Environment Agency for England and Wales SR2 document.

Author Atkins
Revision 4
Date 08/01/2015

Title **SSVs derived using CLEA for 1% SOM and sand soil type, Commercial land use**

Compound	SSV mg/kg	Notes
Dinoseb	7.53	
Ethylbenzene	180000	Based on information within the Environment Agency Ethylbenzene SGV report published in March 2009. The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 508 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Fluoranthene	72300	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 18.9 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Fluorene	66800	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 125 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Formaldehyde	463	
Hexachloroethane	510	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 8.13 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Indeno(1,2,3-c,d)pyrene	142	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 0.0614 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Iso-propylbenzene	180000	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 388 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Lead		The SSV for lead has been withdrawn following a recent appraisal of the toxicological basis for this value and the publication of the Category 4 Screening Levels (C4SLs) by DEFRA in March 2014.
Mercury (elemental)	4.30	Based on information in the Environment Agency Mercury SGV report published in March 2009. The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the lower of the aqueous and the vapour saturation based limit as calculations are based on inhalation exposure only.
Mercury (inorganic)	3600	Value presented is the Environment Agency inorganic mercury SGV published in March 2009. The commercial assessment criterion will not change with soil type or SOM.
Mercury (methyl)	414	Based on information in the Environment Agency Mercury SGV report published in March 2009. The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 66.4 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Methyl tert-butyl ether	3340	
Molybdenum	17700	
m-Xylene	276000	Based on information within the Environment Agency Xylene SGV report published in March 2009. Users must consider total exposure from all xylene isomers and not consider them in isolation. The lowest SSV of each xylene isomer may be chosen to compare to the total xylene concentration. The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 613 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Naphthalene	8180	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 75 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Nickel	1800	Value presented is the Environment Agency Nickel SGV published in May 2009. The commercial assessment criterion will not change with soil type or SOM. The oral and inhalation assessment criteria are derived independently and the SGV is the lower value of the two.
Nicotine	857	

Author	Atkins
Revision	4
Date	08/01/2015

Title **SSVs derived using CLEA for 1% SOM and sand soil type, Commercial land use**

Compound	SSV mg/kg	Notes
o-Xylene	296000	Based on information within the Environment Agency Xylene SGV report published in March 2009. Users must consider total exposure from all xylene isomers and not consider them in isolation. The lowest SSV of each xylene isomer may be chosen to compare to the total xylene concentration. The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 467 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Phenol	686	Based on information within the Environment Agency Phenol SGV report published in July 2009. The SSV presented assumes 1% soil organic matter and uses the linear media partitioning model within the CLEA software which estimates the corresponding soil water concentration for phenol to be 1% by weight. The value presented is based on a threshold protective of direct skin contact with phenol. A long term exposure value of 28900 mg/kg was derived by the CLEA v.1.04 model and is provided for illustration only. Derived by comparing oral exposure to the oral HCV, and dermal and inhalation exposure to the inhalation HCV.
Prochloraz	12500	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 0.116 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Propylbenzene	187000	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 399 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
p-Xylene	279000	Based on information within the Environment Agency Xylene SGV report published in March 2009. Users must consider total exposure from all xylene isomers and not consider them in isolation. The lowest SSV of each xylene isomer may be chosen to compare to the total xylene concentration. The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 564 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Pyrene	54200	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 2.20 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Selenium	13000	Value presented is the Environment Agency selenium SGV published in March 2009. The commercial assessment criterion will not change with soil type or SOM.
Styrene	22200	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 607 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Sum of PCDDs, PCDFs and dioxin-like PCBs	No SSV. Due to publication of the Dioxins, Furans and Dioxin-like PCB SGVs in September 2009, please see the Frequently Asked Questions for more information.	
Tetrachloroethene	75.8	
Toluene	414000	Based on information within the Environment Agency Toluene SGV report published in March 2009. The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 835 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
TPH aliphatic C10-C12	171000	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 49.9 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
TPH aliphatic C12-C16	171000	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 21.0 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
TPH aliphatic C16-C35	≤ 1 kg/kg	This fraction is not considered volatile and the inhalation of vapour pathways have not been considered (TPHCWG, 1997). Modelling indicates that a chronic long term risk would not be present at concentrations above this. However at >1 kg/kg free product would be anticipated and further assessment may be required (e.g. this value is unlikely to be protective of dermal contact). Please see the Frequently Asked Questions for more information on free product.

Author Atkins
Revision 4
Date 08/01/2015

Title **SSVs derived using CLEA for 1% SOM and sand soil type, Commercial land use**

PLEASE NOTE

Compound	SSV mg/kg	Notes
TPH aliphatic C5-C6	≤ 1 kg/kg	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Modelling indicates that a chronic long term risk would not be present at concentrations above this. However at >1 kg/kg free product would be anticipated and further assessment may be required (e.g. this value is unlikely to be protective of dermal contact). Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 327 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
TPH aliphatic C6-C8	≤ 1 kg/kg	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Modelling indicates that a chronic long term risk would not be present at concentrations above this. However at >1 kg/kg free product would be anticipated and further assessment may be required (e.g. this value is unlikely to be protective of dermal contact). Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 158 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
TPH aliphatic C8-C10	167000	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 82.5 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
TPH aromatic C10-C12	68300	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 370 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
TPH aromatic C12-C16	68400	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 155 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
TPH aromatic C16-C21	28400	This fraction is not considered volatile and the inhalation of vapour pathways have not been considered (TPHCWG, 1997).
TPH aromatic C21-C35	28400	This fraction is not considered volatile and the inhalation of vapour pathways have not been considered (TPHCWG, 1997).
TPH aromatic C5-C7	13.1	Benzene is the only consituent of this fraction (TPHCWG 1997). Based on information within the Environment Agency Benzene SGV report published in March 2009.
TPH aromatic C7-C8	414000	Toluene is the only consituent of this fraction (TPHCWG 1997). Based on information in the Environment Agency Toluene SGV report published in March 2009. The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 835 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
TPH aromatic C8-C10	58600	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the assessment criterion calculated using the approach outlined within SR4, assuming that free product is not present. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 614 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Trans-1,2-dichloroethene	10.1	
Tributyl tin oxide	123	The lower of the aqueous or vapour based saturation limits has been exceeded in the calculation. The SSV presented is the combined assessment criterion calculated by the CLEA software, assuming that free phase product is not present. The inhalation of vapour pathway contributes less than 10% of total exposure which is unlikely to significantly affect the SSV. Users may wish to consider the fact that the lower of the aqueous or vapour based saturation limits is 40.9 mg/kg and should confirm that free phase product is not observed where measured concentrations exceed this value.
Trichloroethene		The SSV for trichloroethene has been temporarily withdrawn following a recent re-evaluation of the toxicological basis for this value and is pending further review.
Trichloromethylbenzene	0.0266	
Vanadium	7530	
Vinyl chloride	0.0329	
Zinc	≤1 kg/kg	

Note:
All values provided are rounded to 3 significant figures.
It is noted for some compounds that the SSV is sufficiently high that free product is likely to be encountered. Please see the Frequently Asked Questions for more advice.
In some instances the risk based value may be lower than the laboratory detection limit. Please see the Frequently Asked Questions for more advice.

Author Atkins
Revision 1
Date 31/03/2011

Title **WSVs derived using CLEA for a Commercial land use**

PLEASE NOTE

Name	Commercial WSV (mg/L)		Notes
1,1,2 Trichloroethane	208	d	
1,1 Dichloroethane	1110	c	
1,1 Dichloroethene	65.6	d	
1,2,4 Trimethylbenzene	9.83	d	
1,2 Dichloropropane	11.1	b	
2,4 Dimethylphenol	30900	a	
2,4 Dinitrotoluene	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
2,6 Dinitrotoluene	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
2 Chloronaphthalene	62.7	a	
Total Methylphenols	1620000	a	The value presented is the lowest risk based number for the three methylphenol isomers. Users must consider total exposure from all methylphenol isomers and not consider them in isolation. In line with the approach published by EIC when assessing total cresols, the lowest WSV of each methylphenol isomer may be chosen to compare to the total methylphenol concentration.
Biphenyl	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
Bis (2 ethylhexyl) phthalate	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate. In line with the EIC report section 3.7, where the toxicity effects are the same, the potential additivity of phthalates should be considered by assessors when using the WSV for these substances. Guidance on additivity is provided in the Environment Agency for England and Wales SR2 document.
Bromobenzene	87.7	c	
Bromodichloromethane	6.82	b	
Bromoform	1770	c	
Butyl benzyl phthalate	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate. In line with the EIC report section 3.7, where the toxicity effects are the same, the potential additivity of phthalates should be considered by assessors when using the WSV for these substances. Guidance on additivity is provided in the Environment Agency for England and Wales SR2 document.
Chloroethane	4180	c	
Chloromethane	5.50	b	
Cis 1,2 Dichloroethene	54.6	b	
Dichloromethane	1500	d	
Diethyl Phthalate	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate. In line with the EIC report section 3.7, where the toxicity effects are the same, the potential additivity of phthalates should be considered by assessors when using the WSV for these substances. Guidance on additivity is provided in the Environment Agency for England and Wales SR2 document.
Di n butyl phthalate	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate. In line with the EIC report section 3.7, where the toxicity effects are the same, the potential additivity of phthalates should be considered by assessors when using the WSV for these substances. Guidance on additivity is provided in the Environment Agency for England and Wales SR2 document.
Di n octyl phthalate	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate. In line with the EIC report section 3.7, where the toxicity effects are the same, the potential additivity of phthalates should be considered by assessors when using the WSV for these substances. Guidance on additivity is provided in the Environment Agency for England and Wales SR2 document.
Hexachloroethane	>50	f	The saturation limit has been exceeded in the calculation. The WSV presented is the aqueous solubility limit.
Iso propylbenzene	389	a	
Methyl tert butyl ether	33800	c	
Propylbenzene	1100	a	
Styrene	3530	a	
Trans 1,2 Dichloroethene	65.7	b	
Tributyl tin oxide	54.5	a	
Acenaphthene	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
Anthracene	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
Benzo(a)anthracene	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
Benzo(a)pyrene	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
Benzo(b)fluoranthene	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
Benzo(g,h,i)perylene	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
Benzo(k)fluoranthene	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.

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Date	31/03/2011

Title **WSVs derived using CLEA for a Commercial land use**

PLEASE NOTE

Name	Commercial WSV (mg/L)		Notes
Chrysene	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
Dibenz(ah)anthracene	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
Fluoranthene	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
Fluorene	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
Indeno(1,2,3 cd)pyrene	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
Pyrene	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
Benzene	8.46	b	
Toluene	9090	a	
Ethylbenzene	1250	a	
o xylene	503	a	Based on information in the Environment Agency Xylene SGV report published in March 2009. Users must consider exposure from all xylene isomers and not consider them in isolation. The lowest xylene WSV could be chosen to compare to the sum of xylene concentrations.
m xylene	413	a	Based on information in the Environment Agency Xylene SGV report published in March 2009. Users must consider exposure from all xylene isomers and not consider them in isolation. The lowest xylene WSV could be chosen to compare to the sum of xylene concentrations.
p xylene	432	a	Based on information in the Environment Agency Xylene SGV report published in March 2009. Users must consider exposure from all xylene isomers and not consider them in isolation. The lowest xylene WSV could be chosen to compare to the sum of xylene concentrations.
Phenol	269000	a	
Mercury (methyl)	5660	a	
Mercury (elemental)	0.428	a	
TPH aromatic C5-C7	8.46	b	Benzene is the only constituent of this fraction (TPHCWG 1997). Based on information within the Environment Agency Benzene SGV report published in March 2009
TPH aromatic C7-C8	9090	a	Toluene is the only constituent of this fraction (TPHCWG 1997). Based on information within the Environment Agency Toluene SGV report published in March 2009.
TPH aromatic C8-C10	96.5	a	
TPH aromatic C10-C12	380	a	
TPH aromatic C12-C16	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
TPH aliphatic C5-C6	198	a	
TPH aliphatic C6-C8	144	a	
TPH aliphatic C8-C10	2.90	a	
TPH aliphatic C10-C12	2.23	a	
TPH aliphatic C12-C16	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
1,2 dichloroethane	3.54	b	
1,1,1 Trichloroethane	1270	c	
1,1,1,2 Tetrachloroethane	96.7	d	
1,1,2,2 Tetrachloroethane	650	c	
Carbon tetrachloride	3.31	b	
Chlorobenzene (mono)	1300	a	
Tetrachloroethene	174	c	
[redacted]	[redacted]	[redacted]	
Vinyl chloride	0.249	b	
Naphthalene	99.8	a	
Chloroform/Trichloromethane	369	d	
Dinoseb	>52	f	The saturation limit has been exceeded in the calculation. The WSV presented is the aqueous solubility limit.
Trichloromethylbenzene	0.0609	b	
Nicotine	58900	b	
Formaldehyde	2360	b	
Prochloraz	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
2,6-bis(1,1-dimethyl)-4-(1-meth	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
2,4-Dichloro-o-cresol	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.
Dibromochloromethane	38.7	b	
DDD	No WSV	e	The saturation limit has been exceeded in the calculation. At the aqueous solubility limit the hazard quotient for both indoor and outdoor pathways was less than 0.01 and therefore no risk based number is considered appropriate.

Notes:

a	Where both indoor and outdoor values derived by RBCA were greater than the saturation limit, the hazard quotient for the indoor pathway was considered. If the hazard quotient was greater than 0.01, the hazard quotients were used to calculate a risk based value (not limited by the saturation limit). The calculated indoor and calculated outdoor values have been integrated in line with SNIFFER (2003).
b	Where indoor and outdoor values were presented by RBCA, these have been integrated in line with SNIFFER (2003).
c	Where indoor values were presented by RBCA, and the outdoor values were greater than the saturation limit, the hazard quotient for the outdoor pathway was considered. If the hazard quotient for the outdoor pathway was less than 0.1, the indoor values have been presented as the WSV.

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Title **WSVs derived using CLEA for a Commercial land use**

Name	Commercial WSV (mg/L)	Notes
d	Where indoor values were presented by RBCA, and the outdoor values were greater than the saturation limit, the hazard quotient for the outdoor pathway was considered. If the hazard quotient for the outdoor pathway was greater than 0.1 but less than 1, the hazard quotient was used to calculate a risk based value (not limited by the saturation limit). The indoor and calculated outdoor values were integrated in line with SNIFFER (2003).	
e	Where the indoor and outdoor values derived by RBCA were greater than the saturation limit, the hazard quotient for the indoor pathway was considered. The hazard quotient was less than 0.01 and no risk based number is considered appropriate. In this case 'no WSV' is presented.	
f	Due to the limitations in the RBCA software, a hazard quotient could not be calculated for the inhalation of indoor air. The WSV presented is the aqueous solubility limit. Further assessment is recommended should the aqueous solubility limit be exceeded.	

Only inhalation exposure pathways are considered as presented within the input parameters.
The potential presence of free product should be assessed to ensure no further risk assessment is required.
TPH >C16 are not considered to be volatile according to TPHCWG. Consequently no WSV have been derived.
All values provided are rounded to 3 significant figures.
In some instances the risk based value may be lower than the laboratory detection limit or the drinking water standard. Please see the Frequently Asked Questions for more advice.

Appendix E. Screening Spreadsheets

E.1. Historical Groundwater/Perched Water Screening

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Standard for the Protection of Fisheries
UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) I
WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Drinking Water Screening Value (DWS)	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances		
Sample Reference									GW11	GW11
Zone									2	2
Groundwater Body									RTDs	RTDs
Date Sampled									26/01/2006	27/02/2006
Analytical Parameter (Water Analysis)										
Inorganics										
Barium	mg/l		0.7	No EQS	29	0.16	0.2	0	0.18	0.2
Beryllium	mg/l		No DWS	No EQS	1	0	0	0		
Boron	mg/l		1	7	29	1	1.5	28	1.2	1.4
Cadmium	mg/l		0.005	0.0002	29	0.0005	0.011	20	0.001	0.001
Calcium	mg/l		No DWS	No EQS	56	146	930	0	266	759
Chromium	mg/l		0.05	0.015	52	0.0009	0.013	0	0.005	0.005
Chromium (hexavalent)	mg/l		No DWS	0.0006	58	0.03	0.04	12	*<0.03*	*<0.03*
Cobalt	mg/l		No DWS	0.003	1	0	0	0		
Copper	mg/l		2	0.005	29	0.005	0.02	7	*<0.005*	0.015
Iron	mg/l		0.2	1	1	3.03	3.03	1		
Lead	mg/l		0.01	0.0072	29	0.005	0.045	13	0.009	0.031
Magnesium	mg/l		No DWS	No EQS	42	220	374	0	320	350
Manganese	mg/l		0.05	No EQS	31	0.629	1.38	31	0.71	1.33
Mercury	mg/l		0.001	0.00005	29	0.0001	0.0002	12	*<0.0001*	0.0001
Molybdenum	mg/l		0.07	No EQS	29	0.005	0.012	0	*<0.005*	0.007
Nickel	mg/l		0.02	0.02	29	0.005	0.11	3	*<0.005*	0.02
Potassium	mg/l		No DWS	No EQS	54	85.1	161	0	129	140
Silver	mg/l		No DWS	0.0005	1	0	0	0		
Sodium	mg/l		200	No EQS	49	1740	3890	49	3230	3230
Zinc	mg/l		No DWS	0.04	1	0	0	0		
pH	pH Units		6.5 - 9.5	6.0-9.0	71	6.8	8.4	0	7.2	7.6
Electrical Conductivity	µS/cm		2500	No EQS	71	9630	103000	71	12900	15300
Ammoniacal Nitrogen as N	mg/l		0.39	0.78	71	4.7	20.9	71	10.4	10.1
Ammonia as N	mg/l		No DWS	0.021	2	0	0	0		
Chloride	mg/l		250	250	71	1940	6430	71	5320	5430
Nitrite as N	mg/l		-	No EQS	65	0.008	4.1	0	*<0.1*	*<0.1*
Nitrite as NO2	mg/l		0.5	No EQS	65	0.026275	13.466163	18		
Nitrate as N	mg/l		-	No EQS	65	0.3	2.2	0	*<0.3*	*<0.3*
Nitrate as NO3	mg/l		50	No EQS	65	1.32804	9.73896	0		
Sulphate as SO4	mg/l		250	400	71	378	653	71	548	566
Chemical Oxygen Demand (Total)	mg/l		No DWS	No EQS	46	20	681	0	293	287
Fluoride as F	mg/l		1.5	5	65	0.1	1.1	0	0.21	0.43
Antimony	mg/l		0.005	No EQS	54	0.001	0.002	0	*<0.001*	*<0.001*
Selenium	mg/l		0.01	No EQS	69	0.001	0.622	44	*<0.001*	0.004
Arsenic	mg/l		0.01	0.025	46	0.001	0.107	20	0.002	0.003
Organics										
1,1,1-Trichloroethane	µg/l		No DWS	100	3	0	0	0		
1,1,2-Trichloroethane	µg/l		No DWS	300	3	0	0	0		
1,2-Dichlorobenzene	µg/l		No DWS	No EQS	3	0	0	0		
1,2,4-Trichlorobenzene	ng/l		No DWS	No EQS	3	0	0	0		
1,2-Dichloroethane	µg/l		3	10	3	0	0	0		
1,3-Dichlorobenzene	µg/l		No DWS	No EQS	3	0	0	0		
1,4-Dichlorobenzene	µg/l		No DWS	No EQS	3	0	0	0		
1,2,3-Trichlorobenzene	ng/l		No DWS	No EQS	3	0	0	0		
2,4-D	µg/l		30	0.3	3	0	0	0		
2,4,5-Trichlorophenol	µg/l		No DWS	No EQS	3	0	0	0		
2,4,6-Trichlorophenol	µg/l		200	No EQS	3	0	0	0		
2,4-Dichlorophenol	µg/l		No DWS	20	3	0	0	0		
2,4-Dimethylphenol	µg/l		No DWS	No EQS	3	0	0	0		
2,4-Dinitrotoluene	µg/l		No DWS	No EQS	3	0	0	0		
2,6-Dinitrotoluene	µg/l		No DWS	No EQS	3	0	0	0		
2-Chloronaphthalene	µg/l		No DWS	No EQS	3	0	0	0		
2-Chlorophenol	µg/l		No DWS	50	3	0	0	0		
2-Methylnaphthalene	µg/l		No DWS	No EQS	3	0	0	0		
2-Methylphenol	µg/l		No DWS	100	3	0	0	0		
2-Nitrophenol	µg/l		No DWS	No EQS	3	0	0	0		
4-Bromophenyl-phenylether	µg/l		No DWS	No EQS	3	0	0	0		
4-Chloro-3-methylphenol	µg/l		No DWS	40	3	0	0	0		

Values in italics are method detection limits	UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
Leachate	UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
Exceedance of both DWS and EQS	UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
Exceedance of EQS	UK Standard for the Protection of Fisheries
Exceedance of DWS	UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) I
	WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Drinking Water Screening Value (DWS)	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances		
Sample Reference									GW11	GW11
Zone									2	2
Groundwater Body									RTDs	RTDs
Date Sampled									26/01/2006	27/02/2006
Analytical Parameter (Water Analysis)										
4-Chlorophenyl-phenylether	µg/l		No DWS	No EQS	3	0	0	0		
4-Methylphenol	µg/l		No DWS	100	2	0	0	0		
Acenaphthene	µg/l		No DWS	1.2	2	0	0	0		
Acenaphthylene	µg/l		No DWS	1.2	3	0	0	0		
Aldrin	ng/l		30	5	3	0	0	0		
Anthracene	µg/l		No DWS	0.1	3	0	0	0		
Atrazine	µg/l		2	0.6	3	0	0	0		
Azinphos-methyl	µg/l		No DWS	0.01	3	0	0	0		
Benzene	µg/l		1	8	3	0	0	0		
Benzo[a]anthracene	µg/l		No DWS	1.2	3	0	0	0		
Benzo[a]pyrene	µg/l		0.01	0.05	3	0	0	0		
Benzo[b]fluoranthene	µg/l		No DWS	No EQS	3	0	0	0		
Benzo[g,h,i]perylene	µg/l		No DWS	No EQS	3	0	0	0		
Benzo[k]fluoranthene	µg/l		No DWS	No EQS	3	0	0	0		
bis(2-Chloroethoxy)methane	µg/l		No DWS	No EQS	3	0	0	0		
bis(2-Chloroethyl)ether	µg/l		No DWS	No EQS	3	0	0	0		
bis(2-Chloroisopropyl)ether	µg/l		No DWS	No EQS	3	0	0	0		
bis(2-ethylhexyl)phthalate	µg/l		8	1.3	3	0	0	0		
Butylbenzylphthalate	µg/l		No DWS	20	3	0	0	0		
Tetrachloromethane	µg/l		3	12	3	0	0	0		
Chlorfenvinphos	µg/l		No DWS	0.1	3	0	0	0		
Trichloromethane	µg/l		No DWS	2.5	3	0	0	0		
Chrysene	µg/l		No DWS	1.2	3	0	0	0		
Cis-permethrin	µg/l		No DWS	0.01	3	0	0	0		
Demeton-s-methyl	µg/l		No DWS	0.5	2	0	0	0		
Diazinon	µg/l		No DWS	0.01	3	0	0	0		
Dibenzo[a,h]anthracene	µg/l		No DWS	1.2	3	0	0	0		
Dibenzofuran	µg/l		No DWS	No EQS	3	0	0	0		
Dieldrin	ng/l		30	5	3	0	0	0		
Diethylphthalate	µg/l		No DWS	200	3	0	0	0		
Dimethote	µg/l		6	0.48	3	0	0	0		
Dimethylphthalate	µg/l		No DWS	800	3	0	0	0		
Dibutyl phthalate	µg/l		No DWS	8	3	0	0	0		
Dioctyl phthalate	µg/l		No DWS	20	3	0	0	0		
Endosulphan alpha	ng/l		No DWS	0.5	3	0	0	0		
Endosulphan beta	ng/l		No DWS	0.5	3	0	0	0		
Endrin	ng/l		600	5	3	0	0	0		
Fenitrothion	µg/l		No DWS	0.01	3	0	0	0		
Fluoranthene	µg/l		No DWS	0.1	3	0	0	0		
Fluorene	µg/l		No DWS	1.2	3	0	0	0		
Hexachlorobenzene	ng/l		No DWS	0.01	3	0	0	0		
Hexachlorobutadiene	ng/l		No DWS	0.1	3	0	0	0		
Hexachloroethane	µg/l		No DWS	No EQS	3	0	0	0		
Indeno[1,2,3-cd]pyrene	µg/l		No DWS	No EQS	3	0	0	0		
Isodrin	ng/l		No DWS	5	2	0	0	0		
Isophorone	µg/l		No DWS	No EQS	3	0	0	0		
m and p-Xylene	µg/l		No DWS	No EQS	3	0.12	0.21	0		
Malathion	µg/l		No DWS	0.02	3	0	0	0		
Mecoprop	µg/l		10	18	3	0	0	0		
Naphthalene	µg/l		No DWS	1.2	3	0	0	0		
Nitrobenzene	µg/l		No DWS	No EQS	3	0	0	0		
o,p-DDT	ng/l		1000	25	3	0	0	0		
o-Xylene	µg/l		No DWS	No EQS	3	0	0	0		
p,p-DDT	ng/l		No DWS	10	3	0	0	0		
Pentachlorophenol	µg/l		9	0.4	3	0	0	0		
Phenanthrene	µg/l		No DWS	1.2	3	0	0	0		
Phenol	µg/l		No DWS	7.7	3	0	0	0		
Pyrene	µg/l		No DWS	1.2	3	0	0	0		
Simazine	µg/l		2	1	3	0	0	0		
Tetrachloroethene	µg/l		10	10	3	0	0	0		
Tin	mg/l		No DWS	0.01	1	0	0	0		

Values in italics are method detection limits	UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
Leachate	UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
Exceedance of both DWS and EQS	UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
Exceedance of EQS	UK Standard for the Protection of Fisheries
Exceedance of DWS	UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) I
	WHO Drinking Water Guideline

Lab Sample Number	**Units**	**Limit of detection**	**Drinking Water Screening Value (DWS)**	**Surface Water Screening Value (EQS)**	**No Samples**	**Minimum Value**	**Maximum Value**	**No. Exceedances**		
Sample Reference									GW11	GW11
Zone									2	2
Groundwater Body									RTDs	RTDs
Date Sampled									26/01/2006	27/02/2006
Analytical Parameter (Water Analysis)										
Toluene	µg/l		No DWS	40	3	0.17	0.25	0		
Permethrin	µg/l		300	0.01	2	0	0	0		
Sum of xylenes	µg/l		No DWS	30	3	0.21	0.21	0		
Tributyltin	µg/l		No DWS	0.002	3	0	0	0		
Trichloroethene	µg/l		10	10	3	0	0	0		
Trifluralin	ng/l		20000	30	3	0	0	0		
Triphenyltin	µg/l		No DWS	0.008	3	0	0	0		
Uranium	mg/l		0.015	No EQS	1	0	0	0		
Vanadium	mg/l		No DWS	0.1	1	0	0	0		
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l		No DWS	0.03	3	0	0	0		
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l		No DWS	0.002	3	0	0	0		

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Regulations)

Lab Sample Number	Units					
Sample Reference		GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		23/03/2006	20/04/2006	18/05/2006	22/06/2006	20/07/2006
Analytical Parameter (Water Analysis)						
Inorganics						
Barium	mg/l	0.18	0.19	0.18	0.17	0.16
Beryllium	mg/l					
Boron	mg/l	1.5	1.3	1.3	1.4	1.1
Cadmium	mg/l	0.0005	0.001	0.0005	0.001	*<0.0005*
Calcium	mg/l	307	281	306	285	313
Chromium	mg/l	0.005	0.005	0.005	0.005	0.005
Chromium (hexavalent)	mg/l	0.03	0.03	0.03		
Cobalt	mg/l					
Copper	mg/l	0.005	0.005	0.005	*<0.005*	*<0.005*
Iron	mg/l					
Lead	mg/l	0.005	0.011	0.005	*<0.005*	*<0.005*
Magnesium	mg/l	358	342	362	357	346
Manganese	mg/l	0.78	0.72	0.75	0.72	0.7
Mercury	mg/l	0.0001	0.0001	0.0001	*<0.0001*	*<0.0001*
Molybdenum	mg/l	0.005	0.005	0.005	0.012	*<0.005*
Nickel	mg/l	0.005	0.005	0.005	*<0.005*	0.005
Potassium	mg/l	154	117	141	146	147
Silver	mg/l					
Sodium	mg/l	3160	3270	3260	3350	3140
Zinc	mg/l					
pH	pH Units	7	7.1	8.1	7.1	7
Electrical Conductivity	µS/cm	16300	15600	16500	14800	13400
Ammoniacal Nitrogen as N	mg/l	7.4	9.5	9.9	5.7	8.4
Ammonia as N	mg/l					0
Chloride	mg/l	5170	4860	6270	5860	5900
Nitrite as N	mg/l	2	0.1	0.1	3.2	1.6
Nitrite as NO2	mg/l	6.56886	0.328443	0.328443	10.510176	5.255088
Nitrate as N	mg/l	0.5	1.1	0.3	1.8	1.2
Nitrate as NO3	mg/l	2.2134	4.86948	1.32804	7.96824	5.31216
Sulphate as SO4	mg/l	498	485	526	519	503
Chemical Oxygen Demand (Total)	mg/l	275	20	444	494	400
Fluoride as F	mg/l	0.24	0.27	0.19	0.2	0.23
Antimony	mg/l	0.001	0.001	0.001	*<0.001*	*<0.001*
Selenium	mg/l	0.003	0.001	0.002	0.091	0.002
Arsenic	mg/l	0.001	0.002	0.001	*<0.001*	0.002
Organics						
1,1,1-Trichloroethane	µg/l					
1,1,2-Trichloroethane	µg/l					
1,2-Dichlorobenzene	µg/l					
1,2,4-Trichlorobenzene	ng/l					
1,2-Dichloroethane	µg/l					
1,3-Dichlorobenzene	µg/l					
1,4-Dichlorobenzene	µg/l					
1,2,3-Trichlorobenzene	ng/l					
2,4-D	µg/l					
2,4,5-Trichlorophenol	µg/l					
2,4,6-Trichlorophenol	µg/l					
2,4-Dichlorophenol	µg/l					
2,4-Dimethylphenol	µg/l					
2,4-Dinitrotoluene	µg/l					
2,6-Dinitrotoluene	µg/l					
2-Chloronaphthalene	µg/l					
2-Chlorophenol	µg/l					
2-Methylnaphthalene	µg/l					
2-Methylphenol	µg/l					
2-Nitrophenol	µg/l					
4-Bromophenyl-phenylether	µg/l					
4-Chloro-3-methylphenol	µg/l					

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Regulations'

Lab Sample Number	Units					
Sample Reference		GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		23/03/2006	20/04/2006	18/05/2006	22/06/2006	20/07/2006
Analytical Parameter (Water Analysis)						
4-Chlorophenyl-phenylether	µg/l					
4-Methylphenol	µg/l					
Acenaphthene	µg/l					
Acenaphthylene	µg/l					
Aldrin	ng/l					
Anthracene	µg/l					
Atrazine	µg/l					
Azinphos-methyl	µg/l					
Benzene	µg/l					
Benzo[a]anthracene	µg/l					
Benzo[a]pyrene	µg/l					
Benzo[b]fluoranthene	µg/l					
Benzo[g,h,i]perylene	µg/l					
Benzo[k]fluoranthene	µg/l					
bis(2-Chloroethoxy)methane	µg/l					
bis(2-Chloroethyl)ether	µg/l					
bis(2-Chloroisopropyl)ether	µg/l					
bis(2-ethylhexyl)phthalate	µg/l					
Butylbenzylphthalate	µg/l					
Tetrachloromethane	µg/l					
Chlorfenvinphos	µg/l					
Trichloromethane	µg/l					
Chrysene	µg/l					
Cis-permethrin	µg/l					
Demeton-s-methyl	µg/l					
Diazinon	µg/l					
Dibenzo[a,h]anthracene	µg/l					
Dibenzofuran	µg/l					
Dieldrin	ng/l					
Diethylphthalate	µg/l					
Dimethote	µg/l					
Dimethylphthalate	µg/l					
Dibutyl phthalate	µg/l					
Dioctyl phthalate	µg/l					
Endosulphan alpha	ng/l					
Endosulphan beta	ng/l					
Endrin	ng/l					
Fenitrothion	µg/l					
Fluoranthene	µg/l					
Fluorene	µg/l					
Hexachlorobenzene	ng/l					
Hexachlorobutadiene	ng/l					
Hexachloroethane	µg/l					
Indeno[1,2,3-cd]pyrene	µg/l					
Isodrin	ng/l					
Isophorone	µg/l					
m and p-Xylene	µg/l					
Malathion	µg/l					
Mecoprop	µg/l					
Naphthalene	µg/l					
Nitrobenzene	µg/l					
o,p-DDT	ng/l					
o-Xylene	µg/l					
p,p-DDT	ng/l					
Pentachlorophenol	µg/l					
Phenanthrene	µg/l					
Phenol	µg/l					
Pyrene	µg/l					
Simazine	µg/l					
Tetrachloroethene	µg/l					
Tin	mg/l					

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Regulations'

Lab Sample Number	Units					
Sample Reference		GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		23/03/2006	20/04/2006	18/05/2006	22/06/2006	20/07/2006
Analytical Parameter (Water Analysis)						
Toluene	µg/l					
Permethrin	µg/l					
Sum of xylenes	µg/l					
Tributyltin	µg/l					
Trichloroethene	µg/l					
Trifluralin	ng/l					
Triphenyltin	µg/l					
Uranium	mg/l					
Vanadium	mg/l					
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l					
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l					

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		18/08/2006	28/09/2006	19/10/2006	09/11/2006	08/12/2006	11/01/2007	15/02/2007
Analytical Parameter (Water Analysis)								
Inorganics								
Barium	mg/l	0.17	0.18	0.17	0.19	0.2	0.17	0.18
Beryllium	mg/l							
Boron	mg/l	1.1	1.3	1	1.2	1.3	1.1	1.3
Cadmium	mg/l	*<0.0005*	0.0005	*<0.0005*	0.011	0.001	0.001	0.001
Calcium	mg/l	291	299	322	283	682	930	826
Chromium	mg/l	0.005	0.005	0.005	0.005	0.006	0.013	0.005
Chromium (hexavalent)	mg/l		0.03	*<0.03*		*<0.03*	0.03	0.03
Cobalt	mg/l							
Copper	mg/l	*<0.005*	0.005	*<0.005*	0.005	0.011	0.02	0.01
Iron	mg/l							
Lead	mg/l	*<0.005*	0.005	*<0.005*	0.045	0.011	0.021	0.008
Magnesium	mg/l	345	357	358	339	363	286	357
Manganese	mg/l	0.68	0.83	0.73	0.75	1.19	1.38	1.19
Mercury	mg/l	*<0.0001*	0.0002	*<0.0001*	*<0.0001*	*<0.0001*	0.0001	0.0001
Molybdenum	mg/l	*<0.005*	0.005	*<0.005*	*<0.005*	*<0.005*	0.005	0.005
Nickel	mg/l	*<0.005*	0.005	0.009	*<0.005*	0.042	0.11	0.018
Potassium	mg/l	143	157	148	153	131	122	136
Silver	mg/l							
Sodium	mg/l	3180	3180	3180	3670	3890	2440	3560
Zinc	mg/l							
pH	pH Units	7.5	7.2	7.1	7.1	6.8	7.6	7.6
Electrical Conductivity	µS/cm	15200	18000	16500	15800	15800	15100	15800
Ammoniacal Nitrogen as N	mg/l	9	9.9	9.2	11.5	20.9	9.3	9.8
Ammonia as N	mg/l	0						
Chloride	mg/l	6020	5920	5950	4580	6430	5850	5140
Nitrite as N	mg/l	0.7	0.1	*<0.1*	*<0.1*	*<0.1*	0.1	0.1
Nitrite as NO2	mg/l	2.299101	0.328443				0.328443	0.328443
Nitrate as N	mg/l	*<0.3*		0.6	*<0.3*	*<0.3*	0.3	0.5
Nitrate as NO3	mg/l			2.65608			1.32804	2.2134
Sulphate as SO4	mg/l	535	653	509	480	475	504	522
Chemical Oxygen Demand (Total)	mg/l	520	239	300	234	476	350	294
Fluoride as F	mg/l	0.23	0.16	0.21	0.2	0.33	0.49	0.29
Antimony	mg/l	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	0.001	0.001
Selenium	mg/l	0.068	0.056	0.12	0.14	0.048	0.049	0.111
Arsenic	mg/l	0.003	*<0.001*	0.003	*<0.001*	0.006	0.02	0.027
Organics								
1,1,1-Trichloroethane	µg/l		*<0.10*					
1,1,2-Trichloroethane	µg/l		*<0.10*					
1,2-Dichlorobenzene	µg/l		*<1.0*					
1,2,4-Trichlorobenzene	ng/l		*<5*					
1,2-Dichloroethane	µg/l		*<0.10*					
1,3-Dichlorobenzene	µg/l		*<1.0*					
1,4-Dichlorobenzene	µg/l		*<1.0*					
1,2,3-Trichlorobenzene	ng/l		*<5*					
2,4-D	µg/l		*<0.05*					
2,4,5-Trichlorophenol	µg/l		*<1.0*					
2,4,6-Trichlorophenol	µg/l		*<1.0*					
2,4-Dichlorophenol	µg/l		*<1.0*					
2,4-Dimethylphenol	µg/l		*<2.0*					
2,4-Dinitrotoluene	µg/l		*<1.0*					
2,6-Dinitrotoluene	µg/l		*<1.0*					
2-Chloronaphthalene	µg/l		*<1.0*					
2-Chlorophenol	µg/l		*<1.0*					
2-Methylnaphthalene	µg/l		*<1.0*					
2-Methylphenol	µg/l		*<1.0*					
2-Nitrophenol	µg/l		*<1.0*					
4-Bromophenyl-phenylether	µg/l		*<1.0*					
4-Chloro-3-methylphenol	µg/l		*<1.0*					

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		18/08/2006	28/09/2006	19/10/2006	09/11/2006	08/12/2006	11/01/2007	15/02/2007
Analytical Parameter (Water Analysis)								
4-Chlorophenyl-phenylether	µg/l		*<1.0*					
4-Methylphenol	µg/l		*<1.0*					
Acenaphthene	µg/l		*<1.0*					
Acenaphthylene	µg/l		*<1.0*					
Aldrin	ng/l		*<3*					
Anthracene	µg/l		*<1.0*					
Atrazine	µg/l		*<0.05*					
Azinphos-methyl	µg/l		*<0.050*					
Benzene	µg/l		*<0.10*					
Benzo[a]anthracene	µg/l		*<1.0*					
Benzo[a]pyrene	µg/l		*<1.0*					
Benzo[b]fluoranthene	µg/l		*<1.0*					
Benzo[g,h,i]perylene	µg/l		*<1.0*					
Benzo[k]fluoranthene	µg/l		*<1.0*					
bis(2-Chloroethoxy)methane	µg/l		*<1.0*					
bis(2-Chloroethyl)ether	µg/l		*<1.0*					
bis(2-Chloroisopropyl)ether	µg/l		*<1.0*					
bis(2-ethylhexyl)phthalate	µg/l		*<10.0*					
Butylbenzylphthalate	µg/l		*<1.0*					
Tetrachloromethane	µg/l		*<0.10*					
Chlorfenvinphos	µg/l		*<0.050*					
Trichloromethane	µg/l		*<0.10*					
Chrysene	µg/l		*<1.0*					
Cis-permethrin	µg/l		*<0.020*					
Demeton-s-methyl	µg/l		*<0.050*					
Diazinon	µg/l		*<0.050*					
Dibenzo[a,h]anthracene	µg/l		*<1.0*					
Dibenzofuran	µg/l		*<1.0*					
Dieldrin	ng/l		*<3*					
Diethylphthalate	µg/l		*<3.0*					
Dimethote	µg/l		*<0.050*					
Dimethylphthalate	µg/l		*<1.0*					
Dibutyl phthalate	µg/l		*<10.0*					
Dioctyl phthalate	µg/l		*<1.0*					
Endosulphan alpha	ng/l		*<5*					
Endosulphan beta	ng/l		*<5*					
Endrin	ng/l		*<3*					
Fenitrothion	µg/l		*<0.050*					
Fluoranthene	µg/l		*<1.0*					
Fluorene	µg/l		*<1.0*					
Hexachlorobenzene	ng/l		*<5*					
Hexachlorobutadiene	ng/l		*<5*					
Hexachloroethane	µg/l		*<1.0*					
Indeno[1,2,3-cd]pyrene	µg/l		*<1.0*					
Isodrin	ng/l		*<3*					
Isophorone	µg/l		*<1.0*					
m and p-Xylene	µg/l		0.12					
Malathion	µg/l		*<0.050*					
Mecoprop	µg/l		*<0.04*					
Naphthalene	µg/l		*<1.0*					
Nitrobenzene	µg/l		*<1.0*					
o,p-DDT	ng/l		*<2*					
o-Xylene	µg/l		*<0.10*					
p,p-DDT	ng/l		*<2*					
Pentachlorophenol	µg/l		*<0.05*					
Phenanthrene	µg/l		*<1.0*					
Phenol	µg/l		*<2.0*					
Pyrene	µg/l		*<1.0*					
Simazine	µg/l		*<0.05*					
Tetrachloroethene	µg/l		*<0.10*					
Tin	mg/l							

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		18/08/2006	28/09/2006	19/10/2006	09/11/2006	08/12/2006	11/01/2007	15/02/2007
Analytical Parameter (Water Analysis)								
Toluene	µg/l		*<0.10*					
Permethrin	µg/l		*<0.020*					
Sum of xylenes	µg/l		*<0.20*					
Tributyltin	µg/l		*<0.02*					
Trichloroethene	µg/l		*<0.10*					
Trifluralin	ng/l		*<5*					
Triphenyltin	µg/l		*<0.02*					
Uranium	mg/l							
Vanadium	mg/l							
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l		0					
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l		0					

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		08/03/2007	05/04/2007	08/05/2007	07/06/2007	05/07/2007	07/08/2007	06/09/2007
Analytical Parameter (Water Analysis)								
Inorganics								
Barium	mg/l	0.17	0.19	0.17	0.17	0.18	0.17	0.17
Beryllium	mg/l							
Boron	mg/l	1.3	1.3	1.2	1.4	1.2	1.2	1.3
Cadmium	mg/l	0.0005	0.0005	0.0005	0.001	0.0005	0.0006	*<0.0005*
Calcium	mg/l	303	581	296	303	283	288	281
Chromium	mg/l	0.005	0.005	0.005	0.005	0.005	*<0.005*	*<0.005*
Chromium (hexavalent)	mg/l		0.03	0.03	*<0.03*	0.03	*<0.03*	*<0.03*
Cobalt	mg/l							
Copper	mg/l	0.005	0.008	0.005	*<0.005*	0.005	*<0.005*	*<0.005*
Iron	mg/l							
Lead	mg/l	0.005	0.012	0.005	*<0.005*	0.012	*<0.005*	0.007
Magnesium	mg/l	374	360	346	349	365	332	343
Manganese	mg/l	0.72	1.17	0.83	0.77	0.65	0.81	0.69
Mercury	mg/l	0.0001	0.0001	0.0001	*<0.0001*	0.0001	*<0.0001*	*<0.0001*
Molybdenum	mg/l	0.005	0.005	0.005	*<0.005*	0.005	*<0.005*	*<0.005*
Nickel	mg/l	0.005	0.024	0.014	0.005	0.005	*<0.005*	*<0.005*
Potassium	mg/l	139	150	145	161	115	153	138
Silver	mg/l							
Sodium	mg/l	3320	3470	3230	3320	3810	3070	3110
Zinc	mg/l							
pH	pH Units	7.1	8.1	7.6	8.4	7.5	7.5	7.3
Electrical Conductivity	µS/cm	15100	15800	14800	16500	15100	14800	16000
Ammoniacal Nitrogen as N	mg/l	13.7	11.5	9.2	9.1	12.9	9.6	9.7
Ammonia as N	mg/l							
Chloride	mg/l	5600	5960	5930	5610	5500	6070	6150
Nitrite as N	mg/l	0.1	0.1	0.1	*<0.1*	0.1	*<0.1*	*<0.1*
Nitrite as NO2	mg/l	0.328443	0.328443	0.328443		0.328443		
Nitrate as N	mg/l	0.5	1.3	1.5	*<0.3*	0.3	*<0.3*	*<0.3*
Nitrate as NO3	mg/l	2.2134	5.75484	6.6402		1.32804		
Sulphate as SO4	mg/l	518	560	538	538	547	551	551
Chemical Oxygen Demand (Total)	mg/l	307	262	590	264	281	291	260
Fluoride as F	mg/l		0.5	0.2	0.3	0.2	0.3	0.2
Antimony	mg/l		0.001	0.001	*<0.001*	0.001	*<0.001*	*<0.001*
Selenium	mg/l		0.001	0.001	0.622	0.095	0.16	0.069
Arsenic	mg/l		0.005	0.003	0.107	0.023	0.038	0.017
Organics								
1,1,1-Trichloroethane	µg/l							*<0.10*
1,1,2-Trichloroethane	µg/l							*<0.10*
1,2-Dichlorobenzene	µg/l							*<1.0*
1,2,4-Trichlorobenzene	ng/l							*<5*
1,2-Dichloroethane	µg/l							*<0.10*
1,3-Dichlorobenzene	µg/l							*<1.0*
1,4-Dichlorobenzene	µg/l							*<1.0*
1,2,3-Trichlorobenzene	ng/l							*<5*
2,4-D	µg/l							*<0.05*
2,4,5-Trichlorophenol	µg/l							*<1.0*
2,4,6-Trichlorophenol	µg/l							*<1.0*
2,4-Dichlorophenol	µg/l							*<1.0*
2,4-Dimethylphenol	µg/l							*<2.0*
2,4-Dinitrotoluene	µg/l							*<1.0*
2,6-Dinitrotoluene	µg/l							*<1.0*
2-Chloronaphthalene	µg/l							*<1.0*
2-Chlorophenol	µg/l							*<1.0*
2-Methylnaphthalene	µg/l							*<1.0*
2-Methylphenol	µg/l							*<1.0*
2-Nitrophenol	µg/l							*<1.0*
4-Bromophenyl-phenylether	µg/l							*<1.0*
4-Chloro-3-methylphenol	µg/l							*<1.0*

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		08/03/2007	05/04/2007	08/05/2007	07/06/2007	05/07/2007	07/08/2007	06/09/2007
Analytical Parameter (Water Analysis)								
4-Chlorophenyl-phenylether	µg/l							*<1.0*
4-Methylphenol	µg/l							*<1.0*
Acenaphthene	µg/l							*<1.0*
Acenaphthylene	µg/l							*<1.0*
Aldrin	ng/l							*<3*
Anthracene	µg/l							*<1.0*
Atrazine	µg/l							*<0.10*
Azinphos-methyl	µg/l							*<0.050*
Benzene	µg/l							*<0.10*
Benzo[a]anthracene	µg/l							*<1.0*
Benzo[a]pyrene	µg/l							*<1.0*
Benzo[b]fluoranthene	µg/l							*<1.0*
Benzo[g,h,i]perylene	µg/l							*<1.0*
Benzo[k]fluoranthene	µg/l							*<1.0*
bis(2-Chloroethoxy)methane	µg/l							*<1.0*
bis(2-Chloroethyl)ether	µg/l							*<1.0*
bis(2-Chloroisopropyl)ether	µg/l							*<1.0*
bis(2-ethylhexyl)phthalate	µg/l							*<10.0*
Butylbenzylphthalate	µg/l							*<1.0*
Tetrachloromethane	µg/l							*<0.10*
Chlorfenvinphos	µg/l							*<0.050*
Trichloromethane	µg/l							*<0.10*
Chrysene	µg/l							*<1.0*
Cis-permethrin	µg/l							*<0.010*
Demeton-s-methyl	µg/l							*<0.050*
Diazinon	µg/l							*<0.050*
Dibenzo[a,h]anthracene	µg/l							*<1.0*
Dibenzofuran	µg/l							*<1.0*
Dieldrin	ng/l							*<3*
Diethylphthalate	µg/l							*<3.0*
Dimethote	µg/l							*<0.050*
Dimethylphthalate	µg/l							*<1.0*
Dibutyl phthalate	µg/l							*<10.0*
Dioctyl phthalate	µg/l							*<1.0*
Endosulphan alpha	ng/l							*<5*
Endosulphan beta	ng/l							*<5*
Endrin	ng/l							*<3*
Fenitrothion	µg/l							*<0.050*
Fluoranthene	µg/l							*<1.0*
Fluorene	µg/l							*<1.0*
Hexachlorobenzene	ng/l							*<5*
Hexachlorobutadiene	ng/l							*<5*
Hexachloroethane	µg/l							*<1.0*
Indeno[1,2,3-cd]pyrene	µg/l							*<1.0*
Isodrin	ng/l							*<3*
Isophorone	µg/l							*<1.0*
m and p-Xylene	µg/l							0.21
Malathion	µg/l							*<0.050*
Mecoprop	µg/l							*<0.04*
Naphthalene	µg/l							*<1.0*
Nitrobenzene	µg/l							*<1.0*
o,p-DDT	ng/l							*<2*
o-Xylene	µg/l							*<0.10*
p,p-DDT	ng/l							*<2*
Pentachlorophenol	µg/l							*<0.05*
Phenanthrene	µg/l							*<1.0*
Phenol	µg/l							*<2.0*
Pyrene	µg/l							*<1.0*
Simazine	µg/l							*<0.10*
Tetrachloroethene	µg/l							*<0.10*
Tin	mg/l							

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Lab Sample Number	**Units**							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		08/03/2007	05/04/2007	08/05/2007	07/06/2007	05/07/2007	07/08/2007	06/09/2007
Analytical Parameter (Water Analysis)								
Toluene	µg/l							0.25
Permethrin	µg/l							*<0.020*
Sum of xylenes	µg/l							0.21
Tributyltin	µg/l							*<0.10*
Trichloroethene	µg/l							*<0.10*
Trifluralin	ng/l							*<5*
Triphenyltin	µg/l							*<0.10*
Uranium	mg/l							
Vanadium	mg/l							
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l							0
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l							0

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	**Units**							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		04/10/2007	08/11/2007	06/12/2007	10/01/2008	07/02/2008	06/03/2008	08/04/2008
Analytical Parameter (Water Analysis)								
Inorganics								
Barium	mg/l	0.17	0.17	0.16	0.16	0.16	0.17	0.17
Beryllium	mg/l							
Boron	mg/l	1.3	1.2	1.2	1.3	1.1	1.2	1.2
Cadmium	mg/l	*<0.0005*	0.0005	*<0.0005*	*<0.0005*	0.0007	0.0006	*<0.0005*
Calcium	mg/l	273	296	286	282	265	275	301
Chromium	mg/l	*<0.005*	0.005	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
Chromium (hexavalent)	mg/l	*<0.03*	0.03	*<0.03*	*<0.06*	*<0.15*	*<0.3*	
Cobalt	mg/l							
Copper	mg/l	*<0.005*	0.005	*<0.005*	*<0.005*	*<0.005*	*<0.005*	0.006
Iron	mg/l							
Lead	mg/l	*<0.005*	0.02	*<0.005*	*<0.005*	0.008	0.017	0.009
Magnesium	mg/l	342	370	341	331	328	342	340
Manganese	mg/l	0.65	0.66	0.69	0.69	0.64	0.65	0.67
Mercury	mg/l	*<0.0001*	0.0001	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*
Molybdenum	mg/l	*<0.005*	0.005	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
Nickel	mg/l	*<0.005*	0.005	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
Potassium	mg/l	132	129	145	153	145	122	142
Silver	mg/l							
Sodium	mg/l	1740	2530	3210	3270	3120	3400	3100
Zinc	mg/l							
pH	pH Units	7.1	6.9	7.5	7.2	7.6	7.4	7.1
Electrical Conductivity	µS/cm	15200	15900	15600	15000	14700	15200	13500
Ammoniacal Nitrogen as N	mg/l	10.7	9.2	9.3	9.8	8.7	8.8	4.7
Ammonia as N	mg/l							
Chloride	mg/l	6270	5570	6320	6100	6110	5600	5640
Nitrite as N	mg/l	1.4	0.1	*<0.1*	*<0.1*	*<0.1*	*<0.1*	2.8
Nitrite as NO2	mg/l	4.598202	0.328443					9.196404
Nitrate as N	mg/l	0.3	0.3	*<0.3*	*<0.3*	*<0.3*	*<0.3*	1.1
Nitrate as NO3	mg/l	1.32804	1.32804					4.86948
Sulphate as SO4	mg/l	547	534	583	562	562	571	557
Chemical Oxygen Demand (Total)	mg/l	277	420	328	269	306	681	304
Fluoride as F	mg/l	0.2	0.2	0.2	0.2	0.3	0.2	0.3
Antimony	mg/l	0.001	0.001	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Selenium	mg/l	0.001	0.069	0.085	0.114	0.077	0.058	0.049
Arsenic	mg/l	0.004	0.014	0.019	0.069	0.017	0.013	0.01
Organics								
1,1,1-Trichloroethane	µg/l							
1,1,2-Trichloroethane	µg/l							
1,2-Dichlorobenzene	µg/l							
1,2,4-Trichlorobenzene	ng/l							
1,2-Dichloroethane	µg/l							
1,3-Dichlorobenzene	µg/l							
1,4-Dichlorobenzene	µg/l							
1,2,3-Trichlorobenzene	ng/l							
2,4-D	µg/l							
2,4,5-Trichlorophenol	µg/l							
2,4,6-Trichlorophenol	µg/l							
2,4-Dichlorophenol	µg/l							
2,4-Dimethylphenol	µg/l							
2,4-Dinitrotoluene	µg/l							
2,6-Dinitrotoluene	µg/l							
2-Chloronaphthalene	µg/l							
2-Chlorophenol	µg/l							
2-Methylnaphthalene	µg/l							
2-Methylphenol	µg/l							
2-Nitrophenol	µg/l							
4-Bromophenyl-phenylether	µg/l							
4-Chloro-3-methylphenol	µg/l							

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		04/10/2007	08/11/2007	06/12/2007	10/01/2008	07/02/2008	06/03/2008	08/04/2008
Analytical Parameter (Water Analysis)								
4-Chlorophenyl-phenylether	µg/l							
4-Methylphenol	µg/l							
Acenaphthene	µg/l							
Acenaphthylene	µg/l							
Aldrin	ng/l							
Anthracene	µg/l							
Atrazine	µg/l							
Azinphos-methyl	µg/l							
Benzene	µg/l							
Benzo[a]anthracene	µg/l							
Benzo[a]pyrene	µg/l							
Benzo[b]fluoranthene	µg/l							
Benzo[g,h,i]perylene	µg/l							
Benzo[k]fluoranthene	µg/l							
bis(2-Chloroethoxy)methane	µg/l							
bis(2-Chloroethyl)ether	µg/l							
bis(2-Chloroisopropyl)ether	µg/l							
bis(2-ethylhexyl)phthalate	µg/l							
Butylbenzylphthalate	µg/l							
Tetrachloromethane	µg/l							
Chlorfenvinphos	µg/l							
Trichloromethane	µg/l							
Chrysene	µg/l							
Cis-permethrin	µg/l							
Demeton-s-methyl	µg/l							
Diazinon	µg/l							
Dibenzo[a,h]anthracene	µg/l							
Dibenzofuran	µg/l							
Dieldrin	ng/l							
Diethylphthalate	µg/l							
Dimethote	µg/l							
Dimethylphthalate	µg/l							
Dibutyl phthalate	µg/l							
Dioctyl phthalate	µg/l							
Endosulphan alpha	ng/l							
Endosulphan beta	ng/l							
Endrin	ng/l							
Fenitrothion	µg/l							
Fluoranthene	µg/l							
Fluorene	µg/l							
Hexachlorobenzene	ng/l							
Hexachlorobutadiene	ng/l							
Hexachloroethane	µg/l							
Indeno[1,2,3-cd]pyrene	µg/l							
Isodrin	ng/l							
Isophorone	µg/l							
m and p-Xylene	µg/l							
Malathion	µg/l							
Mecoprop	µg/l							
Naphthalene	µg/l							
Nitrobenzene	µg/l							
o,p-DDT	ng/l							
o-Xylene	µg/l							
p,p-DDT	ng/l							
Pentachlorophenol	µg/l							
Phenanthrene	µg/l							
Phenol	µg/l							
Pyrene	µg/l							
Simazine	µg/l							
Tetrachloroethene	µg/l							
Tin	mg/l							

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Lab Sample Number	Units							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		04/10/2007	08/11/2007	06/12/2007	10/01/2008	07/02/2008	06/03/2008	08/04/2008
Analytical Parameter (Water Analysis)								
Toluene	µg/l							
Permethrin	µg/l							
Sum of xylenes	µg/l							
Tributyltin	µg/l							
Trichloroethene	µg/l							
Trifluralin	ng/l							
Triphenyltin	µg/l							
Uranium	mg/l							
Vanadium	mg/l							
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l							
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l							

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Lab Sample Number	Units							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		07/05/2008	05/06/2008	03/07/2008	07/08/2008	04/09/2008	09/10/2008	06/11/2008
Analytical Parameter (Water Analysis)								
Inorganics								
Barium	mg/l	0.16						
Beryllium	mg/l					*<0.005*		
Boron	mg/l	1.2						
Cadmium	mg/l	*<0.0005*						
Calcium	mg/l	265	297	279	293	283	288	288
Chromium	mg/l	*<0.005*						
Chromium (hexavalent)	mg/l	*<0.06*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	0.04	*<0.03*
Cobalt	mg/l					*<0.005*		
Copper	mg/l	0.011						
Iron	mg/l							
Lead	mg/l	0.005						
Magnesium	mg/l	314				340		
Manganese	mg/l	0.68				0.69		
Mercury	mg/l	*<0.0001*						
Molybdenum	mg/l	*<0.005*						
Nickel	mg/l	*<0.005*						
Potassium	mg/l	146	104	120	128			
Silver	mg/l					*<0.02*		
Sodium	mg/l	2970	3730	3760	2750			
Zinc	mg/l							
pH	pH Units	6.9	7.5	7.4	7.5	8.1	7.3	7.2
Electrical Conductivity	µS/cm	13490	15400	15400	14800	15500	15100	15200
Ammoniacal Nitrogen as N	mg/l	4.8	7.3	9.2	8.1	8.6	8.7	8
Ammonia as N	mg/l							
Chloride	mg/l	5710	4720	6020	5260	5710	5270	1940
Nitrite as N	mg/l	2.7	4.1	*<0.1*	1.6	*<0.1*	*<0.1*	2.9
Nitrite as NO2	mg/l	8.867961	13.466163		5.255088			9.524847
Nitrate as N	mg/l	1.4	1	*<0.3*	0.4	*<0.3*	*<0.3*	1.3
Nitrate as NO3	mg/l	6.19752	4.4268		1.77072			5.75484
Sulphate as SO4	mg/l	559	555	550	558	546	563	555
Chemical Oxygen Demand (Total)	mg/l	267	347	260	133	277	539	291
Fluoride as F	mg/l	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Antimony	mg/l	0.002		*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Selenium	mg/l	0.041		0.061	0.07	0.077	0.08	0.034
Arsenic	mg/l	0.009		0.014	0.015	0.018	0.019	0.008
Organics								
1,1,1-Trichloroethane	µg/l					*<0.10*		
1,1,2-Trichloroethane	µg/l					*<0.10*		
1,2-Dichlorobenzene	µg/l					*<1.0*		
1,2,4-Trichlorobenzene	ng/l					*<6*		
1,2-Dichloroethane	µg/l					*<0.10*		
1,3-Dichlorobenzene	µg/l					*<1.0*		
1,4-Dichlorobenzene	µg/l					*<1.0*		
1,2,3-Trichlorobenzene	ng/l					*<6*		
2,4-D	µg/l					*<0.05*		
2,4,5-Trichlorophenol	µg/l					*<1.0*		
2,4,6-Trichlorophenol	µg/l					*<1.0*		
2,4-Dichlorophenol	µg/l					*<1.0*		
2,4-Dimethylphenol	µg/l					*<2.0*		
2,4-Dinitrotoluene	µg/l					*<1.0*		
2,6-Dinitrotoluene	µg/l					*<1.0*		
2-Chloronaphthalene	µg/l					*<1.0*		
2-Chlorophenol	µg/l					*<1.0*		
2-Methylnaphthalene	µg/l					*<1.0*		
2-Methylphenol	µg/l					*<1.0*		
2-Nitrophenol	µg/l					*<1.0*		
4-Bromophenyl-phenylether	µg/l					*<1.0*		
4-Chloro-3-methylphenol	µg/l					*<1.0*		

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Lab Sample Number	Units							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		07/05/2008	05/06/2008	03/07/2008	07/08/2008	04/09/2008	09/10/2008	06/11/2008
Analytical Parameter (Water Analysis)								
4-Chlorophenyl-phenylether	µg/l					*<1.0*		
4-Methylphenol	µg/l							
Acenaphthene	µg/l							
Acenaphthylene	µg/l					*<1.0*		
Aldrin	ng/l					*<6*		
Anthracene	µg/l					*<1.0*		
Atrazine	µg/l					*<0.020*		
Azinphos-methyl	µg/l					*<0.002*		
Benzene	µg/l					*<0.10*		
Benzo[a]anthracene	µg/l					*<1.0*		
Benzo[a]pyrene	µg/l					*<1.0*		
Benzo[b]fluoranthene	µg/l					*<1.0*		
Benzo[g,h,i]perylene	µg/l					*<1.0*		
Benzo[k]fluoranthene	µg/l					*<1.0*		
bis(2-Chloroethoxy)methane	µg/l					*<1.0*		
bis(2-Chloroethyl)ether	µg/l					*<1.0*		
bis(2-Chloroisopropyl)ether	µg/l					*<1.0*		
bis(2-ethylhexyl)phthalate	µg/l					*<10.0*		
Butylbenzylphthalate	µg/l					*<1.0*		
Tetrachloromethane	µg/l					*<0.10*		
Chlorfenvinphos	µg/l					*<0.002*		
Trichloromethane	µg/l					*<0.10*		
Chrysene	µg/l					*<1.0*		
Cis-permethrin	µg/l					*<0.002*		
Demeton-s-methyl	µg/l							
Diazinon	µg/l					*<0.002*		
Dibenzo[a,h]anthracene	µg/l					*<1.0*		
Dibenzofuran	µg/l					*<1.0*		
Dieldrin	ng/l					*<6*		
Diethylphthalate	µg/l					*<1.0*		
Dimethote	µg/l					*<0.020*		
Dimethylphthalate	µg/l					*<1.0*		
Dibutyl phthalate	µg/l					*<10.0*		
Dioctyl phthalate	µg/l					*<1.0*		
Endosulphan alpha	ng/l					*<6*		
Endosulphan beta	ng/l					*<6*		
Endrin	ng/l					*<6*		
Fenitrothion	µg/l					*<0.002*		
Fluoranthene	µg/l					*<1.0*		
Fluorene	µg/l					*<1.0*		
Hexachlorobenzene	ng/l					*<2*		
Hexachlorobutadiene	ng/l					*<2*		
Hexachloroethane	µg/l					*<1.0*		
Indeno[1,2,3-cd]pyrene	µg/l					*<1.0*		
Isodrin	ng/l							
Isophorone	µg/l					*<1.0*		
m and p-Xylene	µg/l					0.17		
Malathion	µg/l					*<0.002*		
Mecoprop	µg/l					*<0.04*		
Naphthalene	µg/l					*<1.0*		
Nitrobenzene	µg/l					*<1.0*		
o,p-DDT	ng/l					*<2*		
o-Xylene	µg/l					*<0.10*		
p,p-DDT	ng/l					*<2*		
Pentachlorophenol	µg/l					*<0.05*		
Phenanthrene	µg/l					*<1.0*		
Phenol	µg/l					*<2.0*		
Pyrene	µg/l					*<1.0*		
Simazine	µg/l					*<0.020*		
Tetrachloroethene	µg/l					*<0.10*		
Tin	mg/l					*<0.10*		

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Lab Sample Number	**Units**							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		07/05/2008	05/06/2008	03/07/2008	07/08/2008	04/09/2008	09/10/2008	06/11/2008
Analytical Parameter (Water Analysis)								
Toluene	µg/l					0.17		
Permethrin	µg/l							
Sum of xylenes	µg/l					*<0.20*		
Tributyltin	µg/l					*<0.02*		
Trichloroethene	µg/l					*<0.10*		
Trifluralin	ng/l					*<10*		
Triphenyltin	µg/l					*<0.02*		
Uranium	mg/l					*<0.001*		
Vanadium	mg/l					*<0.005*		
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l					0		
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l					0		

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		02/12/2008	08/01/2009	05/02/2009	05/03/2009	14/04/2009	07/05/2009	04/06/2009
Analytical Parameter (Water Analysis)								
Inorganics								
Barium	mg/l							
Beryllium	mg/l							
Boron	mg/l							
Cadmium	mg/l							
Calcium	mg/l	288	260	326	273	288	303	
Chromium	mg/l							
Chromium (hexavalent)	mg/l	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*
Cobalt	mg/l							
Copper	mg/l							
Iron	mg/l							
Lead	mg/l							
Magnesium	mg/l							
Manganese	mg/l							
Mercury	mg/l							
Molybdenum	mg/l							
Nickel	mg/l							
Potassium	mg/l							
Silver	mg/l							
Sodium	mg/l							
Zinc	mg/l							
pH	pH Units	7	8.4	8.2	7.3	7.3	7.1	7.2
Electrical Conductivity	µS/cm	15000	14900	15900	15200	14600	14200	15200
Ammoniacal Nitrogen as N	mg/l	7.1	8.2	7.8	8.5	8.4	7.2	6.9
Ammonia as N	mg/l							
Chloride	mg/l	5900	5830	5360	5900	5640	5150	5600
Nitrite as N	mg/l	1.7	*<0.1*	0.1	*<0.1*	*<0.1*	1.4	0.7
Nitrite as NO2	mg/l	5.583531		0.328443			4.598202	2.299101
Nitrate as N	mg/l	0.5	*<0.3*	*<0.3*	*<0.3*	*<0.3*	0.4	*<0.3*
Nitrate as NO3	mg/l	2.2134					1.77072	
Sulphate as SO4	mg/l	558	555	552	543	510	503	492
Chemical Oxygen Demand (Total)	mg/l	256	346	245	263	330	192	231
Fluoride as F	mg/l	0.1	0.1	0.2	1.1	0.3	0.3	0.2
Antimony	mg/l	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Selenium	mg/l	0.049	0.037	0.036	0.027	0.03	0.028	0.024
Arsenic	mg/l	0.008	0.007	0.005	0.005	0.006	0.004	0.005
Organics								
1,1,1-Trichloroethane	µg/l							
1,1,2-Trichloroethane	µg/l							
1,2-Dichlorobenzene	µg/l							
1,2,4-Trichlorobenzene	ng/l							
1,2-Dichloroethane	µg/l							
1,3-Dichlorobenzene	µg/l							
1,4-Dichlorobenzene	µg/l							
1,2,3-Trichlorobenzene	ng/l							
2,4-D	µg/l							
2,4,5-Trichlorophenol	µg/l							
2,4,6-Trichlorophenol	µg/l							
2,4-Dichlorophenol	µg/l							
2,4-Dimethylphenol	µg/l							
2,4-Dinitrotoluene	µg/l							
2,6-Dinitrotoluene	µg/l							
2-Chloronaphthalene	µg/l							
2-Chlorophenol	µg/l							
2-Methylnaphthalene	µg/l							
2-Methylphenol	µg/l							
2-Nitrophenol	µg/l							
4-Bromophenyl-phenylether	µg/l							
4-Chloro-3-methylphenol	µg/l							

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		02/12/2008	08/01/2009	05/02/2009	05/03/2009	14/04/2009	07/05/2009	04/06/2009
Analytical Parameter (Water Analysis)								
4-Chlorophenyl-phenylether	µg/l							
4-Methylphenol	µg/l							
Acenaphthene	µg/l							
Acenaphthylene	µg/l							
Aldrin	ng/l							
Anthracene	µg/l							
Atrazine	µg/l							
Azinphos-methyl	µg/l							
Benzene	µg/l							
Benzo[a]anthracene	µg/l							
Benzo[a]pyrene	µg/l							
Benzo[b]fluoranthene	µg/l							
Benzo[g,h,i]perylene	µg/l							
Benzo[k]fluoranthene	µg/l							
bis(2-Chloroethoxy)methane	µg/l							
bis(2-Chloroethyl)ether	µg/l							
bis(2-Chloroisopropyl)ether	µg/l							
bis(2-ethylhexyl)phthalate	µg/l							
Butylbenzylphthalate	µg/l							
Tetrachloromethane	µg/l							
Chlorfenvinphos	µg/l							
Trichloromethane	µg/l							
Chrysene	µg/l							
Cis-permethrin	µg/l							
Demeton-s-methyl	µg/l							
Diazinon	µg/l							
Dibenzo[a,h]anthracene	µg/l							
Dibenzofuran	µg/l							
Dieldrin	ng/l							
Diethylphthalate	µg/l							
Dimethote	µg/l							
Dimethylphthalate	µg/l							
Dibutyl phthalate	µg/l							
Dioctyl phthalate	µg/l							
Endosulphan alpha	ng/l							
Endosulphan beta	ng/l							
Endrin	ng/l							
Fenitrothion	µg/l							
Fluoranthene	µg/l							
Fluorene	µg/l							
Hexachlorobenzene	ng/l							
Hexachlorobutadiene	ng/l							
Hexachloroethane	µg/l							
Indeno[1,2,3-cd]pyrene	µg/l							
Isodrin	ng/l							
Isophorone	µg/l							
m and p-Xylene	µg/l							
Malathion	µg/l							
Mecoprop	µg/l							
Naphthalene	µg/l							
Nitrobenzene	µg/l							
o,p-DDT	ng/l							
o-Xylene	µg/l							
p,p-DDT	ng/l							
Pentachlorophenol	µg/l							
Phenanthrene	µg/l							
Phenol	µg/l							
Pyrene	µg/l							
Simazine	µg/l							
Tetrachloroethene	µg/l							
Tin	mg/l							

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Lab Sample Number	Units							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		02/12/2008	08/01/2009	05/02/2009	05/03/2009	14/04/2009	07/05/2009	04/06/2009
Analytical Parameter (Water Analysis)								
Toluene	µg/l							
Permethrin	µg/l							
Sum of xylenes	µg/l							
Tributyltin	µg/l							
Trichloroethene	µg/l							
Trifluralin	ng/l							
Triphenyltin	µg/l							
Uranium	mg/l							
Vanadium	mg/l							
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l							
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l							

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	**Units**							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		09/07/2009	06/08/2009	10/09/2009	07/10/2009	05/11/2009	03/12/2009	04/03/2010
Analytical Parameter (Water Analysis)								
Inorganics								
Barium	mg/l							
Beryllium	mg/l							
Boron	mg/l							
Cadmium	mg/l							
Calcium	mg/l	272	146	288				
Chromium	mg/l							0.003
Chromium (hexavalent)	mg/l	*<0.03*	0.03	*<0.03*	*<0.03*	*<0.03*	*<0.03*	
Cobalt	mg/l							
Copper	mg/l							
Iron	mg/l							
Lead	mg/l							
Magnesium	mg/l							
Manganese	mg/l							
Mercury	mg/l							
Molybdenum	mg/l							
Nickel	mg/l							
Potassium	mg/l							
Silver	mg/l							
Sodium	mg/l							
Zinc	mg/l							
pH	pH Units	7.1	7.4	6.9	7.4	7.2	7.2	7.9
Electrical Conductivity	µS/cm	15200	14900	15200	14900	14700	13100	12400
Ammoniacal Nitrogen as N	mg/l	7.9	8.3	8.4	8.3	6.6	8.5	8
Ammonia as N	mg/l							
Chloride	mg/l	5210	5760	5500	5420	5310	4980	4660
Nitrite as N	mg/l	0.4	*<0.1*	1.6	0.4	1.5	*<0.1*	*<0.1*
Nitrite as NO2	mg/l	1.313772		5.255088	1.313772	4.926645		
Nitrate as N	mg/l	*<0.3*	*<0.3*	0.5	*<0.3*	*<0.3*	*<0.3*	*<0.3*
Nitrate as NO3	mg/l			2.2134				
Sulphate as SO4	mg/l	443	439	410	433	400	378	379
Chemical Oxygen Demand (Total)	mg/l	386	660	269	215			
Fluoride as F	mg/l	0.3	0.2	0.2	*<0.1*	0.7	0.2	*<0.1*
Antimony	mg/l	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Selenium	mg/l	0.049	0.058	0.035	0.047	0.042	0.073	0.051
Arsenic	mg/l	0.014	0.013	0.008	0.011	0.011	0.018	
Organics								
1,1,1-Trichloroethane	µg/l							
1,1,2-Trichloroethane	µg/l							
1,2-Dichlorobenzene	µg/l							
1,2,4-Trichlorobenzene	ng/l							
1,2-Dichloroethane	µg/l							
1,3-Dichlorobenzene	µg/l							
1,4-Dichlorobenzene	µg/l							
1,2,3-Trichlorobenzene	ng/l							
2,4-D	µg/l							
2,4,5-Trichlorophenol	µg/l							
2,4,6-Trichlorophenol	µg/l							
2,4-Dichlorophenol	µg/l							
2,4-Dimethylphenol	µg/l							
2,4-Dinitrotoluene	µg/l							
2,6-Dinitrotoluene	µg/l							
2-Chloronaphthalene	µg/l							
2-Chlorophenol	µg/l							
2-Methylnaphthalene	µg/l							
2-Methylphenol	µg/l							
2-Nitrophenol	µg/l							
4-Bromophenyl-phenylether	µg/l							
4-Chloro-3-methylphenol	µg/l							

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		09/07/2009	06/08/2009	10/09/2009	07/10/2009	05/11/2009	03/12/2009	04/03/2010
Analytical Parameter (Water Analysis)								
4-Chlorophenyl-phenylether	µg/l							
4-Methylphenol	µg/l							
Acenaphthene	µg/l							
Acenaphthylene	µg/l							
Aldrin	ng/l							
Anthracene	µg/l							
Atrazine	µg/l							
Azinphos-methyl	µg/l							
Benzene	µg/l							
Benzo[a]anthracene	µg/l							
Benzo[a]pyrene	µg/l							
Benzo[b]fluoranthene	µg/l							
Benzo[g,h,i]perylene	µg/l							
Benzo[k]fluoranthene	µg/l							
bis(2-Chloroethoxy)methane	µg/l							
bis(2-Chloroethyl)ether	µg/l							
bis(2-Chloroisopropyl)ether	µg/l							
bis(2-ethylhexyl)phthalate	µg/l							
Butylbenzylphthalate	µg/l							
Tetrachloromethane	µg/l							
Chlorfenvinphos	µg/l							
Trichloromethane	µg/l							
Chrysene	µg/l							
Cis-permethrin	µg/l							
Demeton-s-methyl	µg/l							
Diazinon	µg/l							
Dibenzo[a,h]anthracene	µg/l							
Dibenzofuran	µg/l							
Dieldrin	ng/l							
Diethylphthalate	µg/l							
Dimethote	µg/l							
Dimethylphthalate	µg/l							
Dibutyl phthalate	µg/l							
Dioctyl phthalate	µg/l							
Endosulphan alpha	ng/l							
Endosulphan beta	ng/l							
Endrin	ng/l							
Fenitrothion	µg/l							
Fluoranthene	µg/l							
Fluorene	µg/l							
Hexachlorobenzene	ng/l							
Hexachlorobutadiene	ng/l							
Hexachloroethane	µg/l							
Indeno[1,2,3-cd]pyrene	µg/l							
Isodrin	ng/l							
Isophorone	µg/l							
m and p-Xylene	µg/l							
Malathion	µg/l							
Mecoprop	µg/l							
Naphthalene	µg/l							
Nitrobenzene	µg/l							
o,p-DDT	ng/l							
o-Xylene	µg/l							
p,p-DDT	ng/l							
Pentachlorophenol	µg/l							
Phenanthrene	µg/l							
Phenol	µg/l							
Pyrene	µg/l							
Simazine	µg/l							
Tetrachloroethene	µg/l							
Tin	mg/l							

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Lab Sample Number	**Units**							
Sample Reference		GW11	GW11	GW11	GW11	GW11	GW11	GW11
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		09/07/2009	06/08/2009	10/09/2009	07/10/2009	05/11/2009	03/12/2009	04/03/2010
Analytical Parameter (Water Analysis)								
Toluene	µg/l							
Permethrin	µg/l							
Sum of xylenes	µg/l							
Tributyltin	µg/l							
Trichloroethene	µg/l							
Trifluralin	ng/l							
Triphenyltin	µg/l							
Uranium	mg/l							
Vanadium	mg/l							
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l							
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l							

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

	Units				
Lab Sample Number					
Sample Reference		GW11	GW11	GW11	GW11
Zone		2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs
Date Sampled		03/06/2010	08/09/2010	07/12/2010	03/03/2011
Analytical Parameter (Water Analysis)					
Inorganics					
Barium	mg/l				
Beryllium	mg/l				
Boron	mg/l				
Cadmium	mg/l				
Calcium	mg/l				
Chromium	mg/l	0.002	0.0016	0.002	*<0.0007*
Chromium (hexavalent)	mg/l	*<0.03*	*<0.03*	*<0.03*	*<0.03*
Cobalt	mg/l				
Copper	mg/l				
Iron	mg/l				
Lead	mg/l				
Magnesium	mg/l				
Manganese	mg/l				
Mercury	mg/l				
Molybdenum	mg/l				
Nickel	mg/l				
Potassium	mg/l	131	130	118	110
Silver	mg/l				
Sodium	mg/l				
Zinc	mg/l				
pH	pH Units	7.4	7.1	7.1	8
Electrical Conductivity	µS/cm	11600	12700	12200	11700
Ammoniacal Nitrogen as N	mg/l	9	8.64	8.58	9.03
Ammonia as N	mg/l				
Chloride	mg/l	4590	4550	4510	4500
Nitrite as N	mg/l	0.008	0.296	*<0.006*	*<0.006*
Nitrite as NO2	mg/l	0.02627544	0.97219128		
Nitrate as N	mg/l	0.4	*<0.29*	*<0.29*	*<0.29*
Nitrate as NO3	mg/l	1.77072			
Sulphate as SO4	mg/l	416	424	411	431
Chemical Oxygen Demand (Total)	mg/l				
Fluoride as F	mg/l	*<0.1*	0.2	*<0.2*	*<0.2*
Antimony	mg/l	*<0.0004*	*<0.0016*	*<0.0016*	
Selenium	mg/l	0.056	0.047	0.053	0.039
Arsenic	mg/l				
Organics					
1,1,1-Trichloroethane	µg/l				
1,1,2-Trichloroethane	µg/l				
1,2-Dichlorobenzene	µg/l				
1,2,4-Trichlorobenzene	ng/l				
1,2-Dichloroethane	µg/l				
1,3-Dichlorobenzene	µg/l				
1,4-Dichlorobenzene	µg/l				
1,2,3-Trichlorobenzene	ng/l				
2,4-D	µg/l				
2,4,5-Trichlorophenol	µg/l				
2,4,6-Trichlorophenol	µg/l				
2,4-Dichlorophenol	µg/l				
2,4-Dimethylphenol	µg/l				
2,4-Dinitrotoluene	µg/l				
2,6-Dinitrotoluene	µg/l				
2-Chloronaphthalene	µg/l				
2-Chlorophenol	µg/l				
2-Methylnaphthalene	µg/l				
2-Methylphenol	µg/l				
2-Nitrophenol	µg/l				
4-Bromophenyl-phenylether	µg/l				
4-Chloro-3-methylphenol	µg/l				

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Lab Sample Number	Units				
Sample Reference		GW11	GW11	GW11	GW11
Zone		2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs
Date Sampled		03/06/2010	08/09/2010	07/12/2010	03/03/2011
Analytical Parameter (Water Analysis)					
4-Chlorophenyl-phenylether	µg/l				
4-Methylphenol	µg/l				
Acenaphthene	µg/l				
Acenaphthylene	µg/l				
Aldrin	ng/l				
Anthracene	µg/l				
Atrazine	µg/l				
Azinphos-methyl	µg/l				
Benzene	µg/l				
Benzo[a]anthracene	µg/l				
Benzo[a]pyrene	µg/l				
Benzo[b]fluoranthene	µg/l				
Benzo[g,h,i]perylene	µg/l				
Benzo[k]fluoranthene	µg/l				
bis(2-Chloroethoxy)methane	µg/l				
bis(2-Chloroethyl)ether	µg/l				
bis(2-Chloroisopropyl)ether	µg/l				
bis(2-ethylhexyl)phthalate	µg/l				
Butylbenzylphthalate	µg/l				
Tetrachloromethane	µg/l				
Chlorfenvinphos	µg/l				
Trichloromethane	µg/l				
Chrysene	µg/l				
Cis-permethrin	µg/l				
Demeton-s-methyl	µg/l				
Diazinon	µg/l				
Dibenzo[a,h]anthracene	µg/l				
Dibenzofuran	µg/l				
Dieldrin	ng/l				
Diethylphthalate	µg/l				
Dimethote	µg/l				
Dimethylphthalate	µg/l				
Dibutyl phthalate	µg/l				
Dioctyl phthalate	µg/l				
Endosulphan alpha	ng/l				
Endosulphan beta	ng/l				
Endrin	ng/l				
Fenitrothion	µg/l				
Fluoranthene	µg/l				
Fluorene	µg/l				
Hexachlorobenzene	ng/l				
Hexachlorobutadiene	ng/l				
Hexachloroethane	µg/l				
Indeno[1,2,3-cd]pyrene	µg/l				
Isodrin	ng/l				
Isophorone	µg/l				
m and p-Xylene	µg/l				
Malathion	µg/l				
Mecoprop	µg/l				
Naphthalene	µg/l				
Nitrobenzene	µg/l				
o,p-DDT	ng/l				
o-Xylene	µg/l				
p,p-DDT	ng/l				
Pentachlorophenol	µg/l				
Phenanthrene	µg/l				
Phenol	µg/l				
Pyrene	µg/l				
Simazine	µg/l				
Tetrachloroethene	µg/l				
Tin	mg/l				

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Lab Sample Number	Units				
Sample Reference		GW11	GW11	GW11	GW11
Zone		2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs
Date Sampled		03/06/2010	08/09/2010	07/12/2010	03/03/2011
Analytical Parameter (Water Analysis)					
Toluene	µg/l				
Permethrin	µg/l				
Sum of xylenes	µg/l				
Tributyltin	µg/l				
Trichloroethene	µg/l				
Trifluralin	ng/l				
Triphenyltin	µg/l				
Uranium	mg/l				
Vanadium	mg/l				
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l				
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l				

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Standard for the Protection of Fisheries
UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Drinking Water Screening Value (DWS)	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances							
Sample Reference									GW12	GW12	GW12	GW12	GW12	GW12	GW12
Zone									2	2	2	2	2	2	2
Groundwater Body									RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled									26/01/2006	27/02/2006	23/03/2006	20/04/2006	18/05/2006	22/06/2006	20/07/2006
Analytical Parameter (Water Analysis)															
Inorganics															
Barium	mg/l		0.7	No EQS	77	0.2088	0.38	0	0.35	0.34	0.33	0.37	0.31	0.29	0.28
Boron	mg/l		1	7	76	0.88	3.4	67	1.3	1.4	1.4	1.4	1.4	1.4	1.2
Cadmium	mg/l		0.005	0.0002	76	0.0003	0.003	24	0.003	0.001	0.0005	0.002	0.002	*<0.0005*	*<0.0005*
Calcium	mg/l		No DWS	No EQS	78	263	387	0	326	331	328	337	330	295	329
Chromium	mg/l		0.05	0.015	85	0.001	0.061	9	0.061	0.017	0.025	0.032	0.018	0.005	0.005
Chromium (hexavalent)	mg/l		No DWS	0.0006	72	0.02	0.04	13	*<0.03*	*<0.03*	0.03	0.03	0.03		
Cobalt	mg/l		No DWS	0.003	1	0	0	0							
Copper	mg/l		2	0.005	77	0.001	0.082	21	0.082	0.029	0.039	0.049	0.028	0.008	0.007
Iron	mg/l		0.2	1	1	5.66	5.66	1							
Lead	mg/l		0.01	0.0072	77	0.003	0.066	26	0.066	0.037	0.029	0.052	0.02	*<0.005*	*<0.005*
Magnesium	mg/l		No DWS	No EQS	78	263	446	0	390	403	413	413	431	385	404
Manganese	mg/l		0.05	No EQS	78	0.813	1.79	78	1.79	1.23	1.04	1.67	1.18	0.93	0.85
Mercury	mg/l		0.001	0.00005	76	0.0001	0.1	14	0.0001	*<0.0001*	0.0001	0.0001	0.0001	*<0.0001*	*<0.0001*
Molybdenum	mg/l		0.07	No EQS	77	0.002	0.067	0	*<0.005*	0.011	0.005	0.005	0.005	0.011	*<0.005*
Nickel	mg/l		0.02	0.02	77	0.0009	0.083	8	0.083	0.015	0.042	0.067	0.026	*<0.005*	0.01
Potassium	mg/l		No DWS	No EQS	85	87	1060	0	152	153	165	141	161	159	164
Silver	mg/l		No DWS	0.0005	1	0	0	0							
Sodium	mg/l		200	No EQS	85	1560	24700	85	3390	3480	3260	3700	3670	3570	3550
Zinc	mg/l		No DWS	0.04	1	0	0	0							
pH	pH Units		6.5 - 9.5	6.0-9.0	85	6.7	8.2	0	7	7.4	6.9	7	7.6	6.9	6.9
Electrical Conductivity	µS/cm		2500	No EQS	85	12100	19500	85	14400	16800	18200	17200	18500	16400	14800
Ammoniacal Nitrogen as N	mg/l		0.39	0.78	85	12.3	20.6	85	12.8	14.1	13.9	14.5	13.3	14.3	13
Ammonia as N	mg/l		No DWS	0.021	2	0	0	0							0
Chloride	mg/l		250	250	85	1640	7130	85	6500	6130	5820	6520	7130	5550	6380
Nitrite as N	mg/l		-	No EQS	77	0.1	0.1	0	*<0.1*	*<0.1*	0.1	0.1	0.1	*<0.1*	*<0.1*
Nitrite as NO2	mg/l		0.5	No EQS	77	0.328443	0.328443	0			0.328443	0.328443	0.328443		
Nitrate as N	mg/l		-	No EQS	78	0.3	0.9	0	*<0.3*	*<0.3*	0.3	0.8	0.3	*<0.3*	0.3
Nitrate as NO3	mg/l		50	No EQS	78	1.32804	3.98412	0			1.32804	3.54144	1.32804		1.32804
Sulphate as SO4	mg/l		250	400	85	272	1040	85	724	696	715	609	696	672	702
Chemical Oxygen Demand (Total)	mg/l		No DWS	No EQS	45	83	872	0	600	395	454		708	603	540
Fluoride as F	mg/l		1.5	5	77	0.1	1	0	0.2	0.26	0.21	0.26	0.19	0.18	0.19
Antimony	mg/l		0.005	No EQS	55	0.0005	0.003	0	0.001	*<0.001*	0.001	0.002	0.001	*<0.001*	*<0.001*
Selenium	mg/l		0.01	No EQS	83	0.001	0.698	45	0.002	0.003	0.004	0.001	0.003	0.091	0.002
Arsenic	mg/l		0.01	0.025	46	0.003	0.122	22	0.009	0.006	0.007	0.008	0.006	0.004	0.006
Organics															
1,1,1-Trichloroethane	µg/l		No DWS	100	3	0	0	0							
1,1,2-Trichloroethane	µg/l		No DWS	300	3	0	0	0							
1,2-Dichlorobenzene	µg/l		No DWS	No EQS	3	0	0	0							
1,2,4-Trichlorobenzene	ng/l		No DWS	No EQS	3	0	0	0							
1,2-Dichloroethane	µg/l		3	10	3	0	0	0							
1,3-Dichlorobenzene	µg/l		No DWS	No EQS	3	0	0	0							
1,4-Dichlorobenzene	µg/l		No DWS	No EQS	3	0	0	0							
1,2,3-Trichlorobenzene	ng/l		No DWS	No EQS	3	0	0	0							
2,4-D	µg/l		30	0.3	3	0	0	0							
2,4,5-Trichlorophenol	µg/l		No DWS	No EQS	3	0	0	0							
2,4,6-Trichlorophenol	µg/l		200	No EQS	3	0	0	0							
2,4-Dichlorophenol	µg/l		No DWS	20	3	0	0	0							
2,4-Dimethylphenol	µg/l		No DWS	No EQS	3	0	0	0							
2,4-Dinitrotoluene	µg/l		No DWS	No EQS	3	0	0	0							
2,6-Dinitrotoluene	µg/l		No DWS	No EQS	3	0	0	0							
2-Chloronaphthalene	µg/l		No DWS	No EQS	3	0	0	0							
2-Chlorophenol	µg/l		No DWS	50	3	0	0	0							
2-Methylnaphthalene	µg/l		No DWS	No EQS	3	0	0	0							
2-Methylphenol	µg/l		No DWS	100	3	0	0	0							
2-Nitrophenol	µg/l		No DWS	No EQS	3	0	0	0							
4-Bromophenyl-phenylether	µg/l		No DWS	No EQS	3	0	0	0							
4-Chloro-3-methylphenol	µg/l		No DWS	40	3	0	0	0							
4-Chlorophenyl-phenylether	µg/l		No DWS	No EQS	3	0	0	0							
4-Methylphenol	µg/l		No DWS	100	2	0	0	0							
Acenaphthene	µg/l		No DWS	1.2	2	0	0	0							
Acenaphthylene	µg/l		No DWS	1.2	3	0	0	0							
Aldrin	ng/l		30	5	3	0	0	0							
Anthracene	µg/l		No DWS	0.1	3	0	0	0							
Atrazine	µg/l		2	0.6	3	0	0	0							
Azinphos-methyl	µg/l		No DWS	0.01	3	0	0	0							
Benzene	µg/l		1	8	3	0	0	0							
Benzo[a]anthracene	µg/l		No DWS	1.2	3	0	0	0							
Benzo[a]pyrene	µg/l		0.01	0.05	3	0	0	0							
Benzo[b]fluoranthene	µg/l		No DWS	No EQS	3	0	0	0							
Benzo[g,h,i]perylene	µg/l		No DWS	No EQS	3	0	0	0							
Benzo[k]fluoranthene	µg/l		No DWS	No EQS	3	0	0	0							
bis(2-Chloroethoxy)methane	µg/l		No DWS	No EQS	3	0	0	0							
bis(2-Chloroethyl)ether	µg/l		No DWS	No EQS	3	0	0	0							
bis(2-Chloroisopropyl)ether	µg/l		No DWS	No EQS	3	0	0	0							
bis(2-ethylhexyl)phthalate	µg/l		8	1.3	3	0	0	0							
Butylbenzylphthalate	µg/l		No DWS	20	3	0	0	0							
Tetrachloromethane	µg/l		3	12	3	0	0	0							
Chlorfenvinphos	µg/l		No DWS	0.1	3	0	0	0							
Trichloromethane	µg/l		No DWS	2.5	3	0	0	0							
Chrysene	µg/l		No DWS	1.2	3	0	0	0							
Cis-permethrin	µg/l		No DWS	0.01	3	0	0	0							
Demeton-s-methyl	µg/l		No DWS	0.5	2	0	0	0							
Diazinon	µg/l		No DWS	0.01	3	0	0	0							
Dibenzo[a,h]anthracene	µg/l		No DWS	1.2	3	0	0	0							
Dibenzofuran	µg/l		No DWS	No EQS	3	0	0	0							
Dieldrin	ng/l		30	5	3	0	0	0							
Diethylphthalate	µg/l		No DWS	200	3	0	0	0							
Dimethote	µg/l		6	0.48	3	0	0	0							
Dimethylphthalate	µg/l		No DWS	800	3	0	0	0							
Dibutyl phthalate	µg/l		No DWS	8	3	0	0	0							
Dioctyl phthalate	µg/l		No DWS	20	3	0	0	0							
Endosulphan alpha	ng/l		No DWS	0.5	3	0	0	0							
Endosulphan beta	ng/l		No DWS	0.5	3	0	0	0							
Endrin	ng/l		600	5	3	0	0	0							
Fenitrothion	µg/l		No DWS	0.01	3	0	0	0							
Fluoranthene	µg/l		No DWS	0.1	3	0	0	0							
Fluorene	µg/l		No DWS	1.2	3	0	0	0							
Hexachlorobenzene	ng/l		No DWS	0.01	3	0	0	0							
Hexachlorobutadiene	ng/l		No DWS	0.1	3	0	0	0							
Hexachloroethane	µg/l		No DWS	No EQS	3	0	0	0							
Indeno[1,2,3-cd]pyrene	µg/l		No DWS	No EQS	3	0	0	0							
Isodrin	ng/l		No DWS	5	2	0	0	0							
Isophorone	µg/l		No DWS	No EQS	3	0	0	0							
m and p-Xylene	µg/l		No DWS	No EQS	3	0	0	0							
Malathion	µg/l		No DWS	0.02	3	0	0	0							
Mecoprop	µg/l		10	18	3	0	0	0							
Naphthalene	µg/l		No DWS	1.2	3	0	0	0							
Nitrobenzene	µg/l		No DWS	No EQS	3	0	0	0							
o,p-DDT	ng/l		1000	25	3	0	0	0							
o-Xylene	µg/l		No DWS	No EQS	3	0	0	0							
p,p-DDT	ng/l		No DWS	10	3	0	0	0							
Pentachlorophenol	µg/l		9	0.4	3	0	0	0							
Phenanthrene	µg/l		No DWS	1.2	3	0	0	0							
Phenol	µg/l		No DWS	7.7	3	0	0	0							
Pyrene	µg/l		No DWS	1.2	3	0	0	0							
Simazine	µg/l		2	1	3	0	0	0							
Tetrachloroethene	µg/l		10	10	3	0	0	0							
Tin	mg/l		No DWS	0.01	1	0	0	0							
Toluene	µg/l		No DWS	40	3	0	0	0							
Permethrin	µg/l		300	0.01	2	0	0	0							
Sum of xylenes	µg/l		No DWS	30	3	0	0	0							
Tributyltin	µg/l		No DWS	0.002	3	0	0	0							
Trichloroethene	µg/l		10	10	3	0	0	0							
Trifluralin	ng/l		20000	30	3	0	0	0							
Triphenyltin	µg/l		No DWS	0.008	3	0	0	0							
Uranium	mg/l		0.015	No EQS	1	0	0	0							
Vanadium	mg/l		No DWS	0.1	1	0	0	0							
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l		No DWS	0.03	3	0	0	0							
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l		No DWS	0.002	3	0	0	0							

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units																			
Sample Reference		GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12
Zone		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		18/08/2006	28/09/2006	19/10/2006	09/11/2006	08/12/2006	11/01/2007	15/02/2007	08/03/2007	05/04/2007	08/05/2007	07/06/2007	05/07/2007	07/08/2007	06/09/2007	04/10/2007	08/11/2007	06/12/2007	10/01/2008	07/02/2008
Analytical Parameter (Water Analysis)																				
Inorganics																				
Barium	mg/l	0.31	0.31	0.32	0.32	0.35	0.31	0.31	0.31	0.38	0.32	0.32	0.32	0.32	0.32	0.32	0.3	0.3	0.3	0.29
Boron	mg/l	1.1	1.3	1.1	1.3	1.2	1.1	1.3	1.3	1.3	1.1	1.3	1.4	1.2	1.3	1.3	1.3	1.2	1.2	1
Cadmium	mg/l	<0.0005	0.001	<0.0005	0.001	<0.0005	0.001	0.0005	0.0005	0.001	0.0005	0.001	0.0005	<0.0005	<0.0005	0.0005	0.0005	<0.0005	<0.0005	0.0005
Calcium	mg/l	299	307	322	302	315	286	299	324	333	310	321	324	323	314	303	331	313	311	285
Chromium	mg/l	0.009	0.025	0.01	0.011	0.011	0.039	0.005	0.005	0.03	0.012	0.005	0.005	<0.005	<0.005	0.006	0.005	<0.005	<0.005	<0.005
Chromium (hexavalent)	mg/l	<0.03	0.03	<0.03	<0.03	<0.03	0.03			0.03	0.03	<0.03	0.03	<0.03	<0.03	<0.03	0.03	<0.03	<0.06	<0.3
Cobalt	mg/l																			
Copper	mg/l	0.016	0.057	0.013	0.024	0.014	0.051	0.005	0.006	0.041	0.018	<0.005	0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005
Iron	mg/l																			
Lead	mg/l	0.007	0.027	0.011	0.022	0.009	0.038	0.005	0.006	0.024	0.01	0.005	0.007	<0.005	<0.005	<0.005	0.022	<0.005	<0.005	<0.005
Magnesium	mg/l	384	391	405	384	380	326	385	399	386	375	398	421	371	388	399	421	384	370	353
Manganese	mg/l	0.94	1.08	0.95	0.9	1.07	1.2	0.89	1	1.23	1.14	0.99	0.95	1.11	0.94	0.89	0.89	0.91	0.89	0.86
Mercury	mg/l	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	mg/l	<0.005	0.005	<0.005	<0.005	<0.005	0.005	0.005	0.005	0.005	0.005	<0.005	0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005
Nickel	mg/l	0.015	0.039	0.012	0.014	0.012	0.053	0.005	0.005	0.026	0.017	<0.005	0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005
Potassium	mg/l	158	168	166	129	132	128	137	140	148	153	172	126	167	152	141	144	156	162	144
Silver	mg/l																			
Sodium	mg/l	3540	3380	3490	3550	3570	2530	3230	3420	3090	3430	3630	3460	3420	3530	1560	3370	3440	3480	3310
Zinc	mg/l																			
pH	pH Units	7.2	6.9	6.9	7	6.7	7.3	7.6	6.8	8.1	7.4	8.1	7	7.1	6.8	7.2	6.8	7.4	7.1	7.2
Electrical Conductivity	µS/cm	16800	19500	18100	17100	16400	15800	16800	15400	16700	15200	17400	15900	16000	17500	17300	17400	16800	16100	15700
Ammoniacal Nitrogen as N	mg/l	13.4	13.5	13.8	14.9	18.3	15.4	14.5	15.6	17	15.8	15.1	16.7	15.2	15.3	15.1	15	15.1	15	14.6
Ammonia as N	mg/l	0																		
Chloride	mg/l	6190	6540	6600	5160	6750	6160	5640	5780	6550	6310	5600	5890	6460	6650	5710	6140	6910	5770	6580
Nitrite as N	mg/l	<0.1	0.1	<0.1	<0.1	<0.1	0.1	0.1	0.1	0.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1
Nitrite as NO2	mg/l		0.328443				0.328443	0.328443	0.328443	0.328443	0.328443		0.328443				0.328443			
Nitrate as N	mg/l	<0.3	0.3	0.5	<0.3	<0.3	0.3	0.4	0.4	0.5	0.9	<0.3	0.3	<0.3	<0.3	<0.3	0.3	<0.3	<0.3	<0.3
Nitrate as NO3	mg/l		1.32804	2.2134			1.32804	1.77072	1.77072	2.2134	3.98412		1.32804				1.32804			
Sulphate as SO4	mg/l	707	738	656	615	492	547	588	489	600	562	557	562	600	638	635	609	629	573	571
Chemical Oxygen Demand (Total)	mg/l	648	364	330	328	368	635	324	380	341	872	282	348	324	320	359	379	295	307	236
Fluoride as F	mg/l	0.22	0.16	0.18	0.18	0.18	0.2	0.16		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Antimony	mg/l	<0.001	0.001	<0.001	<0.001	<0.001	0.001	0.001		0.001	0.001	<0.001	0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001
Selenium	mg/l	0.07	0.052	0.13	0.14		0.052	0.146		0.001	0.001	0.698	0.106	0.169	0.078	0.002	0.076	0.092	0.12	0.083
Arsenic	mg/l	0.007	0.012	0.006	0.003		0.025	0.031		0.01	0.006	0.122	0.025	0.036	0.018	0.003	0.017	0.02	0.073	0.018
Organics																				
1,1,1-Trichloroethane	µg/l		<0.10												<0.10					
1,1,2-Trichloroethane	µg/l		<0.10												<0.10					
1,2-Dichlorobenzene	µg/l		<1.0												<1.0					
1,2,4-Trichlorobenzene	ng/l		<5												<5					
1,2-Dichloroethane	µg/l		<0.10												<0.10					
1,3-Dichlorobenzene	µg/l		<1.0												<1.0					
1,4-Dichlorobenzene	µg/l		<1.0												<1.0					
1,2,3-Trichlorobenzene	ng/l		<5												<5					
2,4-D	µg/l		<0.05												<0.05					
2,4,5-Trichlorophenol	µg/l		<1.0												<1.0					
2,4,6-Trichlorophenol	µg/l		<1.0												<1.0					
2,4-Dichlorophenol	µg/l		<1.0												<1.0					
2,4-Dimethylphenol	µg/l		<2.0												<2.0					
2,4-Dinitrotoluene	µg/l		<1.0												<1.0					
2,6-Dinitrotoluene	µg/l		<1.0												<1.0					
2-Chloronaphthalene	µg/l		<1.0												<1.0					
2-Chlorophenol	µg/l		<1.0												<1.0					
2-Methylnaphthalene	µg/l		<1.0												<1.0					
2-Methylphenol	µg/l		<1.0												<1.0					
2-Nitrophenol	µg/l		<1.0												<1.0					
4-Bromophenyl-phenylether	µg/l		<1.0												<1.0					
4-Chloro-3-methylphenol	µg/l		<1.0												<1.0					
4-Chlorophenyl-phenylether	µg/l		<1.0												<1.0					
4-Methylphenol	µg/l		<1.0												<1.0					
Acenaphthene	µg/l		<1.0												<1.0					
Acenaphthylene	µg/l		<1.0												<1.0					
Aldrin	ng/l		<3												<3					
Anthracene	µg/l		<1.0												<1.0					
Atrazine	µg/l		<0.05												<0.10					
Azinphos-methyl	µg/l		<0.050												<0.050					
Benzene	µg/l		<0.10												<0.10					
Benzo[a]anthracene	µg/l		<1.0												<1.0					
Benzo[a]pyrene	µg/l		<1.0												<1.0					
Benzo[b]fluoranthene	µg/l		<1.0												<1.0					
Benzo[g,h,i]perylene	µg/l		<1.0												<1.0					
Benzo[k]fluoranthene	µg/l		<1.0												<1.0					
bis(2-Chloroethoxy)methane	µg/l		<1.0												<1.0					
bis(2-Chloroethyl)ether	µg/l		<1.0												<1.0					
bis(2-Chloroisopropyl)ether	µg/l		<1.0												<1.0					
bis(2-ethylhexyl)phthalate	µg/l		<10.0												<50.0					
Butylbenzylphthalate	µg/l		<1.0												<1.0					
Tetrachloromethane	µg/l		<0.10												<0.10					
Chlorfenvinphos	µg/l		<0.050												<0.050					
Trichloromethane	µg/l		<0.10												<0.10					
Chrysene	µg/l		<1.0												<1.0					
Cis-permethrin	µg/l		<0.02												<0.010					
Demeton-s-methyl	µg/l		<0.050												<0.050					
Diazinon	µg/l		<0.050												<0.050					
Dibenzo[a,h]anthracene	µg/l		<1.0												<1.0					
Dibenzofuran	µg/l		<1.0												<1.0					
Dieldrin	ng/l		<3												<3					
Diethylphthalate	µg/l		<3.0												<3.0					
Dimethote	µg/l		<0.050												<0.050					
Dimethylphthalate	µg/l		<1.0												<1.0					
Dibutyl phthalate	µg/l		<10.0												<10.0					
Dioctyl phthalate	µg/l		<1.0												<1.0					
Endosulphan alpha	ng/l		<5												<5					
Endosulphan beta	ng/l		<5												<5					
Endrin	ng/l		<3												<3					
Fenitrothion	µg/l		<0.050												<0.050					
Fluoranthene	µg/l		<1.0												<1.0					
Fluorene	µg/l		<1.0												<1.0					
Hexachlorobenzene	ng/l		<5												<5					
Hexachlorobutadiene	ng/l		<5												<5					
Hexachloroethane	µg/l		<1.0												<1.0					
Indeno[1,2,3-cd]pyrene	µg/l		<1.0												<1.0					
Isodrin	ng/l		<3												<3					
Isophorone	µg/l		<1.0												<1.0					
m and p-Xylene	µg/l		<0.10												<0.10					
Malathion	µg/l		<0.050												<0.050					
Mecoprop	µg/l		<0.04												<0.04					
Naphthalene	µg/l		<1.0												<1.0					
Nitrobenzene	µg/l		<1.0												<1.0					
o,p-DDT	ng/l		<2												<2					
o-Xylene	µg/l		<0.10												<0.10					
p,p-DDT	ng/l		<2												<2					
Pentachlorophenol	µg/l		<0.05												<0.05					
Phenanthrene	µg/l		<1.0												<1.0					
Phenol	µg/l		<2.0												<2.0					
Pyrene	µg/l		<1.0												<1.0					
Simazine	µg/l		<0.05												<0.10					
Tetrachloroethene	µg/l		<0.10												<0.10					
Tin	mg/l																			
Toluene	µg/l		<0.10												<0.10					
Permethrin	µg/l		<0.020												<0.020					
Sum of xylenes	µg/l		<0.20												<0.20					
Tributyltin	µg/l		<0.02												<0.10					
Trichloroethene	µg/l		<0.10												<0.10					
Trifluralin	ng/l		<5												<5					
Triphenyltin	µg/l		<0.02												<0.10					
Uranium	mg/l																			
Vanadium	mg/l																			
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l		0												0					
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l		0												0					

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units																			
Sample Reference		GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12
Zone		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		06/03/2008	08/04/2008	07/05/2008	05/06/2008	03/07/2008	07/08/2008	04/09/2008	09/10/2008	06/11/2008	02/12/2008	08/01/2009	05/02/2009	05/03/2009	14/04/2009	07/05/2009	04/06/2009	09/07/2009	06/08/2009	10/09/2009
Analytical Parameter (Water Analysis)																				
Inorganics																				
Barium	mg/l	0.33	0.31	0.3	0.25	0.25	0.28	0.24	0.36	0.33	0.29	0.28	0.31	0.29	0.32	0.33	0.32	0.34	0.34	0.36
Boron	mg/l	1.2	1.2	1.2	1.1	1	1.1	1	1.7	1.5	1.2	1.2	1.3	1.2	3.4	1.3	1.5	1.3	1.3	1.6
Cadmium	mg/l	0.0005	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	0.0003	<0.0003	<0.0003	0.0004	<0.0003	<0.0003	<0.0003	0.0006	<0.0003	<0.0003	<0.0003
Calcium	mg/l	318	336	296	319	321	320	300	312	315	323	294	357	308	387	360	312	303	284	337
Chromium	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.003	<0.001	0.001	0.001	<0.001	<0.001	<0.001	0.001	0.001	0.002	0.002	0.003
Chromium (hexavalent)	mg/l	<1.5	<0.03	<0.06	<0.03	<0.03	<0.03	<0.03	0.04	0.02	<0.03	<0.03	<0.03	<0.03	0.03	0.03	<0.03	<0.03	<0.03	<0.03
Cobalt	mg/l							<0.005												
Copper	mg/l	0.006	0.006	0.01	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.001	0.001	0.002	<0.001	0.004	<0.001	0.002	0.001	<0.001	<0.001
Iron	mg/l																			
Lead	mg/l	0.014	<0.005	<0.005	<0.005	<0.005	<0.005	0.021	<0.002	0.007	0.003	<0.002	0.004	0.003	0.004	<0.002	0.003	0.007	0.006	<0.002
Magnesium	mg/l	400	377	356	370	363	363	372	446	393	409	412	409	387	382	405	412	399	387	416
Manganese	mg/l	0.93	0.91	0.94	0.86	0.97	0.91	0.92	0.85	0.985	1.07	0.988	1.06	0.94	0.962	1.1	1.1	1.09	1.1	1.17
Mercury	mg/l	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.1	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	0.005	<0.002	<0.0013	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0023	<0.0009	0.0026	0.0025	0.016	0.0019	0.0009	<0.0009	0.0035	0.0029	<0.0009	0.0021
Potassium	mg/l	134	143	148	103	126	132	135	143	152	140	148	138	109	132	114	133	137	129	159
Silver	mg/l							<0.02												
Sodium	mg/l	3950	3310	3380	3790	3680	2820	5450	5440	3810	3910	2950	3750	3670	3980	3440	4200	3490	3790	3830
Zinc	mg/l																			
pH	pH Units	7	7	7.1	7.5	7.1	7.6	7.5	7	6.9	6.9	8.2	8.2	7.4	7.2	7	7.1	6.9	7.3	6.7
Electrical Conductivity	µS/cm	16400	14600	14350	16000	16400	15800	16600	16600	16700	16200	15700	16500	16000	15500	14900	16400	17000	16300	16800
Ammoniacal Nitrogen as N	mg/l	14.7	15	15.8	14.5	14.8	14.9	14.8	14.6	14.4	14.4	14.4	14.4	15.7	15	15.9	13.8	15.3	15.4	16.2
Ammonia as N	mg/l																			
Chloride	mg/l	6460	6010	6250	5430	6490	6300	6020	5920	1640	5400	6320	5820	6170	6180	5240	6130	5800	4450	6340
Nitrite as N	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite as NO2	mg/l																			
Nitrate as N	mg/l	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Nitrate as NO3	mg/l																			
Sulphate as SO4	mg/l	609	554	563	532	540	560	542	606	585	555	531	502	484	504	510	556	522	523	534
Chemical Oxygen Demand (Total)	mg/l	698	322	344	83	600	379	381	773	325	361	448	383	307	405	380	560	620	535	320
Fluoride as F	mg/l	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.1	<0.1	0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.2
Antimony	mg/l	<0.001	<0.001	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Selenium	mg/l	0.067	0.055	0.047	0.056	0.067	0.077	0.085	0.093	0.04	0.05	0.041	0.039	0.028	0.03	0.03	0.029	0.058	0.063	0.041
Arsenic	mg/l	0.014	0.011	0.009	0.008	0.015	0.017	0.019	0.022	0.009	0.008	0.008	0.006	0.004	0.006	0.004	0.006	0.016	0.014	0.01
Organics																				
1,1,1-Trichloroethane	µg/l							<0.10												
1,1,2-Trichloroethane	µg/l							<0.10												
1,2-Dichlorobenzene	µg/l							<1.0												
1,2,4-Trichlorobenzene	ng/l							<6												
1,2-Dichloroethane	µg/l							<0.10												
1,3-Dichlorobenzene	µg/l							<1.0												
1,4-Dichlorobenzene	µg/l							<1.0												
1,2,3-Trichlorobenzene	ng/l							<6												
2,4-D	µg/l							<0.05												
2,4,5-Trichlorophenol	µg/l							<1.0												
2,4,6-Trichlorophenol	µg/l							<1.0												
2,4-Dichlorophenol	µg/l							<1.0												
2,4-Dimethylphenol	µg/l							<2.0												
2,4-Dinitrotoluene	µg/l							<1.0												
2,6-Dinitrotoluene	µg/l							<1.0												
2-Chloronaphthalene	µg/l							<1.0												
2-Chlorophenol	µg/l							<1.0												
2-Methylnaphthalene	µg/l							<1.0												
2-Methylphenol	µg/l							<1.0												
2-Nitrophenol	µg/l							<1.0												
4-Bromophenyl-phenylether	µg/l							<1.0												
4-Chloro-3-methylphenol	µg/l							<1.0												
4-Chlorophenyl-phenylether	µg/l							<1.0												
4-Methylphenol	µg/l																			
Acenaphthene	µg/l																			
Acenaphthylene	µg/l							<1.0												
Aldrin	ng/l							<6												
Anthracene	µg/l							<1.0												
Atrazine	µg/l							<0.020												
Azinphos-methyl	µg/l							<0.002												
Benzene	µg/l							<0.10												
Benzo[a]anthracene	µg/l							<1.0												
Benzo[a]pyrene	µg/l							<1.0												
Benzo[b]fluoranthene	µg/l							<1.0												
Benzo[g,h,i]perylene	µg/l							<1.0												
Benzo[k]fluoranthene	µg/l							<1.0												
bis(2-Chloroethoxy)methane	µg/l							<1.0												
bis(2-Chloroethyl)ether	µg/l							<1.0												
bis(2-Chloroisopropyl)ether	µg/l							<1.0												
bis(2-ethylhexyl)phthalate	µg/l							<10.0												
Butylbenzylphthalate	µg/l							<1.0												
Tetrachloromethane	µg/l							<0.10												
Chlorfenvinphos	µg/l							<0.002												
Trichloromethane	µg/l							<0.10												
Chrysene	µg/l							<1.0												
Cis-permethrin	µg/l							<0.002												
Demeton-s-methyl	µg/l																			
Diazinon	µg/l							<0.002												
Dibenzo[a,h]anthracene	µg/l							<1.0												
Dibenzofuran	µg/l							<1.0												
Dieldrin	ng/l							<6												
Diethylphthalate	µg/l							<3.0												
Dimethote	µg/l							<0.020												
Dimethylphthalate	µg/l							<1.0												
Dibutyl phthalate	µg/l							<10.0												
Dioctyl phthalate	µg/l							<1.0												
Endosulphan alpha	ng/l							<6												
Endosulphan beta	ng/l							<6												
Endrin	ng/l							<6												
Fenitrothion	µg/l							<0.002												
Fluoranthene	µg/l							<1.0												
Fluorene	µg/l							<1.0												
Hexachlorobenzene	ng/l							<2												
Hexachlorobutadiene	ng/l							<2												
Hexachloroethane	µg/l							<1.0												
Indeno[1,2,3-cd]pyrene	µg/l							<1.0												
Isodrin	ng/l																			
Isophorone	µg/l							<1.0												
m and p-Xylene	µg/l							<0.10												
Malathion	µg/l							<0.002												
Mecoprop	µg/l							<0.04												
Naphthalene	µg/l							<1.0												
Nitrobenzene	µg/l							<1.0												
o,p-DDT	ng/l							<2												
o-Xylene	µg/l							<0.10												
p,p-DDT	ng/l							<2												
Pentachlorophenol	µg/l							<0.05												
Phenanthrene	µg/l							<1.0												
Phenol	µg/l							<2.0												
Pyrene	µg/l							<1.0												
Simazine	µg/l							<0.020												
Tetrachloroethene	µg/l							<0.10												
Tin	mg/l							<0.10												
Toluene	µg/l							<0.10												
Permethrin	µg/l																			
Sum of xylenes	µg/l							<0.20												
Tributyltin	µg/l							<0.02												
Trichloroethene	µg/l							<0.10												
Trifluralin	ng/l							<10												
Triphenyltin	µg/l							<0.02												
Uranium	mg/l							<0.001												
Vanadium	mg/l							<0.005												
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l							0												
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l							0												

