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Revision description

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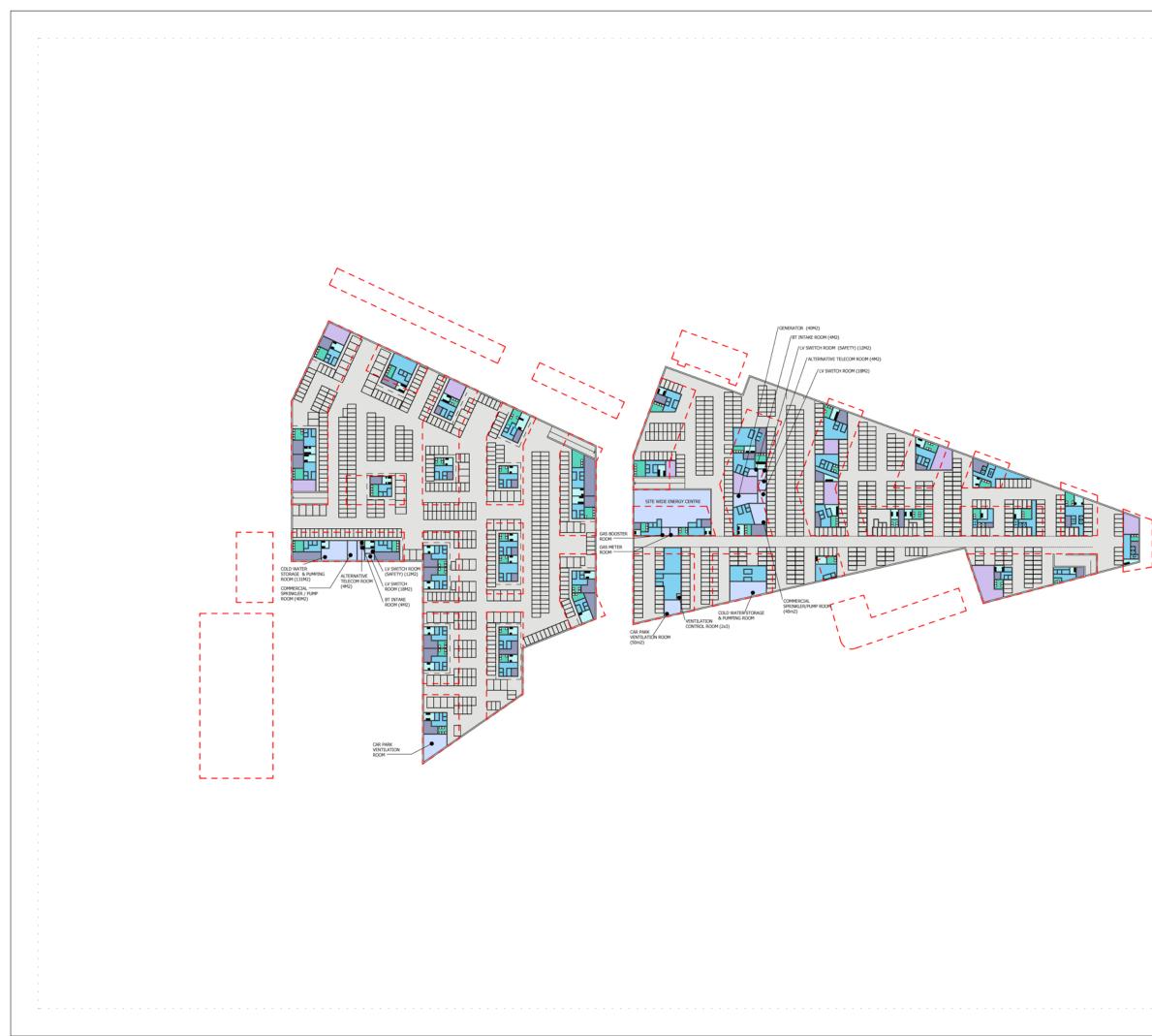
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Stag Brewery Richmond