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units								
Sample Reference		GW12	GW12	GW12	GW12	GW12	GW12	GW12	GW12
Zone		2	2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		07/10/2009	05/11/2009	03/12/2009	04/03/2010	03/06/2010	08/09/2010	07/12/2010	03/03/2011
Analytical Parameter (Water Analysis)									
Inorganics									
Barium	mg/l	0.3	0.33	0.35		0.31	0.304	0.292	0.285
Boron	mg/l	1.1	1.3	1.4		1.1	1.2	1.7	1.17
Cadmium	mg/l	*<0.0003*	*<0.0003*	*<0.0003*		*<0.0006*	0.0006	*<0.0006*	*<0.0006*
Calcium	mg/l	338	374	312	366	354	351	316	314
Chromium	mg/l	0.001	*<0.001*	0.001	0.001	0.003	0.0027	0.0052	*<0.0007*
Chromium (hexavalent)	mg/l	*<0.03*	*<0.03*	*<0.03*		*<0.03*	*<0.03*	*<0.03*	*<0.03*
Cobalt	mg/l								
Copper	mg/l	*<0.001*	*<0.001*	*<0.001*		0.003	*<0.001*	0.002	0.002
Iron	mg/l								
Lead	mg/l	0.003	0.003	*<0.002*		0.032	*<0.005*	*<0.005*	0.005
Magnesium	mg/l	403	398	380	369	368	402	378	339
Manganese	mg/l	1.03	1.14	1.13	1.13	1.2	1.1	0.997	1.02
Mercury	mg/l	*<0.0001*	0.0001	*<0.0001*		*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*
Molybdenum	mg/l	*<0.002*	*<0.002*	*<0.002*		0.006	0.008	0.004	*<0.002*
Nickel	mg/l	0.002	*<0.0009*	0.0047		0.01	*<0.002*	*<0.002*	*<0.002*
Potassium	mg/l	137	99	87	125	140	157	138	122
Silver	mg/l								
Sodium	mg/l	3900	3890	4230	3320	3310	3280	3130	3010
Zinc	mg/l								
pH	pH Units	7.3	7	7.1	7.4	7.3	6.9	6.7	8
Electrical Conductivity	µS/cm	16700	16500	15000	14700	13300	15600	14300	13500
Ammoniacal Nitrogen as N	mg/l	15.6	16.2	15.6	15.8	15.7	14.8	13.6	13.9
Ammonia as N	mg/l								
Chloride	mg/l	6220	6230	5370	5980	6040	5790	5780	5510
Nitrite as N	mg/l	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.008*	*<0.006*	*<0.006*	*<0.006*
Nitrite as NO2	mg/l								
Nitrate as N	mg/l	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.29*	*<0.29*	*<0.29*
Nitrate as NO3	mg/l								
Sulphate as SO4	mg/l	561	510	499	481	479	443	412	357
Chemical Oxygen Demand (Total)	mg/l	329							
Fluoride as F	mg/l	*<0.1*	0.2	0.2	*<0.1*	*<0.1*	0.1	*<0.2*	*<0.2*
Antimony	mg/l	*<0.001*	*<0.001*	*<0.001*	*<0.001*	0.0005	*<0.0016*	*<0.0016*	
Selenium	mg/l	0.049	0.049	0.086	0.054	0.074	0.066	0.069	0.045
Arsenic	mg/l	0.012	0.013	0.02					
Organics									
1,1,1-Trichloroethane	µg/l								
1,1,2-Trichloroethane	µg/l								
1,2-Dichlorobenzene	µg/l								
1,2,4-Trichlorobenzene	ng/l								
1,2-Dichloroethane	µg/l								
1,3-Dichlorobenzene	µg/l								
1,4-Dichlorobenzene	µg/l								
1,2,3-Trichlorobenzene	ng/l								
2,4-D	µg/l								
2,4,5-Trichlorophenol	µg/l								
2,4,6-Trichlorophenol	µg/l								
2,4-Dichlorophenol	µg/l								
2,4-Dimethylphenol	µg/l								
2,4-Dinitrotoluene	µg/l								
2,6-Dinitrotoluene	µg/l								
2-Chloronaphthalene	µg/l								
2-Chlorophenol	µg/l								
2-Methylnaphthalene	µg/l								
2-Methylphenol	µg/l								
2-Nitrophenol	µg/l								
4-Bromophenyl-phenylether	µg/l								
4-Chloro-3-methylphenol	µg/l								
4-Chlorophenyl-phenylether	µg/l								
4-Methylphenol	µg/l								
Acenaphthene	µg/l								
Acenaphthylene	µg/l								
Aldrin	ng/l								
Anthracene	µg/l								
Atrazine	µg/l								
Azinphos-methyl	µg/l								
Benzene	µg/l								
Benzo[a]anthracene	µg/l								
Benzo[a]pyrene	µg/l								
Benzo[b]fluoranthene	µg/l								
Benzo[g,h,i]perylene	µg/l								
Benzo[k]fluoranthene	µg/l								
bis(2-Chloroethoxy)methane	µg/l								
bis(2-Chloroethyl)ether	µg/l								
bis(2-Chloroisopropyl)ether	µg/l								
bis(2-ethylhexyl)phthalate	µg/l								
Butylbenzylphthalate	µg/l								
Tetrachloromethane	µg/l								
Chlorfenvinphos	µg/l								
Trichloromethane	µg/l								
Chrysene	µg/l								
Cis-permethrin	µg/l								
Demeton-s-methyl	µg/l								
Diazinon	µg/l								
Dibenzo[a,h]anthracene	µg/l								
Dibenzofuran	µg/l								
Dieldrin	ng/l								
Diethylphthalate	µg/l								
Dimethote	µg/l								
Dimethylphthalate	µg/l								
Dibutyl phthalate	µg/l								
Dioctyl phthalate	µg/l								
Endosulphan alpha	ng/l								
Endosulphan beta	ng/l								
Endrin	ng/l								
Fenitrothion	µg/l								
Fluoranthene	µg/l								
Fluorene	µg/l								
Hexachlorobenzene	ng/l								
Hexachlorobutadiene	ng/l								
Hexachloroethane	µg/l								
Indeno[1,2,3-cd]pyrene	µg/l								
Isodrin	ng/l								
Isophorone	µg/l								
m and p-Xylene	µg/l								
Malathion	µg/l								
Mecoprop	µg/l								
Naphthalene	µg/l								
Nitrobenzene	µg/l								
o,p-DDT	ng/l								
o-Xylene	µg/l								
p,p-DDT	ng/l								
Pentachlorophenol	µg/l								
Phenanthrene	µg/l								
Phenol	µg/l								
Pyrene	µg/l								
Simazine	µg/l								
Tetrachloroethene	µg/l								
Tin	mg/l								
Toluene	µg/l								
Permethrin	µg/l								
Sum of xylenes	µg/l								
Tributyltin	µg/l								
Trichloroethene	µg/l								
Trifluralin	ng/l								
Triphenyltin	µg/l								
Uranium	mg/l								
Vanadium	mg/l								
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l								
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l								

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Standard for the Protection of Fisheries
UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
WHO Drinking Water Guideline

Lab Sample Number	**Units**	**Limit of detection**	**Drinking Water Screening Value (DWS)**	**Surface Water Screening Value (EQS)**	**No Samples**	**Minimum Value**	**Maximum Value**	**No. Exceedances**							
Sample Reference									GW13	GW13	GW13	GW13	GW13	GW13	GW13
Zone									2	2	2	2	2	2	2
Groundwater Body									RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled									26/01/2006	27/02/2006	23/03/2006	20/04/2006	18/05/2006	22/06/2006	20/07/2006
Analytical Parameter (Water Analysis)															
Inorganics															
Barium	mg/l		0.7	No EQS	50	0.0865	0.25	0	0.25	0.24	0.2	0.2	0.18	0.2	0.18
Boron	mg/l		1	7	49	0.3	0.93	0	0.4	0.5	0.5	0.5	0.5	0.5	0.3
Cadmium	mg/l		0.005	0.0002	49	0.0005	0.0021	12	0.002	0.001	0.0005	0.001	0.001	*<0.0005*	*<0.0005*
Calcium	mg/l		No DWS	No EQS	51	131	483	0	419	401	293	289	280	311	328
Chromium	mg/l		0.05	0.015	55	0.0008	0.013	0	0.013	0.006	0.005	0.005	0.005	0.005	0.005
Chromium (hexavalent)	mg/l		No DWS	0.0006	46	0.03	0.04	5	*<0.03*	*<0.03*	0.03	0.03	0.03		
Copper	mg/l		2	0.005	50	0.001	0.026	7	0.026	0.02	0.005	0.005	0.005	*<0.005*	0.005
Iron	mg/l		0.2	1	1	1.16	1.16	1							
Lead	mg/l		0.01	0.0072	50	0.002	0.098	16	0.098	0.083	0.019	0.019	0.009	*<0.005*	0.007
Magnesium	mg/l		No DWS	No EQS	51	31	161	0	47	57	56	65	57	67	69
Manganese	mg/l		0.05	No EQS	51	0.1103	1.73	51	1.72	1.73	1.05	1.02	0.95	1.11	0.83
Mercury	mg/l		0.001	0.00005	49	0.0001	0.001	7	*<0.0001*	0.0001	0.001	0.0001	0.0001	*<0.0001*	*<0.0001*
Molybdenum	mg/l		0.07	No EQS	50	0.002	0.056	0	*<0.005*	0.015	0.005	0.005	0.005	0.014	*<0.005*
Nickel	mg/l		0.02	0.02	50	0.003	0.053	4	0.023	*<0.005*	0.007	0.005	0.005	*<0.005*	0.005
Potassium	mg/l		No DWS	No EQS	55	46	105	0	46	53	54	55	50	64	65
Sodium	mg/l		200	No EQS	55	0.015	1780	54	444	514	494	634	508	645	692
Zinc	mg/l		No DWS	0.04	1	0	0	0							
pH	pH Units		6.5 - 9.5	6.0-9.0	55	7	8.1	0	7.3	7.5	7.1	7.4	7.8	7.2	7.2
Electrical Conductivity	µS/cm		2500	No EQS	55	2160	8690	54	3520	3720	4160	4170	4370	4460	4440
Ammoniacal Nitrogen as N	mg/l		0.39	0.78	55	0.9	7.81	54	5.3	4.9	4.1	3.2	3.1	1.4	1.2
Ammonia as N	mg/l		No DWS	0.021	2	0	0	0							0
Chloride	mg/l		250	250	55	705	2910	55	1030	1170	1280	1300	1310	1410	1470
Nitrite as N	mg/l		-	No EQS	51	0.078	2.4	0	*<0.1*	*<0.1*	0.3	0.1	0.1	1.8	2
Nitrite as NO2	mg/l		0.5	No EQS	51	0.256186	7.882632	14			0.985329	0.328443	0.328443	5.911974	6.56886
Nitrate as N	mg/l		-	No EQS	51	0.3	3.4	0	*<0.3*	*<0.3*	0.3	1.1	0.3	0.7	0.9
Nitrate as NO3	mg/l		50	No EQS	51	1.32804	15.05112	0			1.32804	4.86948	1.32804	3.09876	3.98412
Sulphate as SO4	mg/l		250	400	55	135	411	37	135	163	178	167	177	190	196
Chemical Oxygen Demand (Total)	mg/l		No DWS	No EQS	31	45	249	0	97	187	90	82	98	104	148
Fluoride as F	mg/l		1.5	5	51	0.1	0.6	0	0.29	0.35	0.27	0.28	0.19	0.21	0.21
Antimony	mg/l		0.005	No EQS	41	0.0005	0.003	0	0.001	*<0.001*	0.001	0.001	0.001	*<0.001*	*<0.001*
Selenium	mg/l		0.01	No EQS	55	0.001	0.044	29	0.002	0.003	0.002	0.001	0.001	0.021	0.002
Arsenic	mg/l		0.01	0.025	33	0.002	0.046	14	0.041	0.038	0.033	0.035	0.034	0.042	0.006
Organics															
1,1,1-Trichloroethane	µg/l		No DWS	100	1	0	0	0							
1,1,2-Trichloroethane	µg/l		No DWS	300	3	0	0	0							
1,2-Dichlorobenzene	µg/l		No DWS	No EQS	1	0	0	0							
1,2,4-Trichlorobenzene	ng/l		No DWS	No EQS	4	0	0	0							
1,2-Dichloroethane	µg/l		3	10	3	0	0	0							
1,3-Dichlorobenzene	µg/l		No DWS	No EQS	1	0	0	0							
1,4-Dichlorobenzene	µg/l		No DWS	No EQS	1	0	0	0							
1,2,3-Trichlorobenzene	ng/l		No DWS	No EQS	1	0	0	0							
2,4-D	µg/l		30	0.3	3	0	0	0							
2,4,5-Trichlorophenol	µg/l		No DWS	No EQS	3	0	0	0							
2,4,6-Trichlorophenol	µg/l		200	No EQS	3	0	0	0							
2,4-Dichlorophenol	µg/l		No DWS	20	3	0	0	0							
2,4-Dimethylphenol	µg/l		No DWS	No EQS	3	0	0	0							
2,4-Dinitrotoluene	µg/l		No DWS	No EQS	3	0	0	0							
2,6-Dinitrotoluene	µg/l		No DWS	No EQS	3	0	0	0							
2-Chloronaphthalene	µg/l		No DWS	No EQS	3	0	0	0							
2-Chlorophenol	µg/l		No DWS	50	3	0	0	0							
2-Methylnaphthalene	µg/l		No DWS	No EQS	3	0	0	0							
2-Methylphenol	µg/l		No DWS	100	3	0	0	0							
2-Nitrophenol	µg/l		No DWS	No EQS	3	0	0	0							
4-Bromophenyl-phenylether	µg/l		No DWS	No EQS	3	0	0	0							
4-Chloro-3-methylphenol	µg/l		No DWS	40	3	0	0	0							
4-Chlorophenyl-phenylether	µg/l		No DWS	No EQS	1	0	0	0							
4-Methylphenol	µg/l		No DWS	100	1	0	0	0							
Acenaphthene	µg/l		No DWS	1.2	1	0	0	0							
Acenaphthylene	µg/l		No DWS	1.2	3	0	0	0							
Aldrin	ng/l		30	5	3	0	0	0							
Anthracene	µg/l		No DWS	0.1	3	0	0	0							
Atrazine	µg/l		2	0.6	3	0	0	0							
Azinphos-methyl	µg/l		No DWS	0.01	3	0	0	0							
Benzene	µg/l		1	8	3	0	0	0							
Benzo[a]anthracene	µg/l		No DWS	1.2	3	0	0	0							
Benzo[a]pyrene	µg/l		0.01	0.05	3	0	0	0							
Benzo[b]fluoranthene	µg/l		No DWS	No EQS	3	0	0	0							
Benzo[g,h,i]perylene	µg/l		No DWS	No EQS	1	0	0	0							
Benzo[k]fluoranthene	µg/l		No DWS	No EQS	3	0	0	0							
bis(2-Chloroethoxy)methane	µg/l		No DWS	No EQS	3	0	0	0							
bis(2-Chloroethyl)ether	µg/l		No DWS	No EQS	1	0	0	0							
bis(2-Chloroisopropyl)ether	µg/l		No DWS	No EQS	3	0	0	0							
bis(2-ethylhexyl)phthalate	µg/l		8	1.3	3	0	0	0							
Butylbenzylphthalate	µg/l		No DWS	20	1	0	0	0							
Tetrachloromethane	µg/l		3	12	3	0	0	0							
Chlorfenvinphos	µg/l		No DWS	0.1	3	0	0	0							
Trichloromethane	µg/l		No DWS	2.5	3	0	0	0							
Chrysene	µg/l		No DWS	1.2	3	0	0	0							
Cis-permethrin	µg/l		No DWS	0.01	3	0	0	0							
Demeton-s-methyl	µg/l		No DWS	0.5	1	0	0	0							
Diazinon	µg/l		No DWS	0.01	3	0	0	0							
Dibenzo[a,h]anthracene	µg/l		No DWS	1.2	3	0	0	0							
Dibenzofuran	µg/l		No DWS	No EQS	3	0	0	0							
Dieldrin	ng/l		30	5	3	0	0	0							
Diethylphthalate	µg/l		No DWS	200	1	0	0	0							
Dimethote	µg/l		6	0.48	3	0	0	0							
Dimethylphthalate	µg/l		No DWS	800	1	0	0	0							
Dibutyl phthalate	µg/l		No DWS	8	1	0	0	0							
Dioctyl phthalate	µg/l		No DWS	20	1	0	0	0							
Endosulphan alpha	ng/l		No DWS	0.5	1	0	0	0							
Endosulphan beta	ng/l		No DWS	0.5	1	0	0	0							
Endrin	ng/l		600	5	3	0	0	0							
Fenitrothion	µg/l		No DWS	0.01	3	0	0	0							
Fluoranthene	µg/l		No DWS	0.1	3	0	0	0							
Fluorene	µg/l		No DWS	1.2	3	0	0	0							
Hexachlorobenzene	ng/l		No DWS	0.01	4	0	0	0							
Hexachlorobutadiene	ng/l		No DWS	0.1	4	0	0	0							
Hexachloroethane	µg/l		No DWS	No EQS	3	0	0	0							
Indeno[1,2,3-cd]pyrene	µg/l		No DWS	No EQS	1	0	0	0							
Isodrin	ng/l		No DWS	5	1	0	0	0							
Isophorone	µg/l		No DWS	No EQS	3	0	0	0							
m and p-Xylene	µg/l		No DWS	No EQS	3	0	0	0							
Malathion	µg/l		No DWS	0.02	3	0	0	0							
Mecoprop	µg/l		10	18	3	0	0	0							
Naphthalene	µg/l		No DWS	1.2	3	0	0	0							
Nitrobenzene	µg/l		No DWS	No EQS	3	0	0	0							
o,p-DDT	ng/l		1000	25	3	0	0	0							
o-Xylene	µg/l		No DWS	No EQS	3	0	0	0							
p,p-DDT	ng/l		No DWS	10	3	0	0	0							
Pentachlorophenol	µg/l		9	0.4	4	0	0	0							
Phenanthrene	µg/l		No DWS	1.2	3	0	0	0							
Phenol	µg/l		No DWS	7.7	3	0	0	0							
Pyrene	µg/l		No DWS	1.2	3	0	0	0							
Simazine	µg/l		2	1	3	0	0	0							
Tetrachloroethene	µg/l		10	10	3	0	0	0							
Tin	mg/l		No DWS	0.01	3	0	0	0							
Toluene	µg/l		No DWS	40	1	0	0	0							
Permethrin	µg/l		300	0.01	3	0	0	0							
Sum of xylenes	µg/l		No DWS	30	1	0	0	0							
Tributyltin	µg/l		No DWS	0.002	3	0.13	0.13	1							
Trichloroethene	µg/l		10	10	3	0	0	0							
Trifluralin	ng/l		20000	30	1	0	0	0							
Triphenyltin	µg/l		No DWS	0.008	1	1.05	1.05	1							
Uranium	mg/l		0.015	No EQS	4	0	0	0							
Vanadium	mg/l		No DWS	0.1	4	0	0	0							
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l		No DWS	0.03	0	0	0	0							

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Lab Sample Number	Units																			
Sample Reference		GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13
Zone		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		18/08/2006	28/09/2006	06/12/2007	10/01/2008	07/02/2008	06/03/2008	08/04/2008	07/05/2008	05/06/2008	03/07/2008	07/08/2008	04/09/2008	09/10/2008	06/11/2008	02/12/2008	08/01/2009	05/02/2009	05/03/2009	07/05/2009
Analytical Parameter (Water Analysis)																				
Inorganics																				
Barium	mg/l	0.2	0.2	0.1	0.11	0.098	0.13	0.15	0.16	0.14	0.16	0.18	0.16	0.24	0.2	0.2	0.21	0.22	0.21	0.132
Boron	mg/l	0.3	0.4	0.4	0.5	0.4	0.4	0.5	0.5	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cadmium	mg/l	<0.0005	0.001	<0.0005	<0.0005	0.0012	0.0007	0.0005	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.0021
Calcium	mg/l	323	303	188	190	191	243	332	314	334	382	372	363	384	383	449	458	430	399	262
Chromium	mg/l	0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium (hexavalent)	mg/l	<0.03	0.03	<0.03	<0.03	<0.03	<0.3		<0.06	<0.03	<0.03	<0.03	<0.03	0.04	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Copper	mg/l	0.008	0.012	0.009	<0.005	0.01	0.011	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	0.001	<0.001	<0.001	0.002	<0.001	0.004
Iron	mg/l																			
Lead	mg/l	0.013	0.009	0.015	0.007	0.013	0.019	<0.005	0.006	0.006	<0.005	<0.005	0.005	<0.002	0.002	0.002	0.002	<0.002	<0.002	0.026
Magnesium	mg/l	77	81	33	45	31	56	69	63	70	78	85	88	84	84	91	97	101	102	74.3
Manganese	mg/l	0.94	1.15	0.79	0.83	0.5	0.62	0.76	0.81	0.67	0.89	0.84	0.91	0.86	1.03	1.16	1.08	1.05	0.925	0.1103
Mercury	mg/l	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	mg/l	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	0.003	0.007	<0.002	<0.002
Nickel	mg/l	0.009	0.008	0.007	0.006	0.007	<0.005	0.008	0.01	0.011	0.011	0.01	0.009	0.0112	0.0087	0.0107	0.011	0.0155	0.0127	0.0096
Potassium	mg/l	71	72	98	104	46	58	64	75	76	82	80	82	83	85	93	97	93	81	62.9
Sodium	mg/l	737	0.015	369	443	298	512	534	606	747	877	806	822	1370	966	1170	1050	1160	1290	836
Zinc	mg/l																			
pH	pH Units	7.5	7.2	7.7	7.4	7.5	7.4	7.2	7.1	7.6	7.3	7.5	7.3	7.2	7.3	7.1	8.1	8.1	7.3	7.3
Electrical Conductivity	µS/cm	5060	5760	2590	3130	2160	3540	3490	4392	4550	5510	5620	5930	5900	6260	6420	6630	7050	7000	4500
Ammoniacal Nitrogen as N	mg/l	3.7	4	2.9	4.1	1.3	1.2	1	4.7	<0.3	3.3	0.9	3.2	3.2	1	1.2	5.1	3	2.8	1.4
Ammonia as N	mg/l	0																		
Chloride	mg/l	1580	1550	708	969	705	1010	1220	1490	1420	1810	1820	1860	1880	2010	2200	2190	2280	2340	1490
Nitrite as N	mg/l	<0.1	0.1	<0.1	<0.1	<0.1	0.7	1.3	0.4	1.9	<0.1	2.1	<0.1	<0.1	2.3	2.4	<0.1	0.3	0.4	0.1
Nitrite as NO2	mg/l		0.328443				2.299101	4.269759	1.313772	6.240417		6.897303			7.554189	7.882632		0.985329	1.313772	0.328443
Nitrate as N	mg/l	<0.3	0.3	<0.3	0.4	<0.3	1.1	0.3	<0.3	3.4	0.7	0.5	<0.3	<0.3	1.9	0.8	0.4	<0.3	<0.3	<0.3
Nitrate as NO3	mg/l		1.32804		1.77072		4.86948	1.32804		15.05112	3.09876	2.2134			8.41092	3.54144	1.77072			
Sulphate as SO4	mg/l	216	210	165	164	181	222	211	227	218	252	258	261	276	276	289	300	299	312	217
Chemical Oxygen Demand (Total)	mg/l	184	91	45	95	96	91	101	103	249	81	103	106	140	102	79	204	152	106	94
Fluoride as F	mg/l	0.26	0.18	0.6	0.5	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.3	0.2
Antimony	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Selenium	mg/l	0.019	0.017	0.012	0.017	0.01	0.01	0.008	0.038	0.015	0.02	0.023	0.026	0.029	0.015	0.019	0.017	0.016	0.012	0.009
Arsenic	mg/l	0.03	0.046	0.024	0.041	0.021	0.026	0.025	0.008	0.002	0.005	0.005	0.006	0.008	0.004	0.005	0.004	0.007	0.003	0.002
Organics																				
1,1,1-Trichloroethane	µg/l		<0.10																	
1,1,2-Trichloroethane	µg/l		<0.10										<0.10	<0.10						
1,2-Dichlorobenzene	µg/l		<1.0																	
1,2,4-Trichlorobenzene	ng/l		<5										<6	<6	<1.0					
1,2-Dichloroethane	µg/l		<0.10										<0.10	<0.10						
1,3-Dichlorobenzene	µg/l		<1.0																	
1,4-Dichlorobenzene	µg/l		<1.0																	
1,2,3-Trichlorobenzene	ng/l		<5																	
2,4-D	µg/l		<0.10										<0.05	<0.05						
2,4,5-Trichlorophenol	µg/l		<1.0										<1.0		<1.0					
2,4,6-Trichlorophenol	µg/l		<1.0										<1.0		<1.0					
2,4-Dichlorophenol	µg/l		<1.0										<1.0		<1.0					
2,4-Dimethylphenol	µg/l		<2.0										<2.0		<2.0					
2,4-Dinitrotoluene	µg/l		<1.0										<1.0		<1.0					
2,6-Dinitrotoluene	µg/l		<1.0										<1.0		<1.0					
2-Chloronaphthalene	µg/l		<1.0										<1.0		<1.0					
2-Chlorophenol	µg/l		<1.0										<1.0		<1.0					
2-Methylnaphthalene	µg/l		<1.0										<1.0		<1.0					
2-Methylphenol	µg/l		<1.0										<1.0		<1.0					
2-Nitrophenol	µg/l		<1.0										<1.0		<1.0					
4-Bromophenyl-phenylether	µg/l		<1.0										<1.0		<1.0					
4-Chloro-3-methylphenol	µg/l		<1.0										<1.0		<1.0					
4-Chlorophenyl-phenylether	µg/l		<1.0																	
4-Methylphenol	µg/l		<1.0																	
Acenaphthene	µg/l		<1.0																	
Acenaphthylene	µg/l		<1.0										<1.0		<1.0					
Aldrin	ng/l		<3										<6	<6						
Anthracene	µg/l		<1.0										<1.0		<1.0					
Atrazine	µg/l		<0.10										<0.020	<0.020						
Azinphos-methyl	µg/l		<0.050										<0.002	<0.002						
Benzene	µg/l		<0.10										<0.10	<0.10						
Benzo[a]anthracene	µg/l		<1.0										<1.0		<1.0					
Benzo[a]pyrene	µg/l		<1.0										<1.0		<1.0					
Benzo[b]fluoranthene	µg/l		<1.0										<1.0		<1.0					
Benzo[g,h,i]perylene	µg/l		<1.0																	
Benzo[k]fluoranthene	µg/l		<1.0										<1.0		<1.0					
bis(2-Chloroethoxy)methane	µg/l		<1.0										<1.0		<1.0					
bis(2-Chloroethyl)ether	µg/l		<1.0																	
bis(2-Chloroisopropyl)ether	µg/l		<1.0										<1.0		<1.0					
bis(2-ethylhexyl)phthalate	µg/l		<10.0										<10.0		<10.0					
Butylbenzylphthalate	µg/l		<1.0																	
Tetrachloromethane	µg/l		<0.10										<0.10	<0.10						
Chlorfenvinphos	µg/l		<0.050										<0.002	<0.002						
Trichloromethane	µg/l		<0.10										<0.10	<0.10						
Chrysene	µg/l		<1.0										<1.0		<1.0					
Cis-permethrin	µg/l		<0.020										<0.002	<0.002						
Demeton-s-methyl	µg/l		<0.050																	
Diazinon	µg/l		<0.050										<0.002	<0.002						
Dibenzo[a,h]anthracene	µg/l		<1.0										<1.0		<1.0					
Dibenzofuran	µg/l		<1.0										<1.0		<1.0					
Dieldrin	ng/l		<3										<6	<6						
Diethylphthalate	µg/l		<3.0																	
Dimethote	µg/l		<0.050										<0.020	<0.020						
Dimethylphthalate	µg/l		<1.0																	
Dibutyl phthalate	µg/l		<10.0																	
Dioctyl phthalate	µg/l		<1.0																	
Endosulphan alpha	ng/l		<5																	
Endosulphan beta	ng/l		<5																	
Endrin	ng/l		<3										<6	<6						
Fenitrothion	µg/l		<0.050										<0.002	<0.002						
Fluoranthene	µg/l		<1.0										<1.0		<1.0					
Fluorene	µg/l		<1.0										<1.0		<1.0					
Hexachlorobenzene	ng/l		<5										<2	<2	<1.0					
Hexachlorobutadiene	ng/l		<5										<2	<2	<1.0					
Hexachloroethane	µg/l		<1.0										<1.0		<1.0					
Indeno[1,2,3-cd]pyrene	µg/l		<1.0																	
Isodrin	ng/l		<3																	
Isophorone	µg/l		<1.0										<1.0		<1.0					
m and p-Xylene	µg/l		<0.10										<0.10	<0.10						
Malathion	µg/l		<0.050										<0.002	<0.002						
Mecoprop	µg/l		<0.08										<0.04	<0.04						
Naphthalene	µg/l		<1.0										<1.0		<1.0					
Nitrobenzene	µg/l		<1.0										<1.0		<1.0					
o,p-DDT	ng/l		<2										<2	<2						
o-Xylene	µg/l		<0.10										<0.10	<0.10						
p,p-DDT	ng/l		<2										<2	<2						
Pentachlorophenol	µg/l		<0.10										<0.05	<0.05	<5.0					
Phenanthrene	µg/l		<1.0										<1.0		<1.0					
Phenol	µg/l		<2.0										<2.0		<2.0					
Pyrene	µg/l		<1.0										<1.0		<1.0					
Simazine	µg/l		<0.05										<0.020	<0.020						
Tetrachloroethene	µg/l		<0.10										<0.10	<0.10						
Tin	mg/l		<0.10										<0.10	<0.10						
Toluene	µg/l		<0.020																	
Permethrin	µg/l		<0.20										<0.20	<0.20						
Sum of xylenes	µg/l		<0.05																	
Tributyltin	µg/l		0.13										<0.10	<0.10						
Trichloroethene	µg/l		<5										<10	<10						
Trifluralin	ng/l		<0.05																	
Triphenyltin	µg/l		1.05																	
Uranium	mg/l		0										0	0	0					
Vanadium	mg/l		0										0	0	0					
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l																			

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Lab Sample Number	Units												
Sample Reference		GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13	GW13
Zone		2	2	2	2	2	2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		04/06/2009	09/07/2009	06/08/2009	10/09/2009	07/10/2009	05/11/2009	03/12/2009	04/03/2010	03/06/2010	08/09/2010	07/12/2010	03/03/2011
Analytical Parameter (Water Analysis)													
Inorganics													
Barium	mg/l	0.2	0.21	0.2	0.22	0.17	0.21	0.22		0.17	0.155	0.164	0.178
Boron	mg/l	0.5	0.4	0.5	0.4	0.3	0.4	0.4		0.39	0.36	0.79	0.39
Cadmium	mg/l	*<0.0003*	*<0.0003*	*<0.0003*	*<0.0003*	*<0.0003*	0.0008	*<0.0003*		*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*
Calcium	mg/l	376	483	349	411	343	428	382	375	343	323	342	322
Chromium	mg/l	*<0.001*	0.009	*<0.001*	*<0.001*	*<0.001*	*<0.001*	0.002	0.001	*<0.001*	0.0029	0.0035	*<0.0007*
Chromium (hexavalent)	mg/l	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*		*<0.03*	*<0.03*	*<0.03*	*<0.03*
Copper	mg/l	0.002	0.001	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*		0.003	*<0.001*	*<0.001*	0.001
Iron	mg/l												
Lead	mg/l	0.003	0.008	0.003	*<0.002*	*<0.002*	0.007	*<0.002*		0.01	*<0.005*	*<0.005*	0.006
Magnesium	mg/l	101	113	104	121	86	139	122	134	129	130	141	152
Manganese	mg/l	0.678	0.803	1.04	0.911	0.634	0.998	1.01	0.904	0.98	0.886	0.829	0.859
Mercury	mg/l	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	0.0001	*<0.0001*		*<0.0001*	0.0001	*<0.0001*	*<0.0001*
Molybdenum	mg/l	0.003	*<0.002*	*<0.002*	0.002	0.005	0.002	0.002		0.004	0.01	0.005	0.002
Nickel	mg/l	0.0136	0.0219	0.0061	0.0088	0.0056	*<0.0009*	0.0172		0.015	0.008	0.024	0.006
Potassium	mg/l	79	89	88	103	81	82	67	94	88	105	97.2	97.3
Sodium	mg/l	1260	1280	1220	1320	1060	1510	1780	1260	1150	1180	1270	1350
Zinc	mg/l												
pH	pH Units	7.2	7.1	7.4	7	7.4	7.2	7.2	7.5	7.5	7.1	7	7.9
Electrical Conductivity	µS/cm	6500	7330	6880	6880	6720	7620	7270	7080	6210	7530	7410	7600
Ammoniacal Nitrogen as N	mg/l	1.8	3.6	3.5	2.5	3.4	3.9	4.2	4.7	5.1	5.63	5.84	6.36
Ammonia as N	mg/l												
Chloride	mg/l	2160	2340	2380	2380	2180	2560	2610	2530	2460	2520	2630	2780
Nitrite as N	mg/l	0.6	*<0.1*	*<0.1*	1.5	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.008*	0.078	*<0.006*	*<0.006*
Nitrite as NO2	mg/l	1.970658			4.926645						0.25618554		
Nitrate as N	mg/l	*<0.3*	*<0.3*	*<0.3*	0.4	0.4	*<0.3*	0.3	*<0.3*	0.4	*<0.29*	*<0.29*	*<0.29*
Nitrate as NO3	mg/l				1.77072	1.77072		1.32804		1.77072			
Sulphate as SO4	mg/l	294	315	294	309	305	308	316	299	293	294	303	336
Chemical Oxygen Demand (Total)	mg/l	114	184	198	124	164							
Fluoride as F	mg/l	0.2	0.2	0.2	0.2	*<0.1*	0.2	0.2	0.1	0.1	0.2	*<0.2*	*<0.2*
Antimony	mg/l	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	0.0005	*<0.0016*	*<0.0016*	
Selenium	mg/l	0.009	0.022	0.024	0.016	0.017	0.022	0.044	0.026	0.026	0.03	0.038	0.022
Arsenic	mg/l	0.002	0.007	0.006	0.004	0.005	0.006	0.011					
Organics													
1,1,1-Trichloroethane	µg/l												
1,1,2-Trichloroethane	µg/l												
1,2-Dichlorobenzene	µg/l												
1,2,4-Trichlorobenzene	ng/l												
1,2-Dichloroethane	µg/l												
1,3-Dichlorobenzene	µg/l												
1,4-Dichlorobenzene	µg/l												
1,2,3-Trichlorobenzene	ng/l												
2,4-D	µg/l												
2,4,5-Trichlorophenol	µg/l												
2,4,6-Trichlorophenol	µg/l												
2,4-Dichlorophenol	µg/l												
2,4-Dimethylphenol	µg/l												
2,4-Dinitrotoluene	µg/l												
2,6-Dinitrotoluene	µg/l												
2-Chloronaphthalene	µg/l												
2-Chlorophenol	µg/l												
2-Methylnaphthalene	µg/l												
2-Methylphenol	µg/l												
2-Nitrophenol	µg/l												
4-Bromophenyl-phenylether	µg/l												
4-Chloro-3-methylphenol	µg/l												
4-Chlorophenyl-phenylether	µg/l												
4-Methylphenol	µg/l												
Acenaphthene	µg/l												
Acenaphthylene	µg/l												
Aldrin	ng/l												
Anthracene	µg/l												
Atrazine	µg/l												
Azinphos-methyl	µg/l												
Benzene	µg/l												
Benzo[a]anthracene	µg/l												
Benzo[a]pyrene	µg/l												
Benzo[b]fluoranthene	µg/l												
Benzo[g,h,i]perylene	µg/l												
Benzo[k]fluoranthene	µg/l												
bis(2-Chloroethoxy)methane	µg/l												
bis(2-Chloroethyl)ether	µg/l												
bis(2-Chloroisopropyl)ether	µg/l												
bis(2-ethylhexyl)phthalate	µg/l												
Butylbenzylphthalate	µg/l												
Tetrachloromethane	µg/l												
Chlorfenvinphos	µg/l												
Trichloromethane	µg/l												
Chrysene	µg/l												
Cis-permethrin	µg/l												
Demeton-s-methyl	µg/l												
Diazinon	µg/l												
Dibenzo[a,h]anthracene	µg/l												
Dibenzofuran	µg/l												
Dieldrin	ng/l												
Diethylphthalate	µg/l												
Dimethote	µg/l												
Dimethylphthalate	µg/l												
Dibutyl phthalate	µg/l												
Dioctyl phthalate	µg/l												
Endosulphan alpha	ng/l												
Endosulphan beta	ng/l												
Endrin	ng/l												
Fenitrothion	µg/l												
Fluoranthene	µg/l												
Fluorene	µg/l												
Hexachlorobenzene	ng/l												
Hexachlorobutadiene	ng/l												
Hexachloroethane	µg/l												
Indeno[1,2,3-cd]pyrene	µg/l												
Isodrin	ng/l												
Isophorone	µg/l												
m and p-Xylene	µg/l												
Malathion	µg/l												
Mecoprop	µg/l												
Naphthalene	µg/l												
Nitrobenzene	µg/l												
o,p-DDT	ng/l												
o-Xylene	µg/l												
p,p-DDT	ng/l												
Pentachlorophenol	µg/l												
Phenanthrene	µg/l												
Phenol	µg/l												
Pyrene	µg/l												
Simazine	µg/l												
Tetrachloroethene	µg/l												
Tin	mg/l												
Toluene	µg/l												
Permethrin	µg/l												
Sum of xylenes	µg/l												
Tributyltin	µg/l												
Trichloroethene	µg/l												
Trifluralin	µg/l												
Triphenyltin	µg/l												
Uranium	mg/l												
Vanadium	mg/l												
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l												

Values in italics are method detection limits
- Leachate
- Exceedance of both DWS and EQS
- Exceedance of EQS
- Exceedance of DWS

- UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
- UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
- UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
- UK Standard for the Protection of Fisheries
- UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
- WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Drinking Water Screening Value (DWS)	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances of Either Criterion							
Sample Reference									SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944
Zone									2	2	2	2	2	2	2
Groundwater Body									Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk
Date Sampled									26/01/2006	27/02/2006	23/03/2006	20/04/2006	18/05/2006	22/06/2006	20/07/2006
Analytical Parameter (Water Analysis)															
Inorganics															
Barium	mg/l		0.7	No EQS	65	0.071	0.183	0	0.11	0.11	0.12	0.12	0.17	0.1	0.1
Boron	mg/l		1	7	64	0.8	3.1	52	1	1	1	1.1	1	0.9	0.8
Cadmium	mg/l		0.005	0.0002	64	0.0005	0.002	21	0.001	*<0.0005*	0.0005	0.0005	0.001	*<0.0005*	*<0.0005*
Calcium	mg/l		No DWS	No EQS	66	269	3150	0	351	392	428	398	2840	330	319
Chromium	mg/l		0.05	0.015	71	0.001	0.009	0	0.005	0.005	0.005	0.005	0.006	0.005	0.005
Chromium (hexavalent)	mg/l		No DWS	0.0006	61	0.03	0.03	10	*<0.03*	*<0.03*	0.03	0.03	0.03	*<0.03*	
Copper	mg/l		2	0.005	65	0.001	0.02	7	*<0.005*	*<0.005*	0.005	0.005	0.014	*<0.005*	*<0.005*
Iron	mg/l		0.2	1	1	0	0	0							
Lead	mg/l		0.01	0.0072	65	0.002	0.044	14	*<0.005*	0.013	0.005	0.009	0.012	*<0.005*	0.005
Magnesium	mg/l		No DWS	No EQS	66	217	412	0	244	257	223	253	230	229	222
Manganese	mg/l		0.05	No EQS	66	0.066	1.8	66	0.45	0.29	0.36	0.48	1.73	0.13	0.11
Mercury	mg/l		0.001	0.00005	64	0.0001	0.001	38	0.0003	0.0004	0.0002	0.0005	0.0006	0.0006	0.001
Molybdenum	mg/l		0.07	No EQS	65	0.003	0.056	0	*<0.005*	*<0.005*	0.005	0.005	0.005	0.012	*<0.005*
Nickel	mg/l		0.02	0.02	65	0.005	0.034	4	0.008	*<0.005*	0.01	0.01	0.015	*<0.005*	0.005
Potassium	mg/l		No DWS	No EQS	71	76	205	0	93	98	94	85	101	89	94
Sodium	mg/l		200	No EQS	71	1220	4210	71	2090	2370	1900	2380	2430	2320	2260
Zinc	mg/l		No DWS	0.04	1	0.021	0.021	0							
pH	pH Units		6.5 - 9.5	6.0-9.0	71	6.9	8.5	0	7.3	7.8	7.1	7.3	8	7.2	7.1
Electrical Conductivity	µS/cm		2500	No EQS	71	10500	16500	71	10900	11900	12500	12000	12800	11800	10500
Ammoniacal Nitrogen as N	mg/l		0.39	0.78	71	0.21	7.9	39	2.8	7.9	1.1	1.9	1.2	0.3	0.3
Ammonia as N	mg/l		No DWS	0.021	2	0	0	0							0
Chloride	mg/l		250	250	71	3400	6280	71	4010	4120	3900	3670	4020	4530	4200
Nitrite as N	mg/l		-	No EQS	65	0.029	1.1	0	0.1	*<0.1*	0.7	0.3	0.1	1.1	0.7
Nitrite as NO2	mg/l		0.5	No EQS	65	0.095248	3.612873	12	0.328443		2.299101	0.985329	0.328443	3.612873	2.299101
Nitrate as N	mg/l		-	No EQS	66	0.3	1.6	0	*<0.3*	*<0.3*	0.4	1.6	0.3	0.6	1.5
Nitrate as NO3	mg/l		50	No EQS	65	1.32804	7.08288	0			1.77072	7.08288	1.32804	2.65608	6.6402
Sulphate as SO4	mg/l		250	400	71	495	1080	71	609	670	685	749	543	549	495
Chemical Oxygen Demand (Total)	mg/l		No DWS	No EQS	46	0	1000	0	309	154	190	269	0	240	300
Fluoride as F	mg/l		1.5	5	65	0.1	0.87	0	0.22	0.3	0.36	0.31	0.84	0.23	0.39
Antimony	mg/l		0.005	No EQS	55	0.001	0.005	0	*<0.001*	*<0.001*	0.001	0.001	0.001	*<0.001*	*<0.001*
Selenium	mg/l		0.01	No EQS	70	0.001	0.428	45	*<0.001*	0.002	0.003	0.001	0.003	0.068	0.003
Arsenic	mg/l		0.01	0.025	47	0.001	0.095	21	0.001	0.001	0.002	0.002	0.001	*<0.001*	*<0.001*
Organics															
1,1,1-Trichloroethane	µg/l		No DWS	100	2	0	0	0							
1,1,2-Trichloroethane	µg/l		No DWS	300	3	0	0	0							
1,2-Dichlorobenzene	µg/l		No DWS	No EQS	2	0	0	0							
1,2,4-Trichlorobenzene	ng/l		No DWS	No EQS	3	0	0	0							
1,2-Dichloroethane	µg/l		3	10	3	0	0	0							
1,3-Dichlorobenzene	µg/l		No DWS	No EQS	2	0	0	0							
1,4-Dichlorobenzene	µg/l		No DWS	No EQS	2	0	0	0							
1,2,3-Trichlorobenzene	ng/l		No DWS	No EQS	2	0	0	0							
2,4-D	µg/l		30	0.3	3	0	0	0							
2,4,5-Trichlorophenol	µg/l		No DWS	No EQS	3	0	0	0							
2,4,6-Trichlorophenol	µg/l		200	No EQS	3	0	0	0							
2,4-Dichlorophenol	µg/l		No DWS	20	3	0	0	0							
2,4-Dimethylphenol	µg/l		No DWS	No EQS	3	0	0	0							
2,4-Dinitrotoluene	µg/l		No DWS	No EQS	3	0	0	0							
2,6-Dinitrotoluene	µg/l		No DWS	No EQS	3	0	0	0							
2-Chloronaphthalene	µg/l		No DWS	No EQS	3	0	0	0							
2-Chlorophenol	µg/l		No DWS	50	3	0	0	0							
2-Methylnaphthalene	µg/l		No DWS	No EQS	3	0	0	0							
2-Methylphenol	µg/l		No DWS	100	3	0	0	0							
2-Nitrophenol	µg/l		No DWS	No EQS	3	0	0	0							
4-Bromophenyl-phenylether	µg/l		No DWS	No EQS	3	0	0	0							
4-Chloro-3-methylphenol	µg/l		No DWS	40	3	0	0	0							
4-Chlorophenyl-phenylether	µg/l		No DWS	No EQS	2	0	0	0							
4-Methylphenol	µg/l		No DWS	100	2	0	0	0							
Acenaphthene	µg/l		No DWS	1.2	3	0	0	0							
Acenaphthylene	µg/l		No DWS	1.2	3	0	0	0							
Aldrin	ng/l		30	5	3	0	0	0							
Anthracene	µg/l		No DWS	0.1	3	0	0	0							
Atrazine	µg/l		2	0.6	3	0.045	0.045	0							
Azinphos-methyl	µg/l		No DWS	0.01	3	0	0	0							
Benzene	µg/l		1	8	3	0	0	0							
Benzo[a]anthracene	µg/l		No DWS	1.2	3	0	0	0							
Benzo[a]pyrene	µg/l		0.01	0.05	3	0	0	0							
Benzo[b]fluoranthene	µg/l		No DWS	No EQS	3	0	0	0							
Benzo[g,h,i]perylene	µg/l		No DWS	No EQS	2	0	0	0							
Benzo[k]fluoranthene	µg/l		No DWS	No EQS	3	0	0	0							
bis(2-Chloroethoxy)methane	µg/l		No DWS	No EQS	3	0	0	0							
bis(2-Chloroethyl)ether	µg/l		No DWS	No EQS	2	0	0	0							
bis(2-Chloroisopropyl)ether	µg/l		No DWS	No EQS	3	0	0	0							
bis(2-ethylhexyl)phthalate	µg/l		8	1.3	3	0	0	0							
Butylbenzylphthalate	µg/l		No DWS	20	2	0	0	0							
Tetrachloromethane	µg/l		3	12	3	0	0	0							
Chlorfenvinphos	µg/l		No DWS	0.1	3	0	0	0							
Trichloromethane	µg/l		No DWS	2.5	3	0	0	0							
Chrysene	µg/l		No DWS	1.2	3	0	0	0							
Cis-permethrin	µg/l		No DWS	0.01	3	0	0	0							
Demeton-s-methyl	µg/l		No DWS	0.5	2	0	0	0							
Diazinon	µg/l		No DWS	0.01	3	0	0	0							
Dibenzo[a,h]anthracene	µg/l		No DWS	1.2	3	0	0	0							
Dibenzofuran	µg/l		No DWS	No EQS	3	0	0	0							
Dieldrin	ng/l		30	5	3	0	0	0							
Diethylphthalate	µg/l		No DWS	200	2	0	0	0							
Dimethote	µg/l		6	0.48	3	0	0	0							
Dimethylphthalate	µg/l		No DWS	800	2	0	0	0							
Dibutyl phthalate	µg/l		No DWS	8	2	0	0	0							
Dioctyl phthalate	µg/l		No DWS	20	2	0	0	0							
Endosulphan alpha	ng/l		No DWS	0.5	2	0	0	0							
Endosulphan beta	ng/l		No DWS	0.5	2	0	0	0							
Endrin	ng/l		600	5	3	0	0	0							
Fenitrothion	µg/l		No DWS	0.01	3	0	0	0							
Fluoranthene	µg/l		No DWS	0.1	3	0	0	0							
Fluorene	µg/l		No DWS	1.2	3	0	0	0							
Hexachlorobenzene	ng/l		No DWS	0.01	3	0	0	0							
Hexachlorobutadiene	ng/l		No DWS	0.1	3	0	0	0							
Hexachloroethane	µg/l		No DWS	No EQS	3	0	0	0							
Indeno[1,2,3-cd]pyrene	µg/l		No DWS	No EQS	2	0	0	0							
Isodrin	ng/l		No DWS	5	2	0	0	0							
Isophorone	µg/l		No DWS	No EQS	3	0	0	0							
m and p-Xylene	µg/l		No DWS	No EQS	3	0	0	0							
Malathion	µg/l		No DWS	0.02	3	0	0	0							
Mecoprop	µg/l		10	18	3	0	0	0							
Naphthalene	µg/l		No DWS	1.2	3	0	0	0							
Nitrobenzene	µg/l		No DWS	No EQS	3	0	0	0							
o,p-DDT	ng/l		1000	25	3	0	0	0							
o-Xylene	µg/l		No DWS	No EQS	3	0	0	0							
p,p-DDT	ng/l		No DWS	10	3	0	0	0							
Pentachlorophenol	µg/l		9	0.4	3	0	0	0							
Phenanthrene	µg/l		No DWS	1.2	3	0	0	0							
Phenol	µg/l		No DWS	7.7	3	0	0	0							
Pyrene	µg/l		No DWS	1.2	3	0	0	0							
Simazine	µg/l		2	1	3	0	0	0							
Tetrachloroethene	µg/l		10	10	3	0	0	0							
Toluene	µg/l		No DWS	40	3	0	0	0							
Permethrin	µg/l		300	0.01	2	0	0	0							
Sum of xylenes	µg/l		No DWS	30	3	0	0	0							
Tributyltin	µg/l		No DWS	0.002	2	0	0	0							
Trichloroethene	µg/l		10	10	3	0	0	0							
Trifluralin	ng/l		20000	30	3	0	0	0							
Triphenyltin	µg/l		No DWS	0.008	2	0	0	0							
Uranium	mg/l		0.015	No EQS	2	0	1.8	1							
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l		No DWS	0.03	3	0	0	0							
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l		No DWS	0.002	3	0	0	0							

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Lab Sample Number	Units																			
Sample Reference		SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944
Zone		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Groundwater Body		Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk
Date Sampled		18/08/2006	28/09/2006	19/10/2006	09/11/2006	08/12/2006	11/01/2007	15/02/2007	08/03/2007	05/04/2007	08/05/2007	07/06/2007	05/07/2007	07/08/2007	06/09/2007	04/10/2007	08/11/2007	06/12/2007	10/01/2008	07/02/2008
Analytical Parameter (Water Analysis)																				
Inorganics																				
Barium	mg/l	0.12	0.099	0.086	0.11	0.093	0.12	0.092	0.097	0.095	0.097	0.089	0.1	0.095	0.088	0.078	0.074	0.075	0.071	0.076
Boron	mg/l	0.8	1.1	0.9	1.2	1.1	1.2	1.1	1.2	1.2	1.1	1.3	1.4	1.2	1.3	1.4	1.1	1.2	1.2	1
Cadmium	mg/l	<0.0005	0.0005	<0.0005	0.001	0.001	0.002	0.0005	0.0005	0.001	0.0005	<0.0005	0.0009	<0.0005	<0.0005	0.0006	0.0005	<0.0005	<0.0005	0.0006
Calcium	mg/l	3150	881	712	1180	512	1560	553	459	388	390	434	425	366	454	418	378	371	401	307
Chromium	mg/l	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005
Chromium (hexavalent)	mg/l	<0.03	0.03	<0.03	<0.03	<0.03	0.03	0.03		0.03	0.03	<0.03	0.03	<0.03	<0.03	<0.03	0.03	<0.03	<0.03	<0.03
Copper	mg/l	0.006	0.005	<0.005	0.02	<0.005	0.005	0.005	0.005	0.005	0.005	<0.005	0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005
Iron	mg/l																			
Lead	mg/l	<0.005	0.005	<0.005	0.015	<0.005	0.016	0.005	0.005	0.005	0.005	<0.005	0.006	<0.005	<0.005	0.006	0.015	<0.005	<0.005	<0.005
Magnesium	mg/l	217	250	272	254	260	248	275	299	271	289	274	306	293	295	285	270	272	272	274
Manganese	mg/l	0.44	0.63	1.26	1.8	0.46	1.1	0.38	0.32	0.34	0.45	0.56	0.44	0.5	0.89	1.02	0.82	0.81	1.27	0.3
Mercury	mg/l	0.0009	0.0003	0.0004	0.0003	<0.0001	0.0003	0.0001	0.0002	0.0001	0.0001	0.0001	0.0003	<0.0001	<0.0001	0.0001	0.0001	<0.0001	0.0001	<0.0001
Molybdenum	mg/l	<0.005	0.005	<0.005	<0.005	<0.005	0.005	0.005	0.005	0.005	0.005	<0.005	0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005
Nickel	mg/l	0.008	0.011	0.011	0.016	0.01	0.013	0.005	0.005	0.007	0.007	0.011	0.01	0.01	0.007	0.011	0.011	0.011	0.011	0.011
Potassium	mg/l	105	118	124	102	96	109	106	112	107	124	132	100	132	121	116	98	118	127	122
Sodium	mg/l	2370	2510	2220	1840	2870	2430	2800	2860	2580	2810	2160	3060	2760	2480	1220	1790	2370	2300	2690
Zinc	mg/l																			
pH	pH Units	7.6	7.3	7	7.1	7.1	7.8	7.7	7.1	8.3	7.9	8.4	7.7	7.7	6.9	7.4	6.9	7.5	7.1	7.8
Electrical Conductivity	µS/cm	11800	15300	12800	11100	13500	12600	13900	13500	13900	13000	14200	13300	13300	13000	12100	12500	12800	12000	13600
Ammoniacal Nitrogen as N	mg/l	0.7	0.3	0.3	2.3	1.4	2.2	0.5	0.9	0.6	1.3	0.6	2.5	0.5	1.4	1.3	0.4	<0.3	0.6	0.3
Ammonia as N	mg/l	0																		
Chloride	mg/l	4260	5110	4240	3400	4750	4490	4840	4990	4830	5170	4840	4800	5050	4380	3950	4050	4390	3940	4830
Nitrite as N	mg/l	0.4	0.1	<0.1	<0.1	<0.1	0.1	0.1	0.1	0.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.4	<0.1
Nitrite as NO2	mg/l	1.313772	0.328443				0.328443	0.328443	0.328443	0.328443	0.328443		0.328443				0.328443		1.313772	
Nitrate as N	mg/l	0.3	0.5	0.8	0.5	0.3	0.3	0.7	0.5	0.6	1	<0.3	0.3	<0.3	<0.3	<0.3	0.3	<0.3	0.4	<0.3
Nitrate as NO3	mg/l	1.32804	2.2134	3.54144	2.2134	1.32804	1.32804	3.09876	2.2134	2.65608	4.4268		1.32804				1.32804		1.77072	
Sulphate as SO4	mg/l	522	675	988	1080	658	739	724	720	739	755	798	811	794	963	950	937	960	952	778
Chemical Oxygen Demand (Total)	mg/l	1000	188	218	158	250	308	198	224	210	520	216	215	227	187	210	239	390	194	303
Fluoride as F	mg/l	0.87	0.61	0.8	0.62	0.29	0.63	0.25		0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.5	0.3	0.3	0.2
Antimony	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.001		0.001	0.001	<0.001	0.001	0.005	<0.001	0.001	0.001	<0.001	<0.001	0.001
Selenium	mg/l	0.045	0.04	0.09	0.085	0.045	0.049	0.115		0.001	0.001	0.428	0.08	0.142	0.059	0.001	0.051	0.069	0.101	0.067
Arsenic	mg/l	0.002	<0.001	0.001	<0.001	0.001	0.012	0.023		0.001	0.001	0.095	0.019	0.031	0.013	0.003	0.013	0.016	0.058	0.014
Organics																				
1,1,1-Trichloroethane	µg/l		<0.10												<0.10					
1,1,2-Trichloroethane	µg/l		<0.10												<0.10					
1,2-Dichlorobenzene	µg/l		<1.0												<1.0					
1,2,4-Trichlorobenzene	ng/l		<5												<5					
1,2-Dichloroethane	µg/l		<0.10												<0.10					
1,3-Dichlorobenzene	µg/l		<1.0												<1.0					
1,4-Dichlorobenzene	µg/l		<1.0												<1.0					
1,2,3-Trichlorobenzene	ng/l		<5												<5					
2,4-D	µg/l		<0.10												<0.05					
2,4,5-Trichlorophenol	µg/l		<1.0												<1.0					
2,4,6-Trichlorophenol	µg/l		<1.0												<1.0					
2,4-Dichlorophenol	µg/l		<1.0												<1.0					
2,4-Dimethylphenol	µg/l		<2.0												<2.0					
2,4-Dinitrotoluene	µg/l		<1.0												<1.0					
2,6-Dinitrotoluene	µg/l		<1.0												<1.0					
2-Chloronaphthalene	µg/l		<1.0												<1.0					
2-Chlorophenol	µg/l		<1.0												<1.0					
2-Methylnaphthalene	µg/l		<1.0												<1.0					
2-Methylphenol	µg/l		<1.0												<1.0					
2-Nitrophenol	µg/l		<1.0												<1.0					
4-Bromophenyl-phenylether	µg/l		<1.0												<1.0					
4-Chloro-3-methylphenol	µg/l		<1.0												<1.0					
4-Chlorophenyl-phenylether	µg/l		<1.0												<1.0					
4-Methylphenol	µg/l		<1.0												<1.0					
Acenaphthene	µg/l		<1.0												<1.0					
Acenaphthylene	µg/l		<1.0												<1.0					
Aldrin	ng/l		<3												<3					
Anthracene	µg/l		<1.0												<1.0					
Atrazine	µg/l		<0.05												<0.05					
Azinphos-methyl	µg/l		<0.050												<0.050					
Benzene	µg/l		<0.10												<0.10					
Benzo[a]anthracene	µg/l		<1.0												<1.0					
Benzo[a]pyrene	µg/l		<1.0												<1.0					
Benzo[b]fluoranthene	µg/l		<1.0												<1.0					
Benzo[g,h,i]perylene	µg/l		<1.0												<1.0					
Benzo[k]fluoranthene	µg/l		<1.0												<1.0					
bis(2-Chloroethoxy)methane	µg/l		<1.0												<1.0					
bis(2-Chloroethyl)ether	µg/l		<1.0												<1.0					
bis(2-Chloroisopropyl)ether	µg/l		<1.0												<1.0					
bis(2-ethylhexyl)phthalate	µg/l		<25.0												<10.0					
Butylbenzylphthalate	µg/l		<1.0												<1.0					
Tetrachloromethane	µg/l		<0.10												<0.10					
Chlorfenvinphos	µg/l		<0.050												<0.050					
Trichloromethane	µg/l		<0.10												<0.10					
Chrysene	µg/l		<1.0												<1.0					
Cis-permethrin	µg/l		<0.020												<0.010					
Demeton-s-methyl	µg/l		<0.050												<0.050					
Diazinon	µg/l		<0.050												<0.050					
Dibenzo[a,h]anthracene	µg/l		<1.0												<1.0					
Dibenzofuran	µg/l		<1.0												<1.0					
Dieldrin	ng/l		<3												<3					
Diethylphthalate	µg/l		<3.0												<3.0					
Dimethote	µg/l		<0.050												<0.050					
Dimethylphthalate	µg/l		<1.0												<1.0					
Dibutyl phthalate	µg/l		<10.0												<10.0					
Dioctyl phthalate	µg/l		<1.0												<1.0					
Endosulphan alpha	ng/l		<5												<5					
Endosulphan beta	ng/l		<5												<5					
Endrin	ng/l		<3												<3					
Fenitrothion	µg/l		<0.050												<0.050					
Fluoranthene	µg/l		<1.0												<1.0					
Fluorene	µg/l		<1.0												<1.0					
Hexachlorobenzene	ng/l		<5												<5					
Hexachlorobutadiene	ng/l		<5												<5					
Hexachloroethane	µg/l		<1.0												<1.0					
Indeno[1,2,3-cd]pyrene	µg/l		<1.0												<1.0					
Isodrin	ng/l		<3												<3					
Isophorone	µg/l		<1.0												<1.0					
m and p-Xylene	µg/l		<0.10												<0.10					
Malathion	µg/l		<0.050												<0.050					
Mecoprop	µg/l		<0.08												<0.04					
Naphthalene	µg/l		<1.0												<1.0					
Nitrobenzene	µg/l		<1.0												<1.0					
o,p-DDT	ng/l		<2												<2					
o-Xylene	µg/l		<0.10												<0.10					
p,p-DDT	ng/l		<2												<2					
Pentachlorophenol	µg/l		<0.10												<0.05					
Phenanthrene	µg/l		<1.0												<1.0					
Phenol	µg/l		<2.0												<2.0					
Pyrene	µg/l		<1.0												<1.0					
Simazine	µg/l		<0.05												<0.05					
Tetrachloroethene	µg/l		<0.10												<0.10					
Toluene	µg/l		<0.10												<0.10					
Permethrin	µg/l		<0.020												<0.020					
Sum of xylenes	µg/l		<0.20												<0.20					
Tributyltin	µg/l		<0.02												<0.02					
Trichloroethene	µg/l		<0.10												<0.10					
Trifluralin	ng/l		<5												<5					
Triphenyltin	µg/l		<0.02												<0.02					
Uranium	mg/l		1.8												0					
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l		0												0					
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l		0												0					

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units																			
Sample Reference		SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944
Zone		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Groundwater Body		Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk
Date Sampled		06/03/2008	08/04/2008	07/05/2008	05/06/2008	03/07/2008	07/08/2008	04/09/2008	09/10/2008	06/11/2008	02/12/2008	08/01/2009	05/02/2009	05/03/2009	14/04/2009	07/05/2009	04/06/2009	09/07/2009	06/08/2009	10/09/2009
Analytical Parameter (Water Analysis)																				
Inorganics																				
Barium	mg/l	0.093	0.078	0.084	0.079	0.078	0.091	0.081	0.1	0.1	0.099	0.099	0.1	0.094	0.094	0.084	0.095	0.11	0.1	0.12
Boron	mg/l	1.2	1.1	1.2	1	1	1.1	1	1.4	1.4	1.1	1.2	1.3	1.2	3.1	1.4	1.4	1.4	1.4	1.7
Cadmium	mg/l	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	0.0005	*<0.0003*	*<0.0003*	*<0.0003*	*<0.0003*	*<0.0003*	*<0.0003*	*<0.0003*	*<0.0003*	0.0008	*<0.0003*	*<0.0003*	*<0.0003*
Calcium	mg/l	501	358	358	367	344	341	324	318	337	336	329	385	311	324	391	331	329	377	331
Chromium	mg/l	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	0.009	*<0.001*	*<0.001*	0.001	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	0.009	*<0.001*	0.001
Chromium (hexavalent)	mg/l	*<0.15*		*<0.06*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*
Copper	mg/l	0.008	*<0.005*	0.005	*<0.005*	*<0.005*	*<0.005*	*<0.005*	0.001	0.002	*<0.001*	0.001	0.002	*<0.001*	0.008	0.002	0.003	0.003	0.001	*<0.001*
Iron	mg/l																			
Lead	mg/l	0.015	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	0.022	*<0.002*	*<0.002*	*<0.002*	*<0.002*	0.002	*<0.002*	0.003	*<0.002*	*<0.002*	0.007	0.004	*<0.002*
Magnesium	mg/l	297	294	307	302	304	302	308	358	305	337	355	336	328	320	326	355	358	354	379
Manganese	mg/l	1.03	0.56	0.6	0.36	0.22	0.19	0.19	0.18	0.221	0.227	0.157	0.194	0.185	0.279	0.735	0.327	0.16	0.182	0.185
Mercury	mg/l	0.0001	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	0.0001	0.0002
Molybdenum	mg/l	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	0.005	*<0.002*	*<0.0013*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*
Nickel	mg/l	*<0.005*	0.012	0.015	0.015	0.013	0.015	0.017	0.0157	0.0161	0.0138	0.0148	0.0188	0.0135	0.0116	0.016	0.017	0.0188	0.0145	0.0161
Potassium	mg/l	111	116	130	95	110	116	119	118	131	126	134	126	104	126	108	124	205	134	163
Sodium	mg/l	2730	2570	2900	3560	3650	2610	3870	4050	3180	3530	2750	3430	3400	3380	2890	3820	3430	3770	3760
Zinc	mg/l																			
pH	pH Units	7.3	7.2	7.2	7.7	7.5	7.7	8	7.3	7.3	7.4	8.5	8.3	7.5	7.3	7.3	8.1	7.2	7.6	7.2
Electrical Conductivity	µS/cm	12800	12600	12100	14400	15000	14100	15100	14700	14700	14700	14600	15700	14500	13900	13100	15000	16500	16000	16200
Ammoniacal Nitrogen as N	mg/l	0.4	*<0.3*	2	*<0.3*	0.5	*<0.3*	*<0.3*	*<0.3*	0.7	0.4	0.8	*<0.3*	0.4	0.3	*<0.3*	*<0.3*	0.5	*<0.3*	*<0.3*
Ammonia as N	mg/l																			
Chloride	mg/l	4430	4990	5300	4540	5870	5040	5600	5290	6050	5060	5720	5580	5470	5400	5190	5600	5650	6190	6200
Nitrite as N	mg/l	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	0.1	*<0.1*	0.2	0.2	*<0.1*	0.3
Nitrite as NO2	mg/l														0.328443		0.656886	0.656886		0.985329
Nitrate as N	mg/l	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*
Nitrate as NO3	mg/l																			
Sulphate as SO4	mg/l	985	886	860	813	745	756	728	758	759	734	729	756	764	832	958	806	779	788	772
Chemical Oxygen Demand (Total)	mg/l	188	237	231	543	224	276	280	413	220	236	376	215	220	360	260	203	344	650	291
Fluoride as F	mg/l	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.2
Antimony	mg/l	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Selenium	mg/l	0.052	0.046	0.012	0.047	0.059	0.071	0.075	0.088	0.036	0.045	0.037	0.037	0.026	0.026	0.028	0.028	0.055	0.061	0.039
Arsenic	mg/l	0.012	0.009	0.028	0.007	0.013	0.015	0.017	0.021	0.008	0.008	0.007	0.005	0.004	0.005	0.004	0.005	0.015	0.013	0.009
Organics																				
1,1,1-Trichloroethane	µg/l																			
1,1,2-Trichloroethane	µg/l							*<0.10*												
1,2-Dichlorobenzene	µg/l																			
1,2,4-Trichlorobenzene	ng/l							*<6*												
1,2-Dichloroethane	µg/l							*<0.10*												
1,3-Dichlorobenzene	µg/l																			
1,4-Dichlorobenzene	µg/l																			
1,2,3-Trichlorobenzene	ng/l																			
2,4-D	µg/l							*<0.05*												
2,4,5-Trichlorophenol	µg/l							*<1.0*												
2,4,6-Trichlorophenol	µg/l							*<1.0*												
2,4-Dichlorophenol	µg/l							*<1.0*												
2,4-Dimethylphenol	µg/l							*<2.0*												
2,4-Dinitrotoluene	µg/l							*<1.0*												
2,6-Dinitrotoluene	µg/l							*<1.0*												
2-Chloronaphthalene	µg/l							*<1.0*												
2-Chlorophenol	µg/l							*<1.0*												
2-Methylnaphthalene	µg/l							*<1.0*												
2-Methylphenol	µg/l							*<1.0*												
2-Nitrophenol	µg/l							*<1.0*												
4-Bromophenyl-phenylether	µg/l							*<1.0*												
4-Chloro-3-methylphenol	µg/l							*<1.0*												
4-Chlorophenyl-phenylether	µg/l																			
4-Methylphenol	µg/l																			
Acenaphthene	µg/l							*<1.0*												
Acenaphthylene	µg/l							*<1.0*												
Aldrin	ng/l							*<6*												
Anthracene	µg/l							*<1.0*												
Atrazine	µg/l							0.045												
Azinphos-methyl	µg/l							*<0.002*												
Benzene	µg/l							*<0.10*												
Benzo[a]anthracene	µg/l							*<1.0*												
Benzo[a]pyrene	µg/l							*<1.0*												
Benzo[b]fluoranthene	µg/l							*<1.0*												
Benzo[g,h,i]perylene	µg/l																			
Benzo[k]fluoranthene	µg/l							*<1.0*												
bis(2-Chloroethoxy)methane	µg/l							*<1.0*												
bis(2-Chloroethyl)ether	µg/l																			
bis(2-Chloroisopropyl)ether	µg/l							*<1.0*												
bis(2-ethylhexyl)phthalate	µg/l							*<10.0*												
Butylbenzylphthalate	µg/l																			
Tetrachloromethane	µg/l							*<0.10*												
Chlorfenvinphos	µg/l							*<0.002*												
Trichloromethane	µg/l							*<0.10*												
Chrysene	µg/l							*<1.0*												
Cis-permethrin	µg/l							*<0.002*												
Demeton-s-methyl	µg/l																			
Diazinon	µg/l							*<0.002*												
Dibenzo[a,h]anthracene	µg/l							*<1.0*												
Dibenzofuran	µg/l							*<1.0*												
Dieldrin	ng/l							*<6*												
Diethylphthalate	µg/l																			
Dimethote	µg/l							*<0.020*												
Dimethylphthalate	µg/l																			
Dibutyl phthalate	µg/l																			
Dioctyl phthalate	µg/l																			
Endosulphan alpha	ng/l																			
Endosulphan beta	ng/l																			
Endrin	ng/l							*<6*												
Fenitrothion	µg/l							*<0.002*												
Fluoranthene	µg/l							*<1.0*												
Fluorene	µg/l							*<1.0*												
Hexachlorobenzene	ng/l							*<2*												
Hexachlorobutadiene	ng/l							*<2*												
Hexachloroethane	µg/l							*<1.0*												
Indeno[1,2,3-cd]pyrene	µg/l																			
Isodrin	ng/l																			
Isophorone	µg/l							*<1.0*												
m and p-Xylene	µg/l							*<0.10*												
Malathion	µg/l							*<0.002*												
Mecoprop	µg/l							*<0.04*												
Naphthalene	µg/l							*<1.0*												
Nitrobenzene	µg/l							*<1.0*												
o,p-DDT	ng/l							*<2*												
o-Xylene	µg/l							*<0.10*												
p,p-DDT	ng/l							*<2*												
Pentachlorophenol	µg/l							*<0.05*												
Phenanthrene	µg/l							*<1.0*												
Phenol	µg/l							*<2.0*												
Pyrene	µg/l							*<1.0*												
Simazine	µg/l							*<0.020*												
Tetrachloroethene	µg/l							*<0.10*												
Toluene	µg/l							*<0.10*												
Permethrin	µg/l																			
Sum of xylenes	µg/l							*<0.20*												
Tributyltin	µg/l																			
Trichloroethene	µg/l							*<0.10*												
Trifluralin	ng/l							*<10*												
Triphenyltin	µg/l																			
Uranium	mg/l																			
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l							0												
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l							0												

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Lab Sample Number	Units								
Sample Reference		SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944	SA5944
Zone		2	2	2	2	2	2	2	2
Groundwater Body		Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk
Date Sampled		07/10/2009	05/11/2009	03/12/2009	04/03/2010	03/06/2010	08/09/2010	07/12/2010	03/03/2011
Analytical Parameter (Water Analysis)									
Inorganics									
Barium	mg/l	0.1	0.11	0.11		0.093	0.107	0.098	0.122
Boron	mg/l	1.3	1.4	1.7		1.3	1.45	1.73	1.42
Cadmium	mg/l	*<0.0003*	0.0006	*<0.0003*		*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*
Calcium	mg/l	376	368	304	378	422	405	346	339
Chromium	mg/l	*<0.001*	*<0.001*	0.002	*<0.001*	0.001	0.002	0.0017	0.0022
Chromium (hexavalent)	mg/l	*<0.03*	*<0.03*	*<0.03*		*<0.03*	*<0.03*	*<0.03*	*<0.03*
Copper	mg/l	*<0.001*	0.001	0.002		0.004	*<0.001*	0.002	0.004
Iron	mg/l								
Lead	mg/l	0.004	0.005	*<0.002*		0.027	0.005	*<0.005*	*<0.005*
Magnesium	mg/l	386	358	347	350	338	412	380	366
Manganese	mg/l	0.165	0.159	0.141	0.278	0.53	0.203	0.198	0.15
Mercury	mg/l	*<0.0001*	0.0002	0.0001		*<0.0001*	*<0.0001*	0.0001	0.0001
Molybdenum	mg/l	*<0.002*	*<0.002*	0.003		*<0.002*	0.01	0.003	*<0.002*
Nickel	mg/l	0.0168	*<0.0009*	0.0223		0.022	0.015	0.018	0.015
Potassium	mg/l	154	105	76	139	151	168	161	154
Sodium	mg/l	4040	3810	4210	3260	3110	3770	3350	3440
Zinc	mg/l								
pH	pH Units	7.6	7.3	7.4	7.6	7.6	7.3	7.3	8
Electrical Conductivity	µS/cm	16400	16400	15000	14000	11700	16400	15200	15000
Ammoniacal Nitrogen as N	mg/l	0.5	*<0.3*	0.5	0.5	0.45	0.21	0.6	0.48
Ammonia as N	mg/l								
Chloride	mg/l	6040	6280	5330	5660	5480	6140	6250	6280
Nitrite as N	mg/l	*<0.1*	0.4	*<0.1*	*<0.1*	0.355	0.315	*<0.006*	*<0.006*
Nitrite as NO2	mg/l		1.313772			1.16597265	1.03459545		
Nitrate as N	mg/l	*<0.3*	*<0.3*	*<0.3*	*<0.3*	0.5	*<0.29*	*<0.29*	*<0.29*
Nitrate as NO3	mg/l					2.2134			
Sulphate as SO4	mg/l	714	786	783	834	913	782	822	804
Chemical Oxygen Demand (Total)	mg/l	282							
Fluoride as F	mg/l	*<0.1*	0.2	0.2	0.1	0.2	0.2	*<0.2*	*<0.2*
Antimony	mg/l	*<0.001*	*<0.001*	*<0.001*	*<0.001*	0.0011	*<0.0016*	*<0.0016*	
Selenium	mg/l	0.051	0.047	0.085	0.048	0.068	0.065	0.072	0.044
Arsenic	mg/l	0.012	0.012	0.02					
Organics									
1,1,1-Trichloroethane	µg/l								
1,1,2-Trichloroethane	µg/l								
1,2-Dichlorobenzene	µg/l								
1,2,4-Trichlorobenzene	ng/l								
1,2-Dichloroethane	µg/l								
1,3-Dichlorobenzene	µg/l								
1,4-Dichlorobenzene	µg/l								
1,2,3-Trichlorobenzene	ng/l								
2,4-D	µg/l								
2,4,5-Trichlorophenol	µg/l								
2,4,6-Trichlorophenol	µg/l								
2,4-Dichlorophenol	µg/l								
2,4-Dimethylphenol	µg/l								
2,4-Dinitrotoluene	µg/l								
2,6-Dinitrotoluene	µg/l								
2-Chloronaphthalene	µg/l								
2-Chlorophenol	µg/l								
2-Methylnaphthalene	µg/l								
2-Methylphenol	µg/l								
2-Nitrophenol	µg/l								
4-Bromophenyl-phenylether	µg/l								
4-Chloro-3-methylphenol	µg/l								
4-Chlorophenyl-phenylether	µg/l								
4-Methylphenol	µg/l								
Acenaphthene	µg/l								
Acenaphthylene	µg/l								
Aldrin	ng/l								
Anthracene	µg/l								
Atrazine	µg/l								
Azinphos-methyl	µg/l								
Benzene	µg/l								
Benzo[a]anthracene	µg/l								
Benzo[a]pyrene	µg/l								
Benzo[b]fluoranthene	µg/l								
Benzo[g,h,i]perylene	µg/l								
Benzo[k]fluoranthene	µg/l								
bis(2-Chloroethoxy)methane	µg/l								
bis(2-Chloroethyl)ether	µg/l								
bis(2-Chloroisopropyl)ether	µg/l								
bis(2-ethylhexyl)phthalate	µg/l								
Butylbenzylphthalate	µg/l								
Tetrachloromethane	µg/l								
Chlorfenvinphos	µg/l								
Trichloromethane	µg/l								
Chrysene	µg/l								
Cis-permethrin	µg/l								
Demeton-s-methyl	µg/l								
Diazinon	µg/l								
Dibenzo[a,h]anthracene	µg/l								
Dibenzofuran	µg/l								
Dieldrin	ng/l								
Diethylphthalate	µg/l								
Dimethote	µg/l								
Dimethylphthalate	µg/l								
Dibutyl phthalate	µg/l								
Dioctyl phthalate	µg/l								
Endosulphan alpha	ng/l								
Endosulphan beta	ng/l								
Endrin	ng/l								
Fenitrothion	µg/l								
Fluoranthene	µg/l								
Fluorene	µg/l								
Hexachlorobenzene	ng/l								
Hexachlorobutadiene	ng/l								
Hexachloroethane	µg/l								
Indeno[1,2,3-cd]pyrene	µg/l								
Isodrin	ng/l								
Isophorone	µg/l								
m and p-Xylene	µg/l								
Malathion	µg/l								
Mecoprop	µg/l								
Naphthalene	µg/l								
Nitrobenzene	µg/l								
o,p-DDT	ng/l								
o-Xylene	µg/l								
p,p-DDT	ng/l								
Pentachlorophenol	µg/l								
Phenanthrene	µg/l								
Phenol	µg/l								
Pyrene	µg/l								
Simazine	µg/l								
Tetrachloroethene	µg/l								
Toluene	µg/l								
Permethrin	µg/l								
Sum of xylenes	µg/l								
Tributyltin	µg/l								
Trichloroethene	µg/l								
Trifluralin	ng/l								
Triphenyltin	µg/l								
Uranium	mg/l								
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l								
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l								

Values in italics are method detection limits	UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
Leachate	UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
Exceedance of both DWS and EQS	UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
Exceedance of EQS	UK Standard for the Protection of Fisheries
Exceedance of DWS	UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
	WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Drinking Water Screening Value (DWS)	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances							
Sample Reference									EW1	EW1	EW1	EW1	EW1	EW1	EW1
Zone									2	2	2	2	2	2	2
Groundwater Body									Alluvium	Alluvium	Alluvium	Alluvium	Alluvium	Alluvium	Alluvium
Date Sampled									08/09/2010	15/05/2013	12/06/2013	03/07/2013	06/08/2013	04/09/2013	02/10/2013
Analytical Parameter (Water Analysis)															
Inorganics															
Barium	mg/l		0.7	No EQS	7	0.09	0.2329	0	0.11	0.09	0.1139	0.1635	0.1915	0.2329	0.1567
Boron	mg/l		1	7	7	0.32	0.62	0	0.62	0.33	0.36	0.32	0.46	0.41	0.37
Cadmium	mg/l		0.005	0.0002	7	0.0028	0.0028	1	0.0028	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*
Calcium	mg/l		No DWS	No EQS	7	29.8	138	0	138	91.4	29.8	30.4	65.8	78.3	69.5
Chromium	mg/l		0.05	0.015	7	0.005	0.071	1	0.071	0.006	0.005	*<0.0020*	*<0.0020*	*<0.0020*	*<0.0020*
Chromium (hexavalent)	mg/l		No DWS	0.0006	7	0	0	0	*<0.03*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
Copper	mg/l		2	0.005	7	0.01	0.021	4	*<0.001*	0.013	0.021	0.014	0.01	*<0.009*	*<0.009*
Lead	mg/l		0.01	0.0072	7	0.006	0.015	2	0.015	*<0.006*	*<0.006*	0.013	*<0.006*	0.006	*<0.006*
Magnesium	mg/l		No DWS	No EQS	7	10.6	59	0	59	44.6	10.6	11.9	27.4	27.7	24.1
Manganese	mg/l		0.05	No EQS	7	0.045	0.974	6	0.974	0.406	0.07	0.045	0.116	0.15	0.126
Mercury	mg/l		0.001	0.00005	7	0.00012	0.00021	3	*<0.0001*	0.00021	0.00012	*<0.00010*	*<0.00010*	*<0.00010*	0.00016
Molybdenum	mg/l		0.07	No EQS	7	0.03	0.217	2	0.145	*<0.003*	0.033	0.043	0.062	0.217	0.03
Nickel	mg/l		0.02	0.02	7	0.004	0.025	1	0.025	0.009	0.007	0.004	0.011	0.007	0.008
Potassium	mg/l		No DWS	No EQS	7	824	5645	0	5645	1710	1190	824	1640	1210	1220
Sodium	mg/l		200	No EQS	7	418	1650	7	1650	858	581	418	676	617	621
pH	pH Units		6.5 - 9.5	6.0-9.0	7	7	8.6	0	7	7.5	8.4	8.6	8.2	8.1	8.1
Electrical Conductivity	µS/cm		2500	No EQS	7	5600	21000	7	21000	10100	7480	5600	8800	7330	6700
Ammoniacal Nitrogen as N	mg/l		0.39	0.78	7	4.07	34.4	7	34.4	14.5	6.53	4.07	8.34	6.75	5.88
Chloride	mg/l		250	250	7	1010	5150	7	5150	2300	1510	1010	1930	1640	1450
Nitrite as N	mg/l		-	No EQS	7	0	0	0	*<0.006*	*<0.025*	*<0.025*	*<0.025*	*<0.025*	*<0.025*	*<0.025*
Nitrite as NO2	mg/l		0.5	No EQS	7	0	0	0							
Nitrate as N	mg/l		-	No EQS	7	0	0	0	*<0.29*	*<0.4*	*<0.4*	*<0.4*	*<0.4*	*<0.4*	*<0.4*
Nitrate as NO3	mg/l		50	No EQS	7	0	0	0							
Sulphate as SO4	mg/l		250	400	7	838	2830	7	2830	1390	978	838	1420	1220	1110
Fluoride as F	mg/l		1.5	5	7	0.8	2.6	2	2.6	1.6	1.3	1.2	1.1	0.8	0.8
Antimony	mg/l		0.005	No EQS	1	0.0027	0.0027	0	0.0027						
Selenium	mg/l		0.01	No EQS	7	0.0039	0.154	1	0.154	0.0069	0.0046	0.0053	0.0047	0.0043	0.0039

Values in italics are method detection limits	UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
Leachate	UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
Exceedance of both DWS and EQS	UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
Exceedance of EQS	UK Standard for the Protection of Fisheries
Exceedance of DWS	UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
	WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Drinking Water Screening Value (DWS)	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances							
Sample Reference									EW2	EW2	EW2	EW2	EW2	EW2	EW2
Zone									2	2	2	2	2	2	2
Groundwater Body									Alluvium	Alluvium	Alluvium	Alluvium	Alluvium	Alluvium	Alluvium
Date Sampled									24/06/2010	15/05/2013	12/06/2013	03/07/2013	06/08/2013	04/09/2013	02/10/2013
Analytical Parameter (Water Analysis)															
Inorganics															
Barium	mg/l		0.7	No EQS	7	0.1993	0.3241	0	0.204	0.211	0.1993	0.278	0.2683	0.3241	0.2946
Boron	mg/l		1	7	7	0.97	1.29	5	1.29	0.97	1.1	1.12	1.12	1.04	0.97
Cadmium	mg/l		0.005	0.0002	7	0	0	0	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*
Calcium	mg/l		No DWS	No EQS	7	505	546	0	516	546	528	515	515	505	542
Chromium	mg/l		0.05	0.015	7	0.002	0.008	0	0.002	0.006	0.007	0.003	0.006	0.005	0.008
Chromium (hexavalent)	mg/l		No DWS	0.0006	6	0	0	0		*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
Copper	mg/l		2	0.005	7	0	0	0	*<0.001*	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*
Lead	mg/l		0.01	0.0072	7	0.009	0.049	4	*<0.005*	0.009	0.018	0.049	*<0.006*	0.019	*<0.006*
Magnesium	mg/l		No DWS	No EQS	7	423	574	0	466	514	491	423	574	461	500
Manganese	mg/l		0.05	No EQS	7	1.69	2.55	7	2.55	1.94	1.79	2.05	1.78	1.69	1.86
Mercury	mg/l		0.001	0.00005	7	0	0	0	*<0.0001*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*
Molybdenum	mg/l		0.07	No EQS	7	0.003	0.136	2	*<0.002*	*<0.003*	0.09	0.003	0.018	0.136	*<0.003*
Nickel	mg/l		0.02	0.02	7	0.006	0.014	0	*<0.002*	0.006	*<0.003*	*<0.003*	0.014	0.011	0.011
Potassium	mg/l		No DWS	No EQS	7	647	2500	0	647	949	880	933	1820	2500	2270
Sodium	mg/l		200	No EQS	7	2540	3270	7	3090	3270	3040	2540	3110	2900	3250
pH	pH Units		6.5 - 9.5	6.0-9.0	7	7.3	7.8	0	7.4	7.3	7.7	7.8	7.7	7.7	7.6
Electrical Conductivity	µS/cm		2500	No EQS	7	16800	19200	7	17500	16800	17100	17800	18100	19200	18300
Ammoniacal Nitrogen as N	mg/l		0.39	0.78	7	54.1	77.6	7	54.1	57.9	55.3	59.7	69	77.6	72.7
Chloride	mg/l		250	250	6	5500	6260	6		6260	5710	6020	5940	5500	5710
Nitrite as N	mg/l		-	No EQS	7	0.03	0.03	0	0.03	*<0.025*	*<0.025*	*<0.025*	*<0.025*	*<0.025*	*<0.025*
Nitrite as NO2	mg/l		0.5	No EQS	7	0.098533	0.0985329	0	0.0985329						
Nitrate as N	mg/l		-	No EQS	7	0	0	0	*<0.3*	*<0.4*	*<0.4*	*<0.4*	*<0.4*	*<0.4*	*<0.4*
Nitrate as NO3	mg/l		50	No EQS	7	0	0	0							
Sulphate as SO4	mg/l		250	400	6	69.6	3380	4		74.7	69.6	436	1810	3380	2820
Chemical Oxygen Demand (Total)	mg/l		No DWS	No EQS	1	488	488	0	488						
Fluoride as F	mg/l		1.5	5	7	0.5	1.6	1	0.5	0.8	0.9	0.9	1.3	1.6	1.4
Antimony	mg/l		0.005	No EQS	1	0.01	0.01	1	0.01						
Selenium	mg/l		0.01	No EQS	7	0.001	0.0121	1	0.001	0.0048	0.0055	0.0076	0.0121	*<0.0080*	*<0.0080*
Arsenic	mg/l		0.01	0.025	1	0.01	0.01	0	0.01						

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Standard for the Protection of Fisheries
UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) I
WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Drinking Water Screening Value (DWS)	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances		
Sample Reference									EW3	EW3
Zone									2	2
Groundwater Body									Alluvium	Alluvium
Date Sampled									24/06/2010	15/05/2013
Analytical Parameter (Water Analysis)										
Inorganics										
Barium	mg/l		0.7	No EQS	7	0.028	0.0934	0	0.028	0.0638
Boron	mg/l		1	7	7	0.52	0.77	0	0.77	0.52
Cadmium	mg/l		0.005	0.0002	7	0.0006	0.0032	4	*<0.0006*	*<0.0006*
Calcium	mg/l		No DWS	No EQS	7	7.98	10.1	0	9.65	7.98
Chromium	mg/l		0.05	0.015	7	0.0108	0.0171	3	0.014	0.0117
Chromium (hexavalent)	mg/l		No DWS	0.0006	6	0	0	0		*<0.005*
Copper	mg/l		2	0.005	7	0	0	0	*<0.001*	*<0.009*
Lead	mg/l		0.01	0.0072	7	0.006	0.044	2	*<0.005*	*<0.006*
Magnesium	mg/l		No DWS	No EQS	7	0.32	0.75	0	0.32	*<0.60*
Manganese	mg/l		0.05	No EQS	7	0.012	0.013	0	*<0.004*	*<0.007*
Mercury	mg/l		0.001	0.00005	7	0.0001	0.0001	1	0.0001	*<0.00010*
Molybdenum	mg/l		0.07	No EQS	7	0.342	4.77	7	1.28	4.77
Nickel	mg/l		0.02	0.02	7	0.552	0.933	7	0.552	0.933
Potassium	mg/l		No DWS	No EQS	7	5450	13100	0	12700	13100
Sodium	mg/l		200	No EQS	7	2180	2580	7	2580	2300
pH	pH Units		6.5 - 9.5	6.0-9.0	7	11.5	12.7	0	11.5	12.7
Electrical Conductivity	µS/cm		2500	No EQS	7	35100	48200	7	35100	48200
Ammoniacal Nitrogen as N	mg/l		0.39	0.78	7	69	92	7	83.8	69
Chloride	mg/l		250	250	6	6100	7290	6		7290
Nitrite as N	mg/l		-	No EQS	7	0	0	0	*<0.008*	*<0.025*
Nitrite as NO2	mg/l		0.5	No EQS	7	0	0	0		
Nitrate as N	mg/l		-	No EQS	7	0	0	0	*<0.3*	*<0.4*
Nitrate as NO3	mg/l		50	No EQS	7	0	0	0		
Sulphate as SO4	mg/l		250	400	6	9770	11400	6		11100
Chemical Oxygen Demand (Total)	mg/l		No DWS	No EQS	1	1650	1650	0	1650	
Fluoride as F	mg/l		1.5	5	7	5.3	6.2	7	5.5	6.1
Antimony	mg/l		0.005	No EQS	1	0.035	0.035	1	0.035	
Selenium	mg/l		0.01	No EQS	7	0.9553	1.68	7	0.9553	1.68
Arsenic	mg/l		0.01	0.025	1	0.161	0.161	1	0.161	

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Regulations

Lab Sample Number	Units					
Sample Reference		EW3	EW3	EW3	EW3	EW3
Zone		2	2	2	2	2
Groundwater Body		Alluvium	Alluvium	Alluvium	Alluvium	Alluvium
Date Sampled		12/06/2013	03/07/2013	06/08/2013	04/09/2013	02/10/2013
Analytical Parameter (Water Analysis)						
Inorganics						
Barium	mg/l	0.0545	0.0934	0.0586	0.0516	0.0519
Boron	mg/l	0.61	0.64	0.72	0.7	0.57
Cadmium	mg/l	0.0006	0.0013	0.0032	*<0.0006*	0.0007
Calcium	mg/l	9.86	9.03	9.58	9.96	10.1
Chromium	mg/l	0.0108	0.0131	0.0159	0.0163	0.0171
Chromium (hexavalent)	mg/l	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
Copper	mg/l	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*
Lead	mg/l	0.006	0.044	*<0.006*	0.011	*<0.006*
Magnesium	mg/l	0.75	*<0.60*	0.62	*<0.60*	*<0.60*
Manganese	mg/l	0.012	0.013	*<0.007*	*<0.007*	*<0.007*
Mercury	mg/l	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*
Molybdenum	mg/l	0.597	2.05	2.22	1.3	0.342
Nickel	mg/l	0.809	0.816	0.866	0.832	0.867
Potassium	mg/l	12900	12300	11300	5450	11800
Sodium	mg/l	2250	2180	2260	2240	2400
pH	pH Units	12.7	12.5	12.5	12.4	12.4
Electrical Conductivity	µS/cm	45800	43700	42200	40300	40900
Ammoniacal Nitrogen as N	mg/l	74.2	78.5	87.8	84.5	92
Chloride	mg/l	7270	7150	6790	6100	6620
Nitrite as N	mg/l	*<0.025*	*<0.025*	*<0.025*	*<0.025*	*<0.025*
Nitrite as NO2	mg/l					
Nitrate as N	mg/l	*<0.4*	*<0.4*	*<0.4*	*<0.4*	*<0.4*
Nitrate as NO3	mg/l					
Sulphate as SO4	mg/l	11100	11400	10600	9770	10400
Chemical Oxygen Demand (Total)	mg/l					
Fluoride as F	mg/l	6.2	6.2	5.6	5.3	5.4
Antimony	mg/l					
Selenium	mg/l	1.48	1.44	1.39	1.19	1.29
Arsenic	mg/l					

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Standard for the Protection of Fisheries
UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Drinking Water Screening Value (DWS)	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances							
Sample Reference									EW4	EW4	EW4	EW4	EW4	EW4	EW4
Zone									2	2	2	2	2	2	2
Groundwater Body									RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled									13/06/2012	04/07/2012	08/08/2012	04/09/2012	02/10/2012	07/11/2012	11/12/2012
Analytical Parameter (Water Analysis)															
Inorganics															
Barium	mg/l		0.7	No EQS	32	0.057	0.66	0	0.0849	0.0693	0.0733	0.0721	0.0614	0.0951	0.0868
Boron	mg/l		1	7	32	0.47	1.2	1	0.48	0.52	0.51	0.51	0.48	0.65	0.52
Cadmium	mg/l		0.005	0.0002	31	0	0	0	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*
Calcium	mg/l		No DWS	No EQS	32	241	327	0	267	279	265	327	261	253	258
Chromium	mg/l		0.05	0.015	32	0.002	0.0179	1	0.0179	0.002	*<0.0020*	*<0.0020*	*<0.0020*	*<0.0020*	*<0.0020*
Chromium (hexavalent)	mg/l		No DWS	0.0006	32	0	0	0	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
Copper	mg/l		2	0.005	32	0	0	0	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*
Iron	mg/l		0.2	1	1	1.09	1.09	1							
Lead	mg/l		0.01	0.0072	32	0.007	0.012	2	*<0.006*	*<0.006*	*<0.006*	*<0.006*	*<0.006*	*<0.006*	*<0.006*
Magnesium	mg/l		No DWS	No EQS	30	61.1	81.1	0	74.9	81	73.9	79.3	67.7	71.1	72.1
Manganese	mg/l		0.05	No EQS	32	0.577	79.4	32	1.07	0.962	0.896	0.866	0.739	0.714	0.771
Mercury	mg/l		0.001	0.00005	32	0	0	0	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*
Molybdenum	mg/l		0.07	No EQS	32	0.003	0.062	0	0.013	*<0.003*	*<0.003*	0.003	*<0.003*	*<0.003*	*<0.003*
Nickel	mg/l		0.02	0.02	32	0.003	0.013	0	0.008	0.005	*<0.003*	*<0.003*	*<0.003*	*<0.003*	*<0.003*
Potassium	mg/l		No DWS	No EQS	32	21.8	67.2	0	44.1	42.2	26.2	31.5	24.6	25.5	23.4
Sodium	mg/l		200	No EQS	32	311	504	32	504	454	485	483	416	374	389
Zinc	mg/l		No DWS	0.04	1	0	0	0							
pH	pH Units		6.5 - 9.5	6.0-9.0	32	7.1	7.7	0	7.7	7.5	7.4	7.4	7.5	7.4	7.7
Electrical Conductivity	µS/cm		2500	No EQS	32	2710	3210	32	3060	2970	3000	2870	2970	2990	3020
Ammoniacal Nitrogen as N	mg/l		0.39	0.78	32	0.58	1.82	32	0.63	0.75	0.81	0.67	0.64	1.14	0.69
Chloride	mg/l		250	250	32	464	791	32	543	525	537	542	495	791	508
Nitrite as N	mg/l		-	No EQS	32	0	0	0	*<0.025*	*<0.025*	*<0.025*	*<0.025*	*<0.025*	*<0.025*	*<0.025*
Nitrite as NO2	mg/l		0.5	No EQS	32	0	0	0							
Nitrate as N	mg/l		-	No EQS	32	0.5	0.5	0	*<0.4*	*<0.4*	*<0.4*	*<0.4*	*<0.4*	*<0.4*	0.5
Nitrate as NO3	mg/l		50	No EQS	32	2.2134	2.2134	0							2.2134
Sulphate as SO4	mg/l		250	400	32	414	529	32	483	475	453	458	436	467	458
Chemical Oxygen Demand (Total)	mg/l		No DWS	No EQS	2	37	86	0							
Fluoride as F	mg/l		1.5	5	32	0.2	0.3	0	0.3	0.3	0.2	0.3	*<0.2*	0.3	0.3
Selenium	mg/l		0.01	No EQS	31	0.0016	0.015	3	*<0.0016*	*<0.0016*	*<0.0016*	0.0018	*<0.0016*	*<0.0016*	*<0.0016*

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units																			
Sample Reference		EW4	EW4	EW4	EW4	EW4	EW4	EW4	EW4	EW4	EW4	EW4	EW4	EW4	EW4	EW4	EW4	EW4	EW4	EW4
Zone		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		09/01/2013	06/02/2013	05/03/2013	03/04/2013	01/05/2013	12/06/2013	03/07/2013	06/08/2013	04/09/2013	02/10/2013	06/11/2013	04/12/2013	05/03/2014	02/04/2014	07/05/2014	04/06/2014	02/07/2014	06/08/2014	03/09/2014
Analytical Parameter (Water Analysis)																				
Inorganics																				
Barium	mg/l	0.0823	0.0791	0.0969	0.0889	0.0871	0.0738	0.1057	0.0895	0.1034	0.0757	0.0785	0.0976	0.0803	0.1558	0.0708	0.66	0.07	0.059	0.094
Boron	mg/l	0.47	0.77	0.55	0.48	0.51	0.57	0.6	0.59	0.51	0.51	0.72	0.63	0.66	0.65	1.2	<0.0006	0.63	0.68	0.74
Cadmium	mg/l	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006		<0.0006	<0.0006	<0.0006
Calcium	mg/l	285	260	256	257	241	263	252	241	249	256	253	249	256	258	275	265	266	257	250
Chromium	mg/l	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.002	0.015	0.006	<0.002
Chromium (hexavalent)	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	mg/l	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Iron	mg/l																			1.09
Lead	mg/l	0.012	<0.006	<0.006	<0.006	<0.006	0.007	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.009	<0.006	<0.006	<0.006	<0.006	<0.006
Magnesium	mg/l	81	75.5	76.2	71.8	71.2	81.1	79.6	72.7	73.9	78.4	78.2	74.1	78.2	74.9	78.7	70.6	61.1	67.3	76.4
Manganese	mg/l	0.788	0.685	0.771	0.719	0.694	0.683	0.831	0.68	0.729	0.665	0.694	0.649	0.678	0.901	0.688	0.673	0.652	0.577	0.609
Mercury	mg/l	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010
Molybdenum	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.062	<0.003	<0.003	0.004	<0.003	0.003	0.013	<0.003	0.005	<0.003	<0.003
Nickel	mg/l	<0.003	<0.003	<0.003	0.004	<0.003	<0.003	<0.003	<0.003	0.013	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.006	0.005	0.007	<0.003
Potassium	mg/l	26.2	23.2	23.8	24.6	27.4	22	24.1	22.7	21.9	24.3	23.8	21.8	23.4	24	45	67.2	38.8	26.3	35.1
Sodium	mg/l	425	405	377	358	374	414	359	363	371	390	386	388	395	410	407	400	311	336	429
Zinc	mg/l																			<0.018
pH	pH Units	7.5	7.4	7.5	7.6	7.4	7.5	7.4	7.6	7.4	7.6	7.4	7.6	7.6	7.7	7.5	7.5	7.3	7.4	7.5
Electrical Conductivity	µS/cm	2910	2890	2870	2940	2870	2780	2830	2820	2730	2740	2860	2710	2880	2910	2870	3210	2850	3060	2920
Ammoniacal Nitrogen as N	mg/l	0.75	0.72	0.71	0.66	0.85	0.74	1.02	0.8	1.06	0.88	0.81	0.58	0.65	1.82	1.12	1.44	0.9	0.73	0.86
Chloride	mg/l	514	522	500	534	509	507	492	513	464	512	507	482	539	534	511	537	496	482	521
Nitrite as N	mg/l	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Nitrite as NO2	mg/l																			
Nitrate as N	mg/l	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.5	<0.4	<0.42	<0.42
Nitrate as NO3	mg/l																2.2134			
Sulphate as SO4	mg/l	436	503	489	447	496	481	508	489	485	505	491	504	465	481	500	529	523	483	475
Chemical Oxygen Demand (Total)	mg/l																86		37	
Fluoride as F	mg/l	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2
Selenium	mg/l	0.0039	<0.0016	<0.0016	<0.0016	0.0034	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016		<0.0016	0.0016	<0.0016

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	**Units**						
Sample Reference		EW4	EW4	EW4	EW4	EW4	EW4
Zone		2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		08/10/2014	12/11/2014	03/12/2014	06/01/2015	17/02/2015	04/03/2015
Analytical Parameter (Water Analysis)							
Inorganics							
Barium	mg/l	0.057	0.061	0.062	0.065	0.057	0.064
Boron	mg/l	0.61	0.57	0.7	0.66	0.68	0.74
Cadmium	mg/l	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*
Calcium	mg/l	248	262	247	265	259	253
Chromium	mg/l	*<0.002*	*<0.002*	*<0.002*	*<0.005*	*<0.002*	*<0.005*
Chromium (hexavalent)	mg/l	*<0.005*	*<0.005*	*<0.005*	*<0.002*	*<0.005*	*<0.002*
Copper	mg/l	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*
Iron	mg/l						
Lead	mg/l	*<0.006*	*<0.006*	*<0.006*	*<0.006*	*<0.006*	*<0.006*
Magnesium	mg/l			75.1	78	78.8	81
Manganese	mg/l	74.7	79.4	0.666	0.651	0.623	0.672
Mercury	mg/l	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*
Molybdenum	mg/l	*<0.003*	0.015	*<0.003*	*<0.003*	0.011	*<0.003*
Nickel	mg/l	*<0.003*	0.003	*<0.003*	*<0.003*	*<0.003*	0.005
Potassium	mg/l	26.1	30.9	28.5	28.8	29.1	28.3
Sodium	mg/l	378	438	447	421	460	438
Zinc	mg/l						
pH	pH Units	7.4	7.1	7.7	7.7	7.7	7.3
Electrical Conductivity	µS/cm	2930	2900	3030	3090	3160	3000
Ammoniacal Nitrogen as N	mg/l	0.68	0.84	0.94	0.88	0.8	1.03
Chloride	mg/l	481	511	538	561	524	558
Nitrite as N	mg/l	*<0.42*	*<0.025*	*<0.025*	*<0.42*	*<0.025*	*<0.42*
Nitrite as NO2	mg/l						
Nitrate as N	mg/l	*<0.025*	*<0.42*	*<0.42*	*<0.025*	*<0.42*	*<0.025*
Nitrate as NO3	mg/l						
Sulphate as SO4	mg/l	471	470	423	436	444	414
Chemical Oxygen Demand (Total)	mg/l						
Fluoride as F	mg/l	0.3	0.3	0.3	0.3	0.3	0.3
Selenium	mg/l	*<0.0016*	0.012	0.015	*<0.0080*	*<0.0080*	0.015

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Standard for the Protection of Fisheries
UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) I
WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Drinking Water Screening Value (DWS)	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances		
Sample Reference									EW5	EW5
Zone									2	2
Groundwater Body									RTDs	RTDs
Date Sampled									13/06/2012	04/07/2012
Analytical Parameter (Water Analysis)										
Inorganics										
Barium	mg/l		0.7	No EQS	19	0.0191	0.1707	0	0.127	0.1516
Boron	mg/l		1	7	19	0.3	0.91	0	0.76	0.91
Cadmium	mg/l		0.005	0.0002	19	0	0	0	*<0.0006*	*<0.0006*
Calcium	mg/l		No DWS	No EQS	19	11.4	345	0	325	345
Chromium	mg/l		0.05	0.015	19	0.003	0.003	0	*<0.0020*	*<0.0020*
Chromium (hexavalent)	mg/l		No DWS	0.0006	19	0.005	0.005	1	*<0.005*	*<0.005*
Copper	mg/l		2	0.005	19	0	0	0	*<0.009*	*<0.009*
Lead	mg/l		0.01	0.0072	19	0.01	0.032	6	*<0.006*	*<0.006*
Magnesium	mg/l		No DWS	No EQS	19	0.73	260	0	251	257
Manganese	mg/l		0.05	No EQS	19	0.008	0.855	10	0.709	0.855
Mercury	mg/l		0.001	0.00005	19	0	0	0	*<0.0001*	*<0.0001*
Molybdenum	mg/l		0.07	No EQS	19	0.007	0.31	10	0.007	*<0.003*
Nickel	mg/l		0.02	0.02	19	0.003	0.219	11	0.005	0.003
Potassium	mg/l		No DWS	No EQS	19	114	5780	0	114	133
Sodium	mg/l		200	No EQS	19	1700	3010	19	2650	2800
pH	pH Units		6.5 - 9.5	6.0-9.0	19	7.3	12.4	0	7.4	7.3
Electrical Conductivity	µS/cm		2500	No EQS	19	12600	27100	19	12900	12600
Ammoniacal Nitrogen as N	mg/l		0.39	0.78	19	8.35	17.1	19	8.98	11.1
Chloride	mg/l		250	250	19	4640	5780	19	4640	4780
Nitrite as N	mg/l		-	No EQS	19	0.032	0.797	0	*<0.025*	*<0.025*
Nitrite as NO2	mg/l		0.5	No EQS	19	0.105102	2.6176907	7		
Nitrate as N	mg/l		-	No EQS	19	0.5	1.4	0	*<0.4*	*<0.4*
Nitrate as NO3	mg/l		50	No EQS	19	2.2134	6.19752	0		
Sulphate as SO4	mg/l		250	400	19	541	4570	19	563	541
Fluoride as F	mg/l		1.5	5	19	0.2	3.9	2	0.2	0.2
Selenium	mg/l		0.01	No EQS	19	0.0031	0.0979	12	*<0.0016*	*<0.0016*

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Regulations)

Lab Sample Number	Units					
Sample Reference		EW5	EW5	EW5	EW5	EW5
Zone		2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		08/08/2012	04/09/2012	02/10/2012	07/11/2012	11/12/2012
Analytical Parameter (Water Analysis)						
Inorganics						
Barium	mg/l	0.1707	0.0687	0.0191	0.0954	0.0344
Boron	mg/l	0.87	0.66	*<0.23*	0.82	0.4
Cadmium	mg/l	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*
Calcium	mg/l	314	128	34.3	154	38.7
Chromium	mg/l	*<0.0020*	0.003	*<0.0020*	*<0.0020*	*<0.0020*
Chromium (hexavalent)	mg/l	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
Copper	mg/l	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*
Lead	mg/l	*<0.006*	*<0.006*	*<0.006*	*<0.006*	*<0.006*
Magnesium	mg/l	260	187	53.9	237	136
Manganese	mg/l	0.737	0.062	0.009	0.075	0.01
Mercury	mg/l	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*
Molybdenum	mg/l	0.021	0.072	0.139	0.037	0.109
Nickel	mg/l	0.018	0.045	0.11	0.024	0.078
Potassium	mg/l	565	1710	3560	1070	2330
Sodium	mg/l	3010	2660	2350	2220	2200
pH	pH Units	7.7	8.5	10.6	8.5	9.9
Electrical Conductivity	µS/cm	13800	14700	18800	14400	17400
Ammoniacal Nitrogen as N	mg/l	9.86	11.8	13.1	9.26	11.5
Chloride	mg/l	4750	5210	4990	4920	5150
Nitrite as N	mg/l	*<0.025*	*<0.025*	0.183	*<0.025*	0.164
Nitrite as NO2	mg/l			0.60105069		0.53864652
Nitrate as N	mg/l	*<0.4*	*<0.4*	*<0.4*	*<0.4*	0.7
Nitrate as NO3	mg/l					3.09876
Sulphate as SO4	mg/l	829	1390	2540	1030	1930
Fluoride as F	mg/l	0.4	0.6	0.6	0.5	0.8
Selenium	mg/l	0.0031	0.0066	0.0393	0.0128	0.0258

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	**Units**							
Sample Reference		EW5	EW5	EW5	EW5	EW5	EW5	EW5
Zone		2	2	2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		09/01/2013	06/02/2013	05/03/2013	03/04/2013	01/05/2013	12/06/2013	03/07/2013
Analytical Parameter (Water Analysis)								
Inorganics								
Barium	mg/l	0.042	0.0415	0.052	0.0469	0.0682	0.0663	0.0888
Boron	mg/l	*<0.23*	0.77	0.3	*<0.23*	*<0.23*	0.5	0.48
Cadmium	mg/l	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*
Calcium	mg/l	22.6	65.6	24.2	11.4	37.1	114	128
Chromium	mg/l	*<0.0020*	*<0.0020*	*<0.0020*	*<0.0020*	*<0.0020*	*<0.0020*	*<0.0020*
Chromium (hexavalent)	mg/l	0.005	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
Copper	mg/l	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*
Lead	mg/l	0.029	*<0.006*	*<0.006*	*<0.006*	*<0.006*	0.014	0.032
Magnesium	mg/l	10.6	181	98.2	0.73	*<0.60*	214	205
Manganese	mg/l	0.011	0.014	*<0.007*	*<0.007*	0.008	0.089	0.091
Mercury	mg/l	*<0.0001*	*<0.0001*	*<0.0001*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*
Molybdenum	mg/l	0.184	0.065	0.104	0.168	0.267	0.019	0.028
Nickel	mg/l	0.134	0.045	0.089	0.122	0.211	0.018	0.015
Potassium	mg/l	3970	1870	2600	3860	5780	907	921
Sodium	mg/l	2090	2250	1950	1980	1700	2200	2100
pH	pH Units	11.2	9.6	10.5	11.6	12.4	8.7	8.5
Electrical Conductivity	µS/cm	20400	15500	17700	20700	27100	13200	13400
Ammoniacal Nitrogen as N	mg/l	14.8	10.4	11.6	12.3	13.6	8.35	8.39
Chloride	mg/l	5510	5180	5200	5240	5520	4890	4860
Nitrite as N	mg/l	0.329	0.101	0.228	0.409	0.797	0.069	0.052
Nitrite as NO2	mg/l	1.08057747	0.33172743	0.74885004	1.34333187	2.61769071	0.22662567	0.17079036
Nitrate as N	mg/l	*<0.4*	0.5	*<0.4*	*<0.4*	0.8	*<0.4*	*<0.4*
Nitrate as NO3	mg/l		2.2134			3.54144		
Sulphate as SO4	mg/l	2970	1590	2330	3010	4570	936	963
Fluoride as F	mg/l	0.7	0.7	0.6	1.3	3.9	0.4	0.4
Selenium	mg/l	0.0035	0.0232	0.0333	0.0502	*<0.0016*	0.0119	0.0124

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units					
Sample Reference		EW5	EW5	EW5	EW5	EW5
Zone		2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		06/08/2013	04/09/2013	02/10/2013	06/11/2013	04/12/2013
Analytical Parameter (Water Analysis)						
Inorganics						
Barium	mg/l	0.1072	0.1032	0.0757	0.0306	0.0601
Boron	mg/l	0.61	0.6	0.63	0.67	0.41
Cadmium	mg/l	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*
Calcium	mg/l	176	176	161	32.1	14.2
Chromium	mg/l	*<0.0020*	*<0.0020*	*<0.0020*	*<0.0020*	*<0.0020*
Chromium (hexavalent)	mg/l	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
Copper	mg/l	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*
Lead	mg/l	*<0.006*	0.015	*<0.006*	0.015	0.01
Magnesium	mg/l	216	196	225	122	*<0.60*
Manganese	mg/l	0.115	0.121	0.057	0.017	*<0.007*
Mercury	mg/l	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*
Molybdenum	mg/l	0.019	0.135	0.012	0.09	0.31
Nickel	mg/l	0.016	0.015	0.02	0.068	0.219
Potassium	mg/l	764	898	1290	2620	5650
Sodium	mg/l	2170	2060	2500	2050	1860
pH	pH Units	8.3	8.3	8.4	10.1	12.4
Electrical Conductivity	µS/cm	13200	13000	13300	17000	26300
Ammoniacal Nitrogen as N	mg/l	8.46	8.97	9.42	11.8	17.1
Chloride	mg/l	4680	4840	4870	5110	5780
Nitrite as N	mg/l	*<0.025*	*<0.025*	0.032	0.15	0.626
Nitrite as NO2	mg/l			0.10510176	0.4926645	2.05605318
Nitrate as N	mg/l	*<0.4*	*<0.4*	*<0.4*	*<0.4*	1.4
Nitrate as NO3	mg/l					6.19752
Sulphate as SO4	mg/l	925	1030	1040	2090	4150
Fluoride as F	mg/l	0.4	0.4	0.5	1.1	3.6
Selenium	mg/l	0.0084	0.0108	0.0123	0.0304	0.0979

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Standard for the Protection of Fisheries
UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) I
WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Drinking Water Screening Value (DWS)	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances		
Sample Reference									EW5R	EW5R
Zone									2	2
Groundwater Body									RTDs	RTDs
Date Sampled									02/04/2014	07/05/2014
Analytical Parameter (Water Analysis)										
Inorganics										
Barium	mg/l		0.7	No EQS	12	0.127	0.199	0	0.199	0.1587
Boron	mg/l		1	7	12	0.79	1.34	10	1.17	1.34
Cadmium	mg/l		0.005	0.0002	12	0	0	0	*<0.0006*	*<0.0006*
Calcium	mg/l		No DWS	No EQS	12	264	334	0	320	306
Chromium	mg/l		0.05	0.015	12	0.002	0.008	0	*<0.0020*	*<0.0020*
Chromium (hexavalent)	mg/l		No DWS	0.0006	12	0.002	0.002	1	*<0.005*	*<0.005*
Copper	mg/l		2	0.005	12	0	0	0	*<0.009*	*<0.009*
Iron	mg/l		0.2	1	1	1.53	1.53	1		
Lead	mg/l		0.01	0.0072	12	0.015	0.02	2	0.02	0.015
Magnesium	mg/l		No DWS	No EQS	12	187	255	0	255	238
Manganese	mg/l		0.05	No EQS	12	0.52	0.7	12	0.7	0.657
Mercury	mg/l		0.001	0.00005	12	0	0	0	*<0.00010*	*<0.00010*
Molybdenum	mg/l		0.07	No EQS	12	0.003	0.019	0	*<0.003*	0.007
Nickel	mg/l		0.02	0.02	12	0.003	0.012	0	*<0.003*	*<0.003*
Potassium	mg/l		No DWS	No EQS	12	98	186	0	186	123
Sodium	mg/l		200	No EQS	12	1770	2510	12	2410	2340
Zinc	mg/l		No DWS	0.04	1	0	0	0		
pH	pH Units		6.5 - 9.5	6.0-9.0	12	7.1	7.6	0	7.6	7.4
Electrical Conductivity	µS/cm		2500	No EQS	12	10700	12200	12	11700	11100
Ammoniacal Nitrogen as N	mg/l		0.39	0.78	12	5.41	5.75	12	5.7	5.59
Chloride	mg/l		250	250	12	3770	4250	12	4250	4230
Nitrite as N	mg/l		-	No EQS	12	0	0	0	*<0.025*	*<0.025*
Nitrite as NO2	mg/l		0.5	No EQS	12	0	0	0		
Nitrate as N	mg/l		-	No EQS	12	0.4	0.4	0	*<0.4*	*<0.4*
Nitrate as NO3	mg/l		50	No EQS	12	1.77072	1.77072	0		
Sulphate as SO4	mg/l		250	400	12	510	576	12	576	556
Chemical Oxygen Demand (Total)	mg/l		No DWS	No EQS	1	161	161	0		
Fluoride as F	mg/l		1.5	5	12	0.2	0.2	0	*<0.2*	0.2
Antimony	mg/l		0.005	No EQS	1	0	0	0		
Selenium	mg/l		0.01	No EQS	12	0.0016	0.078	2	*<0.0016*	0.0016

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Regulations)

Lab Sample Number	Units					
Sample Reference		EW5R	EW5R	EW5R	EW5R	EW5R
Zone		2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		04/06/2014	02/07/2014	06/08/2014	03/09/2014	08/10/2014
Analytical Parameter (Water Analysis)						
Inorganics						
Barium	mg/l	0.14	0.151	0.127	0.169	0.132
Boron	mg/l	1.01	1.08	1.07	1.21	0.98
Cadmium	mg/l	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*
Calcium	mg/l	286	334	306	284	330
Chromium	mg/l	*<0.002*	*<0.002*	0.002	*<0.002*	0.008
Chromium (hexavalent)	mg/l	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
Copper	mg/l	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*
Iron	mg/l				1.53	
Lead	mg/l	*<0.006*	*<0.006*	*<0.006*	*<0.006*	*<0.006*
Magnesium	mg/l	230	211	217	236	187
Manganese	mg/l	0.599	0.632	0.52	0.575	0.575
Mercury	mg/l	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*
Molybdenum	mg/l	*<0.003*	*<0.003*	*<0.003*	*<0.003*	*<0.003*
Nickel	mg/l	0.008	0.003	0.006	0.004	0.004
Potassium	mg/l	116	111	118	132	98
Sodium	mg/l	2100	2110	2130	2510	1770
Zinc	mg/l				*<0.018*	
pH	pH Units	7.4	7.1	7.5	7.3	7.2
Electrical Conductivity	µS/cm	12200	11000	11900	11100	11100
Ammoniacal Nitrogen as N	mg/l	5.61	5.49	5.41	5.75	5.61
Chloride	mg/l	4180	4070	3920	4220	3980
Nitrite as N	mg/l	*<0.025*	*<0.025*	*<0.025*	*<0.025*	*<0.025*
Nitrite as NO2	mg/l					
Nitrate as N	mg/l	0.4	*<0.4*	*<0.42*	*<0.42*	*<0.42*
Nitrate as NO3	mg/l	1.77072				
Sulphate as SO4	mg/l	544	545	537	547	516
Chemical Oxygen Demand (Total)	mg/l	161				
Fluoride as F	mg/l	0.2	0.2	0.2	*<0.2*	0.2
Antimony	mg/l				*<0.008*	
Selenium	mg/l	0.0025	*<0.008*	*<0.0016*	*<0.0016*	*<0.008*

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Lab Sample Number	Units					
Sample Reference		EW5R	EW5R	EW5R	EW5R	EW5R
Zone		2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		12/11/2014	03/12/2014	06/01/2015	17/02/2015	04/03/2015
Analytical Parameter (Water Analysis)						
Inorganics						
Barium	mg/l	0.142	0.142	0.148	0.128	0.139
Boron	mg/l	0.79	1.08	1.22	1.14	1.11
Cadmium	mg/l	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*
Calcium	mg/l	284	264	281	276	268
Chromium	mg/l	*<0.005*	*<0.002*	*<0.005*	*<0.002*	*<0.005*
Chromium (hexavalent)	mg/l	0.002	*<0.005*	*<0.002*	*<0.005*	*<0.002*
Copper	mg/l	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*
Iron	mg/l					
Lead	mg/l	*<0.006*	*<0.006*	*<0.006*	*<0.006*	*<0.006*
Magnesium	mg/l	226	211	228	218	219
Manganese	mg/l	0.577	0.606	0.609	0.555	0.583
Mercury	mg/l	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*
Molybdenum	mg/l	0.019	0.003	*<0.003*	0.013	*<0.003*
Nickel	mg/l	0.012	0.005	*<0.003*	0.003	0.006
Potassium	mg/l	126	110	129	126	115
Sodium	mg/l	2200	2160	2180	2180	2190
Zinc	mg/l					
pH	pH Units	7.1	7.5	7.6	7.5	7.2
Electrical Conductivity	µS/cm	11000	11100	11300	11200	10700
Ammoniacal Nitrogen as N	mg/l	5.57	5.73	5.65	5.46	5.55
Chloride	mg/l	3980	3950	3920	3810	3770
Nitrite as N	mg/l	*<0.025*	*<0.025*	*<0.42*	*<0.025*	*<0.42*
Nitrite as NO2	mg/l					
Nitrate as N	mg/l	*<0.42*	*<0.42*	*<0.025*	*<0.42*	*<0.025*
Nitrate as NO3	mg/l					
Sulphate as SO4	mg/l	529	534	539	520	510
Chemical Oxygen Demand (Total)	mg/l					
Fluoride as F	mg/l	0.2	0.2	0.2	0.2	0.2
Antimony	mg/l					
Selenium	mg/l	0.065	0.078	*<0.0080*	*<0.0080*	*<0.0080*

Values in italics are method detection limits	UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
Leachate	UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
Exceedance of both DWS and EQS	UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
Exceedance of EQS	UK Standard for the Protection of Fisheries
Exceedance of DWS	UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
	WHO Drinking Water Guideline

Lab Sample Number	**Units**	**Limit of detection**	**Drinking Water Screening Value (DWS)**	**Surface Water Screening Value (EQS)**	**No Samples**	**Minimum Value**	**Maximum Value**	**No. Exceedances**						
Sample Reference									EW6	EW6	EW6	EW6	EW6	EW6
Zone									2	2	2	2	2	2
Groundwater Body									RTDs	RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled									02/04/2014	07/05/2014	04/06/2014	02/07/2014	06/08/2014	03/09/2014
Analytical Parameter (Water Analysis)														
Inorganics														
Barium	mg/l		0.7	No EQS	12	0.017	0.0544	0	0.0544	0.0288	0.02	0.02	0.017	0.044
Boron	mg/l		1	7	12	0.46	0.86	0	0.67	0.86	0.58	0.65	0.62	0.67
Cadmium	mg/l		0.005	0.0002	12	0	0	0	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*
Calcium	mg/l		No DWS	No EQS	12	47.2	64.7	0	56.2	47.9	50.6	64.7	52.6	47.8
Chromium	mg/l		0.05	0.015	12	0.002	0.002	0	0.002	*<0.0020*	*<0.002*	*<0.002*	*<0.002*	*<0.002*
Chromium (hexavalent)	mg/l		No DWS	0.0006	12	0	0	0	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
Copper	mg/l		2	0.005	12	0	0	0	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*
Iron	mg/l		0.2	1	1	0	0	0						*<0.23*
Lead	mg/l		0.01	0.0072	12	0.007	0.007	0	0.007	*<0.006*	*<0.006*	*<0.006*	*<0.006*	*<0.006*
Magnesium	mg/l		No DWS	No EQS	12	46.5	53.6	0	53.6	51.9	46.8	48.6	47.2	48.3
Manganese	mg/l		0.05	No EQS	12	0.298	0.453	12	0.453	0.404	0.36	0.391	0.298	0.335
Mercury	mg/l		0.001	0.00005	12	0	0	0	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*
Molybdenum	mg/l		0.07	No EQS	12	0.006	0.015	0	*<0.003*	0.006	*<0.003*	*<0.003*	*<0.003*	*<0.003*
Nickel	mg/l		0.02	0.02	12	0.003	0.011	0	*<0.003*	*<0.003*	0.009	0.003	0.005	0.006
Potassium	mg/l		No DWS	No EQS	12	32.7	40.3	0	34.9	36.5	34.6	36.6	32.7	40.3
Sodium	mg/l		200	No EQS	12	421	519	12	519	471	437	462	423	514
Zinc	mg/l		No DWS	0.04	1	0	0	0						*<0.018*
pH	pH Units		6.5 - 9.5	6.0-9.0	12	7.6	8.2	0	7.9	8.1	7.9	7.7	8	7.8
Electrical Conductivity	µS/cm		2500	No EQS	12	2250	2750	4	2750	2580	2730	2480	2590	2430
Ammoniacal Nitrogen as N	mg/l		0.39	0.78	12	0.28	1.01	3	1.01	0.74	0.47	0.31	0.34	0.28
Chloride	mg/l		250	250	12	494	683	12	683	617	623	580	549	536
Nitrite as N	mg/l		-	No EQS	12	0.033	3.27	0	*<0.025*	0.047	*<0.025*	*<0.025*	*<0.025*	*<0.025*
Nitrite as NO2	mg/l		0.5	No EQS	12	0.108386	10.740086	2		0.15436821				
Nitrate as N	mg/l		-	No EQS	12	0.6	2.76	0	0.6	1.1	2	1.5	1.91	2.14
Nitrate as NO3	mg/l		50	No EQS	12	2.65608	12.217968	0	2.65608	4.86948	8.8536	6.6402	8.455188	9.473352
Sulphate as SO4	mg/l		250	400	12	181	193	0	192	193	183	184	182	187
Chemical Oxygen Demand (Total)	mg/l		No DWS	No EQS	1	53	53	0			53			
Fluoride as F	mg/l		1.5	5	12	0.4	0.5	0	0.4	0.4	0.4	0.4	0.4	0.4
Antimony	mg/l		0.005	No EQS	1	0	0	0						*<0.0016*
Selenium	mg/l		0.01	No EQS	12	0.008	0.012	1	*<0.0016*	*<0.0016*	*<0.0016*	*<0.0016*	*<0.0016*	*<0.008*

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units	
Sample Reference		EW6
Zone		2
Groundwater Body		RTDs
Date Sampled		08/10/2014
Analytical Parameter (Water Analysis)		
Inorganics		
Barium	mg/l	0.018
Boron	mg/l	0.58
Cadmium	mg/l	*<0.0006*
Calcium	mg/l	50.4
Chromium	mg/l	*<0.002*
Chromium (hexavalent)	mg/l	*<0.005*
Copper	mg/l	*<0.009*
Iron	mg/l	
Lead	mg/l	*<0.006*
Magnesium	mg/l	48.6
Manganese	mg/l	0.35
Mercury	mg/l	*<0.00010*
Molybdenum	mg/l	*<0.003*
Nickel	mg/l	*<0.003*
Potassium	mg/l	34.3
Sodium	mg/l	439
Zinc	mg/l	
pH	pH Units	7.8
Electrical Conductivity	µS/cm	2470
Ammoniacal Nitrogen as N	mg/l	*<0.27*
Chloride	mg/l	564
Nitrite as N	mg/l	0.033
Nitrite as NO2	mg/l	0.10838619
Nitrate as N	mg/l	1.99
Nitrate as NO3	mg/l	8.809332
Sulphate as SO4	mg/l	183
Chemical Oxygen Demand (Total)	mg/l	
Fluoride as F	mg/l	0.4
Antimony	mg/l	
Selenium	mg/l	*<0.0016*

Values in italics are method detection limits

Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	**Units**					
Sample Reference		EW6	EW6	EW6	EW6	EW6
Zone		2	2	2	2	2
Groundwater Body		RTDs	RTDs	RTDs	RTDs	RTDs
Date Sampled		12/11/2014	03/12/2014	06/01/2015	17/02/2015	04/03/2015
Analytical Parameter (Water Analysis)						
Inorganics						
Barium	mg/l	0.019	0.019	0.019	0.018	0.019
Boron	mg/l	0.46	0.6	0.6	0.65	0.61
Cadmium	mg/l	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*	*<0.0006*
Calcium	mg/l	50.7	47.2	48.9	48.5	48.9
Chromium	mg/l	*<0.002*	*<0.002*	*<0.005*	*<0.002*	*<0.005*
Chromium (hexavalent)	mg/l	*<0.005*	*<0.005*	*<0.002*	*<0.005*	*<0.002*
Copper	mg/l	*<0.009*	*<0.009*	*<0.009*	*<0.009*	*<0.009*
Iron	mg/l					
Lead	mg/l	*<0.006*	*<0.006*	*<0.006*	*<0.006*	*<0.006*
Magnesium	mg/l	46.5	48.1	49.5	48.8	50.7
Manganese	mg/l	0.319	0.335	0.334	0.326	0.324
Mercury	mg/l	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*
Molybdenum	mg/l	0.015	*<0.003*	*<0.003*	0.01	*<0.003*
Nickel	mg/l	0.011	0.005	*<0.003*	0.004	0.008
Potassium	mg/l	38.6	34	35.1	34	33.6
Sodium	mg/l	476	477	421	442	434
Zinc	mg/l					
pH	pH Units	7.6	8.1	8.2	8.1	7.9
Electrical Conductivity	µS/cm	2370	2340	2380	2360	2250
Ammoniacal Nitrogen as N	mg/l	*<0.27*	0.32	*<0.27*	*<0.27*	*<0.27*
Chloride	mg/l	525	535	502	498	494
Nitrite as N	mg/l	*<0.025*	*<0.025*	3	*<0.025*	3.27
Nitrite as NO2	mg/l			9.85329		10.7400861
Nitrate as N	mg/l	2.31	2.34	*<0.025*	2.76	*<0.025*
Nitrate as NO3	mg/l	10.225908	10.358712		12.217968	
Sulphate as SO4	mg/l	183	183	181	182	183
Chemical Oxygen Demand (Total)	mg/l					
Fluoride as F	mg/l	0.4	0.5	0.4	0.4	0.4
Antimony	mg/l					
Selenium	mg/l	0.008	0.012	*<0.0008*	*<0.0008*	*<0.0080*

E.2. Historical Surface Water Screening

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS

UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Standard for the Protection of Fisheries
UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances							
Sample Reference								SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1
Zone														
Depth (m)														
Date Sampled								01/10/2000	01/01/2001	01/04/2001	01/07/2001	01/10/2001	01/01/2002	01/04/2002
Analytical Parameter (Water Analysis)														
Inorganics														
Barium	mg/l		0.7	4	0.05	5	1							
Beryllium	mg/l		No EQS	4	0.05	5	0							
Cadmium	mg/l		0.0002	28	0.05	155	10	0.1	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*
Calcium	mg/l		No EQS	54	52	2630	0	141	143	159	160	162	161	157
Chromium	mg/l		0.015	55	0.001	6.6	18	1	2.1	1.2	1.4	1.4	2.4	1.4
Chromium (hexavalent)	mg/l		0.0006	34	0.03	0.03	10							
Cobalt	mg/l		0.003	2	0	0	0							
Copper	mg/l		0.005	3	0	0.015	1							
Lead	mg/l		0.0072	20	0	31	7	1	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Iron	mg/l		1	19	0.02	21.6	1	0.05	0.03	0.04	0.15	0.02	0.18	0.19
Magnesium	mg/l		No EQS	55	4.48	19	0	5.4	4.8	6	6.8	6.7	6.7	6.4
Manganese	mg/l		0.05	20	0	1.21	3	0.004	*<0.004*	*<0.004*	0.031	*<0.004*	0.006	0.009
Potassium	mg/l		No EQS	64	2.61	26	0	10	4	7	26	8	8	14
Silver	mg/l		0.0005	4	15	15	2							
Mercury	mg/l		0.00005	1	0	0	0							
Sodium	mg/l		200	64	13.9	79.4	0	34.2	29.4	35.7	42.6	35.4	41.5	36
Molybdenum	mg/l		0.07	1	0	0	0							
Nickel	mg/l		0.02	20	0	12	15	3	*<2*	*<2*	*<4*	6	*<2*	3
Tin	µg/l		10	3	0.1	0.1	0							
Uranium	µg/l		15	2	0.8	0.9	0							
Vanadium	µg/l		100	3	0.65	0.65	0							
Zinc	µg/l		40	22	4.35	332	1	6	7	7	14	7	13	10
Fluoride as F	mg/l		5	34	0.1	0.6	0							
pH	pH Units		6.0-9.0	64	5.6	9.1	0	7.9	8	7.78	7.9	8	7.91	8.74
Electrical Conductivity	µS/cm		2500	64	92.5	1350	0	730	640	710	740	760	759	628
Ammoniacal Nitrogen as N	mg/l		0.78	64	0.03	1.4	5	0.03	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.238*	*<0.16*
Chloride	mg/l		250	64	32	172	0	50	34	49	50	97	56.9	56.7
Nitrite as N	mg/l		No EQS	35	0.05	0.7	0							
Nitrite as NO2	mg/l		0.5	35	0.164222	2.299101	1							
Nitrate as N	mg/l		No EQS	35	0.4	10.4	0							
Nitrate as NO3	mg/l		50	35	1.77072	46.03872	0							
Sulphate as SO4	mg/l		400	64	6.1	269	0	58	41	66	64	64	74.3	73
Chemical Oxygen Demand (Total)	mg/l		No EQS	54	10	810	0	10	*<10*	*<10*	*<10*	*<10*	*<10*	10.5
Selenium	mg/l		0.01	8	0.006	0.006	0							
Organics														
1,1,1-Trichloroethane	µg/l		100	5	0	0	0							
1,1,2-Trichloroethane	µg/l		300	5	0	0	0							
1,2-Dichlorobenzene	µg/l		No EQS	5	0	0	0							
1,2,4-Trichlorobenzene	ng/L		No EQS	5	0	0	0							
1,2-Dichloroethane	µg/l		10	5	0	0	0							
1,3-Dichlorobenzene	µg/l		No EQS	5	0	0	0							
1,4-Dichlorobenzene	µg/l		No EQS	5	0	0	0							
1,2,3-Trichlorobenzene	µg/l		No EQS	4	0	0	0							
2,4-D	µg/l		0.3	5	0	0	0							
2,4,5-Trichlorophenol	µg/l		No EQS	5	0	0	0							
2,4,6-Trichlorophenol	µg/l		200	5	0	0	0							
2,4-Dichlorophenol	µg/l		20	5	0	0	0							
2,4-Dimethylphenol	µg/l		No EQS	5	0	0	0							
2,4-Dinitrotoluene	µg/l		No EQS	5	0	0	0							
2,6-Dinitrotoluene	µg/l		No EQS	5	0	0	0							
2-Chloronaphthalene	µg/l		No EQS	5	0	0	0							
2-Chlorophenol	µg/l		50	5	0	0	0							
2-Methylnaphthalene	µg/l		No EQS	5	0	0	0							
2-Methylphenol	µg/l		100	5	0	0	0							
2-Nitrophenol	µg/l		No EQS	5	0	0	0							
4-Bromophenyl-phenylether	µg/l		No EQS	5	0	0	0							
4-Chloro-3-methylphenol	µg/l		40	5	0	0	0							
4-Chlorophenyl-phenylether	µg/l		No EQS	5	0	0	0							
4-Methylphenol	µg/l		100	5	0	0	0							
Acenaphthene	µg/l		1.2	5	0	0	0							
Acenaphthylene	µg/l		1.2	5	0	0	0							
Aldrin	ng/l		5	5	0	0	0							
Anthracene	µg/l		0.1	5	0	0	0							
Antimony	mg/l		0.005	4	0	0	0							
Arsenic	mg/l		0.025	4	0	0	0							
Atrazine	µg/l		0.6	5	0	0	0							
Azinphos-methyl	µg/l		0.01	5	0	0	0							
Benzene	µg/l		8	5	0	0	0							
Benzo[a]anthracene	µg/l		1.2	5	0	0	0							
Benzo[a]pyrene	µg/l		0.05	5	0	0	0							
Benzo[b]fluoranthene	µg/l		No EQS	5	0	0	0							
Benzo[g,h,i]perylene	µg/l		No EQS	5	0	0	0							
Benzo[k]fluoranthene	µg/l		No EQS	5	0	0	0							
bis(2-Chloroethoxy)methane	µg/l		No EQS	5	0	0	0							
bis(2-Chloroethyl)ether	µg/l		No EQS	5	0	0	0							
bis(2-Chloroisopropyl)ether	µg/l		No EQS	5	0	0	0							
bis(2-ethylhexyl)phthalate	µg/l		1.3	5	0	0	0							
Butylbenzylphthalate	µg/l		20	5	0	0	0							
Tetrachloromethane	µg/l		12	5	0	0	0							
Chlorfenvinphos	µg/l		0.1	5	0	0	0							
Trichloromethane	µg/l		2.5	5	0	0	0							
Chrysene	µg/l		1.2	5	0	0	0							
Cis-permethrin	µg/l		0.01	5	0	0	0							
Demeton-s-methyl	µg/l		0.5	4	0	0	0							
Diazinon	µg/l		0.01	5	0	0	0							
Dibenzo[a,h]anthracene	µg/l		1.2	5	0	0	0							
Dibenzofuran	µg/l		No EQS	5	0	0	0							
Dieldrin	ng/l		5	5	0	0	0							
Diethylphthalate	µg/l		200	5	0	0	0							
Dimethote	µg/l		0.48	5	0	0	0							
Dimethylphthalate	µg/l		800	5	0	0	0							
Dibutyl phthalate	µg/l		8	5	0	0	0							
Dioctyl phthalate	µg/l		20	5	0	0	0							
Endosulphan alpha	ng/l		0.5	5	0	0	0							
Endosulphan beta	ng/l		0.5	5	0	0	0							
Endrin	ng/l		5	5	0	0	0							
Fenitrothion	µg/l		0.01	5	0	0	0							
Fluoranthene	µg/l		0.1	5	0	0	0							
Fluorene	µg/l		1.2	5	0	0	0							
Hexachlorobenzene	ng/L		0.01	5	0	0	0							
Hexachlorobutadiene	ng/L		0.1	5	0	0	0							
Hexachloroethane	µg/l		No EQS	5	0	0	0							
Indeno[1,2,3-cd]pyrene	µg/l		No EQS	5	0	0	0							
Isodrin	ng/l		5	5	0	0	0							
Isophorone	µg/l		No EQS	5	0	0	0							
m and p-Xylene	µg/l		No EQS	5	0	0	0							
Malathion	µg/l		0.02	5	0	0	0							
Mecoprop	µg/l		18	5	0	0	0							
Mercury	µg/l		0.05	5	0.16	0.52	4							
Naphthalene	µg/l		1.2	5	0	0	0							
Nitrobenzene	µg/l		No EQS	5	0	0	0							
o,p-DDT	ng/l		25	5	0	0	0							
o-Xylene	µg/l		No EQS	5	0	0	0							
p,p-DDT	ng/l		10	5	0	0	0							
Pentachlorophenol	µg/l		0.4	5	0	0	0							
Phenanthrene	µg/l		1.2	5	0	0	0							
Phenol	µg/l		7.7	5	0	0	0							
Pyrene	µg/l		1.2	5	0	0	0							
Simazine	µg/l		1	5	0	0	0							
Tetrachloroethene	µg/l		10	5	1.86	2.37	0							
Toluene	µg/l		40	5	0	0	0							
Sum of xylenes	µg/l		30	5	0	0	0							
Tributyltin	µg/l		0.002	5	0	0	0							
Trichloroethene	µg/l		10	5	0.17	0.25	0							
Trifluralin	ng/l		30	5	0	0	0							
Triphenyltin	µg/l		0.008	5	0	0	0							
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l		0.03	5	0	0	0							
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l		0.002	5	0	0	0							

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS

Lab Sample Number	Units																			
Sample Reference		SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1
Zone																				
Depth (m)																				
Date Sampled		01/07/2002	01/10/2002	01/01/2003	01/04/2003	01/07/2003	01/10/2003	01/01/2004	01/04/2004	01/07/2004	01/10/2004	01/04/2005	01/05/2005	01/07/2005	26/01/2006	27/02/2006	23/03/2006	20/04/2006	18/05/2006	22/06/2006
Analytical Parameter (Water Analysis)																				
Inorganics																				
Barium	mg/l																			
Beryllium	mg/l																			
Cadmium	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1		<0.1	<0.1	<0.1			0.05			
Calcium	mg/l	172	2630	144	147	144	191	260	142	148	138	175	131	163	164	227	159	160	154	161
Chromium	mg/l	1.8	1	1.9	1.4	2.7	6.6	3	1.6	1.1	<0.005	3.2	<0.4	3.6	<0.005	<0.005	0.005	0.005	0.005	<0.005
Chromium (hexavalent)	mg/l														<0.03	<0.03	0.03	0.03	0.03	<0.03
Cobalt	mg/l																			
Copper	mg/l																			
Lead	mg/l	2	<1	<1	<1	<1	31	2	3	<1		2	<1.0	7						
Iron	mg/l	0.33	21.6	0.04	0.24	0.02	0.8	0.21	0.12	0.2		0.34	0.05	0.34						
Magnesium	mg/l	7.9	19	5.8	6.2	6	8	7.4	5.9	6.4	8.7	7.2	6.4	6.4	7.7	9.6	7.7	8.6	7.3	7.4
Manganese	mg/l	0.011	1.21	<0.004	0.007	<0.004	0.067	0.007	0.005	0.004		0.017	0.006	0.053						
Potassium	mg/l	12.6	17	<3.6	6.8	8.4	10.7	10.3	8.9	9	13	13.4	10.5	10.9	17	22	16	17	11	16
Silver	mg/l																			
Mercury	mg/l																			
Sodium	mg/l	38	36.8	27.4	30.2	26	33	31.7	30.9	31.1	51	42.4	43	33.8	53	65	51	54	43	57
Molybdenum	mg/l																			
Nickel	mg/l	5	5	3	5	2	12	4	4	4		6	3	8						
Tin	µg/l																			
Uranium	µg/l																			
Vanadium	µg/l																			
Zinc	µg/l	23	332	6	26	7	40	9	11	12		16	9	24						
Fluoride as F	mg/l														0.15	0.25	0.3	0.27	0.22	0.16
pH	pH Units	8.08	7.92	8.17	8.06	7.96	8.2	8.23	7.81	8.11	7.4	8.16	8.18	8.09	7.9	8.2	7.7	7.8	8.3	7.8
Electrical Conductivity	µS/cm	803	92.5	625	693	696	764	736	722	687	817	788	788	777	1090	939	963	949	864	964
Ammoniacal Nitrogen as N	mg/l	0.18	1.07	<0.03	<0.03	<0.03	<0.03	0.05	0.08	0.07	<0.3	0.03	0.07	0.03	<0.3	1	0.4	0.3	0.3	<0.3
Chloride	mg/l	64.2	65.5	39	47.7	41.3	50.4	46.4	52.8	43	95	65.6	65.6	64.9	135	168	168	172	140	108
Nitrite as N	mg/l														<0.1	<0.1	0.1	0.1	0.1	<0.1
Nitrite as NO2	mg/l																0.328443	0.328443	0.328443	
Nitrate as N	mg/l														10.4	10.3	10.1	9.7	9.2	10.4
Nitrate as NO3	mg/l														46.03872	45.59604	44.71068	42.93996	40.72656	46.03872
Sulphate as SO4	mg/l	6.1	77.4	47.4	70.5	60.3	82.6	70.8	79.5	65.6	76	71.7	75.2	70.4	96	97	94	98	68	76
Chemical Oxygen Demand (Total)	mg/l	231	810	<10	11.6	<10	<10	<10	11.4	12.9	<20	10	14.5	17.1	24	23	20	20	20	20
Selenium	mg/l																			
Organics																				
1,1,1-Trichloroethane	µg/l																<0.10			
1,1,2-Trichloroethane	µg/l																<0.10			
1,2-Dichlorobenzene	µg/l																<1.0			
1,2,4-Trichlorobenzene	ng/L																<5			
1,2-Dichloroethane	µg/l																<0.10			
1,3-Dichlorobenzene	µg/l																<1.0			
1,4-Dichlorobenzene	µg/l																<1.0			
1,2,3-Trichlorobenzene	µg/l																<5			
2,4-D	µg/l																<0.05			
2,4,5-Trichlorophenol	µg/l																<1.0			
2,4,6-Trichlorophenol	µg/l																<1.0			
2,4-Dichlorophenol	µg/l																<1.0			
2,4-Dimethylphenol	µg/l																<2.0			
2,4-Dinitrotoluene	µg/l																<1.0			
2,6-Dinitrotoluene	µg/l																<1.0			
2-Chloronaphthalene	µg/l																<1.0			
2-Chlorophenol	µg/l																<1.0			
2-Methylnaphthalene	µg/l																<1.0			
2-Methylphenol	µg/l																<1.0			
2-Nitrophenol	µg/l																<1.0			
4-Bromophenyl-phenylether	µg/l																<1.0			
4-Chloro-3-methylphenol	µg/l																<1.0			
4-Chlorophenyl-phenylether	µg/l																<1.0			
4-Methylphenol	µg/l																<1.0			
Acenaphthene	µg/l																<1.0			
Acenaphthylene	µg/l																<1.0			
Aldrin	ng/l																<3			
Anthracene	µg/l																<1.0			
Antimony	mg/l																0			
Arsenic	mg/l																0			
Atrazine	µg/l																<0.10			
Azinphos-methyl	µg/l																<0.050			
Benzene	µg/l																<0.10			
Benzo[a]anthracene	µg/l																<1.0			
Benzo[a]pyrene	µg/l																<1.0			
Benzo[b]fluoranthene	µg/l																<1.0			
Benzo[g,h,i]perylene	µg/l																<1.0			
Benzo[k]fluoranthene	µg/l																<1.0			
bis(2-Chloroethoxy)methane	µg/l																<1.0			
bis(2-Chloroethyl)ether	µg/l																<1.0			
bis(2-Chloroisopropyl)ether	µg/l																<1.0			
bis(2-ethylhexyl)phthalate	µg/l																<10.0			
Butylbenzylphthalate	µg/l																<1.0			
Tetrachloromethane	µg/l																<0.10			
Chlorfenvinphos	µg/l																<0.050			
Trichloromethane	µg/l																<0.10			
Chrysene	µg/l																<1.0			
Cis-permethrin	µg/l																<0.020			
Demeton-s-methyl	µg/l																<0.050			
Diazinon	µg/l																<0.050			
Dibenzo[a,h]anthracene	µg/l																<1.0			
Dibenzofuran	µg/l																<1.0			
Dieldrin	ng/l																<3			
Diethylphthalate	µg/l																<3.0			
Dimethote	µg/l																<0.050			
Dimethylphthalate	µg/l																<1.0			
Dibutyl phthalate	µg/l																<10.0			
Dioctyl phthalate	µg/l																<1.0			
Endosulphan alpha	ng/l																<5			
Endosulphan beta	ng/l																<5			
Endrin	ng/l																<3			
Fenitrothion	µg/l																<0.050			
Fluoranthene	µg/l																<1.0			
Fluorene	µg/l																<1.0			
Hexachlorobenzene	ng/L																<5			
Hexachlorobutadiene	ng/L																<5			
Hexachloroethane	µg/l																<1.0			
Indeno[1,2,3-cd]pyrene	µg/l																<1.0			
Isodrin	ng/l																<3			
Isophorone	µg/l																<1.0			
m and p-Xylene	µg/l																<0.10			
Malathion	µg/l																<0.050			
Mecoprop	µg/l																<0.04			
Mercury	µg/l																0.52			
Naphthalene	µg/l																<1.0			
Nitrobenzene	µg/l																<1.0			
o,p-DDT	ng/l																<2			
o-Xylene	µg/l																<0.10			
p,p-DDT	ng/l																<2			
Pentachlorophenol	µg/l																<0.05			
Phenanthrene	µg/l																<1.0			
Phenol	µg/l																<2.0			
Pyrene	µg/l																<1.0			
Simazine	µg/l																<0.20			
Tetrachloroethene	µg/l																2.08			
Toluene	µg/l																<0.10			
Sum of xylenes	µg/l																<0.20			
Tributyltin	µg/l																<0.02			
Trichloroethene	µg/l																0.24			
Trifluralin	ng/l																<5			
Triphenyltin	µg/l																<0.02			
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l																0			
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l																0			

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS

Lab Sample Number	Units																		
Sample Reference		SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1	SSW1
Zone																			
Depth (m)																			
Date Sampled		20/07/2006	18/08/2006	28/09/2006	19/10/2006	09/11/2006	07/12/2006	11/01/2007	15/02/2007	08/03/2007	07/06/2007	06/09/2007	06/12/2007	06/03/2008	05/06/2008	04/09/2008	02/12/2008	05/03/2009	04/06/2009
Analytical Parameter (Water Analysis)																			
Inorganics																			
Barium	mg/l									0.05		5		<5		<5			
Beryllium	mg/l									0.05		5		<5		<5			
Cadmium	mg/l		155	0.07						0.05		0.06		<0.05		0.1		1.37	
Calcium	mg/l	170		145	178	154	185	135	128	147	149	132	155	144	150	107	118	111	91
Chromium	mg/l	0.005	0.005	0.005	<0.005	<0.005	0.005	0.005	0.005	0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	0.001	<0.001
Chromium (hexavalent)	mg/l	0.03	0.03		<0.03	<0.03	0.03	0.03	0.03	0.03	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Cobalt	mg/l													<5		<5			
Copper	mg/l													0					
Lead	mg/l													0					
Iron	mg/l																		
Magnesium	mg/l	7.2	7.1	6.5	8	7.2	7.5	9.3	7.9	7.9	7.2	8.3	7.5	7.9	7.4	7.2	5.92	6.21	6.58
Manganese	mg/l													0					
Potassium	mg/l	16	15	12	13	17	14	22	7.4	14	13	11	12	12	10	7.4	8.77	7.47	6.61
Silver	mg/l									15		15		<15		<15			
Mercury	mg/l													0					
Sodium	mg/l	53	59	40	44	44	42	63	21	51	42	44	47	48	39	30	26	28	26
Molybdenum	mg/l													0					
Nickel	mg/l													0					
Tin	µg/l									0.1				<20		<20			
Uranium	µg/l													0.9		0.8			
Vanadium	µg/l									0.65				<5		<5			
Zinc	µg/l									4.35				14		6			
Fluoride as F	mg/l	0.16	0.2	0.19	0.32	0.25	0.21	0.19	0.23		0.2	0.3	<0.1	0.2	0.3	0.2	<0.1	0.2	0.3
pH	pH Units	7.9	8.2	8	8	8.1	7.7	8.4	8.3	8	8.6	7.8	8.1	7.9	8.2	7.9	8	8.3	9
Electrical Conductivity	µS/cm	898	956	981	882	916	805	931	702	951	900	710	804	779	749	640	645	756	1350
Ammoniacal Nitrogen as N	mg/l	0.5	0.3	0.3	<0.3	0.7	0.3	0.3	0.3	0.3	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chloride	mg/l	99	121	73	76	86	134	120	125	171	80	73	73	85	59	56	129	61	60
Nitrite as N	mg/l	0.1	0.1	0.1	<0.1	<0.1	0.1	0.1	0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
Nitrite as NO2	mg/l	0.328443	0.328443	0.328443			0.328443	0.328443	0.328443	0.328443	0.328443								0.328443
Nitrate as N	mg/l	10	9.6	9.1	8.9	8.8	8	7	6.4	9.4	9	6.9	8.5	8.7	7.5	5.9	6.8	6.6	4.3
Nitrate as NO3	mg/l	44.268	42.49728	40.28388	39.39852	38.95584	35.4144	30.9876	28.33152	41.61192	39.8412	30.54492	37.6278	38.51316	33.201	26.11812	30.10224	29.21688	19.03524
Sulphate as SO4	mg/l	76	80	82	67	75	79	101	116	81	76	74	79	81	67	61	118	70	66
Chemical Oxygen Demand (Total)	mg/l	20	20	20	20	20		20	20	20	20	<20	<20	22	21	<20	<20	<20	20
Selenium	mg/l																		
Organics																			
1,1,1-Trichloroethane	µg/l			<0.10						<0.10		<0.10		<0.10					
1,1,2-Trichloroethane	µg/l			<0.10						<0.10		<0.10		<0.10					
1,2-Dichlorobenzene	µg/l			<1.0						<1.0		<1.0		<1.0					
1,2,4-Trichlorobenzene	ng/L			<5						<5		<5		<1.0					
1,2-Dichloroethane	µg/l			<0.10						<0.10		<0.10		<0.10					
1,3-Dichlorobenzene	µg/l			<1.0						<1.0		<1.0		<1.0					
1,4-Dichlorobenzene	µg/l			<1.0						<1.0		<1.0		<1.0					
1,2,3-Trichlorobenzene	µg/l			<5						<5		<5							
2,4-D	µg/l			<0.05						<0.05		<0.05		<0.05					
2,4,5-Trichlorophenol	µg/l			<1.0						<1.0		<1.0		<1.0					
2,4,6-Trichlorophenol	µg/l			<1.0						<1.0		<1.0		<1.0					
2,4-Dichlorophenol	µg/l			<1.0						<1.0		<1.0		<1.0					
2,4-Dimethylphenol	µg/l			<2.0						<2.0		<2.0		<2.0					
2,4-Dinitrotoluene	µg/l			<1.0						<1.0		<1.0		<1.0					
2,6-Dinitrotoluene	µg/l			<1.0						<1.0		<1.0		<1.0					
2-Chloronaphthalene	µg/l			<1.0						<1.0		<1.0		<1.0					
2-Chlorophenol	µg/l			<1.0						<1.0		<1.0		<1.0					
2-Methylnaphthalene	µg/l			<1.0						<1.0		<1.0		<1.0					
2-Methylphenol	µg/l			<1.0						<1.0		<1.0		<1.0					
2-Nitrophenol	µg/l			<1.0						<1.0		<1.0		<1.0					
4-Bromophenyl-phenylether	µg/l			<1.0						<1.0		<1.0		<1.0					
4-Chloro-3-methylphenol	µg/l			<1.0						<1.0		<1.0		<1.0					
4-Chlorophenyl-phenylether	µg/l			<1.0						<1.0		<1.0		<1.0					
4-Methylphenol	µg/l			<1.0						<1.0		<1.0		<1.0					
Acenaphthene	µg/l			<1.0						<1.0		<1.0		<1.0					
Acenaphthylene	µg/l			<1.0						<1.0		<1.0		<1.0					
Aldrin	ng/l			<3						<3		<3		<6					
Anthracene	µg/l			<1.0						<1.0		<1.0		<1.0					
Antimony	mg/l			0						0		0							
Arsenic	mg/l			0						0		0							
Atrazine	µg/l			<0.10						<0.05		<0.05		<0.020					
Azinphos-methyl	µg/l			<0.050						<0.050		<0.050		<0.002					
Benzene	µg/l			<0.10						<0.10		<0.10		<0.10					
Benzo[a]anthracene	µg/l			<1.0						<1.0		<1.0		<1.0					
Benzo[a]pyrene	µg/l			<1.0						<1.0		<1.0		<1.0					
Benzo[b]fluoranthene	µg/l			<1.0						<1.0		<1.0		<1.0					
Benzo[g,h,i]perylene	µg/l			<1.0						<1.0		<1.0		<1.0					
Benzo[k]fluoranthene	µg/l			<1.0						<1.0		<1.0		<1.0					
bis(2-Chloroethoxy)methane	µg/l			<1.0						<1.0		<1.0		<1.0					
bis(2-Chloroethyl)ether	µg/l			<1.0						<1.0		<1.0		<1.0					
bis(2-Chloroisopropyl)ether	µg/l			<1.0						<1.0		<1.0		<1.0					
bis(2-ethylhexyl)phthalate	µg/l			<10.0						<10.0		<10.0		<10.0					
Butylbenzylphthalate	µg/l			<1.0						<1.0		<1.0		<1.0					
Tetrachloromethane	µg/l			<0.10						<0.10		<0.10		<0.10					
Chlorfenvinphos	µg/l			<0.050						<0.050		<0.050		<0.002					
Trichloromethane	µg/l			<0.10						<0.10		<0.10		<0.10					
Chrysene	µg/l			<1.0						<1.0		<1.0		<1.0					
Cis-permethrin	µg/l			<0.020						<0.010		<0.010		<0.002					
Demeton-s-methyl	µg/l			<0.050						<0.050		<0.050							
Diazinon	µg/l			<0.050						<0.050		<0.050		<0.002					
Dibenzo[a,h]anthracene	µg/l			<1.0						<1.0		<1.0		<1.0					
Dibenzofuran	µg/l			<1.0						<1.0		<1.0		<1.0					
Dieldrin	ng/l			<3						<3		<3		<6					
Diethylphthalate	µg/l			<3.0						<10.0		<3.0		<3.0					
Dimethote	µg/l			<0.050						<0.050		<0.050		<0.020					
Dimethylphthalate	µg/l			<1.0						<1.0		<1.0		<1.0					
Dibutyl phthalate	µg/l			<10.0						<10.0		<10.0		<10.0					
Dioctyl phthalate	µg/l			<1.0						<1.0		<1.0		<1.0					
Endosulphan alpha	ng/l			<5						<5		<5		<6					
Endosulphan beta	ng/l			<5						<5		<5		<6					
Endrin	ng/l			<3						<3		<3		<6					
Fenitrothion	µg/l			<0.050						<0.050		<0.050		<0.002					
Fluoranthene	µg/l			<1.0						<1.0		<1.0		<1.0					
Fluorene	µg/l			<1.0						<1.0		<1.0		<1.0					
Hexachlorobenzene	ng/L			<5						<5		<5		<1.0					
Hexachlorobutadiene	ng/L			<5						<5		<5		<1.0					
Hexachloroethane	µg/l			<1.0						<1.0		<1.0		<1.0					
Indeno[1,2,3-cd]pyrene	µg/l			<1.0						<1.0		<1.0		<1.0					
Isodrin	ng/l			<3						<3		<3		<6					
Isophorone	µg/l			<1.0						<1.0		<1.0		<1.0					
m and p-Xylene	µg/l			<0.10						<0.10		<0.10		<0.10					
Malathion	µg/l			<0.050						<0.050		<0.050		<0.002					
Mecoprop	µg/l			<0.04						<0.04		<0.04		<0.04					
Mercury	µg/l			0.19						0.16		<0.015		0.48					
Naphthalene	µg/l			<1.0						<1.0		<1.0		<1.0					
Nitrobenzene	µg/l			<1.0						<1.0		<1.0		<1.0					
o,p-DDT	ng/l			<2						<2		<2		<2					
o-Xylene	µg/l			<0.10						<0.10		<0.10		<0.10					
p,p-DDT	ng/l			<2						<2		<2		<2					
Pentachlorophenol	µg/l			<0.05						<0.05		<0.05		<5.0					
Phenanthrene	µg/l			<1.0						<1.0		<1.0		<1.0					
Phenol	µg/l			<2.0						<2.0		<2.0		<2.0					
Pyrene	µg/l			<1.0						<1.0		<1.0		<1.0					
Simazine	µg/l			<0.05						<0.05		<0.05		<0.020					
Tetrachloroethene	µg/l			1.86						<0.10		2.37		2.14					
Toluene	µg/l			<0.10						<0.10		<0.10		<0.10					
Sum of xylenes	µg/l			<0.20						<0.20		<0.20		<0.20					
Tributyltin	µg/l			<0.02						<0.02		<0.02		<0.02					
Trichloroethene	µg/l			0.25						0.17		0.22		0.24					
Trifluralin	ng/l			<5						<5		<5		<10					
Triphenyltin	µg/l			<0.02						<0.02		<0.02		<0.02					
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l			0						0		0		0					
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l			0						0		0		0					

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS

Lab Sample Number	Units	
Sample Reference		SSW1
Zone		
Depth (m)		
Date Sampled		10/09/2009
Analytical Parameter (Water Analysis)		
Inorganics		
Barium	mg/l	
Beryllium	mg/l	
Cadmium	mg/l	0.06
Calcium	mg/l	52
Chromium	mg/l	*<0.001*
Chromium (hexavalent)	mg/l	*<0.03*
Cobalt	mg/l	
Copper	mg/l	
Lead	mg/l	
Iron	mg/l	
Magnesium	mg/l	4.48
Manganese	mg/l	
Potassium	mg/l	6.64
Silver	mg/l	
Mercury	mg/l	
Sodium	mg/l	27
Molybdenum	mg/l	
Nickel	mg/l	
Tin	µg/l	
Uranium	µg/l	
Vanadium	µg/l	
Zinc	µg/l	
Fluoride as F	mg/l	0.2
pH	pH Units	8.1
Electrical Conductivity	µS/cm	471
Ammoniacal Nitrogen as N	mg/l	1.4
Chloride	mg/l	47
Nitrite as N	mg/l	0.7
Nitrite as NO2	mg/l	2.299101
Nitrate as N	mg/l	*<0.3*
Nitrate as NO3	mg/l	
Sulphate as SO4	mg/l	13
Chemical Oxygen Demand (Total)	mg/l	32
Selenium	mg/l	
Organics		
1,1,1-Trichloroethane	µg/l	
1,1,2-Trichloroethane	µg/l	
1,2-Dichlorobenzene	µg/l	
1,2,4-Trichlorobenzene	ng/L	
1,2-Dichloroethane	µg/l	
1,3-Dichlorobenzene	µg/l	
1,4-Dichlorobenzene	µg/l	
1,2,3-Trichlorobenzene	µg/l	
2,4-D	µg/l	
2,4,5-Trichlorophenol	µg/l	
2,4,6-Trichlorophenol	µg/l	
2,4-Dichlorophenol	µg/l	
2,4-Dimethylphenol	µg/l	
2,4-Dinitrotoluene	µg/l	
2,6-Dinitrotoluene	µg/l	
2-Chloronaphthalene	µg/l	
2-Chlorophenol	µg/l	
2-Methylnaphthalene	µg/l	
2-Methylphenol	µg/l	
2-Nitrophenol	µg/l	
4-Bromophenyl-phenylether	µg/l	
4-Chloro-3-methylphenol	µg/l	
4-Chlorophenyl-phenylether	µg/l	
4-Methylphenol	µg/l	
Acenaphthene	µg/l	
Acenaphthylene	µg/l	
Aldrin	ng/l	
Anthracene	µg/l	
Antimony	mg/l	
Arsenic	mg/l	
Atrazine	µg/l	
Azinphos-methyl	µg/l	
Benzene	µg/l	
Benzo[a]anthracene	µg/l	
Benzo[a]pyrene	µg/l	
Benzo[b]fluoranthene	µg/l	
Benzo[g,h,i]perylene	µg/l	
Benzo[k]fluoranthene	µg/l	
bis(2-Chloroethoxy)methane	µg/l	
bis(2-Chloroethyl)ether	µg/l	
bis(2-Chloroisopropyl)ether	µg/l	
bis(2-ethylhexyl)phthalate	µg/l	
Butylbenzylphthalate	µg/l	
Tetrachloromethane	µg/l	
Chlorfenvinphos	µg/l	
Trichloromethane	µg/l	
Chrysene	µg/l	
Cis-permethrin	µg/l	
Demeton-s-methyl	µg/l	
Diazinon	µg/l	
Dibenzo[a,h]anthracene	µg/l	
Dibenzofuran	µg/l	
Dieldrin	ng/l	
Diethylphthalate	µg/l	
Dimethote	µg/l	
Dimethylphthalate	µg/l	
Dibutyl phthalate	µg/l	
Dioctyl phthalate	µg/l	
Endosulphan alpha	ng/l	
Endosulphan beta	ng/l	
Endrin	ng/l	
Fenitrothion	µg/l	
Fluoranthene	µg/l	
Fluorene	µg/l	
Hexachlorobenzene	ng/L	
Hexachlorobutadiene	ng/L	
Hexachloroethane	µg/l	
Indeno[1,2,3-cd]pyrene	µg/l	
Isodrin	ng/l	
Isophorone	µg/l	
m and p-Xylene	µg/l	
Malathion	µg/l	
Mecoprop	µg/l	
Mercury	µg/l	
Naphthalene	µg/l	
Nitrobenzene	µg/l	
o,p-DDT	ng/l	
o-Xylene	µg/l	
p,p-DDT	ng/l	
Pentachlorophenol	µg/l	
Phenanthrene	µg/l	
Phenol	µg/l	
Pyrene	µg/l	
Simazine	µg/l	
Tetrachloroethene	µg/l	
Toluene	µg/l	
Sum of xylenes	µg/l	
Tributyltin	µg/l	
Trichloroethene	µg/l	
Trifluralin	ng/l	
Triphenyltin	µg/l	
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l	
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l	

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS

UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Standard for the Protection of Fisheries
UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
WHO Drinking Water Guideline

Lab Sample Number	**Units**	**Limit of detection**	**Surface Water Screening Value (EQS)**	**No Samples**	**Minimum Value**	**Maximum Value**	**No. Exceedances**							
Sample Reference								SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2
Zone														
Depth (m)														
Date Sampled								01/10/2000	01/01/2001	01/04/2001	01/07/2001	01/10/2001	01/01/2002	01/04/2002
Analytical Parameter (Water Analysis)														
Inorganics														
Beryllium	mg/l		No EQS	4	0.05	5	0							
Cadmium	mg/l		0.0002	26	0	2.18	9	0.1	0.4	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*
Calcium	mg/l		No EQS	57	78.7	243	0	137	139	153	162	156	152	141
Chromium	mg/l		0.015	57	0.0007	6.6	18	0.7	6.6	2.8	0.9	1.8	1.7	1.3
Chromium (hexavalent)	mg/l		0.0006	36	0.03	0.03	10							
Cobalt	mg/l		0.003	4	0.00017	0.00037	0							
Copper	mg/l		0.005	6	0	0	0							
Lead	mg/l		0.0072	20	0	3	5	1	*<1*	*<1*	*<1*	2	*<1*	*<1*
Iron	mg/l		1	19	0.02	0.3	0	0.07	0.04	0.12	0.05	0.07	0.12	0.15
Magnesium	mg/l		No EQS	57	5.1	67	0	5.5	5.1	6.8	6.3	7.3	6.8	6.3
Manganese	mg/l		0.05	19	0.005	0.37	2	0.02	0.01	0.024	*<0.004*	0.018	0.021	0.018
Potassium	mg/l		No EQS	67	9.5	984	0	14	67	139	10	65	18	72
Silver	mg/l		0.0005	3	15	15	2							
Sodium	mg/l		200	67	30.3	997	21	34.1	44.9	70.7	36.9	55.6	40.7	48.7
Nickel	mg/l		0.02	19	2	25	17	3	25	6	4	4	*<2*	4
Tin	µg/l		10	2	0.1	0.1	0							
Uranium	µg/l		15	1	1	1	0							
Vanadium	µg/l		100	2	1.35	1.35	0							
Zinc	µg/l		40	21	3.49	19	0	8	7	16	12	6	9	12
Fluoride as F	mg/l		5	36	0.17	1	0							
pH	pH Units		6.0-9.0	67	7.3	9	0	7.9	8.1	8.07	8	8	7.98	8.05
Electrical Conductivity	µS/cm		2500	67	111	6370	19	710	830	1120	800	1010	792	932
Ammoniacal Nitrogen as N	mg/l		0.78	67	0.027	1.7	4	0.03	0.16	0.23	0.22	0.19	0.197	0.09
Chloride	mg/l		250	67	50	1500	35	50	72	134	66	98	57.8	91.5
Nitrite as N	mg/l		No EQS	37	0.034	0.604	0							
Nitrite as NO2	mg/l		0.5	37	0.111671	1.9837957	9							
Nitrate as N	mg/l		No EQS	37	2.6	10.4	0							
Nitrate as NO3	mg/l		50	37	11.50968	46.03872	0							
Sulphate as SO4	mg/l		400	67	56	987	16	56	85	145	83	115	79.3	104
Chemical Oxygen Demand (Total)	mg/l		No EQS	57	10	129	0	10	*<10*	14	50.2	23	*<10*	13.3
Selenium	mg/l		0.01	15	0.001	0.02	4							
Organics														
1,1,1-Trichloroethane	µg/l		100	5	0	0	0							
1,1,2-Trichloroethane	µg/l		300	5	0	0	0							
1,2-Dichlorobenzene	µg/l		No EQS	4	0	0	0							
1,2,4-Trichlorobenzene	ng/l		No EQS	5	0	0	0							
1,2-Dichloroethane	µg/l		10	5	0	0	0							
1,3-Dichlorobenzene	µg/l		No EQS	5	0	0	0							
1,4-Dichlorobenzene	µg/l		No EQS	5	0	0	0							
1,2,3-Trichlorobenzene	ng/l		No EQS	4	0	0	0							
2,4-D	µg/l		0.3	5	0	0	0							
2,4,5-Trichlorophenol	µg/l		No EQS	5	0	0	0							
2,4,6-Trichlorophenol	µg/l		200	5	0	0	0							
2,4-Dichlorophenol	µg/l		20	5	0	0	0							
2,4-Dimethylphenol	µg/l		No EQS	5	0	0	0							
2,4-Dinitrotoluene	µg/l		No EQS	5	0	0	0							
2,6-Dinitrotoluene	µg/l		No EQS	5	0	0	0							
2-Chloronaphthalene	µg/l		No EQS	5	0	0	0							
2-Chlorophenol	µg/l		50	5	0	0	0							
2-Methylnaphthalene	µg/l		No EQS	5	0	0	0							
2-Methylphenol	µg/l		100	5	0	0	0							
2-Nitrophenol	µg/l		No EQS	5	0	0	0							
4-Bromophenyl-phenylether	µg/l		No EQS	5	0	0	0							
4-Chloro-3-methylphenol	µg/l		40	5	0	0	0							
4-Chlorophenyl-phenylether	µg/l		No EQS	5	0	0	0							
4-Methylphenol	µg/l		100	5	0	0	0							
Acenaphthene	µg/l		1.2	5	0	0	0							
Acenaphthylene	µg/l		1.2	5	0	0	0							
Aldrin	ng/l		5	5	0	0	0							
Anthracene	µg/l		0.1	5	0	0	0							
Antimony	mg/l		0.005	4	0	0	0							
Arsenic	mg/l		0.025	4	0	0	0							
Atrazine	µg/l		0.6	5	0	0	0							
Azinphos-methyl	µg/l		0.01	5	0	0	0							
Benzene	µg/l		8	5	0	0	0							
Benzo[a]anthracene	µg/l		1.2	5	0	0	0							
Benzo[a]pyrene	µg/l		0.05	5	0	0	0							
Benzo[b]fluoranthene	µg/l		No EQS	5	0	0	0							
Benzo[g,h,i]perylene	µg/l		No EQS	5	0	0	0							
Benzo[k]fluoranthene	µg/l		No EQS	5	0	0	0							
bis(2-Chloroethoxy)methane	µg/l		No EQS	5	0	0	0							
bis(2-Chloroethyl)ether	µg/l		No EQS	5	0	0	0							
bis(2-Chloroisopropyl)ether	µg/l		No EQS	5	0	0	0							
bis(2-ethylhexyl)phthalate	µg/l		1.3	5	0	0	0							
Butylbenzylphthalate	µg/l		20	5	0	0	0							
Tetrachloromethane	µg/l		12	5	0	0	0							
Chlorfenvinphos	µg/l		0.1	5	0	0	0							
Trichloromethane	µg/l		2.5	5	0	0	0							
Chrysene	µg/l		1.2	5	0	0	0							
Cis-permethrin	µg/l		0.01	5	0	0	0							
Demeton-s-methyl	µg/l		0.5	4	0	0	0							
Diazinon	µg/l		0.01	5	0	0	0							
Dibenzo[a,h]anthracene	µg/l		1.2	5	0	0	0							
Dibenzofuran	µg/l		No EQS	5	0	0	0							
Dieldrin	ng/l		5	5	0	0	0							
Diethylphthalate	µg/l		200	5	0	0	0							
Dimethote	µg/l		0.48	5	0	0	0							
Dimethylphthalate	µg/l		800	5	0	0	0							
Dibutyl phthalate	µg/l		8	5	0	0	0							
Dioctyl phthalate	µg/l		20	5	0	0	0							
Endosulphan alpha	ng/l		0.5	5	0	0	0							
Endosulphan beta	ng/l		0.5	5	0	0	0							
Endrin	ng/l		5	5	0	0	0							
Fenitrothion	µg/l		0.01	5	0	0	0							
Fluoranthene	µg/l		0.1	5	0	0	0							
Fluorene	µg/l		1.2	5	0	0	0							
Hexachlorobenzene	ng/l		0.01	5	0	0	0							
Hexachlorobutadiene	µg/l		0.1	5	0	0	0							
Hexachloroethane	µg/l		No EQS	5	0	0	0							
Indeno[1,2,3-cd]pyrene	µg/l		No EQS	5	0	0	0							
Isodrin	ng/l		5	5	0	0	0							
Isophorone	µg/l		No EQS	5	0	0	0							
m and p-Xylene	µg/l		No EQS	5	0	0	0							
Malathion	µg/l		0.02	5	0	0	0							
Mecoprop	µg/l		18	5	0	0	0							
Mercury	µg/l		0.05	5	0.05	0.35	3							
Naphthalene	µg/l		1.2	5	0	0	0							
Nitrobenzene	µg/l		No EQS	5	0	0	0							
o,p-DDT	ng/l		25	5	0	0	0							
o-Xylene	µg/l		No EQS	5	0	0	0							
p,p-DDT	ng/l		10	5	0	0	0							
Pentachlorophenol	µg/l		0.4	5	0	0	0							
Phenanthrene	µg/l		1.2	5	0	0	0							
Phenol	µg/l		7.7	5	0	0	0							
Pyrene	µg/l		1.2	5	0	0	0							
Simazine	µg/l		1	5	0	0	0							
Tetrachloroethene	µg/l		10	5	0.12	1.23	0							
Toluene	µg/l		40	5	0	0	0							
Sum of xylenes	µg/l		30	5	0	0	0							
Tributyltin	µg/l		0.002	5	0	0	0							
Trichloroethene	µg/l		10	5	0.12	0.16	0							
Trifluralin	ng/l		30	5	0.35	0.35	0							
Triphenyltin	µg/l		0.008	5	0	0	0							
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l		0.03	5	0	0	0							
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l		0.002	5	0	0	0							

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS

Lab Sample Number																				
Sample Reference	Units	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2
Zone																				
Depth (m)																				
Date Sampled		01/07/2002	01/10/2002	01/01/2003	01/04/2003	01/07/2003	01/10/2003	01/01/2004	01/04/2004	01/07/2004	01/10/2004	01/01/2005	01/04/2005	01/07/2005	26/01/2006	27/02/2006	23/03/2006	20/04/2006	18/05/2006	22/06/2006
Analytical Parameter (Water Analysis)																				
Inorganics																				
Beryllium	mg/l																			
Cadmium	mg/l	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	0.2	*<0.1*	*<0.1*	*<0.1*		*<0.1*	*<0.1*	0.1			0.05			0
Calcium	mg/l	157	157	137	136	139	153	243	132	147	164	131	133	148	167	165	165	156	138	159
Chromium	mg/l	1.3	2.2	1.5	1.2	0.7	2.2	2	1	1.2	*<0.005*	*<0.4*	0.8	1.2	*<0.005*	*<0.005*	0.005	0.005	0.005	*<0.005*
Chromium (hexavalent)	mg/l														*<0.03*	*<0.03*	0.03	0.03	0.03	*<0.03*
Cobalt	mg/l																0.00037			
Copper	mg/l																			0
Lead	mg/l	*<1*	*<1*	*<1*	*<1*	*<1*	1	*<1*	*<1*	3		*<1.0*	*<1.0*	3						
Iron	mg/l	0.1	0.18	0.05	0.17	0.02	0.1	0.1	0.06	0.3		0.19	0.11	0.22						
Magnesium	mg/l	8.8	8.2	6.5	6.4	6.4	7	7.5	6	7.6	9.2	9.4	9.6	20.8	13	21	18	27	23	27
Manganese	mg/l	0.009	0.024	0.005	0.009	0.008	0.018	0.007	0.009	0.041		0.028	0.37	0.055						
Potassium	mg/l	54.8	36.9	9.5	18.8	21.3	48.4	26.3	19.9	17.4	17	43.5	42.5	73.8	50	66	46	67	29	114
Silver	mg/l																			
Sodium	mg/l	55.2	50.5	30.3	36.5	34.5	42.2	38.3	33.1	47.2	54	75.6	71.2	162	107	169	151	230	195	274
Nickel	mg/l	5	3	3	3	3	7	2	2	2		*<2.0*	3	4						
Tin	µg/l																			
Uranium	µg/l																			
Vanadium	µg/l																			
Zinc	µg/l	13	11	9	14	15	9	6	7	12		13	17	14						
Fluoride as F	mg/l														0.17	0.27	0.21	0.31	0.24	0.23
pH	pH Units	8.11	7.83	8.23	8.05	7.94	8.24	8.22	7.91	7.96	7.3	8.17	8.01	8.17	8.1	7.8	7.9	8.1	8.4	8.1
Electrical Conductivity	µS/cm	970	111	698	744	760	911	814	726	760	818	1070	947	1600	1270	1560	1550	1900	1750	1990
Ammoniacal Nitrogen as N	mg/l	0.027	0.198	*<0.03*	*<0.03*	0.07	0.13	0.04	0.13	0.11	*<0.3*	0.1	0.05	0.15	*<0.3*	1	0.5	0.3	0.3	*<0.3*
Chloride	mg/l	116	92	54.7	62.8	57.9	78.4	59.1	56.8	69.5	93	145	126	323	205	342	294	417	375	471
Nitrite as N	mg/l														*<0.1*	*<0.1*	0.1	0.1	0.1	*<0.1*
Nitrite as NO2	mg/l																0.328443	0.328443	0.328443	
Nitrate as N	mg/l														10.4	9.5	10	9.1	9.4	8.6
Nitrate as NO3	mg/l														46.03872	42.0546	44.268	40.28388	41.61192	38.07048
Sulphate as SO4	mg/l	106	110	71.9	76.9	70	106	86	86.6	75.8	80	116	96.8	64.8	135	172	137	171	115	189
Chemical Oxygen Demand (Total)	mg/l	22	27.6	*<10*	13.4	*<10*	10.2	*<10*	11.3	12.4	29	17.3	15.4	42	45	21	20	50	38	44
Selenium	mg/l																			
Organics																				
1,1,1-Trichloroethane	µg/l																*<0.10*			
1,1,2-Trichloroethane	µg/l																*<0.10*			
1,2-Dichlorobenzene	µg/l																			
1,2,4-Trichlorobenzene	ng/l																*<5*			
1,2-Dichloroethane	µg/l																*<0.10*			
1,3-Dichlorobenzene	µg/l																*<1.0*			
1,4-Dichlorobenzene	µg/l																*<1.0*			
1,2,3-Trichlorobenzene	ng/l																*<5*			
2,4-D	µg/l																*<0.05*			
2,4,5-Trichlorophenol	µg/l																*<1.0*			
2,4,6-Trichlorophenol	µg/l																*<1.0*			
2,4-Dichlorophenol	µg/l																*<1.0*			
2,4-Dimethylphenol	µg/l																*<2.0*			
2,4-Dinitrotoluene	µg/l																*<1.0*			
2,6-Dinitrotoluene	µg/l																*<1.0*			
2-Chloronaphthalene	µg/l																*<1.0*			
2-Chlorophenol	µg/l																*<1.0*			
2-Methylnaphthalene	µg/l																*<1.0*			
2-Methylphenol	µg/l																*<1.0*			
2-Nitrophenol	µg/l																*<1.0*			
4-Bromophenyl-phenylether	µg/l																*<1.0*			
4-Chloro-3-methylphenol	µg/l																*<1.0*			
4-Chlorophenyl-phenylether	µg/l																*<1.0*			
4-Methylphenol	µg/l																*<1.0*			
Acenaphthene	µg/l																*<1.0*			
Acenaphthylene	µg/l																*<1.0*			
Aldrin	ng/l																*<3*			
Anthracene	µg/l																*<1.0*			
Antimony	mg/l																0			
Arsenic	mg/l																0			
Atrazine	µg/l																*<1.0*			
Azinphos-methyl	µg/l																*<0.050*			
Benzene	µg/l																*<0.10*			
Benzo[a]anthracene	µg/l																*<1.0*			
Benzo[a]pyrene	µg/l																*<1.0*			
Benzo[b]fluoranthene	µg/l																*<1.0*			
Benzo[g,h,i]perylene	µg/l																*<1.0*			
Benzo[k]fluoranthene	µg/l																*<1.0*			
bis(2-Chloroethoxy)methane	µg/l																*<1.0*			
bis(2-Chloroethyl)ether	µg/l																*<1.0*			
bis(2-Chloroisopropyl)ether	µg/l																*<1.0*			
bis(2-ethylhexyl)phthalate	µg/l																*<10.0*			
Butylbenzylphthalate	µg/l																*<1.0*			
Tetrachloromethane	µg/l																*<0.10*			
Chlorfenvinphos	µg/l																*<1.0*			
Trichloromethane	µg/l																*<0.10*			
Chrysene	µg/l																*<1.0*			
Cis-permethrin	µg/l																*<1.0*			
Demeton-s-methyl	µg/l																*<1.0*			
Diazinon	µg/l																*<1.0*			
Dibenzo[a,h]anthracene	µg/l																*<1.0*			
Dibenzofuran	µg/l																*<1.0*			
Dieldrin	ng/l																*<3*			
Diethylphthalate	µg/l																*<3.0*			
Dimethote	µg/l																*<0.050*			
Dimethylphthalate	µg/l																*<1.0*			
Dibutyl phthalate	µg/l																*<10.0*			
Dioctyl phthalate	µg/l																*<1.0*			
Endosulphan alpha	ng/l																*<5*			
Endosulphan beta	ng/l																*<1.0*			
Endrin	ng/l																*<3*			
Fenitrothion	µg/l																*<0.050*			
Fluoranthene	µg/l																*<1.0*			
Fluorene	µg/l																*<1.0*			
Hexachlorobenzene	ng/l																*<5*			
Hexachlorobutadiene	µg/l																*<5*			
Hexachloroethane	µg/l																*<1.0*			
Indeno[1,2,3-cd]pyrene	µg/l																*<1.0*			
Isodrin	ng/l																*<1.0*			
Isophorone	µg/l																*<1.0*			
m and p-Xylene	µg/l																*<0.10*			
Malathion	µg/l																*<0.050*			
Mecoprop	µg/l																*<1.0*			
Mercury	µg/l																0.35			
Naphthalene	µg/l																*<1.0*			
Nitrobenzene	µg/l																*<1.0*			
o,p-DDT	ng/l																*<1.0*			
o-Xylene	µg/l																*<0.10*			
p,p-DDT	ng/l																*<1.0*			
Pentachlorophenol	µg/l																*<0.05*			
Phenanthrene	µg/l																*<1.0*			
Phenol	µg/l																*<2.0*			
Pyrene	µg/l																*<1.0*			
Simazine	µg/l																*<0.10*			
Tetrachloroethene	µg/l																0.12			
Toluene	µg/l																*<0.10*			
Sum of xylenes	µg/l																*<0.20*			
Tributyltin	µg/l																*<0.02*			
Trichloroethene	µg/l																0.16			
Trifluralin	ng/l																0.35			
Triphenyltin	µg/l																*<0.02*			
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l																0			
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l																0			

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS

Lab Sample Number	Units															
Sample Reference		SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2	SSW2
Zone																
Depth (m)																
Date Sampled		20/07/2006	18/08/2006	28/09/2006	19/10/2006	09/11/2006	07/12/2006	11/01/2007	15/02/2007	08/03/2007	07/06/2007	06/09/2007	06/12/2007	06/03/2008	05/06/2008	05/03/2009
Analytical Parameter (Water Analysis)																
Inorganics																
Beryllium	mg/l			0.05						0.05		5		<5		
Cadmium	mg/l			0.05						0.05		0.05		<0.05		2.18
Calcium	mg/l	156	153	149	162	140	136	135	119	114	118	131	148	138	139	115
Chromium	mg/l	0.005	0.005	0.005	<0.005	<0.005	0.005	0.005	0.005	0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.001
Chromium (hexavalent)	mg/l	0.03	0.03	0.03	<0.03	<0.03	0.03	0.03	0.03		0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Cobalt	mg/l			0.00019						0.00017				<5		
Copper	mg/l													0		
Lead	mg/l													0		
Iron	mg/l															
Magnesium	mg/l	60	66	19	22	13	9.1	9.3	10	9.4	9.3	13	64	8.3	8.5	43
Manganese	mg/l															
Potassium	mg/l	141	58	19	23	23	20	22	39	25	22	16	44	16	17	116
Silver	mg/l									15		15		<15		
Sodium	mg/l	638	587	146	160	102	56	63	76	60	61	77	529	53	57	373
Nickel	mg/l															
Tin	µg/l									0.1				<20		
Uranium	µg/l													1		
Vanadium	µg/l									1.35				<5		
Zinc	µg/l									3.49				19		
Fluoride as F	mg/l	0.24	0.26	0.21	0.28	0.25	0.19	0.19	0.17		0.2	0.2	<0.1	0.2	0.2	0.2
pH	pH Units	8.1	8.1	8	7.9	7.8	7.8	8.4	8.2	7.8	8.6	7.7	8.1	8.1	8.2	8.2
Electrical Conductivity	µS/cm	3140	3730	1580	1480	1220	876	931	1080	888	926	959	3330	797	793	2840
Ammoniacal Nitrogen as N	mg/l	0.3	0.3	0.3	<0.3	1.3	0.3	0.3	0.3	0.3	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chloride	mg/l	1060	1150	263	284	179	106	120	173	137	114	145	930	83	75	702
Nitrite as N	mg/l	0.3	0.1	0.1	<0.1	<0.1	0.1	0.1	0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.2
Nitrite as NO2	mg/l	0.985329	0.328443	0.328443			0.328443	0.328443	0.328443	0.328443	0.328443					0.656886
Nitrate as N	mg/l	8.5	8.8	8.4	8.3	6.2	6.6	7	6.1	6.8	2.6	5.5	7.7	8.4	6.5	5.7
Nitrate as NO3	mg/l	37.6278	38.95584	37.18512	36.74244	27.44616	29.21688	30.9876	27.00348	30.10224	11.50968	24.3474	34.08636	37.18512	28.7742	25.23276
Sulphate as SO4	mg/l	263	238	110	99	127	95	101	110	96	89	93	204	85	79	255
Chemical Oxygen Demand (Total)	mg/l	109	61	33	33	56	34	20	20	20	20	25	41	<20	109	50
Selenium	mg/l															
Organics																
1,1,1-Trichloroethane	µg/l			<0.10						<0.10		<0.10		<0.10		
1,1,2-Trichloroethane	µg/l			<0.10						<0.10		<0.10		<0.10		
1,2-Dichlorobenzene	µg/l			<1.0						<1.0		<1.0		<1.0		
1,2,4-Trichlorobenzene	ng/l			<5						<5		<5		<1.0		
1,2-Dichloroethane	µg/l			<0.10						<0.10		<0.10		<0.10		
1,3-Dichlorobenzene	µg/l			<1.0						<1.0		<1.0		<1.0		
1,4-Dichlorobenzene	µg/l			<1.0						<1.0		<1.0		<1.0		
1,2,3-Trichlorobenzene	ng/l			<5						<5		<5				
2,4-D	µg/l			<0.05						<0.05		<0.05		<0.05		
2,4,5-Trichlorophenol	µg/l			<1.0						<1.0		<1.0		<1.0		
2,4,6-Trichlorophenol	µg/l			<1.0						<1.0		<1.0		<1.0		
2,4-Dichlorophenol	µg/l			<1.0						<1.0		<1.0		<1.0		
2,4-Dimethylphenol	µg/l			<2.0						<2.0		<2.0		<2.0		
2,4-Dinitrotoluene	µg/l			<1.0						<1.0		<1.0		<1.0		
2,6-Dinitrotoluene	µg/l			<1.0						<1.0		<1.0		<1.0		
2-Chloronaphthalene	µg/l			<1.0						<1.0		<1.0		<1.0		
2-Chlorophenol	µg/l			<1.0						<1.0		<1.0		<1.0		
2-Methylnaphthalene	µg/l			<1.0						<1.0		<1.0		<1.0		
2-Methylphenol	µg/l			<1.0						<1.0		<1.0		<1.0		
2-Nitrophenol	µg/l			<1.0						<1.0		<1.0		<1.0		
4-Bromophenyl-phenylether	µg/l			<1.0						<1.0		<1.0		<1.0		
4-Chloro-3-methylphenol	µg/l			<1.0						<1.0		<1.0		<1.0		
4-Chlorophenyl-phenylether	µg/l			<1.0						<1.0		<1.0		<1.0		
4-Methylphenol	µg/l			<1.0						<1.0		<1.0		<1.0		
Acenaphthene	µg/l			<1.0						<1.0		<1.0		<1.0		
Acenaphthylene	µg/l			<1.0						<1.0		<1.0		<1.0		
Aldrin	ng/l			<3						<3		<3		<6		
Anthracene	µg/l			<1.0						<1.0		<1.0		<1.0		
Antimony	mg/l			0						0		0				
Arsenic	mg/l			0						0		0				
Atrazine	µg/l			<0.05						<0.05		<0.05		<0.020		
Azinphos-methyl	µg/l			<0.050						<0.050		<0.050		<0.002		
Benzene	µg/l			<0.10						<0.10		<0.10		<0.10		
Benzo[a]anthracene	µg/l			<1.0						<1.0		<1.0		<1.0		
Benzo[a]pyrene	µg/l			<1.0						<1.0		<1.0		<1.0		
Benzo[b]fluoranthene	µg/l			<1.0						<1.0		<1.0		<1.0		
Benzo[g,h,i]perylene	µg/l			<1.0						<1.0		<1.0		<1.0		
Benzo[k]fluoranthene	µg/l			<1.0						<1.0		<1.0		<1.0		
bis(2-Chloroethoxy)methane	µg/l			<1.0						<1.0		<1.0		<1.0		
bis(2-Chloroethyl)ether	µg/l			<1.0						<1.0		<1.0		<1.0		
bis(2-Chloroisopropyl)ether	µg/l			<1.0						<1.0		<1.0		<1.0		
bis(2-ethylhexyl)phthalate	µg/l			<10.0						<10.0		<10.0		<10.0		
Butylbenzylphthalate	µg/l			<1.0						<1.0		<1.0		<1.0		
Tetrachloromethane	µg/l			<0.10						<0.10		<0.10		<0.10		
Chlorfenvinphos	µg/l			<0.050						<0.050		<0.050		<0.002		
Trichloromethane	µg/l			<0.10						<0.10		<0.10		<0.10		
Chrysene	µg/l			<1.0						<1.0		<1.0		<1.0		
Cis-permethrin	µg/l			<0.020						<0.010		<0.010		<0.002		
Demeton-s-methyl	µg/l			<0.050						<0.050		<0.050				
Diazinon	µg/l			<0.050						<0.050		<0.050		<0.002		
Dibenzo[a,h]anthracene	µg/l			<1.0						<1.0		<1.0		<1.0		
Dibenzofuran	µg/l			<1.0						<1.0		<1.0		<1.0		
Dieldrin	ng/l			<3						<3		<3		<6		
Diethylphthalate	µg/l			<3.0						<10.0		<3.0		<3.0		
Dimethote	µg/l			<0.050						<0.050		<0.050		<0.020		
Dimethylphthalate	µg/l			<1.0						<1.0		<1.0		<1.0		
Dibutyl phthalate	µg/l			<10.0						<10.0		<10.0		<10.0		
Dioctyl phthalate	µg/l			<1.0						<1.0		<1.0		<1.0		
Endosulphan alpha	ng/l			<5						<5		<5		<6		
Endosulphan beta	ng/l			<5						<5		<5		<6		
Endrin	ng/l			<3						<3		<3		<6		
Fenitrothion	µg/l			<0.050						<0.050		<0.050		<0.002		
Fluoranthene	µg/l			<1.0						<1.0		<1.0		<1.0		
Fluorene	µg/l			<1.0						<1.0		<1.0		<1.0		
Hexachlorobenzene	ng/l			<5						<5		<5		<1.0		
Hexachlorobutadiene	µg/l			<5						<5		<5		<1.0		
Hexachloroethane	µg/l			<1.0						<1.0		<1.0		<1.0		
Indeno[1,2,3-cd]pyrene	µg/l			<1.0						<1.0		<1.0		<1.0		
Isodrin	ng/l			<3						<3		<3		<6		
Isophorone	µg/l			<1.0						<1.0		<1.0		<1.0		
m and p-Xylene	µg/l			<0.10						<0.10		<0.10		<0.10		
Malathion	µg/l			<0.050						<0.050		<0.050		<0.002		
Mecoprop	µg/l			<0.04						<0.04		<0.04		<0.04		
Mercury	µg/l			0.26						0.08		<0.015		0.05		
Naphthalene	µg/l			<1.0						<1.0		<1.0		<1.0		
Nitrobenzene	µg/l			<1.0						<1.0		<1.0		<1.0		
o,p-DDT	ng/l			<2						<2		<2		<2		
o-Xylene	µg/l			<0.10						<0.10		<0.10		<0.10		
p,p-DDT	ng/l			<2						<2		<2		<2		
Pentachlorophenol	µg/l			<0.05						<0.05		<0.05		<5.0		
Phenanthrene	µg/l			<1.0						<1.0		<1.0		<1.0		
Phenol	µg/l			<2.0						<2.0		<2.0		<2.0		
Pyrene	µg/l			<1.0						<1.0		<1.0		<1.0		
Simazine	µg/l			<0.05						<0.05		<0.05		<0.020		
Tetrachloroethene	µg/l			1.04						<0.10		1.07		1.23		
Toluene	µg/l			<0.10						<0.10		<0.10		<0.10		
Sum of xylenes	µg/l			<0.20						<0.20		<0.20		<0.20		
Tributyltin	µg/l			<0.02						<0.02		<0.02		<0.02		
Trichloroethene	µg/l			0.13						<0.10		0.12		0.14		
Trifluralin	ng/l			<5						<5		<5		<10		
Triphenyltin	µg/l			<0.02						<0.02		<0.02		<0.02		
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l			0						0		0		0		
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l			0						0		0		0		

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS

UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Standard for the Protection of Fisheries
UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
WHO Drinking Water Guideline

Lab Sample Number / Sample Reference / Zone / Depth (m) / Date Sampled / **Analytical Parameter (Water Analysis)**	Units	Limit of detection	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances
Inorganics							
Beryllium	mg/l		No EQS	5	0.05	5	0
Boron	mg/l		7	2	0	0	0
Cadmium	mg/l		0.0002	24	0	8.1	14
Calcium	mg/l		No EQS	58	84.3	496	0
Chromium	mg/l		0.015	58	0.0013	8.2	15
Chromium (hexavalent)	mg/l		0.0006	39	0.03	0.03	10
Cobalt	mg/l		0.003	5	0.0002	0.00089	0
Copper	mg/l		0.005	5	0	0.022	2
Lead	mg/l		0.0072	17	0	120	14
Iron	mg/l		1	16	0.03	5.4	4
Magnesium	mg/l		No EQS	58	6.4	346	0
Manganese	mg/l		0.05	16	0.013	2.3	11
Potassium	mg/l		No EQS	67	13	5090	0
Silver	mg/l		0.0005	5	15	15	3
Sodium	mg/l		200	67	37.9	2940	45
Nickel	mg/l		0.02	16	2	30	12
Tin	µg/l		10	3	0.1	0.1	0
Uranium	µg/l		15	2	0.4	1	0
Vanadium	µg/l		100	3	3.13	5	0
Zinc	µg/l		40	19	8	86	2
Fluoride as F	mg/l		5	39	0.16	5.3	1
pH	pH Units		6.0-9.0	67	7.11	9.3	0
Electrical Conductivity	µS/cm		2500	67	715	21700	44
Ammoniacal Nitrogen as N	mg/l		0.78	67	0.03	5.6	12
Chloride	mg/l		250	67	6.13	4980	49
Nitrite as N	mg/l		No EQS	41	0.031	1.2	0
Nitrite as NO2	mg/l		0.5	41	0.101817	3.941316	5
Nitrate as N	mg/l		No EQS	41	0.29	7.9	0
Nitrate as NO3	mg/l		50	41	1.283772	34.97172	0
Sulphate as SO4	mg/l		400	67	34.8	4760	41
Chemical Oxygen Demand (Total)	mg/l		No EQS	58	13.9	1180	0
Selenium	mg/l		0.01	15	0.003	0.188	8
Organics							
1,1,1-Trichloroethane	µg/l		100	5	0	0	0
1,1,2-Trichloroethane	µg/l		300	5	0	0	0
1,2-Dichlorobenzene	µg/l		No EQS	5	0	0	0
1,2,4-Trichlorobenzene	ng/L		No EQS	5	0	0	0
1,2-Dichloroethane	µg/l		10	5	0.12	0.12	0
1,3-Dichlorobenzene	µg/l		No EQS	5	0	0	0
1,4-Dichlorobenzene	µg/l		No EQS	5	0	0	0
1,2,3-Trichlorobenzene	µg/l		No EQS	4	0	0	0
2,4-D	µg/l		0.3	5	0	0	0
2,4,5-Trichlorophenol	µg/l		No EQS	5	0	0	0
2,4,6-Trichlorophenol	µg/l		200	5	2.3	2.3	0
2,4-Dichlorophenol	µg/l		20	5	0	0	0
2,4-Dimethylphenol	µg/l		No EQS	5	0	0	0
2,4-Dinitrotoluene	µg/l		No EQS	5	0	0	0
2,6-Dinitrotoluene	µg/l		No EQS	5	0	0	0
2-Chloronaphthalene	µg/l		No EQS	5	0	0	0
2-Chlorophenol	µg/l		50	5	0	0	0
2-Methylnaphthalene	µg/l		No EQS	5	0	0	0
2-Methylphenol	µg/l		100	5	0	0	0
2-Nitrophenol	µg/l		No EQS	5	0	0	0
4-Bromophenyl-phenylether	µg/l		No EQS	5	0	0	0
4-Chloro-3-methylphenol	µg/l		40	5	0	0	0
4-Chlorophenyl-phenylether	µg/l		No EQS	5	0	0	0
4-Methylphenol	µg/l		100	5	0	0	0
Acenaphthene	µg/l		1.2	5	0	0	0
Acenaphthylene	µg/l		1.2	5	0	0	0
Aldrin	ng/l		5	5	0	0	0
Anthracene	µg/l		0.1	5	0	0	0
Antimony	mg/l		0.005	4	0	0	0
Arsenic	mg/l		0.025	4	0	0	0
Atrazine	µg/l		0.6	5	0	0	0
Azinphos-methyl	µg/l		0.01	5	0	0	0
Benzene	µg/l		8	5	0	0	0
Benzo[a]anthracene	µg/l		1.2	5	0	0	0
Benzo[a]pyrene	µg/l		0.05	5	0	0	0
Benzo[b]fluoranthene	µg/l		No EQS	5	0	0	0
Benzo[g,h,i]perylene	µg/l		No EQS	5	0	0	0
Benzo[k]fluoranthene	µg/l		No EQS	5	0	0	0
bis(2-Chloroethoxy)methane	µg/l		No EQS	5	0	0	0
bis(2-Chloroethyl)ether	µg/l		No EQS	5	0	0	0
bis(2-Chloroisopropyl)ether	µg/l		No EQS	5	0	0	0
bis(2-ethylhexyl)phthalate	µg/l		1.3	5	0	0	0
Butylbenzylphthalate	µg/l		20	5	1.5	1.5	0
Tetrachloromethane	µg/l		12	5	0	0	0
Chlorfenvinphos	µg/l		0.1	5	0	0	0
Trichloromethane	µg/l		2.5	5	0	0	0
Chrysene	µg/l		1.2	5	0	0	0
Cis-permethrin	µg/l		0.01	5	0	0	0
Demeton-s-methyl	µg/l		0.5	5	0	0	0
Diazinon	µg/l		0.01	5	0	0	0
Dibenzo[a,h]anthracene	µg/l		1.2	5	0	0	0
Dibenzofuran	µg/l		No EQS	5	0	0	0
Dieldrin	ng/l		5	5	0	0	0
Diethylphthalate	µg/l		200	5	0	0	0
Dimethote	µg/l		0.48	5	0	0	0
Dimethylphthalate	µg/l		800	5	0	0	0
Dibutyl phthalate	µg/l		8	5	0	0	0
Dioctyl phthalate	µg/l		20	5	0	0	0
Endosulphan alpha	ng/l		0.5	5	0	0	0
Endosulphan beta	ng/l		0.5	5	0	0	0
Endrin	ng/l		5	5	0	0	0
Fenitrothion	µg/l		0.01	5	0	0	0
Fluoranthene	µg/l		0.1	5	0	0	0
Fluorene	µg/l		1.2	5	0	0	0
Hexachlorobenzene	ng/L		0.01	5	0	0	0
Hexachlorobutadiene	ng/L		0.1	5	0	0	0
Hexachloroethane	µg/l		No EQS	5	0	0	0
Indeno[1,2,3-cd]pyrene	µg/l		No EQS	5	0	0	0
Isodrin	ng/l		5	5	0	0	0
Isophorone	µg/l		No EQS	5	0	0	0
m and p-Xylene	µg/l		No EQS	5	0	0	0
Malathion	µg/l		0.02	5	0	0	0
Mecoprop	µg/l		18	5	0	0	0
Mercury	µg/l		0.05	5	0.04	0.19	2
Naphthalene	µg/l		1.2	5	0	0	0
Nitrobenzene	µg/l		No EQS	5	0	0	0
o,p-DDT	ng/l		25	5	0	0	0
o-Xylene	µg/l		No EQS	5	0	0	0
p,p-DDT	ng/l		10	5	0	0	0
Pentachlorophenol	µg/l		0.4	5	0	0	0
Phenanthrene	µg/l		1.2	5	0	0	0
Phenol	µg/l		7.7	5	0	0	0
Pyrene	µg/l		1.2	5	0	0	0
Simazine	µg/l		1	5	0	0	0
Tetrachloroethene	µg/l		10	5	0.11	1.07	0
Toluene	µg/l		40	5	0	0	0
Sum of xylenes	µg/l		30	5	0	0	0
Tributyltin	µg/l		0.002	5	0	0	0
Trichloroethene	µg/l		10	5	0.13	0.13	0
Trifluralin	ng/l		30	5	0	0	0
Triphenyltin	µg/l		0.008	5	0	0	0
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l		0.03	5	0	0	0
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l		0.002	5	0	0	0

Analytical Parameter (Water Analysis)	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3
Date Sampled	01/10/2000	01/01/2001	01/04/2001	01/07/2001	01/10/2001	01/04/2002	01/01/2003	01/04/2003	01/07/2003	01/10/2003	01/01/2004	01/04/2004	01/07/2004	01/10/2004
Inorganics														
Beryllium														
Boron														
Cadmium	0.5	0.1	1.5	8.1	0.5	0.2	0.6	*<0.1*	*<0.1*	0.5	*<0.1*	0.2	*<0.1*	
Calcium	186	130	173	270	269	187	155	126	133	181	262	122	144	138
Chromium	2	8.2	5.4	1.6	1.3	3.7	1.4	0.8	1	2.9	1.2	0.8	0.6	*<0.005*
Chromium (hexavalent)														
Cobalt														
Copper														
Lead	91	10	120	6	19	39	68	7	2	71	*<1*	3	3	
Iron	3.51	0.23	5.4	1.65	0.86	1.41	0.43	0.07	0.9	1	0.36	0.17	0.03	
Magnesium	18.7	6.4	69.7	44.7	58.2	27.6	21.4	7.6	8.2	22	48.8	6.4	6.8	8.7
Manganese	0.61	0.06	0.427	0.621	2.3	2.03	0.223	0.016	0.147	0.717	0.081	0.014	0.014	
Potassium	430	48	3750	2730	1420	637	289	56.3	54.6	431	269	24.9	14.4	13
Silver														
Sodium	194	42.7	1310	943	628	230	164	48	51.6	208	330	37.9	38.3	51
Nickel	9	*<2*	18	30	8	10	5	*<2*	*<2*	7	5	2	*<2*	
Tin														
Uranium														
Vanadium														
Zinc	86	14	13	17	9	21	29	26	9	8	16	13	15	
Fluoride as F														
pH	7.8	8.1	7.75	8.3	7.9	7.8	8.23	7.11	7.72	8.18	8.25	7.61	8.04	7.4
Electrical Conductivity	2550	750	14300	10500	7300	3120	2190	880	868	2970	3580	727	715	817
Ammoniacal Nitrogen as N	0.03	*<0.03*	5.6	0.06	0.06	0.11	*<0.03*	0.09	0.08	0.64	0.13	0.1	0.18	*<0.3*
Chloride	490	58	3780	2200	1600	6.13	403	98	96.4	484	642	71.7	58.5	95
Nitrite as N														
Nitrite as NO2														
Nitrate as N														
Nitrate as NO3														
Sulphate as SO4	265	74	2200	2300	1460	113	363	98	74.9	470	687	87.5	70.2	76
Chemical Oxygen Demand (Total)	305	125	104	202	132	289	43.8	87.5	69.6	59.5	53.2	18.1	50	*<20*
Selenium														

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS

Lab Sample Number	Units																			
Sample Reference		SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3
Zone																				
Depth (m)																				
Date Sampled		01/01/2005	01/04/2005	01/07/2005	26/01/2006	27/02/2006	23/03/2006	20/04/2006	18/05/2006	22/06/2006	20/07/2006	18/08/2006	28/09/2006	19/10/2006	09/11/2006	07/12/2006	11/01/2007	15/02/2007	08/03/2007	07/06/2007
Analytical Parameter (Water Analysis)																				
Inorganics																				
Beryllium	mg/l												0.05						0.05	
Boron	mg/l									0										
Cadmium	mg/l	*<0.1*	*<0.1*	0.1			0.13			0			0.05						0.00031	
Calcium	mg/l	144	130	132	182	267	235	258	158	238	220	205	150	171	144	129	129	141	106	129
Chromium	mg/l	*<0.4*	3.2	2.3	*<0.005*	*<0.005*	0.005	0.005	0.005	*<0.005*	0.005	0.005	0.005	*<0.005*	*<0.005*	0.005	0.005	0.005	0.005	0.005
Chromium (hexavalent)	mg/l				*<0.03*	*<0.03*	0.03	0.03	0.03			0.03	0.03	*<0.03*	*<0.03*	0.03	0.03	0.03	0.03	0.03
Cobalt	mg/l						0.00037						0.0002						0.00089	
Copper	mg/l																			
Lead	mg/l	*<0.1*	6	3																
Iron	mg/l	0.21	0.14	0.69																
Magnesium	mg/l	13.2	8.8	25	24	63	60	62	25	66	69	135	12	12	11	8.4	8.3	10	8.7	9.8
Manganese	mg/l	0.038	0.013	0.817																
Potassium	mg/l	140	32.1	153	61	883	969	627	236	1260	869	270	24	25	21	19	16	34	13	48
Silver	mg/l						15												15	
Sodium	mg/l	120	64.5	222	266	685	648	518	245	806	636	1240	88	84	77	52	55	77	56	67
Nickel	mg/l	4	6	4																
Tin	µg/l																		0.1	
Uranium	µg/l																			
Vanadium	µg/l																		3.13	
Zinc	µg/l	13	16	11															60.5	
Fluoride as F	mg/l				0.25	0.65	0.63	0.6	0.36	0.7	0.66	0.42	0.22	0.25	0.24	0.19	0.2	0.16		0.2
pH	pH Units	7.97	8.08	8.13	8	7.9	8	8	8.3	8	7.9	8.1	7.8	7.6	7.9	7.8	8.3	8.1	7.7	8.6
Electrical Conductivity	µS/cm	1570	893	2170	3160	7400	7670	5430	2500	7330	6720	7350	1230	1020	1080	842	895	953	861	979
Ammoniacal Nitrogen as N	mg/l	0.05	0.07	0.31	0.5	1.4	0.9	1.3	1.1	*<0.3*	1.7	0.5	0.3	0.4	1	0.3	0.3	0.3	0.4	0.5
Chloride	mg/l	270	113	503	595	1530	1620	967	494	1790	1810	2270	144	124	131	96	108	123	118	127
Nitrite as N	mg/l				*<0.1*	*<0.1*	0.2	0.1	0.1	0.5	0.1	0.3	0.1	*<0.1*	*<0.1*	0.1	0.1	0.1	0.1	0.1
Nitrite as NO2	mg/l						0.656886	0.328443	0.328443	1.642215	0.328443	0.985329	0.328443			0.328443	0.328443	0.328443	0.328443	0.328443
Nitrate as N	mg/l				7.9	2.6	2.6	2.2	1.7	*<0.3*	0.4	2.6	4.3	5.5	6.5	6.4	7.4	6.1	6.9	2.6
Nitrate as NO3	mg/l				34.97172	11.50968	11.50968	9.73896	7.52556		1.77072	11.50968	19.03524	24.3474	28.7742	28.33152	32.75832	27.00348	30.54492	11.50968
Sulphate as SO4	mg/l	178	89.9	34.8	432	1100	1210	984	380	1210	997	533	121	91	119	89	96	95	95	99
Chemical Oxygen Demand (Total)	mg/l	46.2	13.9	71.2	64	102	113	84	76	174	370	113	30	21	26	25	20	20	20	40
Selenium	mg/l																			
Organics																				
1,1,1-Trichloroethane	µg/l						*<0.10*						*<0.10*						*<0.10*	
1,1,2-Trichloroethane	µg/l						*<0.10*						*<0.10*						*<0.10*	
1,2-Dichlorobenzene	µg/l						*<1.0*						*<1.0*						*<1.0*	
1,2,4-Trichlorobenzene	ng/L						*<5*						*<5*						*<5*	
1,2-Dichloroethane	µg/l						*<0.10*						*<0.10*						*<0.10*	
1,3-Dichlorobenzene	µg/l						*<1.0*						*<1.0*						*<1.0*	
1,4-Dichlorobenzene	µg/l						*<1.0*						*<1.0*						*<1.0*	
1,2,3-Trichlorobenzene	µg/l						*<5*						*<5*						*<5*	
2,4-D	µg/l						*<0.05*						*<0.05*						*<0.05*	
2,4,5-Trichlorophenol	µg/l						*<1.0*						*<1.0*						*<1.0*	
2,4,6-Trichlorophenol	µg/l						*<1.0*						2.3						*<1.0*	
2,4-Dichlorophenol	µg/l						*<1.0*						*<1.0*						*<1.0*	
2,4-Dimethylphenol	µg/l						*<2.0*						*<2.0*						*<2.0*	
2,4-Dinitrotoluene	µg/l						*<1.0*						*<1.0*						*<1.0*	
2,6-Dinitrotoluene	µg/l						*<1.0*						*<1.0*						*<1.0*	
2-Chloronaphthalene	µg/l						*<1.0*						*<1.0*						*<1.0*	
2-Chlorophenol	µg/l						*<1.0*						*<1.0*						*<1.0*	
2-Methylnaphthalene	µg/l						*<1.0*						*<1.0*						*<1.0*	
2-Methylphenol	µg/l						*<1.0*						*<1.0*						*<1.0*	
2-Nitrophenol	µg/l						*<1.0*						*<1.0*						*<1.0*	
4-Bromophenyl-phenylether	µg/l						*<1.0*						*<1.0*						*<1.0*	
4-Chloro-3-methylphenol	µg/l						*<1.0*						*<1.0*						*<1.0*	
4-Chlorophenyl-phenylether	µg/l						*<1.0*						*<1.0*						*<1.0*	
4-Methylphenol	µg/l						*<1.0*						*<1.0*						*<1.0*	
Acenaphthene	µg/l						*<1.0*						*<1.0*						*<1.0*	
Acenaphthylene	µg/l						*<1.0*						*<1.0*						*<1.0*	
Aldrin	ng/l						*<3*						*<3*						*<3*	
Anthracene	µg/l						*<1.0*						*<1.0*						*<1.0*	
Antimony	mg/l						0						0						0	
Arsenic	mg/l						0						0						0	
Atrazine	µg/l						*<0.05*						*<0.20*						*<0.05*	
Azinphos-methyl	µg/l						*<0.050*						*<0.050*						*<0.050*	
Benzene	µg/l						*<0.10*						*<0.10*						*<0.10*	
Benzo[a]anthracene	µg/l						*<1.0*						*<1.0*						*<1.0*	
Benzo[a]pyrene	µg/l						*<1.0*						*<1.0*						*<1.0*	
Benzo[b]fluoranthene	µg/l						*<1.0*						*<1.0*						*<1.0*	
Benzo[g,h,i]perylene	µg/l						*<1.0*						*<1.0*						*<1.0*	
Benzo[k]fluoranthene	µg/l						*<1.0*						*<1.0*						*<1.0*	
bis(2-Chloroethoxy)methane	µg/l						*<1.0*						*<1.0*						*<1.0*	
bis(2-Chloroethyl)ether	µg/l						*<1.0*						*<1.0*						*<1.0*	
bis(2-Chloroisopropyl)ether	µg/l						*<1.0*						*<1.0*						*<1.0*	
bis(2-ethylhexyl)phthalate	µg/l						*<10.0*						*<10.0*						*<10.0*	
Butylbenzylphthalate	µg/l						*<1.0*						*<1.0*						1.5	
Tetrachloromethane	µg/l						*<0.10*						*<0.10*						*<0.10*	
Chlorfenvinphos	µg/l						*<0.050*						*<0.050*						*<0.050*	
Trichloromethane	µg/l						*<0.10*						*<0.10*						*<0.10*	
Chrysene	µg/l						*<1.0*						*<1.0*						*<1.0*	
Cis-permethrin	µg/l						*<0.020*						*<0.020*						*<0.010*	
Demeton-s-methyl	µg/l						*<0.050*						*<0.050*						*<0.050*	
Diazinon	µg/l						*<0.050*						*<0.050*						*<0.050*	
Dibenzo[a,h]anthracene	µg/l						*<1.0*						*<1.0*						*<1.0*	
Dibenzofuran	µg/l						*<1.0*						*<1.0*						*<1.0*	
Dieldrin	ng/l						*<3*						*<3*						*<3*	
Diethylphthalate	µg/l						*<3.0*						*<3.0*						*<10.0*	
Dimethote	µg/l						*<0.050*						*<0.050*						*<0.050*	
Dimethylphthalate	µg/l						*<1.0*						*<1.0*						*<1.0*	
Dibutyl phthalate	µg/l						*<10.0*						*<10.0*						*<10.0*	
Dioctyl phthalate	µg/l						*<1.0*						*<1.0*						*<1.0*	
Endosulphan alpha	ng/l						*<5*						*<5*						*<5*	
Endosulphan beta	ng/l						*<5*						*<5*						*<5*	
Endrin	ng/l						*<3*						*<3*						*<3*	
Fenitrothion	µg/l						*<0.050*						*<0.050*						*<0.050*	
Fluoranthene	µg/l						*<1.0*						*<1.0*						*<1.0*	
Fluorene	µg/l						*<1.0*						*<1.0*						*<1.0*	
Hexachlorobenzene	ng/L						*<5*						*<5*						*<5*	
Hexachlorobutadiene	ng/L						*<5*						*<5*						*<5*	
Hexachloroethane	µg/l						*<1.0*						*<1.0*						*<1.0*	
Indeno[1,2,3-cd]pyrene	µg/l						*<1.0*						*<1.0*						*<1.0*	
Isodrin	ng/l						*<3*						*<3*						*<3*	
Isophorone	µg/l						*<1.0*						*<1.0*						*<1.0*	
m and p-Xylene	µg/l						*<0.10*						*<0.10*						*<0.10*	
Malathion	µg/l						*<0.050*						*<0.050*						*<0.050*	
Mecoprop	µg/l						*<0.04*						*<0.04*						*<0.04*	
Mercury	µg/l						0.11						0.19						*<0.015*	
Naphthalene	µg/l						*<1.0*						*<1.0*						*<1.0*	
Nitrobenzene	µg/l						*<1.0*						*<1.0*						*<1.0*	
o,p-DDT	ng/l						*<2*						*<2*						*<2*	
o-Xylene	µg/l						*<0.10*						*<0.10*						*<0.10*	
p,p-DDT	ng/l						*<2*						*<2*						*<2*	
Pentachlorophenol	µg/l						*<0.05*						*<0.05*						*<0.05*	
Phenanthrene	µg/l						*<1.0*						*<1.0*						*<1.0*	
Phenol	µg/l						*<2.0*						*<2.0*						*<2.0*	
Pyrene	µg/l						*<1.0*						*<1.0*						*<1.0*	
Simazine	µg/l						*<0.05*						*<0.05*						*<0.05*	
Tetrachloroethene	µg/l						0.12						1.07						*<0.10*	
Toluene	µg/l						*<0.10*						*<0.10*						*<0.10*	
Sum of xylenes	µg/l						*<0.20*						*<0.20*						*<0.20*	
Tributyltin	µg/l						*<0.02*						*<0.02*						*<0.02*	
Trichloroethene	µg/l						*<0.10*						0.13						*<0.10*	
Trifluralin	ng/l						*<5*						*<5*						*<5*	
Triphenyltin	µg/l						*<0.02*						*<0.02*						*<0.02*	
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l						0						0						0	
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l						0						0						0	

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Lab Sample Number	Units								
Sample Reference		SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3	SSW3
Zone									
Depth (m)									
Date Sampled		06/09/2007	06/03/2008	05/06/2008	04/09/2008	02/12/2008	05/03/2009	04/06/2009	10/09/2009
Analytical Parameter (Water Analysis)									
Inorganics									
Beryllium	mg/l	5	*<5*		*<5*				
Boron	mg/l		0						
Cadmium	mg/l		*< 0.00009*		0.00006		0.00171		0.00011
Calcium	mg/l	135	180	274	102	275	315	231	115
Chromium	mg/l	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.001*	*<0.001*	0.002	*<0.001*
Chromium (hexavalent)	mg/l	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*
Cobalt	mg/l		*<5*		*<5*				
Copper	mg/l		0						
Lead	mg/l		0						
Iron	mg/l								
Magnesium	mg/l	11	30	71	17	74	82	346	50
Manganese	mg/l								
Potassium	mg/l	28	266	750	170	1620	559	499	149
Silver	mg/l	15	*<15*		*<15*				
Sodium	mg/l	68	254	661	125	1190	672	2940	388
Nickel	mg/l								
Tin	µg/l		*<20*		*<20*				
Uranium	µg/l		1		0.4				
Vanadium	µg/l		*<5*		5				
Zinc	µg/l		11		13				
Fluoride as F	mg/l		0.3	0.5	0.4	0.5	0.5	0.6	0.3
pH	pH Units	7.4	7.9	8	7.8	7.7	8	7.7	7.4
Electrical Conductivity	µS/cm	831	2540	5800	1680	10300	5780	14000	2870
Ammoniacal Nitrogen as N	mg/l	*<0.3*	*<0.3*	0.4	*<0.3*	*<0.3*	*<0.3*	0.4	*<0.3*
Chloride	mg/l	106	483	1150	303	2700	1240	4980	717
Nitrite as N	mg/l	*<0.1*	*<0.1*	0.1	*<0.1*	1.2	*<0.1*	*<0.1*	0.1
Nitrite as NO2	mg/l			0.328443		3.941316			0.328443
Nitrate as N	mg/l	2	5.1	*<0.3*	*<0.3*	0.9	0.5	*<0.3*	*<0.3*
Nitrate as NO3	mg/l	8.8536	22.57668			3.98412	2.2134		
Sulphate as SO4	mg/l	99	455	1020	147	1800	1260	1020	210
Chemical Oxygen Demand (Total)	mg/l	*<20*	35	106	39	144	94	224	76
Selenium	mg/l								
Organics									
1,1,1-Trichloroethane	µg/l	*<0.10*	*<0.10*						
1,1,2-Trichloroethane	µg/l	*<0.10*	*<0.10*						
1,2-Dichlorobenzene	µg/l	*<1.0*	*<1.0*						
1,2,4-Trichlorobenzene	ng/L	*<5*	*<1.0*						
1,2-Dichloroethane	µg/l	*<0.10*	0.12						
1,3-Dichlorobenzene	µg/l	*<1.0*	*<1.0*						
1,4-Dichlorobenzene	µg/l	*<1.0*	*<1.0*						
1,2,3-Trichlorobenzene	µg/l	*<5*							
2,4-D	µg/l	*<0.05*	*<0.05*						
2,4,5-Trichlorophenol	µg/l	*<1.0*	*<1.0*						
2,4,6-Trichlorophenol	µg/l	*<1.0*	*<1.0*						
2,4-Dichlorophenol	µg/l	*<1.0*	*<1.0*						
2,4-Dimethylphenol	µg/l	*<2.0*	*<2.0*						
2,4-Dinitrotoluene	µg/l	*<1.0*	*<1.0*						
2,6-Dinitrotoluene	µg/l	*<1.0*	*<1.0*						
2-Chloronaphthalene	µg/l	*<1.0*	*<1.0*						
2-Chlorophenol	µg/l	*<1.0*	*<1.0*						
2-Methylnaphthalene	µg/l	*<1.0*	*<1.0*						
2-Methylphenol	µg/l	*<1.0*	*<1.0*						
2-Nitrophenol	µg/l	*<1.0*	*<1.0*						
4-Bromophenyl-phenylether	µg/l	*<1.0*	*<1.0*						
4-Chloro-3-methylphenol	µg/l	*<1.0*	*<1.0*						
4-Chlorophenyl-phenylether	µg/l	*<1.0*	*<1.0*						
4-Methylphenol	µg/l	*<1.0*	*<1.0*						
Acenaphthene	µg/l	*<1.0*	*<1.0*						
Acenaphthylene	µg/l	*<1.0*	*<1.0*						
Aldrin	ng/l	*<3*	*<6*						
Anthracene	µg/l	*<1.0*	*<1.0*						
Antimony	mg/l	0							
Arsenic	mg/l	0							
Atrazine	µg/l	*<0.05*	*<0.020*						
Azinphos-methyl	µg/l	*<0.050*	*<0.002*						
Benzene	µg/l	*<0.10*	*<0.10*						
Benzo[a]anthracene	µg/l	*<1.0*	*<1.0*						
Benzo[a]pyrene	µg/l	*<1.0*	*<1.0*						
Benzo[b]fluoranthene	µg/l	*<1.0*	*<1.0*						
Benzo[g,h,i]perylene	µg/l	*<1.0*	*<1.0*						
Benzo[k]fluoranthene	µg/l	*<1.0*	*<1.0*						
bis(2-Chloroethoxy)methane	µg/l	*<1.0*	*<1.0*						
bis(2-Chloroethyl)ether	µg/l	*<1.0*	*<1.0*						
bis(2-Chloroisopropyl)ether	µg/l	*<1.0*	*<1.0*						
bis(2-ethylhexyl)phthalate	µg/l	*<10.0*	*<10.0*						
Butylbenzylphthalate	µg/l	*<1.0*	*<1.0*						
Tetrachloromethane	µg/l	*<0.10*	*<0.10*						
Chlorfenvinphos	µg/l	*<0.050*	*<0.002*						
Trichloromethane	µg/l	*<0.10*	*<0.10*						
Chrysene	µg/l	*<1.0*	*<1.0*						
Cis-permethrin	µg/l	*<0.010*	*<0.002*						
Demeton-s-methyl	µg/l	*<0.050*	*<0.020*						
Diazinon	µg/l	*<0.050*	*<0.002*						
Dibenzo[a,h]anthracene	µg/l	*<1.0*	*<1.0*						
Dibenzofuran	µg/l	*<1.0*	*<1.0*						
Dieldrin	ng/l	*<3*	*<6*						
Diethylphthalate	µg/l	*<3.0*	*<3.0*						
Dimethote	µg/l	*<0.050*	*<0.020*						
Dimethylphthalate	µg/l	*<1.0*	*<1.0*						
Dibutyl phthalate	µg/l	*<10.0*	*<10.0*						
Dioctyl phthalate	µg/l	*<1.0*	*<1.0*						
Endosulphan alpha	ng/l	*<5*	*<6*						
Endosulphan beta	ng/l	*<5*	*<6*						
Endrin	ng/l	*<3*	*<6*						
Fenitrothion	µg/l	*<0.050*	*<0.002*						
Fluoranthene	µg/l	*<1.0*	*<1.0*						
Fluorene	µg/l	*<1.0*	*<1.0*						
Hexachlorobenzene	ng/L	*<5*	*<1.0*						
Hexachlorobutadiene	ng/L	*<5*	*<1.0*						
Hexachloroethane	µg/l	*<1.0*	*<1.0*						
Indeno[1,2,3-cd]pyrene	µg/l	*<1.0*	*<1.0*						
Isodrin	ng/l	*<3*	*<6*						
Isophorone	µg/l	*<1.0*	*<1.0*						
m and p-Xylene	µg/l	*<0.10*	*<0.10*						
Malathion	µg/l	*<0.050*	*<0.002*						
Mecoprop	µg/l	*<0.04*	*<0.04*						
Mercury	µg/l	0.04	*<0.015*						
Naphthalene	µg/l	*<1.0*	*<1.0*						
Nitrobenzene	µg/l	*<1.0*	*<1.0*						
o,p-DDT	ng/l	*<2*	*<2*						
o-Xylene	µg/l	*<0.10*	*<0.10*						
p,p-DDT	ng/l	*<2*	*<2*						
Pentachlorophenol	µg/l	*<0.05*	*<5.0*						
Phenanthrene	µg/l	*<1.0*	*<1.0*						
Phenol	µg/l	*<2.0*	*<2.0*						
Pyrene	µg/l	*<1.0*	*<1.0*						
Simazine	µg/l	*<0.05*	*<0.020*						
Tetrachloroethene	µg/l	0.11	0.4						
Toluene	µg/l	*<0.10*	*<0.10*						
Sum of xylenes	µg/l	*<0.20*	*<0.20*						
Tributyltin	µg/l	*<0.02*	*<0.02*						
Trichloroethene	µg/l	*<0.10*	*<0.10*						
Trifluralin	ng/l	*<5*	*<10*						
Triphenyltin	µg/l	*<0.02*	*<0.02*						
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l	0	0						
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l	0	0						