Drawing

Levels Phase 02

Date	Scale
08/16/16	1:500 @ A1 @ A3
Drawing number	Revision
G100_P_L_02	
	08/16/16 Drawing number



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<u>Phase 1a</u>

451 units

600 parking spaces

361 required to meet 80% of units

Phase 2

521 units

576 parking spaces

417 required to meet 80% of units

Date Check Rev

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Project Stag Brewery

Richmond

Drawing

Basement Plan

Drawn	Date	Scale
RKL	10/13/16	1:1000 @ A1 1:2000 @ A3
Job Number	Drawing number	Revision
16019	G100_P_B_001	



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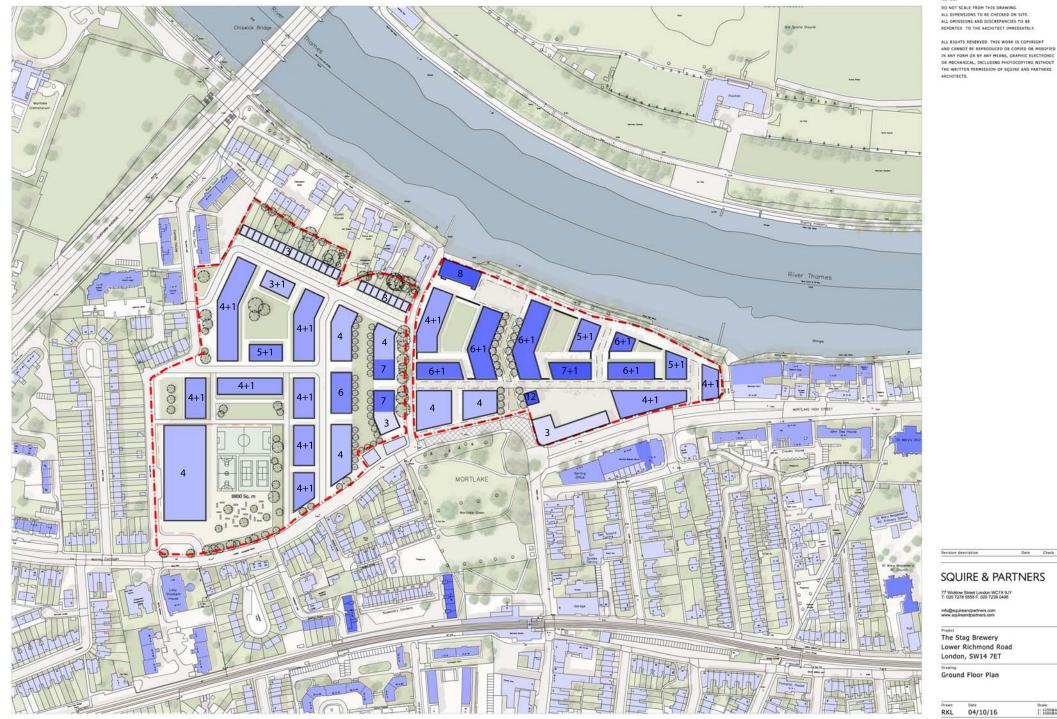
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Stag Brewery Richmond

Drawing

Site plan Ground

Date	Scale
06/08/16	1:1250 @ A1 1:2500 @ A3
Drawing number	Revision
G100_P_00_001	
	06/08/16 Drawing number