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS

UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Standard for the Protection of Fisheries
UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances						
Sample Reference								SSW4	SSW4	SSW4	SSW4	SSW4	SSW4
Zone													
Depth (m)													
Date Sampled								27/02/2006	23/03/2006	20/04/2006	18/05/2006	22/06/2006	20/07/2006
Analytical Parameter (Water Analysis)													
Inorganics													
Beryllium	mg/l		No EQS	5	0.05	5	0						
Cadmium	mg/l		0.0002	7	0.00006	0.48	4		0.48				
Calcium	mg/l		No EQS	35	84	596	0	233	245	232	171	253	147
Chromium	mg/l		0.015	35	0.0008	0.005	0	*<0.005*	0.005	0.005	0.005	*<0.005*	0.005
Chromium (hexavalent)	mg/l		0.0006	31	0.03	0.03	8	*<0.03*	0.03	0.03	0.03	*<0.03*	
Cobalt	mg/l		0.003	5	0.0003	0.00072	0		0.00072				
Copper	mg/l		0.005	4	0	0.019	1						
Lead	mg/l		0.0072	1	0	0	0						
Magnesium	mg/l		No EQS	35	8.5	64	0	28	24	31	23	35	22
Potassium	mg/l		No EQS	37	12	121	0	46	50	46	36	55	43
Silver	mg/l		0.0005	4	15	15	2		15				
Sodium	mg/l		200	37	46	308	8	215	187	243	184	308	253
Tin	µg/l		10	3	0.1	0.1	0						
Uranium	µg/l		15	2	0.2	0.8	0						
Vanadium	µg/l		100	3	4.22	4.22	0						
Zinc	µg/l		40	3	11	26.3	0						
Fluoride as F	mg/l		5	34	0.2	1.17	0	0.36	0.28	0.4	0.37	0.32	0.31
pH	pH Units		6.0-9.0	37	6.7	9.4	0	8	7.6	7.6	8.2	7.9	7.9
Electrical Conductivity	µS/cm		2500	37	658	3320	3	1760	1910	2010	1700	2210	1700
Ammoniacal Nitrogen as N	mg/l		0.78	37	0.29	1.8	8	0.9	1.1	0.4	1.8	1.3	0.3
Chloride	mg/l		250	37	80	454	11	350	360	356	310	454	401
Nitrite as N	mg/l		No EQS	35	0.046	0.5	0	*<0.1*	0.3	0.1	0.1	*<0.1*	0.1
Nitrite as NO2	mg/l		0.5	35	0.151084	1.642215	2		0.985329	0.328443	0.328443		0.328443
Nitrate as N	mg/l		No EQS	35	0.3	6.9	0	*<0.3*	0.3	1.3	0.3	*<0.3*	0.4
Nitrate as NO3	mg/l		50	35	1.32804	30.54492	0		1.32804	5.75484	1.32804		1.77072
Sulphate as SO4	mg/l		400	37	38	1430	9	292	344	380	270	349	172
Chemical Oxygen Demand (Total)	mg/l		No EQS	35	1.2	380	0	44	57	96	57	108	1.2
Selenium	mg/l		0.01	9	0.0016	0.015	1						
Organics													
1,1,1-Trichloroethane	µg/l		100	5	0	0	0		*<0.10*				
1,1,2-Trichloroethane	µg/l		300	5	0	0	0		*<0.10*				
1,2-Dichlorobenzene	µg/l		No EQS	5	0	0	0		*<1.0*				
1,2,4-Trichlorobenzene	µg/l		No EQS	5	0	0	0		*<5*				
1,2-Dichloroethane	µg/l		10	5	0	0	0		*<0.10*				
1,3-Dichlorobenzene	µg/l		No EQS	5	0	0	0		*<1.0*				
1,4-Dichlorobenzene	µg/l		No EQS	5	0	0	0		*<1.0*				
1,2,3-Trichlorobenzene	µg/l		No EQS	4	0	0	0		*<5*				
2,4-D	µg/l		0.3	5	0	0	0		*<0.05*				
2,4,5-Trichlorophenol	µg/l		No EQS	5	0	0	0		*<1.0*				
2,4,6-Trichlorophenol	µg/l		200	5	0	0	0		*<1.0*				
2,4-Dichlorophenol	µg/l		20	5	0	0	0		*<1.0*				
2,4-Dimethylphenol	µg/l		No EQS	5	0	0	0		*<2.0*				
2,4-Dinitrotoluene	µg/l		No EQS	5	0	0	0		*<1.0*				
2,6-Dinitrotoluene	µg/l		No EQS	5	0	0	0		*<1.0*				
2-Chloronaphthalene	µg/l		No EQS	5	0	0	0		*<1.0*				
2-Chlorophenol	µg/l		50	5	0	0	0		*<1.0*				
2-Methylnaphthalene	µg/l		No EQS	5	0	0	0		*<1.0*				
2-Methylphenol	µg/l		100	5	0	0	0		*<1.0*				
2-Nitrophenol	µg/l		No EQS	5	0	0	0		*<1.0*				
4-Bromophenyl-phenylether	µg/l		No EQS	5	0	0	0		*<1.0*				
4-Chloro-3-methylphenol	µg/l		40	5	0	0	0		*<1.0*				
4-Chlorophenyl-phenylether	µg/l		No EQS	5	0	0	0		*<1.0*				
4-Methylphenol	µg/l		100	5	0	0	0		*<1.0*				
Acenaphthene	µg/l		1.2	5	0	0	0		*<1.0*				
Acenaphthylene	µg/l		1.2	5	0	0	0		*<1.0*				
Aldrin	ng/l		5	5	0	0	0		*<3*				
Anthracene	µg/l		0.1	5	0	0	0		*<1.0*				
Antimony	mg/l		0.005	4	0	0	0		0				
Arsenic	mg/l		0.025	4	0	0	0		0				
Atrazine	µg/l		0.6	5	0	0	0		*<0.05*				
Azinphos-methyl	µg/l		0.01	5	0	0	0		*<0.050*				
Benzene	µg/l		8	5	0	0	0		*<0.10*				
Benzo[a]anthracene	µg/l		1.2	5	0	0	0		*<1.0*				
Benzo[a]pyrene	µg/l		0.05	5	0	0	0		*<1.0*				
Benzo[b]fluoranthene	µg/l		No EQS	5	0	0	0		*<1.0*				
Benzo[g,h,i]perylene	µg/l		No EQS	5	0	0	0		*<1.0*				
Benzo[k]fluoranthene	µg/l		No EQS	5	0	0	0		*<1.0*				
bis(2-Chloroethoxy)methane	µg/l		No EQS	5	0	0	0		*<1.0*				
bis(2-Chloroethyl)ether	µg/l		No EQS	5	0	0	0		*<1.0*				
bis(2-Chloroisopropyl)ether	µg/l		No EQS	5	0	0	0		*<1.0*				
bis(2-ethylhexyl)phthalate	µg/l		1.3	5	0	0	0		*<10.0*				
Butylbenzylphthalate	µg/l		20	5	0	0	0		*<1.0*				
Tetrachloromethane	µg/l		12	5	0	0	0		*<0.10*				
Chlorfenvinphos	µg/l		0.1	5	0	0	0		*<0.050*				
Trichloromethane	µg/l		2.5	5	0	0	0		*<0.10*				
Chrysene	µg/l		1.2	5	0	0	0		*<1.0*				
Cis-permethrin	µg/l		0.01	5	0	0	0		*<0.020*				
Demeton-s-methyl	µg/l		0.5	5	0	0	0		*<0.050*				
Diazinon	µg/l		0.01	5	0	0	0		*<0.050*				
Dibenzo[a,h]anthracene	µg/l		1.2	5	0	0	0		*<1.0*				
Dibenzofuran	µg/l		No EQS	5	0	0	0		*<1.0*				
Dieldrin	ng/l		5	5	4	4	0		4				
Diethylphthalate	µg/l		200	5	0	0	0		*<3.0*				
Dimethote	µg/l		0.48	5	0	0	0		*<0.050*				
Dimethylphthalate	µg/l		800	5	0	0	0		*<1.0*				
Dibutyl phthalate	µg/l		8	5	0	0	0		*<10.0*				
Dioctyl phthalate	µg/l		20	5	0	0	0		*<1.0*				
Endosulphan alpha	ng/l		0.5	5	0	0	0		*<5*				
Endosulphan beta	ng/l		0.5	5	0	0	0		*<5*				
Endrin	ng/l		5	5	0	0	0		*<3*				
Fenitrothion	µg/l		0.01	5	0	0	0		*<0.050*				
Fluoranthene	µg/l		0.1	5	0	0	0		*<1.0*				
Fluorene	µg/l		1.2	5	0	0	0		*<1.0*				
Hexachlorobenzene	µg/l		0.01	5	0	0	0		*<5*				
Hexachlorobutadiene	µg/l		0.1	5	0	0	0		*<5*				
Hexachloroethane	µg/l		No EQS	5	0	0	0		*<1.0*				
Indeno[1,2,3-cd]pyrene	µg/l		No EQS	5	0	0	0		*<1.0*				
Isodrin	ng/l		5	5	0	0	0		*<3*				
Isophorone	µg/l		No EQS	5	0	0	0		*<1.0*				
m and p-Xylene	µg/l		No EQS	5	0.13	0.13	0		*<0.10*				
Malathion	µg/l		0.02	5	0	0	0		*<0.050*				
Mecoprop	µg/l		18	5	0	0	0		*<0.04*				
Mercury	µg/l		0.05	5	0.07	0.57	2		0.07				
Naphthalene	µg/l		1.2	5	0	0	0		*<1.0*				
Nitrobenzene	µg/l		No EQS	5	0	0	0		*<1.0*				
o,p-DDT	ng/l		25	5	0	0	0		*<2*				
o-Xylene	µg/l		No EQS	5	0	0	0		*<0.10*				
p,p-DDT	ng/l		10	5	0	0	0		*<2*				
Pentachlorophenol	µg/l		0.4	5	0	0	0		*<0.05*				
Phenanthrene	µg/l		1.2	5	0	0	0		*<1.0*				
Phenol	µg/l		7.7	5	0	0	0		*<2.0*				
Pyrene	µg/l		1.2	5	0	0	0		*<1.0*				
Simazine	µg/l		1	5	0	0	0		*<0.05*				
Tetrachloroethene	µg/l		10	5	0.11	0.23	0		*<0.10*				
Toluene	µg/l		40	5	0	0	0		*<0.10*				
Sum of xylenes	µg/l		30	5	0	0	0		*<0.20*				
Tributyltin	µg/l		0.002	5	0	0	0		*<0.02*				
Trichloroethene	µg/l		10	5	0	0	0		*<0.10*				
Trifluralin	ng/l		30	5	0	0	0		*<5*				
Triphenyltin	µg/l		0.008	5	0	0	0		*<0.02*				
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l		0.03	5	0	0	0		0				
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l		0.002	5	0	0	0		0				

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS

Lab Sample Number	Units																			
Sample Reference		SSW4	SSW4	SSW4	SSW4	SSW4	SSW4	SSW4	SSW4	SSW4	SSW4	SSW4	SSW4	SSW4	SSW4	SSW4	SSW4	SSW4	SSW4	SSW4
Zone																				
Depth (m)																				
Date Sampled		18/08/2006	28/09/2006	19/10/2006	09/11/2006	07/12/2006	11/01/2007	15/02/2007	08/03/2007	07/06/2007	06/09/2007	06/12/2007	06/03/2008	05/06/2008	04/09/2008	02/12/2008	05/03/2009	04/06/2009	10/09/2009	03/12/2009
Analytical Parameter (Water Analysis)																				
Inorganics																				
Beryllium	mg/l		0.05						0.05		5		<5		<5					
Cadmium	mg/l		0.07						0.00008				<0.00005		0.00006		0.00188		0.00048	
Calcium	mg/l	136	141	161	139	136	139	133	102	126	124	176	180	209	84	150	219	171	130	192
Chromium	mg/l	0.005	0.005	<0.005	<0.005	0.005	0.005	0.005	0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	0.002	<0.001	0.003	<0.001
Chromium (hexavalent)	mg/l			<0.03	<0.03	0.03	0.03	0.03	0.03	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Cobalt	mg/l		0.0003						0.00031				<5		<5					
Copper	mg/l												0							
Lead	mg/l												0							
Magnesium	mg/l	13	10	15	11	10	10	9.2	8.5	8.9	12	13	23	32	10	15	26	32	14	22
Potassium	mg/l	30	20	31	24	27	18	18	40	16	16	18	23	30	12	20	22	34	23	36
Silver	mg/l								15				<15		<15					
Sodium	mg/l	94	67	100	88	62	75	61	58	57	63	71	125	169	46	67	102	160	70	122
Tin	µg/l								0.1				<20		<20					
Uranium	µg/l												0.8		0.2					
Vanadium	µg/l								4.22				<5		<5					
Zinc	µg/l								26.3				11		13					
Fluoride as F	mg/l	1.17	0.2	0.52	0.26	0.2	0.21	0.25		0.2	0.2	<0.1	0.2	0.3	0.3	0.5	0.3	0.4	0.3	0.4
pH	pH Units	7.7	9.4	7.5	7.8	7.6	8.1	8.4	7.9	8.6	7.5	8.1	7.9	8.2	7.5	7.5	8	7.9	7.2	7.4
Electrical Conductivity	µS/cm	1010	3320	1110	1110	898	924	811	938	819	811	1000	1280	1530	658	977	1600	1690	849	1380
Ammoniacal Nitrogen as N	mg/l	0.6	0.3	0.9	0.8	1.2	0.3	0.3	0.3	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.7	<0.3	<0.3	<0.3	<0.3
Chloride	mg/l	149	123	144	126	109	113	89	139	90	101	115	185	211	80	136	198	273	115	190
Nitrite as N	mg/l	0.1	0.5	<0.1	<0.1	0.1	0.1	0.1	0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite as NO2	mg/l	0.328443	1.642215			0.328443	0.328443	0.328443	0.328443	0.328443	0.328443									
Nitrate as N	mg/l	0.3	1	0.6	5.4	5.5	6.7	5.7	6.9	2.5	1.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Nitrate as NO3	mg/l	1.32804	4.4268	2.65608	23.90472	24.3474	29.65956	25.23276	30.54492	11.067	6.6402									
Sulphate as SO4	mg/l	117	139	108	154	99	101	74	123	87	91	104	203	236	38	90	297	217	96	229
Chemical Oxygen Demand (Total)	mg/l	50	31	97	22	49	28	56	24	32	<20	<20	29	77	24	42	49	76	139	51
Selenium	mg/l																			
Organics																				
1,1,1-Trichloroethane	µg/l		<0.10						<0.10		<0.10		<0.10							
1,1,2-Trichloroethane	µg/l		<0.10						<0.10		<0.10		<0.10							
1,2-Dichlorobenzene	µg/l		<1.0						<1.0		<1.0		<1.0							
1,2,4-Trichlorobenzene	µg/l		<5						<5		<5		<1.0							
1,2-Dichloroethane	µg/l		<0.10						<0.10		<0.10		<0.10							
1,3-Dichlorobenzene	µg/l		<1.0						<1.0		<1.0		<1.0							
1,4-Dichlorobenzene	µg/l		<1.0						<1.0		<1.0		<1.0							
1,2,3-Trichlorobenzene	µg/l		<5						<5		<5									
2,4-D	µg/l		<0.05						<0.05		<0.05		<0.05							
2,4,5-Trichlorophenol	µg/l		<1.0						<1.0		<1.0		<1.0							
2,4,6-Trichlorophenol	µg/l		<1.0						<1.0		<1.0		<1.0							
2,4-Dichlorophenol	µg/l		<1.0						<1.0		<1.0		<1.0							
2,4-Dimethylphenol	µg/l		<2.0						<2.0		<2.0		<2.0							
2,4-Dinitrotoluene	µg/l		<1.0						<1.0		<1.0		<1.0							
2,6-Dinitrotoluene	µg/l		<1.0						<1.0		<1.0		<1.0							
2-Chloronaphthalene	µg/l		<1.0						<1.0		<1.0		<1.0							
2-Chlorophenol	µg/l		<1.0						<1.0		<1.0		<1.0							
2-Methylnaphthalene	µg/l		<1.0						<1.0		<1.0		<1.0							
2-Methylphenol	µg/l		<1.0						<1.0		<1.0		<1.0							
2-Nitrophenol	µg/l		<1.0						<1.0		<1.0		<1.0							
4-Bromophenyl-phenylether	µg/l		<1.0						<1.0		<1.0		<1.0							
4-Chloro-3-methylphenol	µg/l		<1.0						<1.0		<1.0		<1.0							
4-Chlorophenyl-phenylether	µg/l		<1.0						<1.0		<1.0		<1.0							
4-Methylphenol	µg/l		<1.0						<1.0		<1.0		<1.0							
Acenaphthene	µg/l		<1.0						<1.0		<1.0		<1.0							
Acenaphthylene	µg/l		<1.0						<1.0		<1.0		<1.0							
Aldrin	ng/l		<3						<3		<3		<6							
Anthracene	µg/l		<1.0						<1.0		<1.0		<1.0							
Antimony	mg/l		0						0		0									
Arsenic	mg/l		0						0		0									
Atrazine	µg/l		<0.50						<0.05		<0.05		<0.020							
Azinphos-methyl	µg/l		<0.050						<0.050		<0.050		<0.002							
Benzene	µg/l		<0.10						<0.10		<0.10		<0.10							
Benzo[a]anthracene	µg/l		<1.0						<1.0		<1.0		<1.0							
Benzo[a]pyrene	µg/l		<1.0						<1.0		<1.0		<1.0							
Benzo[b]fluoranthene	µg/l		<1.0						<1.0		<1.0		<1.0							
Benzo[g,h,i]perylene	µg/l		<1.0						<1.0		<1.0		<1.0							
Benzo[k]fluoranthene	µg/l		<1.0						<1.0		<1.0		<1.0							
bis(2-Chloroethoxy)methane	µg/l		<1.0						<1.0		<1.0		<1.0							
bis(2-Chloroethyl)ether	µg/l		<1.0						<1.0		<1.0		<1.0							
bis(2-Chloroisopropyl)ether	µg/l		<1.0						<1.0		<1.0		<1.0							
bis(2-ethylhexyl)phthalate	µg/l		<10.0						<10.0		<10.0		<10.0							
Butylbenzylphthalate	µg/l		<1.0						<1.0		<1.0		<1.0							
Tetrachloromethane	µg/l		<0.10						<0.10		<0.10		<0.10							
Chlorfenvinphos	µg/l		<0.050						<0.050		<0.050		<0.002							
Trichloromethane	µg/l		<0.10						<0.10		<0.10		<0.10							
Chrysene	µg/l		<1.0						<1.0		<1.0		<1.0							
Cis-permethrin	µg/l		<0.020						<0.010		<0.010		<0.002							
Demeton-s-methyl	µg/l		<0.050						<0.050		<0.050		<0.020							
Diazinon	µg/l		<0.050						<0.050		<0.050		<0.002							
Dibenzo[a,h]anthracene	µg/l		<1.0						<1.0		<1.0		<1.0							
Dibenzofuran	µg/l		<1.0						<1.0		<1.0		<1.0							
Dieldrin	ng/l		<3						<3		<3		<6							
Diethylphthalate	µg/l		<3.0						<10.0		<3.0		<3.0							
Dimethote	µg/l		<0.050						<0.050		<0.050		<0.020							
Dimethylphthalate	µg/l		<1.0						<1.0		<1.0		<1.0							
Dibutyl phthalate	µg/l		<10.0						<10.0		<10.0		<10.0							
Dioctyl phthalate	µg/l		<1.0						<1.0		<1.0		<1.0							
Endosulphan alpha	ng/l		<5						<5		<5		<6							
Endosulphan beta	ng/l		<5						<5		<5		<6							
Endrin	ng/l		<3						<3		<3		<6							
Fenitrothion	µg/l		<0.050						<0.050		<0.050		<0.002							
Fluoranthene	µg/l		<1.0						<1.0		<1.0		<1.0							
Fluorene	µg/l		<1.0						<1.0		<1.0		<1.0							
Hexachlorobenzene	µg/l		<5						<5		<5		<1.0							
Hexachlorobutadiene	µg/l		<5						<5		<5		<1.0							
Hexachloroethane	µg/l		<1.0						<1.0		<1.0		<1.0							
Indeno[1,2,3-cd]pyrene	µg/l		<1.0						<1.0		<1.0		<1.0							
Isodrin	ng/l		<3						<3		<3		<6							
Isophorone	µg/l		<1.0						<1.0		<1.0		<1.0							
m and p-Xylene	µg/l		<0.10						<0.10		<0.10		0.13							
Malathion	µg/l		<0.050						<0.050		<0.050		<0.002							
Mecoprop	µg/l		<0.04						<0.04		<0.04		<0.04							
Mercury	µg/l		0.57						<0.015		<0.015		<0.015							
Naphthalene	µg/l		<1.0						<1.0		<1.0		<1.0							
Nitrobenzene	µg/l		<1.0						<1.0		<1.0		<1.0							
o,p-DDT	ng/l		<2						<2		<2		<2							
o-Xylene	µg/l		<0.10						<0.10		<0.10		<0.10							
p,p-DDT	ng/l		<2						<2		<2		<2							
Pentachlorophenol	µg/l		<0.05						<0.05		<0.05		<5.0							
Phenanthrene	µg/l		<1.0						<1.0		<1.0		<1.0							
Phenol	µg/l		<2.0						<2.0		<2.0		<2.0							
Pyrene	µg/l		<1.0						<1.0		<1.0		<1.0							
Simazine	µg/l		<0.10						<0.05		<0.05		<0.020							
Tetrachloroethene	µg/l		0.23						0.11		<0.10		<0.10							
Toluene	µg/l		<0.10						<0.10		<0.10		<0.10							
Sum of xylenes	µg/l		<0.20						<0.20		<0.20		<0.20							
Tributyltin	µg/l		<0.02						<0.02		<0.02		<0.02							
Trichloroethene	µg/l		<0.10						<0.10		<0.10		<0.10							
Trifluralin	ng/l		<5						<5		<5		<10							
Triphenyltin	µg/l		<0.02						<0.02		<0.02		<0.02							
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l		0						0		0		0							
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l		0						0		0		0							

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS

Lab Sample Number	Units				
Sample Reference		SSW4	SSW4	SSW4	SSW4
Zone					
Depth (m)					
Date Sampled		04/03/2010	03/06/2010	07/12/2010	03/03/2011
Analytical Parameter (Water Analysis)					
Inorganics					
Beryllium	mg/l				
Cadmium	mg/l				
Calcium	mg/l	308	281	596	473
Chromium	mg/l	*<0.001*	*<0.001*	0.0008	*<0.0007*
Chromium (hexavalent)	mg/l	*<0.03*	*<0.03*		*<0.03*
Cobalt	mg/l				
Copper	mg/l				
Lead	mg/l				
Magnesium	mg/l	45	57	64	48
Potassium	mg/l	42	91	59.2	64.5
Silver	mg/l				
Sodium	mg/l	169	274	228	207
Tin	µg/l				
Uranium	µg/l				
Vanadium	µg/l				
Zinc	µg/l				
Fluoride as F	mg/l	0.4	0.4	0.6	0.8
pH	pH Units	7.4	7.9	6.7	7.9
Electrical Conductivity	µS/cm	2020	2060	3070	2500
Ammoniacal Nitrogen as N	mg/l	0.6	*<0.19*	1.17	*<0.19*
Chloride	mg/l	249	447	395	266
Nitrite as N	mg/l	*<0.1*	*<0.008*	0.046	0.098
Nitrite as NO2	mg/l			0.15108378	0.32187414
Nitrate as N	mg/l	*<0.3*	0.3	2.1	*<0.29*
Nitrate as NO3	mg/l		1.32804	9.29628	
Sulphate as SO4	mg/l	556	648	1430	1110
Chemical Oxygen Demand (Total)	mg/l	53	79	80	80
Selenium	mg/l		0.015	0.009	0.003
Organics					
1,1,1-Trichloroethane	µg/l				
1,1,2-Trichloroethane	µg/l				
1,2-Dichlorobenzene	µg/l				
1,2,4-Trichlorobenzene	µg/l				
1,2-Dichloroethane	µg/l				
1,3-Dichlorobenzene	µg/l				
1,4-Dichlorobenzene	µg/l				
1,2,3-Trichlorobenzene	µg/l				
2,4-D	µg/l				
2,4,5-Trichlorophenol	µg/l				
2,4,6-Trichlorophenol	µg/l				
2,4-Dichlorophenol	µg/l				
2,4-Dimethylphenol	µg/l				
2,4-Dinitrotoluene	µg/l				
2,6-Dinitrotoluene	µg/l				
2-Chloronaphthalene	µg/l				
2-Chlorophenol	µg/l				
2-Methylnaphthalene	µg/l				
2-Methylphenol	µg/l				
2-Nitrophenol	µg/l				
4-Bromophenyl-phenylether	µg/l				
4-Chloro-3-methylphenol	µg/l				
4-Chlorophenyl-phenylether	µg/l				
4-Methylphenol	µg/l				
Acenaphthene	µg/l				
Acenaphthylene	µg/l				
Aldrin	ng/l				
Anthracene	µg/l				
Antimony	mg/l				
Arsenic	mg/l				
Atrazine	µg/l				
Azinphos-methyl	µg/l				
Benzene	µg/l				
Benzo[a]anthracene	µg/l				
Benzo[a]pyrene	µg/l				
Benzo[b]fluoranthene	µg/l				
Benzo[g,h,i]perylene	µg/l				
Benzo[k]fluoranthene	µg/l				
bis(2-Chloroethoxy)methane	µg/l				
bis(2-Chloroethyl)ether	µg/l				
bis(2-Chloroisopropyl)ether	µg/l				
bis(2-ethylhexyl)phthalate	µg/l				
Butylbenzylphthalate	µg/l				
Tetrachloromethane	µg/l				
Chlorfenvinphos	µg/l				
Trichloromethane	µg/l				
Chrysene	µg/l				
Cis-permethrin	µg/l				
Demeton-s-methyl	µg/l				
Diazinon	µg/l				
Dibenzo[a,h]anthracene	µg/l				
Dibenzofuran	µg/l				
Dieldrin	ng/l				
Diethylphthalate	µg/l				
Dimethote	µg/l				
Dimethylphthalate	µg/l				
Dibutyl phthalate	µg/l				
Dioctyl phthalate	µg/l				
Endosulphan alpha	ng/l				
Endosulphan beta	ng/l				
Endrin	ng/l				
Fenitrothion	µg/l				
Fluoranthene	µg/l				
Fluorene	µg/l				
Hexachlorobenzene	µg/l				
Hexachlorobutadiene	µg/l				
Hexachloroethane	µg/l				
Indeno[1,2,3-cd]pyrene	µg/l				
Isodrin	ng/l				
Isophorone	µg/l				
m and p-Xylene	µg/l				
Malathion	µg/l				
Mecoprop	µg/l				
Mercury	µg/l				
Naphthalene	µg/l				
Nitrobenzene	µg/l				
o,p-DDT	ng/l				
o-Xylene	µg/l				
p,p-DDT	ng/l				
Pentachlorophenol	µg/l				
Phenanthrene	µg/l				
Phenol	µg/l				
Pyrene	µg/l				
Simazine	µg/l				
Tetrachloroethene	µg/l				
Toluene	µg/l				
Sum of xylenes	µg/l				
Tributyltin	µg/l				
Trichloroethene	µg/l				
Trifluralin	ng/l				
Triphenyltin	µg/l				
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l				
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l				

Values in italics are method detection limits	UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
Leachate	UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
Exceedance of both DWS and EQS	UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
Exceedance of EQS	UK Standard for the Protection of Fisheries
	UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
	WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances						
Sample Reference								SSW5	SSW5	SSW5	SSW5	SSW5	SSW5
Zone													
Depth (m)													
Date Sampled								27/02/2006	23/03/2006	20/04/2006	18/05/2006	22/06/2006	20/07/2006
Analytical Parameter (Water Analysis)													
Inorganics													
Beryllium	mg/l		No EQS	4	0.05	0.05	0						
Cadmium	mg/l		0.0002	7	0.00005	0.06	3		0.06				
Calcium	mg/l		No EQS	40	95.9	449	0	204	175	168	147	137	156
Chromium	mg/l		0.015	40	0.0008	0.014	0	*<0.005*	0.005	0.014	0.005	*<0.005*	0.005
Chromium (hexavalent)	mg/l		0.0006	38	0.03	0.03	9	*<0.03*	0.03	0.03	0.03	*<0.03*	
Cobalt	mg/l		0.003	5	0.00031	0.00053	0		0.00053				
Copper	mg/l		0.005	4	0	0	0						
Magnesium	mg/l		No EQS	40	8.9	359	0	36	30	24	20	35	120
Potassium	mg/l		No EQS	46	23	4050	0	346	202	120	102	174	271
Silver	mg/l		0.0005	5	0.015	15	3		15				
Sodium	mg/l		200	46	55	3490	32	338	282	197	167	349	1190
Tin	µg/l		10	1	0.1	0.1	0						
Uranium	µg/l		15	2	0.7	1.1	0						
Vanadium	µg/l		100	3	2.17	2.17	0						
Zinc	µg/l		40	3	10	13	0						
Fluoride as F	mg/l		5	39	0.1	3.5	0	0.38	0.22	0.32	0.25	0.26	0.42
pH	pH Units		6.0-9.0	46	7.3	8.5	0	8	8	7.9	8.3	8	7.8
Electrical Conductivity	µS/cm		2500	46	894	21100	30	4750	2730	1930	1720	2650	6530
Ammoniacal Nitrogen as N	mg/l		0.78	46	0.3	6.39	9	0.7	1.1	0.3	0.7	*<0.3*	1.7
Chloride	mg/l		250	46	109	6400	36	674	561	371	336	642	2250
Nitrite as N	mg/l		No EQS	40	0.056	0.76	0	*<0.1*	0.1	0.1	0.1	0.1	0.1
Nitrite as NO2	mg/l		0.5	40	0.183928	2.4961668	6		0.328443	0.328443	0.328443	0.328443	0.328443
Nitrate as N	mg/l		No EQS	40	0.3	8.6	0	6.3	7.7	6.8	4.9	8.6	0.4
Nitrate as NO3	mg/l		50	40	1.32804	38.07048	0	27.88884	34.08636	30.10224	21.69132	38.07048	1.77072
Sulphate as SO4	mg/l		400	46	76	4170	26	510	329	244	190	260	377
Chemical Oxygen Demand (Total)	mg/l		No EQS	40	21	915	0	57	45	41	36	55	340
Selenium	mg/l		0.01	15	0.0046	0.169	7						
Organics													
1,1,1-Trichloroethane	µg/l		100	4	0	0	0		*<0.10*				
1,1,2-Trichloroethane	µg/l		300	4	0	0	0		*<0.10*				
1,2-Dichlorobenzene	µg/l		No EQS	4	0	0	0		*<1.0*				
1,2,4-Trichlorobenzene	µg/l		No EQS	4	0	0	0		*<5*				
1,2-Dichloroethane	µg/l		10	4	0	0	0		*<0.10*				
1,3-Dichlorobenzene	µg/l		No EQS	4	0	0	0		*<1.0*				
1,4-Dichlorobenzene	µg/l		No EQS	4	0	0	0		*<1.0*				
1,2,3-Trichlorobenzene	µg/l		No EQS	3	0	0	0		*<5*				
2,4-D	µg/l		0.3	4	0	0	0		*<0.05*				
2,4,5-Trichlorophenol	µg/l		No EQS	4	0	0	0		*<1.0*				
2,4,6-Trichlorophenol	µg/l		200	4	0	0	0		*<1.0*				
2,4-Dichlorophenol	µg/l		20	4	0	0	0		*<1.0*				
2,4-Dimethylphenol	µg/l		No EQS	4	0	0	0		*<2.0*				
2,4-Dinitrotoluene	µg/l		No EQS	4	0	0	0		*<1.0*				
2,6-Dinitrotoluene	µg/l		No EQS	4	0	0	0		*<1.0*				
2-Chloronaphthalene	µg/l		No EQS	4	0	0	0		*<1.0*				
2-Chlorophenol	µg/l		50	4	0	0	0		*<1.0*				
2-Methylnaphthalene	µg/l		No EQS	4	0	0	0		*<1.0*				
2-Methylphenol	µg/l		100	4	0	0	0		*<1.0*				
2-Nitrophenol	µg/l		No EQS	4	0	0	0		*<1.0*				
4-Bromophenyl-phenylether	µg/l		No EQS	4	0	0	0		*<1.0*				
4-Chloro-3-methylphenol	µg/l		40	4	0	0	0		*<1.0*				
4-Chlorophenyl-phenylether	µg/l		No EQS	4	0	0	0		*<1.0*				
4-Methylphenol	µg/l		100	4	0	0	0		*<1.0*				
Acenaphthene	µg/l		1.2	4	0	0	0		*<1.0*				
Acenaphthylene	µg/l		1.2	4	0	0	0		*<1.0*				
Aldrin	ng/l		5	4	0	0	0		*<3*				
Anthracene	µg/l		0.1	4	0	0	0		*<1.0*				
Antimony	mg/l		0.005	3	0	0	0		0				
Arsenic	mg/l		0.025	3	0	0	0		0				
Atrazine	µg/l		0.6	4	0	0	0		*<0.05*				
Azinphos-methyl	µg/l		0.01	4	0	0	0		*<0.050*				
Benzene	µg/l		8	4	0	0	0		*<0.10*				
Benzo[a]anthracene	µg/l		1.2	4	0	0	0		*<1.0*				
Benzo[a]pyrene	µg/l		0.05	4	0	0	0		*<1.0*				
Benzo[b]fluoranthene	µg/l		No EQS	4	0	0	0		*<1.0*				
Benzo[g,h,i]perylene	µg/l		No EQS	4	0	0	0		*<1.0*				
Benzo[k]fluoranthene	µg/l		No EQS	4	0	0	0		*<1.0*				
bis(2-Chloroethoxy)methane	µg/l		No EQS	4	0	0	0		*<1.0*				
bis(2-Chloroethyl)ether	µg/l		No EQS	4	0	0	0		*<1.0*				
bis(2-Chloroisopropyl)ether	µg/l		No EQS	4	0	0	0		*<1.0*				
bis(2-ethylhexyl)phthalate	µg/l		1.3	4	0	0	0		*<10.0*				
Butylbenzylphthalate	µg/l		20	4	0	0	0		*<1.0*				
Tetrachloromethane	µg/l		12	4	0	0	0		*<0.10*				
Chlorfenvinphos	µg/l		0.1	4	0	0	0		*<0.050*				
Trichloromethane	µg/l		2.5	4	0	0	0		*<0.10*				
Chrysene	µg/l		1.2	4	0	0	0		*<1.0*				
Cis-permethrin	µg/l		0.01	4	0	0	0		*<0.020*				
Demeton-s-methyl	µg/l		0.5	4	0	0	0		*<0.050*				
Diazinon	µg/l		0.01	4	0	0	0		*<0.050*				
Dibenzo[a,h]anthracene	µg/l		1.2	4	0	0	0		*<1.0*				
Dibenzofuran	µg/l		No EQS	4	0	0	0		*<1.0*				
Dieldrin	ng/l		5	4	0	0	0		*<3*				
Diethylphthalate	µg/l		200	4	0	0	0		*<3.0*				
Dimethote	µg/l		0.48	4	0	0	0		*<0.050*				
Dimethylphthalate	µg/l		800	4	0	0	0		*<1.0*				
Dibutyl phthalate	µg/l		8	4	0	0	0		*<10.0*				
Dioctyl phthalate	µg/l		20	4	0	0	0		*<1.0*				
Endosulphan alpha	ng/l		0.5	4	0	0	0		*<5*				
Endosulphan beta	ng/l		0.5	4	0	0	0		*<5*				
Endrin	ng/l		5	4	0	0	0		*<3*				
Fenitrothion	µg/l		0.01	4	0	0	0		*<0.050*				
Fluoranthene	µg/l		0.1	4	0	0	0		*<1.0*				
Fluorene	µg/l		1.2	4	0	0	0		*<1.0*				
Hexachlorobenzene	µg/l		0.01	4	0	0	0		*<5*				
Hexachlorobutadiene	µg/l		0.1	4	0	0	0		*<5*				
Hexachloroethane	µg/l		No EQS	4	0	0	0		*<1.0*				
Indeno[1,2,3-cd]pyrene	µg/l		No EQS	4	0	0	0		*<1.0*				
Isodrin	ng/l		5	4	0	0	0		*<3*				
Isophorone	µg/l		No EQS	4	0	0	0		*<1.0*				
m and p-Xylene	µg/l		No EQS	4	0	0	0		*<0.10*				
Malathion	µg/l		0.02	4	0	0	0		*<0.050*				
Mecoprop	µg/l		18	4	0	0	0		*<0.04*				
Mercury	µg/l		0.05	4	0.16	0.16	1		0.16				
Naphthalene	µg/l		1.2	4	0	0	0		*<1.0*				
Nitrobenzene	µg/l		No EQS	4	0	0	0		*<1.0*				
o,p-DDT	ng/l		25	4	0	0	0		*<2*				
o-Xylene	µg/l		No EQS	4	0	0	0		*<0.10*				
p,p-DDT	ng/l		10	4	0	0	0		*<2*				
Pentachlorophenol	µg/l		0.4	4	0	0	0		*<0.05*				
Phenanthrene	µg/l		1.2	4	0	0	0		*<1.0*				
Phenol	µg/l		7.7	4	0	0	0		*<2.0*				
Pyrene	µg/l		1.2	4	0	0	0		*<1.0*				
Simazine	µg/l		1	4	0	0	0		*<0.05*				
Tetrachloroethene	µg/l		10	4	0.28	0.69	0		0.69				
Toluene	µg/l		40	4	0	0	0		*<0.10*				
Sum of xylenes	µg/l		30	4	0	0	0		*<0.20*				
Tributyltin	µg/l		0.002	4	0	0	0		*<0.02*				
Trichloroethene	µg/l		10	4	0	0	0		*<0.10*				
Trifluralin	ng/l		30	4	0	0	0		*<5*				
Triphenyltin	µg/l		0.008	4	0	0	0		*<0.02*				
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l		0.03	4	0	0	0		0				
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l		0.002	4	0	0	0		0				

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS

Lab Sample Number	Units																			
Sample Reference		SSW5	SSW5	SSW5	SSW5	SSW5	SSW5	SSW5	SSW5	SSW5	SSW5	SSW5	SSW5	SSW5	SSW5	SSW5	SSW5	SSW5	SSW5	SSW5
Zone																				
Depth (m)																				
Date Sampled		18/08/2006	28/09/2006	19/10/2006	09/11/2006	07/12/2006	11/01/2007	15/02/2007	08/03/2007	07/06/2007	06/12/2007	06/03/2008	05/06/2008	04/09/2008	02/12/2008	05/03/2009	04/06/2009	10/09/2009	03/12/2009	04/03/2010
Analytical Parameter (Water Analysis)																				
Inorganics																				
Beryllium	mg/l		0.05						0.05			*<5*		*<5*						
Cadmium	mg/l		0.05						0.00005			*<0.00005*		0.00005		0.00284		0.0001		
Calcium	mg/l	160	148	162	143	132	157	131	123	125	140	146	187	99	145	236	163	106	115	247
Chromium	mg/l	0.005	0.005	*<0.005*	*<0.005*	0.005	0.005	0.005	0.005	0.005	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.001*	*<0.001*	0.002	*<0.001*	0.002	*<0.001*
Chromium (hexavalent)	mg/l	0.03	0.03	*<0.03*	*<0.03*	0.03	0.03	0.03	A/C	0.03	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*	*<0.03*
Cobalt	mg/l		0.00031						0.0004			*<5*		*<5*						
Copper	mg/l																			
Magnesium	mg/l	56	26	13	12	8.9	11	8.9	11	9.7	44	16	29	11	15	72	276	33	39	71
Potassium	mg/l	63	36	24	23	27	117	51	28	24	69	89	275	50	150	559	183	103	669	448
Silver	mg/l		0.015						0.015			*<15*		*<15*						
Sodium	mg/l	486	216	88	96	55	94	67	76	66	398	115	224	55	126	677	2280	291	657	517
Tin	µg/l								0.1											
Uranium	µg/l											1.1		0.7						
Vanadium	µg/l								2.17			*<5*		*<5*						
Zinc	µg/l								11.6			13		10						
Fluoride as F	mg/l	0.24	0.19	0.27	0.23	0.2	0.18	0.15		0.2	0.1	0.2	0.3	0.3	0.2	0.5	0.4	0.3	0.6	0.5
pH	pH Units	8.1	7.6	7.6	7.3	7.6	8.3	8.4	7.7	8.5	8.2	8.3	8.1	7.8	7.7	8	7.9	7.3	7.9	7.9
Electrical Conductivity	µS/cm	3250	1950	1080	1212	894	1390	981	942	905	2600	1330	2550	917	1660	5750	11500	2100	4120	4440
Ammoniacal Nitrogen as N	mg/l	0.3	0.8	*<0.3*	0.6	0.3	0.3	0.3	0.3	1.1	*<0.3*	*<0.3*	*<0.3*	*<0.3*	0.4	*<0.3*	*<0.3*	*<0.3*	0.5	*<0.3*
Chloride	mg/l	939	381	136	151	109	217	131	140	116	653	212	487	130	320	1320	4020	471	987	902
Nitrite as N	mg/l	0.1	0.2	0.2	*<0.1*	0.1	0.1	0.1	0.1	0.2	*<0.1*	*<0.1*	*<0.1*	*<0.1*	0.2	0.1	0.1	*<0.1*	*<0.1*	*<0.1*
Nitrite as NO2	mg/l	0.328443	0.656886	0.656886		0.328443	0.328443	0.328443	0.328443	0.656886					0.656886	0.328443	0.328443			
Nitrate as N	mg/l	7.4	2.1	4.9	6.2	5.8	5.9	4.7	6.6	0.3	7.4	6.5	2	0.7	4.1	1.9	1.6	0.5	*<0.3*	*<0.3*
Nitrate as NO3	mg/l	32.75832	9.29628	21.69132	27.44616	25.67544	26.11812	20.80596	29.21688	1.32804	32.75832	28.7742	8.8536	3.09876	18.14988	8.41092	7.08288	2.2134		
Sulphate as SO4	mg/l	213	154	92	125	93	190	95	98	90	188	179	402	76	215	1080	636	213	458	980
Chemical Oxygen Demand (Total)	mg/l	67	51	28	32	47	26	188	32	42	34	34	63	21	*<20*	88	171	53	90	92
Selenium	mg/l																			
Organics																				
1,1,1-Trichloroethane	µg/l		*<0.10*						*<0.10*			*<0.10*								
1,1,2-Trichloroethane	µg/l		*<0.10*						*<0.10*			*<0.10*								
1,2-Dichlorobenzene	µg/l		*<1.0*						*<1.0*			*<1.0*								
1,2,4-Trichlorobenzene	µg/l		*<5*						*<5*			*<1.0*								
1,2-Dichloroethane	µg/l		*<0.10*						*<0.10*			*<0.10*								
1,3-Dichlorobenzene	µg/l		*<1.0*						*<1.0*			*<1.0*								
1,4-Dichlorobenzene	µg/l		*<1.0*						*<1.0*			*<1.0*								
1,2,3-Trichlorobenzene	µg/l		*<5*						*<5*											
2,4-D	µg/l		*<0.05*						*<0.05*			*<0.05*								
2,4,5-Trichlorophenol	µg/l		*<1.0*						*<1.0*			*<1.0*								
2,4,6-Trichlorophenol	µg/l		*<1.0*						*<1.0*			*<1.0*								
2,4-Dichlorophenol	µg/l		*<1.0*						*<1.0*			*<1.0*								
2,4-Dimethylphenol	µg/l		*<2.0*						*<2.0*			*<2.0*								
2,4-Dinitrotoluene	µg/l		*<1.0*						*<1.0*			*<1.0*								
2,6-Dinitrotoluene	µg/l		*<1.0*						*<1.0*			*<1.0*								
2-Chloronaphthalene	µg/l		*<1.0*						*<1.0*			*<1.0*								
2-Chlorophenol	µg/l		*<1.0*						*<1.0*			*<1.0*								
2-Methylnaphthalene	µg/l		*<1.0*						*<1.0*			*<1.0*								
2-Methylphenol	µg/l		*<1.0*						*<1.0*			*<1.0*								
2-Nitrophenol	µg/l		*<1.0*						*<1.0*			*<1.0*								
4-Bromophenyl-phenylether	µg/l		*<1.0*						*<1.0*			*<1.0*								
4-Chloro-3-methylphenol	µg/l		*<1.0*						*<1.0*			*<1.0*								
4-Chlorophenyl-phenylether	µg/l		*<1.0*						*<1.0*			*<1.0*								
4-Methylphenol	µg/l		*<1.0*						*<1.0*			*<1.0*								
Acenaphthene	µg/l		*<1.0*						*<1.0*			*<1.0*								
Acenaphthylene	µg/l		*<1.0*						*<1.0*			*<1.0*								
Aldrin	ng/l		*<3*						*<3*			*<6*								
Anthracene	µg/l		*<1.0*						*<1.0*			*<1.0*								
Antimony	mg/l		0						0											
Arsenic	mg/l		0						0											
Atrazine	µg/l		*<0.10*						*<0.05*			*<0.020*								
Azinphos-methyl	µg/l		*<0.050*						*<0.050*			*<0.002*								
Benzene	µg/l		*<0.10*						*<0.10*			*<0.10*								
Benzo[a]anthracene	µg/l		*<1.0*						*<1.0*			*<1.0*								
Benzo[a]pyrene	µg/l		*<1.0*						*<1.0*			*<1.0*								
Benzo[b]fluoranthene	µg/l		*<1.0*						*<1.0*			*<1.0*								
Benzo[g,h,i]perylene	µg/l		*<1.0*						*<1.0*			*<1.0*								
Benzo[k]fluoranthene	µg/l		*<1.0*						*<1.0*			*<1.0*								
bis(2-Chloroethoxy)methane	µg/l		*<1.0*						*<1.0*			*<1.0*								
bis(2-Chloroethyl)ether	µg/l		*<1.0*						*<1.0*			*<1.0*								
bis(2-Chloroisopropyl)ether	µg/l		*<1.0*						*<1.0*			*<1.0*								
bis(2-ethylhexyl)phthalate	µg/l		*<10.0*						*<10.0*			*<10.0*								
Butylbenzylphthalate	µg/l		*<1.0*						*<1.0*			*<1.0*								
Tetrachloromethane	µg/l		*<0.10*						*<0.10*			*<0.10*								
Chlorfenvinphos	µg/l		*<0.050*						*<0.050*			*<0.002*								
Trichloromethane	µg/l		*<0.10*						*<0.10*			*<0.10*								
Chrysene	µg/l		*<1.0*						*<1.0*			*<1.0*								
Cis-permethrin	µg/l		*<0.020*						*<0.010*			*<0.002*								
Demeton-s-methyl	µg/l		*<0.050*						*<0.050*			*<0.020*								
Diazinon	µg/l		*<0.050*						*<0.050*			*<0.002*								
Dibenzo[a,h]anthracene	µg/l		*<1.0*						*<1.0*			*<1.0*								
Dibenzofuran	µg/l		*<1.0*						*<1.0*			*<1.0*								
Dieldrin	ng/l		*<3*						*<3*			*<6*								
Diethylphthalate	µg/l		*<3.0*						*<10.0*			*<3.0*								
Dimethote	µg/l		*<0.050*						*<0.050*			*<0.020*								
Dimethylphthalate	µg/l		*<1.0*						*<1.0*			*<1.0*								
Dibutyl phthalate	µg/l		*<10.0*						*<10.0*			*<10.0*								
Dioctyl phthalate	µg/l		*<1.0*						*<1.0*			*<1.0*								
Endosulphan alpha	ng/l		*<5*						*<5*			*<6*								
Endosulphan beta	ng/l		*<5*						*<5*			*<6*								
Endrin	ng/l		*<3*						*<3*			*<6*								
Fenitrothion	µg/l		*<0.050*						*<0.050*			*<0.002*								
Fluoranthene	µg/l		*<1.0*						*<1.0*			*<1.0*								
Fluorene	µg/l		*<1.0*						*<1.0*			*<1.0*								
Hexachlorobenzene	µg/l		*<5*						*<5*			*<1.0*								
Hexachlorobutadiene	µg/l		*<5*						*<5*			*<1.0*								
Hexachloroethane	µg/l		*<1.0*						*<1.0*			*<1.0*								
Indeno[1,2,3-cd]pyrene	µg/l		*<1.0*						*<1.0*			*<1.0*								
Isodrin	ng/l		*<3*						*<3*			*<6*								
Isophorone	µg/l		*<1.0*						*<1.0*			*<1.0*								
m and p-Xylene	µg/l		*<0.10*						*<0.10*			*<0.10*								
Malathion	µg/l		*<0.050*						*<0.050*			*<0.002*								
Mecoprop	µg/l		*<0.04*						*<0.04*			*<0.04*								
Mercury	µg/l		*<0.015*						*<0.015*			*<0.015*								
Naphthalene	µg/l		*<1.0*						*<1.0*			*<1.0*								
Nitrobenzene	µg/l		*<1.0*						*<1.0*			*<1.0*								
o,p-DDT	ng/l		*<2*						*<2*			*<2*								
o-Xylene	µg/l		*<0.10*						*<0.10*			*<0.10*								
p,p-DDT	ng/l		*<2*						*<2*			*<2*								
Pentachlorophenol	µg/l		*<0.05*						*<0.05*			*<5.0*								
Phenanthrene	µg/l		*<1.0*						*<1.0*			*<1.0*								
Phenol	µg/l		*<2.0*						*<2.0*			*<2.0*								
Pyrene	µg/l		*<1.0*						*<1.0*			*<1.0*								
Simazine	µg/l		*<0.05*						*<0.05*			*<0.020*								
Tetrachloroethene	µg/l		0.28						*<0.10*			0.5								
Toluene	µg/l		*<0.10*						*<0.10*			*<0.10*								
Sum of xylenes	µg/l		*<0.20*						*<0.20*			*<0.20*								
Tributyltin	µg/l		*<0.02*						*<0.02*			*<0.02*								
Trichloroethene	µg/l		*<0.10*						*<0.10*			*<0.10*								
Trifluralin	ng/l		*<5*						*<5*			*<10*								
Triphenyltin	µg/l		*<0.02*						*<0.02*			*<0.02*								
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l		0						0			0								
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l		0						0			0								

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS

Lab Sample Number	**Units**				
Sample Reference		SSW5	SSW5	SSW5	SSW5
Zone					
Depth (m)					
Date Sampled		03/06/2010	08/09/2010	07/12/2010	03/03/2011
Analytical Parameter (Water Analysis)					
Inorganics					
Beryllium	mg/l				
Cadmium	mg/l				
Calcium	mg/l	177	449	369	415
Chromium	mg/l	0.004	0.0008	0.0032	*<0.0007*
Chromium (hexavalent)	mg/l	*<0.03*	*<0.03*		*<0.03*
Cobalt	mg/l				
Copper	mg/l				
Magnesium	mg/l	133	359	112	121
Potassium	mg/l	4050	2520	3230	1150
Silver	mg/l				
Sodium	mg/l	2030	3490	1100	929
Tin	µg/l				
Uranium	µg/l				
Vanadium	µg/l				
Zinc	µg/l				
Fluoride as F	mg/l	1	1.5	1.5	1.1
pH	pH Units	8.2	7.3	7.4	8.3
Electrical Conductivity	µS/cm	15600	21100	13600	8230
Ammoniacal Nitrogen as N	mg/l	*<0.19*	5.29	2.3	*<0.19*
Chloride	mg/l	4170	6400	3110	1840
Nitrite as N	mg/l	*<0.008*	0.087	*<0.006*	0.093
Nitrite as NO2	mg/l		0.28574541		0.30545199
Nitrate as N	mg/l	*<0.3*	*<0.29*	1	0.85
Nitrate as NO3	mg/l			4.4268	3.76278
Sulphate as SO4	mg/l	3260	3020	3060	1980
Chemical Oxygen Demand (Total)	mg/l	199	320	226	109
Selenium	mg/l	0.163	0.122	0.113	0.035
Organics					
1,1,1-Trichloroethane	µg/l				
1,1,2-Trichloroethane	µg/l				
1,2-Dichlorobenzene	µg/l				
1,2,4-Trichlorobenzene	µg/l				
1,2-Dichloroethane	µg/l				
1,3-Dichlorobenzene	µg/l				
1,4-Dichlorobenzene	µg/l				
1,2,3-Trichlorobenzene	µg/l				
2,4-D	µg/l				
2,4,5-Trichlorophenol	µg/l				
2,4,6-Trichlorophenol	µg/l				
2,4-Dichlorophenol	µg/l				
2,4-Dimethylphenol	µg/l				
2,4-Dinitrotoluene	µg/l				
2,6-Dinitrotoluene	µg/l				
2-Chloronaphthalene	µg/l				
2-Chlorophenol	µg/l				
2-Methylnaphthalene	µg/l				
2-Methylphenol	µg/l				
2-Nitrophenol	µg/l				
4-Bromophenyl-phenylether	µg/l				
4-Chloro-3-methylphenol	µg/l				
4-Chlorophenyl-phenylether	µg/l				
4-Methylphenol	µg/l				
Acenaphthene	µg/l				
Acenaphthylene	µg/l				
Aldrin	ng/l				
Anthracene	µg/l				
Antimony	mg/l				
Arsenic	mg/l				
Atrazine	µg/l				
Azinphos-methyl	µg/l				
Benzene	µg/l				
Benzo[a]anthracene	µg/l				
Benzo[a]pyrene	µg/l				
Benzo[b]fluoranthene	µg/l				
Benzo[g,h,i]perylene	µg/l				
Benzo[k]fluoranthene	µg/l				
bis(2-Chloroethoxy)methane	µg/l				
bis(2-Chloroethyl)ether	µg/l				
bis(2-Chloroisopropyl)ether	µg/l				
bis(2-ethylhexyl)phthalate	µg/l				
Butylbenzylphthalate	µg/l				
Tetrachloromethane	µg/l				
Chlorfenvinphos	µg/l				
Trichloromethane	µg/l				
Chrysene	µg/l				
Cis-permethrin	µg/l				
Demeton-s-methyl	µg/l				
Diazinon	µg/l				
Dibenzo[a,h]anthracene	µg/l				
Dibenzofuran	µg/l				
Dieldrin	ng/l				
Diethylphthalate	µg/l				
Dimethote	µg/l				
Dimethylphthalate	µg/l				
Dibutyl phthalate	µg/l				
Dioctyl phthalate	µg/l				
Endosulphan alpha	ng/l				
Endosulphan beta	ng/l				
Endrin	ng/l				
Fenitrothion	µg/l				
Fluoranthene	µg/l				
Fluorene	µg/l				
Hexachlorobenzene	µg/l				
Hexachlorobutadiene	µg/l				
Hexachloroethane	µg/l				
Indeno[1,2,3-cd]pyrene	µg/l				
Isodrin	ng/l				
Isophorone	µg/l				
m and p-Xylene	µg/l				
Malathion	µg/l				
Mecoprop	µg/l				
Mercury	µg/l				
Naphthalene	µg/l				
Nitrobenzene	µg/l				
o,p-DDT	ng/l				
o-Xylene	µg/l				
p,p-DDT	ng/l				
Pentachlorophenol	µg/l				
Phenanthrene	µg/l				
Phenol	µg/l				
Pyrene	µg/l				
Simazine	µg/l				
Tetrachloroethene	µg/l				
Toluene	µg/l				
Sum of xylenes	µg/l				
Tributyltin	µg/l				
Trichloroethene	µg/l				
Trifluralin	ng/l				
Triphenyltin	µg/l				
Sum of benzo(b)fluoranthene and benzo(k)fluoranthene	µg/l				
Sum of indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	µg/l				

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS

UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Standard for the Protection of Fisheries
UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances					
Sample Reference								Pond	Pond	Pond	Pond	Pond
Zone												
Depth (m)												
Date Sampled								21/05/2009	17/12/2009	03/07/2013	04/12/2013	07/05/2014
Analytical Parameter (Water Analysis)												
Inorganics												
Aluminium	mg/l		0.2	2	0.02	0.05	0	0.05	0.02			
Barium	mg/l		0.7	2	0.023	0.035	0	0.023	0.035			
Beryllium	mg/l		No EQS	0	0	0	0					
Boron	mg/l		7	2	0.7	1.5	0	1.5	0.7			
Cadmium	mg/l		0.0002	2	0	0	0	*<0.0003*	*<0.0003*			
Calcium	mg/l		No EQS	5	20.5	121	0	105	121	20.5	68.5	86.4
Chromium	mg/l		0.015	5	0.001	0.001	0	*<0.001*	0.001	*<0.0020*	*<0.0020*	*<0.0020*
Chromium (hexavalent)	mg/l		0.0006	5	0	0	0	*<0.03*	*<0.03*	*<0.005*	*<0.005*	*<0.005*
Cobalt	mg/l		0.003	0	0	0	0					
Copper	mg/l		0.005	5	0.004	0.014	1	0.004	0.014	*<0.009*	*<0.009*	*<0.009*
Lead	mg/l		0.0072	2	0.007	0.007	0	0.007	*<0.002*			
Iron	mg/l		1	2	0	0	0	*<0.03*	*<0.03*			
Magnesium	mg/l		No EQS	5	8.96	279	0	279	49	12	15.1	8.96
Manganese	mg/l		0.05	2	0.039	0.042	0	0.039	0.042			
Potassium	mg/l		No EQS	8	261	2150	0	261	524	1330	551	294
Silver	mg/l		0.0005	0	0	0	0					
Mercury	mg/l		0.00005	2	0	0	0	*<0.0001*	*<0.0001*			
Sodium	mg/l		200	8	137	2790	7	2790	735	449	285	137
Molybdenum	mg/l		0.07	2	0.008	0.01	0	0.008	0.01			
Nickel	mg/l		0.02	2	0.0056	0.0152	0	0.0056	0.0152			
Tin	µg/l		10	0	0	0	0					
Uranium	µg/l		15	0	0	0	0					
Vanadium	µg/l		100	0	0	0	0					
Zinc	µg/l		40	0	0	0	0					
Fluoride as F	mg/l		5	5	0.3	1.3	0	0.3	0.6	1.3	0.9	0.5
pH	pH Units		6.0-9.0	8	7.8	10.4	0	8.9	8.4	7.8	8.6	8.6
Electrical Conductivity	µS/cm		2500	8	2130	11100	7	11100	4130	7790	3650	2130
Ammoniacal Nitrogen as N	mg/l		0.78	8	0.32	2.1	2	*<0.3*	2.1	0.34	*<0.27*	0.32
Ammonia as N	mg/l		0.021	0	0	0	0					
Chloride	mg/l		250	8	339	3910	8	3910	1030	1550	672	339
Nitrite as N	mg/l		No EQS	5	0.152	1.496	0	*<0.1*	*<0.1*	1.496	0.53	0.152
Nitrite as NO2	mg/l		0.5	5	0.499233	4.9135073	2			4.91350728	1.7407479	0.49923336
Nitrate as N	mg/l		No EQS	5	1.4	5.5	0	*<0.3*	5.1	1.4	5.5	2
Nitrate as NO3	mg/l		50	5	6.19752	24.3474	0		22.57668	6.19752	24.3474	8.8536
Sulphate as SO4	mg/l		400	8	366	1680	7	664	547	1300	640	366
Chemical Oxygen Demand (Total)	mg/l		No EQS	5	39	175	0	175	77	111	62	39
Antimony	mg/l		0.005	2	0.001	0.027	1	0.001	0.027			
Selenium	mg/l		0.01	5	0.0061	0.023	3	0.023	0.019	0.018	0.008	0.0061
Arsenic	mg/l		0.025	2	0.006	0.018	0	0.006	0.018			

E.3. Soils Screening (2015)

Assessment Criteria	Commercial - 1% SOM

Constituents	Method Detection Limit (mg/kg)	Generic Assessment Criteria (mg/kg)	No. Samples	Minimum Value	Maximum Value	No. Exceedences	Locations of Exceedences	BH101 0.5 m	BH101 1.5 m	BH101 2 m	BH101 4 m	BH101 5 m	BH101 21 m	BH201 2.9 m	BH201 5.8 m	BH201 7.2 m
Asbestos		-														
Asbestos in Soil Screen / Identification Name	N/A	-	11		0.000	11	see highlights	**Chrysotile-Loose fibres**	**Chrysotile-Loose fibres; Crocidolite-loose fibres**	**Chrysotile-Loose fibres**						**Amosite**
Asbestos in Soil	N/A	-	77		0.000	11	see highlights	**Detected**	**Detected**	**Detected**	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	**Detected**
Asbestos Quantification	0.001	-	11	0.0005	0.080	0		0.0005	0.0005	0.0005						0.0005
		-														
General Inorganics		-														
pH	N/A	-	66	6.6000	12.700	0		6.6	10.4	8.8	8.1	8.2	8.1	11.8	11.3	11.3
Electrical Conductivity	10.000	-	66	90.0000	33000.000	0		2500	8800	8100	6900	5100	2400	2400	5300	6900
Total Cyanide	1.000	34.00000	66	0.5000	1.000	0		0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5
Complex Cyanide	1.000	34.00000	66	0.5000	1.000	0		0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5
Free Cyanide	1.000	34.00000	66	0.5000	0.500	0		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total Sulphate as SO4	50.000	-	66	420.0000	95000.000	0		17000	15000	9200	2000	1300	510	30000	53000	48000
Water Soluble Sulphate (Soil Equivalent)	0.003	-	66	0.0110	19.000	0		4.1	10	9.3	3.1	0.52	0.31	3.2	7.8	10
Water Soluble Sulphate as SO4 (2:1)	2.500	-	66	11.0000	19000.000	0		4100	10000	9300	3100	520	310	3200	7800	10000
Water Soluble SO4 (BRE SD 2:1 Leach Equivalent)	0.001	-	66	0.0053	9.600	0		2	5	4.6	1.6	0.26	0.16	1.6	3.9	5.1
Sulphide	1.000	-	66	0.5000	620.000	0		0.5	86	37	65	68	0.5	200	86	170
Water Soluble Chloride (2:1)	1.000	-	66	3.3000	20000.000	0		390	7000	7000	5100	4000	2400	180	5800	9100
Ammoniacal Nitrogen as N	0.500	-	66	0.2500	270.000	0		0.25	0.25	270	160	26	1.8	0.25	2.9	4.1
Organic Matter	0.100	-	66	0.0500	11.000	0		0.9	3.4	5	3.7	3.9	0.05	0.2	0.2	0.4
Water Soluble Nitrate (2:1) as N	2.000	-	66	1.0000	14.000	0		1	1	1	1	1	1	1	1	1
Water Soluble Nitrite (2:1) as N	0.020	-	66	0.0100	16.000	0		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total Oxidised Nitrogen (TON)	5.000	-	66	2.5000	24.000	1		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
		-														
Total Phenols		-														
Total Phenols (monohydric)	1.000	686.00000	66	0.5000	0.500	0		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
		-														
Speciated PAHs		-														
Naphthalene	0.050	8180.00000	66	0.0250	3.200	0		0.025	0.025	0.26	0.025	0.025	0.025	0.025	0.025	0.025
Acenaphthylene	0.100	-	66	0.0500	0.560	0		0.05	0.05	0.25	0.05	0.05	0.05	0.05	0.05	0.05
Acenaphthene	0.100	109000.00000	66	0.0500	0.480	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Fluorene	0.100	66800.00000	66	0.0500	0.460	0		0.05	0.05	0.22	0.05	0.05	0.05	0.05	0.05	0.05
Phenanthrene	0.100	-	66	0.0500	12.000	0		0.05	0.5	1.2	0.05	0.05	0.05	0.05	1.1	0.05
Anthracene	0.100	536000.00000	66	0.0500	1.400	0		0.05	0.18	0.37	0.05	0.05	0.05	0.05	0.1	0.05
Fluoranthene	0.100	72300.00000	66	0.0500	38.000	0		0.38	1.2	2.6	0.05	0.05	0.05	0.05	0.38	0.05
Pyrene	0.100	54200.00000	66	0.0500	22.000	0		0.3	1	2.1	0.05	0.05	0.05	0.05	0.17	0.05
Benzo(a)anthracene	0.100	131.00000	66	0.0500	11.000	0		0.22	0.74	1.5	0.05	0.05	0.05	0.05	0.05	0.05
Chrysene	0.050	14000.00000	66	0.0250	12.000	0		0.17	0.66	1.4	0.025	0.025	0.025	0.025	0.025	0.025
Benzo(b)fluoranthene	0.100	142.00000	66	0.0500	11.000	0		0.25	1.2	2.3	0.05	0.05	0.05	0.05	0.05	0.05
Benzo(k)fluoranthene	0.100	1430.00000	66	0.0500	7.200	0		0.05	0.5	1.1	0.05	0.05	0.05	0.05	0.05	0.05
Benzo(a)pyrene	0.100	76.00000	66	0.0500	5.500	0		0.17	0.97	2	0.05	0.05	0.05	0.05	0.05	0.05
Indeno(1,2,3-cd)pyrene	0.100	142.00000	66	0.0500	16.000	0		0.05	0.64	1.4	0.05	0.05	0.05	0.05	0.05	0.05
Dibenz(a,h)anthracene	0.100	14.30000	66	0.0500	3.300	0		0.05	0.05	0.26	0.05	0.05	0.05	0.05	0.05	0.05
Benzo(ghi)perylene	0.050	1440.00000	66	0.0250	15.000	0		0.025	0.78	1.6	0.025	0.025	0.025	0.025	0.025	0.025
Coronene	0.050	-	66	0.0250	4.700	0		0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
		-														
Total PAH		-														
Total WAC-17 PAHs	1.600	-	66	0.8000	160.000	0		0.8	8.4	19	0.8	0.8	0.8	0.8	1.8	0.8
		-														
Heavy Metals / Metalloids		-														
Aluminium	30.000	-	66	500.0000	38000.000	0		14000	17000	18000	28000	25000	510	22000	38000	28000
Antimony	1.000	4829.63784	66	0.5000	15.000	0		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Arsenic	1.000	640.00000	66	0.5000	110.000	0		15	18	35	21	13	0.5	20	22	15
Barium	1.000	22100.00000	66	10.0000	750.000	0		110	100	170	43	39	10	110	350	280
Beryllium	0.060	1010.00000	66	0.0500	2.300	0		1	1	1.1	1.5	1.1	0.05	1.1	2.1	1.9
Boron (water soluble)	0.200	-	66	0.1000	13.000	0		1.1	4.5	7.6	11	9.7	0.9	9	4.5	3.8
Cadmium	0.200	410.00000	66	0.1000	12.000	0		2	4	7	0.1	0.1	0.1	3.5	11	12
Chromium (hexavalent)	4.000	49.00000	66	2.0000	2.000	0		2	2	2	2	2	2	2	2	2
Chromium	1.000	49.00000	66	1.7000	110.000	6	BH101 1.5 m, BH101 2 m, BH101 4 m, BH203 2 m, BH204 1 m, BH204 3.6 m,	32	**70**	**110**	**54**	38	2.9	24	30	29
Copper	1.000	109000.00000	66	3.1000	1100.000	0		210	95	160	21	12	7.5	57	78	68
Iron	40.000	-	66	790.0000	60000.000	0		37000	30000	36000	56000	42000	2400	24000	17000	14000
Lead	1.000	2330.00000	66	0.5000	770.000	0		170	120	190	32	21	9.3	150	400	390
Manganese	1.000	-	66	69.0000	980.000	0		300	270	310	980	220	230	300	270	280
Mercury (inorganic)	0.300	3600.00000	66	0.1500	4.500	0		0.15	2	4.5	0.15	0.15	0.15	0.15	0.15	0.15
Molybdenum	0.250	17700.00000	66	0.1500	4.600	0		3.5	1.8	3.5	1.6	0.5	0.15	1.1	0.9	1

Assessment Criteria	Commercial - 1% SOM

Constituents	Method Detection Limit (mg/kg)	Generic Assessment Criteria (mg/kg)	No. Samples	Minimum Value	Maximum Value	No. Exceedences	Locations of Exceedences	BH101 0.5 m	BH101 1.5 m	BH101 2 m	BH101 4 m	BH101 5 m	BH101 21 m	BH201 2.9 m	BH201 5.8 m	BH201 7.2 m
Nickel	1.000	1800.00000	66	1.1000	46.000	0		37	30	42	39	26	4.4	25	33	26
Phosphorus	20.000	-	66	130.0000	3800.000	0		410	2000	3800	900	640	360	440	470	440
Selenium	1.000	13000.00000	66	0.5000	9.800	0		0.5	4.4	0.5	0.5	0.5	2.8	0.5	3.8	2.6
Vanadium	1.000	7530.00000	66	2.9000	160.000	0		48	49	62	84	64	4.9	42	81	67
Zinc	1.000	1000000.00000	66	9.4000	530.000	0		310	280	480	110	74	13	270	370	500
Calcium	20.000	-	66	4600.0000	690000.000	0		38000	88000	79000	19000	31000	460000	280000	320000	310000
Magnesium	20.000	-	66	690.0000	19000.000	0		3100	6600	6700	11000	8300	1200	3800	3900	3700
Potassium	20.000	-	66	170.0000	53000.000	0		6100	23000	27000	10000	5700	270	18000	35000	31000
		-														
Monoaromatics		-				0										
Benzene	0.001	98.00000	66	0.0005	0.001			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Toluene	0.001	414000.00000	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Ethylbenzene	0.001	180000.00000	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
p & m-xylene	0.001	276000.00000	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
o-xylene	0.001	296000.00000	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
MTBE (Methyl Tertiary Butyl Ether)	0.001	3340.00000	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
		-														
Petroleum Hydrocarbons		-														
TPH-CWG - Aliphatic >EC5 - EC6	0.100	1000000.00000	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC6 - EC8	0.100	1000000.00000	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC8 - EC10	0.100	167000.00000	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC10 - EC12	1.000	171000.00000	66	0.5000	4.800	0		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
TPH-CWG - Aliphatic >EC12 - EC16	2.000	171000.00000	66	1.0000	13.000	0		1	6.1	13	1	1	1	4.9	1	1
TPH-CWG - Aliphatic >EC16 - EC21	8.000	1000000.00000	66	4.0000	150.000	0		8.2	42	98	4	4	4	19	4	4
TPH-CWG - Aliphatic >EC21 - EC35	8.000	1000000.00000	66	4.0000	2200.000	0		53	160	380	4	4	4	92	8.7	4
TPH-CWG - Aliphatic (EC5 - EC35)	10.000	-	66	5.0000	2300.000	0		61	210	490	5	5	5	120	5	5
		-														
TPH-CWG - Aromatic >EC5 - EC7	0.100	13.11739	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aromatic >EC7 - EC8	0.100	414000.00000	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aromatic >EC8 - EC10	0.100	58600.00000	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aromatic >EC10 - EC12	1.000	68300.00000	66	0.5000	3.900	0		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
TPH-CWG - Aromatic >EC12 - EC16	2.000	68400.00000	66	1.0000	58.000	0		4	3	6.7	1	1	1	1	1	1
TPH-CWG - Aromatic >EC16 - EC21	10.000	28400.00000	66	5.0000	120.000	0		5	31	71	5	5	5	5	5	5
TPH-CWG - Aromatic >EC21 - EC35	10.000	28400.00000	66	5.0000	750.000	0		28	170	370	5	20	5	5	5	5
TPH-CWG - Aromatic (EC5 - EC35)	10.000	-	66	5.0000	790.000	0		32	200	450	5	20	5	5	5	5
		-														
VOCs		-														
Chloromethane	0.001	0.48010	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Chloroethane	0.001	463.00000	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bromomethane	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Vinyl Chloride	0.001	0.03287	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trichlorofluoromethane	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1-Dichloroethene	0.001	12.63344	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,2-Trichloro 1,2,2-Trifluoroethane	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cis-1,2-dichloroethene	0.001	6.36952	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
MTBE (Methyl Tertiary Butyl Ether)	0.001	3340.00000	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1-Dichloroethane	0.001	122.23362	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
2,2-Dichloropropane	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trichloromethane	0.001	48.04707	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,1-Trichloroethane	0.001	324.88230	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dichloroethane	0.001	0.29382	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1-Dichloropropene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trans-1,2-dichloroethene	0.001	10.10000	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Benzene	0.001	98.00000	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Tetrachloromethane	0.001	1.44310	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dichloropropane	0.001	1.42748	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trichloroethene	0.001	1.20000	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Dibromomethane	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bromodichloromethane	0.001	0.90688	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cis-1,3-dichloropropene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trans-1,3-dichloropropene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Toluene	0.001	414000.00000	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,2-Trichloroethane	0.001	42.52657	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,3-Dichloropropane	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Dibromochloromethane	0.001	9.83481	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Tetrachloroethene	0.001	75.75532	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dibromoethane	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Chlorobenzene	0.001	533.00000	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,1,2-Tetrachloroethane	0.001	52.43645	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Ethylbenzene	0.001	180000.00000	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005

Assessment Criteria	Commercial - 1% SOM

Constituents	Method Detection Limit (mg/kg)	Generic Assessment Criteria (mg/kg)	No. Samples	Minimum Value	Maximum Value	No. Exceedences	Locations of Exceedences	BH101	BH101	BH101	BH101	BH101	BH101	BH201	BH201	BH201
								0.5 m	1.5 m	2 m	4 m	5 m	21 m	2.9 m	5.8 m	7.2 m
p & m-Xylene	0.001	276000.00000	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Styrene	0.001	22200.00000	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Tribromomethane	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
o-Xylene	0.001	296000.00000	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,2,2-Tetrachloroethane	0.001	130.72319	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Isopropylbenzene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bromobenzene	0.001	44.72220	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
n-Propylbenzene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
2-Chlorotoluene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
4-Chlorotoluene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,3,5-Trimethylbenzene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
tert-Butylbenzene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2,4-Trimethylbenzene	0.001	174.86795	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
sec-Butylbenzene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,3-Dichlorobenzene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
p-Isopropyltoluene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dichlorobenzene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,4-Dichlorobenzene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Butylbenzene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dibromo-3-chloropropane	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2,4-Trichlorobenzene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Hexachlorobutadiene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2,3-Trichlorobenzene	0.001	-	66	0.0005	0.001	0		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
		-														
SVOCs		-														
Aniline	0.100	-	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Phenol	0.200	686.00000	66	0.1000	0.100	0		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2-Chlorophenol	0.100	-	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Bis(2-chloroethyl)ether	0.200	-	66	0.1000	0.100	0		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1,3-Dichlorobenzene	0.200	-	66	0.1000	0.100	0		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1,2-Dichlorobenzene	0.100	-	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
1,4-Dichlorobenzene	0.200	-	66	0.1000	0.100	0		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bis(2-chloroisopropyl)ether	0.100	-	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2-Methylphenol	0.300	187000.00000	66	0.1500	0.150	0		0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Hexachloroethane	0.050	510.00000	66	0.0250	0.025	0		0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Nitrobenzene	0.300	-	66	0.1500	0.150	0		0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
4-Methylphenol	0.200	185000.00000	66	0.1000	0.100	0		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Isophorone	0.200	-	66	0.1000	0.100	0		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2-Nitrophenol	0.300	-	66	0.1500	0.150	0		0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
2,4-Dimethylphenol	0.300	35600.00000	66	0.1500	0.150	0		0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Bis(2-chloroethoxy)methane	0.300	-	66	0.1500	0.150	0		0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
1,2,4-Trichlorobenzene	0.300	-	66	0.1500	0.150	0		0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Naphthalene	0.050	8180.00000	66	0.0250	3.200	0		0.025	0.025	0.26	0.025	0.025	0.025	0.025	0.025	0.025
2,4-Dichlorophenol	0.300	-	66	0.1500	0.150	0		0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
4-Chloroaniline	0.100	-	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Hexachlorobutadiene	0.100	-	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
4-Chloro-3-methylphenol	0.100	-	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2,4,6-Trichlorophenol	0.100	-	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2,4,5-Trichlorophenol	0.200	-	66	0.1000	0.100	0		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2-Methylnaphthalene	0.100	-	66	0.0500	4.600	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2-Chloronaphthalene	0.100	60200.00000	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Dimethylphthalate	0.100	-	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2,6-Dinitrotoluene	0.100	1850.00000	66	0.0500	0.050	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Acenaphthylene	0.100	-	66	0.0500	0.560	0		0.05	0.05	0.25	0.05	0.05	0.05	0.05	0.05	0.05
Acenaphthene	0.100	109000.00000	66	0.0500	0.480	0		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2,4-Dinitrotoluene	0.200	3740.00000	66	0.1000	0.100	0		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dibenzofuran	0.200	-	66	0.1000	1.500	0		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
4-Chlorophenyl phenyl ether	0.300	-	66	0.1500	0.150	0		0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Diethyl phthalate	0.200	377000.00000	66	0.1000	0.100	0		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
4-Nitroaniline	0.200	-	66	0.1000	0.100	0		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Fluorene	0.100	66800.00000	66	0.0500	0.460	0		0.05	0.05	0.22	0.05	0.05	0.05	0.05	0.05	0.05

Assessment Criteria

Constituents	Method Detection Limit (mg/kg)	BH202	BH202	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH204	BH204	BH204	BH204	BH204	BH501	BH501	BH501
		0.5 m	2.5 m	6 m	8.1 m	10.5 m	21.6 m	0.5 m	2 m	4 m	1 m	3 m	3.6 m	13 m	13.9 m	0.5 m	3 m	5.5 m
Asbestos																		
Asbestos in Soil Screen / Identification Name	N/A					**Chrysotile**					**Chrysotile**	**Chrysotile**	**Chrysotile**					
Asbestos in Soil	N/A	Not-detected	Not-detected	Not-detected	Not-detected	**Detected**	Not-detected	Not-detected	Not-detected	Not-detected	**Detected**	**Detected**	**Detected**	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification	0.001					0.0005					0.0005	0.0005	0.0005					
General Inorganics																		
pH	N/A	7.2	10.6	12.3	10.4	8.4	7.8	8.1	8.4	7.5	11.1	8.4	8.3	8.2	8.1	8.4	11.4	11.1
Electrical Conductivity	10.000	2000	1900	14000	10000	3200	1500	1700	2600	1300	740	520	480	210	140	220	1200	950
Total Cyanide	1.000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Complex Cyanide	1.000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Free Cyanide	1.000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total Sulphate as SO4	50.000	60000	52000	72000	31000	5300	610	16000	15000	9700	5400	1900	2500	670	630	810	2000	1600
Water Soluble Sulphate (Soil Equivalent)	0.003	7.1	6.2	17	13	4.5	0.27	3.5	2.3	2.6	1.1	1.8	1.7	0.085	0.17	0.12	1.3	0.8
Water Soluble Sulphate as SO4 (2:1)	2.500	7100	6200	17000	13000	4500	270	3500	2300	2600	1100	1800	1700	85	170	120	1300	800
Water Soluble SO4 (BRE SD 2:1 Leach Equivalent)	0.001	3.5	3.1	8.3	6.7	2.2	0.13	1.7	1.2	1.3	0.56	0.92	0.84	0.043	0.085	0.062	0.67	0.4
Sulphide	1.000	0.5	10	48	24	620	0.5	4.5	6.2	10	6.6	30	22	0.5	0.5	0.5	0.5	0.5
Water Soluble Chloride (2:1)	1.000	50	100	6500	5600	2500	2200	41	53	67	66	68	280	84	39	17	700	820
Ammoniacal Nitrogen as N	0.500	0.25	0.25	31	0.25	170	0.25	0.25	2.6	46	0.25	18	28	0.25	0.25	0.25	0.8	4.2
Organic Matter	0.100	0.3	0.6	0.6	1.3	6.3	0.2	1.5	2.6	4.5	1.2	3.8	3.8	0.1	0.1	0.4	0.4	0.05
Water Soluble Nitrate (2:1) as N	2.000	1	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Water Soluble Nitrite (2:1) as N	0.020	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total Oxidised Nitrogen (TON)	5.000	2.5	14	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Total Phenols																		
Total Phenols (monohydric)	1.000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Speciated PAHs																		
Naphthalene	0.050	0.025	0.025	0.26	0.025	0.025	0.025	0.14	0.54	0.025	0.31	0.49	0.55	0.025	0.025	0.025	0.025	0.025
Acenaphthylene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.37	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Acenaphthene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Fluorene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.45	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Phenanthrene	0.100	0.05	0.28	0.95	0.05	0.16	0.05	0.82	1.1	0.05	1.6	0.45	0.54	0.05	0.05	0.05	0.05	0.05
Anthracene	0.100	0.05	0.05	0.28	0.05	0.05	0.05	0.1	0.13	0.05	0.61	0.12	0.16	0.05	0.05	0.05	0.05	0.05
Fluoranthene	0.100	0.05	0.34	0.8	0.05	0.38	0.05	1.2	0.96	0.05	2	0.63	0.85	0.05	0.05	0.05	0.05	0.05
Pyrene	0.100	0.05	0.28	0.68	0.05	0.37	0.05	1	0.86	0.05	1.5	0.5	0.71	0.05	0.05	0.05	0.05	0.05
Benzo(a)anthracene	0.100	0.05	0.23	0.65	0.05	0.24	0.05	0.75	0.46	0.05	1	0.37	0.53	0.05	0.05	0.05	0.05	0.05
Chrysene	0.050	0.025	0.14	0.4	0.025	0.24	0.025	0.41	0.65	0.025	0.81	0.36	0.47	0.025	0.025	0.025	0.025	0.025
Benzo(b)fluoranthene	0.100	0.05	0.05	0.35	0.05	0.24	0.05	0.6	0.4	0.05	0.88	0.62	0.79	0.05	0.05	0.05	0.05	0.05
Benzo(k)fluoranthene	0.100	0.05	0.05	0.4	0.05	0.17	0.05	0.42	0.32	0.05	0.41	0.18	0.35	0.05	0.05	0.05	0.05	0.05
Benzo(a)pyrene	0.100	0.05	0.16	0.43	0.05	0.2	0.05	0.53	0.3	0.05	0.67	0.46	0.58	0.05	0.05	0.05	0.05	0.05
Indeno(1,2,3-cd)pyrene	0.100	0.05	0.05	0.25	0.05	0.05	0.05	0.25	0.05	0.05	0.38	0.32	0.45	0.05	0.05	0.05	0.05	0.05
Dibenz(a,h)anthracene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Benzo(ghi)perylene	0.050	0.025	0.025	0.28	0.025	0.025	0.025	0.3	0.025	0.025	0.43	0.39	0.57	0.025	0.025	0.025	0.025	0.025
Coronene	0.050	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Total PAH																		
Total WAC-17 PAHs	1.600	0.8	0.8	5.7	0.8	2	0.8	6.5	5.7	0.8	11	4.9	6.6	0.8	0.8	0.8	0.8	0.8
Heavy Metals / Metalloids																		
Aluminium	30.000	14000	16000	12000	27000	17000	510	9500	9400	15000	12000	24000	27000	500	630	3600	1400	1500
Antimony	1.000	2.8	2.8	4	3.4	0.5	0.5	3.2	6.3	0.5	2.1	3.3	3.5	0.5	0.5	0.5	0.5	0.5
Arsenic	1.000	9.3	16	110	19	17	0.5	8.8	22	26	9.5	19	23	1.6	0.5	3.3	2.2	0.5
Barium	1.000	120	110	40	260	47	12	82	130	29	110	100	160	11	12	30	29	31
Beryllium	0.060	0.7	0.8	0.3	2	1.2	0.05	0.6	0.8	0.8	0.9	1.6	2.3	0.05	0.05	0.2	0.05	0.05
Boron (water soluble)	0.200	8.1	3.7	1.3	13	6	0.2	2.7	4.8	5	2.2	6	5.7	0.5	0.3	0.8	0.7	0.9
Cadmium	0.200	3.9	4.2	9.4	8.5	0.1	0.1	0.4	0.3	0.1	0.4	0.1	0.1	0.1	0.1	0.2	0.3	0.1
Chromium (hexavalent)	4.000	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Chromium	1.000	20	31	23	26	35	1.7	21	**49**	33	**59**	44	**50**	1.7	2.1	10	11	9.2
Copper	1.000	22	47	52	89	22	3.6	59	60	14	34	27	48	3.6	3.9	8.8	3.5	5.9
Iron	40.000	16000	13000	16000	13000	41000	790	19000	22000	45000	21000	40000	46000	1100	910	6500	1400	1700
Lead	1.000	74	140	660	280	38	1.5	52	90	18	47	41	47	0.5	8.7	6.7	2.9	4.6
Manganese	1.000	240	250	170	270	220	200	360	280	99	370	320	300	220	220	250	200	210
Mercury (inorganic)	0.300	0.15	0.15	0.15	0.15	0.15	0.3	0.15	0.15	0.15	0.4	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Molybdenum	0.250	1	0.4	2.3	1.6	0.4	0.15	0.9	2.1	0.8	0.9	1.5	1.5	0.15	0.15	0.15	0.15	0.15

Assessment Criteria

Constituents	Method Detection Limit (mg/kg)	BH202	BH202	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH204	BH204	BH204	BH204	BH204	BH501	BH501	BH501
		0.5 m	2.5 m	6 m	8.1 m	10.5 m	21.6 m	0.5 m	2 m	4 m	1 m	3 m	3.6 m	13 m	13.9 m	0.5 m	3 m	5.5 m
Nickel	1.000	26	16	14	38	29	9.5	17	29	19	36	28	35	1.3	1.1	8	8.4	7.1
Phosphorus	20.000	1000	730	400	680	600	390	990	490	710	750	480	480	510	670	410	370	380
Selenium	1.000	9.5	5.6	9.8	9.8	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.6	0.5
Vanadium	1.000	100	39	53	120	62	3.6	31	41	68	39	74	85	2.9	3.4	13	5.8	6
Zinc	1.000	56	140	210	220	86	11	100	100	47	84	88	92	9.4	12	32	16	19
Calcium	20.000	450000	450000	460000	400000	30000	690000	340000	240000	11000	150000	81000	53000	640000	550000	340000	430000	460000
Magnesium	20.000	5100	4500	2800	19000	7600	1400	3100	2500	4700	4300	5600	6600	1300	1300	2400	2300	2100
Potassium	20.000	3600	7700	29000	33000	5600	170	2800	2900	5800	2400	6300	6600	180	200	1000	330	370
Monoaromatics																		
Benzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Toluene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Ethylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
p & m-xylene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
o-xylene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
MTBE (Methyl Tertiary Butyl Ether)	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Petroleum Hydrocarbons																		
TPH-CWG - Aliphatic >EC5 - EC6	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC6 - EC8	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC8 - EC10	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC10 - EC12	1.000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
TPH-CWG - Aliphatic >EC12 - EC16	2.000	1	1	1	1	6.9	3.4	3	1	1	1	1	3	1	1	1	1	1
TPH-CWG - Aliphatic >EC16 - EC21	8.000	4	4	4	4	15	4	4	14	4	21	12	22	4	4	4	4	4
TPH-CWG - Aliphatic >EC21 - EC35	8.000	17	4	4	12	4	4	32	110	18	61	150	280	4	4	15	4	4
TPH-CWG - Aliphatic (EC5 - EC35)	10.000	17	5	5	12	22	5	35	130	18	82	160	300	5	5	15	5	5
TPH-CWG - Aromatic >EC5 - EC7	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aromatic >EC7 - EC8	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aromatic >EC8 - EC10	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aromatic >EC10 - EC12	1.000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
TPH-CWG - Aromatic >EC12 - EC16	2.000	1	1	1	1	58	1	1	1	1	2.4	1	1	1	1	1	1	1
TPH-CWG - Aromatic >EC16 - EC21	10.000	5	5	5	5	110	5	5	5	5	18	5	16	5	5	5	5	5
TPH-CWG - Aromatic >EC21 - EC35	10.000	5	5	5	5	12	5	16	50	5	36	37	110	5	5	17	5	5
TPH-CWG - Aromatic (EC5 - EC35)	10.000	5	5	5	5	180	5	16	51	5	56	37	130	5	5	17	5	5
VOCs																		
Chloromethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Chloroethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bromomethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Vinyl Chloride	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trichlorofluoromethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1-Dichloroethene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,2-Trichloro 1,2,2-Trifluoroethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cis-1,2-dichloroethene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
MTBE (Methyl Tertiary Butyl Ether)	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1-Dichloroethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
2,2-Dichloropropane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trichloromethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,1-Trichloroethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dichloroethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1-Dichloropropene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trans-1,2-dichloroethene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Benzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Tetrachloromethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dichloropropane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trichloroethene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Dibromomethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bromodichloromethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cis-1,3-dichloropropene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trans-1,3-dichloropropene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Toluene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,2-Trichloroethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,3-Dichloropropane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Dibromochloromethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Tetrachloroethene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dibromoethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Chlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,1,2-Tetrachloroethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Ethylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005

Assessment Criteria

Constituents	Method Detection Limit (mg/kg)	BH202	BH202	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH204	BH204	BH204	BH204	BH204	BH501	BH501	BH501
		0.5 m	2.5 m	6 m	8.1 m	10.5 m	21.6 m	0.5 m	2 m	4 m	1 m	3 m	3.6 m	13 m	13.9 m	0.5 m	3 m	5.5 m
p & m-Xylene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Styrene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Tribromomethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
o-Xylene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,2,2-Tetrachloroethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Isopropylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bromobenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
n-Propylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
2-Chlorotoluene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
4-Chlorotoluene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,3,5-Trimethylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
tert-Butylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2,4-Trimethylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
sec-Butylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,3-Dichlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
p-Isopropyltoluene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dichlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,4-Dichlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Butylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dibromo-3-chloropropane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2,4-Trichlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Hexachlorobutadiene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2,3-Trichlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
SVOCs																		
Aniline	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Phenol	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2-Chlorophenol	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Bis(2-chloroethyl)ether	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1,3-Dichlorobenzene	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1,2-Dichlorobenzene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
1,4-Dichlorobenzene	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bis(2-chloroisopropyl)ether	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2-Methylphenol	0.300	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Hexachloroethane	0.050	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Nitrobenzene	0.300	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
4-Methylphenol	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Isophorone	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2-Nitrophenol	0.300	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
2,4-Dimethylphenol	0.300	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Bis(2-chloroethoxy)methane	0.300	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
1,2,4-Trichlorobenzene	0.300	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Naphthalene	0.050	0.025	0.025	0.26	0.025	0.025	0.025	0.14	0.54	0.025	0.31	0.49	0.55	0.025	0.025	0.025	0.025	0.025
2,4-Dichlorophenol	0.300	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
4-Chloroaniline	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Hexachlorobutadiene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
4-Chloro-3-methylphenol	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2,4,6-Trichlorophenol	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2,4,5-Trichlorophenol	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2-Methylnaphthalene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.05	0.7	0.5	0.5	0.05	0.05	0.05	0.05	0.05
2-Chloronaphthalene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Dimethylphthalate	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2,6-Dinitrotoluene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Acenaphthylene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.37	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Acenaphthene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2,4-Dinitrotoluene	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dibenzofuran	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1
4-Chlorophenyl phenyl ether	0.300	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Diethyl phthalate	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
4-Nitroaniline	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Fluorene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.45	0.05	0.05	0.05	0.05	0.05	0.05	0.05

Assessment Criteria

Constituents	Method Detection Limit (mg/kg)	BH501	BH501	BH502	BH502	BH502	BH502	BH502	BH502	BH502	BH502	BH502	BH502	BH703	BH703	BH704	BH704	BH705
		7.7 m	7.7 m	0.5 m	1 m	1.6 m	2.1 m	4.7 m	5.6 m	7.7 m	9 m	9.4 m	11.3 m	0.5 m	1.90-2.10 m	0.5 m	1.8 m	1 m
Asbestos																		
Asbestos in Soil Screen / Identification Name	N/A	**Chrysotile**																
Asbestos in Soil	N/A	**Detected**	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification	0.001	0.0005																
General Inorganics																		
pH	N/A	10.5		9.4	11.2									7	6.4	7.3	8.3	8.2
Electrical Conductivity	10.000	530		530	760									220	100	110	130	90
Total Cyanide	1.000	0.5		0.5	0.5									0.5	0.5	0.5	0.5	0.5
Complex Cyanide	1.000	0.5		0.5	0.5									0.5	0.5	0.5	0.5	0.5
Free Cyanide	1.000	0.5		0.5	0.5									0.5	0.5	0.5	0.5	0.5
Total Sulphate as SO4	50.000	2500		980	2000									810	720	670	500	430
Water Soluble Sulphate (Soil Equivalent)	0.003	0.89		0.43	1									0.11	0.11	0.027	0.037	0.03
Water Soluble Sulphate as SO4 (2:1)	2.500	890		430	1000									110	110	27	37	30
Water Soluble SO4 (BRE SD 2:1 Leach Equivalent)	0.001	0.44		0.21	0.5									0.054	0.053	0.014	0.019	0.015
Sulphide	1.000	1.2		0.5	0.5									0.5	0.5	0.5	0.5	0.5
Water Soluble Chloride (2:1)	1.000	340		270	410									31	4	7.5	15	3.3
Ammoniacal Nitrogen as N	0.500	13		0.25	0.25									0.25	0.25	0.25	0.25	0.25
Organic Matter	0.100	2.6		0.2	0.2									0.3	1.5	0.9	0.9	0.05
Water Soluble Nitrate (2:1) as N	2.000	1		5.3	4.6									1	1	6.5	3.8	1
Water Soluble Nitrite (2:1) as N	0.020	0.01		0.01	0.01									0.01	0.01	0.01	0.01	0.01
Total Oxidised Nitrogen (TON)	5.000	2.5		5.3	2.5									2.5	2.5	6.5	2.5	2.5
Total Phenols																		
Total Phenols (monohydric)	1.000	0.5		0.5	0.5									0.5	0.5	0.5	0.5	0.5
Speciated PAHs																		
Naphthalene	0.050	0.025		0.025	0.025									0.025	0.025	0.025	0.025	0.025
Acenaphthylene	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
Acenaphthene	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
Fluorene	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
Phenanthrene	0.100	1.9		0.05	0.05									0.05	0.05	0.05	0.05	0.05
Anthracene	0.100	0.63		0.05	0.05									0.05	0.05	0.05	0.05	0.05
Fluoranthene	0.100	2.2		0.05	0.05									0.05	0.05	0.05	0.05	0.28
Pyrene	0.100	1.9		0.05	0.05									0.05	0.05	0.05	0.05	0.24
Benzo(a)anthracene	0.100	1.1		0.05	0.05									0.05	0.05	0.05	0.05	0.15
Chrysene	0.050	0.92		0.025	0.025									0.025	0.025	0.025	0.025	0.16
Benzo(b)fluoranthene	0.100	1.1		0.05	0.05									0.05	0.05	0.05	0.05	0.05
Benzo(k)fluoranthene	0.100	0.48		0.05	0.05									0.05	0.05	0.05	0.05	0.05
Benzo(a)pyrene	0.100	0.72		0.05	0.05									0.05	0.05	0.05	0.05	0.05
Indeno(1,2,3-cd)pyrene	0.100	0.39		0.05	0.05									0.05	0.05	0.05	0.05	0.05
Dibenz(a,h)anthracene	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
Benzo(ghi)perylene	0.050	0.41		0.025	0.025									0.025	0.025	0.025	0.025	0.025
Coronene	0.050	0.025		0.025	0.025									0.025	0.025	0.025	0.025	0.025
Total PAH																		
Total WAC-17 PAHs	1.600	12		0.8	0.8									0.8	0.8	0.8	0.8	0.8
Heavy Metals / Metalloids																		
Aluminium	30.000	5800		2600	2100									8500	11000	13000	13000	9300
Antimony	1.000	2.7		2.6	0.5									1.1	0.5	0.5	1.4	0.5
Arsenic	1.000	10		1.1	0.5									8.6	10	13	7.6	7
Barium	1.000	86		19	17									56	110	73	57	50
Beryllium	0.060	0.7		0.1	0.05									0.6	0.7	0.8	0.7	0.7
Boron (water soluble)	0.200	1.3		1	0.9									0.1	1.7	1.5	1	0.4
Cadmium	0.200	1.8		0.1	0.1									0.1	0.1	0.1	0.1	0.1
Chromium (hexavalent)	4.000	2		2	2									2	2	2	2	2
Chromium	1.000	16		7.2	7.7									21	23	35	30	25
Copper	1.000	80		5.9	6.6									14	13	14	6.8	8.7
Iron	40.000	16000		5200	3100									23000	24000	26000	22000	22000
Lead	1.000	45		3.9	3.5									16	150	39	7.8	7.7
Manganese	1.000	260		230	200									310	260	250	260	300
Mercury (inorganic)	0.300	0.15		0.15	0.15									0.15	0.15	0.15	0.15	0.15
Molybdenum	0.250	0.9		0.15	0.15									0.15	0.3	0.15	0.15	0.15

Assessment Criteria

Constituents	Method Detection Limit (mg/kg)	BH501	BH501	BH502	BH502	BH502	BH502	BH502	BH502	BH502	BH502	BH502	BH502	BH703	BH703	BH704	BH704	BH705
		7.7 m	7.7 m	0.5 m	1 m	1.6 m	2.1 m	4.7 m	5.6 m	7.7 m	9 m	9.4 m	11.3 m	0.5 m	1.90-2.10 m	0.5 m	1.8 m	1 m
Nickel	1.000	18		6.1	6.8									19	18	20	16	18
Phosphorus	20.000	500		430	350									410	410	900	370	750
Selenium	1.000	0.5		0.5	0.5									0.5	0.5	0.5	0.5	0.5
Vanadium	1.000	23		11	7.7									34	35	49	41	34
Zinc	1.000	93		17	16									36	46	58	35	32
Calcium	20.000	310000		400000	410000									36000	3900	17000	25000	63000
Magnesium	20.000	2700		2300	2300									2900	2100	3200	2800	3800
Potassium	20.000	1300		870	520									2000	2000	2700	2100	2400
Monoaromatics																		
Benzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Toluene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Ethylbenzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
p & m-xylene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
o-xylene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
MTBE (Methyl Tertiary Butyl Ether)	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Petroleum Hydrocarbons																		
TPH-CWG - Aliphatic >EC5 - EC6	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC6 - EC8	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC8 - EC10	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC10 - EC12	1.000	1.7		0.5	0.5									0.5	0.5	0.5	0.5	0.5
TPH-CWG - Aliphatic >EC12 - EC16	2.000	3.4		1	1									1	1	1	1	1
TPH-CWG - Aliphatic >EC16 - EC21	8.000	12		4	4									4	4	4	4	4
TPH-CWG - Aliphatic >EC21 - EC35	8.000	75		11	12									4	4	4	4	4
TPH-CWG - Aliphatic (EC5 - EC35)	10.000	91		11	12									5	5	5	5	5
TPH-CWG - Aromatic >EC5 - EC7	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aromatic >EC7 - EC8	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aromatic >EC8 - EC10	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aromatic >EC10 - EC12	1.000	0.5		0.5	0.5									0.5	0.5	0.5	0.5	0.5
TPH-CWG - Aromatic >EC12 - EC16	2.000	4.2		1	1									1	1	1	3	1
TPH-CWG - Aromatic >EC16 - EC21	10.000	15		5	5									5	5	5	5	5
TPH-CWG - Aromatic >EC21 - EC35	10.000	70		14	5									5	5	5	5	5
TPH-CWG - Aromatic (EC5 - EC35)	10.000	89		14	5									5	5	5	5	5
VOCs																		
Chloromethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Chloroethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Bromomethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Vinyl Chloride	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Trichlorofluoromethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,1-Dichloroethene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,1,2-Trichloro 1,2,2-Trifluoroethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Cis-1,2-dichloroethene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
MTBE (Methyl Tertiary Butyl Ether)	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,1-Dichloroethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
2,2-Dichloropropane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Trichloromethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,1,1-Trichloroethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dichloroethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,1-Dichloropropene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Trans-1,2-dichloroethene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Benzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Tetrachloromethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dichloropropane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Trichloroethene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Dibromomethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Bromodichloromethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Cis-1,3-dichloropropene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Trans-1,3-dichloropropene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Toluene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,1,2-Trichloroethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,3-Dichloropropane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Dibromochloromethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Tetrachloroethene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dibromoethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Chlorobenzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,1,1,2-Tetrachloroethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Ethylbenzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005

Assessment Criteria

Constituents	Method Detection Limit (mg/kg)	BH501	BH501	BH502	BH502	BH502	BH502	BH502	BH502	BH502	BH502	BH502	BH502	BH703	BH703	BH704	BH704	BH705
		7.7 m	7.7 m	0.5 m	1 m	1.6 m	2.1 m	4.7 m	5.6 m	7.7 m	9 m	9.4 m	11.3 m	0.5 m	1.90-2.10 m	0.5 m	1.8 m	1 m
p & m-Xylene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Styrene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Tribromomethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
o-Xylene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,1,2,2-Tetrachloroethane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Isopropylbenzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Bromobenzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
n-Propylbenzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
2-Chlorotoluene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
4-Chlorotoluene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,3,5-Trimethylbenzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
tert-Butylbenzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,2,4-Trimethylbenzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
sec-Butylbenzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,3-Dichlorobenzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
p-Isopropyltoluene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dichlorobenzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,4-Dichlorobenzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Butylbenzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dibromo-3-chloropropane	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,2,4-Trichlorobenzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
Hexachlorobutadiene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
1,2,3-Trichlorobenzene	0.001	0.0005		0.0005	0.0005									0.0005	0.0005	0.0005	0.0005	0.0005
SVOCs																		
Aniline	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
Phenol	0.200	0.1		0.1	0.1									0.1	0.1	0.1	0.1	0.1
2-Chlorophenol	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
Bis(2-chloroethyl)ether	0.200	0.1		0.1	0.1									0.1	0.1	0.1	0.1	0.1
1,3-Dichlorobenzene	0.200	0.1		0.1	0.1									0.1	0.1	0.1	0.1	0.1
1,2-Dichlorobenzene	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
1,4-Dichlorobenzene	0.200	0.1		0.1	0.1									0.1	0.1	0.1	0.1	0.1
Bis(2-chloroisopropyl)ether	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
2-Methylphenol	0.300	0.15		0.15	0.15									0.15	0.15	0.15	0.15	0.15
Hexachloroethane	0.050	0.025		0.025	0.025									0.025	0.025	0.025	0.025	0.025
Nitrobenzene	0.300	0.15		0.15	0.15									0.15	0.15	0.15	0.15	0.15
4-Methylphenol	0.200	0.1		0.1	0.1									0.1	0.1	0.1	0.1	0.1
Isophorone	0.200	0.1		0.1	0.1									0.1	0.1	0.1	0.1	0.1
2-Nitrophenol	0.300	0.15		0.15	0.15									0.15	0.15	0.15	0.15	0.15
2,4-Dimethylphenol	0.300	0.15		0.15	0.15									0.15	0.15	0.15	0.15	0.15
Bis(2-chloroethoxy)methane	0.300	0.15		0.15	0.15									0.15	0.15	0.15	0.15	0.15
1,2,4-Trichlorobenzene	0.300	0.15		0.15	0.15									0.15	0.15	0.15	0.15	0.15
Naphthalene	0.050	0.025		0.025	0.025									0.025	0.025	0.025	0.025	0.025
2,4-Dichlorophenol	0.300	0.15		0.15	0.15									0.15	0.15	0.15	0.15	0.15
4-Chloroaniline	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
Hexachlorobutadiene	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
4-Chloro-3-methylphenol	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
2,4,6-Trichlorophenol	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
2,4,5-Trichlorophenol	0.200	0.1		0.1	0.1									0.1	0.1	0.1	0.1	0.1
2-Methylnaphthalene	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
2-Chloronaphthalene	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
Dimethylphthalate	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
2,6-Dinitrotoluene	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
Acenaphthylene	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
Acenaphthene	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05
2,4-Dinitrotoluene	0.200	0.1		0.1	0.1									0.1	0.1	0.1	0.1	0.1
Dibenzofuran	0.200	0.1		0.1	0.1									0.1	0.1	0.1	0.1	0.1
4-Chlorophenyl phenyl ether	0.300	0.15		0.15	0.15									0.15	0.15	0.15	0.15	0.15
Diethyl phthalate	0.200	0.1		0.1	0.1									0.1	0.1	0.1	0.1	0.1
4-Nitroaniline	0.200	0.1		0.1	0.1									0.1	0.1	0.1	0.1	0.1
Fluorene	0.100	0.05		0.05	0.05									0.05	0.05	0.05	0.05	0.05

Assessment Criteria

Constituents	Method Detection Limit (mg/kg)	BH706	BH706	BH707	BH707	BH707	BH707	BH708	BH708	BH708	WS101	WS101	WS102	WS102	WS102	WS202	WS202	WS202
		0.5 m	2 m	1 m	2.35-2.45 m	4.5 m	5.1 m	0.50-0.70 m	1.80-2.00 m	3.50-3.70 m	1 m	3.7 m	0.5 m	2.7 m	4.7 m	0.5 m	1.65 m	3.7 m
Asbestos																		
Asbestos in Soil Screen / Identification Name	N/A				**Chrysotile**													
Asbestos in Soil	N/A	Not-detected	Not-detected	Not-detected	**Detected**	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification	0.001				0.0005													
General Inorganics																		
pH	N/A	7.9	8.5	7.6	7.6			7.5	6.7	7.5	8.8	12.4	10.7	11.9	12.3	10.4	11.4	12.1
Electrical Conductivity	10.000	100	110	200	590			720	640	320	2200	27000	1400	2500	9800	1300	4400	6800
Total Cyanide	1.000	0.5	0.5	0.5	0.5			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Complex Cyanide	1.000	0.5	0.5	0.5	0.5			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Free Cyanide	1.000	0.5	0.5	0.5	0.5			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total Sulphate as SO4	50.000	480	680	850	2400			1400	1100	860	46000	86000	63000	54000	41000	63000	17000	67000
Water Soluble Sulphate (Soil Equivalent)	0.003	0.018	0.011	0.11	1.6			0.89	0.75	0.24	4.8	15	4.3	1.6	7.6	3.6	2.8	6.3
Water Soluble Sulphate as SO4 (2:1)	2.500	18	11	110	1600			890	750	240	4800	15000	4300	1600	7600	3600	2800	6300
Water Soluble SO4 (BRE SD 2:1 Leach Equivalent)	0.001	0.0091	0.0053	0.054	0.82			0.44	0.37	0.12	2.4	7.5	2.2	0.78	3.8	1.8	1.4	3.1
Sulphide	1.000	0.5	0.5	3.3	6.1			1.8	7	0.5	1.7	1.4	2.6	5.9	1.5	0.5	3.3	5.2
Water Soluble Chloride (2:1)	1.000	21	23	14	20			14	26	24	93	3700	40	570	1800	49	590	240
Ammoniacal Nitrogen as N	0.500	0.25	0.25	0.25	0.25			0.25	7.7	0.25	0.25	4.4	0.25	0.25	1.7	0.25	0.25	0.25
Organic Matter	0.100	1	0.05	1.3	1.9			1.4	2.2	0.05	0.6	0.3	0.3	0.1	0.2	0.2	11	0.2
Water Soluble Nitrate (2:1) as N	2.000	1	1	1	1			1	2.9	1	1	1	1	1	1	1	U/S	1
Water Soluble Nitrite (2:1) as N	0.020	0.01	0.01	0.01	0.01			0.01	0.01	0.01	0.01	0.22	0.01	0.01	0.01	0.01	0.01	0.01
Total Oxidised Nitrogen (TON)	5.000	2.5	2.5	2.5	2.5			2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	U/S	2.5
Total Phenols																		
Total Phenols (monohydric)	1.000	0.5	0.5	0.5	0.5			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Speciated PAHs																		
Naphthalene	0.050	0.025	0.025	0.025	0.025			0.16	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	3.2	0.025
Acenaphthylene	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Acenaphthene	0.100	0.05	0.05	0.05	0.05			0.12	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Fluorene	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Phenanthrene	0.100	0.05	0.05	0.34	0.05			1.5	0.05	0.05	0.05	0.05	0.6	0.05	0.05	0.05	2.9	0.05
Anthracene	0.100	0.05	0.05	0.05	0.05			0.33	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.37	0.05
Fluoranthene	0.100	0.05	0.05	0.77	0.05			1.5	0.05	0.05	0.05	0.05	0.37	0.05	0.05	0.05	0.59	0.05
Pyrene	0.100	0.05	0.05	0.7	0.05			1.2	0.05	0.05	0.05	0.05	0.23	0.05	0.05	0.05	0.6	0.05
Benzo(a)anthracene	0.100	0.05	0.05	0.48	0.05			0.66	0.05	0.05	0.05	0.05	0.24	0.05	0.05	0.05	0.59	0.05
Chrysene	0.050	0.025	0.025	0.49	0.025			0.63	0.025	0.025	0.025	0.025	0.29	0.025	0.025	0.025	0.85	0.025
Benzo(b)fluoranthene	0.100	0.05	0.05	0.49	0.05			0.38	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.35	0.05
Benzo(k)fluoranthene	0.100	0.05	0.05	0.28	0.05			0.49	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.38	0.05
Benzo(a)pyrene	0.100	0.05	0.05	0.42	0.05			0.41	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.35	0.05
Indeno(1,2,3-cd)pyrene	0.100	0.05	0.05	0.29	0.05			0.28	0.05	0.05	0.05	0.05	0.35	0.05	0.05	0.05	0.05	0.05
Dibenz(a,h)anthracene	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Benzo(ghi)perylene	0.050	0.025	0.025	0.4	0.025			0.42	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Coronene	0.050	0.025	0.025	0.025	0.025			0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Total PAH																		
Total WAC-17 PAHs	1.600	0.8	0.8	4.7	0.8			8.1	0.8	0.8	0.8	0.8	2.1	0.8	0.8	0.8	10	0.8
Heavy Metals / Metalloids																		
Aluminium	30.000	17000	15000	6900	13000			7800	12000	8000	16000	19000	13000	17000	15000	13000	9000	15000
Antimony	1.000	0.5	0.5	1.4	0.5			1.2	0.5	0.5	3	3.3	1.7	2.4	1.7	0.5	0.5	2.2
Arsenic	1.000	8.6	10	6.5	8.7			7.6	9.3	7.4	25	35	11	22	12	18	17	25
Barium	1.000	80	51	91	83			47	55	76	88	81	57	49	72	54	98	70
Beryllium	0.060	0.7	0.7	0.6	0.7			0.7	0.7	0.7	0.8	0.7	0.5	0.6	0.7	0.4	0.6	0.5
Boron (water soluble)	0.200	1.3	0.2	0.1	3			0.1	2.3	0.3	11	4.9	2.8	2.4	3.6	2.4	3	1.8
Cadmium	0.200	0.1	0.1	0.1	0.1			0.1	0.1	0.1	6.9	8.3	3.7	3.7	4.3	3.3	0.7	3.1
Chromium (hexavalent)	4.000	2	2	2	2			2	2	2	2	2	2	2	2	2	2	2
Chromium	1.000	22	25	19	23			21	24	31	20	28	20	17	21	17	24	17
Copper	1.000	14	42	16	14			13	15	5.1	65	100	34	36	32	15	32	18
Iron	40.000	30000	30000	17000	25000			20000	24000	25000	15000	15000	12000	7900	8300	9500	16000	14000
Lead	1.000	21	9.4	22	42			17	21	7.3	450	430	140	130	130	90	32	66
Manganese	1.000	600	340	260	260			230	270	78	190	190	170	140	160	180	230	190
Mercury (inorganic)	0.300	0.15	0.15	0.15	0.15			0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Molybdenum	0.250	0.3	0.15	0.15	0.3			0.6	0.4	0.15	0.5	2.5	0.6	1.2	0.7	0.8	1.8	1.6

Assessment Criteria

Constituents	Method Detection Limit (mg/kg)	BH706	BH706	BH707	BH707	BH707	BH707	BH708	BH708	BH708	WS101	WS101	WS102	WS102	WS102	WS202	WS202	WS202
		0.5 m	2 m	1 m	2.35-2.45 m	4.5 m	5.1 m	0.50-0.70 m	1.80-2.00 m	3.50-3.70 m	1 m	3.7 m	0.5 m	2.7 m	4.7 m	0.5 m	1.65 m	3.7 m
Nickel	1.000	18	20	15	19			19	19	15	17	12	11	10	12	19	23	31
Phosphorus	20.000	1300	950	440	680			880	590	260	400	390	380	320	360	430	910	440
Selenium	1.000	0.5	0.5	0.5	0.5			0.5	0.5	0.5	6.5	5.5	1.1	4.9	0.5	5.5	0.5	0.5
Vanadium	1.000	35	38	28	35			31	38	38	29	27	27	23	25	68	53	160
Zinc	1.000	52	39	41	51			38	53	35	290	340	180	120	120	65	51	46
Calcium	20.000	24000	79000	93000	130000			45000	64000	5200	360000	310000	310000	280000	300000	380000	230000	440000
Magnesium	20.000	3200	4700	2800	3700			2200	3000	2600	3900	3400	3400	2900	3800	3700	3100	3900
Potassium	20.000	2800	2600	1700	2800			1800	2500	3100	8000	53000	3800	5500	19000	2100	11000	8700
Monoaromatics																		
Benzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Toluene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Ethylbenzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
p & m-xylene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
o-xylene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
MTBE (Methyl Tertiary Butyl Ether)	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Petroleum Hydrocarbons																		
TPH-CWG - Aliphatic >EC5 - EC6	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC6 - EC8	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC8 - EC10	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC10 - EC12	1.000	0.5	0.5	0.5	0.5			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	4.8	0.5
TPH-CWG - Aliphatic >EC12 - EC16	2.000	1	1	1	1			1	1	1	1	1	1	1	1	1	6.5	2.2
TPH-CWG - Aliphatic >EC16 - EC21	8.000	4	4	4	4			4	4	4	4	4	4	4	4	4	11	4
TPH-CWG - Aliphatic >EC21 - EC35	8.000	4	4	4	4			4	4	4	30	4	4	4	4	8.6	30	11
TPH-CWG - Aliphatic (EC5 - EC35)	10.000	5	5	5	5			5	5	5	30	5	5	5	5	5	52	14
TPH-CWG - Aromatic >EC5 - EC7	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aromatic >EC7 - EC8	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aromatic >EC8 - EC10	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aromatic >EC10 - EC12	1.000	0.5	0.5	0.5	0.5			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	3.9	0.5
TPH-CWG - Aromatic >EC12 - EC16	2.000	2.7	1	1	8.4			1	1	1	1	1	1	1	1	1	13	1
TPH-CWG - Aromatic >EC16 - EC21	10.000	5	5	5	31			5	5	5	5	5	5	5	5	5	19	5
TPH-CWG - Aromatic >EC21 - EC35	10.000	5	5	5	5			5	5	5	5	5	5	5	5	5	22	14
TPH-CWG - Aromatic (EC5 - EC35)	10.000	5	5	5	40			5	5	5	5	5	5	5	5	5	58	14
VOCs																		
Chloromethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Chloroethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bromomethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Vinyl Chloride	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trichlorofluoromethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1-Dichloroethene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,2-Trichloro 1,2,2-Trifluoroethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cis-1,2-dichloroethene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
MTBE (Methyl Tertiary Butyl Ether)	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1-Dichloroethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
2,2-Dichloropropane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trichloromethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,1-Trichloroethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dichloroethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1-Dichloropropene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trans-1,2-dichloroethene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Benzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Tetrachloromethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dichloropropane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trichloroethene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Dibromomethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bromodichloromethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cis-1,3-dichloropropene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trans-1,3-dichloropropene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Toluene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,2-Trichloroethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,3-Dichloropropane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Dibromochloromethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Tetrachloroethene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dibromoethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Chlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,1,2-Tetrachloroethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Ethylbenzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005

Assessment Criteria

Constituents	Method Detection Limit (mg/kg)	BH706	BH706	BH707	BH707	BH707	BH707	BH708	BH708	BH708	WS101	WS101	WS102	WS102	WS102	WS202	WS202	WS202
		0.5 m	2 m	1 m	2.35-2.45 m	4.5 m	5.1 m	0.50-0.70 m	1.80-2.00 m	3.50-3.70 m	1 m	3.7 m	0.5 m	2.7 m	4.7 m	0.5 m	1.65 m	3.7 m
p & m-Xylene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Styrene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Tribromomethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
o-Xylene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,2,2-Tetrachloroethane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Isopropylbenzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bromobenzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
n-Propylbenzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
2-Chlorotoluene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
4-Chlorotoluene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,3,5-Trimethylbenzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
tert-Butylbenzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2,4-Trimethylbenzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
sec-Butylbenzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,3-Dichlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
p-Isopropyltoluene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dichlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,4-Dichlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Butylbenzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dibromo-3-chloropropane	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2,4-Trichlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Hexachlorobutadiene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2,3-Trichlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
SVOCs																		
Aniline	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Phenol	0.200	0.1	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2-Chlorophenol	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Bis(2-chloroethyl)ether	0.200	0.1	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1,3-Dichlorobenzene	0.200	0.1	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1,2-Dichlorobenzene	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
1,4-Dichlorobenzene	0.200	0.1	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bis(2-chloroisopropyl)ether	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2-Methylphenol	0.300	0.15	0.15	0.15	0.15			0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Hexachloroethane	0.050	0.025	0.025	0.025	0.025			0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Nitrobenzene	0.300	0.15	0.15	0.15	0.15			0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
4-Methylphenol	0.200	0.1	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Isophorone	0.200	0.1	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2-Nitrophenol	0.300	0.15	0.15	0.15	0.15			0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
2,4-Dimethylphenol	0.300	0.15	0.15	0.15	0.15			0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Bis(2-chloroethoxy)methane	0.300	0.15	0.15	0.15	0.15			0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
1,2,4-Trichlorobenzene	0.300	0.15	0.15	0.15	0.15			0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Naphthalene	0.050	0.025	0.025	0.025	0.025			0.16	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	3.2	0.025
2,4-Dichlorophenol	0.300	0.15	0.15	0.15	0.15			0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
4-Chloroaniline	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Hexachlorobutadiene	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
4-Chloro-3-methylphenol	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2,4,6-Trichlorophenol	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2,4,5-Trichlorophenol	0.200	0.1	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2-Methylnaphthalene	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	4.6	0.05
2-Chloronaphthalene	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Dimethylphthalate	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2,6-Dinitrotoluene	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Acenaphthylene	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Acenaphthene	0.100	0.05	0.05	0.05	0.05			0.12	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2,4-Dinitrotoluene	0.200	0.1	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dibenzofuran	0.200	0.1	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.5	0.1
4-Chlorophenyl phenyl ether	0.300	0.15	0.15	0.15	0.15			0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Diethyl phthalate	0.200	0.1	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
4-Nitroaniline	0.200	0.1	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Fluorene	0.100	0.05	0.05	0.05	0.05			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

Assessment Criteria

Constituents	Method Detection Limit (mg/kg)	WS202	WS203	WS203	WS204	WS204	WS204	WS204	TP201	TP301	TP301	TP302
		11.7 m	1 m	2.25 m	0.5 m	1.9 m	3.9 m	7.45 m	1 m	0.5 m	2 m	1 m
Asbestos												
Asbestos in Soil Screen / Identification Name	N/A			**Chrysotile**								
Asbestos in Soil	N/A	Not-detected	Not-detected	**Detected**	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification	0.001			0.08								
General Inorganics												
pH	N/A	10.5	8.1	12.7	10.9	11.5	12.2	12.1	10.9	10.8	11.5	10.9
Electrical Conductivity	10.000	3200	1800	14000	1300	1600	26000	33000	590	260	1000	300
Total Cyanide	1.000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Complex Cyanide	1.000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Free Cyanide	1.000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total Sulphate as SO4	50.000	10000	32000	56000	94000	54000	95000	70000	5600	1500	12000	2500
Water Soluble Sulphate (Soil Equivalent)	0.003	8.5	5	3.3	5.6	0.14	19	15	2	0.43	0.31	0.68
Water Soluble Sulphate as SO4 (2:1)	2.500	8500	5000	3300	5600	140	19000	15000	2000	430	310	680
Water Soluble SO4 (BRE SD 2:1 Leach Equivalent)	0.001	4.3	2.5	1.6	2.8	0.068	9.6	7.5	1	0.22	0.16	0.34
Sulphide	1.000	360	0.5	0.5	19	20	26	1	2.4	0.5	1.7	0.5
Water Soluble Chloride (2:1)	1.000	4200	98	1400	55	84	790	20000	16	15	220	11
Ammoniacal Nitrogen as N	0.500	43	0.25	8.2	0.25	0.25	0.25	4.1	0.25	0.25	0.25	0.25
Organic Matter	0.100	4.7	0.3	0.4	0.1	0.2	0.1	0.2	0.9	0.3	2.1	0.6
Water Soluble Nitrate (2:1) as N	2.000	1	1	1	1	1	1	1	1	1	7.5	1
Water Soluble Nitrite (2:1) as N	0.020	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	16	0.01
Total Oxidised Nitrogen (TON)	5.000	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	24	2.5
Total Phenols												
Total Phenols (monohydric)	1.000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Speciated PAHs												
Naphthalene	0.050	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.1
Acenaphthylene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.56	0.05	0.05	0.05
Acenaphthene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.48	0.05	0.05	0.05
Fluorene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.46	0.05	0.05	0.05
Phenanthrene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	12	0.05	0.42	0.59
Anthracene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1.4	0.05	0.05	0.05
Fluoranthene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	38	0.05	0.66	1.2
Pyrene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	22	0.05	0.42	0.64
Benzo(a)anthracene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	11	0.05	0.19	0.52
Chrysene	0.050	0.025	0.025	0.025	0.025	0.025	0.025	0.025	12	0.025	0.27	0.7
Benzo(b)fluoranthene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	11	0.05	0.05	1.1
Benzo(k)fluoranthene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	7.2	0.05	0.05	1
Benzo(a)pyrene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	5.5	0.05	0.05	0.05
Indeno(1,2,3-cd)pyrene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	16	0.05	0.05	0.68
Dibenz(a,h)anthracene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	3.3	0.05	0.05	0.05
Benzo(ghi)perylene	0.050	0.025	0.025	0.025	0.025	0.025	0.025	0.025	15	0.025	0.025	0.7
Coronene	0.050	0.025	0.025	0.025	0.025	0.025	0.025	0.025	4.7	0.025	0.025	0.025
Total PAH												
Total WAC-17 PAHs	1.600	0.8	0.8	0.8	0.8	0.8	0.8	0.8	160	0.8	2	7.2
Heavy Metals / Metalloids												
Aluminium	30.000	22000	15000	14000	9100	15000	9000	14000	18000	2900	9400	11000
Antimony	1.000	0.5	2	2.7	3.1	0.5	0.5	0.5	15	0.5	5.8	0.5
Arsenic	1.000	22	3.6	5.3	66	43	54	19	11	4	16	11
Barium	1.000	21	76	59	47	35	25	51	750	24	260	44
Beryllium	0.060	2	0.4	0.3	0.3	0.5	0.2	0.5	1	0.05	0.5	0.5
Boron (water soluble)	0.200	5.1	3.2	2.1	1.8	1.8	2	2.9	1.6	2.6	3.1	1.6
Cadmium	0.200	0.1	2.7	1.8	3.5	3.7	3	3.2	0.5	0.3	6.1	0.3
Chromium (hexavalent)	4.000	2	2	2	2	2	2	2	2	2	2	2
Chromium	1.000	38	25	23	13	17	13	24	36	9	23	20
Copper	1.000	11	14	11	28	14	16	12	30	9.9	1100	19
Iron	40.000	60000	13000	9700	18000	13000	15000	9700	25000	5000	19000	21000
Lead	1.000	20	41	40	180	130	120	86	770	12	150	30
Manganese	1.000	230	220	210	170	160	140	170	240	210	270	340
Mercury (inorganic)	0.300	0.15	0.15	0.15	0.15	0.4	0.15	0.15	0.15	0.15	0.15	0.15
Molybdenum	0.250	0.8	1.8	2.8	1.1	1.5	1.4	4.6	1	0.15	1.2	0.15

Assessment Criteria

Constituents	Method Detection Limit (mg/kg)	WS202	WS203	WS203	WS204	WS204	WS204	WS204	TP201	TP301	TP301	TP302
		11.7 m	1 m	2.25 m	0.5 m	1.9 m	3.9 m	7.45 m	1 m	0.5 m	2 m	1 m
Nickel	1.000	46	31	24	19	15	19	10	27	5.9	19	19
Phosphorus	20.000	730	450	450	390	400	350	360	610	440	430	610
Selenium	1.000	0.5	3.1	1.2	0.5	7.5	5.6	9.1	0.5	0.5	0.5	0.5
Vanadium	1.000	75	120	110	80	130	100	29	74	11	32	35
Zinc	1.000	88	36	74	80	130	53	51	450	32	530	48
Calcium	20.000	43000	320000	390000	330000	450000	430000	330000	140000	450000	340000	220000
Magnesium	20.000	7200	4800	4200	3400	3500	2900	3500	3600	2000	2400	15000
Potassium	20.000	8000	8100	13000	1300	2000	38000	36000	9100	900	2100	2000
Monoaromatics												
Benzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Toluene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Ethylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
p & m-xylene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
o-xylene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
MTBE (Methyl Tertiary Butyl Ether)	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Petroleum Hydrocarbons												
TPH-CWG - Aliphatic >EC5 - EC6	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC6 - EC8	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC8 - EC10	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aliphatic >EC10 - EC12	1.000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
TPH-CWG - Aliphatic >EC12 - EC16	2.000	1	1	1	1	1	1	1	1	1	1	1
TPH-CWG - Aliphatic >EC16 - EC21	8.000	4	4	14	4	4	4	4	4	4	27	9.6
TPH-CWG - Aliphatic >EC21 - EC35	8.000	24	4	220	4	4	29	19	40	4	130	60
TPH-CWG - Aliphatic (EC5 - EC35)	10.000	24	5	230	5	5	29	19	40	5	160	70
TPH-CWG - Aromatic >EC5 - EC7	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aromatic >EC7 - EC8	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aromatic >EC8 - EC10	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH-CWG - Aromatic >EC10 - EC12	1.000	2.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
TPH-CWG - Aromatic >EC12 - EC16	2.000	3.4	1	1	1	1	1	1	11	1	1	1
TPH-CWG - Aromatic >EC16 - EC21	10.000	5	5	5	5	5	5	5	120	5	15	5
TPH-CWG - Aromatic >EC21 - EC35	10.000	13	5	5	5	5	5	5	290	5	75	45
TPH-CWG - Aromatic (EC5 - EC35)	10.000	19	5	5	5	5	5	5	420	5	90	45
VOCs												
Chloromethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Chloroethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bromomethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Vinyl Chloride	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trichlorofluoromethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1-Dichloroethene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,2-Trichloro 1,2,2-Trifluoroethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cis-1,2-dichloroethene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
MTBE (Methyl Tertiary Butyl Ether)	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1-Dichloroethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
2,2-Dichloropropane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trichloromethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,1-Trichloroethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dichloroethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1-Dichloropropene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trans-1,2-dichloroethene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Benzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Tetrachloromethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dichloropropane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trichloroethene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Dibromomethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bromodichloromethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Cis-1,3-dichloropropene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Trans-1,3-dichloropropene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Toluene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,2-Trichloroethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,3-Dichloropropane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Dibromochloromethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Tetrachloroethene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dibromoethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Chlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,1,2-Tetrachloroethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Ethylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005

Assessment Criteria

Constituents	Method Detection Limit (mg/kg)	WS202	WS203	WS203	WS204	WS204	WS204	WS204	TP201	TP301	TP301	TP302
		11.7 m	1 m	2.25 m	0.5 m	1.9 m	3.9 m	7.45 m	1 m	0.5 m	2 m	1 m
p & m-Xylene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Styrene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Tribromomethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
o-Xylene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,1,2,2-Tetrachloroethane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Isopropylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Bromobenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
n-Propylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
2-Chlorotoluene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
4-Chlorotoluene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,3,5-Trimethylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
tert-Butylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2,4-Trimethylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
sec-Butylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,3-Dichlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
p-Isopropyltoluene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dichlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,4-Dichlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Butylbenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2-Dibromo-3-chloropropane	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2,4-Trichlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Hexachlorobutadiene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1,2,3-Trichlorobenzene	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
SVOCs												
Aniline	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Phenol	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2-Chlorophenol	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Bis(2-chloroethyl)ether	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1,3-Dichlorobenzene	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1,2-Dichlorobenzene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
1,4-Dichlorobenzene	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bis(2-chloroisopropyl)ether	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2-Methylphenol	0.300	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Hexachloroethane	0.050	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Nitrobenzene	0.300	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
4-Methylphenol	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Isophorone	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2-Nitrophenol	0.300	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
2,4-Dimethylphenol	0.300	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Bis(2-chloroethoxy)methane	0.300	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
1,2,4-Trichlorobenzene	0.300	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Naphthalene	0.050	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.1
2,4-Dichlorophenol	0.300	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
4-Chloroaniline	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Hexachlorobutadiene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
4-Chloro-3-methylphenol	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2,4,6-Trichlorophenol	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2,4,5-Trichlorophenol	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2-Methylnaphthalene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2-Chloronaphthalene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Dimethylphthalate	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
2,6-Dinitrotoluene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Acenaphthylene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.56	0.05	0.05	0.05
Acenaphthene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.48	0.05	0.05	0.05
2,4-Dinitrotoluene	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dibenzofuran	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.7	0.1	0.1	0.1
4-Chlorophenyl phenyl ether	0.300	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Diethyl phthalate	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
4-Nitroaniline	0.200	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Fluorene	0.100	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.46	0.05	0.05	0.05

E.4. Leachate, Perched Water and Groundwater Screening (2015) (Controlled Waters)

Values in italics are method detection limits	UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
Leachate	UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
Exceedance of both DWS and EQS	UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
Exceedance of EQS	UK Standard for the Protection of Fisheries
Exceedance of DWS	UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
	UK Drinking Water Standard (Withdrawn)
	WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Drinking Water Screening Value (DWS)	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances	465834	470638	470679	475317	479874	465835	470640	475321	479877	465166	470680	475318	479870	465838	470707	475320	479871	461326	465169	470709	475322	479875
Sample Reference									BH101	BH101	Duplicate B (Dup of BH101)	BH101	BH101	WS101	WS101	WS101	WS101	WS102	WS102	WS102	WS102	BH201	BH201	BH201	BH201	BH202	BH202	BH202	BH202	BH202
Groundwater Body									Chalk	Chalk	Chalk	Chalk	Chalk	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Chalk	Chalk	Chalk	Chalk	Chalk
Depth (m)									5.3	4.0	None Supplied	5.0	4.9	3.31	3.7	3.66	3.6	3.3	3.5	4.0	3.5	3.8	3.8	3.9	3.90	3.8	3.7	3.9	3.7	3.7
Date Sampled									15/07/2015	29/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	29/07/2015	12/08/2015	27/08/2015	14/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	29/07/2015	12/08/2015	27/08/2015	02/07/2015	14/07/2015	29/07/2015	12/08/2015	27/08/2015
Analytical Parameter (Water Analysis)																														
General Inorganics																														
pH	pH Units	N/A	6.5 - 9.5	6.0-9.0	74	5.9	13.3	0	7.2	6.7	7.3	6.8	7.1	8.9	8.2	8	7.7	12.7	12.8	12.8	12.7	11.3	11.4	11.7	11.4	7.6	8.2	7.8	7.4	7.1
Electrical Conductivity	µS/cm	10	2500	No EQS	74	10	120000	38	6000	13000	13000	17000	18000	120000	97000	110000	110000	17000	19000	34000	25000	3100	3600	4400	2800	1900	2100	11000	14000	14000
Total Cyanide	µg/l	10	50	1	74	13	13	1	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
Complex Cyanide	µg/l	10	50	1	74	13	13	1	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
Free Cyanide	µg/l	10	50	1	74	0	0	0	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
Sulphate as SO4	µg/l	45	250000	400000	74	166	17000000	46	327000	461000	487000	532000	680000	9820000	10000000	11000000	10000000	455000	2310000	1530000	968000	383000	347000	429000	342000	72500	143000	452000	430000	565000
Sulphide	µg/l	5	No DWS	No EQS	74	5.8	45000	0	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	77	5.8	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*
Chloride	mg/l	0.15	250	250	74	0.45	29000	38	1900	5000	5000	7000	7100	28000	29000	28000	23000	1900	2800	3200	2300	260	330	460	230	470	500	4200	4700	4400
Ammoniacal Nitrogen as N	µg/l	15	390	780	74	23	450000	36	3600	*< 15*	1700	2800	3900	410000	400000	450000	390000	1700	3900	5400	3200	690	190	2700	1300	150	370	4400	4500	4200
Nitrate as N	mg/l	0.01	-	No EQS	74	0.02	34.7	0	0.15	0.36	0.46	0.09	0.73	1.07	0.94	0.8	1.36	0.36	0.15	0.14	0.13	1.14	1.18	0.83	1.3	6.64	4.68	0.91	0.41	0.28
Nitrate as NO3	mg/l	0.05	50	No EQS	74	0.1	154	22	0.68	1.61	2.03	0.42	3.25	4.73	4.16	3.53	6.02	1.61	0.68	0.62	0.58	5.04	5.25	3.69	5.76	29.4	20.7	4.05	1.82	1.26
Nitrite as N	µg/l	1	-	No EQS	74	1	1100	0	2	4	3	1	3	21	23	11	14	260	290	300	250	450	950	590	190	92	200	220	14	12
Nitrite as NO2	µg/l	5	500	No EQS	74	6.6	3500	21	6.6	13	9.9	*< 5.0*	9.9	69	76	36	46	860	940	970	830	1500	3100	1900	640	300	640	740	46	39
Chemical Oxygen Demand (Total)	mg/l	2	No DWS	No EQS	74	2	5000	0	98	3200	130	69	54	2200	5000	1800	730	86	200	97	84	62	64	80	64	27	12	99	140	37
Biochemical Oxygen Demand	mg/l	1	No DWS	No EQS	74	1.2	130	0	50	33	33	4.4	1.8	8.2	130	24	4.1	*< 1.0*	3.3	1.4	1.2	2.8	7.5	9.7	19	3	1.7	22	*< 1.0*	1.6
Total Oxidised Nitrogen	mg/l	0.3	No DWS	No EQS	74	0.3	35	0	*< 0.3*	0.4	0.5	*< 0.3*	0.7	1.1	1	0.8	1.4	0.6	0.4	0.4	0.4	1.6	2.1	1.4	1.5	6.7	4.9	1.1	0.4	*< 0.3*
Total Phenols																														
Total Phenols (monohydric)	µg/l	10	No DWS	7.7	74	110	1900	11	110	*< 10*	280	*< 10*	*< 10*	*< 10*	1000	*< 10*	*< 10*	*< 10*	120	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
PAHs																														
Naphthalene	µg/l	0.01	No DWS	1.2	87	1.4	1.4	1	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Acenaphthylene	µg/l	0.01	No DWS	1.2	87	1.1	1.1	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Acenaphthene	µg/l	0.01	No DWS	1.2	87	0.53	0.53	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Fluorene	µg/l	0.01	No DWS	1.2	87	0.47	0.47	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Phenanthrene	µg/l	0.01	No DWS	1.2	87	0.68	0.68	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Anthracene	µg/l	0.01	No DWS	0.1	87	0.16	0.16	1	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Fluoranthene	µg/l	0.01	No DWS	0.1	87	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Pyrene	µg/l	0.01	No DWS	1.2	87	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[a]anthracene	µg/l	0.01	No DWS	1.2	87	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Chrysene	µg/l	0.01	No DWS	1.2	87	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[b]fluoranthene	µg/l	0.01	No DWS	No EQS	87	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[k]fluoranthene	µg/l	0.01	No DWS	No EQS	87	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[a]pyrene	µg/l	0.01	0.01	0.05	87	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Indeno[1,2,3-cd]pyrene	µg/l	0.01	No DWS	No EQS	87	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Dibenzo[a,h]anthracene	µg/l	0.01	No DWS	1.2	87	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[g,h,i]perylene	µg/l	0.01	No DWS	No EQS	87	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Coronene	µg/l	0.01	No DWS	No EQS	63	0	0	0		*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*		*< 0.01*	*< 0.01*	*< 0.01*		*< 0.01*	*< 0.01*	*< 0.01*		*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*		*< 0.01*	*< 0.01*	*< 0.01*
Sum of benzo(b)fluoranthene and be	µg/l	SUM	No DWS	0.03	87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum of indeno(1,2,3-cd)pyrene and b	µg/l	SUM	No DWS	0.002	87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total PAHs																														
Total EPA-16 PAHs	µg/l	0.2	No DWS	No EQS	87	4.3	4.3	0	*< 0.20*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.20*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.20*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.20*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.20*	*< 0.2*	*< 0.2*	*< 0.2*
Total WAC-17 PAHs	µg/l	0.2	No DWS	No EQS	63	0	0	0		*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*		*< 0.2*	*< 0.2*	*< 0.2*		*< 0.2*	*< 0.2*	*< 0.2*		*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*		*< 0.2*	*< 0.2*	*< 0.2*
Heavy Metals / Metalloids																														
Aluminium (dissolved)	mg/l	0.001	0.2	No EQS	74	0.0014	25.7	13	0.003	0.0014	0.0015	0.0026	0.0076	0.0563	*< 0.0010*	0.0433	0.0495	18	25.7	20.2	20.8	0.474	0.229	0.432	0.488	*< 0.0010*	0.0095	0.002	0.008	0.0033
Antimony (dissolved)	µg/l	0.4	5	No EQS	74	0.8	12	5	2	1.4	1.2	1	1	2.4	*< 0.4*	*< 0.4*	0.8	5.3	2.6	*< 0.4*	2.4	11	9.5	12	7.2	3.2	2.3	1.3	1	0.9
Arsenic (dissolved)	µg/l	0.15	10	25	87	0.18	55.3	20	0.72	5.57	7.68	0.68	0.61	55.3	*< 0.15*	29.2	5.6	35.9	34.3	38.3	20.4	41.3	28.5	53.9	36.7	0.5	0.69	1.31	0.76	0.7
Barium (dissolved)	µg/l	0.06	700	No EQS	87	0.28	440	0	110	130	140	130	120	37	3.7	43	9.1	21	22	17	24	8.3	7.8	11	9	35	38	180	200	170
Beryllium (dissolved)	µg/l	0.1	No DWS	No EQS	87	0.1	0.3	0	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	0.1	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	0.1	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*
Boron (dissolved)	µg/l	10	1000	7000	87	11	940	0	220	540	560	860	940	920	710	890	920	19	11	32	23	110	99	92	100	98	97	450	620	620
Cadmium (dissolved)	µg/l	0.02	5	0.2	87	0.02	1.8	7	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	0.41	*< 0.02*	1.8	0.39	*< 0.02*	0.04	*< 0.02*	0.07	*< 0.02*	0.05	0.1	0.1	0.02	0.08	*< 0.02*	*< 0.02*	*< 0.02*
Chromium (hexavalent)	µg/l	5	No DWS	0.6	63	2000	2000	1	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*				*< 5.0*			*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*
Chromium (dissolved)	µg/l	0.2	50	15	87	0.2	2100	13	*< 0.2*	*< 0.2*	0.3	1.2	*< 0.2*	15	7.4	17	11	55	24	18	14	4.1	4.7	4.5	2.9	0.3	3.8	0.3	0.9	*< 0.2*
Copper (dissolved)	µg/l	0.5	2000	5	87	0.6	66	33	1.5	0.9	1.3	4	4.3	15	1.8	12	4.2	62	52	66	39	25	8.8	21	24	13	3.3	3.2	2.2	4.2
Iron (dissolved)	mg/l	0.004	0.2	1	74	0.006	6.8	22	3.4	6.8	5.3	*< 0.004*	0.014	0.14	0.29	0.078	0.18	0.014	0.57	0.039	0.59	0.092	0.29	0.073	0.12	0.07	0.04	3.1	0.38	0.062
Lead (dissolved)	µg/l	0.2	10	7.2	87	0.2	35	10	0.2	*< 0.2*	*< 0.2*	0.3	0.3	6.7	*< 0.2*	1.6	11	6.5	28	9	35	1.4	3.2	2.4	7.2	0.3	2.6	0.4	0.2	0.3
Manganese (dissolved)	µg/l	0.05	50	No EQS	74	0.17	1800	32	800	230	290	250	230	48	16	89	53	0.58	0.7	0.38	0.43	1.5	2.2	1.6	5.3	70	120	470	860	910
Mercury (dissolved)	µg/l	0.05	1	0.05	87	0.06	8.83	39	*< 0.05*	0.68	0.64	0.94	*< 0.05*	0.37	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	1.44	*< 0.05*	0.65	1.08	0.24	0.71	0.2	*< 0.05*	0.12	*< 0.05*	0.24	*< 0.05*
Molybdenum (dissolved)	µg/l	0.05	70	No EQS	74	0.22	1100	10	18	3.3	2.3	1.8	2.4	9.2	0.22	4.6	1.2	25	77	100	59	18	11	33	19	2.6	4	8.2	2.8	2.9
Nickel (dissolved)	µg/l	0.5	20	20	87	0.4	1700	14	15	21	21	12	6.8	26	*< 0.5*	19	6.6	2.1	4.5	7	2.9	3.5	7.3	17	8.8	9.8	7	13	1.9	2
Selenium (dissolved)	µg/l	0.6	10	No EQS	87	1.5	820	38	94	41	43	65	71	36	*< 0.6*	18	4.7	43	110	47	120	11	8.9	20	8.1	6.4	18	39	49	56
Vanadium (dissolved)	µg/l	0.2	No DWS	100	85	0.2	460	9	0.3	0.6	0.7	0.9	0.9	37	2.2	34	16	50	80	73	55	230	120	460	200	1.1	1.1	0.6	0.9	0.6
Zinc (dissolved)	µg/l	0.5	No DWS	40	87	0.5	150	2	2.5	2.9	2.1	1.9	5	4.3	20	1.9	3	6	7.5	1.8	6.8	*< 0.5*	2	*< 0.5*	2.9	150	98	14	*< 0.5*	1.3
Calcium (dissolved)	mg/l	0.012	No DWS	No EQS	73	0.19	500	0	150	320	340	270	310	220	130	230	230	6.1	19	6.6	21	7.4	8.6	8.1	7.9	130	160	320	310	380
Magnesium (dissolved)	mg/l	0.005	No DWS	No EQS	74	0.31	520	0	78	280	280	270	420	280	300	270	300	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	0.31	*< 0.005*	*< 0.005*	*< 0.005*	22	24	210	190	240
Potassium (dissolved)	mg/l	0.025	No DWS	No EQS	74	0.099	21000	0	44	160	240	110	100	3100	1500	21000	18000	3200	8200	6800	4200	580	570	880	750	9.3	17	130	81	64
Phosphorus (total)	µg/l	20	No DWS	No EQS	74	21	38000	0	24	21	23	97	*< 20*	19000	22000	34000	38000	860	810	670	73	1100	5200	15000	700	400	120	180	470	*< 20*
Monoaromatics																														
Benzene	µg/l	1	1	8	87	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Toluene	µg/l	1	No DWS	40	87	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Ethyl benzene	µg/l	1	No DWS	20	87	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
m/p-Xylene	µg/l	1	No DWS	No EQS	87	6.6	6.6	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
o-Xylene	µg/l	1	No DWS	No EQS	87	2.1	2.1	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Standard for the Protection of Fisheries
UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
UK Drinking Water Standard (Withdrawn)
WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Drinking Water Screening Value (DWS)	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances	465834	470638	470679	475317	479874	465835	470640	475321	479877	465166	470680	475318	479870	465838	470707	475320	479871	461326	465169	470709	475322	479875
Sample Reference									BH101	BH101	Duplicate B (Dup of BH101)	BH101	BH101	WS101	WS101	WS101	WS101	WS102	WS102	WS102	WS102	BH201	BH201	BH201	BH201	BH202	BH202	BH202	BH202	BH202
Groundwater Body									Chalk	Chalk	Chalk	Chalk	Chalk	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Chalk	Chalk	Chalk	Chalk	Chalk
Depth (m)									5.3	4.0	None Supplied	5.0	4.9	3.31	3.7	3.66	3.6	3.3	3.5	4.0	3.5	3.8	3.8	3.9	3.90	3.8	3.7	3.9	3.7	3.7
Date Sampled									15/07/2015	29/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	29/07/2015	12/08/2015	27/08/2015	14/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	29/07/2015	12/08/2015	27/08/2015	02/07/2015	14/07/2015	29/07/2015	12/08/2015	27/08/2015
Analytical Parameter (Water Analysis)																														
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	No DWS	No EQS	87	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Sum of xylenes	µg/l	SUM	No DWS	30	87	0	8.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TPH CWG																														
TPH-CWG - Aliphatic >C5 - C6	µg/l	10	10	No EQS	87	0	0	0	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C6 - C8	µg/l	10	10	No EQS	87	0	0	0	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C8 - C10	µg/l	10	10	No EQS	87	0	0	0	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	10	No EQS	87	18	18	1	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	10	No EQS	87	12	170	2	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	12	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	10	No EQS	87	48	650	5	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	230	*< 10*	*< 10*	*< 10*	520	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	48	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	10	No EQS	87	110	1300	5	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	980	*< 10*	*< 10*	*< 10*	1300	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	110	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	10	No EQS	87	160	2000	5	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	1200	*< 10*	*< 10*	*< 10*	1800	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	160	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C5 - C7	µg/l	10	10	No EQS	87	0	0	0	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C7 - C8	µg/l	10	10	No EQS	87	0	0	0	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C8 - C10	µg/l	10	10	No EQS	87	0	0	0	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C10 - C12	µg/l	10	10	No EQS	87	84	200	2	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C12 - C16	µg/l	10	10	No EQS	87	230	520	2	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C16 - C21	µg/l	10	10	No EQS	87	110	1500	2	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C21 - C35	µg/l	10	10	No EQS	87	0	0	0	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	10	No EQS	87	420	2300	2	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
VOCs																														
Chloromethane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Chloroethane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Bromomethane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Vinyl Chloride	µg/l	1	0.5	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Trichlorofluoromethane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1-Dichloroethene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
cis 1,2-Dichloroethene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1-Dichloroethane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
2,2-Dichloropropane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Trichloromethane	µg/l	1	No DWS	2.5	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,1-Trichloroethane	µg/l	1	No DWS	100	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dichloroethane	µg/l	1	3	10	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1-Dichloropropene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
trans 1,2-Dichloroethene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Benzene	µg/l	1	1	8	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Tetrachloromethane	µg/l	1	3	12	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dichloropropane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Trichloroethene	µg/l	1	10	10	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Dibromomethane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Bromodichloromethane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
cis 1,3-Dichloropropene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
trans 1,3-Dichloropropene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Toluene	µg/l	1	No DWS	40	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,2-Trichloroethane	µg/l	1	No DWS	300	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,3-Dichloropropane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Dibromochloromethane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Tetrachloroethene	µg/l	1	10	10	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dibromoethane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Chlorobenzene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,1,2-Tetrachloroethane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Ethylbenzene	µg/l	1	No DWS	20	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
m and p-Xylene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Styrene	µg/l	1	No DWS	50	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Tribromomethane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
o-Xylene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,2,2-Tetrachloroethane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
iso-Propylbenzene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Bromobenzene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Propylbenzene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
2-Chlorotoluene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
4-Chlorotoluene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,3,5-Trimethylbenzene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
tert-Butylbenzene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2,4-Trimethylbenzene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
sec-Butylbenzene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,3-Dichlorobenzene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
p-Isopropyltoluene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dichlorobenzene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,4-Dichlorobenzene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
n-Butylbenzene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dibromo-3-chloropropane	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2,4-Trichlorobenzene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Hexachlorobutadiene	µg/l	1	No DWS	0.1	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

UK Standards for the Protection of Surface Water Quality (Water Framework Directive)
UK Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Non-Statutory EQSs for the Protection of Aquatic Life (Surface Water)
UK Standard for the Protection of Fisheries
UK Standard for Ensuring the Quality of Drinking Water Intended for Human Consumption (Water Supply (Water Quality) Regulations)
UK Drinking Water Standard (Withdrawn)
WHO Drinking Water Guideline

Lab Sample Number	Units	Limit of detection	Drinking Water Screening Value (DWS)	Surface Water Screening Value (EQS)	No Samples	Minimum Value	Maximum Value	No. Exceedances	465834	470638	470679	475317	479874	465835	470640	475321	479877	465166	470680	475318	479870	465838	470707	475320	479871	461326	465169	470709	475322	479875
Sample Reference									BH101	BH101	Duplicate B (Dup of BH101)	BH101	BH101	WS101	WS101	WS101	WS101	WS102	WS102	WS102	WS102	BH201	BH201	BH201	BH201	BH202	BH202	BH202	BH202	BH202
Groundwater Body									Chalk	Chalk	Chalk	Chalk	Chalk	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Chalk	Chalk	Chalk	Chalk	Chalk
Depth (m)									5.3	4.0	None Supplied	5.0	4.9	3.31	3.7	3.66	3.6	3.3	3.5	4.0	3.5	3.8	3.8	3.9	3.90	3.8	3.7	3.9	3.7	3.7
Date Sampled									15/07/2015	29/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	29/07/2015	12/08/2015	27/08/2015	14/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	29/07/2015	12/08/2015	27/08/2015	02/07/2015	14/07/2015	29/07/2015	12/08/2015	27/08/2015
Analytical Parameter (Water Analysis)																														
1,2,3-Trichlorobenzene	µg/l	1	No DWS	No EQS	74	0	0	0	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
sVOCs																														
Aniline	µg/l	0.05	No DWS	No EQS	74	0.4	19	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	0.4	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Phenol	µg/l	0.05	No DWS	7.7	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Chlorophenol	µg/l	0.05	No DWS	50	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
bis(2-Chloroethyl)ether	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,3-Dichlorobenzene	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,2-Dichlorobenzene	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,4-Dichlorobenzene	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
bis(2-Chloroisopropyl)ether	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Methylphenol	µg/l	0.05	No DWS	100	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Hexachloroethane	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Nitrobenzene	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Methylphenol	µg/l	0.05	No DWS	100	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Isophorone	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Nitrophenol	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,4-Dimethylphenol	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
bis(2-Chloroethoxy)methane	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,2,4-Trichlorobenzene	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Naphthalene	µg/l	0.01	No DWS	1.2	74	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
2,4-Dichlorophenol	µg/l	0.05	No DWS	20	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Chloroaniline	µg/l	0.05	No DWS	No EQS	74	0.09	0.09	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Hexachlorobutadiene	µg/l	0.05	No DWS	0.1	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Chloro-3-methylphenol	µg/l	0.05	No DWS	40	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,4,6-Trichlorophenol	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,4,5-Trichlorophenol	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Methylnaphthalene	µg/l	0.05	No DWS	No EQS	74	0.17	0.17	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	0.17	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Chloronaphthalene	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Dimethylphthalate	µg/l	0.05	No DWS	800	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,6-Dinitrotoluene	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Acenaphthylene	µg/l	0.01	No DWS	1.2	74	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Acenaphthene	µg/l	0.01	No DWS	1.2	74	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
2,4-Dinitrotoluene	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Dibenzofuran	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Chlorophenyl-phenylether	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Diethylphthalate	µg/l	0.05	No DWS	200	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Nitroaniline	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Fluorene	µg/l	0.01	No DWS	1.2	74	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Azobenzene	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Bromophenyl-phenylether	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Hexachlorobenzene	µg/l	0.02	No DWS	0.01	74	0	0	0	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
Phenanthrene	µg/l	0.01	No DWS	1.2	74	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Anthracene	µg/l	0.01	No DWS	0.1	74	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Carbazole	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Dibutyl phthalate	µg/l	0.05	No DWS	8	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Anthraquinone	µg/l	0.05	No DWS	No EQS	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Fluoranthene	µg/l	0.01	No DWS	0.1	74	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Pyrene	µg/l	0.01	No DWS	1.2	74	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Butylbenzylphthalate	µg/l	0.05	No DWS	20	74	0	0	0	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Benzo[a]anthracene	µg/l	0.01	No DWS	1.2	74	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Chrysene	µg/l	0.01	No DWS	1.2	74	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[b]fluoranthene	µg/l	0.01	No DWS	No EQS	74	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[k]fluoranthene	µg/l	0.01	No DWS	No EQS	74	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[a]pyrene	µg/l	0.01	0.01	0.05	74	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Indeno[1,2,3-cd]pyrene	µg/l	0.01	No DWS	No EQS	74	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Dibenzo[a,h]anthracene	µg/l	0.01	No DWS	1.2	74	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[g,h,i]perylene	µg/l	0.01	No DWS	No EQS	74	0	0	0	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Lab Sample Number	Units	465837	470641	475820	479876	465836	470708	475819	479869	479873	465168	470639	475323	479878	465167	470681	470706	475319	479872	465839	470264	475821	479635	479640	465840	470279	475816	475817
Sample Reference		BH203	BH203	BH203	BH203	BH204	BH204	BH204	BH204	Duplicate B (Dup of BH204)	WS202	WS202	WS202	WS202	WS203	WS203	Duplicate A (Dup of WS203)	WS203	WS203	BH501	BH501	BH501	BH501	Duplicate A (Dup of BH501)	BH502	BH502	BH502	Duplicate A (Dup of BH502)
Groundwater Body		Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk
Depth (m)		2.4	2.9	2.8	2.9	2.5	2.8	3.1	2.9	None Supplied	7.7	7.3	8.0	7.8	1.1	1.2	None Supplied	1.6	1.3	11.7	None Supplied	11.7	11.7	None Supplied	12.2	12.0	12.1	12.1
Date Sampled		15/07/2015	29/07/2015	13/08/2015	27/08/2015	15/07/2015	29/07/2015	13/08/2015	27/08/2015	27/08/2015	14/07/2015	29/07/2015	12/08/2015	27/08/2015	14/07/2015	29/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	28/07/2015	13/08/2015	26/08/2015	26/08/2015	15/07/2015	28/07/2015	13/08/2015	13/08/2015
Analytical Parameter (Water Analysis)																												
General Inorganics																												
pH	pH Units	7.5	7.6	7.7	7.2	7.4	7.6	7.7	7.4	7.4	12.6	13.1	13	12.9	13.3	13.1	13.1	13.1	13	7.5	7.2	7.5	7.2	7.2	7.3	6.5	7.2	7.3
Electrical Conductivity	µS/cm	2800	2800	3000	3200	1700	1800	1600	1700	1700	84000	64000	92000	82000	93000	59000	60000	73000	67000	1200	1100	1100	1100	1100	4900	4500	4000	4000
Total Cyanide	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	13	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
Complex Cyanide	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	13	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
Free Cyanide	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
Sulphate as SO4	µg/l	1080000	1000000	1060000	1090000	111000	103000	95200	124000	129000	17000000	15000000	13000000	13000000	5770000	5060000	4940000	4720000	4770000	136000	144000	124000	128000	133000	614000	600000	500000	483000
Sulphide	µg/l	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	9	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	30000	45000	37000	31000	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*
Chloride	mg/l	260	240	250	330	230	220	200	230	270	4400	4600	4300	4300	4200	4900	4700	4700	4000	75	60	60	67	68	1300	1100	920	880
Ammoniacal Nitrogen as N	µg/l	1300	1500	1800	5400	1300	1700	1400	1900	2300	45000	39000	28000	15000	56000	53000	51000	50000	18000	*< 15*	*< 15*	*< 15*	60	93	*< 15*	*< 15*	*< 15*	*< 15*
Nitrate as N	mg/l	1.11	0.18	0.32	0.22	0.35	0.25	0.32	0.26	0.21	0.28	0.26	0.27	0.25	0.34	0.34	0.33	0.36	0.34	15.9	17.5	18.1	17.6	18	34.7	33.5	29.9	28.4
Nitrate as NO3	mg/l	4.94	0.78	1.4	1	1.56	1.09	1.4	1.15	0.94	1.25	1.14	1.19	1.1	1.51	1.51	1.45	1.61	1.52	70.5	77.6	80.2	78	79.8	154	148	132	126
Nitrite as N	µg/l	410	45	13	7	2	17	3	7	24	1100	1000	910	950	500	400	390	410	460	29	6	4	3	4	20	96	14	10
Nitrite as NO2	µg/l	1300	150	43	23	6.6	56	9.9	23	79	3500	3400	3000	3100	1600	1300	1300	1300	1500	95	20	13	9.9	13	66	320	46	33
Chemical Oxygen Demand (Total)	mg/l	62	110	53	72	43	31	58	120	110	1000	2100	560	450	3300	1200	1100	1300	940	14	22	5.9	34	28	37	25	14	20
Biochemical Oxygen Demand	mg/l	3	23	5.6	2.4	5.7	25	16	2.1	6.9	1.3	2.1	120	1.8	48	17	21	34	17	4.5	4.2	5.5	3.5	3.3	4.8	*< 1.0*	5.3	6.6
Total Oxidised Nitrogen	mg/l	1.5	*< 0.3*	0.3	*< 0.3*	0.4	*< 0.3*	0.3	*< 0.3*	*< 0.3*	1.3	1.3	1.2	1.2	0.8	0.7	0.7	0.8	0.8	16	18	18	18	18	35	34	30	28
Total Phenols																												
Total Phenols (monohydric)	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	1100	1000	*< 10*	1100	1900	1700	1700	*< 10*	1900	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
PAHs																												
Naphthalene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Acenaphthylene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Acenaphthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Fluorene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Phenanthrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[a]anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Chrysene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[b]fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[k]fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[a]pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Indeno[1,2,3-cd]pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Dibenzo[a,h]anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[g,h,i]perylene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Coronene	µg/l		*< 0.01*	*< 0.01*	*< 0.01*		*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*		*< 0.01*	*< 0.01*	*< 0.01*		*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*		*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*		*< 0.01*	*< 0.01*	*< 0.01*
Sum of benzo(b)fluoranthene and be	µg/l	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum of indeno(1,2,3-cd)pyrene and b	µg/l	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total PAHs																												
Total EPA-16 PAHs	µg/l	*< 0.20*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.20*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.20*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.20*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.20*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.20*	*< 0.2*	*< 0.2*	*< 0.2*
Total WAC-17 PAHs	µg/l		*< 0.2*	*< 0.2*	*< 0.2*		*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*		*< 0.2*	*< 0.2*	*< 0.2*		*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*		*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*		*< 0.2*	*< 0.2*	*< 0.2*
Heavy Metals / Metalloids																												
Aluminium (dissolved)	mg/l	0.0059	0.0155	0.0518	0.0218	0.0036	0.0352	0.012	0.105	0.012	0.431	0.0609	0.0734	0.218	0.802	0.424	0.195	0.647	0.198	0.0039	0.0076	0.0172	0.0087	0.0114	0.0029	0.0736	0.0026	0.0032
Antimony (dissolved)	µg/l	2.6	3.5	1.8	1.6	2.1	1	1.3	1.1	1.9	3.7	2.5	*< 0.4*	3.4	*< 0.4*	2.9	3.2	*< 0.4*	3	1.1	1.6	1.4	1.8	1.8	1.5	1.4	1.3	1.1
Arsenic (dissolved)	µg/l	1.71	1.78	2.87	1.32	2.64	1.77	2.57	2.23	1.79	15.5	29.9	15.6	15.1	6.91	21.4	19.3	21.4	13.3	0.44	0.58	0.61	0.41	0.52	0.69	0.79	0.7	0.74
Barium (dissolved)	µg/l	130	140	160	150	39	43	50	49	54	27	24	27	14	50	56	52	43	49	43	41	45	40	42	66	55	66	65
Beryllium (dissolved)	µg/l	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	0.1	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	0.3	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*
Boron (dissolved)	µg/l	420	370	480	490	290	300	290	290	310	54	25	27	33	62	21	15	25	19	120	120	120	110	110	560	540	480	470
Cadmium (dissolved)	µg/l	*< 0.02*	0.05	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	0.11	0.36	*< 0.02*	*< 0.02*	0.02	0.44	0.29	*< 0.02*	0.29	*< 0.02*	0.03	0.03	*< 0.02*	0.04	*< 0.02*	*< 0.02*	0.03	*< 0.02*
Chromium (hexavalent)	µg/l	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*		2000			*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*		
Chromium (dissolved)	µg/l	0.2	0.9	0.7	0.3	*< 0.2*	0.5	0.5	0.4	*< 0.2*	200	2100	1600	1300	2.4	1.7	1.2	1.2	0.5	0.3	0.5	0.8	0.4	0.4	14	19	22	22
Copper (dissolved)	µg/l	8.5	9.9	4.3	2.5	6.4	2.1	4.2	2.7	6	40	33	27	17	6.5	7.8	4.7	9.4	7	5.3	3.7	4.5	11	4.9	4.5	4.3	4.9	4.3
Iron (dissolved)	mg/l	0.13	0.087	0.012	2.9	0.37	0.44	0.097	0.33	0.034	0.095	0.16	*< 0.004*	0.019	0.081	0.24	0.13	0.029	0.032	0.39	0.051	*< 0.004*	0.17	0.065	0.34	0.044	*< 0.004*	0.064
Lead (dissolved)	µg/l	0.4	1.2	0.4	*< 0.2*	0.3	0.5	0.2	0.4	0.3	3.8	4.9	3	3	*< 0.2*	0.7	0.5	1.4	1.1	0.3	*< 0.2*	7.5	0.2	0.2	0.3	0.5	*< 0.2*	*< 0.2*
Manganese (dissolved)	µg/l	420	410	1100	1800	210	640	880	550	440	2.3	0.47	*< 0.05*	*< 0.05*	0.9	0.48	0.67	0.22	0.92	16	9.5	4.7	2.7	3.9	18	22	12	11
Mercury (dissolved)	µg/l	1.37	0.11	0.28	*< 0.05*	0.52	*< 0.05*	0.28	0.21	*< 0.05*	*< 0.05*	2.71	*< 0.05*	*< 0.05*	*< 0.05*	8.83	5.83	1.33	2.32	0.09	0.09	0.37	*< 0.05*	*< 0.05*	*< 0.05*	0.47	0.38	0.31
Molybdenum (dissolved)	µg/l	9.7	9.9	7.2	7.3	5.9	4.5	12	2.9	6.5	59	680	380	400	190	940	1100	730	770	1.8	0.86	0.92	1.5	2	5.8	4.7	4.3	4.4
Nickel (dissolved)	µg/l	9.6	11	8.8	11	8.3	7.3	5.3	3.6	4.8	26	240	160	160	310	1400	1700	1200	1200	4.4	5.5	3.1	3.6	3.2	10	9.6	4.7	4.7
Selenium (dissolved)	µg/l	25	21	10	16	6.4	5.2	3.4	4.7	15	70	820	630	530	100	370	480	260	360	3.6	4.4	3.6	3.9	4	22	18	18	17
Vanadium (dissolved)	µg/l	1.3	1.2	0.9	0.5	3.2	1.1	0.7	0.9	1.5	100	120	61	57	140	170	150	84	110	0.9	0.8	0.9	0.8	0.8	1.5	1.8	2	2.1
Zinc (dissolved)	µg/l	2.9	9.1	2.9	6.4	1.4	2.4	6.6	4.1	2.5	1	*< 0.5*	*< 0.5*	0.5	1.1	2.7	2.4	2.1	3.2	7.1	6.7	3.6	13	12	3.9	6.5	18	12
Calcium (dissolved)	mg/l	360	320	380	440	91	91	86	89	89	56	61	38	49	21	35	46	20	20	190	200	160	180	190	500		350	370
Magnesium (dissolved)	mg/l	65	68	77	120	35	43	37	38	38	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	9.7	11	10	9.8	9.6	21	520	20	19
Potassium (dissolved)	mg/l	55	40	50	84	46	65	21	20	20	18000	18000	18000	17000	11000	11000	11000	12000	11000	13	13	13	11	11	85	24	74	72
Phosphorus (total)	µg/l	440	190	70	39	860	1900	100	44	48	35	58	160	61	80	96	100	89	120	4000	3700	430	870	840	1800	2400	190	750
Monoaromatics																												
Benzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Toluene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Ethyl benzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
m/p-Xylene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
o-Xylene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	**Units**	465837	470641	475820	479876	465836	470708	475819	479869	479873	465168	470639	475323	479878	465167	470681	470706	475319	479872	465839	470264	475821	479635	479640	465840	470279	475816	475817
Sample Reference		BH203	BH203	BH203	BH203	BH204	BH204	BH204	BH204	Duplicate B (Dup of BH204)	WS202	WS202	WS202	WS202	WS203	WS203	Duplicate A (Dup of WS203)	WS203	WS203	BH501	BH501	BH501	BH501	Duplicate A (Dup of BH501)	BH502	BH502	BH502	Duplicate A (Dup of BH502)
Groundwater Body		Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk
Depth (m)		2.4	2.9	2.8	2.9	2.5	2.8	3.1	2.9	None Supplied	7.7	7.3	8.0	7.8	1.1	1.2	None Supplied	1.6	1.3	11.7	None Supplied	11.7	11.7	None Supplied	12.2	12.0	12.1	12.1
Date Sampled		15/07/2015	29/07/2015	13/08/2015	27/08/2015	15/07/2015	29/07/2015	13/08/2015	27/08/2015	27/08/2015	14/07/2015	29/07/2015	12/08/2015	27/08/2015	14/07/2015	29/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	28/07/2015	13/08/2015	26/08/2015	26/08/2015	15/07/2015	28/07/2015	13/08/2015	13/08/2015
Analytical Parameter (Water Analysis)																												
MTBE (Methyl Tertiary Butyl Ether)	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Sum of xylenes	µg/l	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TPH CWG																												
TPH-CWG - Aliphatic >C5 - C6	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C6 - C8	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C8 - C10	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C10 - C12	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C12 - C16	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C16 - C21	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	650	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C21 - C35	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	1200	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic (C5 - C35)	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	1800	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C5 - C7	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C7 - C8	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C8 - C10	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C10 - C12	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C12 - C16	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C16 - C21	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C21 - C35	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic (C5 - C35)	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
VOCs																												
Chloromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Chloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Bromomethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Vinyl Chloride	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Trichlorofluoromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1-Dichloroethene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
cis 1,2-Dichloroethene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
MTBE (Methyl Tertiary Butyl Ether)	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1-Dichloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
2,2-Dichloropropane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Trichloromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,1-Trichloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dichloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1-Dichloropropene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
trans 1,2-Dichloroethene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Benzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Tetrachloromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dichloropropane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Trichloroethene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Dibromomethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Bromodichloromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
cis 1,3-Dichloropropene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
trans 1,3-Dichloropropene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Toluene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,2-Trichloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,3-Dichloropropane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Dibromochloromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Tetrachloroethene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dibromoethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Chlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,1,2-Tetrachloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Ethylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
m and p-Xylene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Styrene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Tribromomethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
o-Xylene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,2,2-Tetrachloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
iso-Propylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Bromobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Propylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
2-Chlorotoluene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
4-Chlorotoluene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,3,5-Trimethylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
tert-Butylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2,4-Trimethylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
sec-Butylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,3-Dichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
p-Isopropyltoluene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,4-Dichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
n-Butylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dibromo-3-chloropropane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2,4-Trichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Hexachlorobutadiene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units	465837	470641	475820	479876	465836	470708	475819	479869	479873	465168	470639	475323	479878	465167	470681	470706	475319	479872	465839	470264	475821	479635	479640	465840	470279	475816	475817
Sample Reference		BH203	BH203	BH203	BH203	BH204	BH204	BH204	BH204	Duplicate B (Dup of BH204)	WS202	WS202	WS202	WS202	WS203	WS203	Duplicate A (Dup of WS203)	WS203	WS203	BH501	BH501	BH501	BH501	Duplicate A (Dup of BH501)	BH502	BH502	BH502	Duplicate A (Dup of BH502)
Groundwater Body		Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk
Depth (m)		2.4	2.9	2.8	2.9	2.5	2.8	3.1	2.9	None Supplied	7.7	7.3	8.0	7.8	1.1	1.2	None Supplied	1.6	1.3	11.7	None Supplied	11.7	11.7	None Supplied	12.2	12.0	12.1	12.1
Date Sampled		15/07/2015	29/07/2015	13/08/2015	27/08/2015	15/07/2015	29/07/2015	13/08/2015	27/08/2015	27/08/2015	14/07/2015	29/07/2015	12/08/2015	27/08/2015	14/07/2015	29/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	28/07/2015	13/08/2015	26/08/2015	26/08/2015	15/07/2015	28/07/2015	13/08/2015	13/08/2015
Analytical Parameter (Water Analysis)																												
1,2,3-Trichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
sVOCs																												
Aniline	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	3.8	*< 0.05*	2.9	*< 0.05*	17	19	16	11	14	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Phenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Chlorophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
bis(2-Chloroethyl)ether	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,3-Dichlorobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,2-Dichlorobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,4-Dichlorobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
bis(2-Chloroisopropyl)ether	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Methylphenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Hexachloroethane	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Nitrobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Methylphenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Isophorone	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Nitrophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,4-Dimethylphenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
bis(2-Chloroethoxy)methane	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,2,4-Trichlorobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Naphthalene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
2,4-Dichlorophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Chloroaniline	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Hexachlorobutadiene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Chloro-3-methylphenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,4,6-Trichlorophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,4,5-Trichlorophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Methylnaphthalene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Chloronaphthalene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Dimethylphthalate	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,6-Dinitrotoluene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Acenaphthylene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Acenaphthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
2,4-Dinitrotoluene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Dibenzofuran	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Chlorophenyl-phenylether	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Diethylphthalate	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Nitroaniline	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Fluorene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Azobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Bromophenyl-phenylether	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Hexachlorobenzene	µg/l	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
Phenanthrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Carbazole	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Dibutyl phthalate	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Anthraquinone	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Butylbenzylphthalate	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Benzo[a]anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Chrysene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[b]fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[k]fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[a]pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Indeno[1,2,3-cd]pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Dibenzo[a,h]anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo[g,h,i]perylene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units	479636	467195	470265	475822	479637	467196	470266	476307	479641	467197	470267	476304	476305
Sample Reference		BH502	BH703	BH703	BH703	BH703	BH705	BH705	BH705	BH705	BH706	BH706	BH706	Duplicate B (Dup of BH706)
Groundwater Body		Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk
Depth (m)		11.6	4.8	None Supplied	4.7	4.7	2.8	None Supplied	2.8	2.8	6.4	None Supplied	6.5	None Supplied
Date Sampled		26/08/2015	20/07/2015	28/07/2015	13/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	14/08/2015
Analytical Parameter (Water Analysis)														
General Inorganics														
pH	pH Units	7.1	7.6	7.2	7.7	7.6	7.5	7.2	7.4	7.2	7.3	7.1	7.8	7.7
Electrical Conductivity	µS/cm	4100	1600	1400	1500	1500	1100	1200	1100	1100	1300	1200	1200	1200
Total Cyanide	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Complex Cyanide	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphate as SO4	µg/l	534000	445000	373000	329000	342000	122000	140000	137000	114000	151000	147000	141000	113000
Sulphide	µg/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	1100	91	99	120	150	97	130	140	120	120	110	140	140
Ammoniacal Nitrogen as N	µg/l	99	54	23	< 15	160	< 15	< 15	110	67	100	< 15	62	110
Nitrate as N	mg/l	31.2	7.06	7.8	7.16	7.11	23.6	22.1	26	24.3	22.5	23	22.9	22.6
Nitrate as NO3	mg/l	138	31.3	34.5	31.7	31.5	104	97.7	115	108	99.5	102	101	100
Nitrite as N	µg/l	18	28	21	30	47	27	5	32	6	92	17	16	21
Nitrite as NO2	µg/l	59	92	69	99	150	89	16	110	20	300	56	53	69
Chemical Oxygen Demand (Total)	mg/l	32	5.2	7.2	4.3	13	2.4	3	15	7.4	2	< 2.0	7.2	6.4
Biochemical Oxygen Demand	mg/l	3.4	< 1.0	3.6	3	1.3	< 1.0	< 1.0	73	< 1.0	< 1.0	1.6	4.2	4.7
Total Oxidised Nitrogen	mg/l	31	7.1	7.8	7.2	7.2	24	22	26	24	23	23	23	23
Total Phenols														
Total Phenols (monohydric)	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
PAHs														
Naphthalene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo[a]anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo[b]fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo[k]fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo[a]pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno[1,2,3-cd]pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzo[a,h]anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo[g,h,i]perylene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Coronene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sum of benzo(b)fluoranthene and be	µg/l	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum of indeno(1,2,3-cd)pyrene and b	µg/l	0	0	0	0	0	0	0	0	0	0	0	0	0
Total PAHs														
Total EPA-16 PAHs	µg/l	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Total WAC-17 PAHs	µg/l	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Heavy Metals / Metalloids														
Aluminium (dissolved)	mg/l	0.0037	0.0147	0.0019	0.0058	0.02	0.0121	0.0044	< 0.0010	0.0027	0.0354	0.0087	< 0.0010	< 0.0010
Antimony (dissolved)	µg/l	1.7	1	1.2	1	1.3	0.9	1	1.2	1.6	0.9	1	1.4	1.2
Arsenic (dissolved)	µg/l	0.75	0.27	< 0.15	0.22	0.21	0.23	0.37	0.31	0.18	0.32	0.34	0.23	0.23
Barium (dissolved)	µg/l	65	110	100	110	100	51	57	67	55	47	50	63	82
Beryllium (dissolved)	µg/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron (dissolved)	µg/l	480	49	45	48	45	31	31	36	33	43	43	42	42
Cadmium (dissolved)	µg/l	< 0.02	0.04	< 0.02	< 0.02	< 0.02	< 0.02	0.02	0.02	0.02	< 0.02	0.03	0.02	0.02
Chromium (hexavalent)	µg/l		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	21	< 0.2	0.2	0.4	< 0.2	0.4	0.2	< 0.2	0.5	0.3	0.9	0.3	0.4
Copper (dissolved)	µg/l	5.9	3	3.2	4.3	15	1.9	3	0.9	2.1	3.7	3.9	< 0.5	< 0.5
Iron (dissolved)	mg/l	0.014	0.76	0.094	0.006	0.028	0.3	0.031	0.042	0.011	0.85	0.071	0.38	0.039
Lead (dissolved)	µg/l	0.3	0.2	< 0.2	< 0.2	0.4	0.2	< 0.2	< 0.2	< 0.2	13	12	23	20
Manganese (dissolved)	µg/l	7.5	220	160	130	140	27	66	170	35	48	29	20	25
Mercury (dissolved)	µg/l	0.2	0.08	0.1	0.2	< 0.05	< 0.05	< 0.05	0.12	< 0.05	< 0.05	< 0.05	0.21	0.17
Molybdenum (dissolved)	µg/l	6.4	1.7	1.5	1.5	9.8	0.3	0.35	0.82	0.32	0.43	0.32	0.35	0.38
Nickel (dissolved)	µg/l	5.5	6.9	6.5	3	5	4.6	5.7	4.8	2.1	4.8	5.2	1.7	2.8
Selenium (dissolved)	µg/l	22	2.7	2.6	3	3.6	1.7	1.8	3	2.3	1.6	1.5	2.9	2.6
Vanadium (dissolved)	µg/l	2	< 0.2	0.2	0.3	0.3	0.5	0.4	0.4	0.3	0.5	0.5	0.3	0.4
Zinc (dissolved)	µg/l	16	5.3	2.8	0.7	3.9	1.2	3.2	< 0.5	1.1	1.4	5.3	1.9	3
Calcium (dissolved)	mg/l	420	290	240	200	210	250	230	230	190	260	230	220	170
Magnesium (dissolved)	mg/l	21	13	13	11	11	7	8.5	7.1	6.3	12	12	11	11
Potassium (dissolved)	mg/l	72	49	51	48	43	3.4	3.9	3.4	3.1	4.2	4.6	4	4.1
Phosphorus (total)	µg/l	110	1400	250	3000	58	5000	640	4300	42	4000	1100	790	760
Monoaromatics														
Benzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethyl benzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m/p-Xylene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Lab Sample Number	479638	467198	470268	476306	479639	467199	475818	479642	475324	475325	479643	479644	463063	463064
Sample Reference	BH706	BH707	BH707	BH707	BH707	BH708	BH708	BH708	FIELD BLANK	TRIP BLANK	Trip Blank	Field Blank	BH101	BH101
Groundwater Body	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk						
Depth (m)	6.4	11.0	None Supplied	11.0	11.1	16.0	16.1	15.9	None Supplied	None Supplied	None Supplied	None Supplied	4.5	7.0
Date Sampled	26/08/2015	20/07/2015	28/07/2015	14/08/2015	26/08/2015	20/07/2015	13/08/2015	26/08/2015	12/08/2015	12/08/2015	26/08/2015	26/08/2015	18/06/2015	19/06/2015
Analytical Parameter (Water Analysis)														
General Inorganics														
pH	7.4	7.2	7	7.5	7.4	7.2	7.4	7.4	10.3	8.6	6.5	5.9		
Electrical Conductivity	1300	1500	1400	1300	1300	1500	1500	1300	540	10	< 10	< 10		
Total Cyanide	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
Complex Cyanide	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
Free Cyanide	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
Sulphate as SO4	151000	311000	300000	322000	274000	248000	227000	215000	3280	8300	166	251		
Sulphide	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		
Chloride	130	120	110	190	130	140	120	120	0.61	2.5	0.49	0.45		
Ammoniacal Nitrogen as N	170	160	< 15	240	140	< 15	< 15	32	< 15	< 15	< 15	68		
Nitrate as N	22.9	8.01	8.49	9.04	9.85	23.2	19.2	24.8	0.05	0.19	0.04	0.02		
Nitrate as NO3	101	35.5	37.6	40.1	43.6	103	85.1	110	0.21	0.83	0.16	0.1		
Nitrite as N	4	18	110	230	37	17	4	4	9	6	1	1		
Nitrite as NO2	13	59	360	750	120	56	13	13	30	20	< 5.0	< 5.0		
Chemical Oxygen Demand (Total)	10	10	21	27	26	10	5.6	82	28	< 2.0	< 2.0	3.5		
Biochemical Oxygen Demand	< 1.0	8.6	1.7	73	2.8	1.6	3.3	14	-	-	< 1.0	2.2		
Total Oxidised Nitrogen	23	8	8.6	9.3	9.9	23	19	25	< 0.3	< 0.3	< 0.3	< 0.3		
Total Phenols														
Total Phenols (monohydric)	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		
PAHs														
Naphthalene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo[a]anthracene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo[b]fluoranthene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo[k]fluoranthene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo[a]pyrene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno[1,2,3-cd]pyrene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzo[a,h]anthracene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo[g,h,i]perylene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Coronene	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Sum of benzo(b)fluoranthene and be	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum of indeno(1,2,3-cd)pyrene and b	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total PAHs														
Total EPA-16 PAHs	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Total WAC-17 PAHs	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2		
Heavy Metals / Metalloids														
Aluminium (dissolved)	0.0024	0.0148	0.0244	< 0.0010	0.0133	0.0215	0.0046	0.0067	0.0578	0.002	< 0.0010	0.0025		
Antimony (dissolved)	1.8	1	1.3	1.2	2.1	1.4	0.8	1.7	1.1	1.4	1.5	1.8		
Arsenic (dissolved)	0.32	0.29	0.61	0.57	0.46	0.67	0.48	0.36	0.36	< 0.15	< 0.15	< 0.15	4.1	9.7
Barium (dissolved)	59	45	47	53	48	47	48	50	1.6	0.35	0.28	0.49	19	20
Beryllium (dissolved)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.2
Boron (dissolved)	43	48	49	47	51	32	36	34	100	100	29	30	180	150
Cadmium (dissolved)	0.04	< 0.02	0.02	0.05	0.05	< 0.02	0.03	0.04	0.02	< 0.02	< 0.02	< 0.02	< 0.08	< 0.08
Chromium (hexavalent)	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0		
Chromium (dissolved)	0.4	< 0.2	0.3	< 0.2	< 0.2	0.9	0.9	< 0.2	2	0.7	< 0.2	0.2	1.6	1.9
Copper (dissolved)	6.2	2.8	1.7	0.6	5	2.1	2.7	3.4	3.1	3.3	3.9	21	2.5	6.6
Iron (dissolved)	0.055	0.44	0.047	0.076	0.041	0.26	0.011	0.026	0.008	0.018	0.011	0.015		
Lead (dissolved)	13	0.4	2	< 0.2	0.4	< 0.2	< 0.2	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 1.0	< 1.0
Manganese (dissolved)	15	720	470	560	230	6.7	10	64	5.8	0.53	0.17	0.52		
Mercury (dissolved)	< 0.05	< 0.05	0.07	0.16	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.5	< 0.5
Molybdenum (dissolved)	0.8	4.5	7.9	9.4	5.6	0.44	0.38	0.83	2.8	0.45	0.92	0.64		
Nickel (dissolved)	2.5	16	21	26	16	6	2.2	5.3	1.2	< 0.5	< 0.5	0.5	0.9	3.3
Selenium (dissolved)	2.2	3.4	3.2	4.6	3.3	2.3	2.8	2.7	13	3.2	< 0.6	< 0.6	< 4.0	< 4.0
Vanadium (dissolved)	0.4	0.2	0.3	< 0.2	< 0.2	0.5	0.4	0.4	0.5	< 0.2	< 0.2	< 0.2	5.1	66
Zinc (dissolved)	8.9	1.7	3.1	1.7	3.9	2.4	1.6	11	4.6	< 0.5	1.5	3.5	7.4	3.8
Calcium (dissolved)	220	290	290	240	250	260	210	200	0.19	0.2	0.2	0.31		
Magnesium (dissolved)	10	12	13	12	11	18	18	17	< 0.005	< 0.005	< 0.005	< 0.005		
Potassium (dissolved)	3.8	3	3.4	2.9	2.7	3.9	5.2	3.8	9.5	9.5	< 0.025	0.099		
Phosphorus (total)	150	2400	3900	3800	76	5400	600	56	< 20	< 20	< 20	< 20		
Monoaromatics														
Benzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethyl benzene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m/p-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units	479636	467195	470265	475822	479637	467196	470266	476307	479641	467197	470267	476304	476305	479638	467198	470268	476306	479639	467199	475818	479642	475324	475325	479643	479644	463063	463064
Sample Reference		BH502	BH703	BH703	BH703	BH703	BH705	BH705	BH705	BH705	BH706	BH706	BH706	Duplicate B (Dup of BH706)	BH706	BH707	BH707	BH707	BH707	BH708	BH708	BH708	FIELD BLANK	TRIP BLANK	Trip Blank	Field Blank	BH101	BH101
Groundwater Body		Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk						
Depth (m)		11.6	4.8	None Supplied	4.7	4.7	2.8	None Supplied	2.8	2.8	6.4	None Supplied	6.5	None Supplied	6.4	11.0	None Supplied	11.0	11.1	16.0	16.1	15.9	None Supplied	None Supplied	None Supplied	None Supplied	4.5	7.0
Date Sampled		26/08/2015	20/07/2015	28/07/2015	13/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	14/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	26/08/2015	20/07/2015	13/08/2015	26/08/2015	12/08/2015	12/08/2015	26/08/2015	26/08/2015	18/06/2015	19/06/2015
Analytical Parameter (Water Analysis)																												
MTBE (Methyl Tertiary Butyl Ether)	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 10
Sum of xylenes	µg/l	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TPH CWG																												
TPH-CWG - Aliphatic >C5 - C6	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C6 - C8	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C8 - C10	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C10 - C12	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C7 - C8	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C8 - C10	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C10 - C12	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs																												
Chloromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Chloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Bromomethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Vinyl Chloride	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Trichlorofluoromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,1-Dichloroethene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
cis 1,2-Dichloroethene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,1-Dichloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
2,2-Dichloropropane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Trichloromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,1,1-Trichloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,2-Dichloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,1-Dichloropropene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
trans 1,2-Dichloroethene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Benzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Tetrachloromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,2-Dichloropropane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Trichloroethene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Dibromomethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Bromodichloromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
cis 1,3-Dichloropropene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
trans 1,3-Dichloropropene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Toluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,1,2-Trichloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,3-Dichloropropane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Dibromochloromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Tetrachloroethene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,2-Dibromoethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Chlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,1,1,2-Tetrachloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
m and p-Xylene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Styrene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Tribromomethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
o-Xylene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,1,2,2-Tetrachloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
iso-Propylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Bromobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Propylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
2-Chlorotoluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
4-Chlorotoluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,3,5-Trimethylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
tert-Butylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,2,4-Trimethylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
sec-Butylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,3-Dichlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
p-Isopropyltoluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,2-Dichlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,4-Dichlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
n-Butylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,2-Dibromo-3-chloropropane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
1,2,4-Trichlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Hexachlorobutadiene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units	479636	467195	470265	475822	479637	467196	470266	476307	479641	467197	470267	476304	476305	479638	467198	470268	476306	479639	467199	475818	479642	475324	475325	479643	479644	463063	463064
Sample Reference		BH502	BH703	BH703	BH703	BH703	BH705	BH705	BH705	BH705	BH706	BH706	BH706	Duplicate B (Dup of BH706)	BH706	BH707	BH707	BH707	BH707	BH708	BH708	BH708	FIELD BLANK	TRIP BLANK	Trip Blank	Field Blank	BH101	BH101
Groundwater Body		Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk						
Depth (m)		11.6	4.8	None Supplied	4.7	4.7	2.8	None Supplied	2.8	2.8	6.4	None Supplied	6.5	None Supplied	6.4	11.0	None Supplied	11.0	11.1	16.0	16.1	15.9	None Supplied	None Supplied	None Supplied	None Supplied	4.5	7.0
Date Sampled		26/08/2015	20/07/2015	28/07/2015	13/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	14/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	26/08/2015	20/07/2015	13/08/2015	26/08/2015	12/08/2015	12/08/2015	26/08/2015	26/08/2015	18/06/2015	19/06/2015
Analytical Parameter (Water Analysis)																												
1,2,3-Trichlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
sVOCs																												
Aniline	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Phenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
2-Chlorophenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
bis(2-Chloroethyl)ether	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
1,3-Dichlorobenzene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
1,2-Dichlorobenzene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
1,4-Dichlorobenzene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
bis(2-Chloroisopropyl)ether	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
2-Methylphenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Hexachloroethane	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Nitrobenzene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
4-Methylphenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Isophorone	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
2-Nitrophenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
2,4-Dimethylphenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
bis(2-Chloroethoxy)methane	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
1,2,4-Trichlorobenzene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Naphthalene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
2,4-Dichlorophenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
4-Chloroaniline	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.09	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Hexachlorobutadiene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
4-Chloro-3-methylphenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
2,4,6-Trichlorophenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
2,4,5-Trichlorophenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
2-Methylnaphthalene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
2-Chloronaphthalene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Dimethylphthalate	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
2,6-Dinitrotoluene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Acenaphthylene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Acenaphthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
2,4-Dinitrotoluene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Dibenzofuran	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
4-Chlorophenyl-phenylether	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Diethylphthalate	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
4-Nitroaniline	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Fluorene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Azobenzene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
4-Bromophenyl-phenylether	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Hexachlorobenzene	µg/l	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02		
Phenanthrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Carbazole	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Dibutyl phthalate	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Anthraquinone	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Butylbenzylphthalate	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Benzo[a]anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Chrysene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Benzo[b]fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Benzo[k]fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Benzo[a]pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Indeno[1,2,3-cd]pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Dibenzo[a,h]anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		
Benzo[g,h,i]perylene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		

Values in italics are method detection limits

Leachate

Exceedance of both DWS and EQS

Exceedance of EQS

Exceedance of DWS

Lab Sample Number	Units	462991	462993	462909	462987	462800	462907	462908	462874	462796	463176	462899
Sample Reference		BH101	WS101	WS102	BH202	BH202	BH203	BH203	BH204	WS202	WS202	WS204
Groundwater Body												
Depth (m)		21.0	5.6	4.2	7.0	11.5	5	13	6.7	6.7	11.7	4.45
Date Sampled		22/06/2015	23/06/2015	24/06/2015	10/06/2015	11/06/2015	29/06/2015	29/06/2015	24/06/2015	25/06/2015	26/06/2015	29/06/2015
Analytical Parameter (Water Analysis)												
General Inorganics												
pH	pH Units											
Electrical Conductivity	µS/cm											
Total Cyanide	µg/l											
Complex Cyanide	µg/l											
Free Cyanide	µg/l											
Sulphate as SO4	µg/l											
Sulphide	µg/l											
Chloride	mg/l											
Ammoniacal Nitrogen as N	µg/l											
Nitrate as N	mg/l											
Nitrate as NO3	mg/l											
Nitrite as N	µg/l											
Nitrite as NO2	µg/l											
Chemical Oxygen Demand (Total)	mg/l											
Biochemical Oxygen Demand	mg/l											
Total Oxidised Nitrogen	mg/l											
Total Phenols												
Total Phenols (monohydric)	µg/l											
PAHs												
Naphthalene	µg/l	< 0.01	< 0.01	< 0.01	1.4	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	< 0.01	< 0.01	< 0.01	1.1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	< 0.01	< 0.01	< 0.01	0.53	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	< 0.01	< 0.01	< 0.01	0.47	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	< 0.01	< 0.01	< 0.01	0.68	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	< 0.01	< 0.01	< 0.01	0.16	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo[a]anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo[b]fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo[k]fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo[a]pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno[1,2,3-cd]pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzo[a,h]anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo[g,h,i]perylene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Coronene	µg/l											
Sum of benzo(b)fluoranthene and be	µg/l	0	0	0	0	0	0	0	0	0	0	0
Sum of indeno(1,2,3-cd)pyrene and b	µg/l	0	0	0	0	0	0	0	0	0	0	0
Total PAHs												
Total EPA-16 PAHs	µg/l	< 0.2	< 0.2	< 0.2	4.3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Total WAC-17 PAHs	µg/l											
Heavy Metals / Metalloids												
Aluminium (dissolved)	mg/l											
Antimony (dissolved)	µg/l											
Arsenic (dissolved)	µg/l	3.6	< 1.1	< 1.1	< 1.1	20	< 1.1	3.7	12	< 1.1	8.8	7.1
Barium (dissolved)	µg/l	94	78	40	80	52	260	34	11	440	30	32
Beryllium (dissolved)	µg/l	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Boron (dissolved)	µg/l	13	41	< 10	27	120	< 10	68	58	12	170	170
Cadmium (dissolved)	µg/l	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l											
Chromium (dissolved)	µg/l	3.7	< 0.4	< 0.4	6.1	1.6	1.6	1.4	4	180	0.7	1.5
Copper (dissolved)	µg/l	1.1	3.2	2	2.7	9.2	2.6	2.4	21	7.6	2.7	4.4
Iron (dissolved)	mg/l											
Lead (dissolved)	µg/l	1.4	< 1.0	< 1.0	1.8	< 1.0	3.9	2	< 1.0	1.5	1.2	3.5
Manganese (dissolved)	µg/l											
Mercury (dissolved)	µg/l	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Molybdenum (dissolved)	µg/l											
Nickel (dissolved)	µg/l	1.1	1.6	0.4	< 0.3	2.7	0.4	1.4	4.2	2.1	0.8	1.9
Selenium (dissolved)	µg/l	< 4.0	< 4.0	< 4.0	14	< 4.0	< 4.0	< 4.0	7.1	18	< 4.0	< 4.0
Vanadium (dissolved)	µg/l		3.9	< 1.7	7.1		31	18	21	12	25	35
Zinc (dissolved)	µg/l	8.5	1.9	1.2	2.8	3.1	0.6	2.3	4.9	1.2	1.3	2.1
Calcium (dissolved)	mg/l											
Magnesium (dissolved)	mg/l											
Potassium (dissolved)	mg/l											
Phosphorus (total)	µg/l											
Monoaromatics												
Benzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethyl benzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m/p-Xylene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	6.6	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.1	< 1.0	< 1.0	< 1.0

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units	462991	462993	462909	462987	462800	462907	462908	462874	462796	463176	462899
Sample Reference		BH101	WS101	WS102	BH202	BH202	BH203	BH203	BH204	WS202	WS202	WS204
Groundwater Body												
Depth (m)		21.0	5.6	4.2	7.0	11.5	5	13	6.7	6.7	11.7	4.45
Date Sampled		22/06/2015	23/06/2015	24/06/2015	10/06/2015	11/06/2015	29/06/2015	29/06/2015	24/06/2015	25/06/2015	26/06/2015	29/06/2015
Analytical Parameter (Water Analysis)												
MTBE (Methyl Tertiary Butyl Ether)	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sum of xylenes	µg/l	0	0	0	0	0	0	0	8.7	0	0	0
TPH CWG												
TPH-CWG - Aliphatic >C5 - C6	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C6 - C8	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C8 - C10	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C10 - C12	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	18	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	170	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	540	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	1200	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	2000	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C7 - C8	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C8 - C10	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C10 - C12	µg/l	< 10	< 10	< 10	84	< 10	< 10	200	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	< 10	< 10	< 10	230	< 10	< 10	520	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	< 10	< 10	< 10	110	< 10	< 10	1500	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	< 10	< 10	< 10	420	< 10	< 10	2300	< 10	< 10	< 10	< 10
VOCs												
Chloromethane	µg/l											
Chloroethane	µg/l											
Bromomethane	µg/l											
Vinyl Chloride	µg/l											
Trichlorofluoromethane	µg/l											
1,1-Dichloroethene	µg/l											
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l											
cis 1,2-Dichloroethene	µg/l											
MTBE (Methyl Tertiary Butyl Ether)	µg/l											
1,1-Dichloroethane	µg/l											
2,2-Dichloropropane	µg/l											
Trichloromethane	µg/l											
1,1,1-Trichloroethane	µg/l											
1,2-Dichloroethane	µg/l											
1,1-Dichloropropene	µg/l											
trans 1,2-Dichloroethene	µg/l											
Benzene	µg/l											
Tetrachloromethane	µg/l											
1,2-Dichloropropane	µg/l											
Trichloroethene	µg/l											
Dibromomethane	µg/l											
Bromodichloromethane	µg/l											
cis 1,3-Dichloropropene	µg/l											
trans 1,3-Dichloropropene	µg/l											
Toluene	µg/l											
1,1,2-Trichloroethane	µg/l											
1,3-Dichloropropane	µg/l											
Dibromochloromethane	µg/l											
Tetrachloroethene	µg/l											
1,2-Dibromoethane	µg/l											
Chlorobenzene	µg/l											
1,1,1,2-Tetrachloroethane	µg/l											
Ethylbenzene	µg/l											
m and p-Xylene	µg/l											
Styrene	µg/l											
Tribromomethane	µg/l											
o-Xylene	µg/l											
1,1,2,2-Tetrachloroethane	µg/l											
iso-Propylbenzene	µg/l											
Bromobenzene	µg/l											
Propylbenzene	µg/l											
2-Chlorotoluene	µg/l											
4-Chlorotoluene	µg/l											
1,3,5-Trimethylbenzene	µg/l											
tert-Butylbenzene	µg/l											
1,2,4-Trimethylbenzene	µg/l											
sec-Butylbenzene	µg/l											
1,3-Dichlorobenzene	µg/l											
p-Isopropyltoluene	µg/l											
1,2-Dichlorobenzene	µg/l											
1,4-Dichlorobenzene	µg/l											
n-Butylbenzene	µg/l											
1,2-Dibromo-3-chloropropane	µg/l											
1,2,4-Trichlorobenzene	µg/l											
Hexachlorobutadiene	µg/l											

Values in italics are method detection limits
Leachate
Exceedance of both DWS and EQS
Exceedance of EQS
Exceedance of DWS

Lab Sample Number	Units	462991	462993	462909	462987	462800	462907	462908	462874	462796	463176	462899
Sample Reference		BH101	WS101	WS102	BH202	BH202	BH203	BH203	BH204	WS202	WS202	WS204
Groundwater Body												
Depth (m)		21.0	5.6	4.2	7.0	11.5	5	13	6.7	6.7	11.7	4.45
Date Sampled		22/06/2015	23/06/2015	24/06/2015	10/06/2015	11/06/2015	29/06/2015	29/06/2015	24/06/2015	25/06/2015	26/06/2015	29/06/2015
Analytical Parameter (Water Analysis)												
1,2,3-Trichlorobenzene	µg/l											
sVOCs												
Aniline	µg/l											
Phenol	µg/l											
2-Chlorophenol	µg/l											
bis(2-Chloroethyl)ether	µg/l											
1,3-Dichlorobenzene	µg/l											
1,2-Dichlorobenzene	µg/l											
1,4-Dichlorobenzene	µg/l											
bis(2-Chloroisopropyl)ether	µg/l											
2-Methylphenol	µg/l											
Hexachloroethane	µg/l											
Nitrobenzene	µg/l											
4-Methylphenol	µg/l											
Isophorone	µg/l											
2-Nitrophenol	µg/l											
2,4-Dimethylphenol	µg/l											
bis(2-Chloroethoxy)methane	µg/l											
1,2,4-Trichlorobenzene	µg/l											
Naphthalene	µg/l											
2,4-Dichlorophenol	µg/l											
4-Chloroaniline	µg/l											
Hexachlorobutadiene	µg/l											
4-Chloro-3-methylphenol	µg/l											
2,4,6-Trichlorophenol	µg/l											
2,4,5-Trichlorophenol	µg/l											
2-Methylnaphthalene	µg/l											
2-Chloronaphthalene	µg/l											
Dimethylphthalate	µg/l											
2,6-Dinitrotoluene	µg/l											
Acenaphthylene	µg/l											
Acenaphthene	µg/l											
2,4-Dinitrotoluene	µg/l											
Dibenzofuran	µg/l											
4-Chlorophenyl-phenylether	µg/l											
Diethylphthalate	µg/l											
4-Nitroaniline	µg/l											
Fluorene	µg/l											
Azobenzene	µg/l											
4-Bromophenyl-phenylether	µg/l											
Hexachlorobenzene	µg/l											
Phenanthrene	µg/l											
Anthracene	µg/l											
Carbazole	µg/l											
Dibutyl phthalate	µg/l											
Anthraquinone	µg/l											
Fluoranthene	µg/l											
Pyrene	µg/l											
Butylbenzylphthalate	µg/l											
Benzo[a]anthracene	µg/l											
Chrysene	µg/l											
Benzo[b]fluoranthene	µg/l											
Benzo[k]fluoranthene	µg/l											
Benzo[a]pyrene	µg/l											
Indeno[1,2,3-cd]pyrene	µg/l											
Dibenzo[a,h]anthracene	µg/l											
Benzo[g,h,i]perylene	µg/l											

E.5. Perched Water/Groundwater Screening (2015) (Human Health)

Values in italics are the method limit of detection

Water screening value exceedance | *LAND USE:* | Commercial

Lab Sample Number	Units	Limit of detection	Water Screening Value	No Samples	Minimum Value	Maximum Value	No. Exceedances	Location of Exceedances	465834	470638	470679	475317	479874	465835	470640	475321	479877	465166	470680	475318	479870
Sample Reference									BH101	BH101	Duplicate B (Dup of BH101)	BH101	BH101	WS101	WS101	WS101	WS101	WS102	WS102	WS102	WS102
Groundwater Body									Chalk	Chalk	Chalk	Chalk	Chalk	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched
Depth (m)									5.26	3.99	None Supplied	4.98	4.86	3.31	3.65	3.66	3.58	3.29	3.49	3.98	3.48
Date Sampled									15/07/2015	29/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	29/07/2015	12/08/2015	27/08/2015	14/07/2015	29/07/2015	12/08/2015	27/08/2015
Time Taken									900	1315	None Supplied	1000	915	1000	1230	1000	900	1000	1245	1100	900
General Inorganics																					
pH	pH Units	N/A		74	5.9	13.3			7.2	6.7	7.3	6.8	7.1	8.9	8.2	8	7.7	12.7	12.8	12.8	12.7
Electrical Conductivity	µS/cm	10		74	10	120000			6000	13000	13000	17000	18000	120000	97000	110000	110000	17000	19000	34000	25000
Total Cyanide	µg/l	10	no WSV	74	< 10	< 10			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Complex Cyanide	µg/l	10	no WSV	74	< 10	< 10			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	10	no WSV	74	< 10	< 10			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphate as SO4	µg/l	45	no WSV	74	166	17000000			327000	461000	487000	532000	680000	9820000	10000000	11000000	10000000	455000	2310000	1530000	968000
Sulphide	µg/l	5	no WSV	74	< 5	< 5			< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	0.15	no WSV	74	0.45	29000			1900	5000	5000	7000	7100	28000	29000	28000	23000	1900	2800	3200	2300
Ammoniacal Nitrogen as N	µg/l	15	no WSV	74	23	450000			3600	< 15	1700	2800	3900	410000	400000	450000	390000	1700	3900	5400	3200
Nitrate as N	mg/l	0.01	no WSV	74	0.02	34.7			0.15	0.36	0.46	0.09	0.73	1.07	0.94	0.8	1.36	0.36	0.15	0.14	0.13
Nitrate as NO3	mg/l	0.05	no WSV	74	0.1	154			0.68	1.61	2.03	0.42	3.25	4.73	4.16	3.53	6.02	1.61	0.68	0.62	0.58
Nitrite as N	µg/l	1	no WSV	74	1	1100			2	4	3	1	3	21	23	11	14	260	290	300	250
Nitrite as NO2	µg/l	5	no WSV	74	6.6	3500			6.6	13	9.9	< 5.0	9.9	69	76	36	46	860	940	970	830
Chemical Oxygen Demand (Total)	mg/l	2	no WSV	74	2	5000			98	3200	130	69	54	2200	5000	1800	730	86	200	97	84
BOD (Biochemical Oxygen Demand)	mg/l	1	no WSV	74	1.2	130			50	33	33	4.4	1.8	8.2	130	24	4.1	< 1.0	3.3	1.4	1.2
Total Oxidised Nitrogen (TON)	mg/l	0.3	no WSV	74	0.3	35			< 0.3	0.4	0.5	< 0.3	0.7	1.1	1	0.8	1.4	0.6	0.4	0.4	0.4
Total Phenols																					
Total Phenols (monohydric)	µg/l	10	no WSV	74	110	1900			110	< 10	280	< 10	< 10	< 10	1000	< 10	< 10	< 10	120	< 10	< 10
Speciated PAHs																					
Naphthalene	µg/l	0.01	9.98E+04	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Coronene	µg/l	0.01	no WSV	63	< 0.01	< 0.01				< 0.01	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01
Total PAH																					
Total EPA-16 PAHs	µg/l	0.2	no WSV	74	< 0.2	< 0.2			< 0.20	< 0.2	< 0.2	< 0.2	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2
Total WAC-17 PAHs	µg/l	0.2	no WSV	63	< 0.2	< 0.2				< 0.2	< 0.2	< 0.2	< 0.2		< 0.2	< 0.2	< 0.2		< 0.2	< 0.2	< 0.2
Heavy Metals / Metalloids																					
Aluminium (dissolved)	mg/l	0.001	no WSV	74	0.0014	25.7			0.003	0.0014	0.0015	0.0026	0.0076	0.0563	< 0.0010	0.0433	0.0495	18	25.7	20.2	20.8
Antimony (dissolved)	µg/l	0.4	no WSV	74	0.8	12			2	1.4	1.2	1	1	2.4	< 0.4	< 0.4	0.8	5.3	2.6	< 0.4	2.4
Arsenic (dissolved)	µg/l	0.15	no WSV	74	0.18	55.3			0.72	5.57	7.68	0.68	0.61	55.3	< 0.15	29.2	5.6	35.9	34.3	38.3	20.4
Barium (dissolved)	µg/l	0.06	no WSV	74	0.28	200			110	130	140	130	120	37	3.7	43	9.1	21	22	17	24
Beryllium (dissolved)	µg/l	0.1	no WSV	74	0.1	0.3			< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1
Boron (dissolved)	µg/l	10	no WSV	74	11	940			220	540	560	860	940	920	710	890	920	19	11	32	23
Cadmium (dissolved)	µg/l	0.02	no WSV	74	0.02	1.8			< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.41	< 0.02	1.8	0.39	< 0.02	0.04	< 0.02	0.07
Chromium (hexavalent)	µg/l	5	no WSV	30	< 5	< 5			< 5.0	< 5.0	< 5.0			< 5.0	< 5.0				< 5.0		
Chromium (dissolved)	µg/l	0.2	no WSV	74	0.2	2100			< 0.2	< 0.2	0.3	1.2	< 0.2	15	7.4	17	11	55	24	18	14
Copper (dissolved)	µg/l	0.5	no WSV	74	0.6	66			1.5	0.9	1.3	4	4.3	15	1.8	12	4.2	62	52	66	39
Iron (dissolved)	mg/l	0.004	no WSV	74	0.006	6.8			3.4	6.8	5.3	< 0.004	0.014	0.14	0.29	0.078	0.18	0.014	0.57	0.039	0.59
Lead (dissolved)	µg/l	0.2	no WSV	74	0.2	35			0.2	< 0.2	< 0.2	0.3	0.3	6.7	< 0.2	1.6	11	6.5	28	9	35
Manganese (dissolved)	µg/l	0.05	no WSV	74	0.17	1800			800	230	290	250	230	48	16	89	53	0.58	0.7	0.38	0.43
Mercury (dissolved)	µg/l	0.05	4.28E+02	74	0.06	8.83			< 0.05	0.68	0.64	0.94	< 0.05	0.37	< 0.05	< 0.05	< 0.05	< 0.05	1.44	< 0.05	0.65
Molybdenum (dissolved)	µg/l	0.05	no WSV	74	0.22	1100			18	3.3	2.3	1.8	2.4	9.2	0.22	4.6	1.2	25	77	100	59
Nickel (dissolved)	µg/l	0.5	no WSV	74	0.5	1700			15	21	21	12	6.8	26	< 0.5	19	6.6	2.1	4.5	7	2.9
Selenium (dissolved)	µg/l	0.6	no WSV	74	1.5	820			94	41	43	65	71	36	< 0.6	18	4.7	43	110	47	120
Vanadium (dissolved)	µg/l	0.2	no WSV	74	0.2	460			0.3	0.6	0.7	0.9	0.9	37	2.2	34	16	50	80	73	55
Zinc (dissolved)	µg/l	0.5	no WSV	74	0.5	150			2.5	2.9	2.1	1.9	5	4.3	20	1.9	3	6	7.5	1.8	6.8
Calcium (dissolved)	mg/l	0.012	no WSV	73	0.19	500			150	320	340	270	310	220	130	230	230	6.1	19	6.6	21
Magnesium (dissolved)	mg/l	0.005	no WSV	74	0.31	520			78	280	280	270	420	280	300	270	300	< 0.005	< 0.005	< 0.005	< 0.005
Potassium (dissolved)	mg/l	0.025	no WSV	74	0.099	21000			44	160	240	110	100	3100	1500	21000	18000	3200	8200	6800	4200
Phosphorus (total)	mg/l	0.05	no WSV	11	0.08	19			< 0.050			19		0.86		1.1			0.12		0.44
Phosphorus (total)	µg/l	20	no WSV	74	21	38000			24	21	23	97	< 20	19000	22000	34000	38000	860	810	670	73
Monoaromatics																					
Benzene	µg/l	1	8.46E+03	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	9.09E+06	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Values in italics are the method limit of detection

Water screening value exceedance

LAND USE: Commercial

Lab Sample Number	Units	Limit of detection	Water Screening Value	No Samples	Minimum Value	Maximum Value	No. Exceedances	Location of Exceedances	465834	470638	470679	475317	479874	465835	470640	475321	479877	465166	470680	475318	479870
Sample Reference									BH101	BH101	Duplicate B (Dup of BH101)	BH101	BH101	WS101	WS101	WS101	WS101	WS102	WS102	WS102	WS102
Groundwater Body									Chalk	Chalk	Chalk	Chalk	Chalk	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched
Depth (m)									5.26	3.99	None Supplied	4.98	4.86	3.31	3.65	3.66	3.58	3.29	3.49	3.98	3.48
Date Sampled									15/07/2015	29/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	29/07/2015	12/08/2015	27/08/2015	14/07/2015	29/07/2015	12/08/2015	27/08/2015
Time Taken									900	1315	None Supplied	1000	915	1000	1230	1000	900	1000	1245	1100	900
Ethylbenzene	µg/l	1	1.25E+06	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	4.13E+05	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	5.03E+05	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	3.38E+07	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons																					
TPH-CWG - Aliphatic >C5 - C6	µg/l	10	1.98E+05	74	< 10	< 10			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C6 - C8	µg/l	10	1.44E+05	74	< 10	< 10			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C8 - C10	µg/l	10	2.90E+03	74	< 10	< 10			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	2.23E+03	74	< 10	< 10			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	no WSV	74	12	12			< 10	< 10	< 10	< 10	< 10	12	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	no WSV	74	48	650			< 10	< 10	< 10	< 10	< 10	230	< 10	< 10	< 10	520	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	no WSV	74	110	1300			< 10	< 10	< 10	< 10	< 10	980	< 10	< 10	< 10	1300	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	no WSV	74	160	1800			< 10	< 10	< 10	< 10	< 10	1200	< 10	< 10	< 10	1800	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	10	8.46E+03	74	< 10	< 10			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C7 - C8	µg/l	10	9.09E+06	74	< 10	< 10			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C8 - C10	µg/l	10	9.65E+04	74	< 10	< 10			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C10 - C12	µg/l	10	3.80E+05	74	< 10	< 10			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	no WSV	74	< 10	< 10			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	no WSV	74	< 10	< 10			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	no WSV	74	< 10	< 10			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	no WSV	74	< 10	< 10			< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs																					
Chloromethane	µg/l	1	5.50E+03	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	1	4.18E+06	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	2.49E+02	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	6.56E+04	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	5.46E+04	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	3.38E+07	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	1.11E+06	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	1	3.69E+05	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	1.27E+06	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	3.54E+03	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	6.57E+04	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	1	8.46E+03	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	3.31E+03	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	1.11E+04	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	6.82E+03	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	9.09E+06	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	2.08E+05	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	3.87E+04	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	1.74E+05	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	1	1.30E+06	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	9.67E+04	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	1.25E+06	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	1	4.13E+05	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	1	3.53E+06	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	1	1.77E+06	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	1	5.03E+05	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	3.89E+05	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	1	8.77E+04	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	1.10E+06	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	9.83E+03	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Values in italics are the method limit of detection

Water screening value exceedance

LAND USE: Commercial

Lab Sample Number	Units	Limit of detection	Water Screening Value	No Samples	Minimum Value	Maximum Value	No. Exceedances	Location of Exceedances	465834	470638	470679	475317	479874	465835	470640	475321	479877	465166	470680	475318	479870
Sample Reference									BH101	BH101	Duplicate B (Dup of BH101)	BH101	BH101	WS101	WS101	WS101	WS101	WS102	WS102	WS102	WS102
Groundwater Body									Chalk	Chalk	Chalk	Chalk	Chalk	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched
Depth (m)									5.26	3.99	None Supplied	4.98	4.86	3.31	3.65	3.66	3.58	3.29	3.49	3.98	3.48
Date Sampled									15/07/2015	29/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	29/07/2015	12/08/2015	27/08/2015	14/07/2015	29/07/2015	12/08/2015	27/08/2015
Time Taken									900	1315	None Supplied	1000	915	1000	1230	1000	900	1000	1245	1100	900
1,2-Dichlorobenzene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	no WSV	74	< 1	< 1			< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SVOCs																					
Aniline	µg/l	0.05	no WSV	74	0.4	19			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.4	< 0.05
Phenol	µg/l	0.05	2.69E+08	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	1.62E+09	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	1.62E+09	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Isophorone	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	3.09E+07	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/l	0.01	9.98E+04	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	no WSV	74	0.09	0.09			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.17	< 0.05
2-Chloronaphthalene	µg/l	0.05	6.27E+04	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.02	no WSV	74	< 0.02	< 0.02			< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Phenanthrene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbazole	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	0.05	no WSV	74	< 0.05	< 0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	no WSV	74	< 0.01	< 0.01			< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Values in italics are the method limit of detection

Water screening value exceedance

LAND USE:

Lab Sample Number	Units	465838	470707	475320	479871	461326	465169	470709	475322	479875	465837	470641	475820	479876	465836	470708	475819	479869	479873
Sample Reference		BH201	BH201	BH201	BH201	BH202	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH204	BH204	BH204	BH204	Duplicate B (Dup of BH204)
Groundwater Body		Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Chalk	Chalk	Chalk	Chalk	Chalk	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits
Depth (m)		3.83	3.81	3.92	3.9	3.79	3.71	3.85	3.66	3.69	2.37	2.86	2.82	2.89	2.5	2.8	3.08	2.85	None Supplied
Date Sampled		15/07/2015	29/07/2015	12/08/2015	27/08/2015	02/07/2015	14/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	29/07/2015	13/08/2015	27/08/2015	15/07/2015	29/07/2015	13/08/2015	27/08/2015	27/08/2015
Time Taken		1245	100	1300	945	1225	1100	1000	1100	1015	1145	900	1030	800	1100	900	945	822	None Supplied
General Inorganics																			
pH	pH Units	11.3	11.4	11.7	11.4	7.6	8.2	7.8	7.4	7.1	7.5	7.6	7.7	7.2	7.4	7.6	7.7	7.4	7.4
Electrical Conductivity	µS/cm	3100	3600	4400	2800	1900	2100	11000	14000	14000	2800	2800	3000	3200	1700	1800	1600	1700	1700
Total Cyanide	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Complex Cyanide	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphate as SO4	µg/l	383000	347000	429000	342000	72500	143000	452000	430000	565000	1080000	1000000	1060000	1090000	111000	103000	95200	124000	129000
Sulphide	µg/l	< 5.0	77	5.8	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	9
Chloride	mg/l	260	330	460	230	470	500	4200	4700	4400	260	240	250	330	230	220	200	230	270
Ammoniacal Nitrogen as N	µg/l	690	190	2700	1300	150	370	4400	4500	4200	1300	1500	1800	5400	1300	1700	1400	1900	2300
Nitrate as N	mg/l	1.14	1.18	0.83	1.3	6.64	4.68	0.91	0.41	0.28	1.11	0.18	0.32	0.22	0.35	0.25	0.32	0.26	0.21
Nitrate as NO3	mg/l	5.04	5.25	3.69	5.76	29.4	20.7	4.05	1.82	1.26	4.94	0.78	1.4	1	1.56	1.09	1.4	1.15	0.94
Nitrite as N	µg/l	450	950	590	190	92	200	220	14	12	410	45	13	7	2	17	3	7	24
Nitrite as NO2	µg/l	1500	3100	1900	640	300	640	740	46	39	1300	150	43	23	6.6	56	9.9	23	79
Chemical Oxygen Demand (Total)	mg/l	62	64	80	64	27	12	99	140	37	62	110	53	72	43	31	58	120	110
BOD (Biochemical Oxygen Demand)	mg/l	2.8	7.5	9.7	19	3	1.7	22	< 1.0	1.6	3	23	5.6	2.4	5.7	25	16	2.1	6.9
Total Oxidised Nitrogen (TON)	mg/l	1.6	2.1	1.4	1.5	6.7	4.9	1.1	0.4	< 0.3	1.5	< 0.3	0.3	< 0.3	0.4	< 0.3	0.3	< 0.3	< 0.3
Total Phenols																			
Total Phenols (monohydric)	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Speciated PAHs																			
Naphthalene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Coronene	µg/l		< 0.01	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01	< 0.01
Total PAH																			
Total EPA-16 PAHs	µg/l	< 0.20	< 0.2	< 0.2	< 0.2	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2	< 0.2
Total WAC-17 PAHs	µg/l		< 0.2	< 0.2	< 0.2	< 0.2		< 0.2	< 0.2	< 0.2		< 0.2	< 0.2	< 0.2		< 0.2	< 0.2	< 0.2	< 0.2
Heavy Metals / Metalloids																			
Aluminium (dissolved)	mg/l	0.474	0.229	0.432	0.488	< 0.0010	0.0095	0.002	0.008	0.0033	0.0059	0.0155	0.0518	0.0218	0.0036	0.0352	0.012	0.105	0.012
Antimony (dissolved)	µg/l	11	9.5	12	7.2	3.2	2.3	1.3	1	0.9	2.6	3.5	1.8	1.6	2.1	1	1.3	1.1	1.9
Arsenic (dissolved)	µg/l	41.3	28.5	53.9	36.7	0.5	0.69	1.31	0.76	0.7	1.71	1.78	2.87	1.32	2.64	1.77	2.57	2.23	1.79
Barium (dissolved)	µg/l	8.3	7.8	11	9	35	38	180	200	170	130	140	160	150	39	43	50	49	54
Beryllium (dissolved)	µg/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron (dissolved)	µg/l	110	99	92	100	98	97	450	620	620	420	370	480	490	290	300	290	290	310
Cadmium (dissolved)	µg/l	< 0.02	0.05	0.1	0.1	0.02	0.08	< 0.02	< 0.02	< 0.02	< 0.02	0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chromium (hexavalent)	µg/l	< 5.0	< 5.0			< 5.0		< 5.0			< 5.0	< 5.0			< 5.0	< 5.0			
Chromium (dissolved)	µg/l	4.1	4.7	4.5	2.9	0.3	3.8	0.3	0.9	< 0.2	0.2	0.9	0.7	0.3	< 0.2	0.5	0.5	0.4	< 0.2
Copper (dissolved)	µg/l	25	8.8	21	24	13	3.3	3.2	2.2	4.2	8.5	9.9	4.3	2.5	6.4	2.1	4.2	2.7	6
Iron (dissolved)	mg/l	0.092	0.29	0.073	0.12	0.07	0.04	3.1	0.38	0.062	0.13	0.087	0.012	2.9	0.37	0.44	0.097	0.33	0.034
Lead (dissolved)	µg/l	1.4	3.2	2.4	7.2	0.3	2.6	0.4	0.2	0.3	0.4	1.2	0.4	< 0.2	0.3	0.5	0.2	0.4	0.3
Manganese (dissolved)	µg/l	1.5	2.2	1.6	5.3	70	120	470	860	910	420	410	1100	1800	210	640	880	550	440
Mercury (dissolved)	µg/l	1.08	0.24	0.71	0.2	< 0.05	0.12	< 0.05	0.24	< 0.05	1.37	0.11	0.28	< 0.05	0.52	< 0.05	0.28	0.21	< 0.05
Molybdenum (dissolved)	µg/l	18	11	33	19	2.6	4	8.2	2.8	2.9	9.7	9.9	7.2	7.3	5.9	4.5	12	2.9	6.5
Nickel (dissolved)	µg/l	3.5	7.3	17	8.8	9.8	7	13	1.9	2	9.6	11	8.8	11	8.3	7.3	5.3	3.6	4.8
Selenium (dissolved)	µg/l	11	8.9	20	8.1	6.4	18	39	49	56	25	21	10	16	6.4	5.2	3.4	4.7	15
Vanadium (dissolved)	µg/l	230	120	460	200	1.1	1.1	0.6	0.9	0.6	1.3	1.2	0.9	0.5	3.2	1.1	0.7	0.9	1.5
Zinc (dissolved)	µg/l	< 0.5	2	< 0.5	2.9	150	98	14	< 0.5	1.3	2.9	9.1	2.9	6.4	1.4	2.4	6.6	4.1	2.5
Calcium (dissolved)	mg/l	7.4	8.6	8.1	7.9	130	160	320	310	380	360	320	380	440	91	91	86	89	89
Magnesium (dissolved)	mg/l	0.31	< 0.005	< 0.005	< 0.005	22	24	210	190	240	65	68	77	120	35	43	37	38	38
Potassium (dissolved)	mg/l	580	570	880	750	9.3	17	130	81	64	55	40	50	84	46	65	21	20	20
Phosphorus (total)	mg/l		0.86		< 0.050		0.08			4	1.8								
Phosphorus (total)	µg/l	1100	5200	15000	700	400	120	180	470	< 20	440	190	70	39	860	1900	100	44	48
Monoaromatics																			
Benzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Values in italics are the method limit of detection

Water screening value exceedance

LAND USE:

Lab Sample Number		465838	470707	475320	479871	461326	465169	470709	475322	479875	465837	470641	475820	479876	465836	470708	475819	479869	479873
Sample Reference		BH201	BH201	BH201	BH201	BH202	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH204	BH204	BH204	BH204	Duplicate B (Dup of BH204)
Groundwater Body	Units	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Chalk	Chalk	Chalk	Chalk	Chalk	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits
Depth (m)		3.83	3.81	3.92	3.9	3.79	3.71	3.85	3.66	3.69	2.37	2.86	2.82	2.89	2.5	2.8	3.08	2.85	None Supplied
Date Sampled		15/07/2015	29/07/2015	12/08/2015	27/08/2015	02/07/2015	14/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	29/07/2015	13/08/2015	27/08/2015	15/07/2015	29/07/2015	13/08/2015	27/08/2015	27/08/2015
Time Taken		1245	100	1300	945	1225	1100	1000	1100	1015	1145	900	1030	800	1100	900	945	822	None Supplied
Ethylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons																			
TPH-CWG - Aliphatic >C5 - C6	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C6 - C8	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C8 - C10	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C10 - C12	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	< 10	< 10	< 10	< 10	48	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	< 10	< 10	< 10	< 10	110	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	< 10	< 10	< 10	< 10	160	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C7 - C8	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C8 - C10	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C10 - C12	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs																			
Chloromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Values in italics are the method limit of detection

Water screening value exceedance

LAND USE:

Lab Sample Number	Units	465838	470707	475320	479871	461326	465169	470709	475322	479875	465837	470641	475820	479876	465836	470708	475819	479869	479873
Sample Reference		BH201	BH201	BH201	BH201	BH202	BH202	BH202	BH202	BH202	BH203	BH203	BH203	BH203	BH204	BH204	BH204	BH204	Duplicate B (Dup of BH204)
Groundwater Body		Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Chalk	Chalk	Chalk	Chalk	Chalk	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits	Terrace Deposits
Depth (m)		3.83	3.81	3.92	3.9	3.79	3.71	3.85	3.66	3.69	2.37	2.86	2.82	2.89	2.5	2.8	3.08	2.85	None Supplied
Date Sampled		15/07/2015	29/07/2015	12/08/2015	27/08/2015	02/07/2015	14/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	29/07/2015	13/08/2015	27/08/2015	15/07/2015	29/07/2015	13/08/2015	27/08/2015	27/08/2015
Time Taken		1245	100	1300	945	1225	1100	1000	1100	1015	1145	900	1030	800	1100	900	945	822	None Supplied
1,2-Dichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,4-Dichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Butylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dibromo-3-chloropropane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2,4-Trichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Hexachlorobutadiene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2,3-Trichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
SVOCs																			
Aniline	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Phenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Chlorophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Bis(2-chloroethyl)ether	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,3-Dichlorobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,2-Dichlorobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,4-Dichlorobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Bis(2-chloroisopropyl)ether	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Methylphenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Hexachloroethane	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Nitrobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Methylphenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Isophorone	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Nitrophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,4-Dimethylphenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Bis(2-chloroethoxy)methane	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,2,4-Trichlorobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Naphthalene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
2,4-Dichlorophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Chloroaniline	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Hexachlorobutadiene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Chloro-3-methylphenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,4,6-Trichlorophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,4,5-Trichlorophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Methylnaphthalene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Chloronaphthalene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Dimethylphthalate	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,6-Dinitrotoluene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Acenaphthylene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Acenaphthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
2,4-Dinitrotoluene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Dibenzofuran	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Chlorophenyl phenyl ether	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Diethyl phthalate	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Nitroaniline	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Fluorene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Azobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Bromophenyl phenyl ether	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Hexachlorobenzene	µg/l	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
Phenanthrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Carbazole	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Dibutyl phthalate	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Anthraquinone	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Butyl benzyl phthalate	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Benzo(a)anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Chrysene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(b)fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(k)fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(a)pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Indeno(1,2,3-cd)pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Dibenz(a,h)anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(ghi)perylene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*

Values in italics are the method limit of detection

Water screening value exceedance

LAND USE:

Lab Sample Number	**Units**	465168	470639	475323	479878	465167	470681	470706	475319	479872	465839	470264	475821	479635	479640	465840	470279	475816	475817
Sample Reference		WS202	WS202	WS202	WS202	WS203	WS203	Duplicate A (Dup of WS203)	WS203	WS203	BH501	BH501	BH501	BH501	Duplicate A (Dup of BH501)	BH502	BH502	BH502	Duplicate A (Dup of BH502)
Groundwater Body		Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk
Depth (m)		7.65	7.26	7.95	7.84	1.14	1.23	None Supplied	1.56	1.27	11.73	None Supplied	11.74	11.73	None Supplied	12.2	12.02	12.09	12.09
Date Sampled		14/07/2015	29/07/2015	12/08/2015	27/08/2015	14/07/2015	29/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	28/07/2015	13/08/2015	26/08/2015	26/08/2015	15/07/2015	28/07/2015	13/08/2015	13/08/2015
Time Taken		1315	1150	1200	1030	1215	1100	None Supplied	1200	1025	1345	None Supplied	1120	1200	None Supplied	1410	1340	1130	1130
General Inorganics																			
pH	pH Units	12.6	13.1	13	12.9	13.3	13.1	13.1	13.1	13	7.5	7.2	7.5	7.2	7.2	7.3	6.5	7.2	7.3
Electrical Conductivity	µS/cm	84000	64000	92000	82000	93000	59000	60000	73000	67000	1200	1100	1100	1100	1100	4900	4500	4000	4000
Total Cyanide	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	13	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Complex Cyanide	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	13	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Free Cyanide	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphate as SO4	µg/l	17000000	15000000	13000000	13000000	5770000	5060000	4940000	4720000	4770000	136000	144000	124000	128000	133000	614000	600000	500000	483000
Sulphide	µg/l	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	30000	45000	37000	31000	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	4400	4600	4300	4300	4200	4900	4700	4700	4000	75	60	60	67	68	1300	1100	920	880
Ammoniacal Nitrogen as N	µg/l	45000	39000	28000	15000	56000	53000	51000	50000	18000	< 15	< 15	< 15	60	93	< 15	< 15	< 15	< 15
Nitrate as N	mg/l	0.28	0.26	0.27	0.25	0.34	0.34	0.33	0.36	0.34	15.9	17.5	18.1	17.6	18	34.7	33.5	29.9	28.4
Nitrate as NO3	mg/l	1.25	1.14	1.19	1.1	1.51	1.51	1.45	1.61	1.52	70.5	77.6	80.2	78	79.8	154	148	132	126
Nitrite as N	µg/l	1100	1000	910	950	500	400	390	410	460	29	6	4	3	4	20	96	14	10
Nitrite as NO2	µg/l	3500	3400	3000	3100	1600	1300	1300	1300	1500	95	20	13	9.9	13	66	320	46	33
Chemical Oxygen Demand (Total)	mg/l	1000	2100	560	450	3300	1200	1100	1300	940	14	22	5.9	34	28	37	25	14	20
BOD (Biochemical Oxygen Demand)	mg/l	1.3	2.1	120	1.8	48	17	21	34	17	4.5	4.2	5.5	3.5	3.3	4.8	< 1.0	5.3	6.6
Total Oxidised Nitrogen (TON)	mg/l	1.3	1.3	1.2	1.2	0.8	0.7	0.7	0.8	0.8	16	18	18	18	18	35	34	30	28
Total Phenols																			
Total Phenols (monohydric)	µg/l	1100	1000	< 10	1100	1900	1700	1700	< 10	1900	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Speciated PAHs																			
Naphthalene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Coronene	µg/l		< 0.01	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01
Total PAH																			
Total EPA-16 PAHs	µg/l	< 0.20	< 0.2	< 0.2	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2	< 0.2	< 0.20	< 0.2	< 0.2	< 0.2
Total WAC-17 PAHs	µg/l		< 0.2	< 0.2	< 0.2		< 0.2	< 0.2	< 0.2	< 0.2		< 0.2	< 0.2	< 0.2	< 0.2		< 0.2	< 0.2	< 0.2
Heavy Metals / Metalloids																			
Aluminium (dissolved)	mg/l	0.431	0.0609	0.0734	0.218	0.802	0.424	0.195	0.647	0.198	0.0039	0.0076	0.0172	0.0087	0.0114	0.0029	0.0736	0.0026	0.0032
Antimony (dissolved)	µg/l	3.7	2.5	< 0.4	3.4	< 0.4	2.9	3.2	< 0.4	3	1.1	1.6	1.4	1.8	1.8	1.5	1.4	1.3	1.1
Arsenic (dissolved)	µg/l	15.5	29.9	15.6	15.1	6.91	21.4	19.3	21.4	13.3	0.44	0.58	0.61	0.41	0.52	0.69	0.79	0.7	0.74
Barium (dissolved)	µg/l	27	24	27	14	50	56	52	43	49	43	41	45	40	42	66	55	66	65
Beryllium (dissolved)	µg/l	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron (dissolved)	µg/l	54	25	27	33	62	21	15	25	19	120	120	120	110	110	560	540	480	470
Cadmium (dissolved)	µg/l	0.11	0.36	< 0.02	< 0.02	0.02	0.44	0.29	< 0.02	0.29	< 0.02	0.03	0.03	< 0.02	0.04	< 0.02	< 0.02	0.03	< 0.02
Chromium (hexavalent)	µg/l		2000				< 5.0	< 5.0			< 5.0	< 5.0				< 5.0	< 5.0		
Chromium (dissolved)	µg/l	200	2100	1600	1300	2.4	1.7	1.2	1.2	0.5	0.3	0.5	0.8	0.4	0.4	14	19	22	22
Copper (dissolved)	µg/l	40	33	27	17	6.5	7.8	4.7	9.4	7	5.3	3.7	4.5	11	4.9	4.5	4.3	4.9	4.3
Iron (dissolved)	mg/l	0.095	0.16	< 0.004	0.019	0.081	0.24	0.13	0.029	0.032	0.39	0.051	< 0.004	0.17	0.065	0.34	0.044	< 0.004	0.064
Lead (dissolved)	µg/l	3.8	4.9	3	3	< 0.2	0.7	0.5	1.4	1.1	0.3	< 0.2	7.5	0.2	0.2	0.3	0.5	< 0.2	< 0.2
Manganese (dissolved)	µg/l	2.3	0.47	< 0.05	< 0.05	0.9	0.48	0.67	0.22	0.92	16	9.5	4.7	2.7	3.9	18	22	12	11
Mercury (dissolved)	µg/l	< 0.05	2.71	< 0.05	< 0.05	< 0.05	8.83	5.83	1.33	2.32	0.09	0.09	0.37	< 0.05	< 0.05	< 0.05	0.47	0.38	0.31
Molybdenum (dissolved)	µg/l	59	680	380	400	190	940	1100	730	770	1.8	0.86	0.92	1.5	2	5.8	4.7	4.3	4.4
Nickel (dissolved)	µg/l	26	240	160	160	310	1400	1700	1200	1200	4.4	5.5	3.1	3.6	3.2	10	9.6	4.7	4.7
Selenium (dissolved)	µg/l	70	820	630	530	100	370	480	260	360	3.6	4.4	3.6	3.9	4	22	18	18	17
Vanadium (dissolved)	µg/l	100	120	61	57	140	170	150	84	110	0.9	0.8	0.9	0.8	0.8	1.5	1.8	2	2.1
Zinc (dissolved)	µg/l	1	< 0.5	< 0.5	0.5	1.1	2.7	2.4	2.1	3.2	7.1	6.7	3.6	13	12	3.9	6.5	18	12
Calcium (dissolved)	mg/l	56	61	38	49	21	35	46	20	20	190	200	160	180	190	500		350	370
Magnesium (dissolved)	mg/l	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	9.7	11	10	9.8	9.6	21	520	20	19
Potassium (dissolved)	mg/l	18000	18000	18000	17000	11000	11000	11000	12000	11000	13	13	13	11	11	85	24	74	72
Phosphorus (total)	mg/l																		
Phosphorus (total)	µg/l	35	58	160	61	80	96	100	89	120	4000	3700	430	870	840	1800	2400	190	750
Monoaromatics																			
Benzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Values in italics are the method limit of detection
Water screening value exceedance
LAND USE:

Lab Sample Number	Units	465168	470639	475323	479878	465167	470681	470706	475319	479872	465839	470264	475821	479635	479640	465840	470279	475816	475817
Sample Reference		WS202	WS202	WS202	WS202	WS203	WS203	Duplicate A (Dup of WS203)	WS203	WS203	BH501	BH501	BH501	BH501	Duplicate A (Dup of BH501)	BH502	BH502	BH502	Duplicate A (Dup of BH502)
Groundwater Body		Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk
Depth (m)		7.65	7.26	7.95	7.84	1.14	1.23	None Supplied	1.56	1.27	11.73	None Supplied	11.74	11.73	None Supplied	12.2	12.02	12.09	12.09
Date Sampled		14/07/2015	29/07/2015	12/08/2015	27/08/2015	14/07/2015	29/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	28/07/2015	13/08/2015	26/08/2015	26/08/2015	15/07/2015	28/07/2015	13/08/2015	13/08/2015
Time Taken		1315	1150	1200	1030	1215	1100	None Supplied	1200	1025	1345	None Supplied	1120	1200	None Supplied	1410	1340	1130	1130
Ethylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons																			
TPH-CWG - Aliphatic >C5 - C6	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C6 - C8	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C8 - C10	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C10 - C12	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	< 10	< 10	< 10	< 10	650	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	< 10	< 10	< 10	< 10	1200	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	< 10	< 10	< 10	< 10	1800	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C7 - C8	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C8 - C10	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C10 - C12	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
VOCs																			
Chloromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromochloromethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloroethene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-Xylene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
n-Propylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Values in italics are the method limit of detection

Water screening value exceedance

LAND USE:

Lab Sample Number	Units	465168	470639	475323	479878	465167	470681	470706	475319	479872	465839	470264	475821	479635	479640	465840	470279	475816	475817
Sample Reference		WS202	WS202	WS202	WS202	WS203	WS203	Duplicate A (Dup of WS203)	WS203	WS203	BH501	BH501	BH501	BH501	Duplicate A (Dup of BH501)	BH502	BH502	BH502	Duplicate A (Dup of BH502)
Groundwater Body		Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Leachate/ Perched	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk
Depth (m)		7.65	7.26	7.95	7.84	1.14	1.23	None Supplied	1.56	1.27	11.73	None Supplied	11.74	11.73	None Supplied	12.2	12.02	12.09	12.09
Date Sampled		14/07/2015	29/07/2015	12/08/2015	27/08/2015	14/07/2015	29/07/2015	29/07/2015	12/08/2015	27/08/2015	15/07/2015	28/07/2015	13/08/2015	26/08/2015	26/08/2015	15/07/2015	28/07/2015	13/08/2015	13/08/2015
Time Taken		1315	1150	1200	1030	1215	1100	None Supplied	1200	1025	1345	None Supplied	1120	1200	None Supplied	1410	1340	1130	1130
1,2-Dichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,4-Dichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Butylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dibromo-3-chloropropane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2,4-Trichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Hexachlorobutadiene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2,3-Trichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
SVOCs																			
Aniline	µg/l	3.8	*< 0.05*	2.9	*< 0.05*	17	19	16	11	14	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Phenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Chlorophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Bis(2-chloroethyl)ether	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,3-Dichlorobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,2-Dichlorobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,4-Dichlorobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Bis(2-chloroisopropyl)ether	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Methylphenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Hexachloroethane	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Nitrobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Methylphenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Isophorone	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Nitrophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,4-Dimethylphenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Bis(2-chloroethoxy)methane	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,2,4-Trichlorobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Naphthalene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
2,4-Dichlorophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Chloroaniline	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Hexachlorobutadiene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Chloro-3-methylphenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,4,6-Trichlorophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,4,5-Trichlorophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Methylnaphthalene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Chloronaphthalene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Dimethylphthalate	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,6-Dinitrotoluene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Acenaphthylene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Acenaphthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
2,4-Dinitrotoluene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Dibenzofuran	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Chlorophenyl phenyl ether	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Diethyl phthalate	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Nitroaniline	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Fluorene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Azobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Bromophenyl phenyl ether	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Hexachlorobenzene	µg/l	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
Phenanthrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Carbazole	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Dibutyl phthalate	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Anthraquinone	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Butyl benzyl phthalate	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Benzo(a)anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Chrysene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(b)fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(k)fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(a)pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Indeno(1,2,3-cd)pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Dibenz(a,h)anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(ghi)perylene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*

Values in italics are the method limit of detection

Water screening value exceedance

LAND USE:

Lab Sample Number	Units	479636	467195	470265	475822	479637	467196	470266	476307	479641	467197	470267	476304	476305	479638	467198	470268	476306	479639
Sample Reference		BH502	BH703	BH703	BH703	BH703	BH705	BH705	BH705	BH705	BH706	BH706	BH706	Duplicate B (Dup of BH706)	BH706	BH707	BH707	BH707	BH707
Groundwater Body		Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk
Depth (m)		11.59	4.77	None Supplied	4.73	4.74	2.76	None Supplied	2.77	2.77	6.43	None Supplied	6.46	None Supplied	6.43	11.03	None Supplied	11.03	11.05
Date Sampled		26/08/2015	20/07/2015	28/07/2015	13/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	14/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	26/08/2015
Time Taken		1230	830	None Supplied	1230	920	915	None Supplied	1030	948	1100	None Supplied	900	900	1000	1200	None Supplied	925	1035
General Inorganics																			
pH	pH Units	7.1	7.6	7.2	7.7	7.6	7.5	7.2	7.4	7.2	7.3	7.1	7.8	7.7	7.4	7.2	7	7.5	7.4
Electrical Conductivity	µS/cm	4100	1600	1400	1500	1500	1100	1200	1100	1100	1300	1200	1200	1200	1300	1500	1400	1300	1300
Total Cyanide	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
Complex Cyanide	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
Free Cyanide	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
Sulphate as SO4	µg/l	534000	445000	373000	329000	342000	122000	140000	137000	114000	151000	147000	141000	113000	151000	311000	300000	322000	274000
Sulphide	µg/l	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*
Chloride	mg/l	1100	91	99	120	150	97	130	140	120	120	110	140	140	130	120	110	190	130
Ammoniacal Nitrogen as N	µg/l	99	54	23	*< 15*	160	*< 15*	*< 15*	110	67	100	*< 15*	62	110	170	160	*< 15*	240	140
Nitrate as N	mg/l	31.2	7.06	7.8	7.16	7.11	23.6	22.1	26	24.3	22.5	23	22.9	22.6	22.9	8.01	8.49	9.04	9.85
Nitrate as NO3	mg/l	138	31.3	34.5	31.7	31.5	104	97.7	115	108	99.5	102	101	100	101	35.5	37.6	40.1	43.6
Nitrite as N	µg/l	18	28	21	30	47	27	5	32	6	92	17	16	21	4	18	110	230	37
Nitrite as NO2	µg/l	59	92	69	99	150	89	16	110	20	300	56	53	69	13	59	360	750	120
Chemical Oxygen Demand (Total)	mg/l	32	5.2	7.2	4.3	13	2.4	3	15	7.4	2	*< 2.0*	7.2	6.4	10	10	21	27	26
BOD (Biochemical Oxygen Demand)	mg/l	3.4	*< 1.0*	3.6	3	1.3	*< 1.0*	*< 1.0*	73	*< 1.0*	*< 1.0*	1.6	4.2	4.7	*< 1.0*	8.6	1.7	73	2.8
Total Oxidised Nitrogen (TON)	mg/l	31	7.1	7.8	7.2	7.2	24	22	26	24	23	23	23	23	23	8	8.6	9.3	9.9
Total Phenols																			
Total Phenols (monohydric)	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
Speciated PAHs																			
Naphthalene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Acenaphthylene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Acenaphthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Fluorene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Phenanthrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(a)anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Chrysene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(b)fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(k)fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(a)pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Indeno(1,2,3-cd)pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Dibenz(a,h)anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(ghi)perylene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Coronene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Total PAH																			
Total EPA-16 PAHs	µg/l	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*
Total WAC-17 PAHs	µg/l	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*
Heavy Metals / Metalloids																			
Aluminium (dissolved)	mg/l	0.0037	0.0147	0.0019	0.0058	0.02	0.0121	0.0044	*< 0.0010*	0.0027	0.0354	0.0087	*< 0.0010*	*< 0.0010*	0.0024	0.0148	0.0244	*< 0.0010*	0.0133
Antimony (dissolved)	µg/l	1.7	1	1.2	1	1.3	0.9	1	1.2	1.6	0.9	1	1.4	1.2	1.8	1	1.3	1.2	2.1
Arsenic (dissolved)	µg/l	0.75	0.27	*< 0.15*	0.22	0.21	0.23	0.37	0.31	0.18	0.32	0.34	0.23	0.23	0.32	0.29	0.61	0.57	0.46
Barium (dissolved)	µg/l	65	110	100	110	100	51	57	67	55	47	50	63	82	59	45	47	53	48
Beryllium (dissolved)	µg/l	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*
Boron (dissolved)	µg/l	480	49	45	48	45	31	31	36	33	43	43	42	42	43	48	49	47	51
Cadmium (dissolved)	µg/l	*< 0.02*	0.04	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	0.02	0.02	0.02	*< 0.02*	0.03	0.02	0.02	0.04	*< 0.02*	0.02	0.05	0.05
Chromium (hexavalent)	µg/l		*< 5.0*	*< 5.0*			*< 5.0*	*< 5.0*			*< 5.0*	*< 5.0*				*< 5.0*	*< 5.0*		
Chromium (dissolved)	µg/l	21	*< 0.2*	0.2	0.4	*< 0.2*	0.4	0.2	*< 0.2*	0.5	0.3	0.9	0.3	0.4	0.4	*< 0.2*	0.3	*< 0.2*	*< 0.2*
Copper (dissolved)	µg/l	5.9	3	3.2	4.3	15	1.9	3	0.9	2.1	3.7	3.9	*< 0.5*	*< 0.5*	6.2	2.8	1.7	0.6	5
Iron (dissolved)	mg/l	0.014	0.76	0.094	0.006	0.028	0.3	0.031	0.042	0.011	0.85	0.071	0.38	0.039	0.055	0.44	0.047	0.076	0.041
Lead (dissolved)	µg/l	0.3	0.2	*< 0.2*	*< 0.2*	0.4	0.2	*< 0.2*	*< 0.2*	*< 0.2*	13	12	23	20	13	0.4	2	*< 0.2*	0.4
Manganese (dissolved)	µg/l	7.5	220	160	130	140	27	66	170	35	48	29	20	25	15	720	470	560	230
Mercury (dissolved)	µg/l	0.2	0.08	0.1	0.2	*< 0.05*	*< 0.05*	*< 0.05*	0.12	*< 0.05*	*< 0.05*	*< 0.05*	0.21	0.17	*< 0.05*	*< 0.05*	0.07	0.16	*< 0.05*
Molybdenum (dissolved)	µg/l	6.4	1.7	1.5	1.5	9.8	0.3	0.35	0.82	0.32	0.43	0.32	0.35	0.38	0.8	4.5	7.9	9.4	5.6
Nickel (dissolved)	µg/l	5.5	6.9	6.5	3	5	4.6	5.7	4.8	2.1	4.8	5.2	1.7	2.8	2.5	16	21	26	16
Selenium (dissolved)	µg/l	22	2.7	2.6	3	3.6	1.7	1.8	3	2.3	1.6	1.5	2.9	2.6	2.2	3.4	3.2	4.6	3.3
Vanadium (dissolved)	µg/l	2	*< 0.2*	0.2	0.3	0.3	0.5	0.4	0.4	0.3	0.5	0.5	0.3	0.4	0.4	0.2	0.3	*< 0.2*	*< 0.2*
Zinc (dissolved)	µg/l	16	5.3	2.8	0.7	3.9	1.2	3.2	*< 0.5*	1.1	1.4	5.3	1.9	3	8.9	1.7	3.1	1.7	3.9
Calcium (dissolved)	mg/l	420	290	240	200	210	250	230	230	190	260	230	220	170	220	290	290	240	250
Magnesium (dissolved)	mg/l	21	13	13	11	11	7	8.5	7.1	6.3	12	12	11	11	10	12	13	12	11
Potassium (dissolved)	mg/l	72	49	51	48	43	3.4	3.9	3.4	3.1	4.2	4.6	4	4.1	3.8	3	3.4	2.9	2.7
Phosphorus (total)	mg/l																		
Phosphorus (total)	µg/l	110	1400	250	3000	58	5000	640	4300	42	4000	1100	790	760	150	2400	3900	3800	76
Monoaromatics																			
Benzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Toluene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*

Values in italics are the method limit of detection

Water screening value exceedance

LAND USE:

Lab Sample Number	**Units**	479636	467195	470265	475822	479637	467196	470266	476307	479641	467197	470267	476304	476305	479638	467198	470268	476306	479639
Sample Reference		BH502	BH703	BH703	BH703	BH703	BH705	BH705	BH705	BH705	BH706	BH706	BH706	Duplicate B (Dup of BH706)	BH706	BH707	BH707	BH707	BH707
Groundwater Body		Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk
Depth (m)		11.59	4.77	None Supplied	4.73	4.74	2.76	None Supplied	2.77	2.77	6.43	None Supplied	6.46	None Supplied	6.43	11.03	None Supplied	11.03	11.05
Date Sampled		26/08/2015	20/07/2015	28/07/2015	13/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	14/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	26/08/2015
Time Taken		1230	830	None Supplied	1230	920	915	None Supplied	1030	948	1100	None Supplied	900	900	1000	1200	None Supplied	925	1035
Ethylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
p & m-xylene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
o-xylene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
MTBE (Methyl Tertiary Butyl Ether)	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Petroleum Hydrocarbons																			
TPH-CWG - Aliphatic >C5 - C6	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C6 - C8	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C8 - C10	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C10 - C12	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C12 - C16	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C16 - C21	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C21 - C35	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic (C5 - C35)	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C5 - C7	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C7 - C8	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C8 - C10	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C10 - C12	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C12 - C16	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C16 - C21	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C21 - C35	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic (C5 - C35)	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
VOCs																			
Chloromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Chloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Bromomethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Vinyl Chloride	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Trichlorofluoromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1-Dichloroethene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Cis-1,2-dichloroethene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
MTBE (Methyl Tertiary Butyl Ether)	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1-Dichloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
2,2-Dichloropropane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Trichloromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,1-Trichloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dichloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1-Dichloropropene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Trans-1,2-dichloroethene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Benzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Tetrachloromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dichloropropane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Trichloroethene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Dibromomethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Bromodichloromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Cis-1,3-dichloropropene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Trans-1,3-dichloropropene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Toluene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,2-Trichloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,3-Dichloropropane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Dibromochloromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Tetrachloroethene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dibromoethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Chlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,1,2-Tetrachloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Ethylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
p & m-Xylene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Styrene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Tribromomethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
o-Xylene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,2,2-Tetrachloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Isopropylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Bromobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
n-Propylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
2-Chlorotoluene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
4-Chlorotoluene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,3,5-Trimethylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
tert-Butylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2,4-Trimethylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
sec-Butylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,3-Dichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
p-Isopropyltoluene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*

Values in italics are the method limit of detection

Water screening value exceedance | LAND USE:

Lab Sample Number	Units	479636	467195	470265	475822	479637	467196	470266	476307	479641	467197	470267	476304	476305	479638	467198	470268	476306	479639
Sample Reference		BH502	BH703	BH703	BH703	BH703	BH705	BH705	BH705	BH705	BH706	BH706	BH706	Duplicate B (Dup of BH706)	BH706	BH707	BH707	BH707	BH707
Groundwater Body		Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk	Chalk
Depth (m)		11.59	4.77	None Supplied	4.73	4.74	2.76	None Supplied	2.77	2.77	6.43	None Supplied	6.46	None Supplied	6.43	11.03	None Supplied	11.03	11.05
Date Sampled		26/08/2015	20/07/2015	28/07/2015	13/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	14/08/2015	26/08/2015	20/07/2015	28/07/2015	14/08/2015	26/08/2015
Time Taken		1230	830	None Supplied	1230	920	915	None Supplied	1030	948	1100	None Supplied	900	900	1000	1200	None Supplied	925	1035
1,2-Dichlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SVOCs																			
Aniline	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chlorophenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylphenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachloroethane	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nitrobenzene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Methylphenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Isophorone	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Nitrophenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloroaniline	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.09	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dimethylphthalate	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzofuran	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Diethyl phthalate	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4-Nitroaniline	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Azobenzene	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	µg/l	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Phenanthrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbazole	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibutyl phthalate	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthraquinone	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	µg/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Values in italics are the method limit of detection

Water screening value exceedance | *LAND USE:*

Lab Sample Number	Units	467199	475818	479642	475324	475325	479643	479644
Sample Reference		BH708	BH708	BH708	FIELD BLANK	TRIP BLANK	Trip Blank	Field Blank
Groundwater Body		Chalk	Chalk	Chalk				
Depth (m)		16.03	16.12	15.93	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled		20/07/2015	13/08/2015	26/08/2015	12/08/2015	12/08/2015	26/08/2015	26/08/2015
Time Taken		1300	1215	1105	1100	1100	None Supplied	None Supplied
General Inorganics								
pH	pH Units	7.2	7.4	7.4	10.3	8.6	6.5	5.9
Electrical Conductivity	µS/cm	1500	1500	1300	540	10	*< 10*	*< 10*
Total Cyanide	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
Complex Cyanide	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
Free Cyanide	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
Sulphate as SO4	µg/l	248000	227000	215000	3280	8300	166	251
Sulphide	µg/l	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*
Chloride	mg/l	140	120	120	0.61	2.5	0.49	0.45
Ammoniacal Nitrogen as N	µg/l	*< 15*	*< 15*	32	*< 15*	*< 15*	*< 15*	68
Nitrate as N	mg/l	23.2	19.2	24.8	0.05	0.19	0.04	0.02
Nitrate as NO3	mg/l	103	85.1	110	0.21	0.83	0.16	0.1
Nitrite as N	µg/l	17	4	4	9	6	1	1
Nitrite as NO2	µg/l	56	13	13	30	20	*< 5.0*	*< 5.0*
Chemical Oxygen Demand (Total)	mg/l	10	5.6	82	28	*< 2.0*	*< 2.0*	3.5
BOD (Biochemical Oxygen Demand)	mg/l	1.6	3.3	14	-	-	*< 1.0*	2.2
Total Oxidised Nitrogen (TON)	mg/l	23	19	25	*< 0.3*	*< 0.3*	*< 0.3*	*< 0.3*
Total Phenols								
Total Phenols (monohydric)	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
Speciated PAHs								
Naphthalene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Acenaphthylene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Acenaphthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Fluorene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Phenanthrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(a)anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Chrysene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(b)fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(k)fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(a)pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Indeno(1,2,3-cd)pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Dibenz(a,h)anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(ghi)perylene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Coronene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Total PAH								
Total EPA-16 PAHs	µg/l	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*
Total WAC-17 PAHs	µg/l	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*
Heavy Metals / Metalloids								
Aluminium (dissolved)	mg/l	0.0215	0.0046	0.0067	0.0578	0.002	*< 0.0010*	0.0025
Antimony (dissolved)	µg/l	1.4	0.8	1.7	1.1	1.4	1.5	1.8
Arsenic (dissolved)	µg/l	0.67	0.48	0.36	0.36	*< 0.15*	*< 0.15*	*< 0.15*
Barium (dissolved)	µg/l	47	48	50	1.6	0.35	0.28	0.49
Beryllium (dissolved)	µg/l	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*	*< 0.1*
Boron (dissolved)	µg/l	32	36	34	100	100	29	30
Cadmium (dissolved)	µg/l	*< 0.02*	0.03	0.04	0.02	*< 0.02*	*< 0.02*	*< 0.02*
Chromium (hexavalent)	µg/l	*< 5.0*						
Chromium (dissolved)	µg/l	0.9	0.9	*< 0.2*	2	0.7	*< 0.2*	0.2
Copper (dissolved)	µg/l	2.1	2.7	3.4	3.1	3.3	3.9	21
Iron (dissolved)	mg/l	0.26	0.011	0.026	0.008	0.018	0.011	0.015
Lead (dissolved)	µg/l	*< 0.2*	*< 0.2*	0.2	*< 0.2*	*< 0.2*	*< 0.2*	*< 0.2*
Manganese (dissolved)	µg/l	6.7	10	64	5.8	0.53	0.17	0.52
Mercury (dissolved)	µg/l	*< 0.05*	0.06	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Molybdenum (dissolved)	µg/l	0.44	0.38	0.83	2.8	0.45	0.92	0.64
Nickel (dissolved)	µg/l	6	2.2	5.3	1.2	*< 0.5*	*< 0.5*	0.5
Selenium (dissolved)	µg/l	2.3	2.8	2.7	13	3.2	*< 0.6*	*< 0.6*
Vanadium (dissolved)	µg/l	0.5	0.4	0.4	0.5	*< 0.2*	*< 0.2*	*< 0.2*
Zinc (dissolved)	µg/l	2.4	1.6	11	4.6	*< 0.5*	1.5	3.5
Calcium (dissolved)	mg/l	260	210	200	0.19	0.2	0.2	0.31
Magnesium (dissolved)	mg/l	18	18	17	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*
Potassium (dissolved)	mg/l	3.9	5.2	3.8	9.5	9.5	*< 0.025*	0.099
Phosphorus (total)	mg/l							
Phosphorus (total)	µg/l	5400	600	56	*< 20*	*< 20*	*< 20*	*< 20*
Monoaromatics								
Benzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Toluene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*

Values in italics are the method limit of detection

Water screening value exceedance

LAND USE:

Lab Sample Number	Units	467199	475818	479642	475324	475325	479643	479644
Sample Reference		BH708	BH708	BH708	FIELD BLANK	TRIP BLANK	Trip Blank	Field Blank
Groundwater Body		Chalk	Chalk	Chalk				
Depth (m)		16.03	16.12	15.93	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled		20/07/2015	13/08/2015	26/08/2015	12/08/2015	12/08/2015	26/08/2015	26/08/2015
Time Taken		1300	1215	1105	1100	1100	None Supplied	None Supplied
Ethylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
p & m-xylene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
o-xylene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
MTBE (Methyl Tertiary Butyl Ether)	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >C5 - C6	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C6 - C8	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C8 - C10	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C10 - C12	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C12 - C16	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C16 - C21	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic >C21 - C35	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aliphatic (C5 - C35)	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C5 - C7	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C7 - C8	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C8 - C10	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C10 - C12	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C12 - C16	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C16 - C21	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic >C21 - C35	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
TPH-CWG - Aromatic (C5 - C35)	µg/l	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*	*< 10*
VOCs								
Chloromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Chloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Bromomethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Vinyl Chloride	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Trichlorofluoromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1-Dichloroethene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Cis-1,2-dichloroethene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
MTBE (Methyl Tertiary Butyl Ether)	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1-Dichloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
2,2-Dichloropropane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Trichloromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,1-Trichloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dichloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1-Dichloropropene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Trans-1,2-dichloroethene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Benzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Tetrachloromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dichloropropane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Trichloroethene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Dibromomethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Bromodichloromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Cis-1,3-dichloropropene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Trans-1,3-dichloropropene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Toluene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,2-Trichloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,3-Dichloropropane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Dibromochloromethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Tetrachloroethene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dibromoethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Chlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,1,2-Tetrachloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Ethylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
p & m-Xylene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Styrene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Tribromomethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
o-Xylene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,1,2,2-Tetrachloroethane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Isopropylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Bromobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
n-Propylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
2-Chlorotoluene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
4-Chlorotoluene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,3,5-Trimethylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
tert-Butylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2,4-Trimethylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
sec-Butylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,3-Dichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
p-Isopropyltoluene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*

Values in italics are the method limit of detection

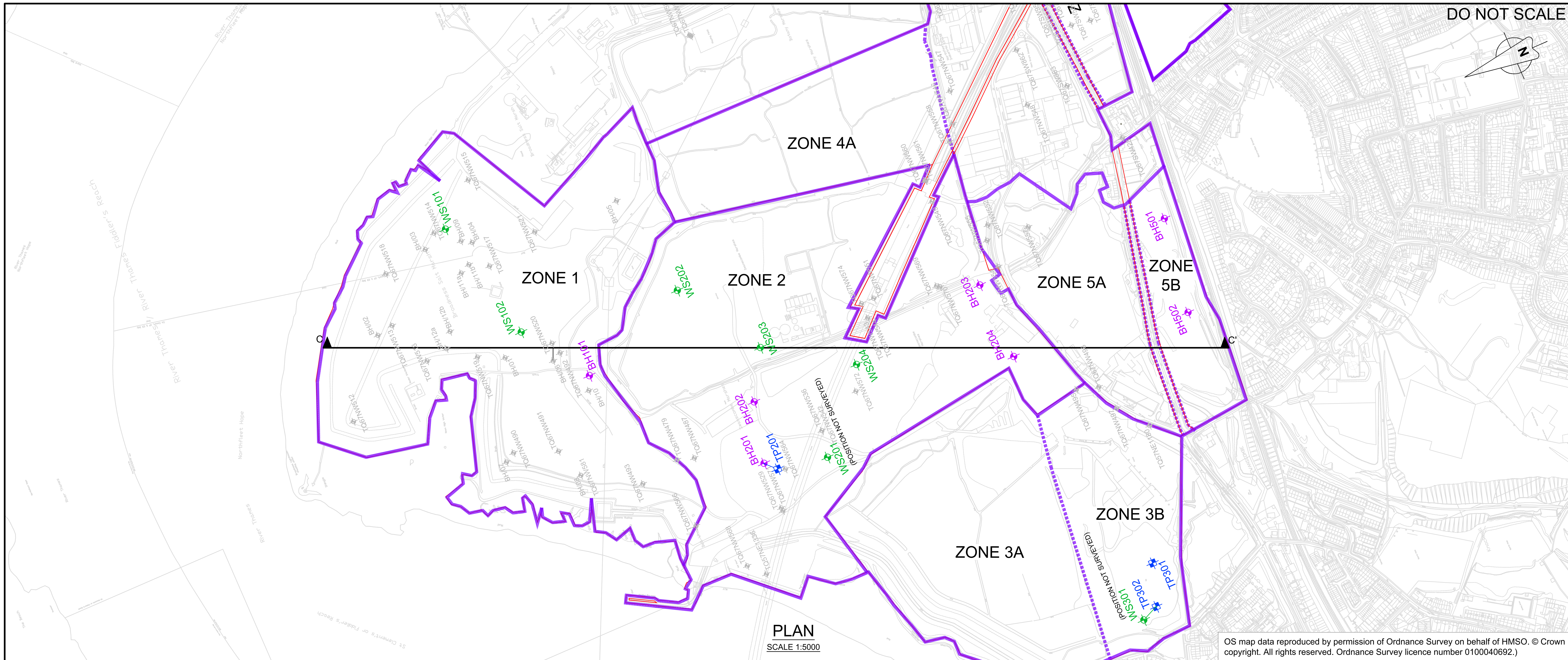
Water screening value exceedance

LAND USE:

Lab Sample Number	Units	467199	475818	479642	475324	475325	479643	479644
Sample Reference		BH708	BH708	BH708	FIELD BLANK	TRIP BLANK	Trip Blank	Field Blank
Groundwater Body		Chalk	Chalk	Chalk				
Depth (m)		16.03	16.12	15.93	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled		20/07/2015	13/08/2015	26/08/2015	12/08/2015	12/08/2015	26/08/2015	26/08/2015
Time Taken		1300	1215	1105	1100	1100	None Supplied	None Supplied
1,2-Dichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,4-Dichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Butylbenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2-Dibromo-3-chloropropane	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2,4-Trichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
Hexachlorobutadiene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
1,2,3-Trichlorobenzene	µg/l	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
SVOCs								
Aniline	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Phenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Chlorophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Bis(2-chloroethyl)ether	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,3-Dichlorobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,2-Dichlorobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,4-Dichlorobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Bis(2-chloroisopropyl)ether	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Methylphenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Hexachloroethane	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Nitrobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Methylphenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Isophorone	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Nitrophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,4-Dimethylphenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Bis(2-chloroethoxy)methane	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
1,2,4-Trichlorobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Naphthalene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
2,4-Dichlorophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Chloroaniline	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Hexachlorobutadiene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Chloro-3-methylphenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,4,6-Trichlorophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,4,5-Trichlorophenol	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Methylnaphthalene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2-Chloronaphthalene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Dimethylphthalate	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
2,6-Dinitrotoluene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Acenaphthylene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Acenaphthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
2,4-Dinitrotoluene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Dibenzofuran	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Chlorophenyl phenyl ether	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Diethyl phthalate	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
4-Nitroaniline	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Fluorene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Azobenzene	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Bromophenyl phenyl ether	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Hexachlorobenzene	µg/l	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*	*< 0.02*
Phenanthrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Carbazole	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Dibutyl phthalate	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Anthraquinone	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Butyl benzyl phthalate	µg/l	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*	*< 0.05*
Benzo(a)anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Chrysene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(b)fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(k)fluoranthene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(a)pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Indeno(1,2,3-cd)pyrene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Dibenz(a,h)anthracene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*
Benzo(ghi)perylene	µg/l	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*	*< 0.01*

Appendix F. Geological Cross-Sections

DO NOT SCALE



PLAN

SCALE 1:5000

NOTE:

1. AS-BUILT EXPLORATORY HOLE POSITIONS TAKEN FROM GEOTECHNICAL ENGINEERING LIMITED'S SURVEY ON 03 JULY 2015.
2. ZONES 7 - 9 CAN BE FOUND ON DRAWING NUMBER 5134008-PHASE2-FIGURE002.
3. EXPLORATORY HOLES WS201 AND WS301 WERE TERMINATED EARLY DUE TO REFUSAL ON HARD STRATUM. THEIR POSITIONS WERE NOT SURVEYED, BUT ARE SHOWN AS APPROXIMATE ON THIS DRAWING.
4. BASE MAP REPRODUCED BY PERMISSION OF ORDNANCE SURVEY ON BEHALF OF HMSO. © CROWN COPYRIGHT. ALL RIGHTS RESERVED. ORDNANCE SURVEY LICENCE NUMBER 0100040692.

LEGEND:

AS-BUILT EXPLORATORY HOLES (2015)

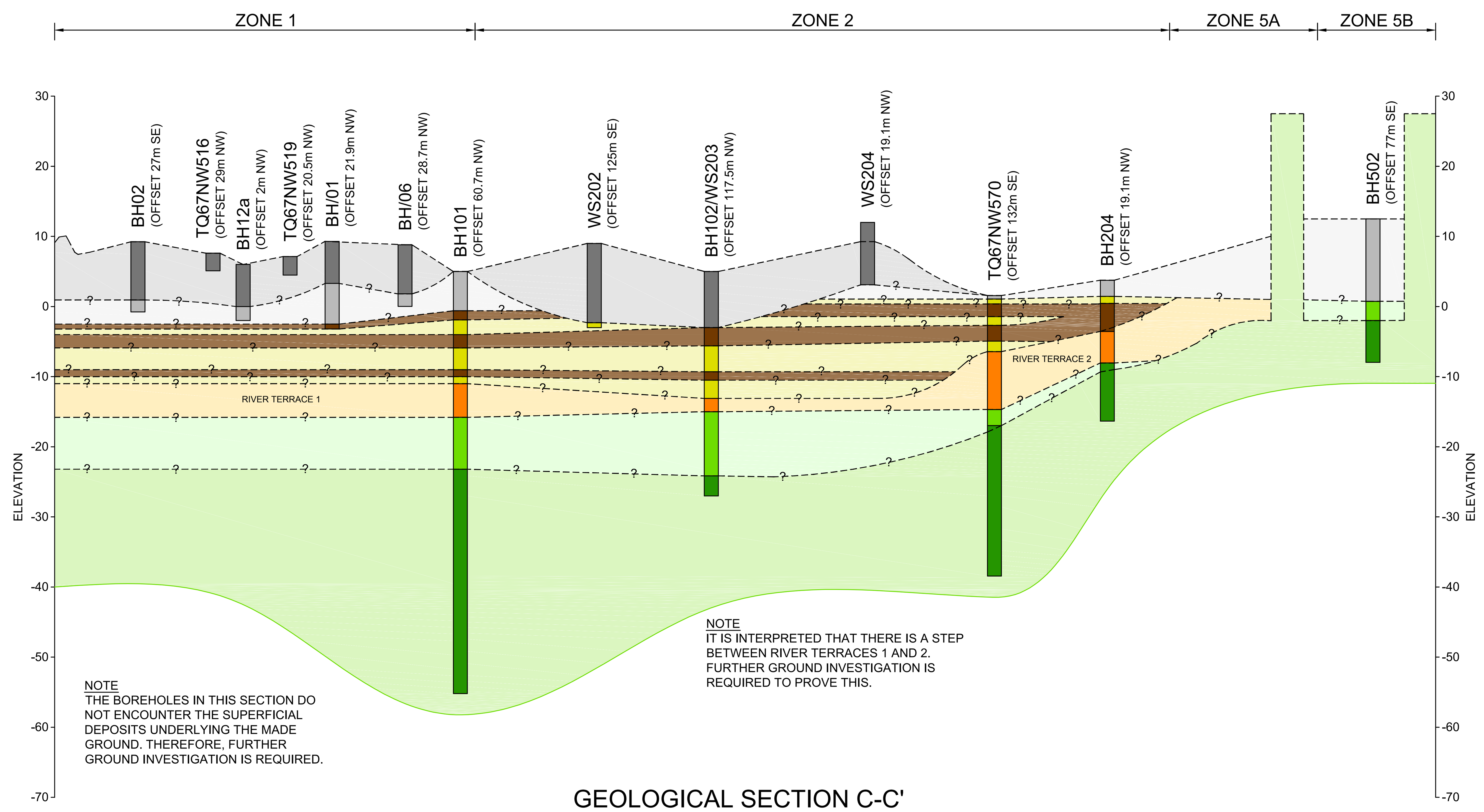
- BH101 — BOREHOLE WITH STANDPIPE
- WS201 — WINDOW SAMPLE WITH STANDPIPE
- TP301 — TRIAL PIT

HISTORICAL EXPLORATORY HOLES

- TQ67NW521 — HISTORICAL EXPLORATORY HOLE

LEGEND GEOLOGICAL SECTION

- INFERRED GEOLOGICAL BOUNDARY
- MADE GROUND
- CKD MADE GROUND
- ALLUVIUM
- PEAT
- FLOOD PLAIN GRAVELS / RIVER TERRACE
- STRUCTURELESS CHALK
- CHALK



GEOLOGICAL SECTION C-C'

SCALE 1:5000(H) 1:500(V)

Rev.	Date	Description	By	Chk'd	App'd
A	22/09/15	FOR INFORMATION / COMMENT	DH	HF	TR

Drawing Status: FOR INFORMATION

Suitability: S0

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Client

LONDON RESORT COMPANY HOLDINGS

Project Title

PARAMOUNT PARK ENTERTAINMENT RESORT

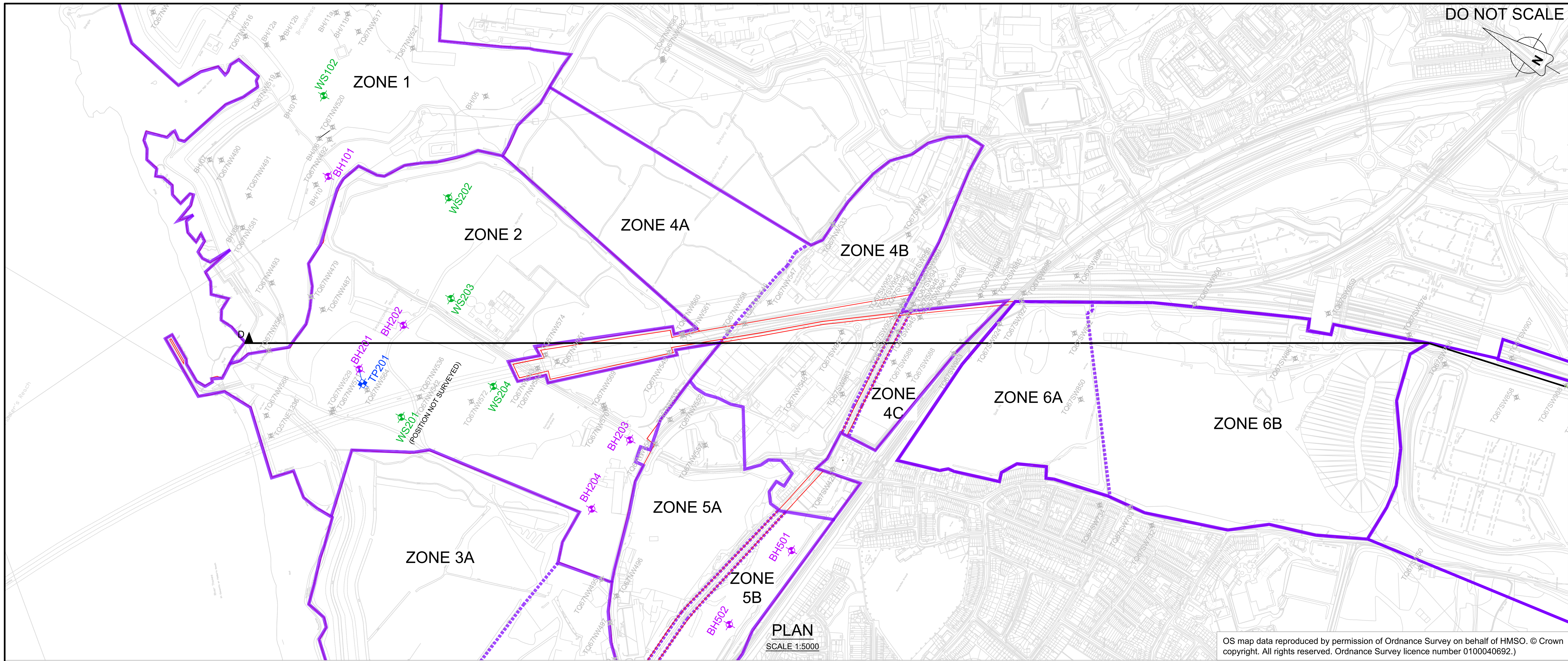
Drawing Title

GEOLOGICAL SECTION C-C'

Scale	Designed	Drawn	Checked	Authorised
SHOWN	MC/HF	DH	HF	TR
Original Size: A1	Date: 22/09/15	Date: 22/09/15	Date: 22/09/15	Date: 22/09/15

Drawing Number: 5134008-GIR-FIGURE002

Revision: A



NOTE:

1. AS-BUILT EXPLORATORY HOLE POSITIONS TAKEN FROM GEOTECHNICAL ENGINEERING LIMITED'S SURVEY ON 03 JULY 2015.
2. EXPLORATORY HOLES WS201 AND WS301 WERE TERMINATED EARLY DUE TO REFUSAL ON HARD STRATUM. THEIR POSITIONS WERE NOT SURVEYED, BUT ARE SHOWN AS APPROXIMATE ON THIS DRAWING.
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LEGEND:

AS-BUILT EXPLORATORY HOLES (2015)

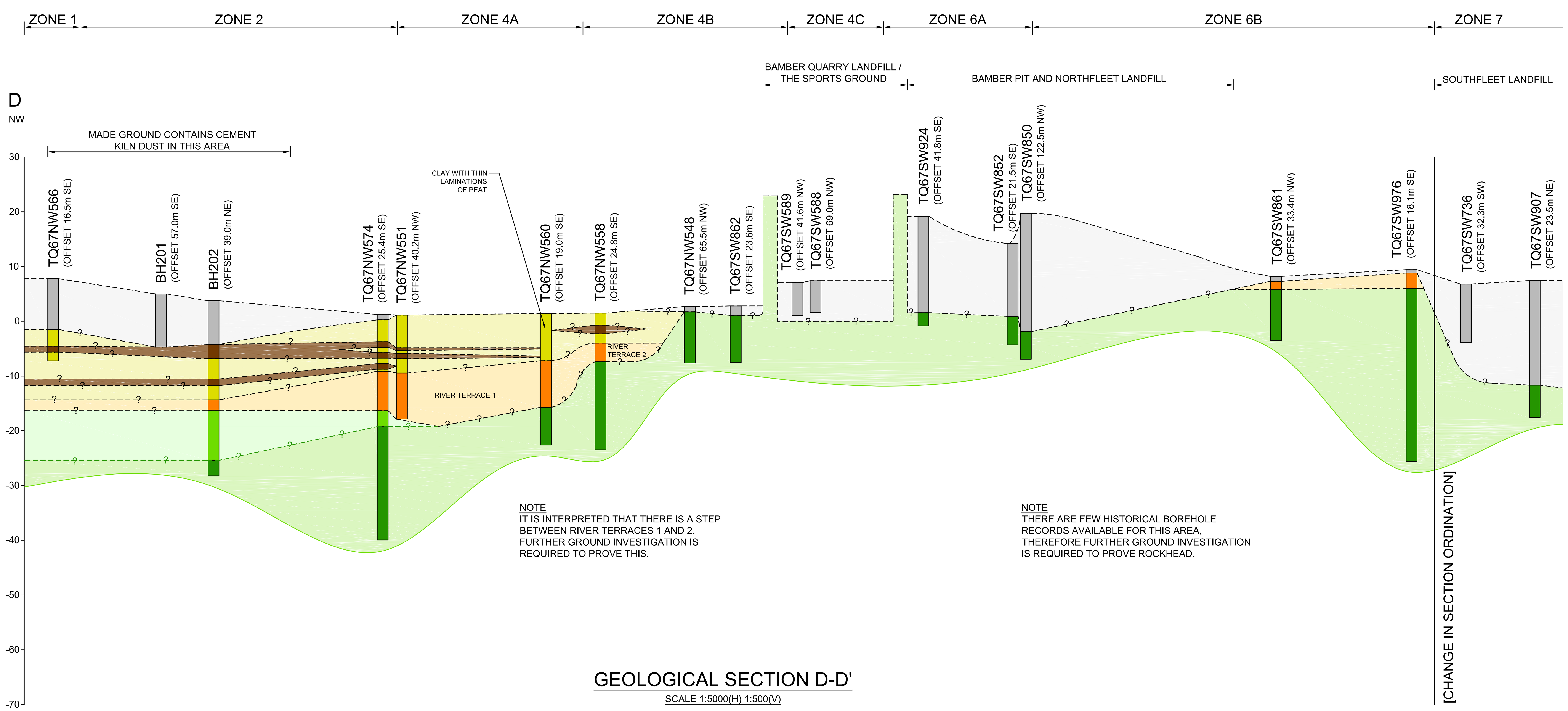
- BH101 — BOREHOLE WITH STANDPIPE
- WS201 — WINDOW SAMPLE WITH STANDPIPE
- TP301 — TRIAL PIT

HISTORICAL EXPLORATORY HOLES

- TQ67NW521 — HISTORICAL EXPLORATORY HOLE

LEGEND GEOLOGICAL SECTION

- INFERRED GEOLOGICAL BOUNDARY
- MADE GROUND
- HEAD DEPOSITS
- ALLUVIUM
- PEAT
- FLOOD PLAIN GRAVELS / RIVER TERRACE
- STRUCTURELESS CHALK
- CHALK



NOTE
IT IS INTERPRETED THAT THERE IS A STEP BETWEEN RIVER TERRACES 1 AND 2. FURTHER GROUND INVESTIGATION IS REQUIRED TO PROVE THIS.

NOTE
THERE ARE FEW HISTORICAL BOREHOLE RECORDS AVAILABLE FOR THIS AREA, THEREFORE FURTHER GROUND INVESTIGATION IS REQUIRED TO PROVE ROCKHEAD.

GEOLOGICAL SECTION D-D'

SCALE 1:5000(H) 1:500(V)

Rev.	Date	Description	By	Chk'd	App'd
A	22/09/15	FOR INFORMATION	DH	HF	TR

Drawing Status: FOR INFORMATION
Suitability: S0

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Client: LONDON RESORT COMPANY HOLDINGS

Project Title: PARAMOUNT PARK ENTERTAINMENT RESORT

Drawing Title: GEOLOGICAL SECTION D-D' SHEET 1 OF 2

Scale	Designed	Drawn	Checked	Authorised
SHOWN	HF	DH	HF	TR

Original Size	Date	Date	Date	Date
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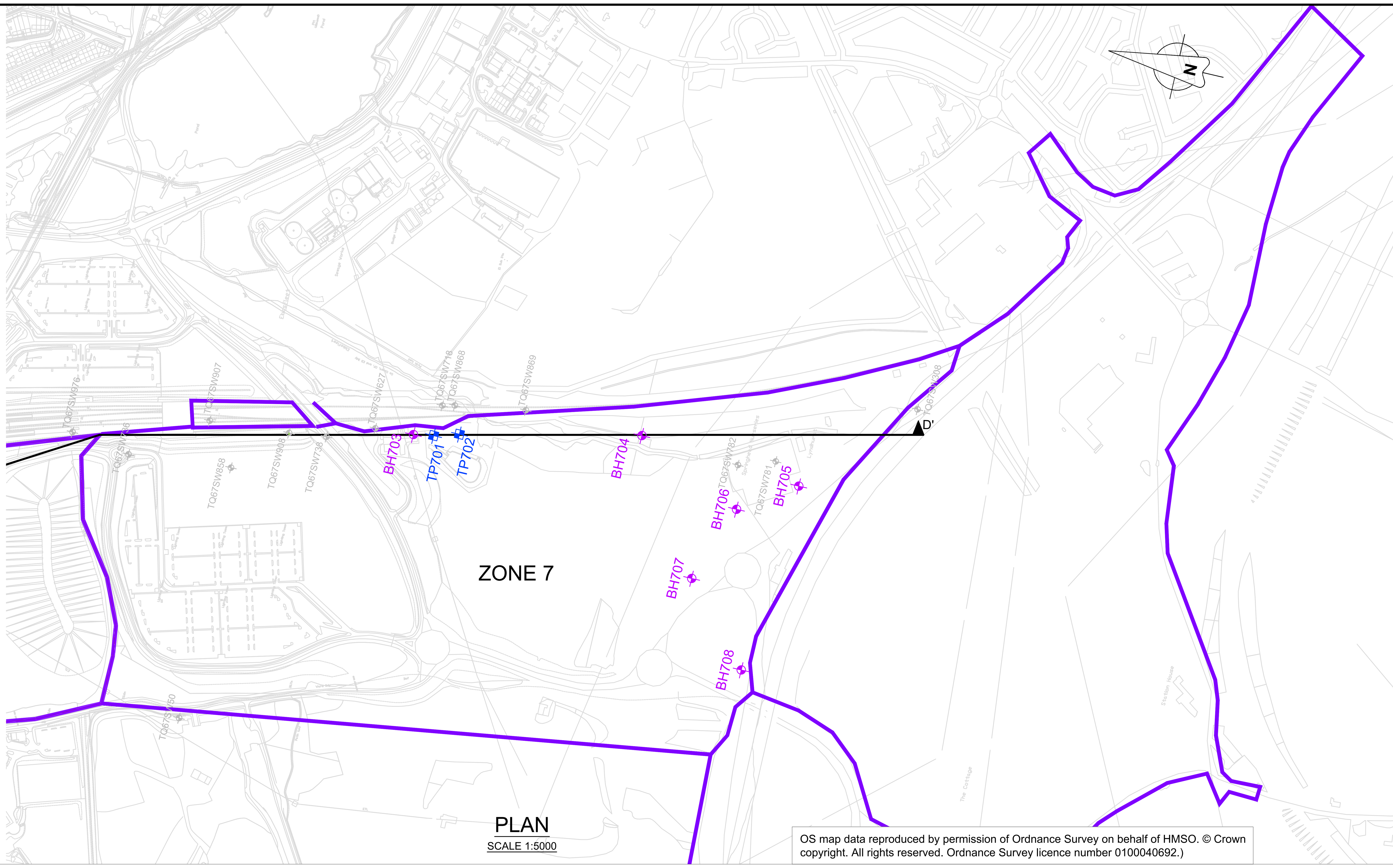
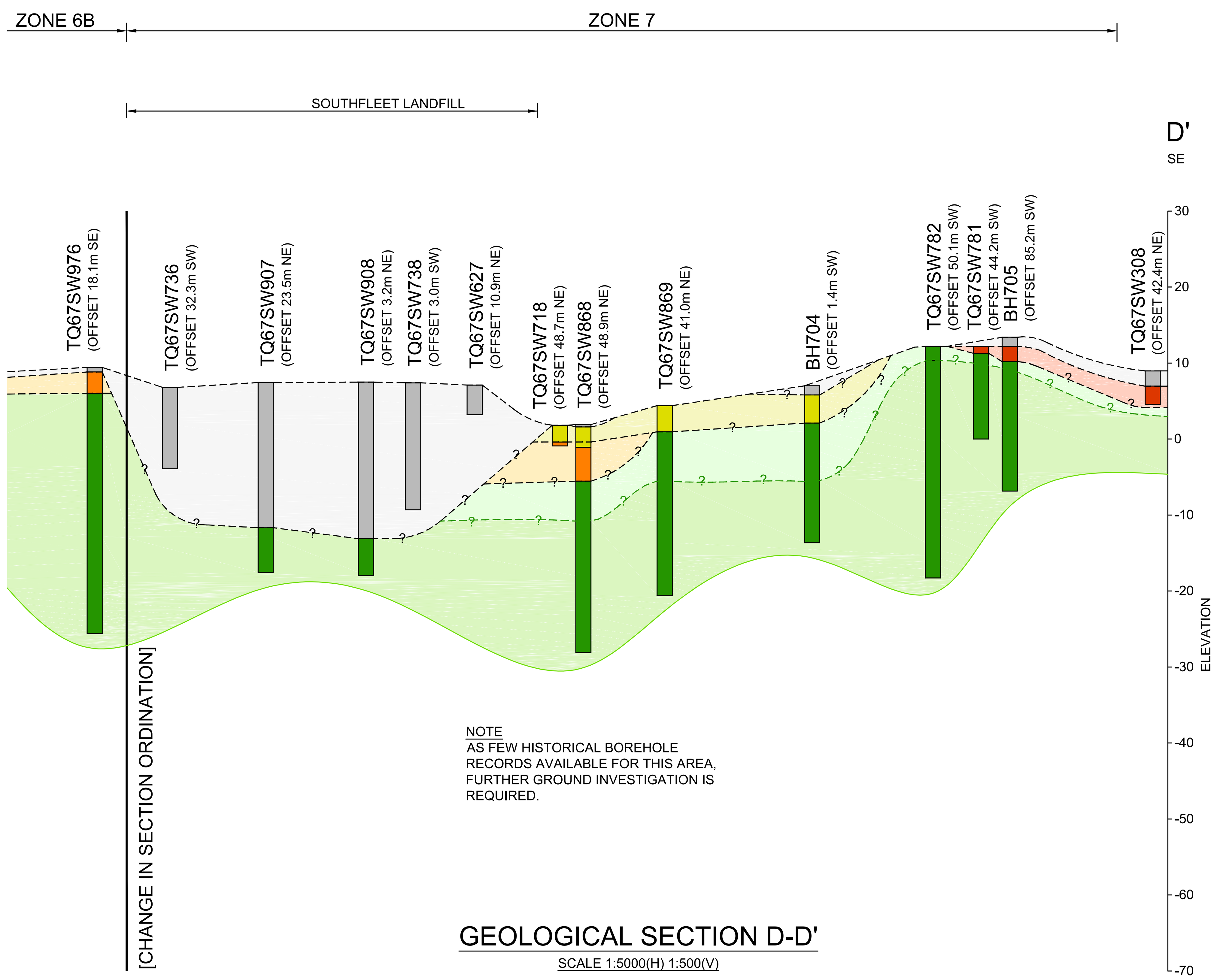
Drawing Number: 5134008-GIR-FIGURE003A
Revision: A

DO NOT SCALE



PLAN
SCALE 1:5000



GEOLOGICAL SECTION D-D'
SCALE 1:5000(H) 1:500(V)

NOTE:

1. AS-BUILT EXPLORATORY HOLE POSITIONS TAKEN FROM GEOTECHNICAL ENGINEERING LIMITED'S SURVEY ON 03 JULY 2015.
2. EXPLORATORY HOLES WS201 AND WS301 WERE TERMINATED EARLY DUE TO REFUSAL ON HARD STRATUM. THEIR POSITIONS WERE NOT SURVEYED, BUT ARE SHOWN AS APPROXIMATE ON THIS DRAWING.
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LEGEND:

AS-BUILT EXPLORATORY HOLES (2015)

BH101 BOREHOLE WITH STANDPIPE
WS201 WINDOW SAMPLE WITH STANDPIPE
TP301 TRIAL PIT

HISTORICAL EXPLORATORY HOLES

TQ67NW521 HISTORICAL EXPLORATORY HOLE

LEGEND GEOLOGICAL SECTION

- ?- - ?- INFERRED GEOLOGICAL BOUNDARY
- MADE GROUND
- HEAD DEPOSITS
- ALLUVIUM
- PEAT
- FLOOD PLAIN GRAVELS / RIVER TERRACE
- STRUCTURELESS CHALK
- CHALK

Rev.	Date	Description	By	Chk'd	App'd
A	22/09/15	FOR INFORMATION	DH	HF	TR

Drawing Status: FOR INFORMATION
Suitability: S0

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LONDON RESORT COMPANY HOLDINGS

Project Title
PARAMOUNT PARK ENTERTAINMENT RESORT

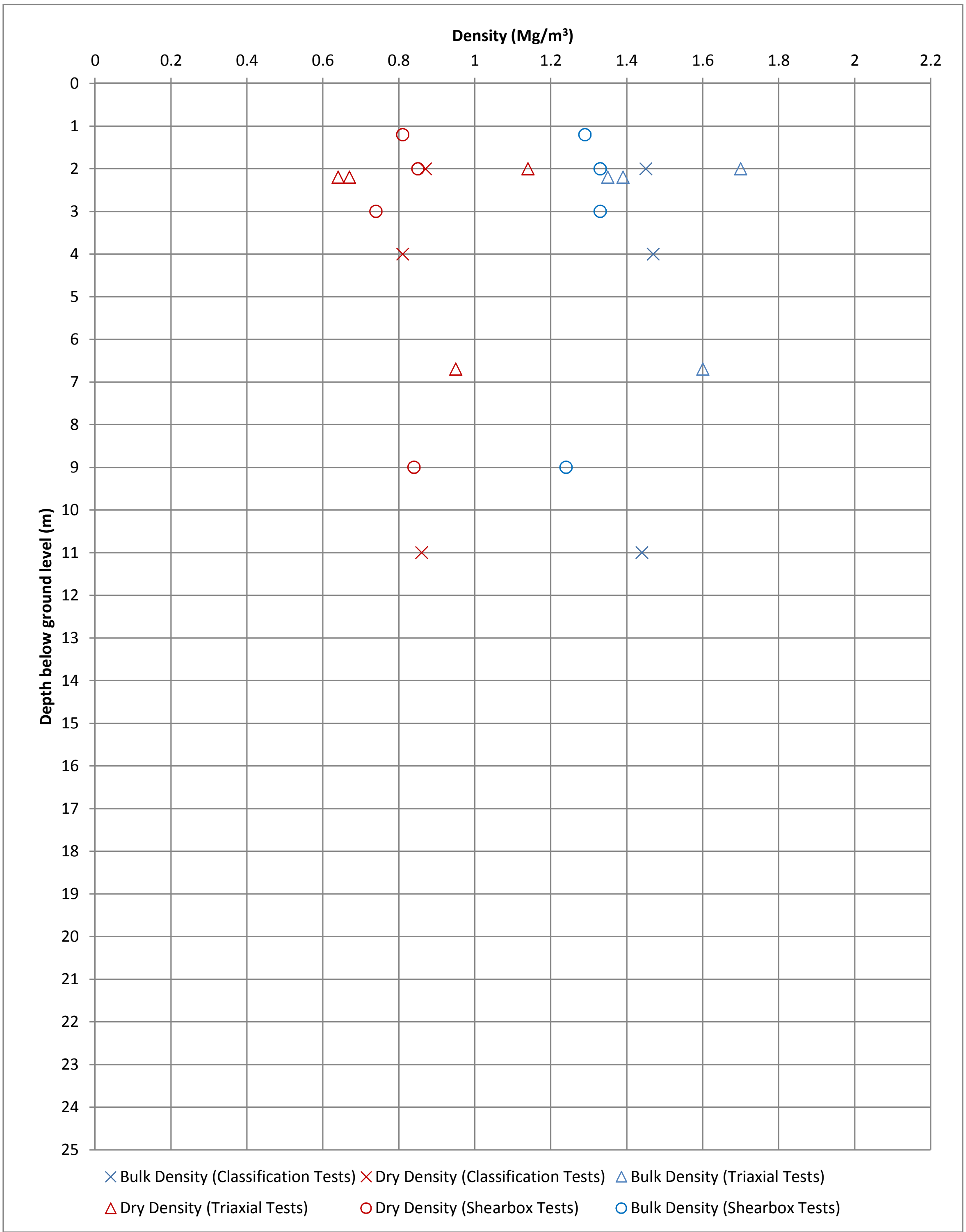
Drawing Title
GEOLOGICAL SECTION D-D' SHEET 2 OF 2

Scale	Designed	Drawn	Checked	Authorised
SHOWN	HF	DH	HF	TR
Original Size	Date	Date	Date	Date
A1	22/09/15	22/09/15	22/09/15	22/09/15

Drawing Number: 5134008-GIR-FIGURE003B
Revision: A

Appendix G. Geotechnical Graphs

G.1. Density Plots



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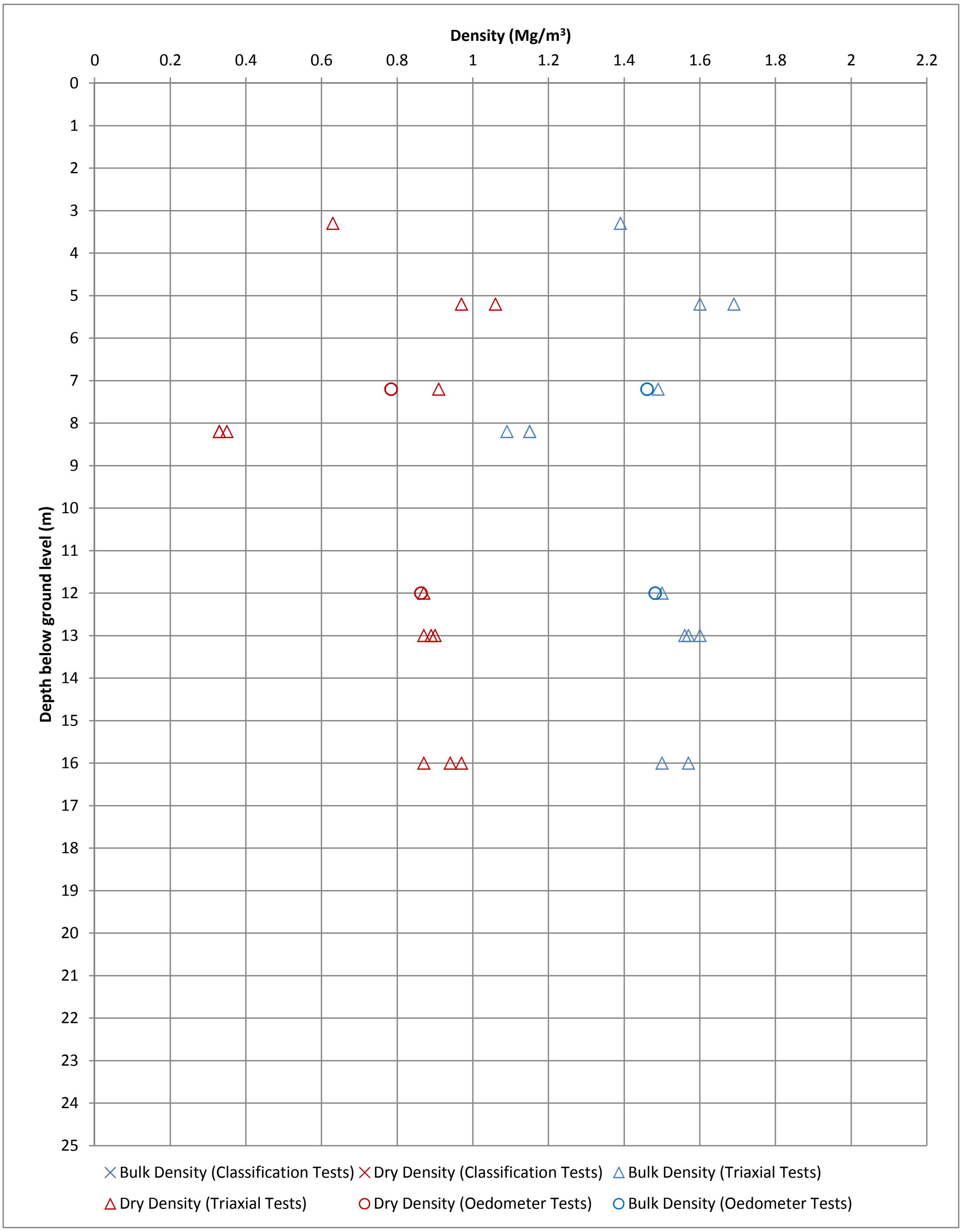
Client **London Resort Company Holdings**	Title **Density vs Depth for CKD**			
Project **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked: TR Date: Nov 15	Reviewed:TR Date: Nov 15
	Status: FINAL	Figure Number: F1.1		Rev: 1



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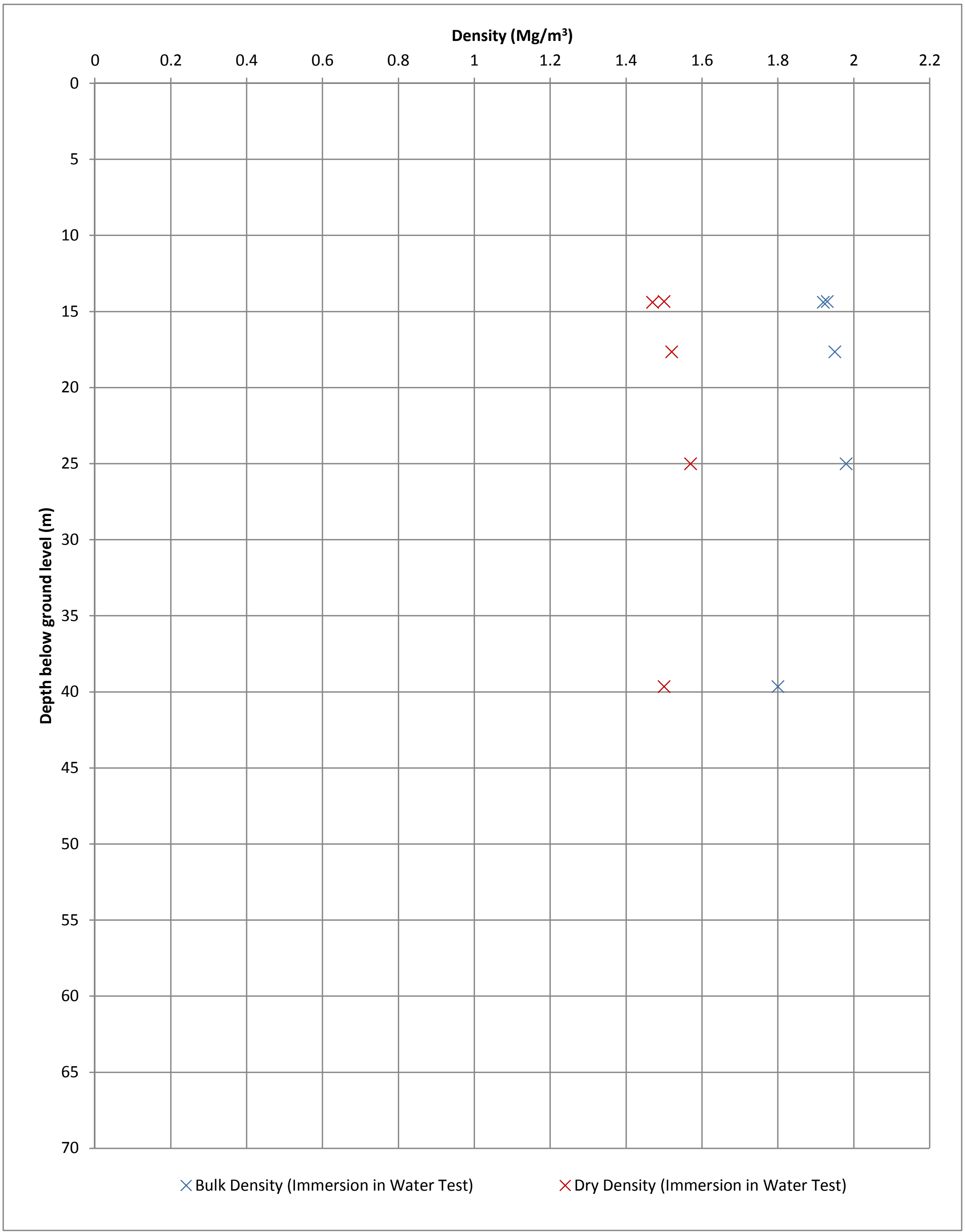
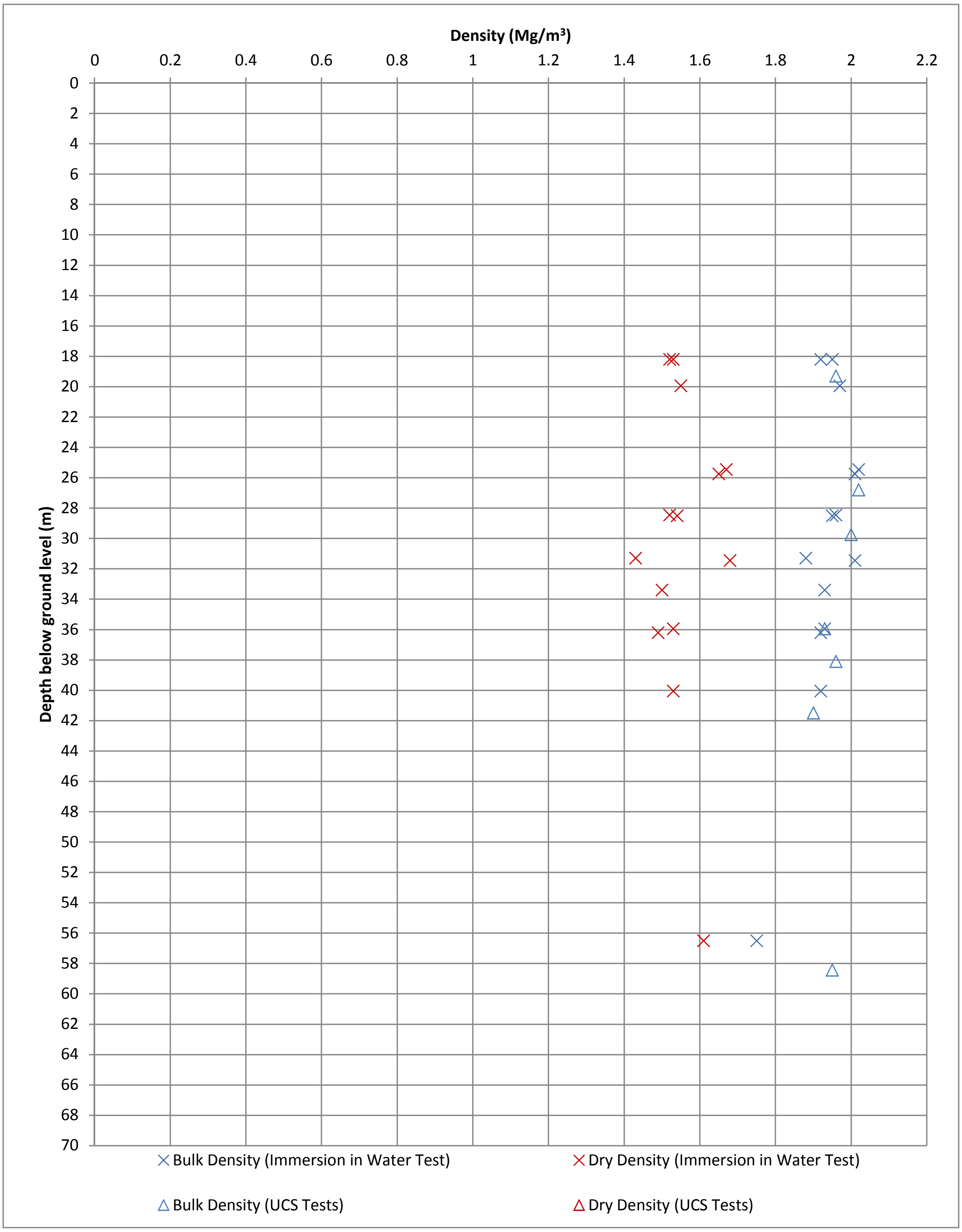
Client: **London Resort Company Holdings**	Title: **Density vs Depth for PEAT**			
Project: **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked: TR Date: Nov 15	Reviewed:TR Date: Nov 15
	Status: FINAL	Figure Number: F1.2		Rev: 1



ATKINS **Atkins Limited** Woodcote Grove Ashley Road Tel: (01372) 726140 Epsom Fax: (01372) 740055 KT18 5BW [redacted]	Client **London Resort Company Holdings**	Title **Density vs Depth for STRUCTURELESS CHALK**

Project	Sheet size:	Drawn: HF	Checked: TR	Reviewed:TR
London Paramount Entertainment Resort	A4	Date: Oct 15	Date: Nov 15	Date: Nov 15
	Status: FINAL	Figure Number: F1.3		Rev: 1



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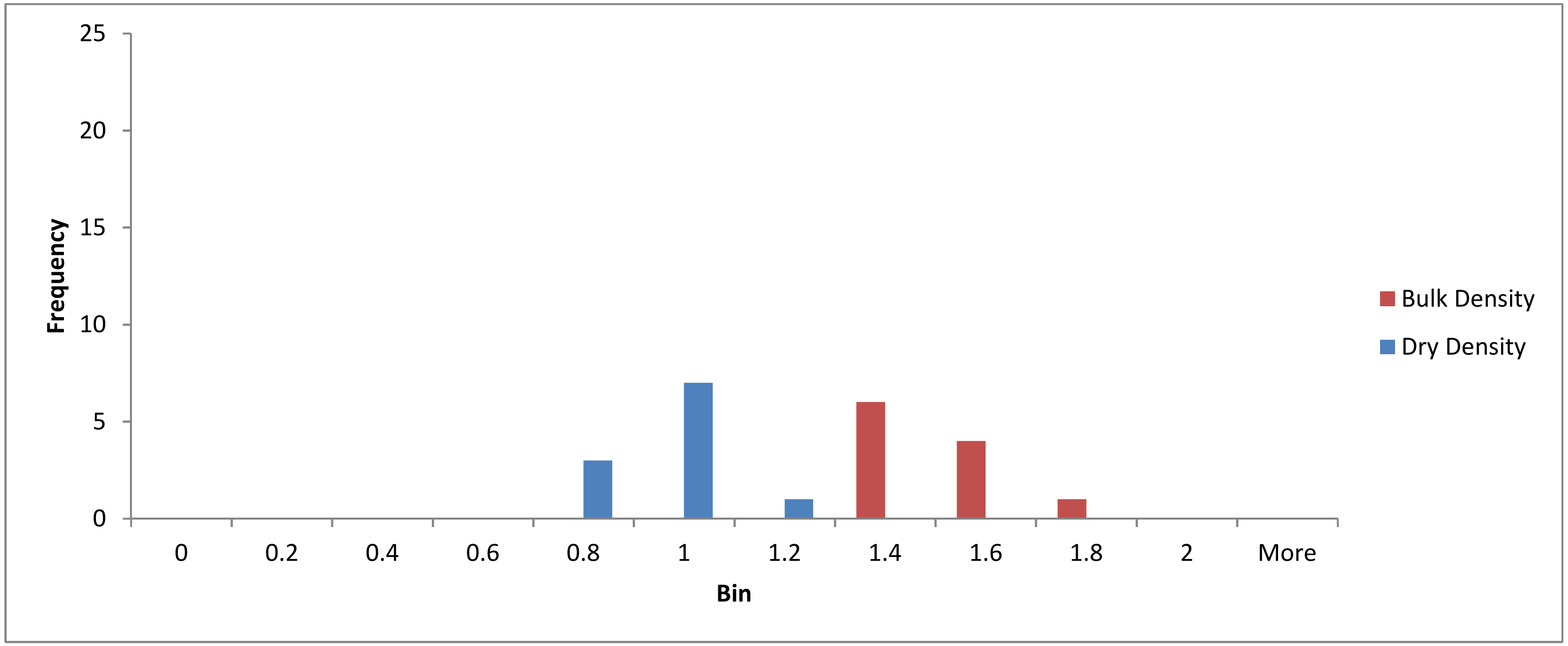
Client **London Resort Company Holdings**	Title **Density vs Depth for COMPETENT CHALK**			
Project **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked: TR Date: Nov 15	Reviewed:TR Date: Nov 15
	Status: FINAL	Figure Number: F1.4		Rev: 1

G.2. Density Histograms



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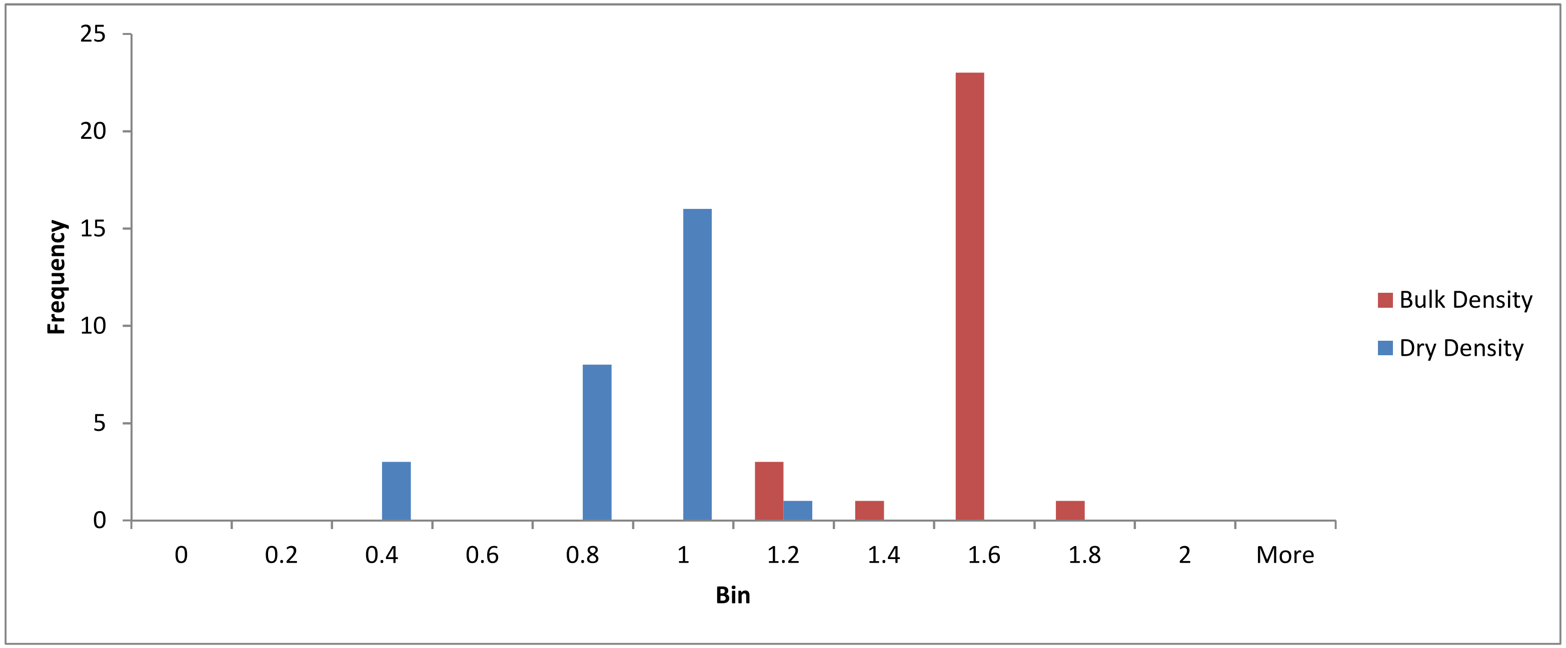
Client **London Resort Company Holdings**	Title **Density Histogram for CKD**				
Project **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Nov 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15	
	Status: FINAL	Figure Number: F2.1		Rev: 1	



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Client: **London Resort Company Holdings**	Title: **Density Histogram for PEAT**			
Project: **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Nov 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
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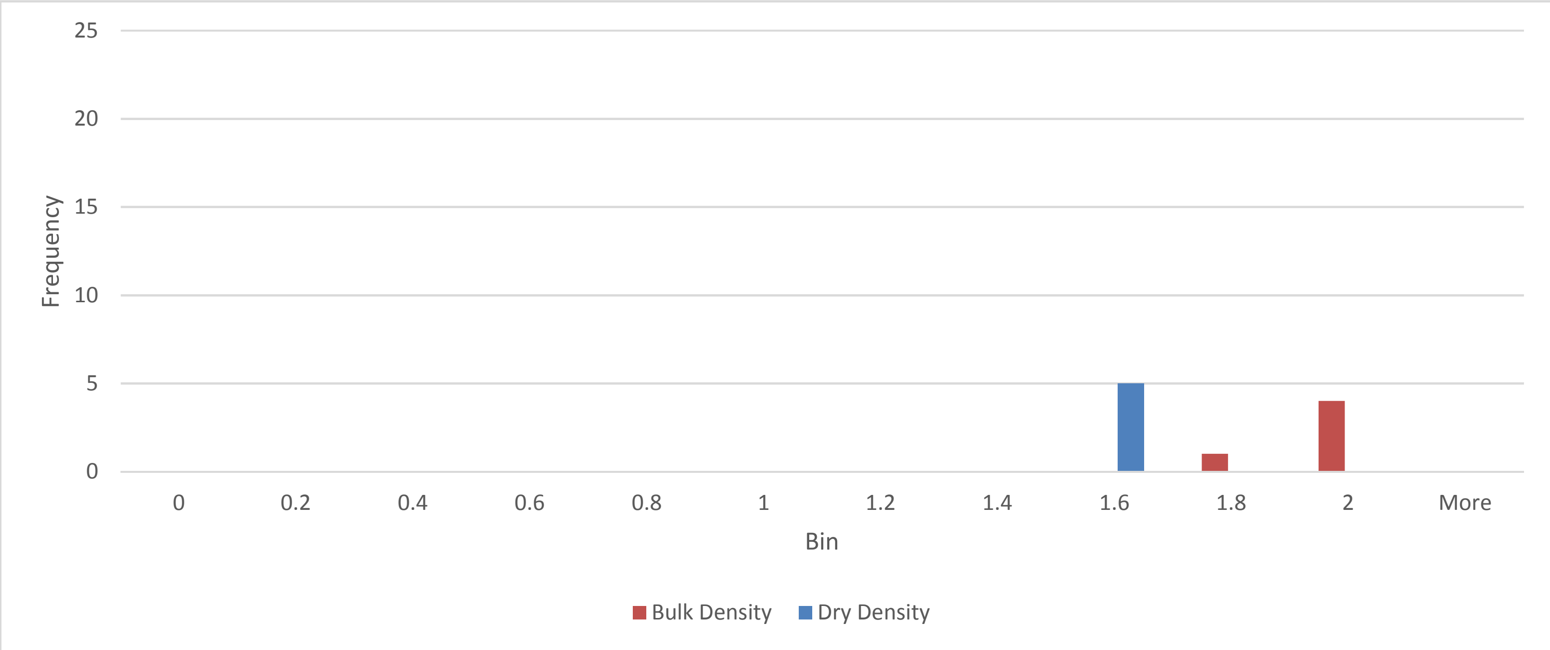

Atkins Limited Woodcote Grove Ashley Road Tel: (01372) 726140 Epsom Fax: (01372) 740055 KT18 5BW [redacted]	Client **London Resort Company Holdings**	Title **Density Histogram for STRUCTURELESS CHALK**			
	Project **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Nov 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
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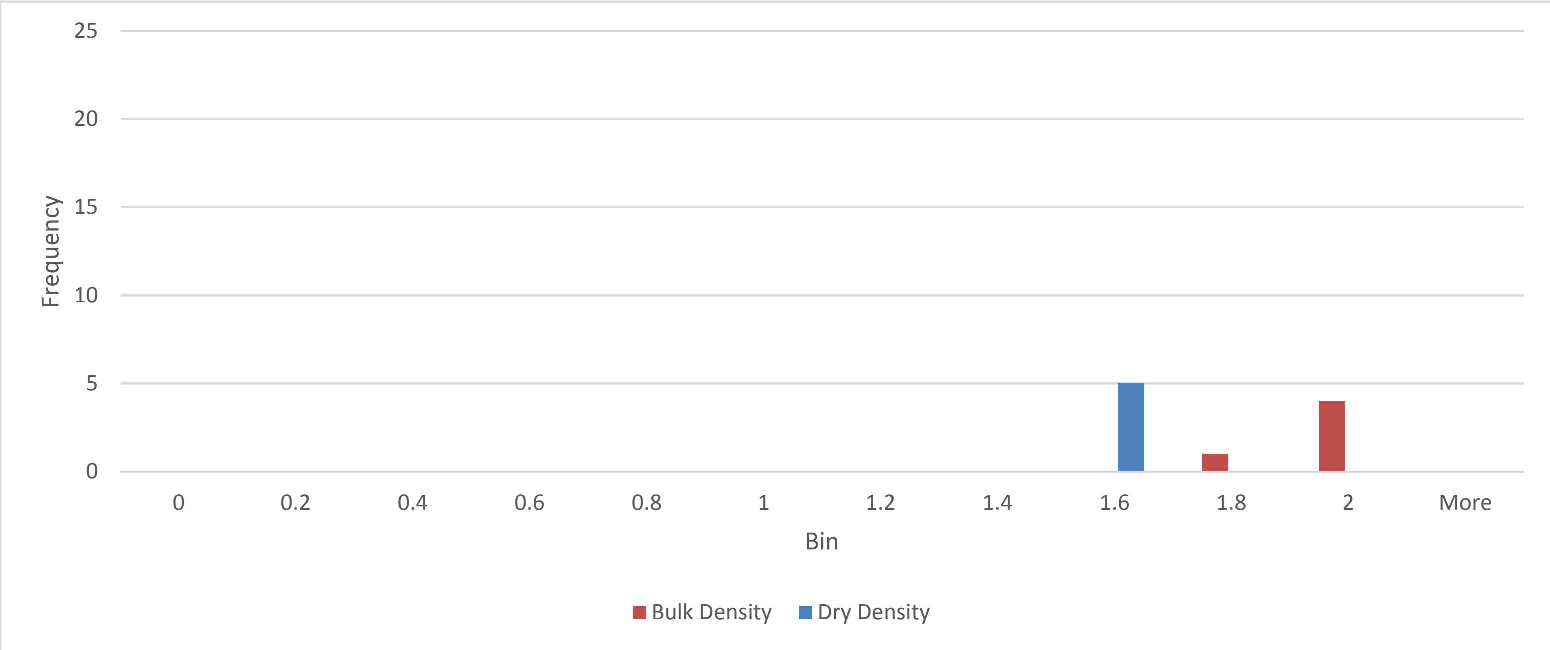

ATKINS **Atkins Limited** Woodcote Grove Ashley Road Epsom KT18 5BW Tel: (01372) 726140 Fax: (01372) 740055 [redacted]	Client **London Resort Company Holdings**	Title **Density Histogram for STRUCTURELESS CHALK**				
	Project **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Nov 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15	
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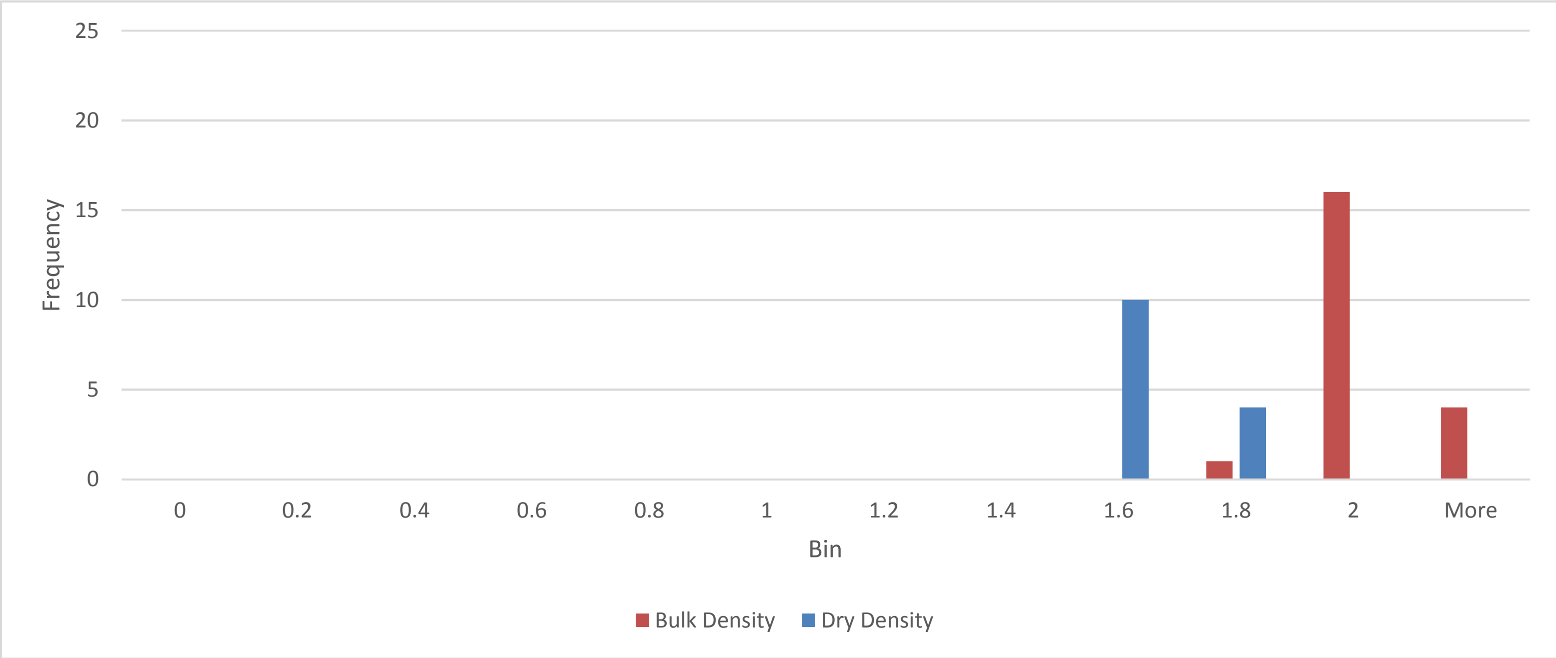

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Client

London Resort Company Holdings

Title

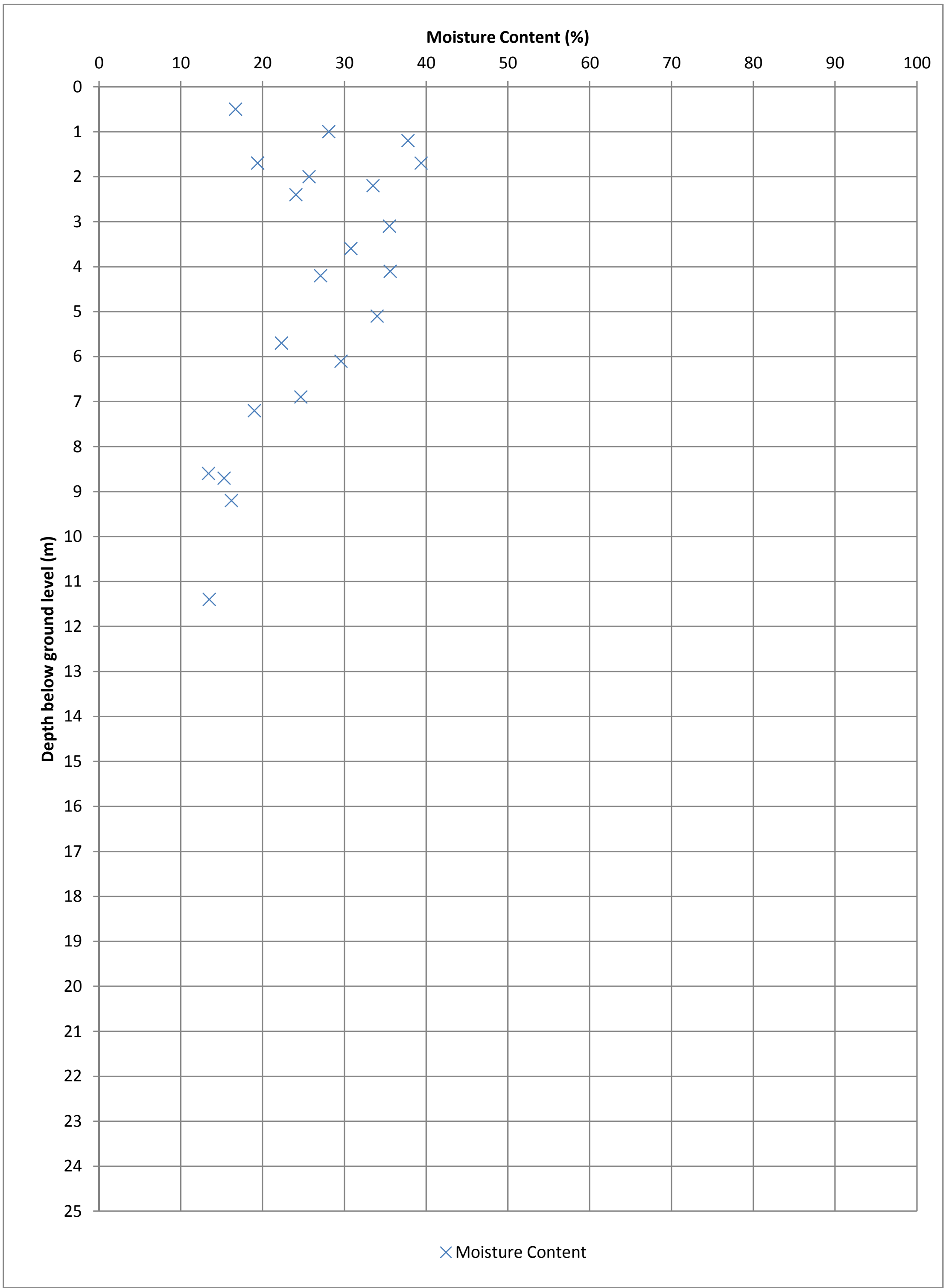
Density Histogram for COMPETENT CHALK

Project

London Paramount Entertainment Resort

Sheet size:	Drawn: HF	Checked:TR	Reviewed:TR
A4	Date: Nov 15	Date: Nov 15	Date: Nov 15
Status:	Figure Number:		Rev:
FINAL	F2.4		1

G.3. Moisture Content vs. Depth Plots



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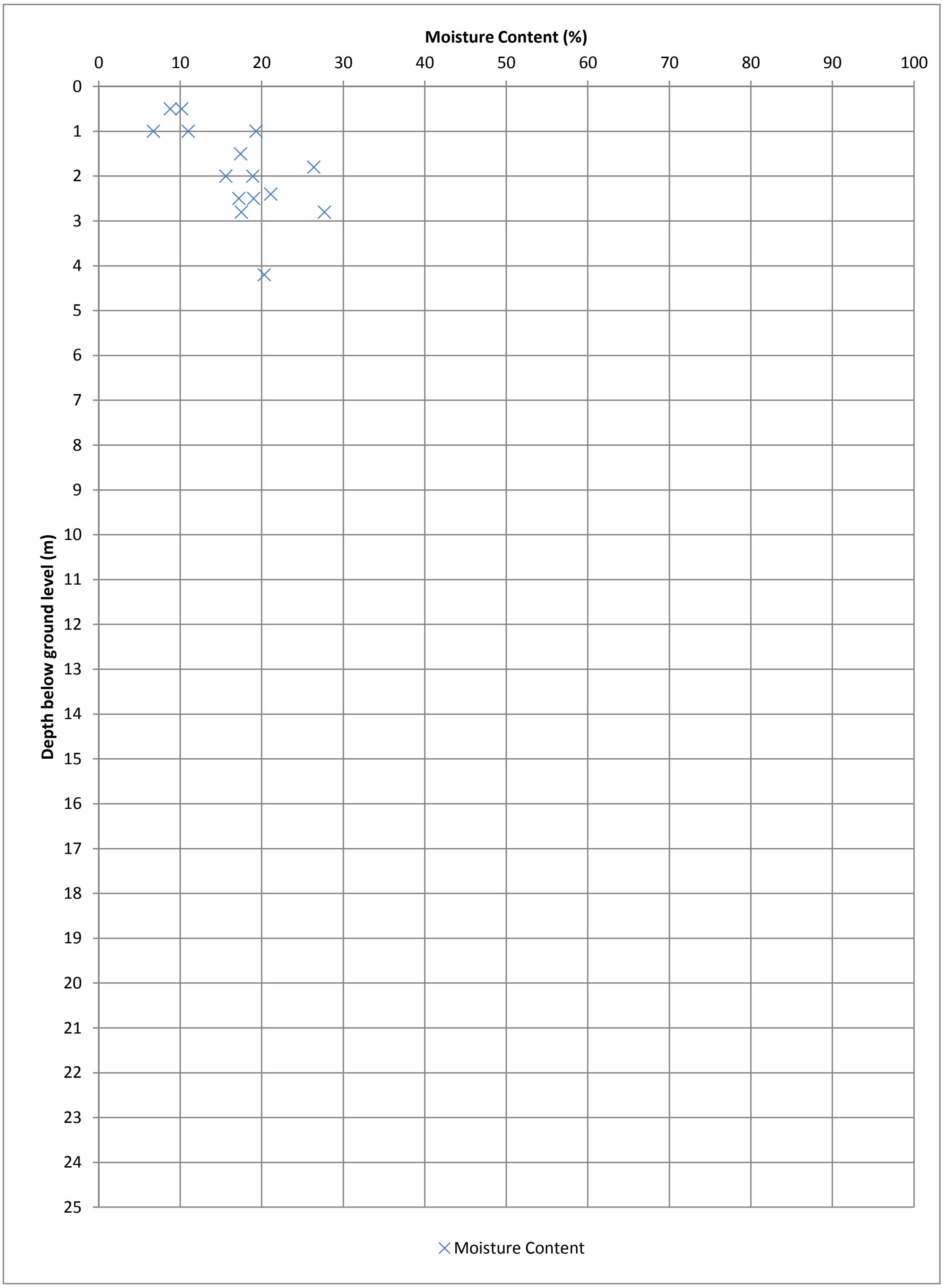
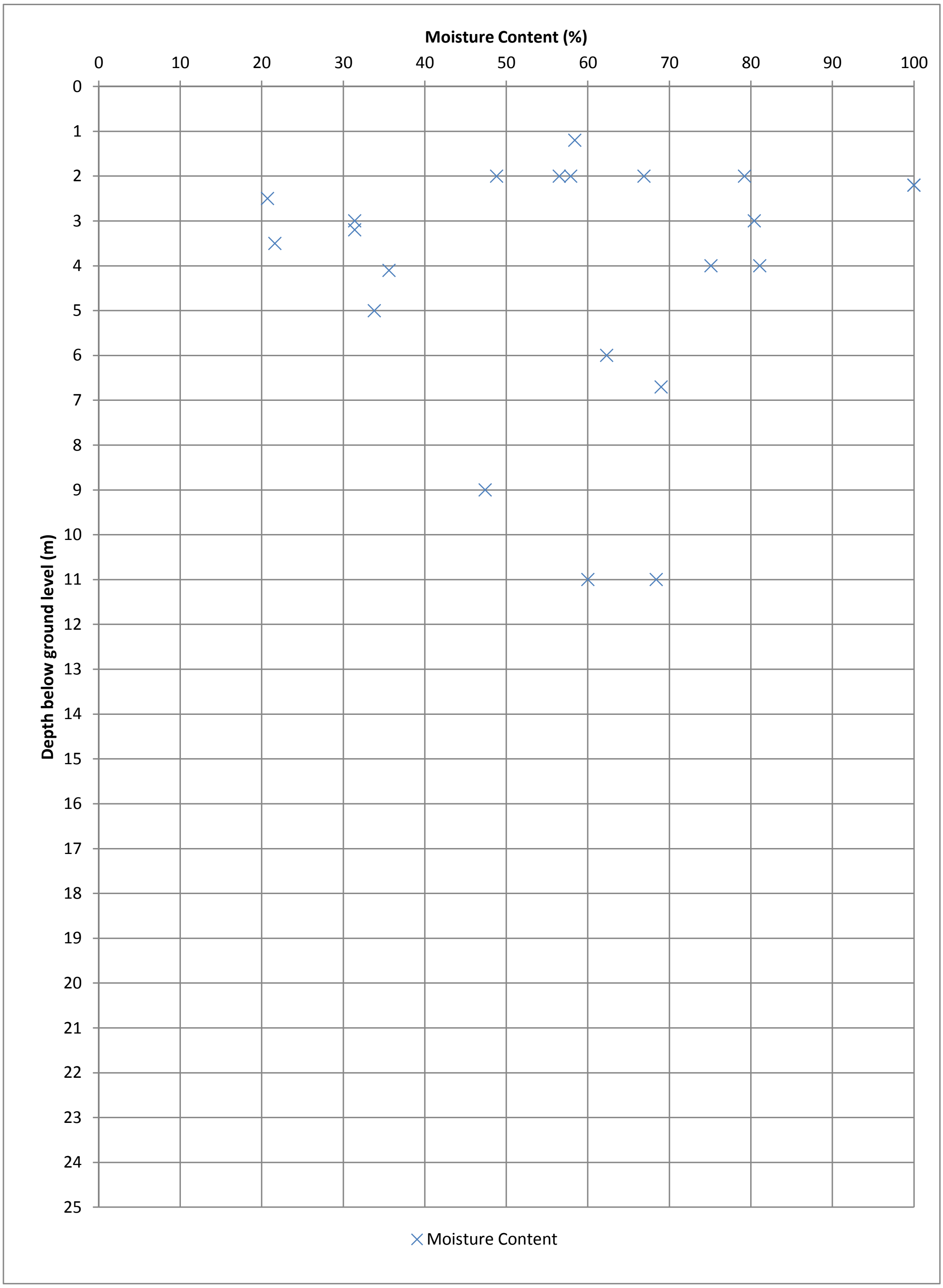
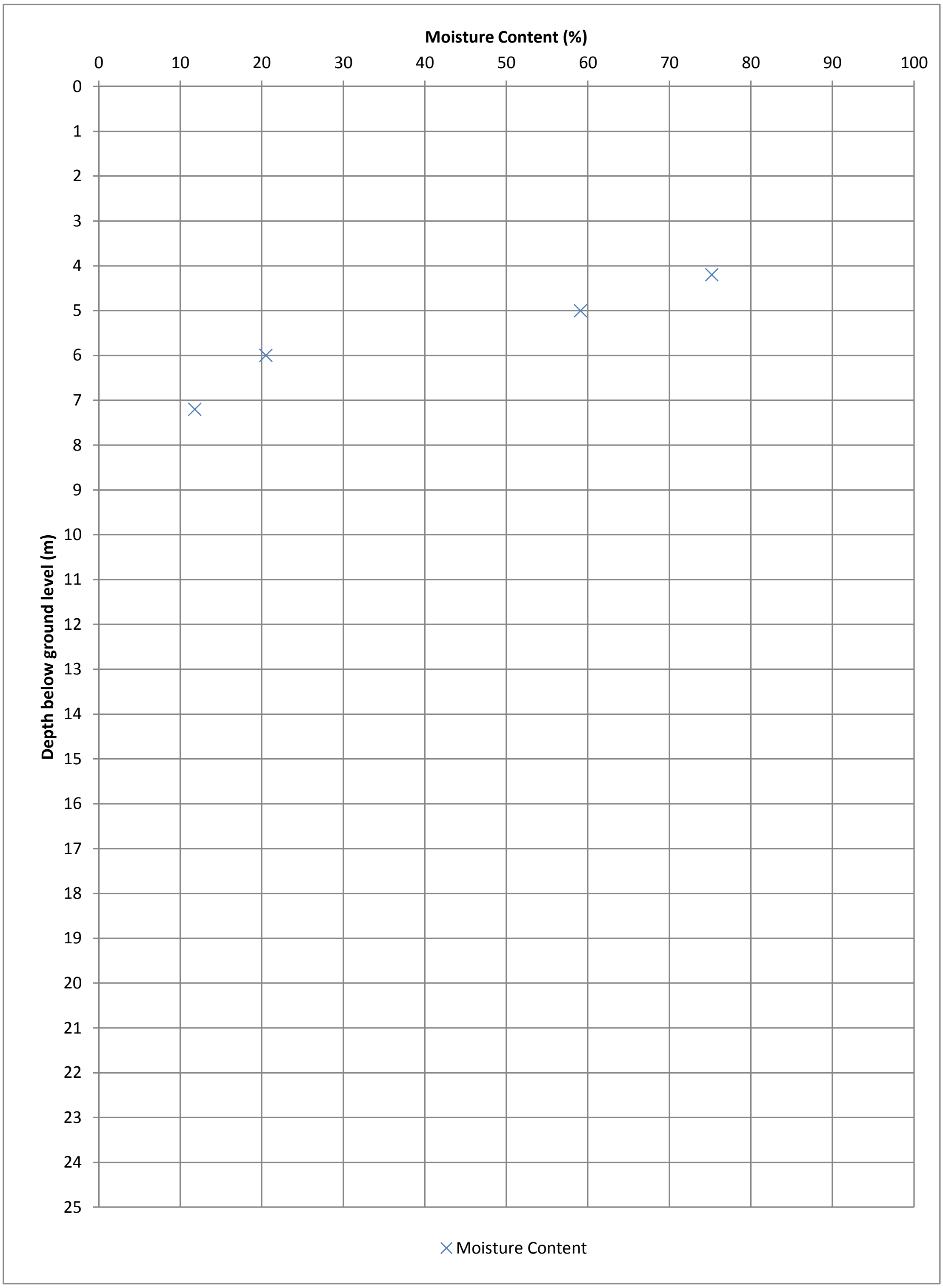
Client **London Resort Company Holdings**	Title **Moisture Content vs Depth for MADE GROUND in Zones 3 and 5**			
Project **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
	Status: FINAL	Figure Number: F3.1		Rev: 1



ATKINS	Client		Title		
Atkins Limited	**London Resort Company Holdings**		**Moisture Content vs Depth for MADE GROUND in Zone 7**		
Woodcote Grove	Project	Sheet size: A4	Drawn: HF	Checked:TR	Reviewed:TR
Ashley Road Tel: (01372) 726140			Date: Oct 15	Date: Nov 15	Date: Nov 15
Epsom Fax: (01372) 740055	**London Paramount Entertainment Resort**	Status: FINAL	Figure Number: F3.2		Rev: 1
KT18 5BW [redacted]					



Atkins Limited Woodcote Grove Ashley Road Epsom KT18 5BW	Tel: (01372) 726140 Fax: (01372) 740055 [redacted]	Client **London Resort Company Holdings**	Title **Moisture Content vs Depth for CKD**		
		Project **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15
			Status: FINAL	Figure Number: F3.3	Reviewed:TR Date: Nov 15 Rev: 1



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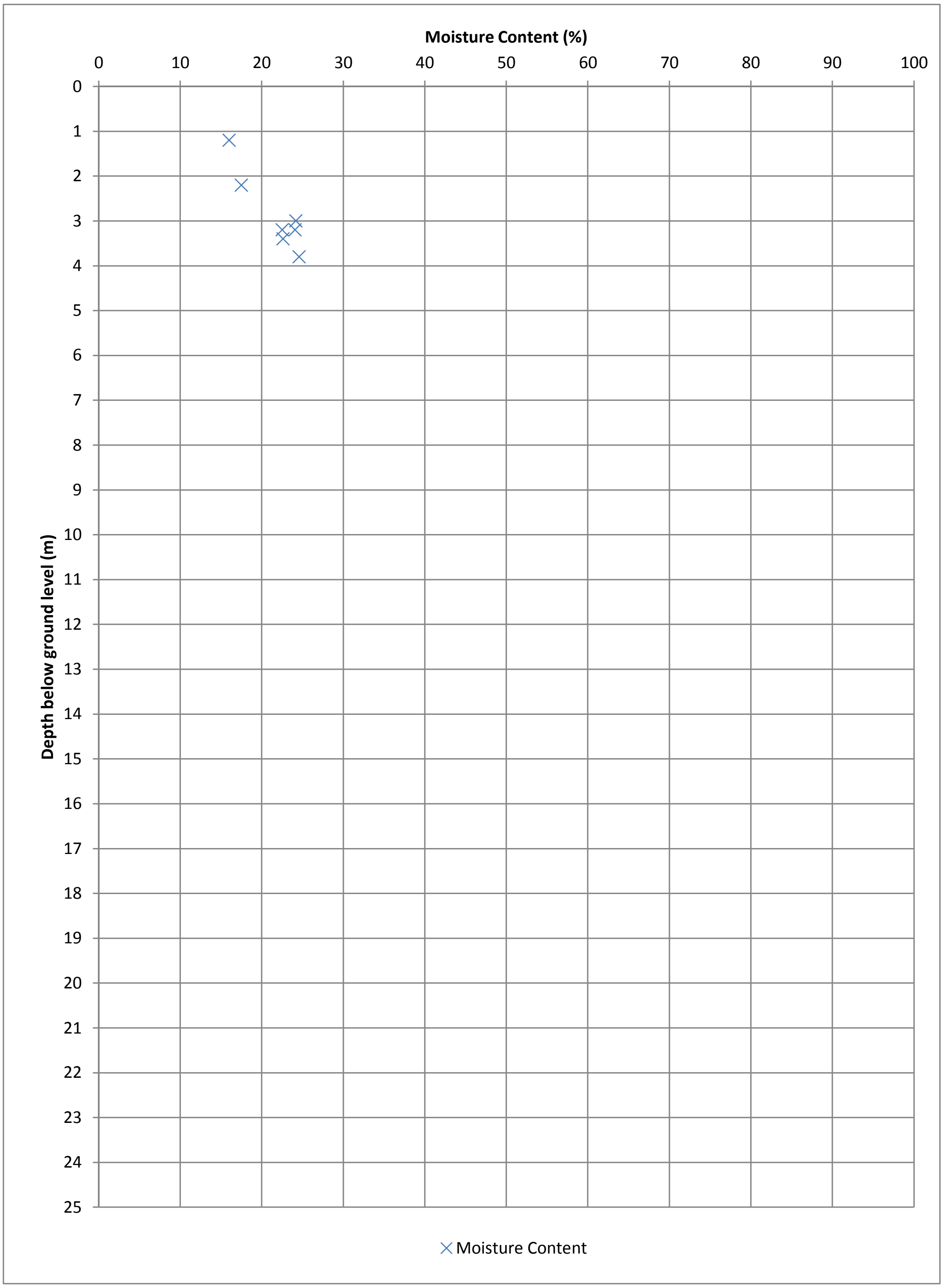
Client **London Resort Company Holdings**	Title **Moisture Content vs Depth for ALLUVIUM on Swanscombe Peninsula**			
Project **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
	Status: FINAL	Figure Number: F3.4		Rev: 1



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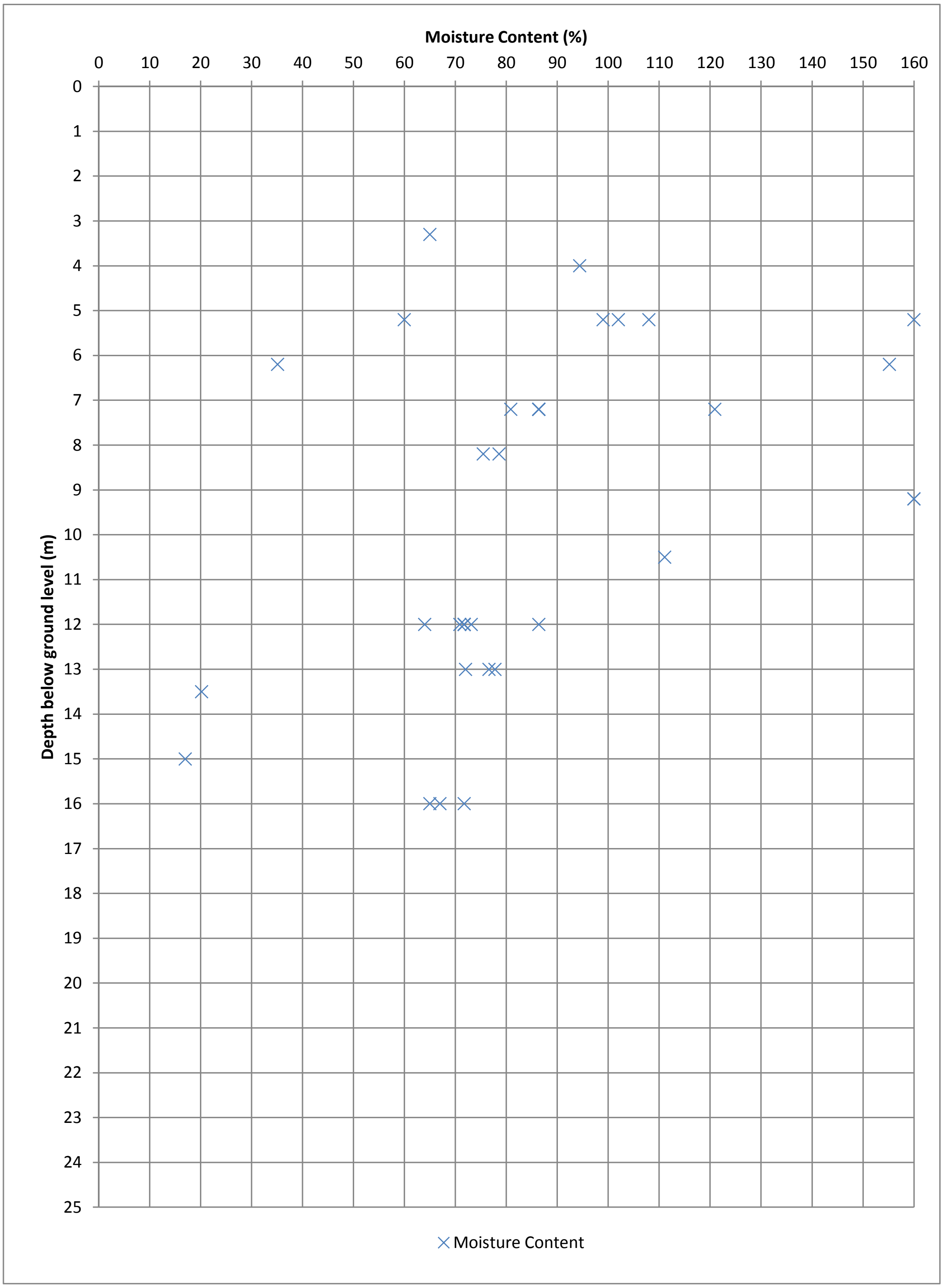
Client: **London Resort Company Holdings**	Title: **Moisture Content vs Depth for ALLUVIUM in Zone 7**			
Project: **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
	Status: FINAL	Figure Number: F3.5		Rev: 1