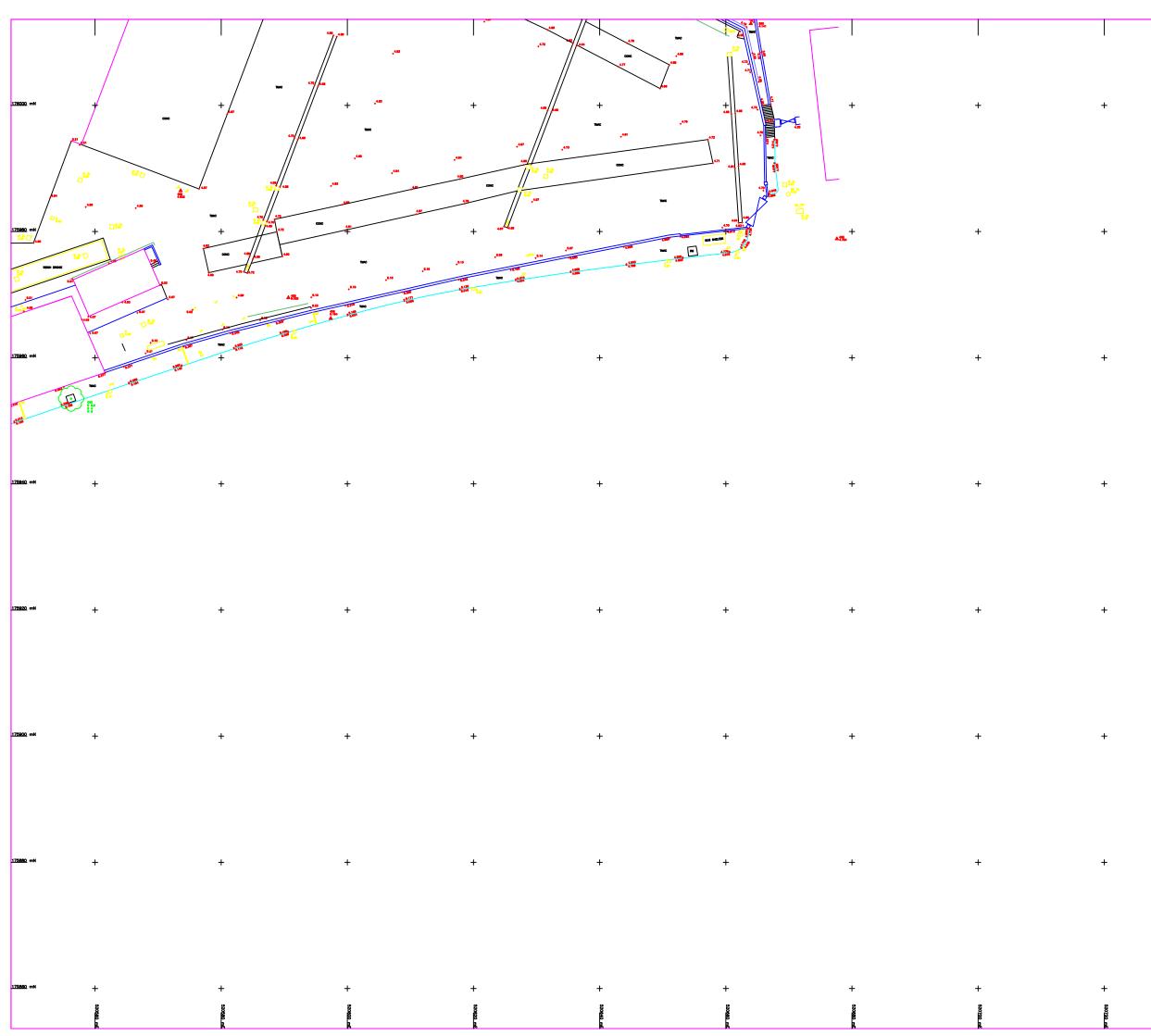
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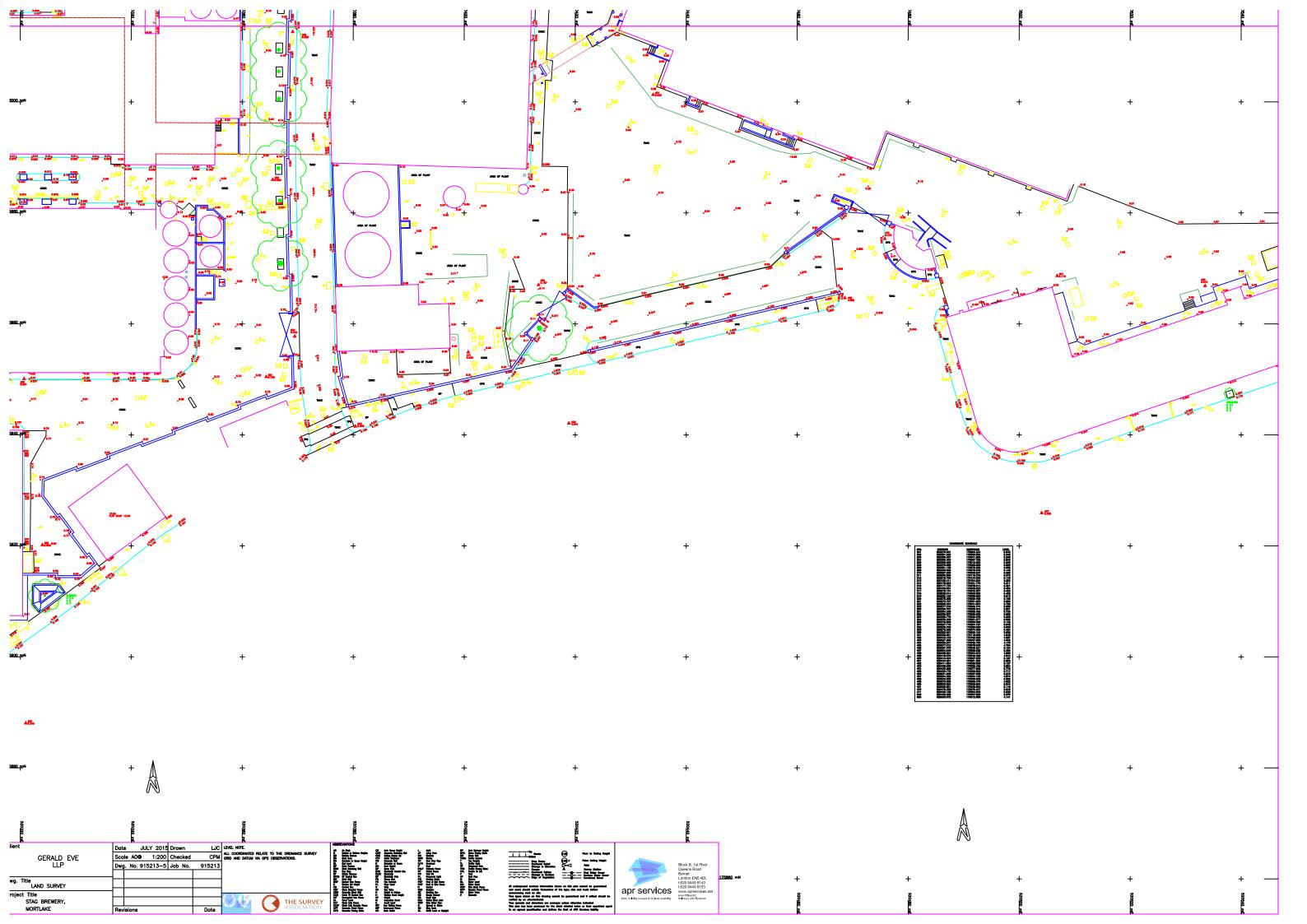
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