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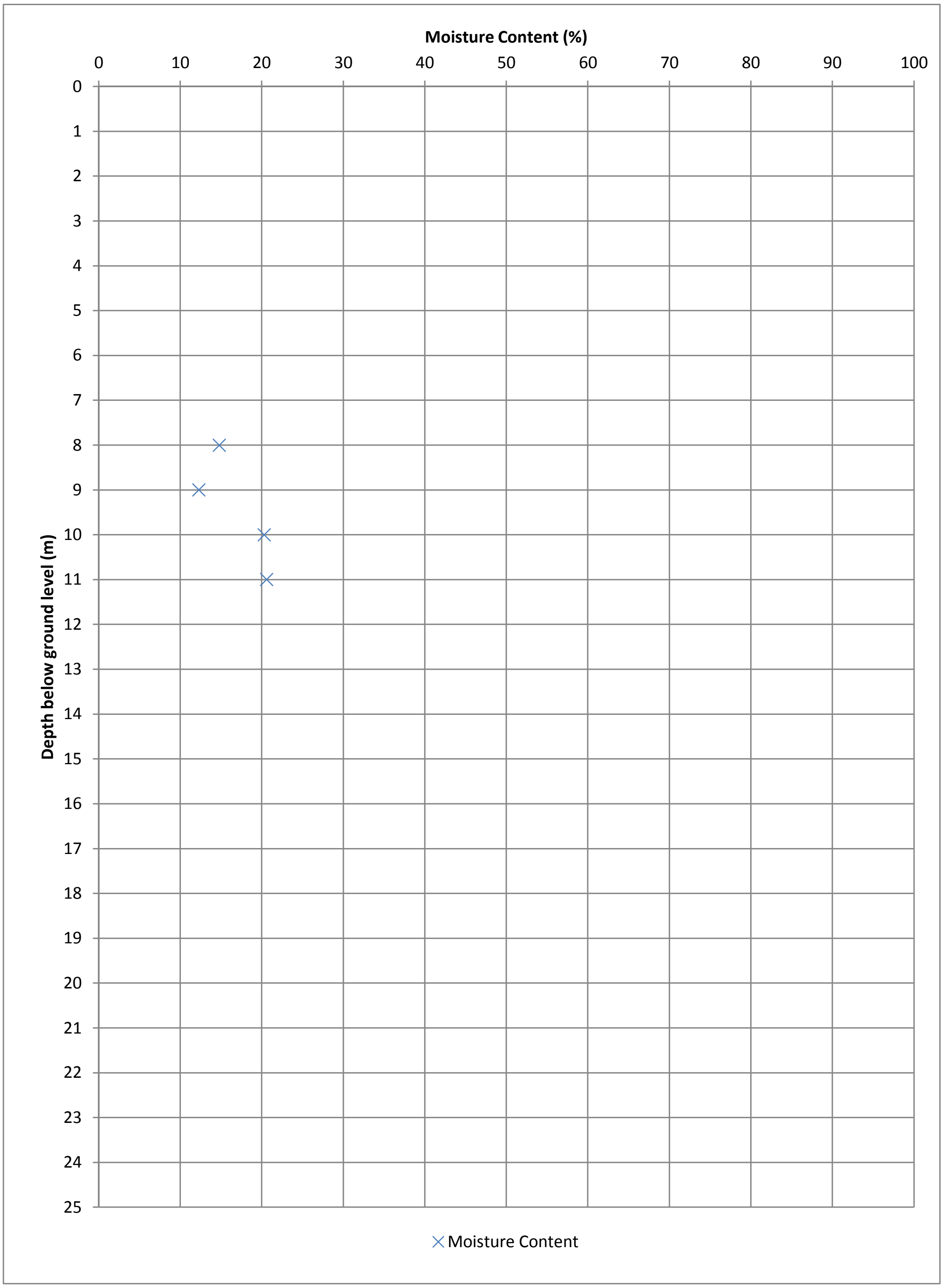
Client
London Resort Company Holdings

Title
Moisture Content vs Depth for PEAT

Project
London Paramount Entertainment Resort

Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
Status: FINAL	Figure Number: F3.6		Rev: 1



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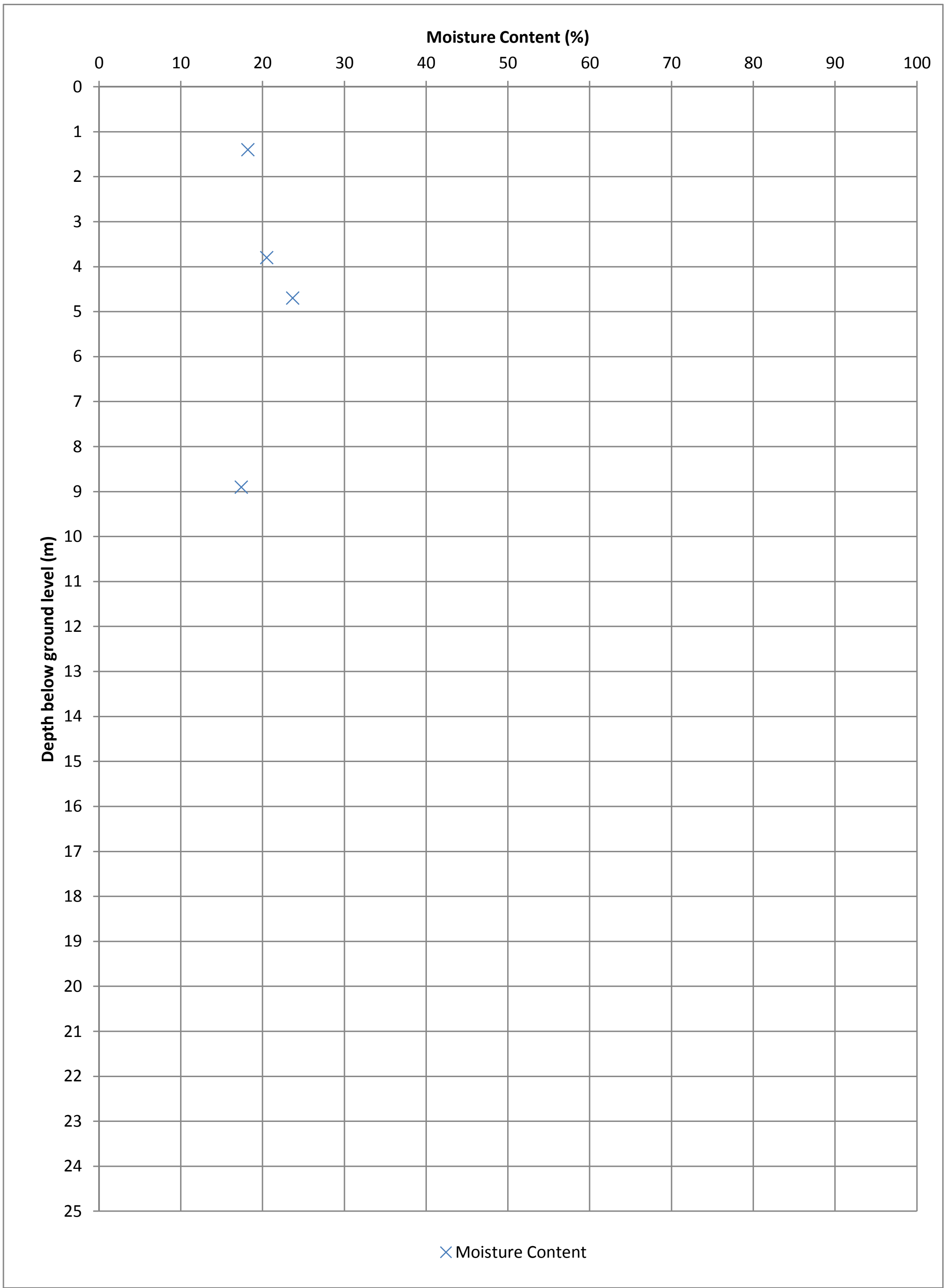
Client	Title
London Resort Company Holdings	**Moisture Content vs Depth for RIVER TERRACE DEPOSITS on Swanscombe Peninsula**

Project	Sheet size:	Drawn: HF	Checked:TR	Reviewed:TR
London Paramount Entertainment Resort	A4	Date: Oct 15	Date: Nov 15	Date: Nov 15
	Status: FINAL	Figure Number: F3.7		Rev: 1



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Client
London Resort Company Holdings

Title
Moisture Content vs Depth for RIVER TERRACE DEPOSITS in Zone 7

Project
London Paramount Entertainment Resort

Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
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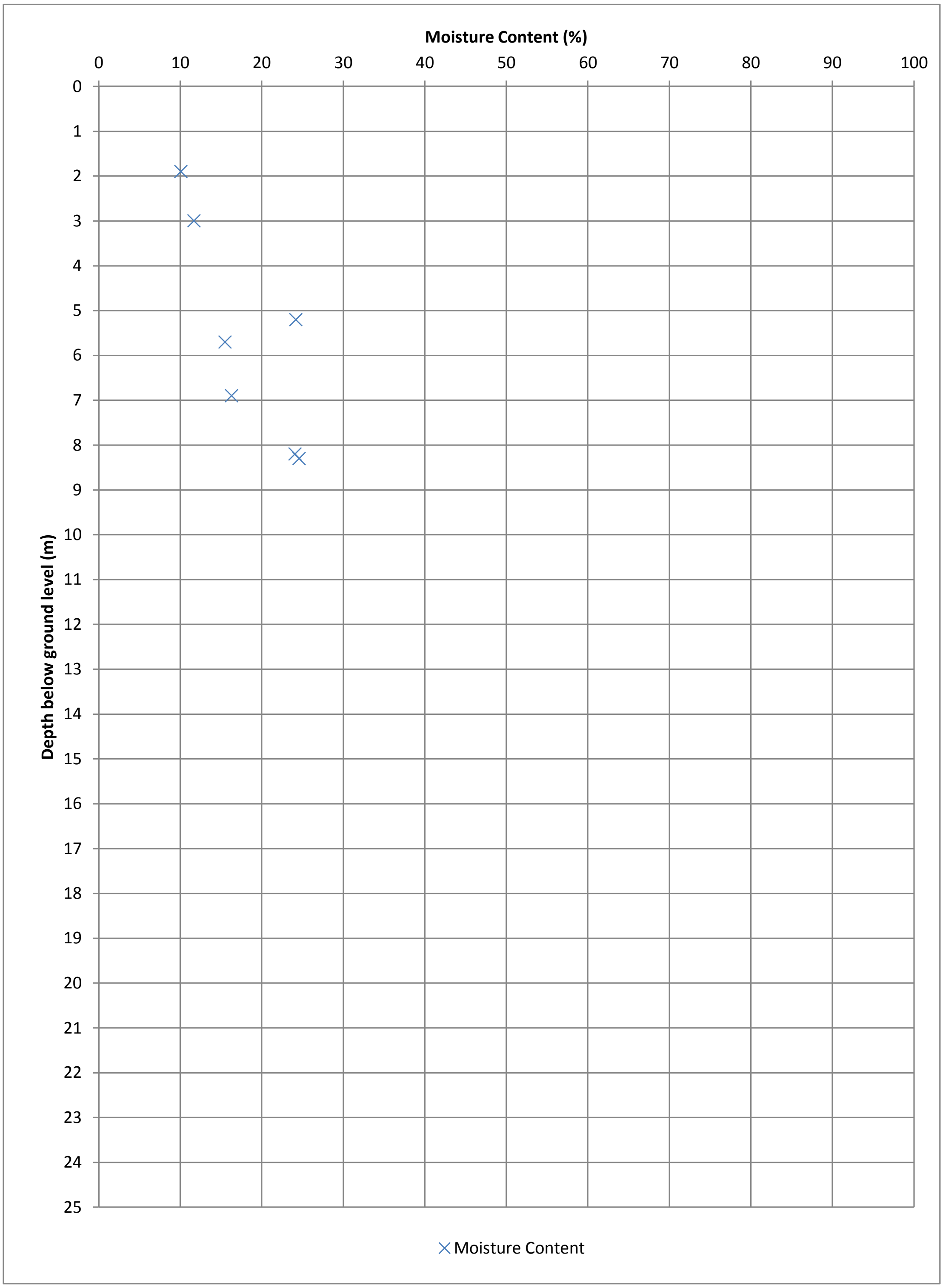

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Client: **London Resort Company Holdings**	Title: **Moisture Content vs Depth for HEAD DEPOSITS**			
Project: **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
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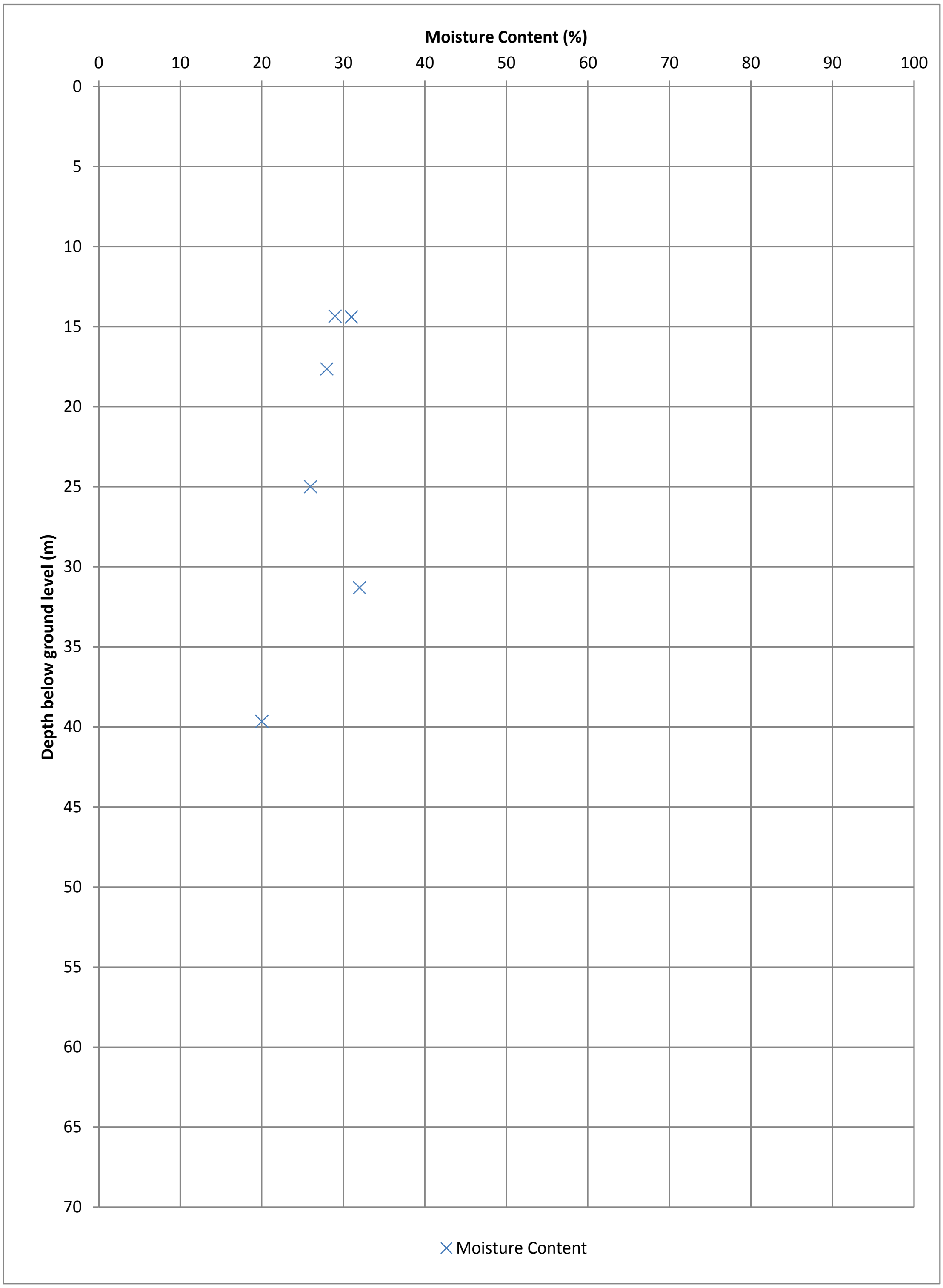

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Client **London Resort Company Holdings**	Title **Moisture Content vs Depth for STRUCTURELESS CHALK**			
Project **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
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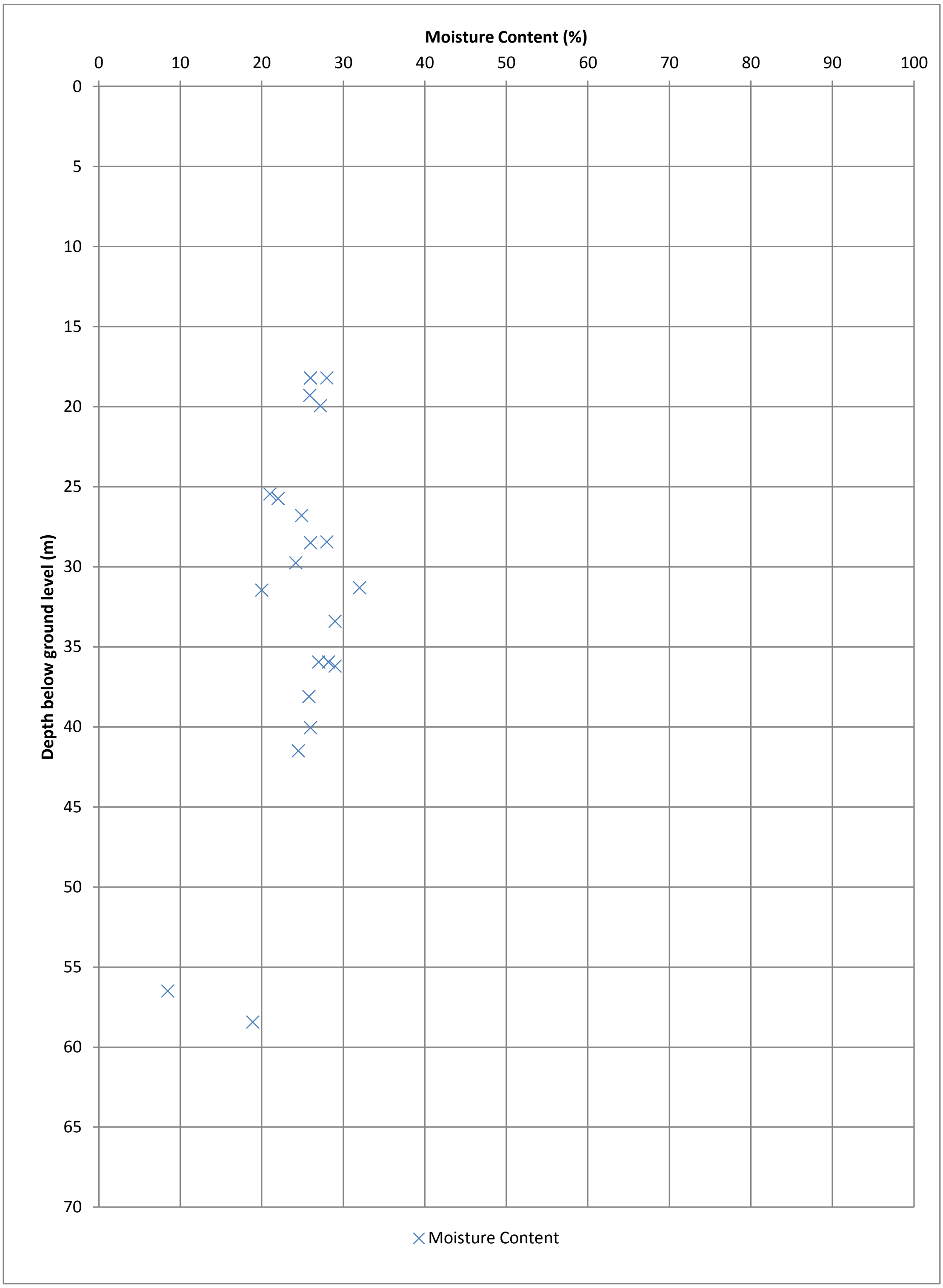

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Client: **London Resort Company Holdings**	Title: **Moisture Content vs Depth for CHALK**			
Project: **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
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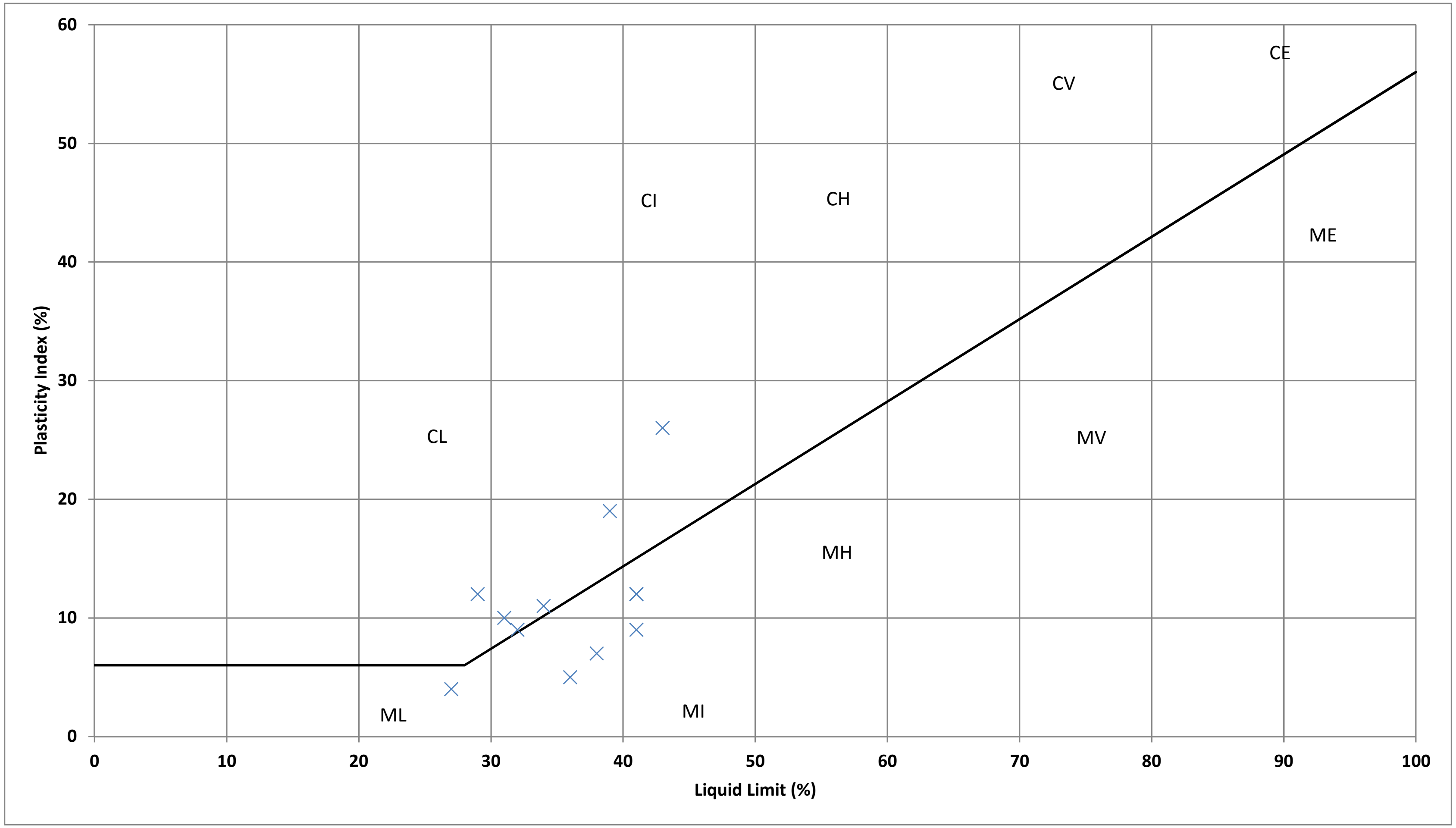
G.4. Atterberg A-Line Plots



ATKINS **Atkins Limited** Woodcote Grove Ashley Road Epsom KT18 5BW	Tel: (01372) 726140 Fax: (01372) 740055 [redacted]	Client **London Resort Company Holdings**	Title **A line for MADE GROUND in Zones 3 and 5**					
		Project **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: H Fisher Date: 20/10/2015	Checked: T Radford Date: 05/11/2015	Authorised: T Radford Date: 10/11/2015		
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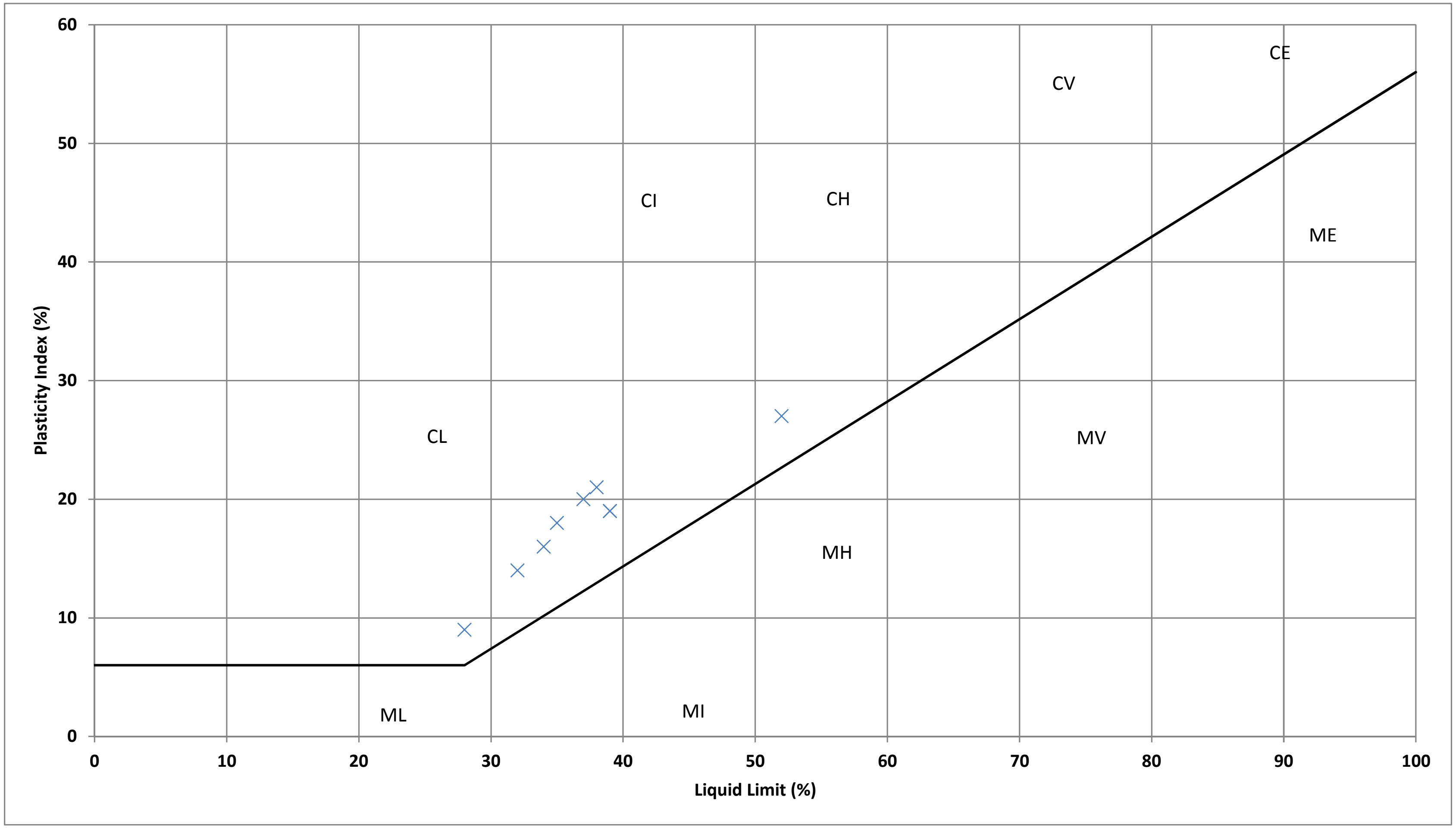

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Client	**London Resort Company Holdings**						
Title	**A line for MADE GROUND in Zone 7**						
Project	**London Paramount Entertainment Resort**						
Sheet size: A4	Drawn: H Fisher	Date: 20/10/2015	Checked: T Radford	Date: 05/11/2015	Authorised: T Radford	Date: 10/11/2015	
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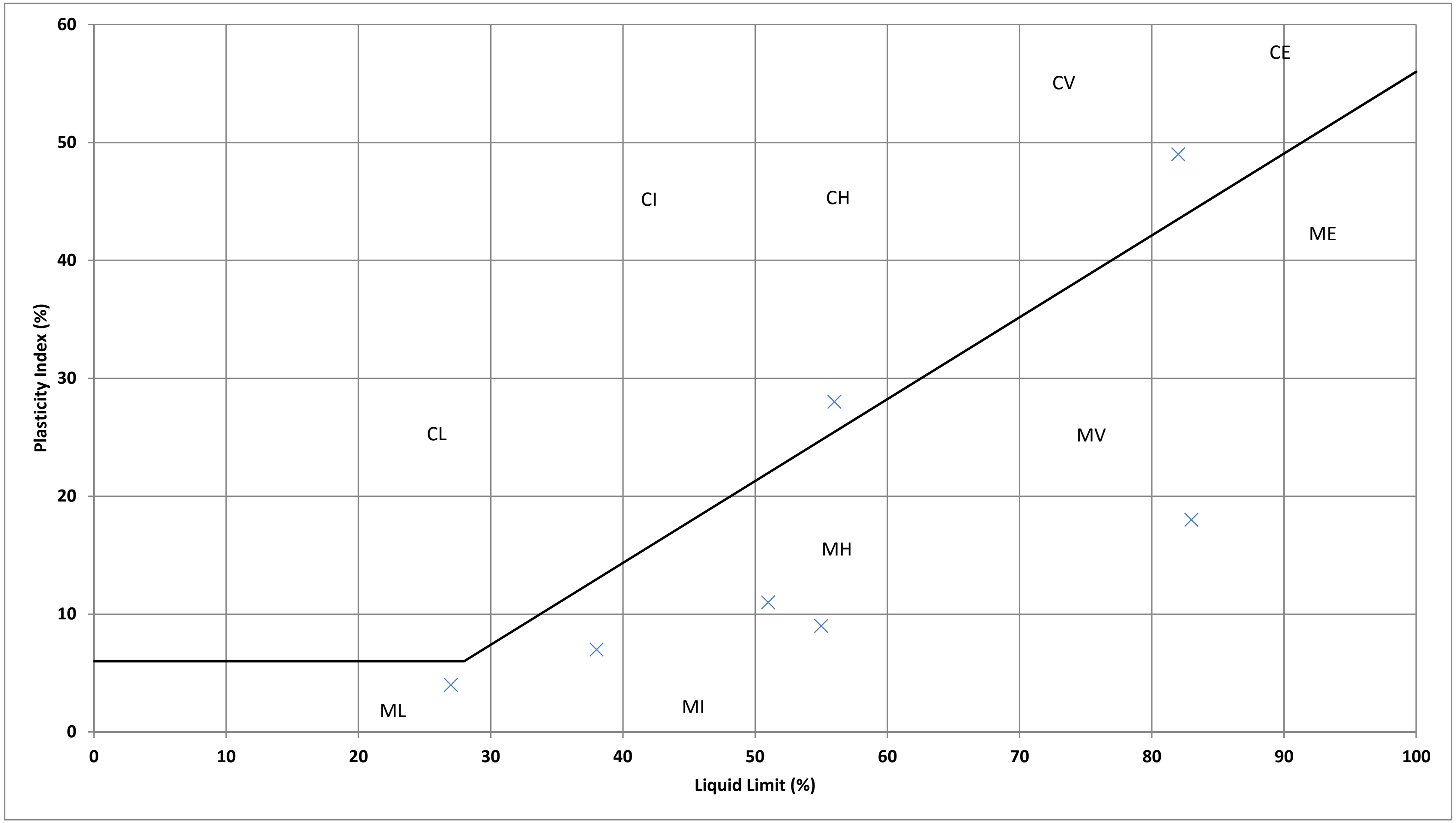
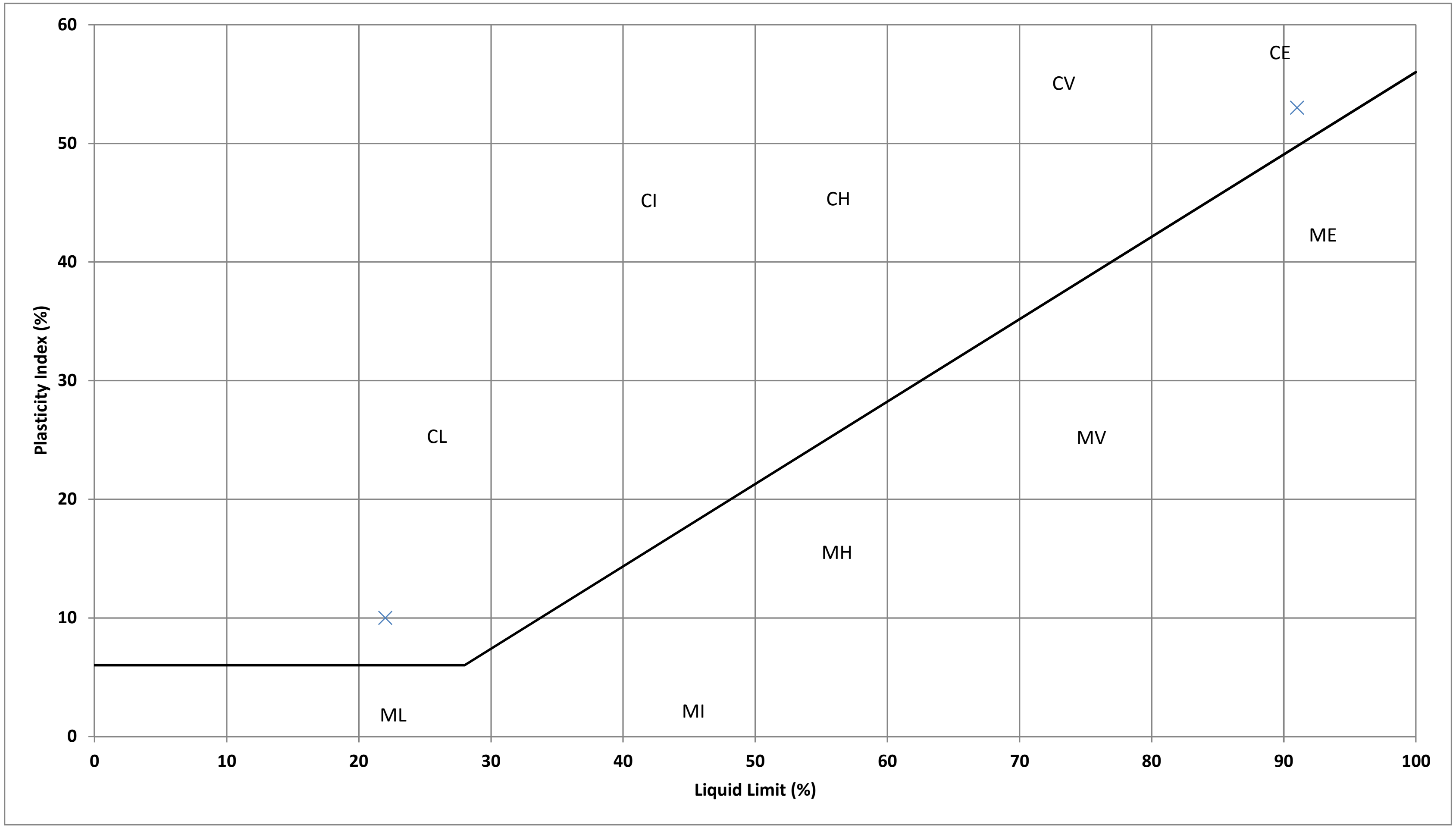
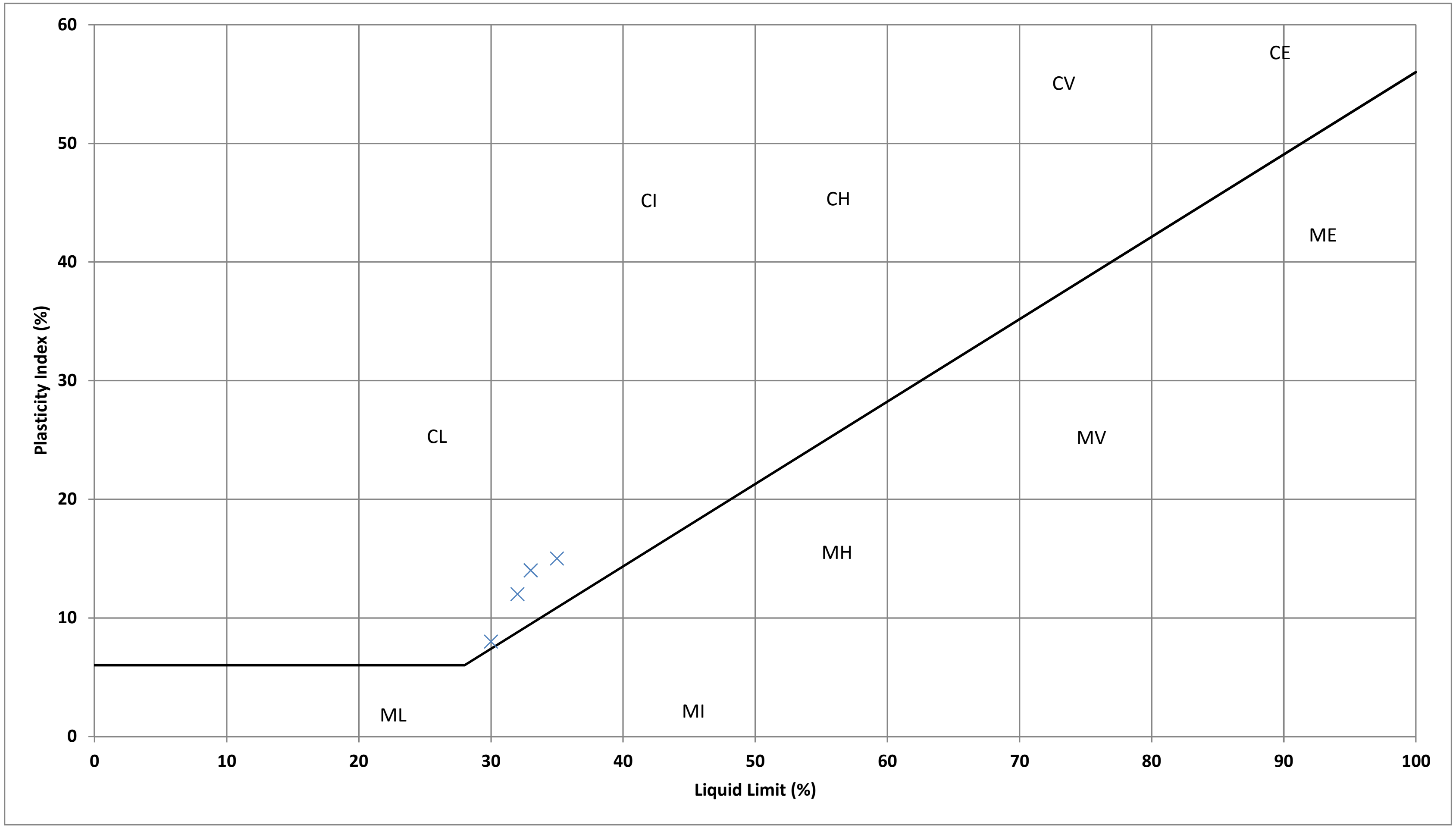


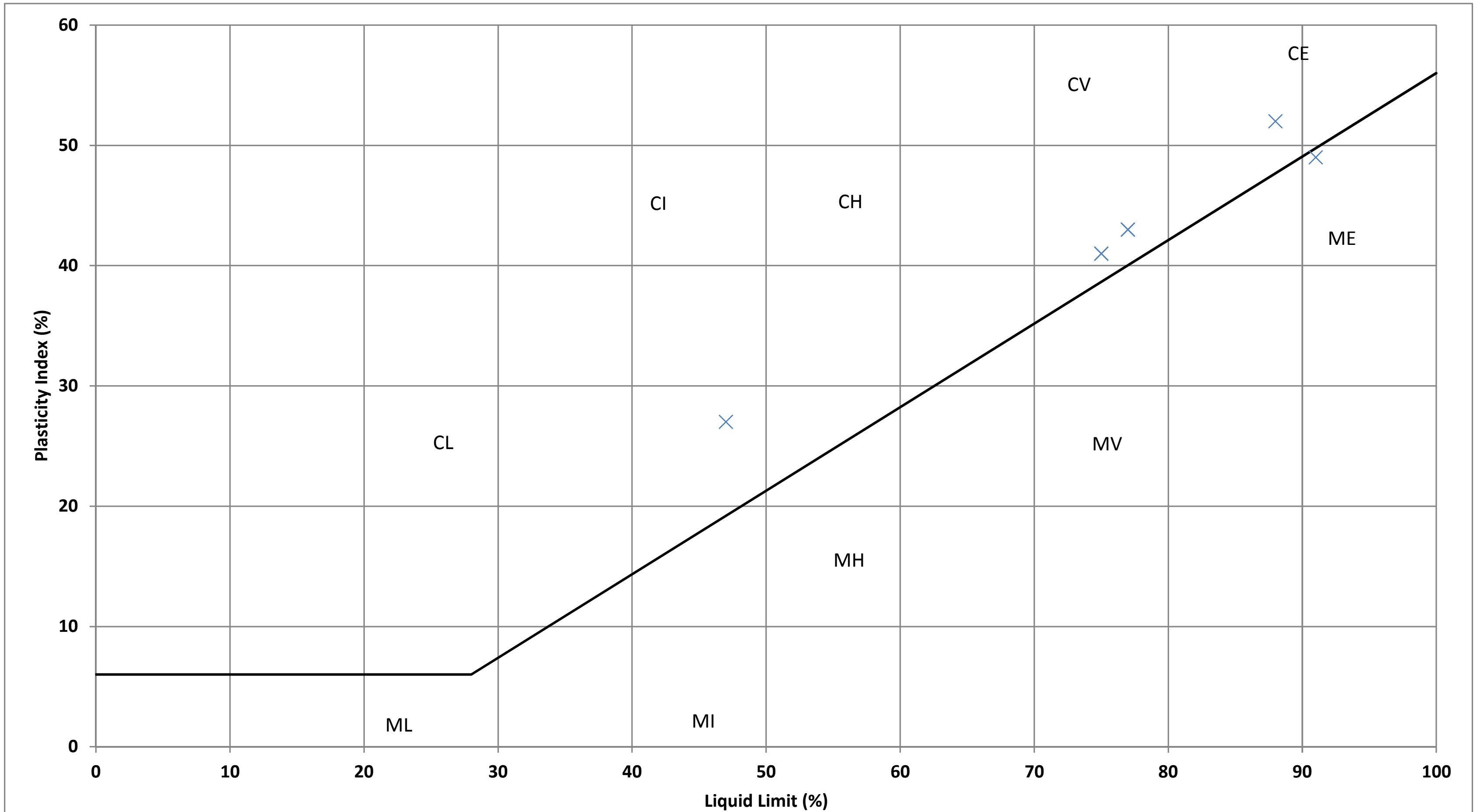
ATKINS	Client			Title			
Atkins Limited	**London Resort Company Holdings**			**A line for CKD**			
Woodcote Grove	Project	Sheet size: A4	Drawn: H Fisher	Checked: T Radford	Authorised: T Radford		
Ashley Road Tel: (01372) 726140	**London Paramount Entertainment Resort**		Date: 20/10/2015	Date: 05/11/2015	Date: 10/11/2015		
Epsom Fax: (01372) 740055		Status: FINAL	Figure Number: F4.3			Rev: 1	
KT18 5BW [redacted]							



ATKINS **Atkins Limited** Woodcote Grove Ashley Road Tel: (01372) 726140 Epsom Fax: (01372) 740055 KT18 5BW [redacted]	Client **London Resort Company Holdings**	Title **A line for ALLUVIUM on Swanscombe Peninsula**
	Project **London Paramount Entertainment Resort**	Sheet size: A4 · Drawn: H Fisher · Date: 20/10/2015 · Checked: T Radford · Date: 05/11/2015 · Authorised: T Radford · Date: 10/11/2015 Status: FINAL · Figure Number: F4.4 · Rev: 1

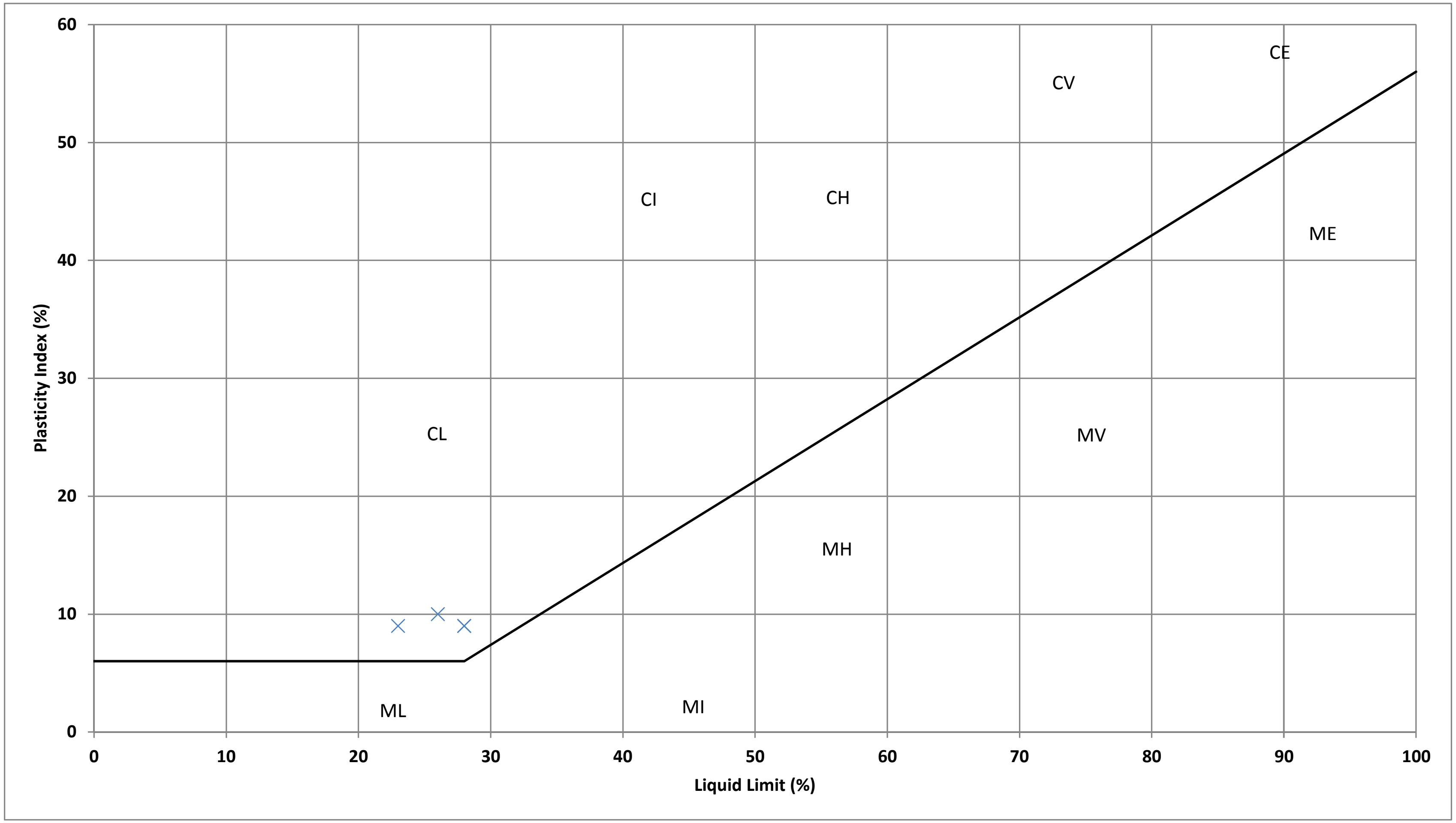


ATKINS	Client: **London Resort Company Holdings**	Title: **A line for ALLUVIUM in Zone 7**
Atkins Limited Woodcote Grove, Ashley Road, Epsom, KT18 5BW; Tel: (01372) 726140, Fax: (01372) 740055, [redacted]	Project: **London Paramount Entertainment Resort**	Sheet size: A4; Drawn: H Fisher, Date: 20/10/2015; Checked: T Radford, Date: 05/11/2015; Authorised: T Radford, Date: 10/11/2015; Status: FINAL; Figure Number: F4.5; Rev: 1



Note: One result recording values PI (209%) and LL (100%), is not shown here.

ATKINS	Client	Title					
Atkins Limited	**London Resort Company Holdings**	**A line for ALLUVIUM PEAT**					
Woodcote Grove	Project	Sheet size: A4	Drawn: H Fisher	Checked: T Radford	Authorised: T Radford		
Ashley Road Tel: (01372) 726140			Date: 20/10/2015	Date: 05/11/2015	Date: 10/11/2015		
Epsom Fax: (01372) 740055	**London Paramount Entertainment Resort**	Status: FINAL	Figure Number: F4.6			Rev: 1	
KT18 5BW [redacted]							



ATKINS	Client	Title	
Atkins Limited	**London Resort Company Holdings**	**A line for RIVER TERRACE DEPOSITS on Swanscombe Peninsula**	

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Project
London Paramount Entertainment Resort

Sheet size:	Drawn:	Checked:	Authorised:
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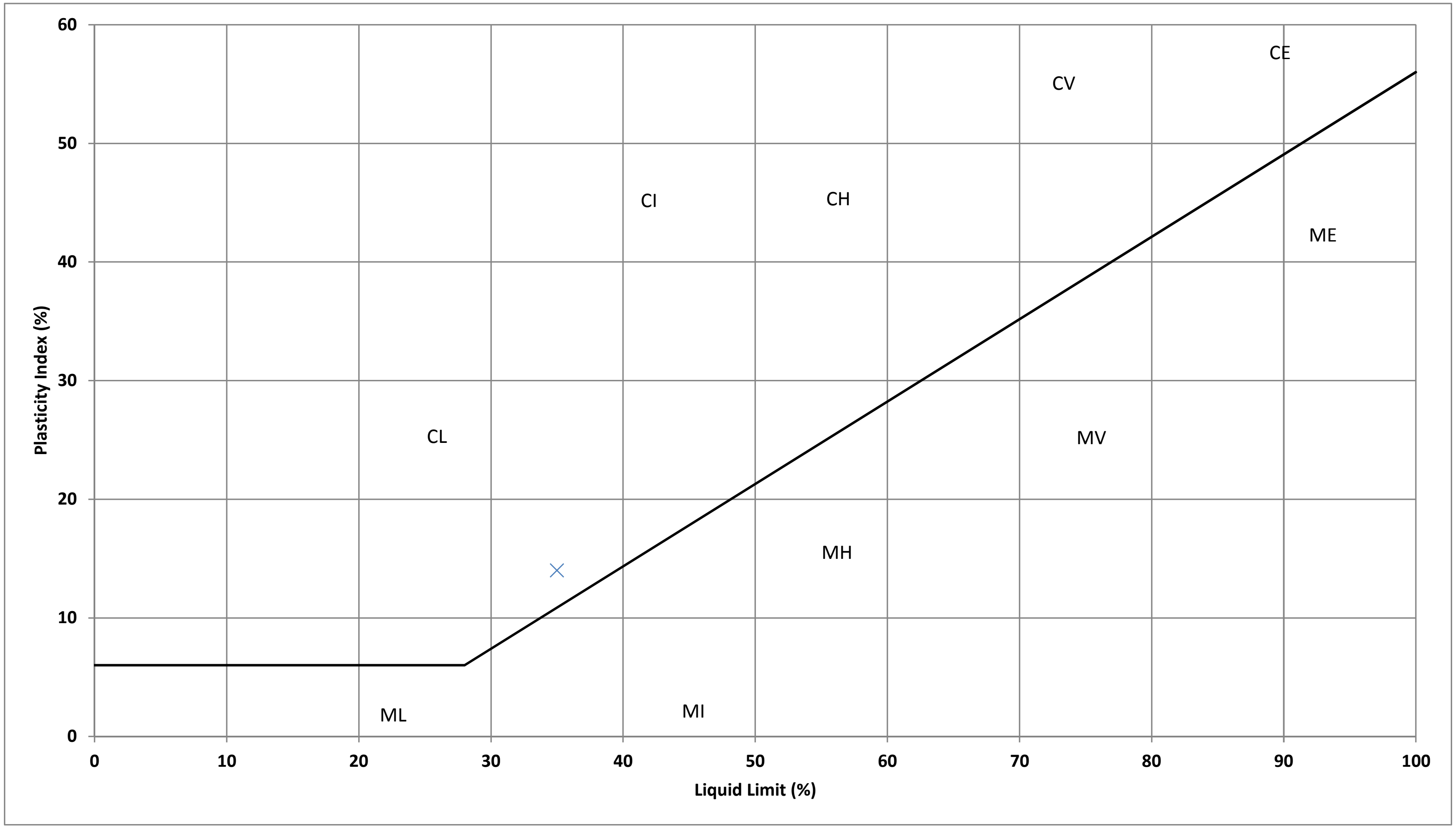
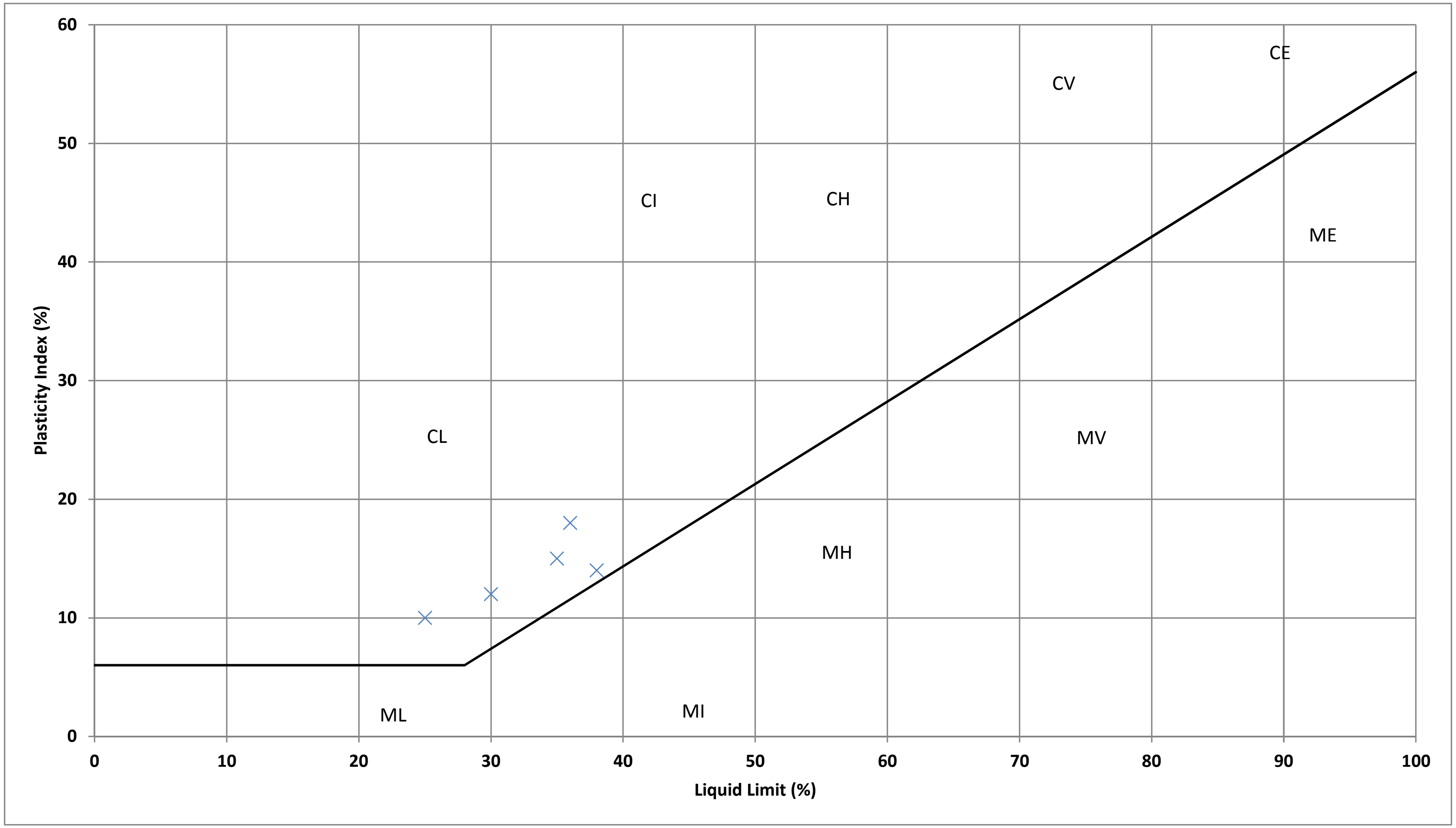
Status: FINAL	Figure Number: F4.7		Rev: 1



ATKINS	Client		Title					
	London Resort Company Holdings		**A line for RIVER TERRACE DEPOSITS in Zone 7**					
Atkins Limited								
Woodcote Grove	Project		Sheet size:	Drawn: H Fisher	Checked: T Radford		Authorised: T Radford	
Ashley Road	Tel: (01372) 726140		A4	Date: 20/10/2015	Date: 05/11/2015		Date: 10/11/2015	
Epsom	Fax: (01372) 740055	**London Paramount Entertainment Resort**	Status:	Figure Number:			Rev:	
KT18 5BW	[redacted]		FINAL	F4.8			1	



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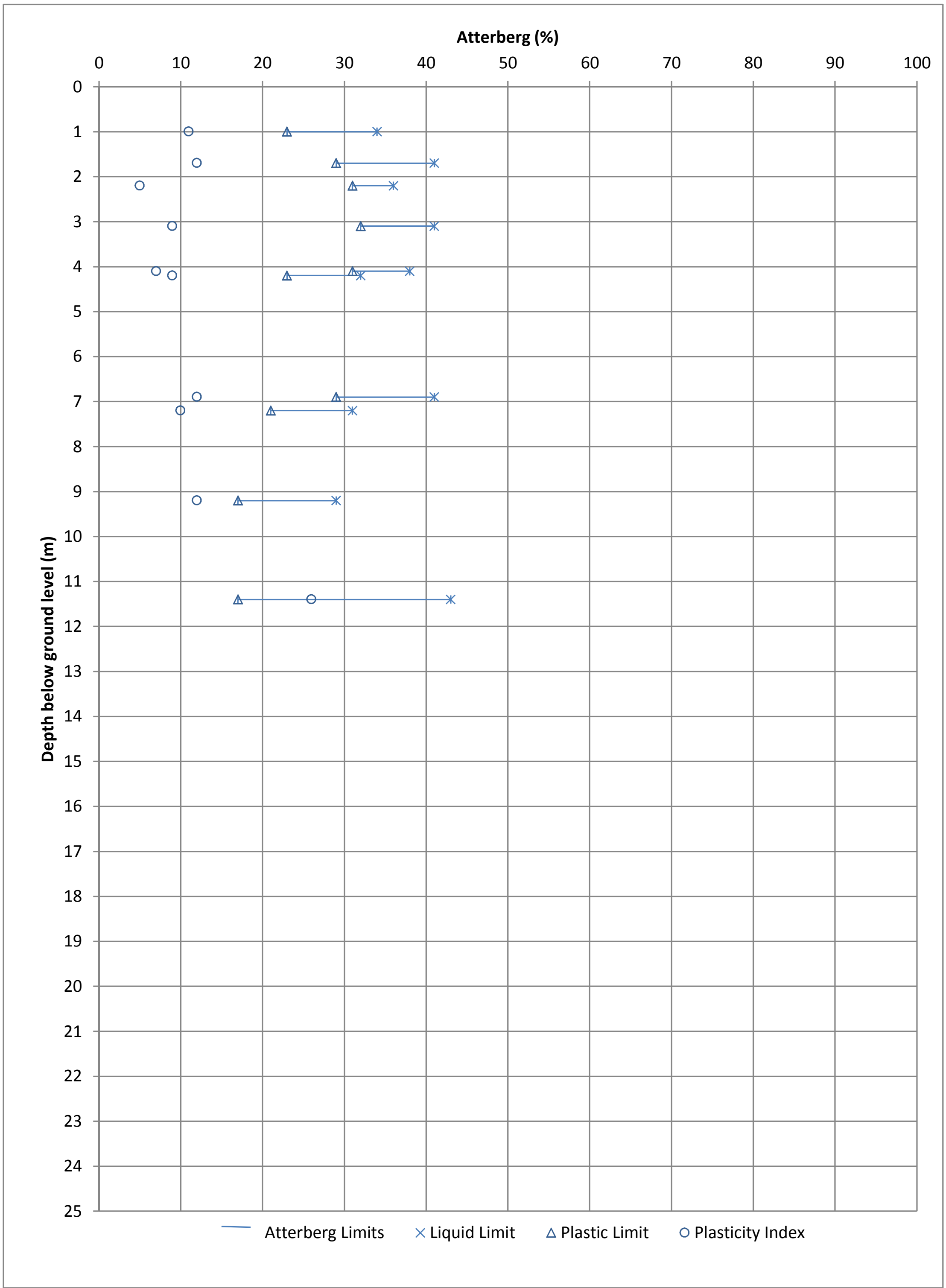
Client	**London Resort Company Holdings**	Title	**A line for HEAD DEPOSITS**				
Project	**London Paramount Entertainment Resort**	Sheet size: A4	Drawn: H Fisher	Date: 20/10/2015	Checked: T Radford	Date: 05/11/2015	Authorised: T Radford Date: 10/11/2015
		Status: FINAL	Figure Number: F4.9				Rev: 1

G.5. Atterberg Limit vs. Depth Plots



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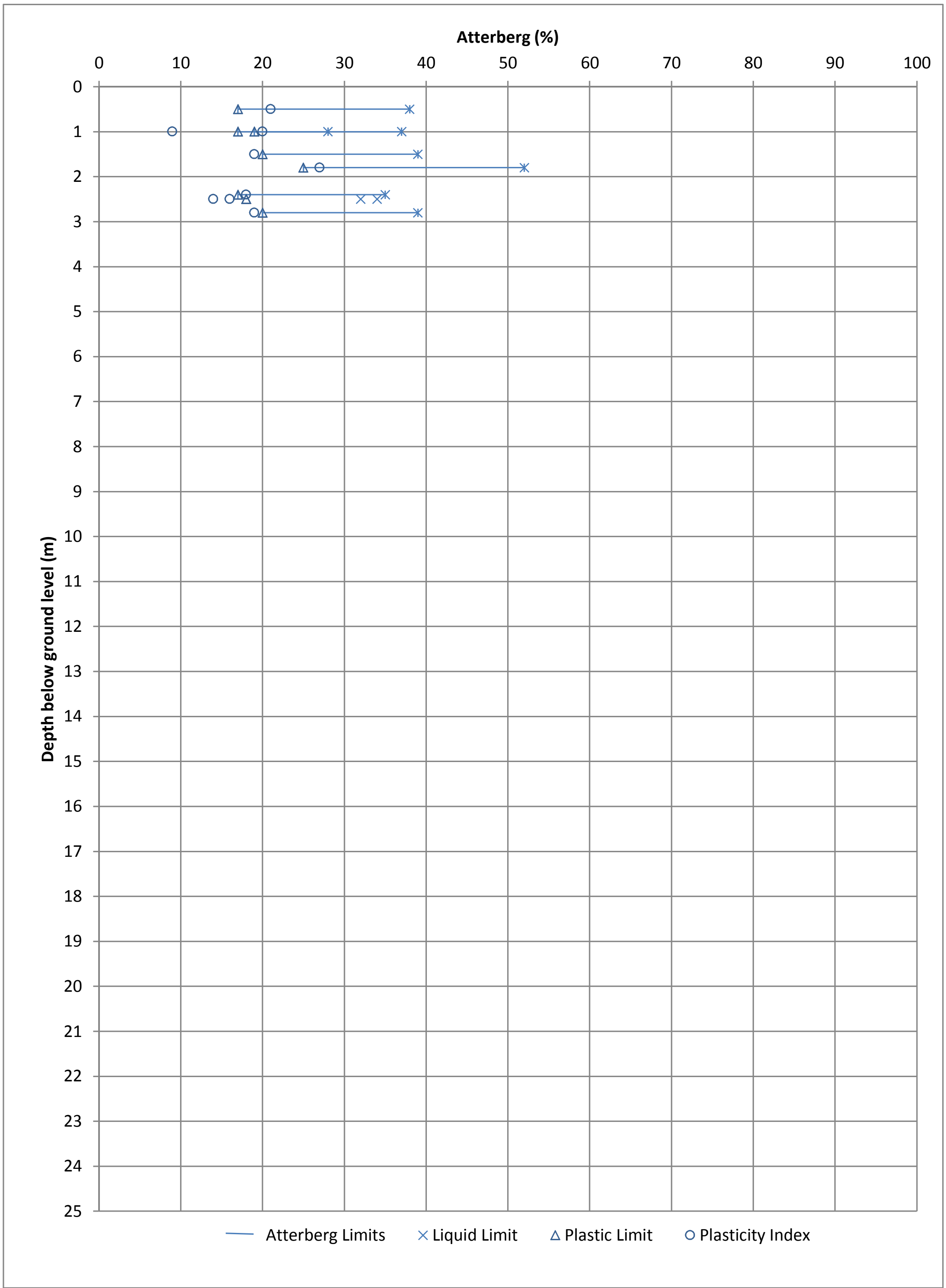
Client
London Resort Company Holdings

Project
London Paramount Entertainment Resort

Title
Atterberg Limits vs Depth for MADE GROUND in Zones 3 and 5

Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
Status: FINAL	Figure Number: F5.1		Rev: 1



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Client **London Resort Company Holdings**	Title **Atterberg Limits vs Depth for MADE GROUND in Zone 7**			
Project **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
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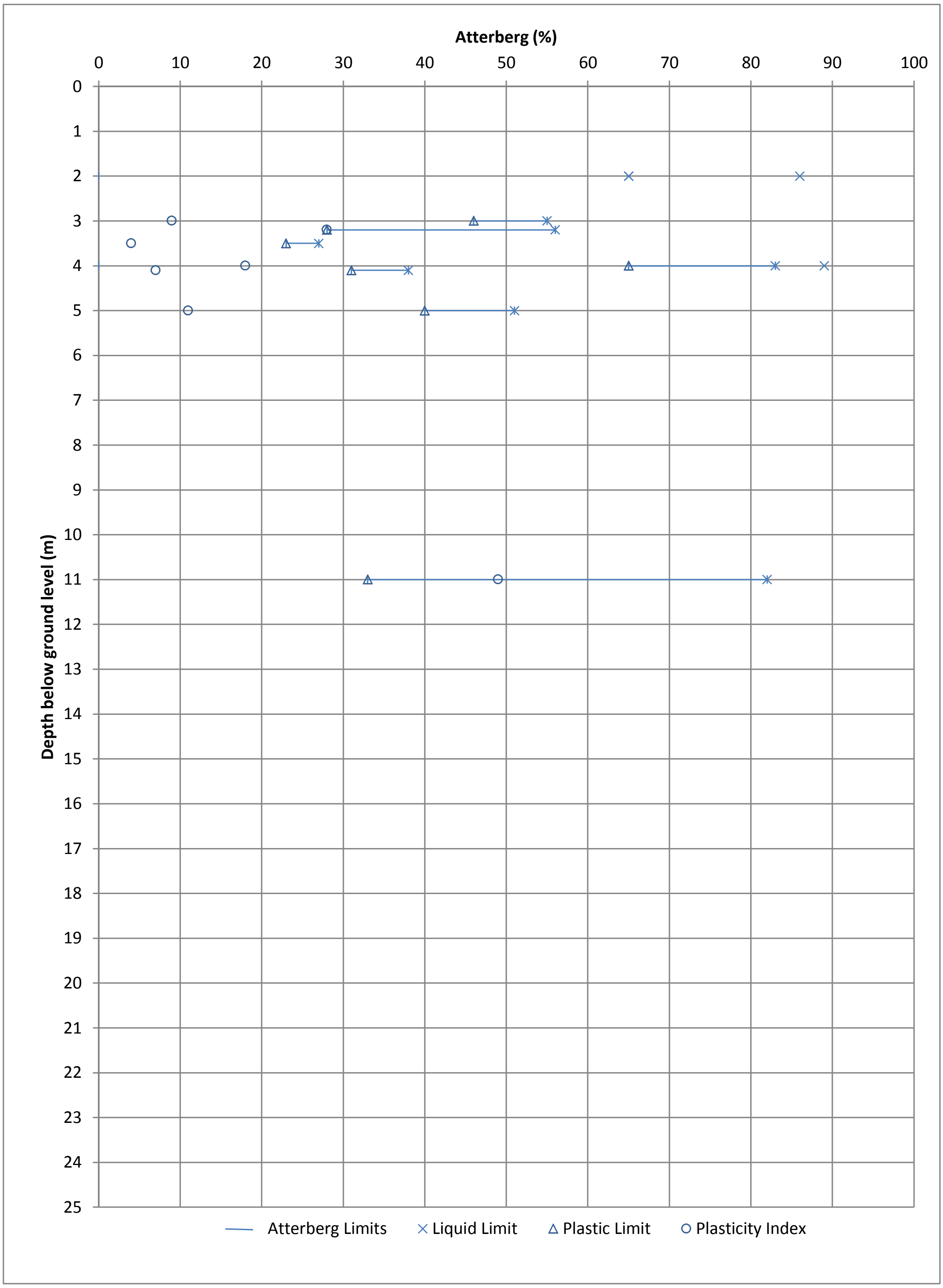

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Client **London Resort Company Holdings**	Title **Atterberg Limits vs Depth for CKD**			
Project **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
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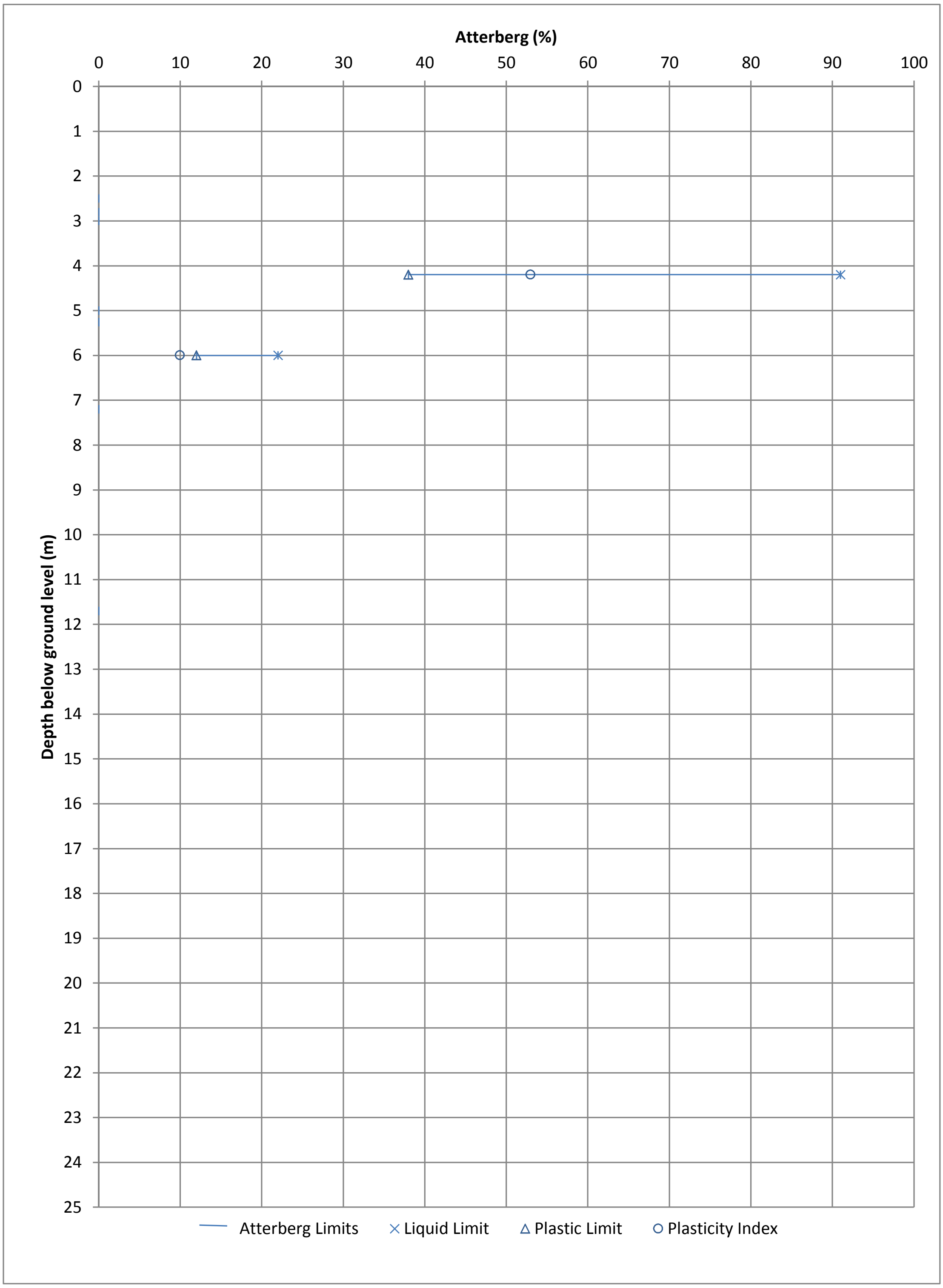

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Client
London Resort Company Holdings

Project
London Paramount Entertainment Resort

Title
Atterberg Limits vs Depth for ALLUVIUM on Swanscombe Peninsula

Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
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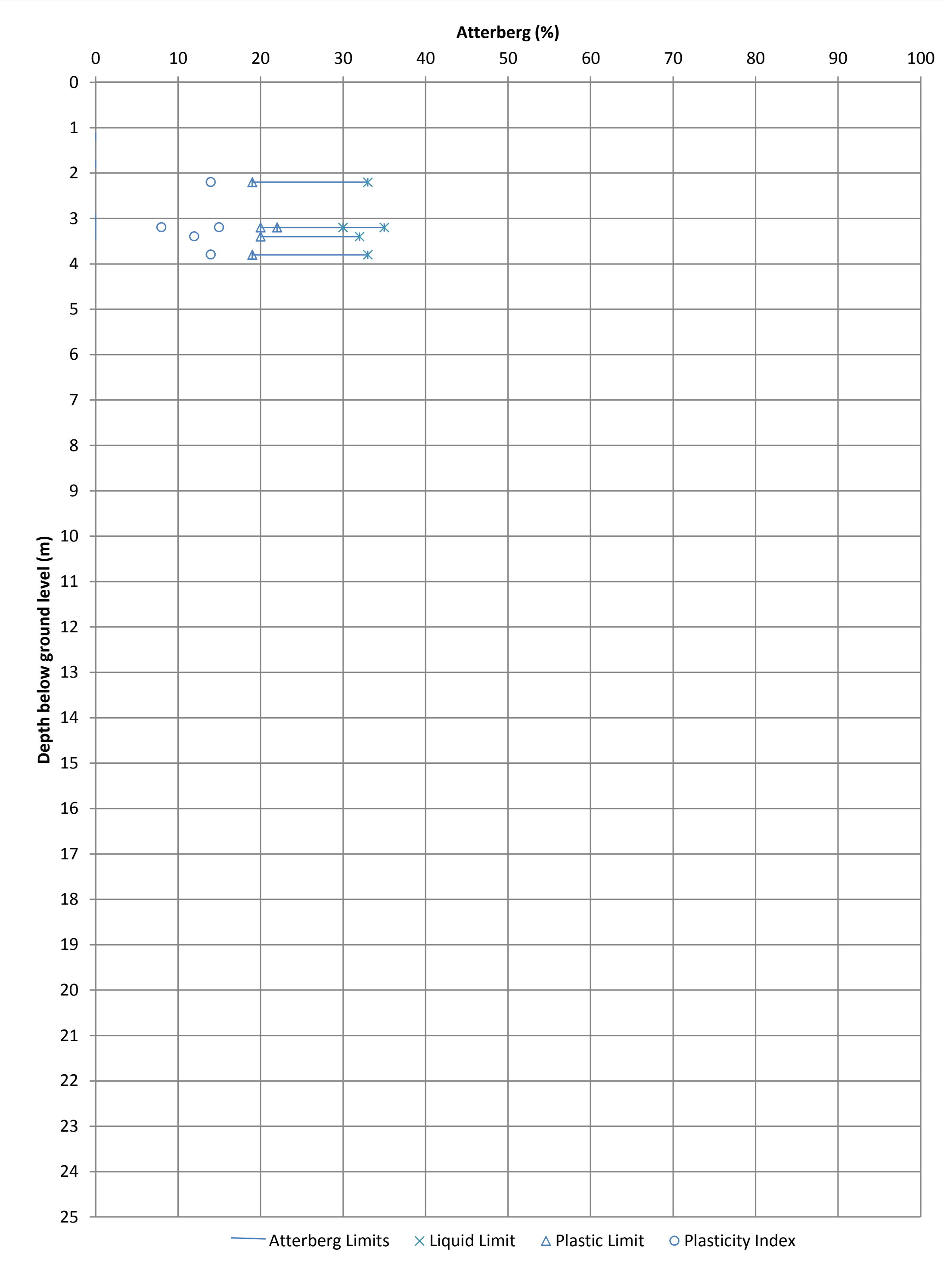

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Client: **London Resort Company Holdings**	Title: **Atterberg Limits vs Depth for ALLUVIUM in Zone 7**			
Project: **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
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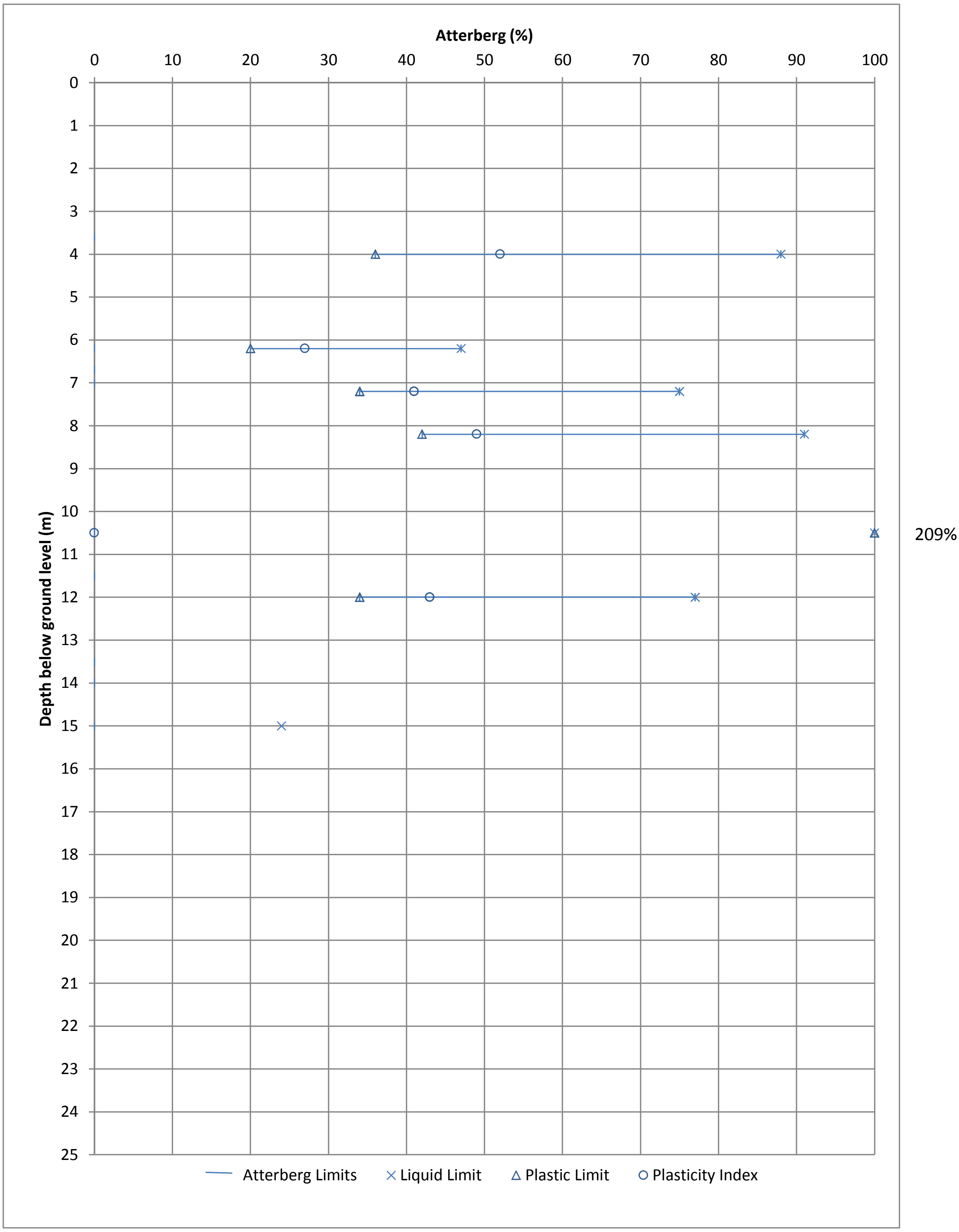

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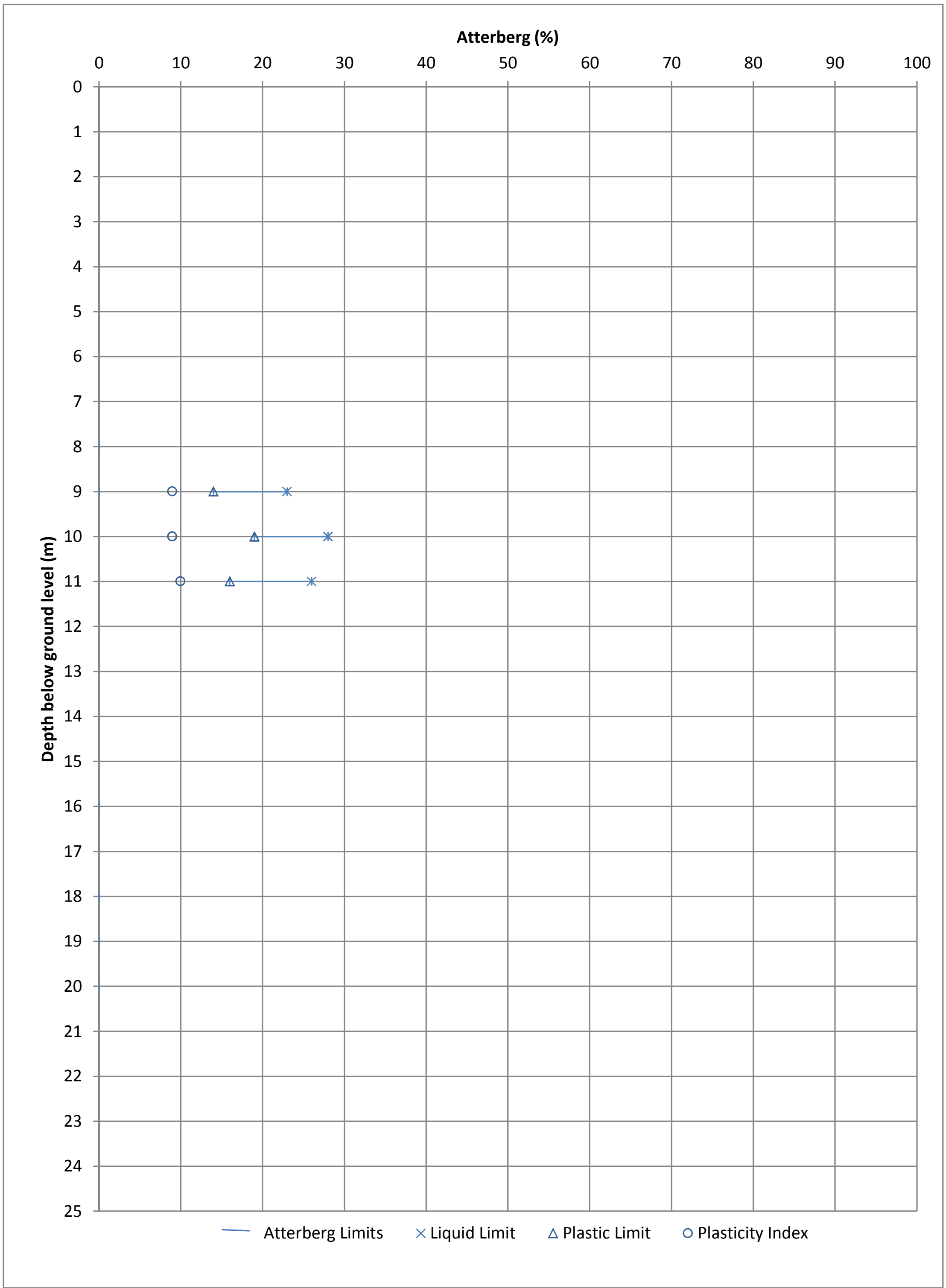
Client		Title			
London Resort Company Holdings		**Atterberg Limits vs Depth for ALLUVIUM PEAT**			
Project		Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
London Paramount Entertainment Resort		Status: FINAL	Figure Number: F5.6		Rev: 1



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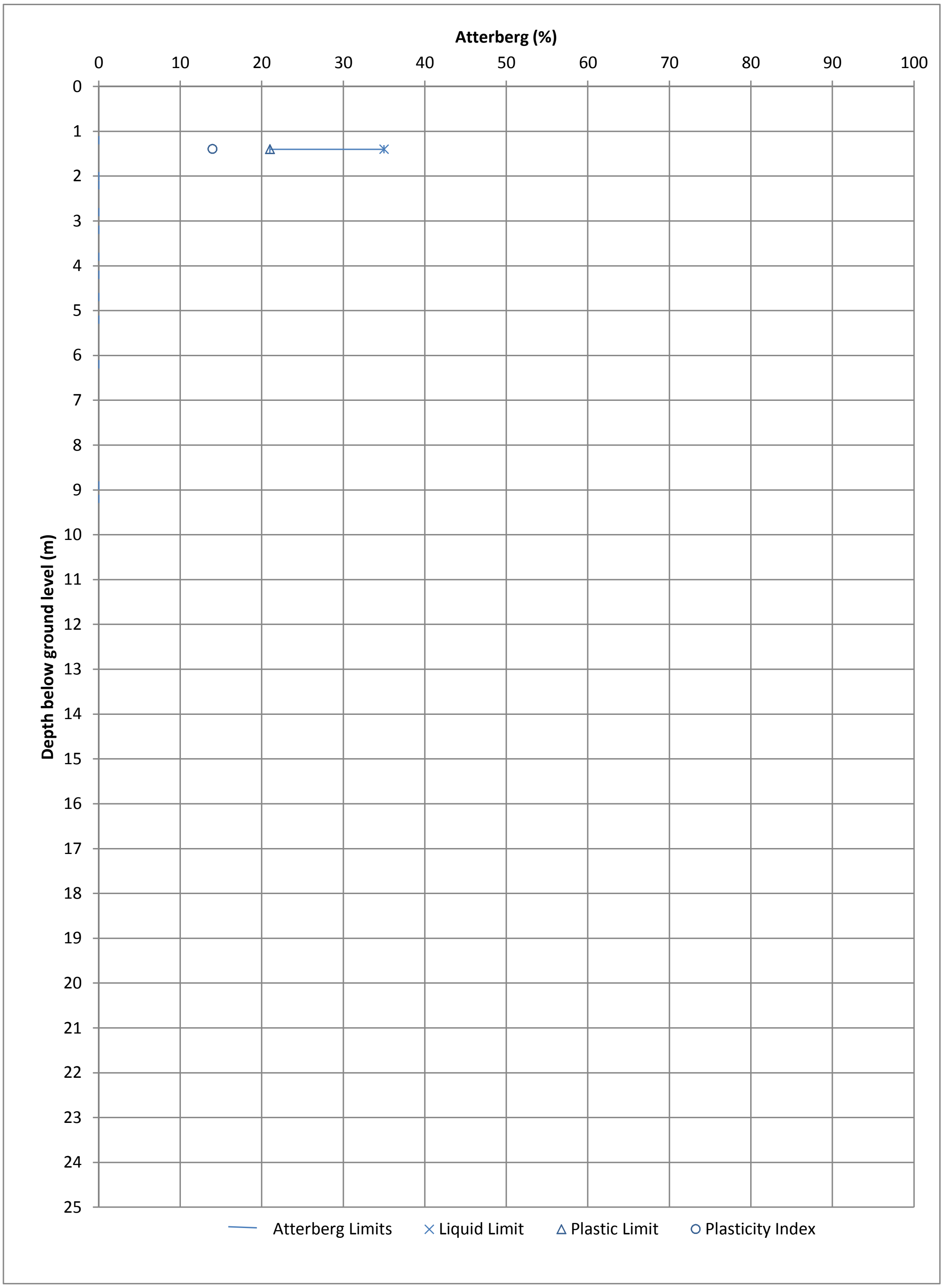
Client	Title			
London Resort Company Holdings	**Atterber Limits vs Depth for RIVER TERRACE DEPOSITS on Swanscombe Peninsula**			
Project	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
London Paramount Entertainment Resort	Status: FINAL	Figure Number: F5.7		Rev: 1



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Client **London Resort Company Holdings**		Title **Atterberg Limits vs Depth for RIVER TERRACE DEPOSITS in Zone 7**			
Project **London Paramount Entertainment Resort**		Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
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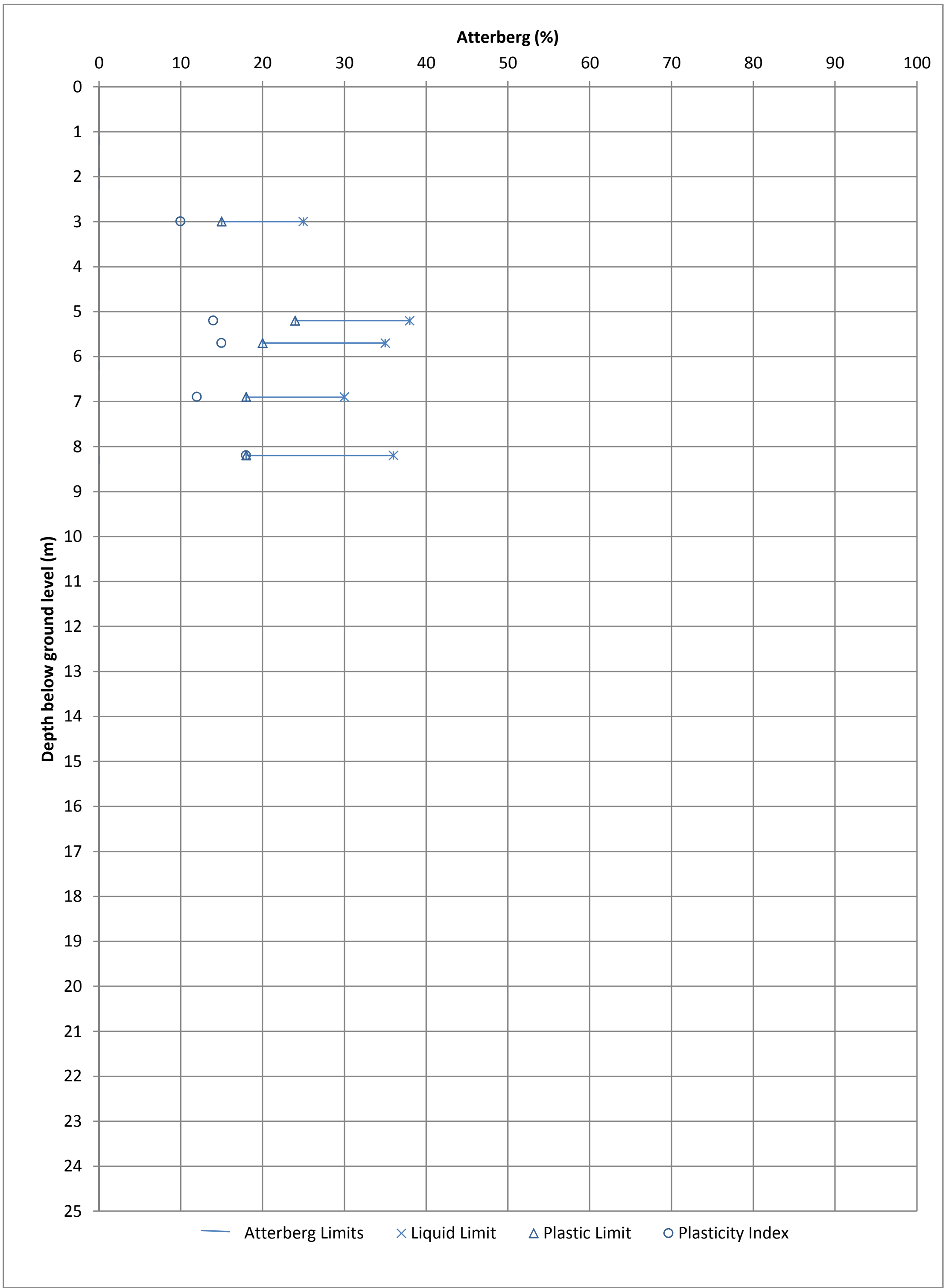

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Client	**London Resort Company Holdings**	Title	**Atterberg Limits vs Depth for HEAD DEPOSITS**		
Project	**London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date: Nov 15	Reviewed:TR Date: Nov 15
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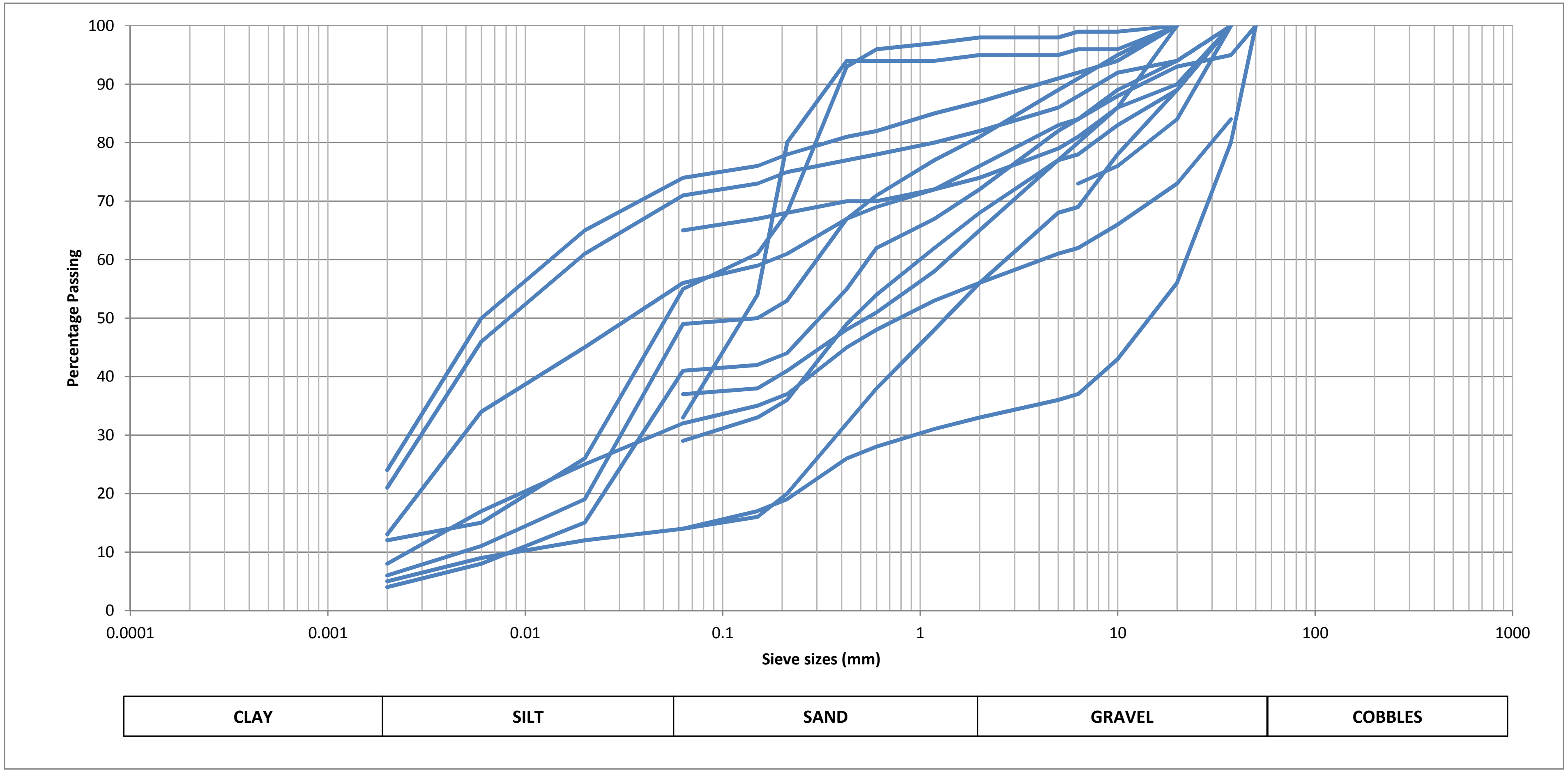
G.6. Particle Size Distribution Graphs



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Client	**London Resort Company Holdings**	Title	**Particle Size Distribution for MADE GROUND in Zones 3 and 5**				
Project	**London Paramount Entertainment Resort**	Sheet size: A4	Drawn: H. Fisher Date: 20/10/2015	Checked: T. Radford Date: 06/11/2015	Authorised: T. Radford Date: 10/11/2015		
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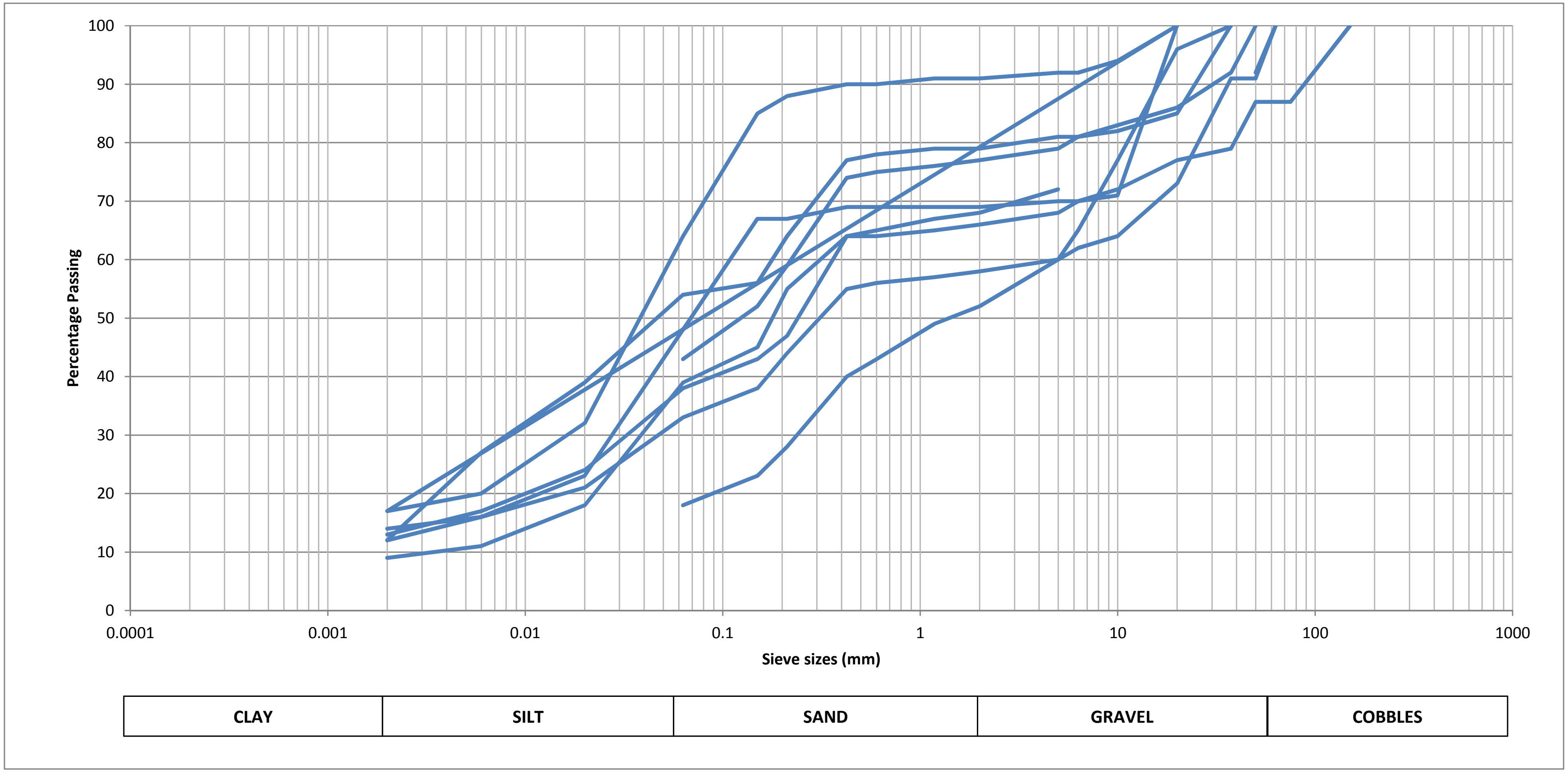

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Client: **London Resort Company Holdings**		Title: **Particle Size Distribution for MADE GROUND in Zone 7**					
Project: **London Paramount Entertainment Resort**		Sheet size: A4	Drawn: H. Fisher	Date: 20/10/2015	Checked: T. Radford	Date: 06/11/2015	Authorised: T. Radford Date: 10/11/2015
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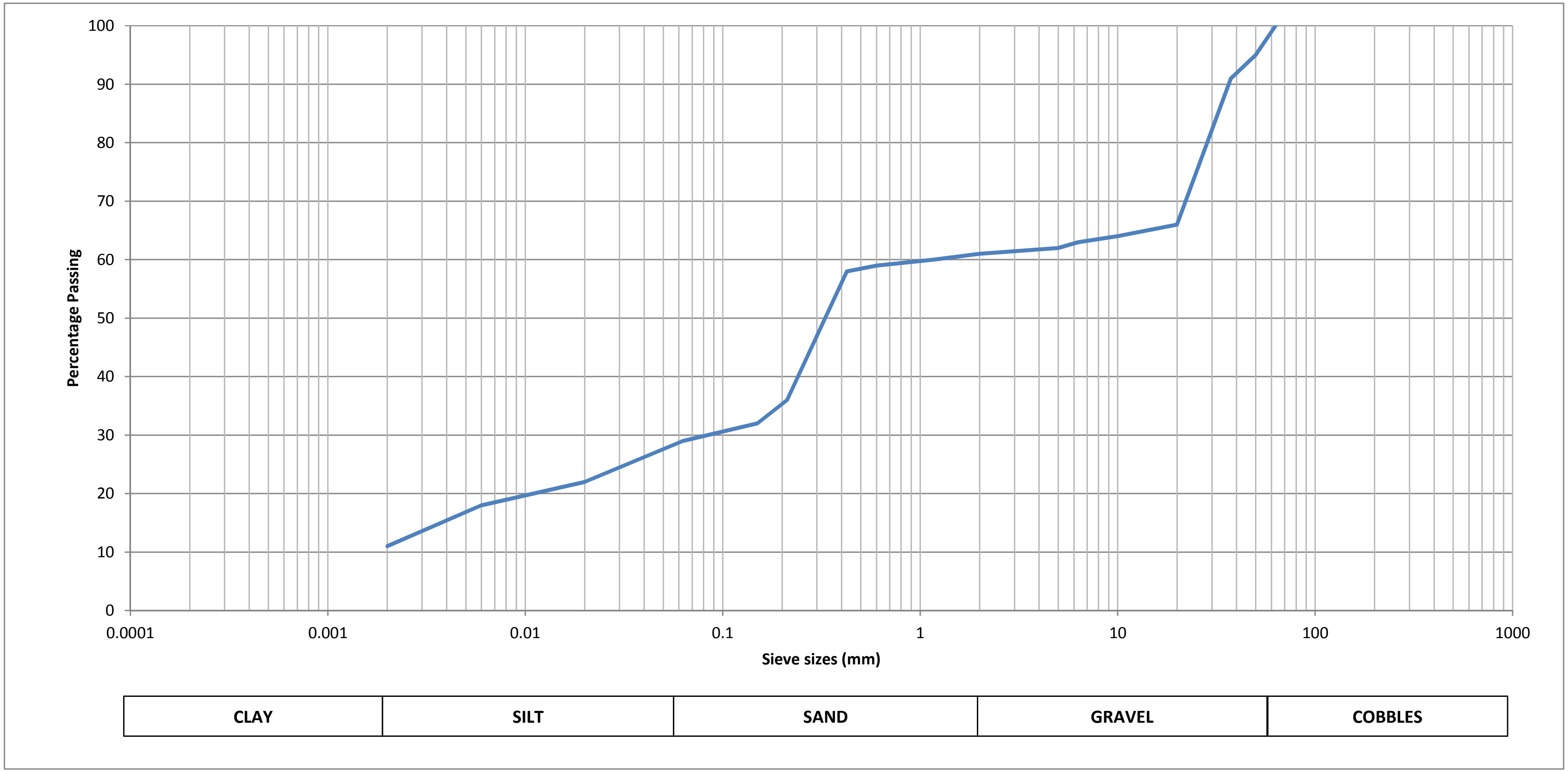

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Client: **London Resort Company Holdings**

Title: **Particle Size Distribution for ALLUVIUM on Swanscombe Peninsula**

Project: **London Paramount Entertainment Resort**

Sheet size:	Drawn:	Checked:	Authorised:
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	Date: 20/10/2015	Date: 06/11/2015	Date: 10/11/2015
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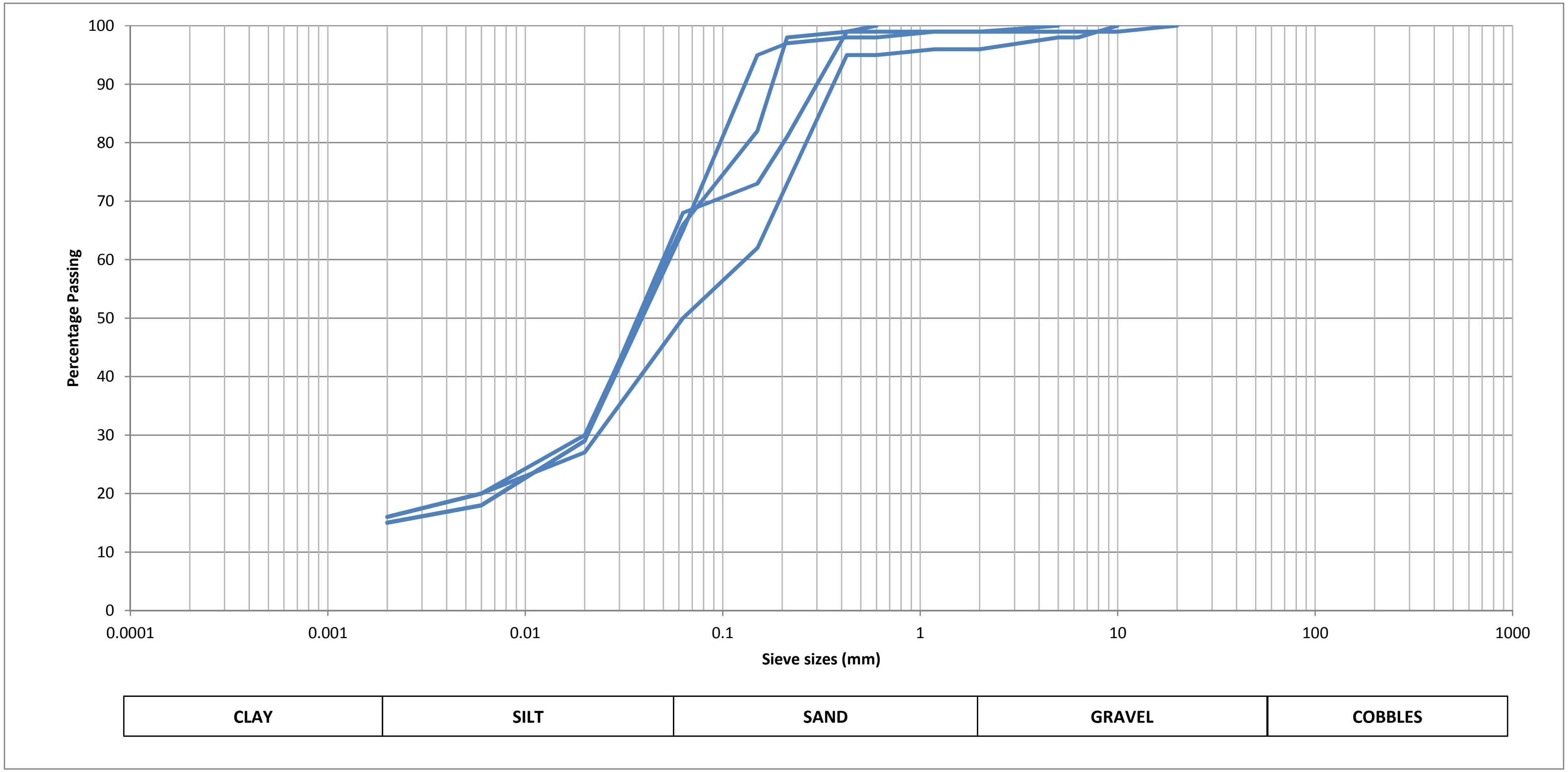

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Client: **London Resort Company Holdings**	Title: **Particle Size Distribution for ALLUVIUM in Zone 7**		
Project: **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: H. Fisher Date: 20/10/2015	Checked: T. Radford Date: 06/11/2015	Authorised: T. Radford Date: 10/11/2015
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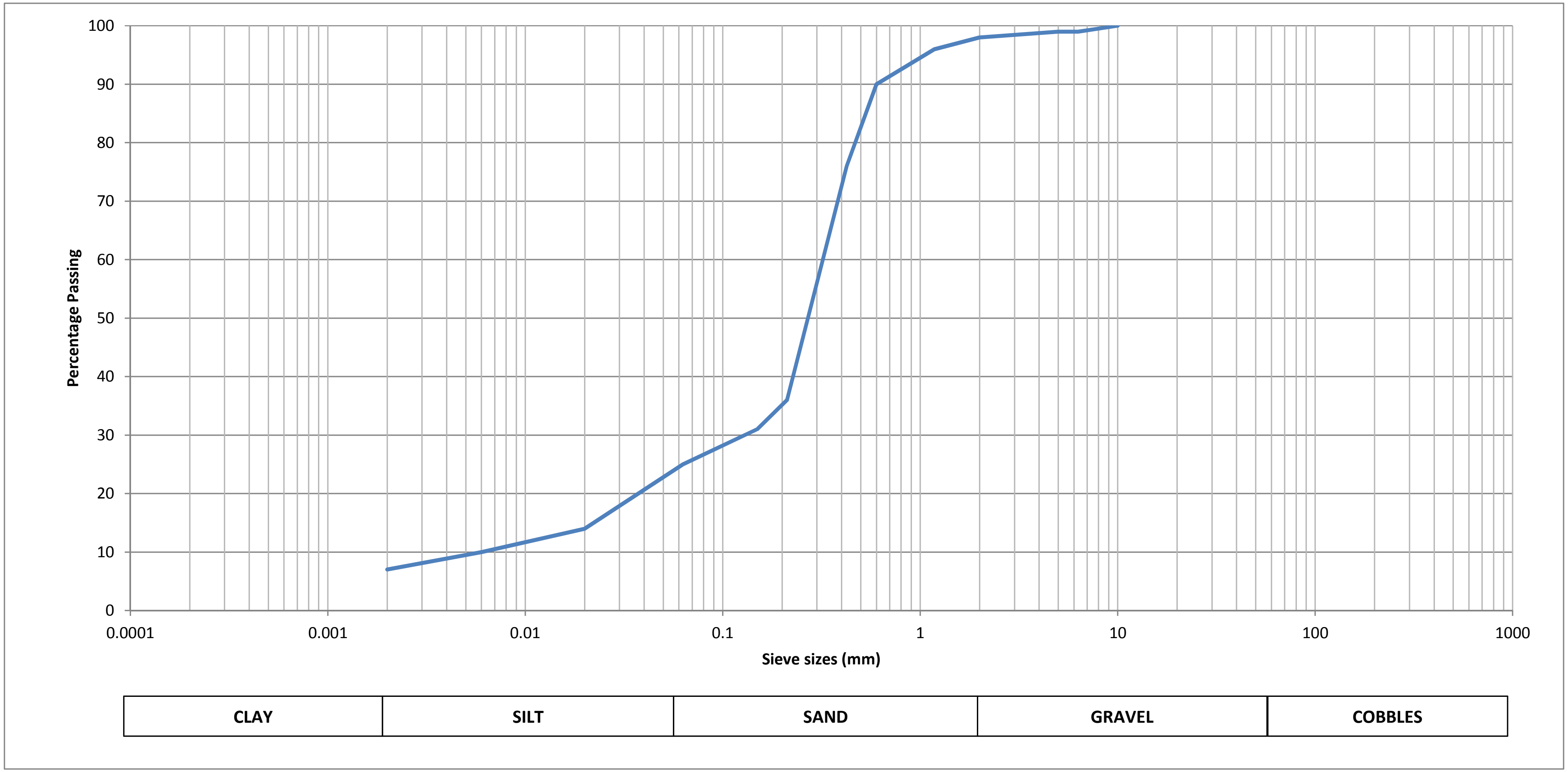