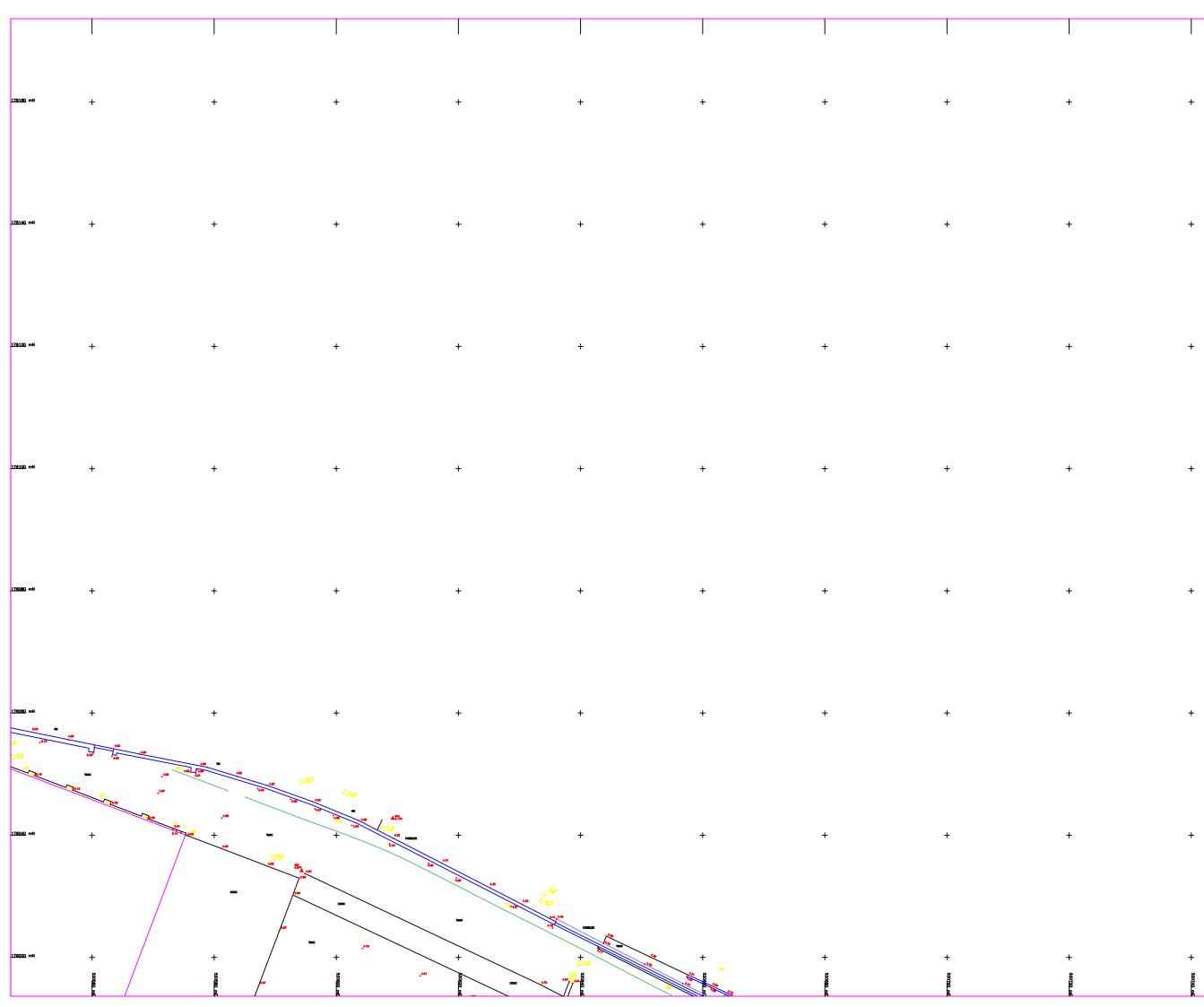
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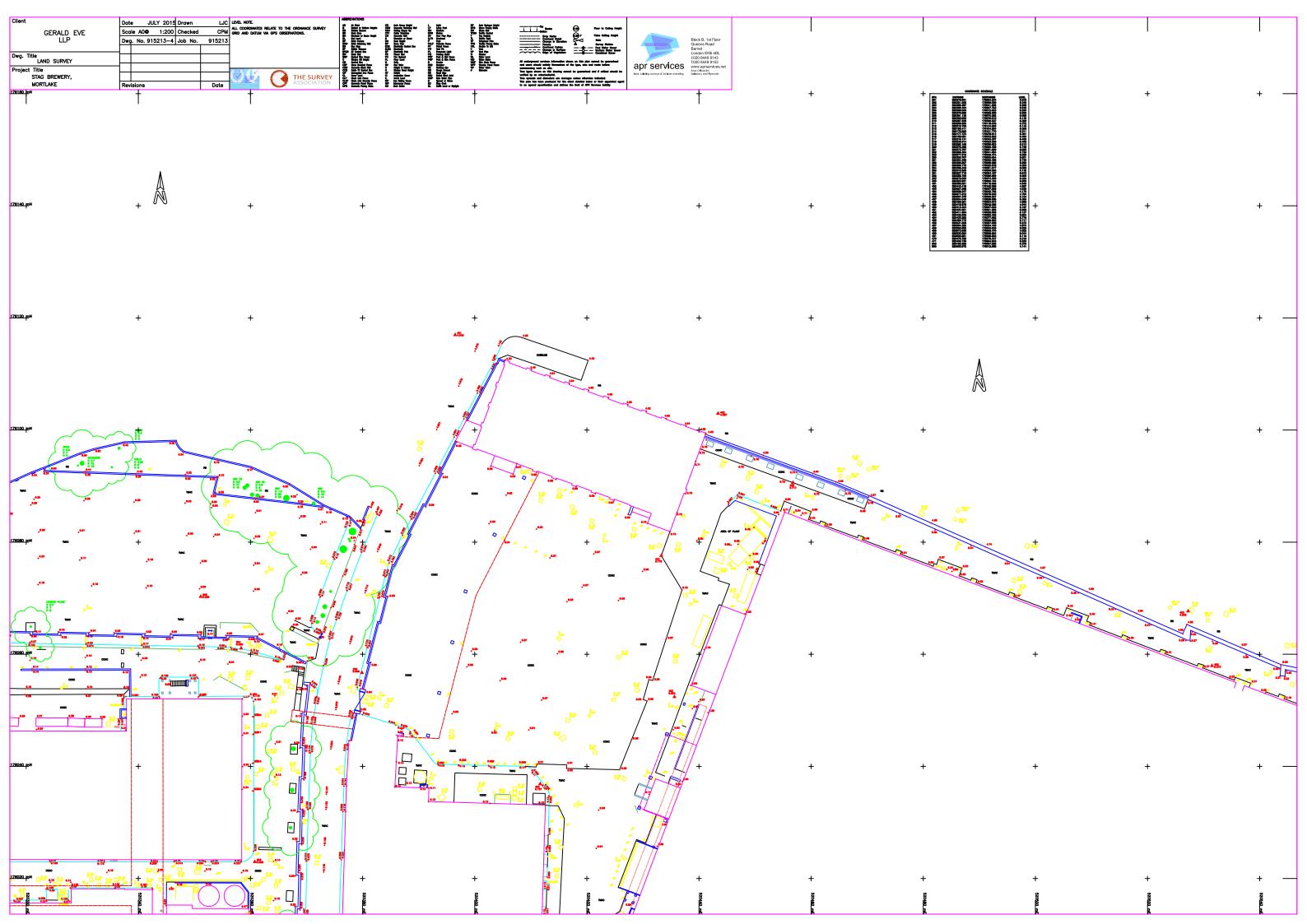