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KT18 5BW [redacted]

Client	London Resort Company Holdings	Title	Particle Size Distribution for PEAT			
Project	London Paramount Entertainment Resort	Sheet size: A4	Drawn: H. Fisher Date: 20/10/2015	Checked: T. Radford Date: 06/11/2015	Authorised: T. Radford Date: 10/11/2015	
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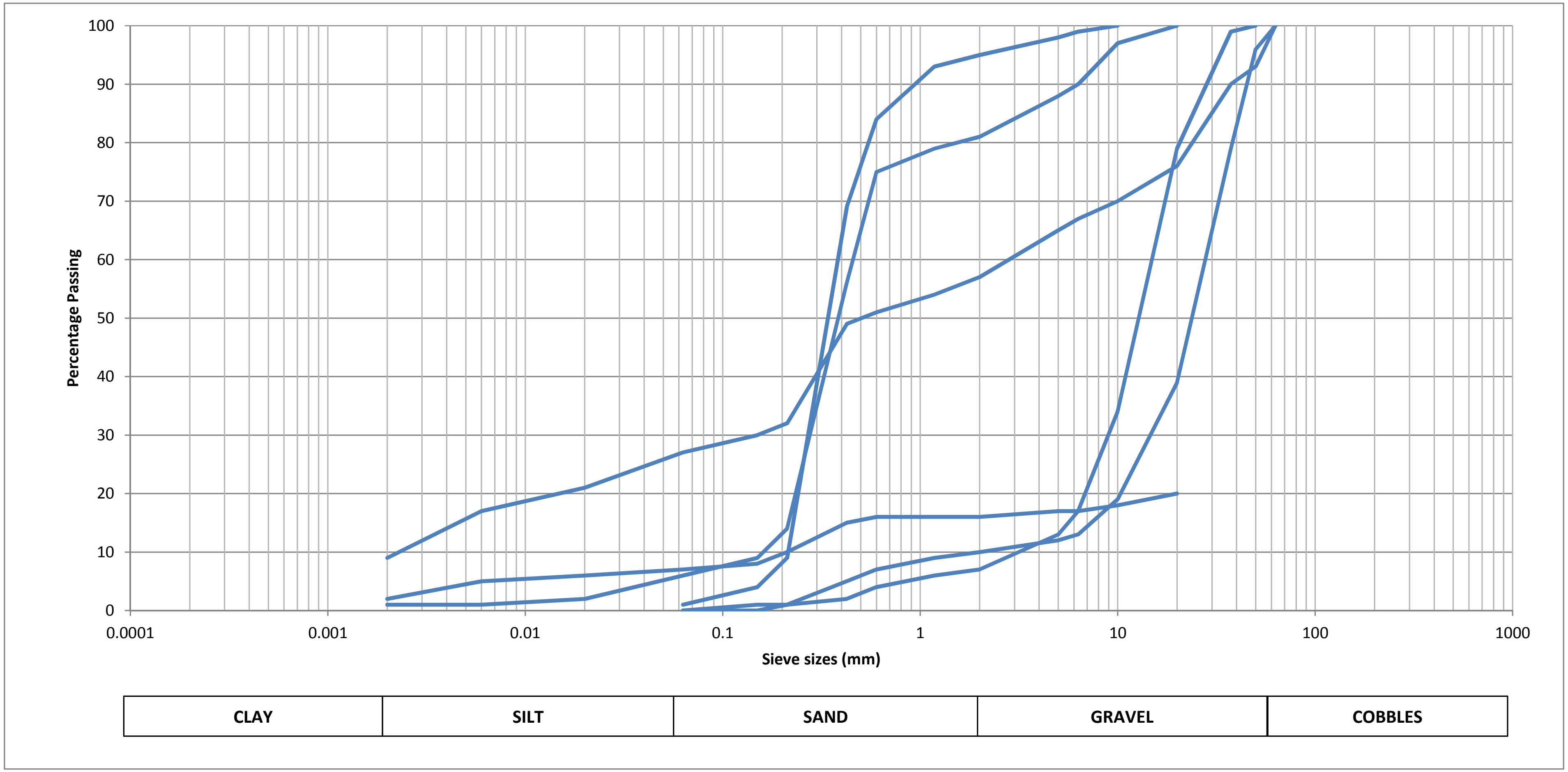

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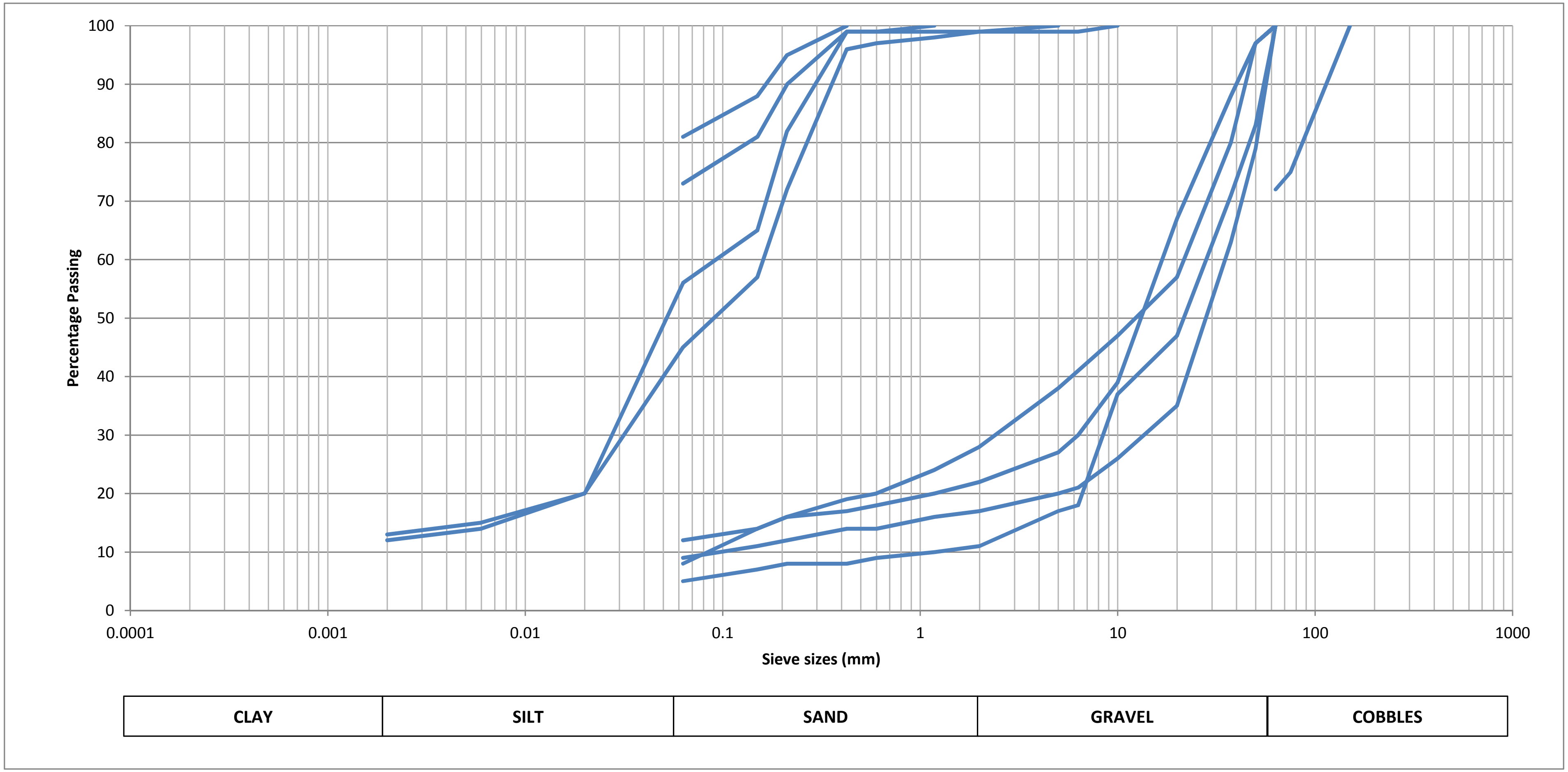
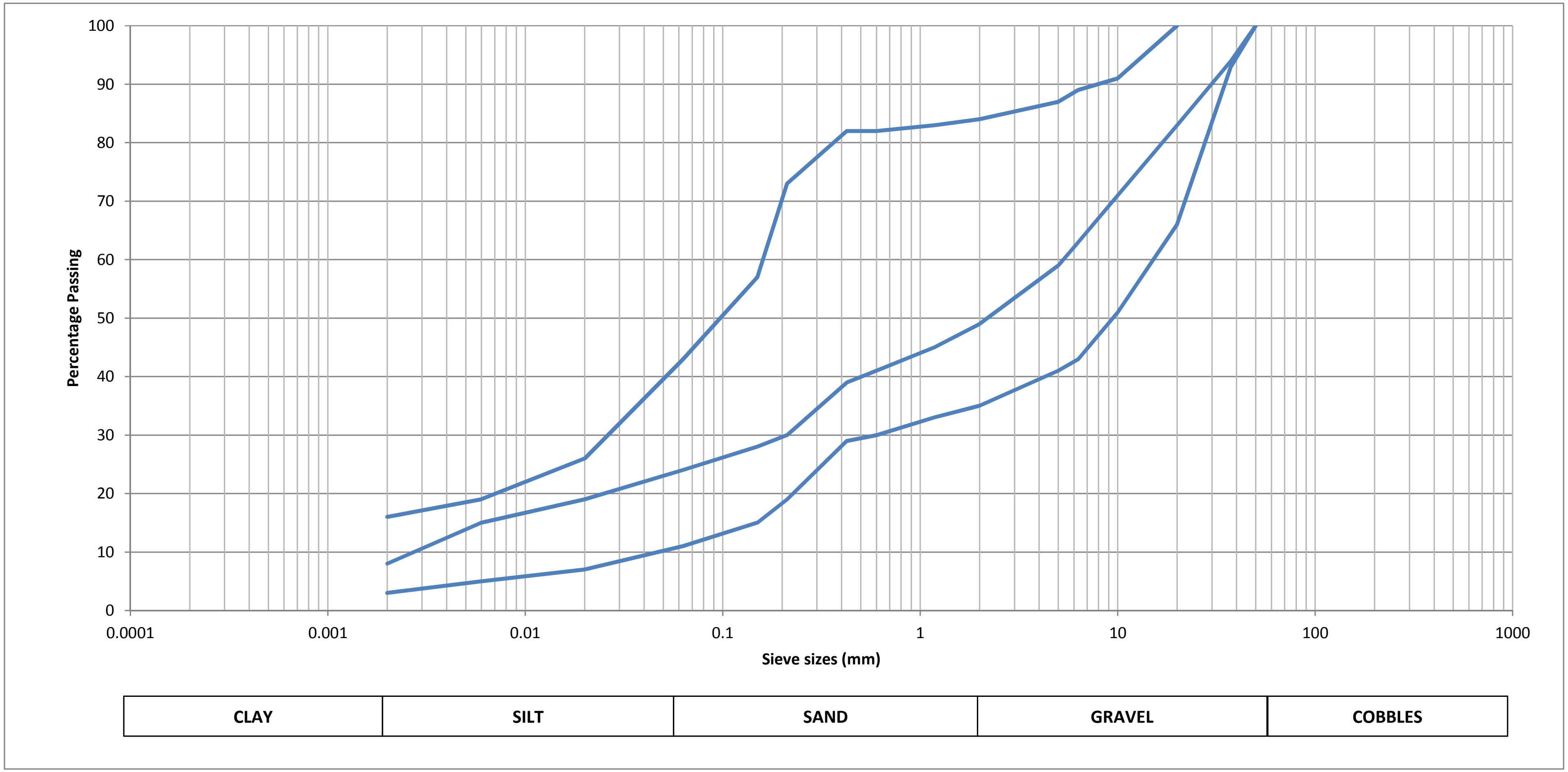
Client: **London Resort Company Holdings**		Title: **Particle Size Distribution for RIVER TERRACE DEPOSITS on Swanscombe Peninsula**					
Project: **London Paramount Entertainment Resort**		Sheet size: A4	Drawn: H. Fisher Date: 20/10/2015	Checked: T. Radford Date: 06/11/2015	Authorised: T. Radford Date: 10/11/2015		
		Status: FINAL	Figure Number: F6.6			Rev: 1	



ATKINS **Atkins Limited** Woodcote Grove Ashley Road Epsom KT18 5BW	Tel: (01372) 726140 Fax: (01372) 740055 [redacted]	Client **London Resort Company Holdings**	Title **Particle Size Distribution for RIVER TERRACE DEPOSITS in Zone 7**					
		Project **Paramount Entertainment Resort**	Sheet size: A4	Drawn: H. Fisher	Date: 20/10/2015	Checked: T. Radford Date: 06/11/2015	Authorised: T. Radford	Date: 10/11/2015
			Status: FINAL	Figure Number: F6.7				Rev: 1



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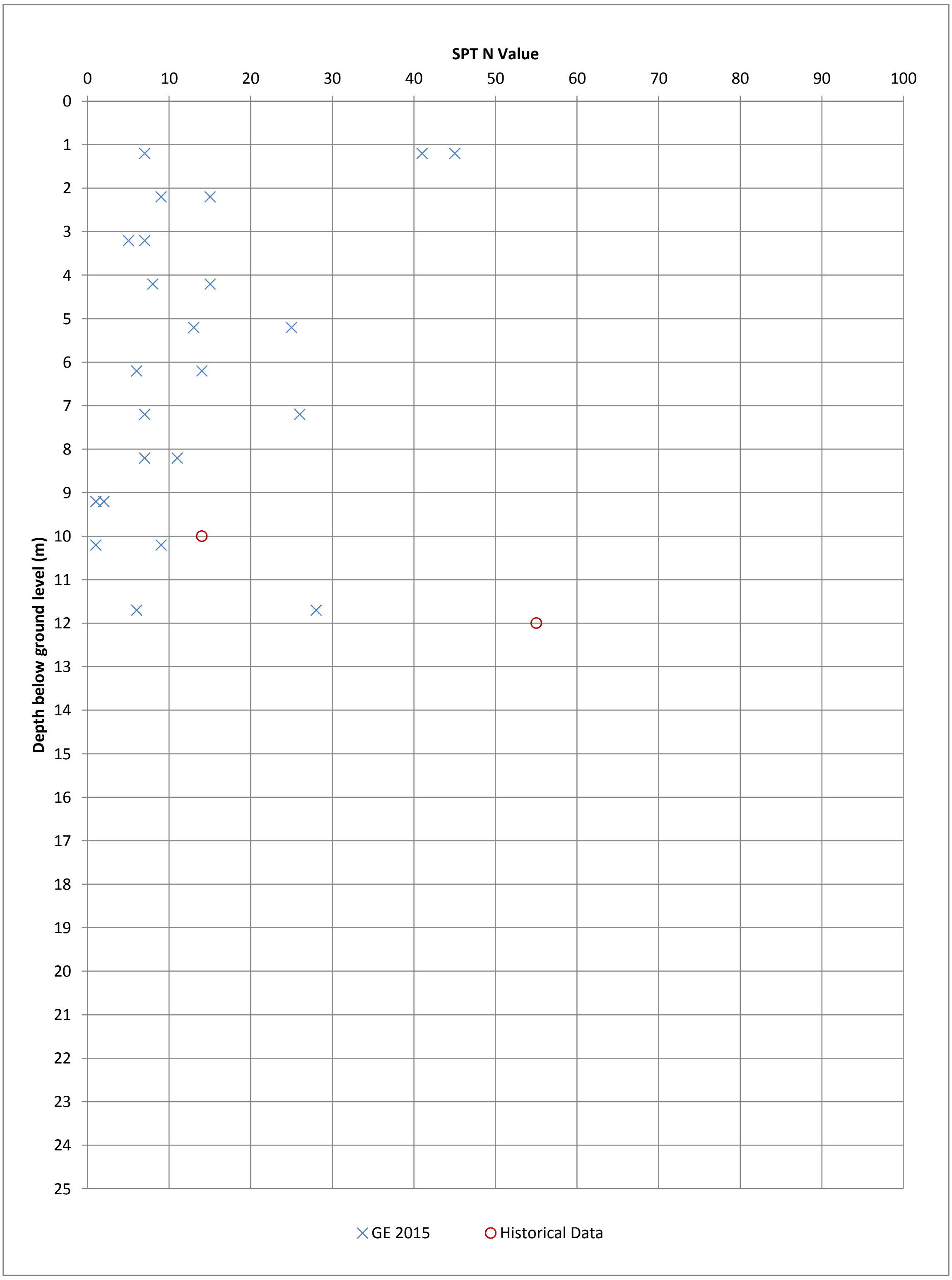
Client	London Resort Company Holdings	Title	Particle Size Distribution for HEAD DEPOSITS				
Project	London Paramount Entertainment Resort	Sheet size: A4	Drawn: H. Fisher Date: 20/10/2015	Checked: T. Radford Date: 06/11/2015	Authorised: T. Radford Date: 10/11/2015		
		Status: FINAL	Figure Number: F6.8		Rev: 1		

G.7. Standard Penetration Test vs. Depth Plots



Maximum Extrapolated N Value	200

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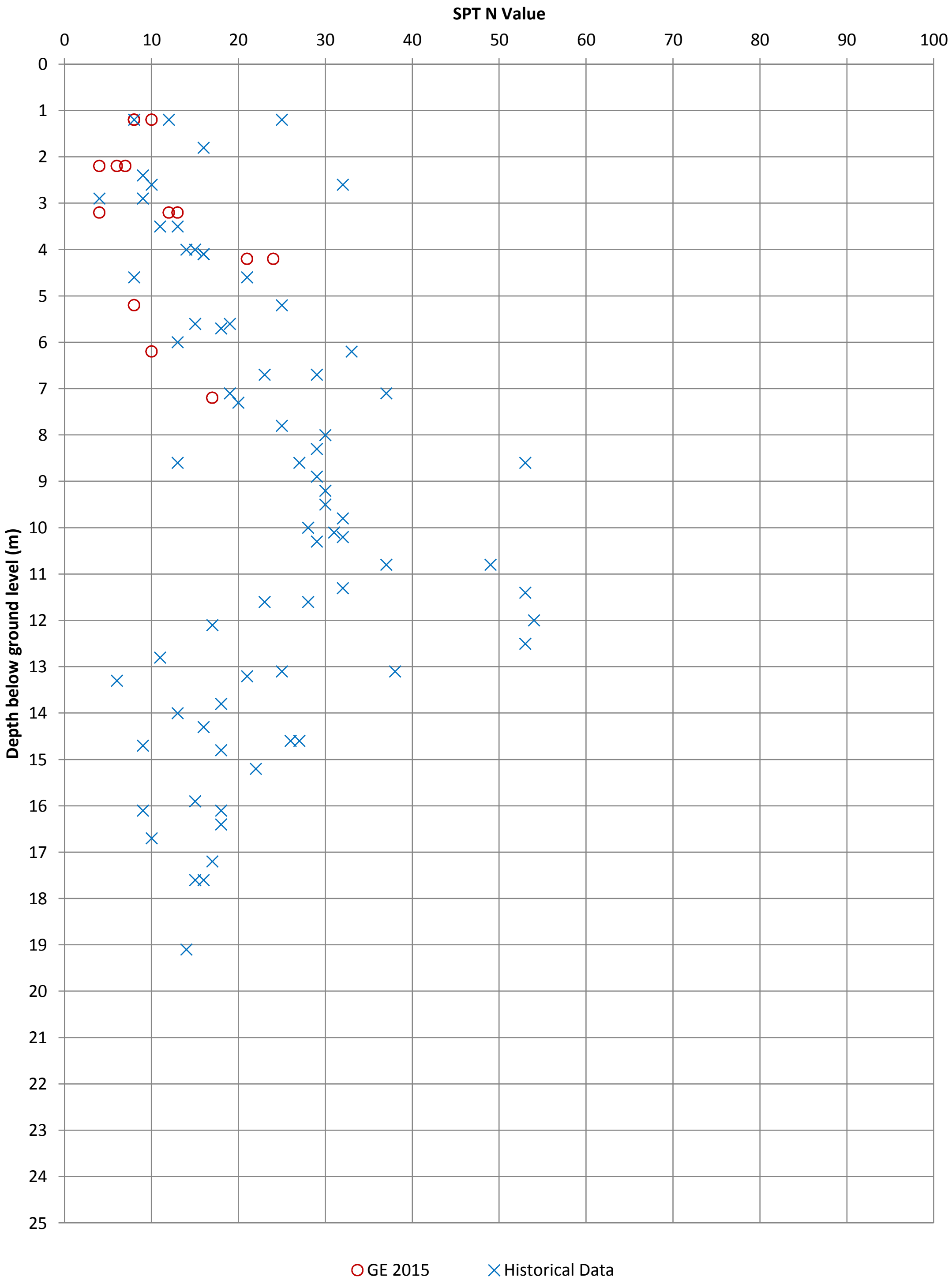
Client	Title			
London Resort Company Holdings	**SPT N Value vs Depth for MADE GROUND in Zones 3 and 5**			
Project	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date: Nov 15
London Paramount Entertainment Resort	Status: FINAL	Figure Number: F7.1		Rev: 1



Maximum Extrapolated N Value	200

ATKINS

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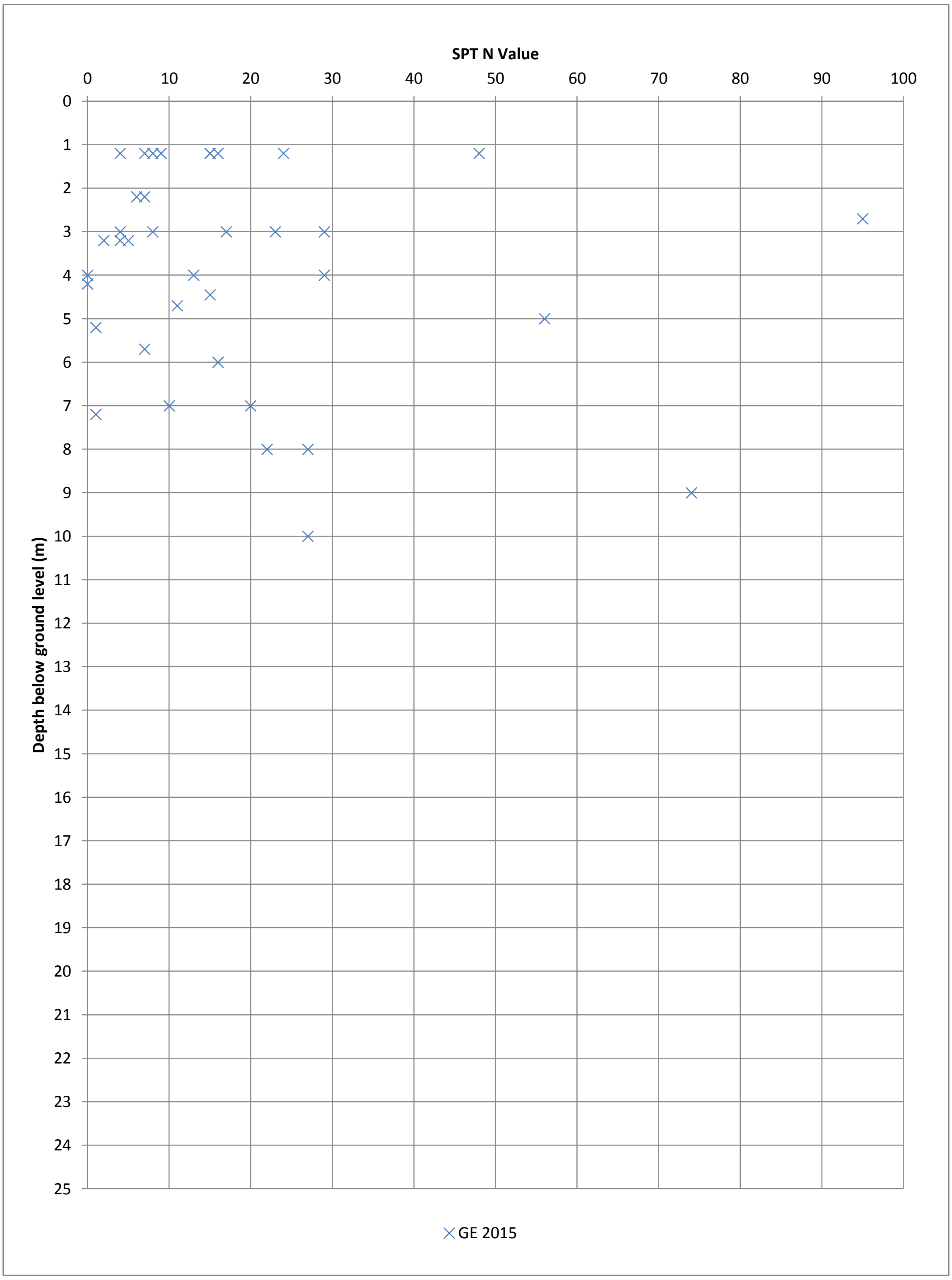
Client: **London Resort Company Holdings**	Title: **SPT N Value vs Depth for MADE GROUND in Zone 7**		
Project: **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date:Nov 15
	Status: FINAL	Figure Number: F7.2	Reviewed:TR Date: Nov 15 Rev: 1



Maximum Extrapolated N Value	200

ATKINS

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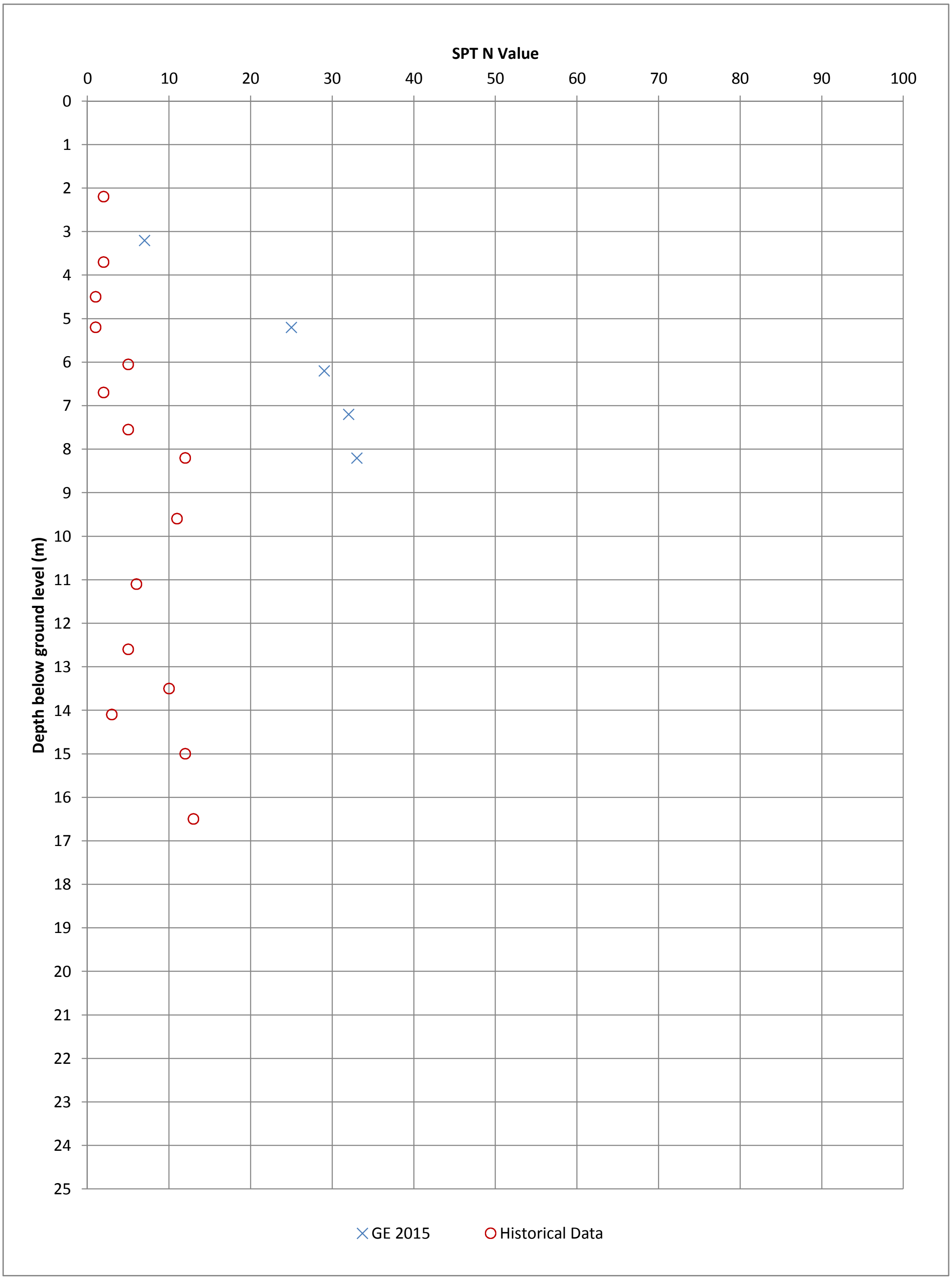
Client	Title			
London Resort Company Holdings	**SPT N Value vs Depth for CKD**			
Project	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date: Nov 15
London Paramount Entertainment Resort	Status: FINAL	Figure Number: F7.3		Rev: 1



Maximum Extrapolated N Value	200

ATKINS

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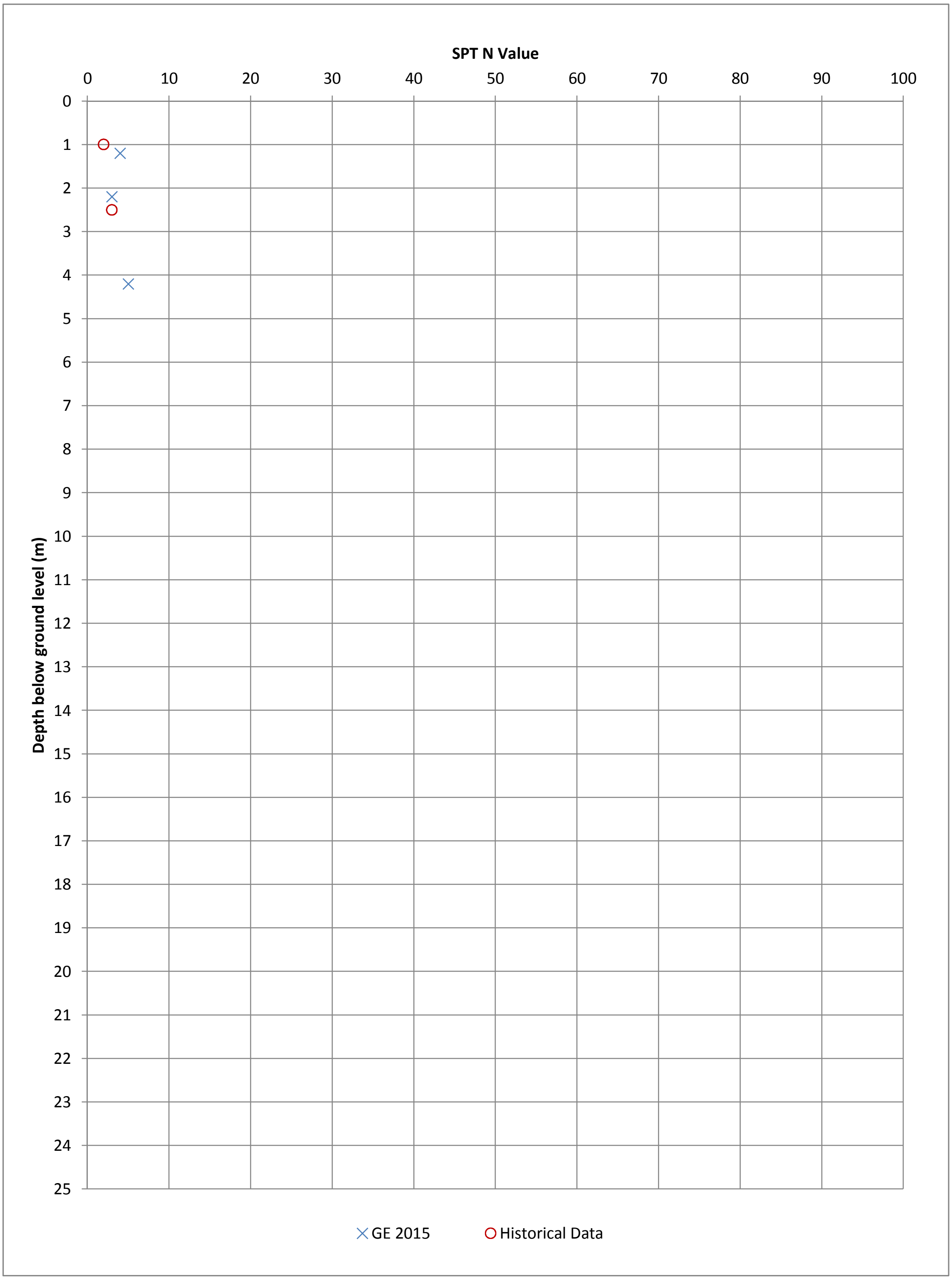
Client **London Resort Company Holdings**	Title **SPT N Value vs Depth for ALLUVIUM on Swanscombe Peninsula**			
Project **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date: Nov 15
	Status: FINAL	Figure Number: F7.4		Rev: 1



Maximum Extrapolated N Value	200

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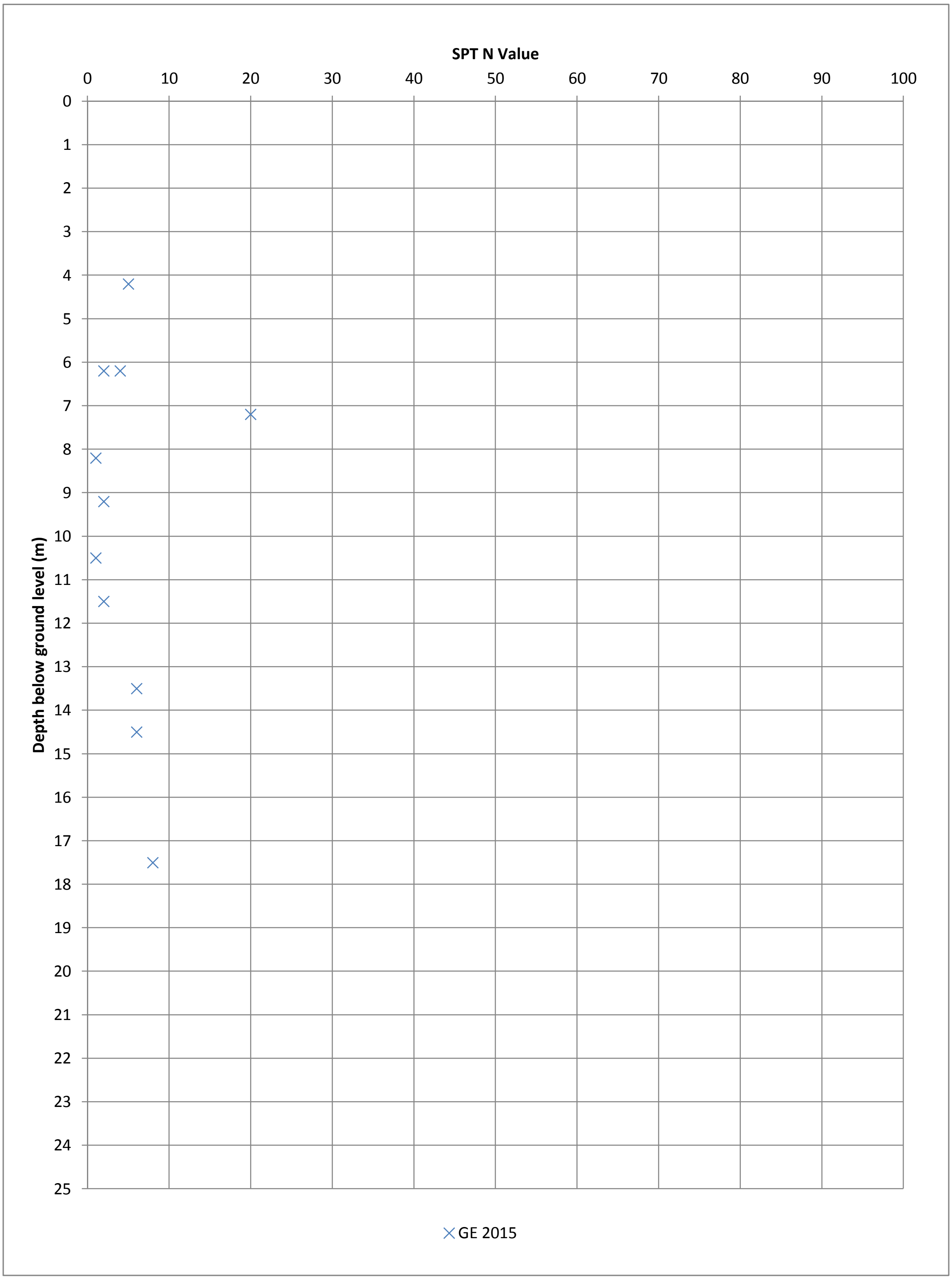
Client
London Resort Company Holdings

Title
SPT N Value vs Depth for ALLUVIUM in Zone 7

Project
London Paramount Entertainment Resort

Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date: Nov 15
Status: FINAL	Figure Number: F7.5		Rev: 1



Maximum Extrapolated N Value	200

ATKINS

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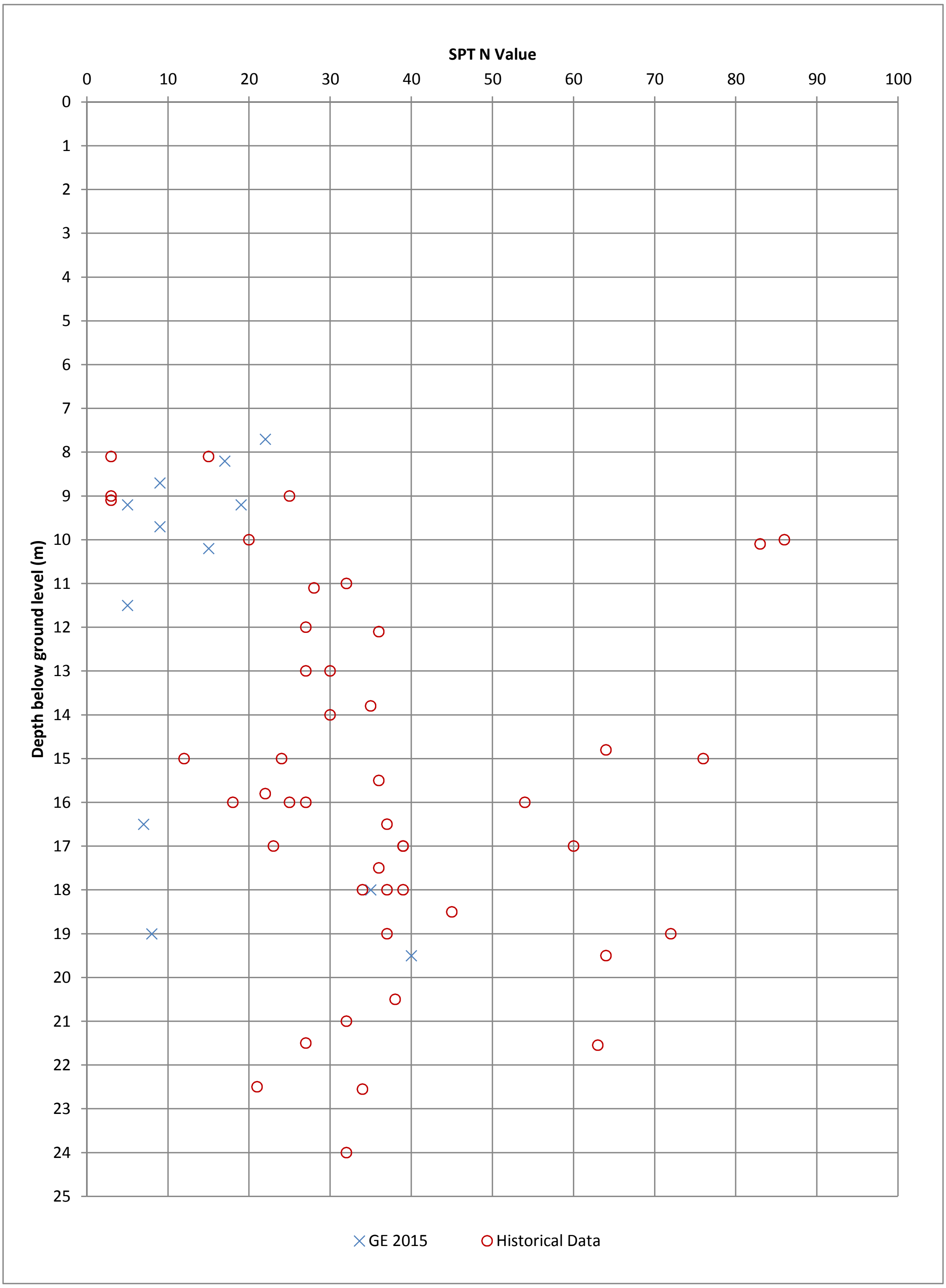
Client: **London Resort Company Holdings**	Title: **SPT N Value vs Depth for PEAT**			
Project: **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date: Nov 15
	Status: FINAL	Figure Number: F7.6		Rev: 1



Maximum Extrapolated N Value	200

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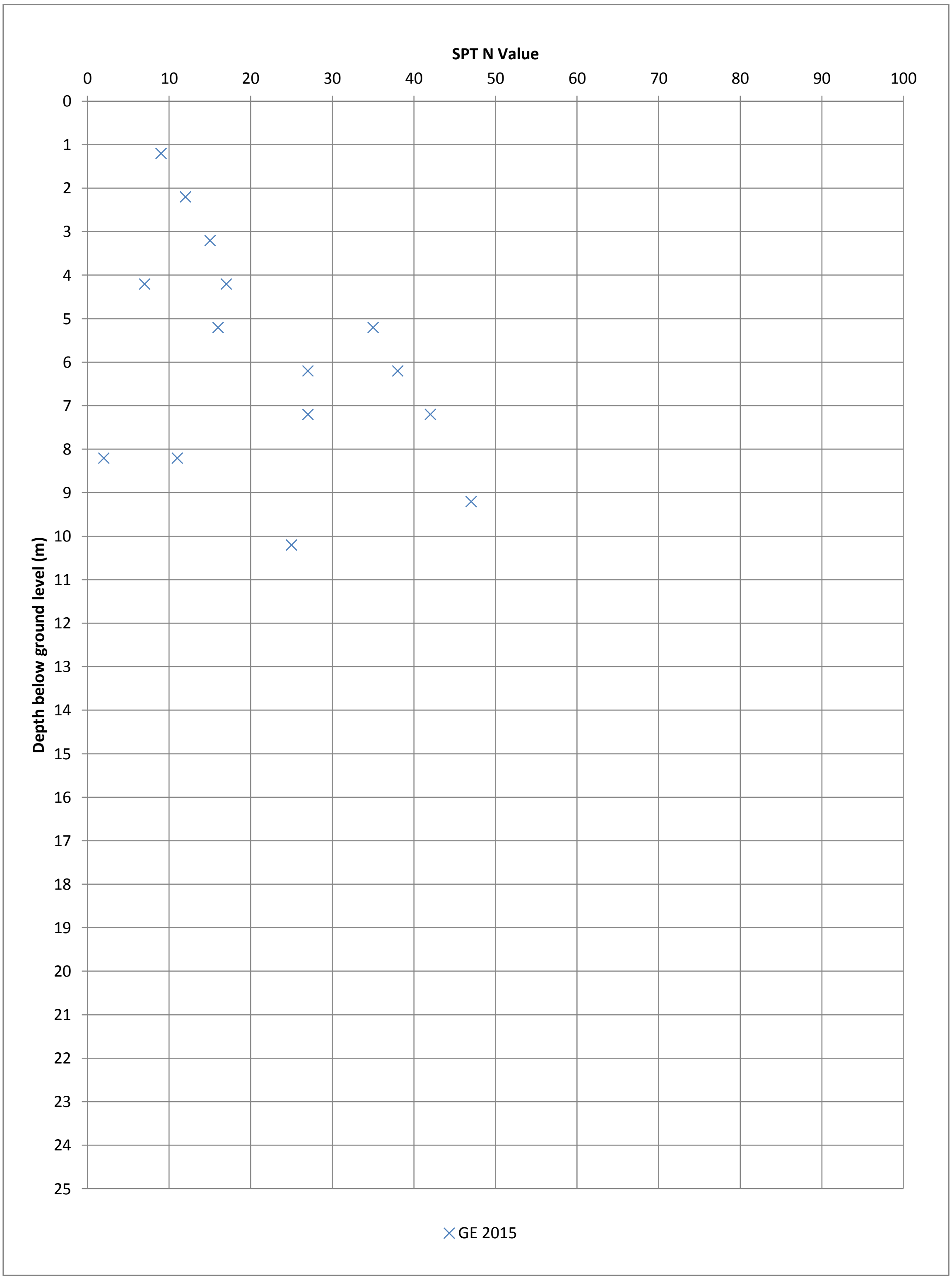
Client
London Resort Company Holdings

Title
SPT N Value vs Depth for RIVER TERRACE DEPOSITS on Swanscombe Peninsula

Project
London Paramount Entertainment Resort

Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date: Nov 15
Status: FINAL	Figure Number: F7.7		Rev: 1



Maximum Extrapolated N Value	200

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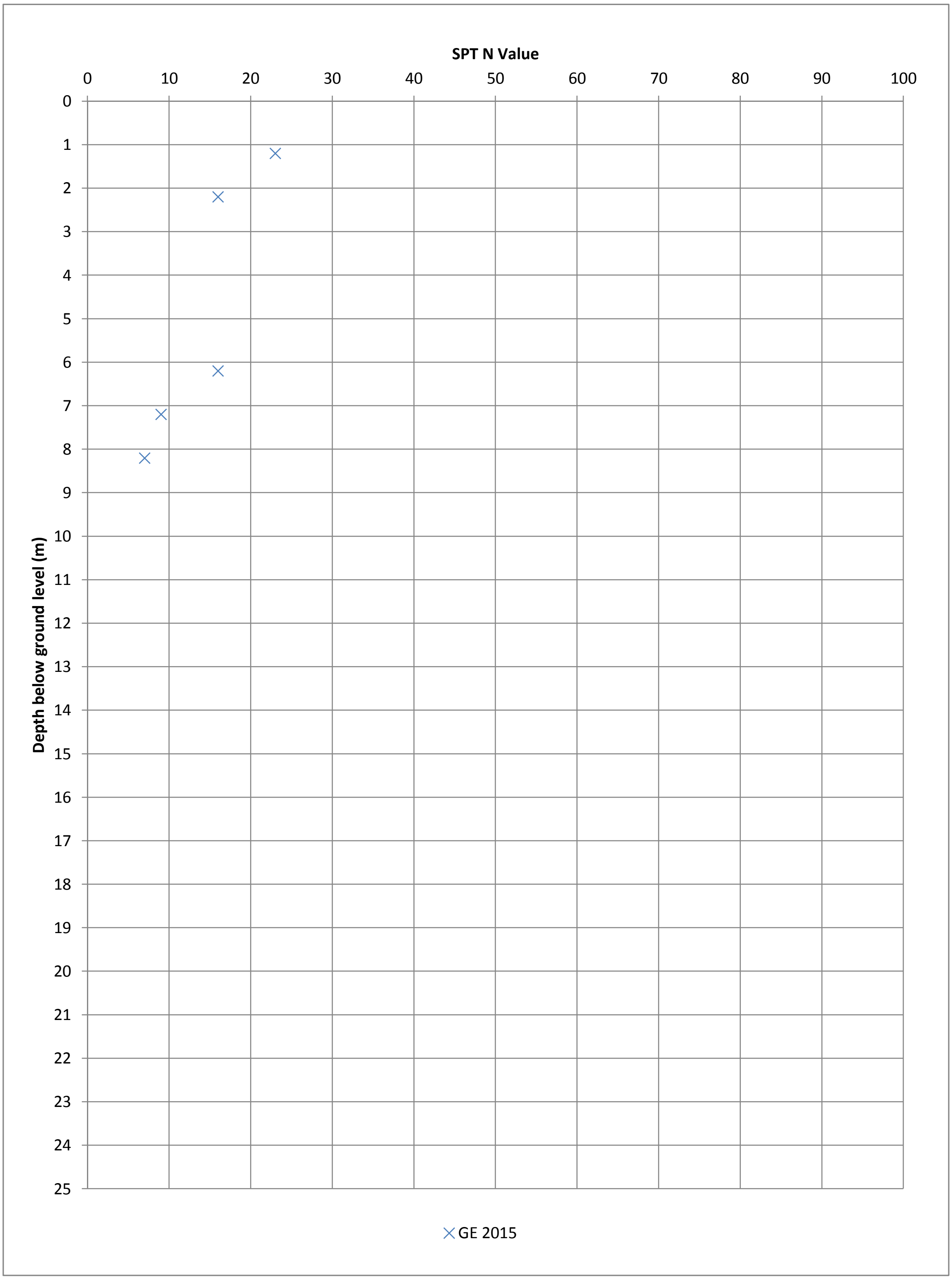
Client
London Resort Company Holdings

Project
London Paramount Entertainment Resort

Title
SPT N Value vs Depth for RIVER TERRACE DEPOSITS in Zone 7

Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date: Nov 15
Status: FINAL	Figure Number: F7.8		Rev: 1



Maximum Extrapolated N Value	200

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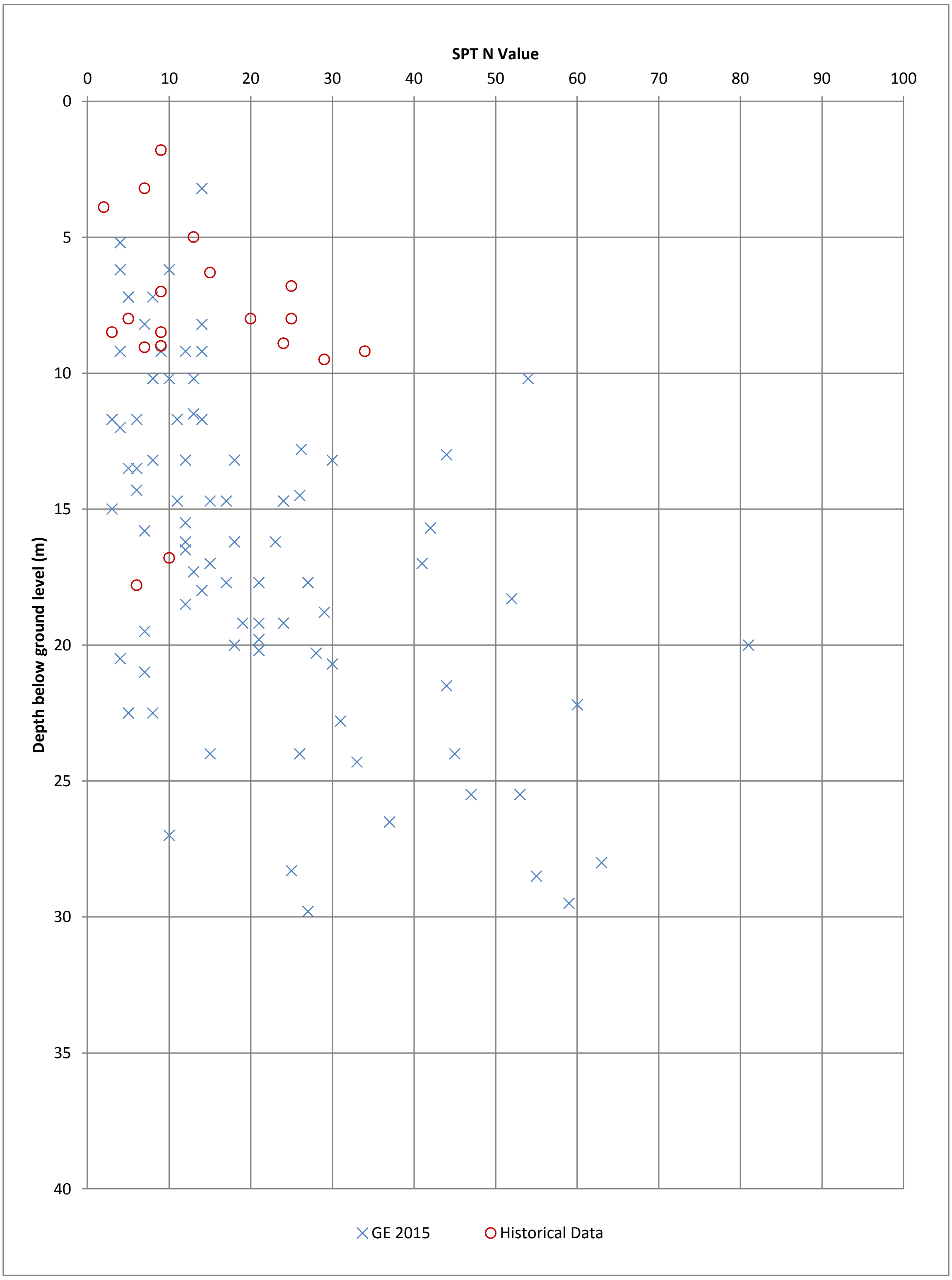
Client
London Resort Company Holdings

Project
London Paramount Entertainment Resort

Title
SPT N Value vs Depth for HEAD DEPOSITS

Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date: Nov 15
Status: FINAL	Figure Number: F7.9		Rev: 1



Maximum Extrapolated N Value	200

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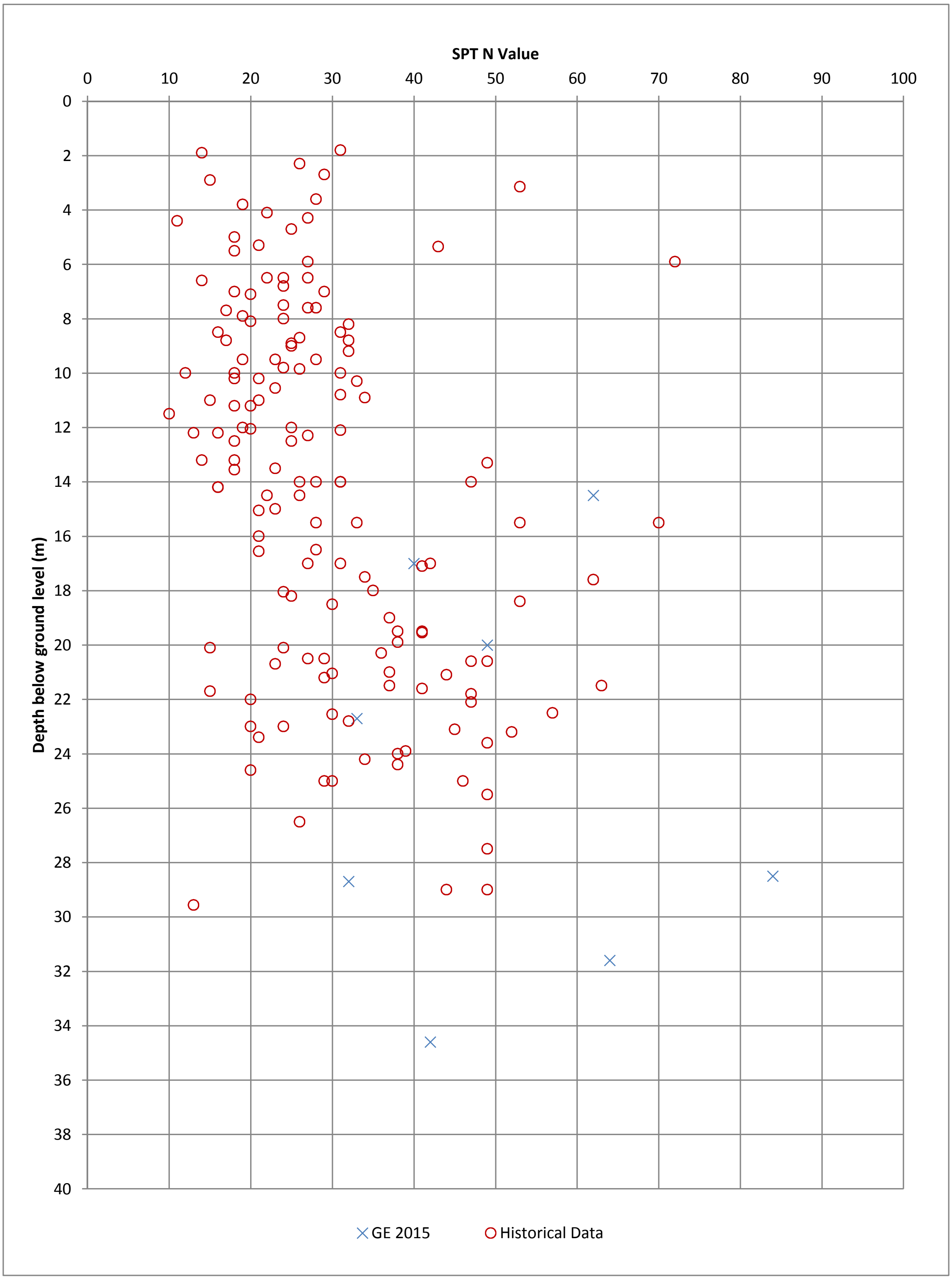
Client
London Resort Company Holdings

Project
London Paramount Entertainment Resort

Title
SPT N Value vs Depth for STRUCTURELESS CHALK

Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date: Nov 15
Status: FINAL	Figure Number: F7.10		Rev: 1



Maximum Extrapolated N Value	200

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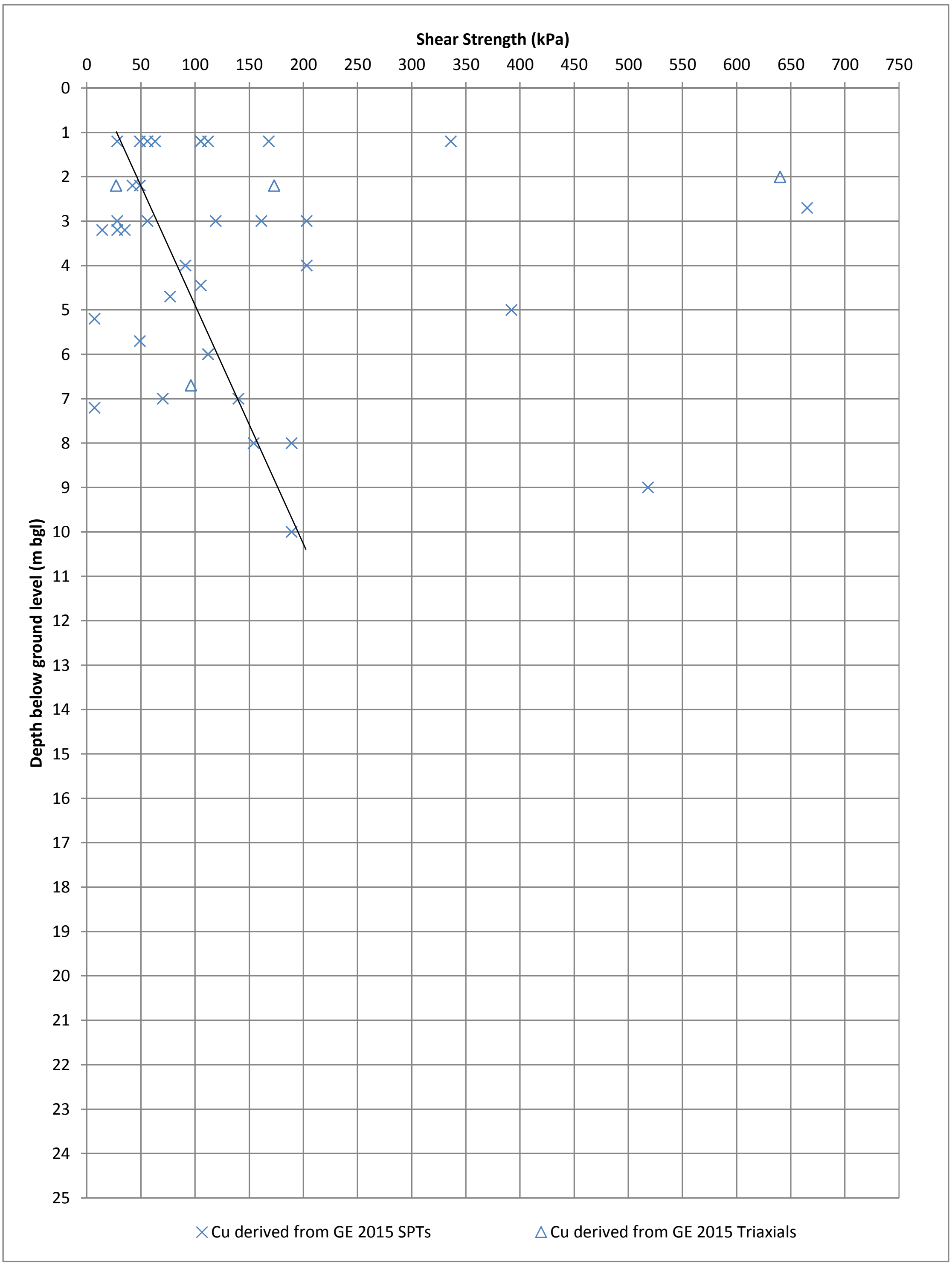
Client: **London Resort Company Holdings**		Title: **SPT N Value vs Depth for COMPETENT CHALK**		
Project: **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date: Nov 15
	Status: FINAL	Figure Number: F7.11		Rev: 1

G.8. Shear Strength vs. Depth Plots



Maximum Extrapolated N Value	200
f, value (Cu = f_1N)	7

ATKINS
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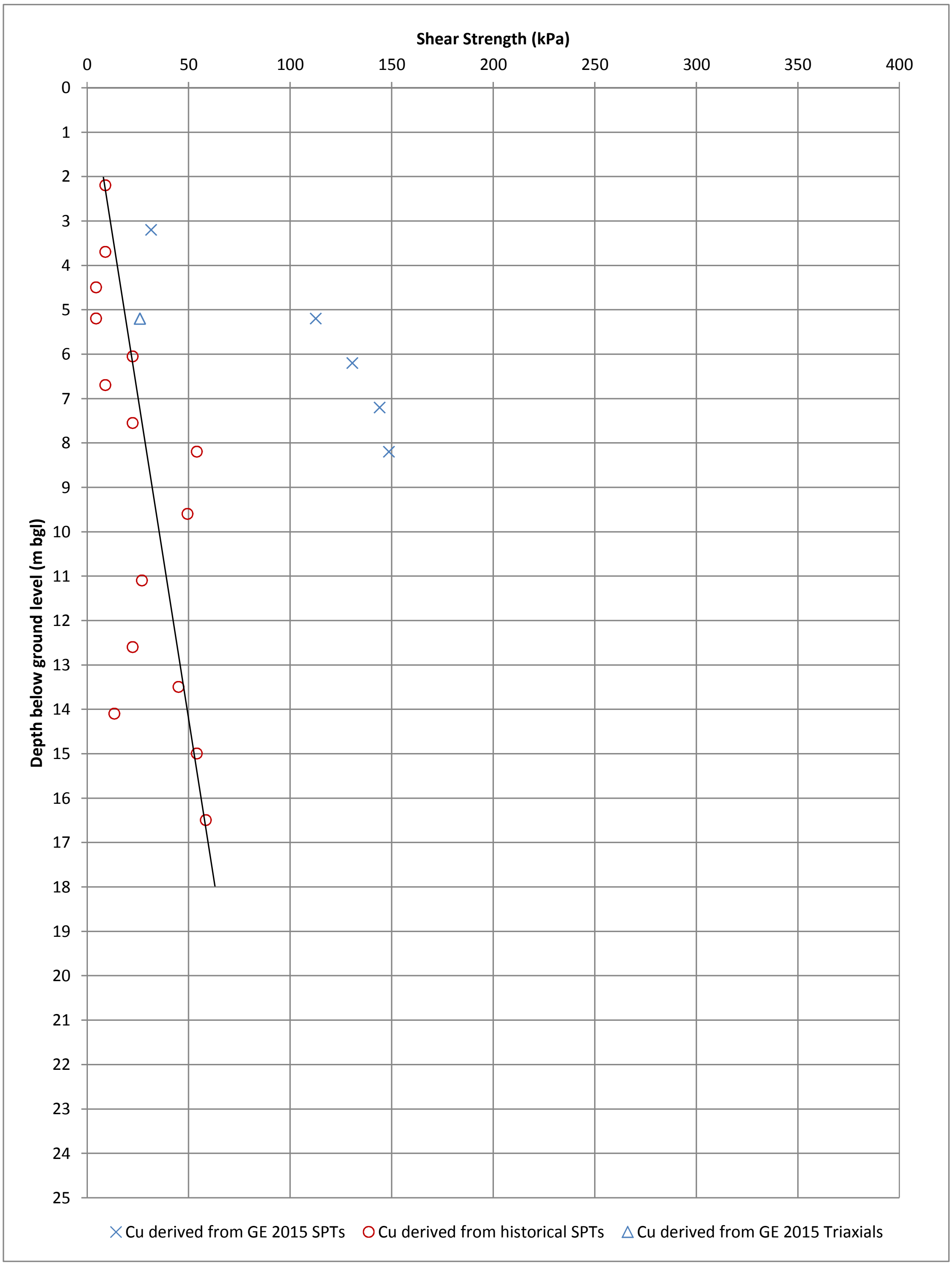
Client	Title			
London Resort Company Holdings	**Shear Strength vs Depth for CKD**			
Project	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date:Nov 15
London Paramount Entertainment Resort	Status: FINAL	Figure Number: F8.1		Rev: 1



Maximum Extrapolated N Value	200
f, value (Cu = f_1N)	4.5

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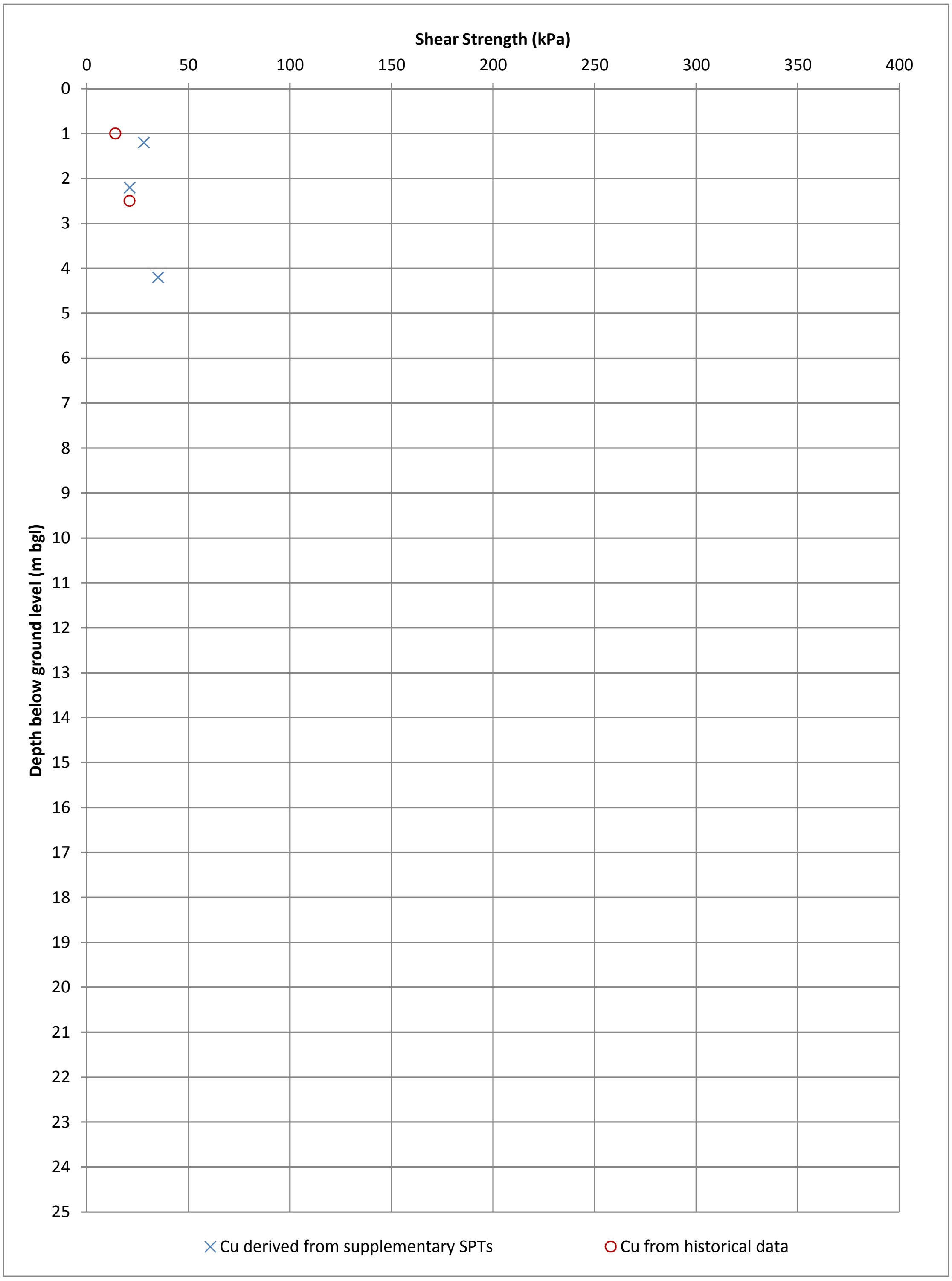
Client	Title			
London Resort Company Holdings	**Shear Strength vs Depth for ALLUVIUM on Swanscombe Peninsula**			
Project	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date:Nov 15
Paramount Entertainment Resort	Status: FINAL	Figure Number: F8.2		Rev: 1



Maximum Extrapolated N Value	200
f, value (Cu = f_1N)	7

ATKINS

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Client

London Resort Company Holdings

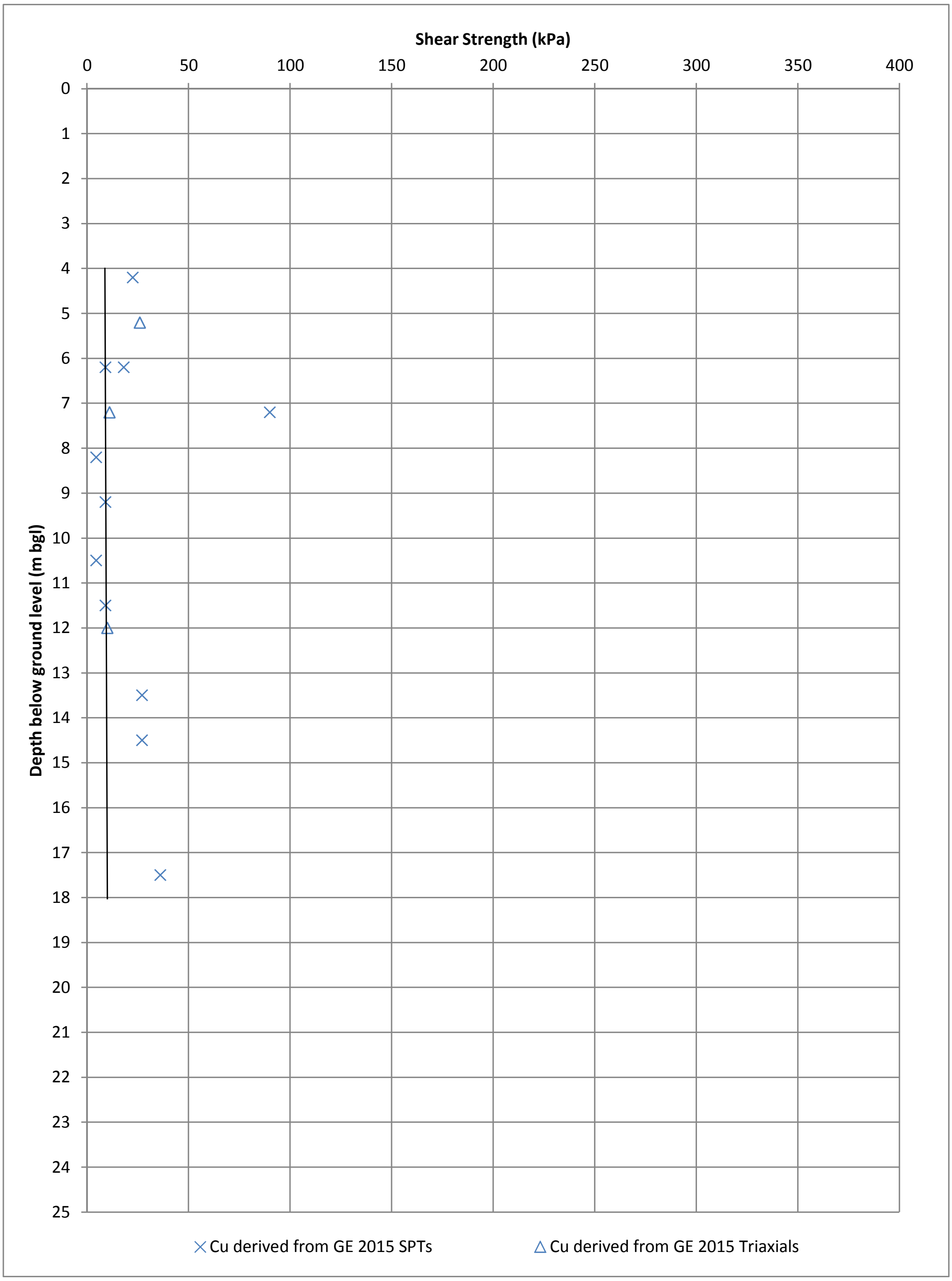
Title

Shear Strength vs Depth for ALLUVIUM in Zone 7

Project

Paramount Entertainment Resort

Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date:Nov 15
Status: FINAL	Figure Number: F8.3		Rev: 1



Maximum Extrapolated N Value	200
f, value (Cu = f_1N)	4.5

ATKINS

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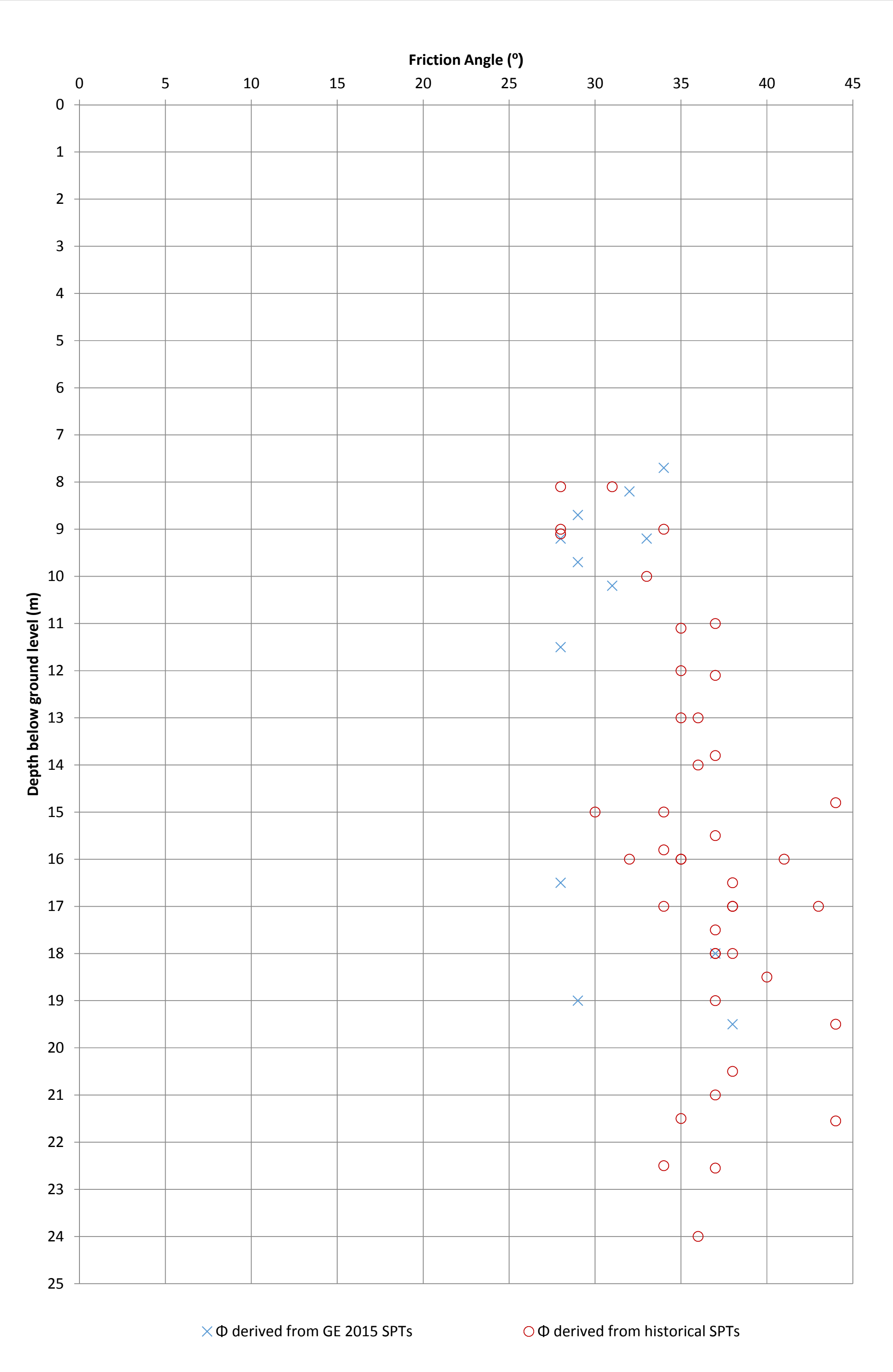
Client: **London Resort Company Holdings**	Title: **Shear Strength vs Depth for ALLUVIUM PEAT**			
Project: **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date:Nov 15
	Status: FINAL	Figure Number: F8.4		Rev: 1

G.9. Phi vs. Depth Plots



Maximum Extrapolated N Value	200

ATKINS

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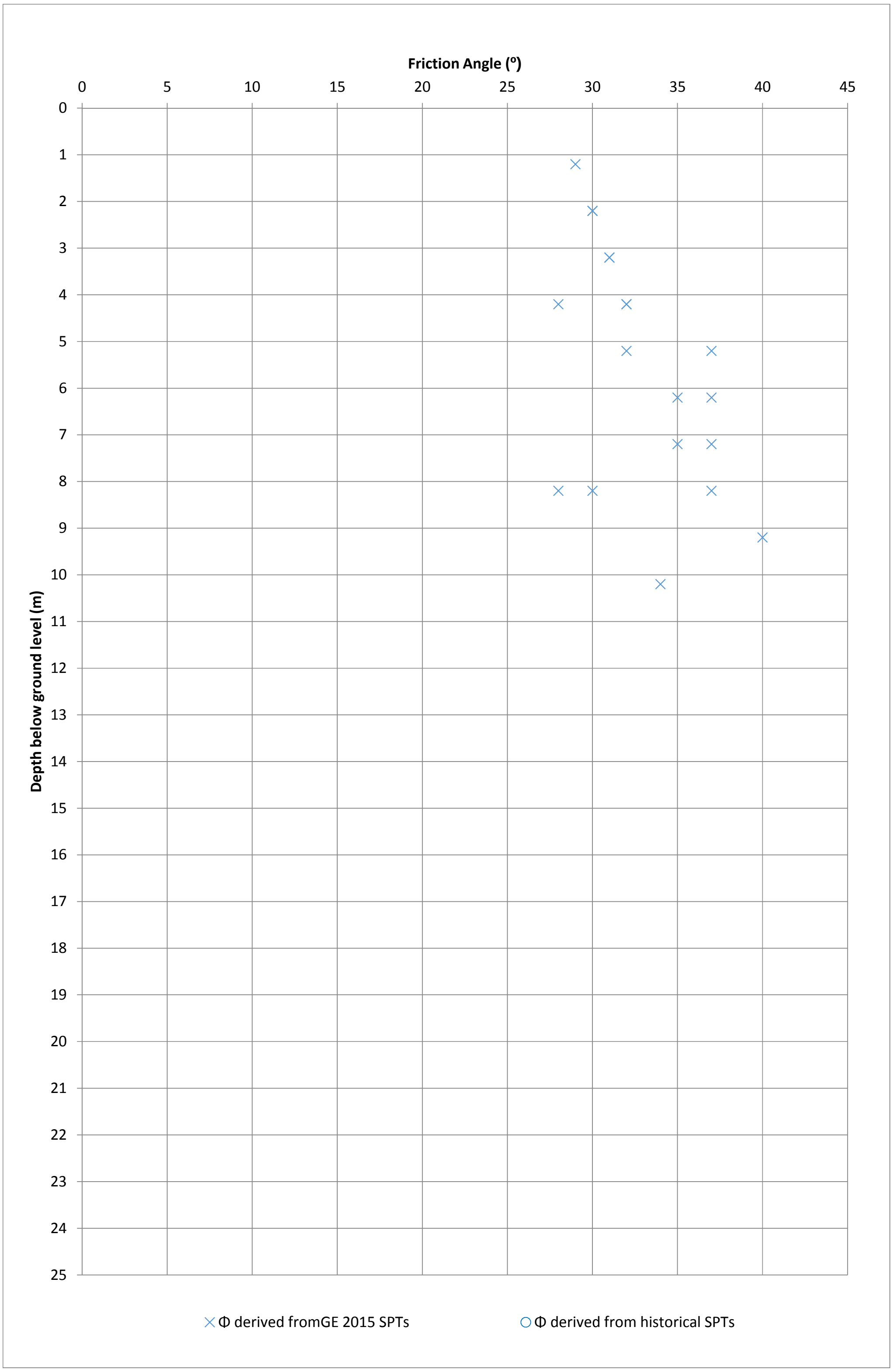
Client
London Resort Company Holdings

Project
Paramount Entertainment Resort

Title
Friction Angle vs Depth for RIVER TERRACE DEPOSITS on Swanscombe Peninsula

Sheet size: A4	Drawn: HF Date:Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date:Nov 15
Status: FINAL	Figure Number: F9.1		Rev: 1



Maximum Extrapolated N Value	200

ATKINS

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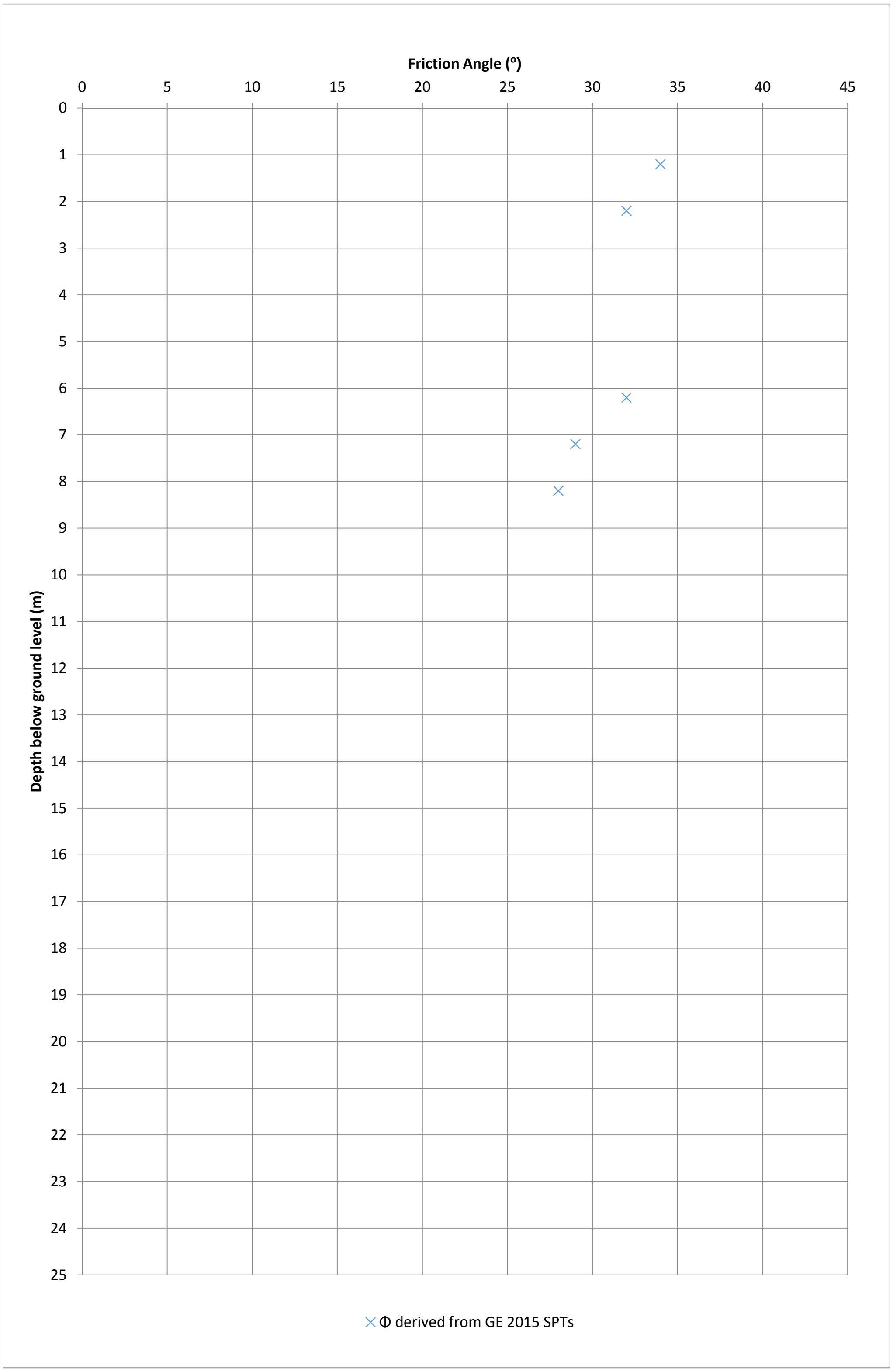
Fax: (01372) 740055
[redacted]

Client	Title			
London Resort Company Holdings	**Friction Angle vs Depth for RIVER TERRACE DEPOSITS in Zone 7**			
Project	Sheet size: A4	Drawn: HF Date:Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date:Nov 15
Paramount Entertainment Resort	Status: FINAL	Figure Number: F9.2		Rev: 1



Maximum Extrapolated N Value	200

ATKINS

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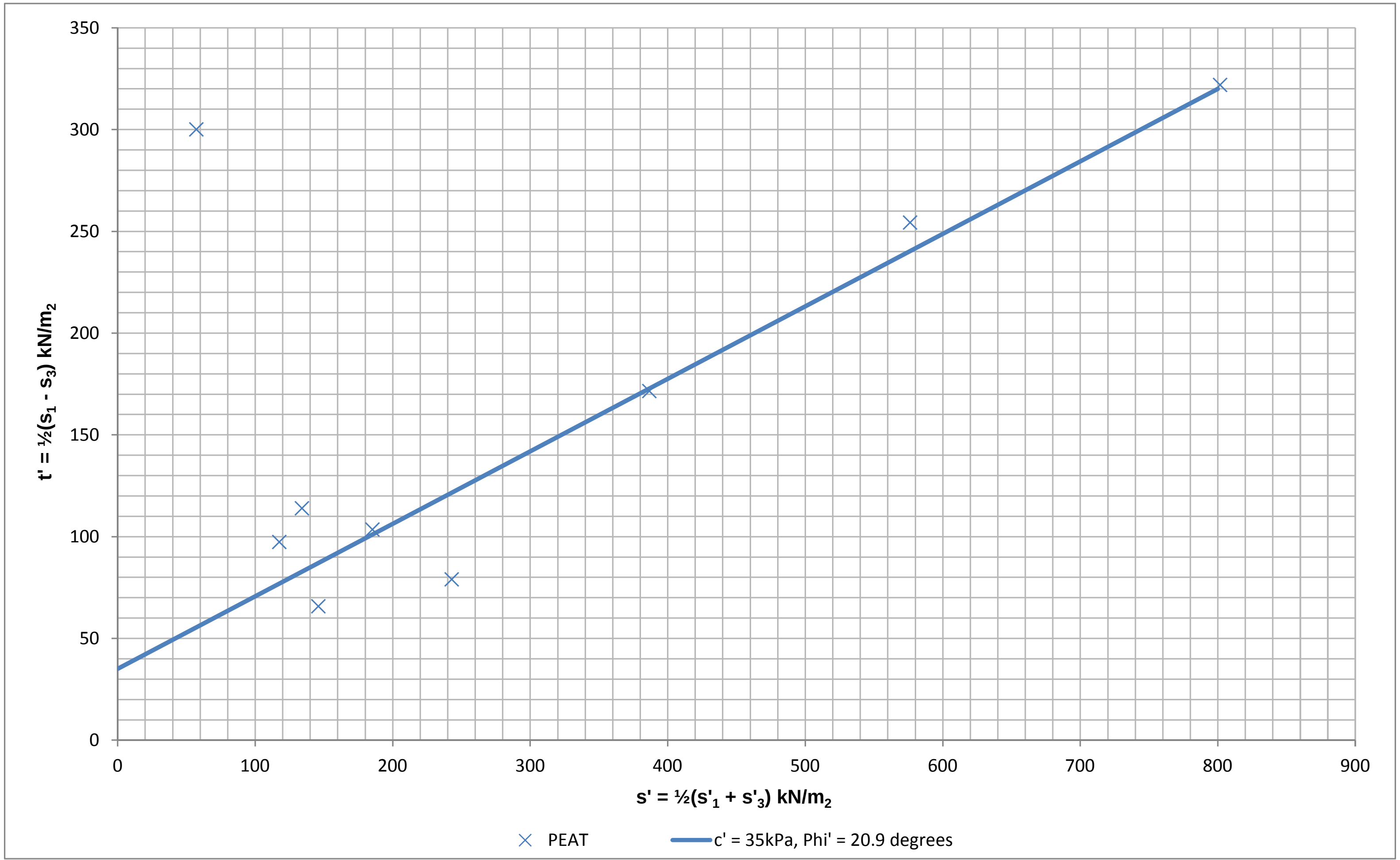
[redacted]

Client		Title	
London Resort Company Holdings		**Friction Angle vs Depth for HEAD DEPOSITS**	

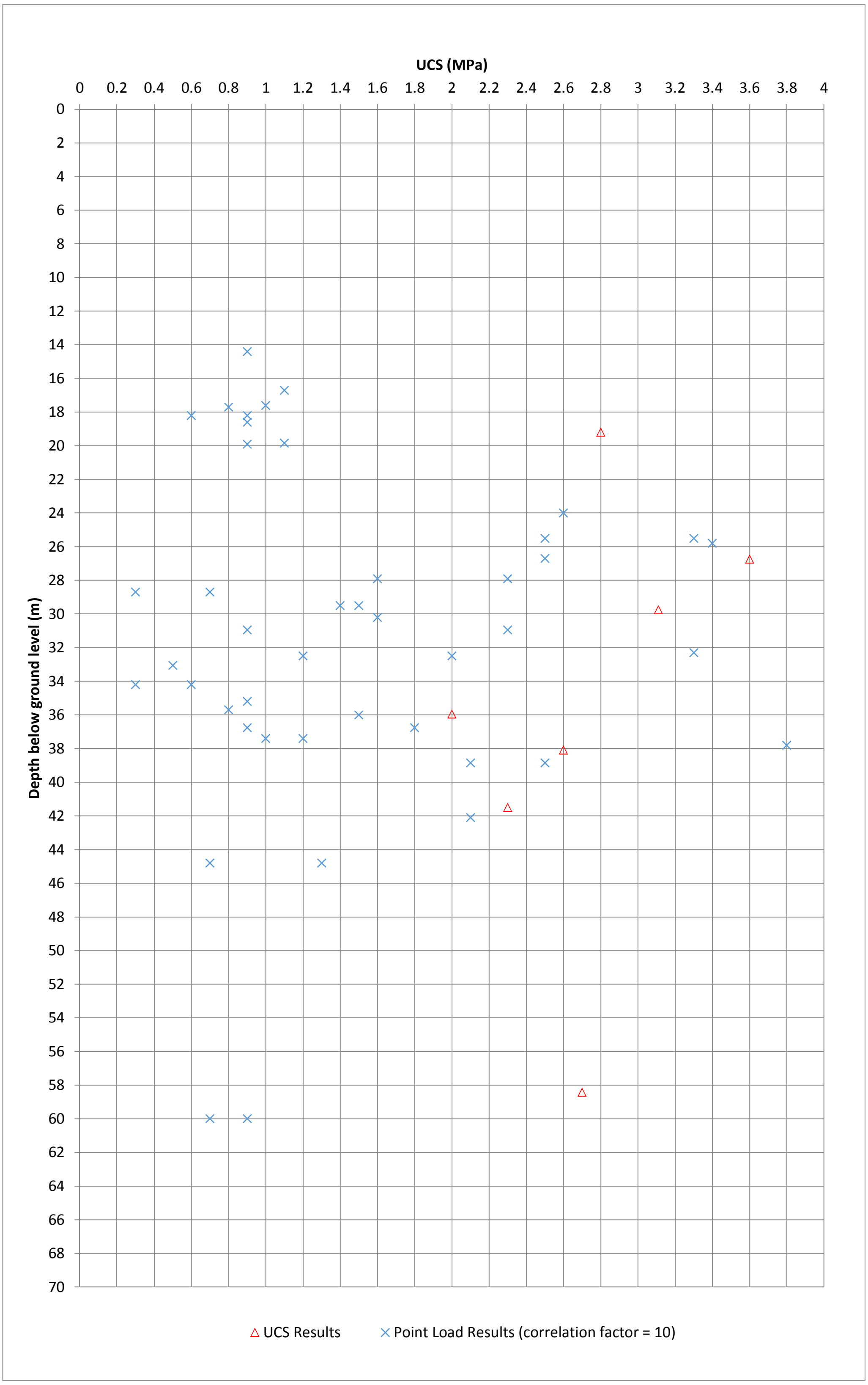
Project	Sheet size: A4	Drawn: HF Date:Oct 15	Checked:TR Date:Nov 15	Reviewed:TR Date:Nov 15
Paramount Entertainment Resort	Status: FINAL	Figure Number: F9.3		Rev: 1

G.10. Effective Strength



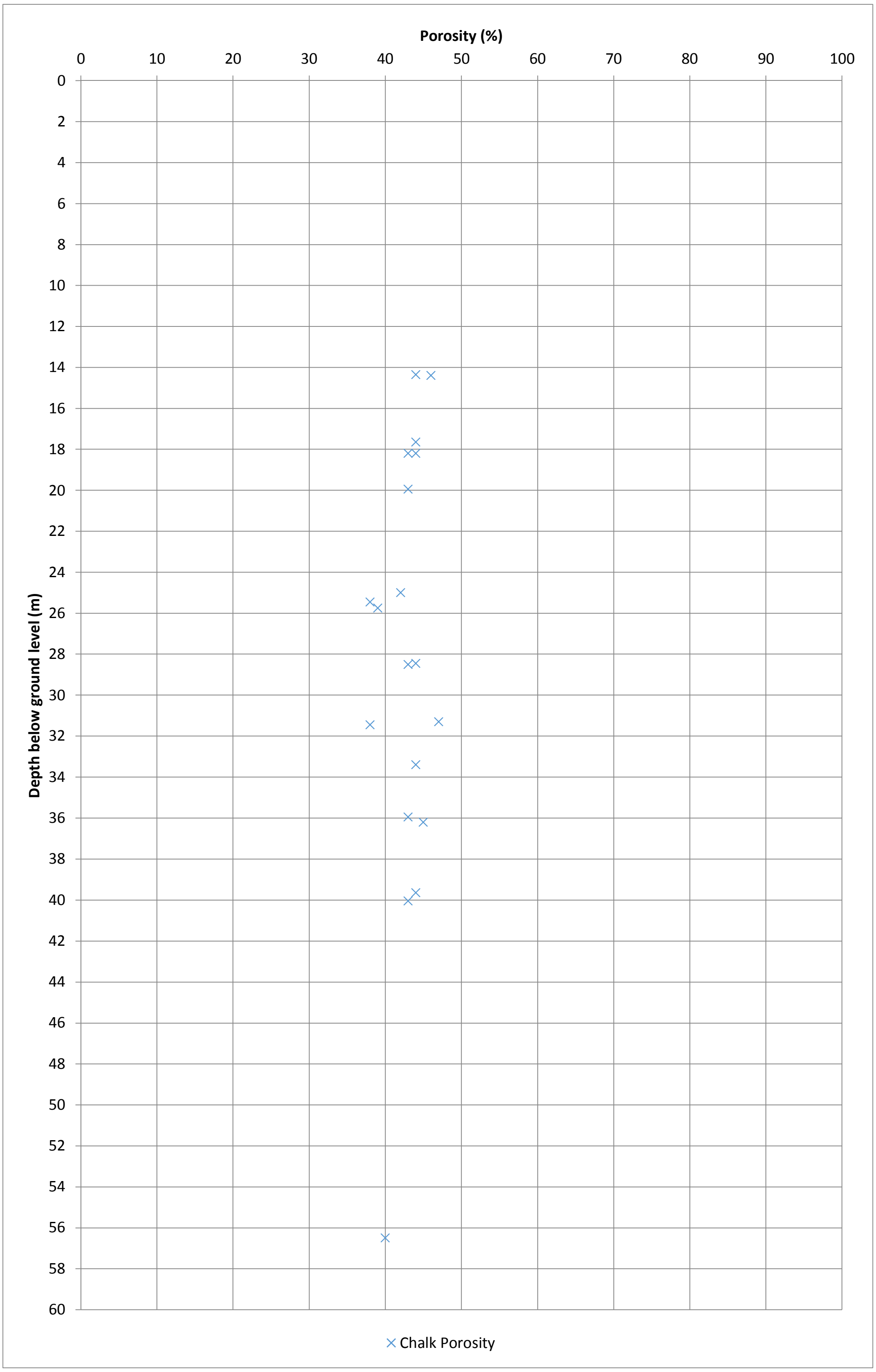
ATKINS **Atkins Limited** Woodcote Grove Ashley Road Tel: (01372) 726140 Epsom Fax: (01372) 740055 KT18 5BW [redacted]	Client **London Resort Company Holdings**	Title **Effective Strength for PEAT**					
	Project **London Paramount Entertainment Resort**	Sheet size: A4	Drawn: H. Fisher Date: 22-Oct-15	Checked: T. Radford Date: 06-Nov-15	Authorised: T. Radford Date: 10-Nov-15		
		Status: FINAL	Figure Number: F10.1			Rev: 1	

G.11. Uniaxial Compressive Strength vs. Depth Plot



ATKINS **Atkins Limited** Woodcote Grove Ashley Road — Tel: (01372) 726140 Epsom — Fax: (01372) 740055 KT18 5BW [redacted]	Client **London Resort Company Holdings**	Title **Uniaxial Compressive Strength vs Depth for CHALK**			
	Project **Paramount Entertainment Resort**	Sheet size: A4	Drawn: HF Date: Oct 15	Checked: TR Date: Nov 15	Reviewed:TR Date: Nov 15
		Status: FINAL	Figure Number: F11.1		Rev: 1

G.12. Porosity vs. Depth



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Client	Title
London Resort Company Holdings	**Porosity of CHALK against Depth Below Ground Level**

Project
London Paramount Entertainment Resort

Sheet Size:	Drawn: HF	Checked:TR	Reviewed:TR
A4	Date: Oct 15	Date:Nov 15	Date:Nov 15
Status:	Figure No:		Rev:
FINAL	F12.1		1

Appendix H. Geotechnical Risk Register

H.1. Geotechnical Risk

For the purpose of this report, Geotechnical Risk is defined as the possibility of an adverse consequence arising from a ground hazard or circumstance.

The Geotechnical Risk Register takes into account the identified geotechnical constraints given above, along with additional project details to ensure that all significant geotechnical risks are identified, recorded, analysed and controlled. The geotechnical risks are discussed in terms of probability, severity and risk, as defined below:

Likelihood (L)*: The perceived likelihood of the identified geotechnical hazard actually occurring (defined as a rating in Table H-1).*

Severity (S)*: The perceived severity, in terms of safety, financial, temporal, legal, or operational consequence, of the occurrence of the identified geotechnical hazard on the identified receptor(s) (defined as a rating in Table H-2).*

Risk (R)*: The perceived level of concern which should be assigned to the identified hazard, based on the likelihood of occurrence, and taking into due account the perceived severity of the impact (defined as a risk number in Table H-3).*

The Geotechnical Risk Register and terminology adopted for this project is based on the guidance given by C.R.I. Clayton [50] and the Highways Agency [51] on managing geotechnical risk. It is a semi-quantitative assessment based on engineering judgement. The classification of probability and severity used in this Geotechnical Risk Register are summarised in Table H-1 and Table H-2respectively. The risk uses the equation:

Degree of Risk (R) = Likelihood (L) x Severity (S)

The explanation of the Degree of Risk is given in Table H-3, which gives the assessed risk level and appropriate actions.

Table H-1 Assessment of Likelihood

Scale	Likelihood	Chance
4	Probable	> 50%
3	Likely	10% - 50%
2	Unlikely	1% - 10%
1	Negligible	< 1%

Table H-2 Assessment of Severity

Scale	Severity	Capital Cost	Programmeme	Safety
4	Very High	Unsustainable costs.	Unsustainable delay.	Unsustainable chance of injury or illness.
3	High	Increased construction costs.	Increased delay to programmeme.	Increased chance of injury or illness.
2	Low	Small impact to costs.	Small delay to programmeme.	Small chance of injury or illness.
1	Very Low	Negligible impact on costs.	Negligible delay to programmeme.	Negligible chance of injury or illness.

Table H-3 Perceived Degree of Risk

Risk Number	Risk Ranking	Action Required
13 to 16	High (H)	Work must not start until risk has been reduced. If risk cannot be reduced, work should not begin.
9 to 12	Substantial (S)	Work must not start until risk has been reduced. Additional Resource required.
5 to 8	Medium (M)	Consider more cost-effective solutions or improvements at no extra cost.
1 to 4	Low (L)	None

The hazards identified for this project are set out in the Geotechnical Risk Register, which is a 'live' document and will need to be updated regularly. A précis of the Geotechnical Risk Register as it stood at the time of issue of this document is set out in the following section.

H.1.1. Risk Matrix

The risk matrix below (Figure H-1) shows the risk number and risk ranking.

Figure H-1 Risk Matrix

Likelihood		Severity	
4	Probable	4	Very High
3	Likely	3	High
2	Unlikely	2	Low
1	Negligible	1	Very Low

		Severity			
Likelihood		1	2	3	4
	1	1 Low	2 Low	3 Low	4 Low
	2	2 Low	4 Low	6 Medium	8 Medium
	3	3 Low	6 Medium	9 Substantial	12 Substantial
	4	4 Low	8 Medium	12 Substantial	16 High

H.2. Risk Register

The Geotechnical Risk Register comprises an initial assessment of the risks identified, prior to the application of risk mitigation measures, and shows how the risks can be reduced by the application of the measures. It does not consider the site in terms of any specific development proposals.

H.2.1. Mitigation Measures

The mitigation measures considered are those that may be applied during design or construction, as appropriate, to mitigate the hazard identified and, in most cases, to render the risk insignificant.

H.2.2. Residual Risk

Following risk identification, assessment and the application of recommended mitigation/avoidance measures most risks can be revised and assessed as either “medium” or “low”. In some cases the risk may be reduced but a significant residual risk remains which must be managed, and in others the risk mitigation measure cannot reduce the likelihood of an event but will be used to mitigate potential effects

Category Risk No.	Constraint	Prior to mitigation: Likelihood Table H-1	Prior to mitigation: Severity Table H-2: Capital cost	Severity: Programme	Severity: Safety	Prior to mitigation: Risk Table H-3: Capital cost	Risk: Programme	Risk: Safety	Risk Ranking Table H-3	Proposed Mitigation Measures	Residual Risk: Likelihood Table H-1	Residual Risk: Severity Table H-2: Capital cost	Severity: Programme	Severity: Safety	Residual Risk: Risk Table H-3: Capital cost	Risk: Programme	Risk: Safety	Risk Ranking Table H-3
Zone 1																		
1	Aggressive ground conditions	4	3	3	1	12	12	4	S	Treating of the Cement Kiln Dust (CKD) to reduce the risk of leachate. Dewatering of corrosive saline groundwater around constructions. Use materials which are suitable for highly alkaline/saline soils for construction.	2	3	3	1	6	6	2	M
2	Buried Foundations	3	3	3	1	9	9	3	S	Further ground investigation to determine the presence of underground structures.	2	3	3	1	6	6	2	M
3	Buried Services	3	3	3	3	9	9	9	S	Receive any further documents on buried services from HS1 and Lafarge. CAT and Genny scan the area.	1	3	3	3	3	3	3	L
4	Cement Kiln Dust	4	3	3	1	12	12	4	S	Treating of the Cement Kiln Dust (CKD) to reduce the risk of leachate.se materials which are suitable for highly alkaline soils for construction. Full personal protective equipment (PPE), including gloves and goggles, is to worn when in contact with CKD. Vehicles are to be washed down when leaving a site containing CKD, as to avoid cross-contamination.	2	3	3	1	6	6	2	M
5	Overhead Pylons	3	2	2	4	6	6	12	S	Do not worth beneath overhead pylons.	1	2	2	4	2	2	4	L
6	Perched/High groundwater	4	2	2	1	6	6	3	M	Dewatering of groundwater is to be used if high groundwater/perched water is encountered. Continuous monitoring of groundwater is to undertaken.	2	2	2	1	4	4	2	L

7	Saline Groundwater	3	2	2	1	6	6	3	M	Dewatering of groundwater is to be used if encountered. Use materials which are suitable for saline soils for construction.	2	2	2	1	4	4	2	L
8	Weak Bearing materials	4	3	3	1	12	12	4	S	Piles into the Chalk to be used for high load structures. Excavation of the Peat and replacement with a less compressible material.	2	3	3	1	6	6	2	M
9	Weak Compressible ground	4	3	3	1	12	12	4	S	Piles into the Chalk to be used for high load structures. Staged construction of embankments to be completed, to monitor the amount of compression. Excavation of the Peat and replacement with a less compressible material. Planned methodology for any earthworks with consideration of the hazard during design.	2	3	3	1	6	6	2	M
Zone 2																		
1	Aggressive ground conditions	4	3	3	1	12	12	4	S	Treating of the Cement Kiln Dust (CKD) to reduce the risk of leachate.Dewatering of corrosive saline groundwater around constructions. Use materials which are suitable for highly alkaline/saline soils for construction.	2	3	3	1	6	6	2	M
2	Buried Foundations	3	3	3	1	9	9	3	S	Further ground investigation to determine the presence of underground structures.	2	3	3	1	6	6	2	M
3	Buried Services	3	3	3	3	9	9	9	S	Receive any further documents on buried services from HS1 and Lafarge. CAT and Genny scan the area. Do not construct on top of the HS1 site.	1	3	3	3	3	3	3	L
4	Cement Kiln Dust	4	3	3	1	12	12	4	S	Treating of the Cement Kiln Dust (CKD) to reduce the risk of leachate.Use materials which are suitable for highly alkaline soils for construction. Full personal protective equipment (PPE), including gloves and goggles, is to worn when in contact with CKD.	2	3	3	1	6	6	2	M

										Vehicles are to be washed down when leaving a site containing CKD, as to avoid cross-contamination.								
5	Overhead Pylons	3	2	2	4	6	6	12	S	Do not worth beneath overhead pylons.	1	2	2	4	2	2	4	L
6	Perched/High groundwater	4	2	2	1	6	6	3	M	Dewatering of groundwater is to be used if high groundwater/perched water is encountered. Continuous monitoring of groundwater is to undertaken.	2	2	2	1	4	4	2	L
7	Saline Groundwater	3	2	2	1	6	6	3	M	Dewatering of groundwater is to be used if encountered. Use materials which are suitable for saline soils for construction.	2	2	2	1	4	4	2	L
8	Weak Bearing materials	4	3	3	1	12	12	4	S	Piles into the Chalk to be used for high load structures.	2	3	3	1	6	6	2	M
9	Weak Compressible ground	4	3	3	1	12	12	4	S	Piles into the Chalk to be used for high load structures. Staged construction of embankments to be completed, to monitor the amount of compression. Excavation of the Peat and replacement with a less compressible material. Planned methodology for any earthworks with consideration of the hazard during design.	2	3	3	1	6	6	2	M
Zone 3																		
1	Aggressive ground conditions	4	3	3	1	12	12	4	S	Treating of the Cement Kiln Dust (CKD) to reduce the risk of leachate.Dewatering of corrosive saline groundwater around constructions. Use materials which are suitable for highly alkaline/saline soils for construction.	2	3	3	1	6	6	2	M
2	Buried Foundations	3	3	3	1	9	9	3	S	Further ground investigation to determine the presence of underground structures.	2	3	3	1	6	6	2	M
3	Buried Services	3	3	3	3	9	9	9	S	Receive any further documents on buried services from Lafarge. CAT and Genny scan the area. Do not construct on top of the mudflow outflow site.	1	3	3	3	3	3	3	L

4	Cement Kiln Dust	4	3	3	1	12	12	4	S	Treating of the Cement Kiln Dust (CKD) to reduce the risk of leachate.Use materials which are suitable for highly alkaline soils for construction. Full personal protective equipment (PPE), including gloves and goggles, is to worn when in contact with CKD. Vehicles are to be washed down when leaving a site containing CKD, as to avoid cross-contamination.	2	3	3	1	6	6	2	M
6	Historical Works	2	3	3	1	6	6	2	M	Further ground investigation to determine the impact of historical works on the ground conditions of the area.	1	3	3	1	3	3	1	L
7	Perched/High groundwater	4	2	2	1	6	6	3	M	Dewatering of groundwater is to be used if high groundwater/perched water is encountered. Continuous monitoring of groundwater is to undertaken.	2	2	2	1	4	4	2	L
8	Saline Groundwater	3	2	2	1	6	6	3	M	Further groundwater monitoring to determine the groundwater regime in this area. Dewatering of groundwater is to be used if encountered. Use materials which are suitable for saline soils for construction.	2	2	2	1	4	4	2	L
9	Weak Bearing materials	4	3	3	1	12	12	4	S	Further ground investigation to determine the location and thickness of the superficial deposits. Piles into the Chalk to be used for high load structures.	2	3	3	1	6	6	2	M
10	Weak Compressible ground	4	3	3	1	12	12	4	S	Further ground investigation to determine the location and thickness of the superficial deposits. Piles into the Chalk to be used for high load structures. Staged construction of embankments to be completed, to monitor the amount of compression. Excavation of the Peat and replacement with a less compressible material.	2	3	3	1	6	6	2	M

										Planned methodology for any earthworks with consideration of the hazard during design.								
Zone 5																		
1	Buried Foundations	3	3	3	1	9	9	3	S	Further ground investigation to be undertaken to confirm the presence of buried foundations.	2	3	3	1	6	6	2	M
2	Buried Services	3	3	3	3	9	9	9	S	To gather available buried service information. CAT and Genny scan the area.	2	3	3	3	6	6	6	M
4	Chalk Dissolution Features	3	3	3	3	9	9	9	S	Further ground investigation to be undertaken. Surveillance during construction is recommended.	2	3	3	3	6	6	6	M
5	Historical Works	3	3	3	1	9	9	3	S	Further ground investigation to determine the impact of historical works on the ground conditions of the area.	2	3	3	1	6	6	2	M
6	Rockfall	3	3	3	3	9	9	9	S	PPE to be worn at all times, particularly hard hats, especially when by cliff-faces. Surveillance during construction is recommended.	2	3	3	3	6	6	6	M
7	Saline groundwater	3	2	2	1	6	6	3	M	Further groundwater monitoring to determine the groundwater regime in this area. Dewatering of groundwater is to be used if encountered. Use materials which are suitable for saline soils for construction.	2	2	2	1	4	4	2	L
8	Variable rockhead	3	3	3	1	9	9	3	S	Further ground investigation to determine the bedrock condition and depths.	2	3	3	1	6	6	3	M
9	Weak bearing materials	3	3	3	1	9	9	3	S	Deep foundations to be used for high load structures.	2	3	3	1	6	6	2	M
Zone 7																		
1	Buried foundations	2	3	3	1	6	6	2	M	Further ground investigation to determine the presence of buried foundations towards the north of Zone 7.	1	3	3	1	3	3	1	L
2	Buried services	3	3	3	3	9	9	9	S	Further ground investigation to determine the presence of buried services towards the north of Zone 7.	2	3	3	3	6	6	6	M

3	Chalk dissolution features	2	3	3	3	6	6	6	M	Further ground investigation to determine the presence of chalk dissolution features. Surveillance during construction is recommended.	1	3	3	3	3	3	3	L
4	Historical works	3	3	3	1	9	9	3	S	Further ground investigation to determine the ground conditions of Southfleet Pit towards the north of Zone 7.	2	3	3	1	6	6	2	M
5	Variable rockhead	4	3	3	1	12	12	4	S	Further ground investigation to determine the rockhead profile in this Zone.	2	3	3	1	6	6	2	M
6	Weak bearing materials	4	3	3	1	12	12	4	S	Piles into the Chalk to be used for high load structures.	2	3	3	1	6	6	2	M
7	Weak compressible ground	3	3	3	1	9	9	3	S	Piles into the Chalk to be used for high load structures. Staged construction of embankments to be completed, to monitor the amount of compression. Planned methodology for any earthworks with consideration of the hazard during design.	2	3	3	1	6	6	2	M

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