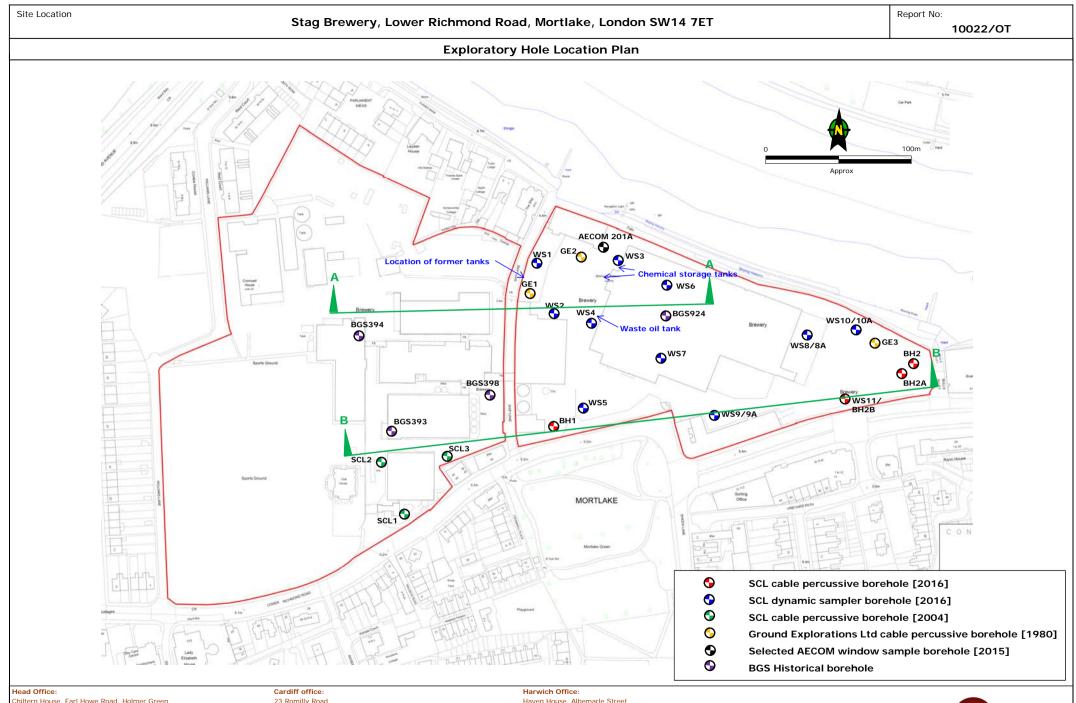
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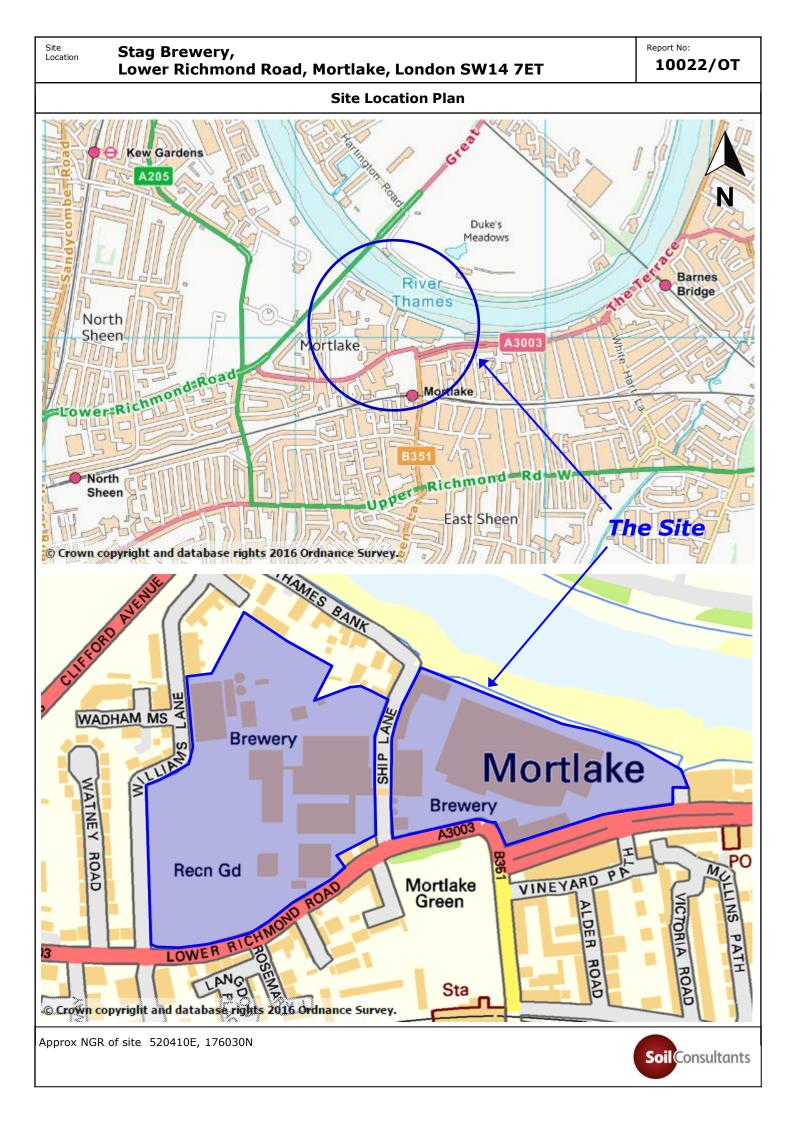
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ΑΞϹΟΜ

STAG BREWERY MORTLAKE Phase 2 Environmental Site Assessment Report

September 2015

47075502

Prepared for: AB InBev UK Limited

Prepared by: AECOM



DOCUMENT PRODUCTION / APPROVAL RECORD				
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47075502/ PH2 ESA 22 SEPTEMBER 2015



EXECUTIVE SUMMARY

AECOM Infrastructure & Environment UK Limited (AECOM) was appointed by AB In-bev UK Limited to undertake soil and groundwater quality monitoring at the Stag Brewery, Mortlake, London, SW14 7ET.

Site Characterisation Scope: The site investigation undertaken included the drilling of two boreholes with groundwater monitoring well installations to supplement the existing network of thirteen groundwater monitoring wells installed during previous phases of investigation. Twenty-eight soil bores were also drilled across the Site to provide a higher density of exploratory points, better understand the ground conditions and collect soil samples for laboratory chemical analysis.

Ground Conditions: The ground conditions at the site were assessed from twenty-eight soil bores were drilled using dynamic percussive drilling techniques to a maximum depth of 5.0m below ground level (bgl). The drilling work was undertaken between 20 and 28 August 2015. The deepening sequence of geology encountered in the site investigation includes Made Ground, superficial deposits of River Terrace Gravels and London Clay bedrock.

Made Ground is between 1.2m and 2.6m thick and comprised loose roadstone, red/yellow brick and concrete gravels, sand and gravels of flint and occasional reworked clay. Buried obstructions, thought to represent relict concrete slabs, were encountered at eleven locations.

The boundary between the River Terrace Deposits and London Clay was encountered at depths between 6.5 and 6.9m bgl. The London Clay was encountered to the maximum depth of drilling (7.0 bgl).

Groundwater: Groundwater elevation monitoring on 28 August 2015 indicated the groundwater to be between 3.57 and 5.14 mbgl. Groundwater flow direction is inferred to be west. The tidal effects of the River Thames were measured in three boreholes across the site by continuous monitoring over 2.5 days. The results indicated a maximum fluctuation of 60mm in a well 20m from the River Thames. However, no measurable effect on groundwater elevation was recorded on the two wells located 65m and 200m from the River Thames.

Soil Quality: No obvious visual or olfactory evidence of hydrocarbon contaminated soils was noted from the drilling arisings. Furthermore, only one result (2.1ppm) out of 113 screening tests performed was above the detection limit (<0.1ppm) of the Photo-Ionisation Detector (PID) equipment during soil headspace monitoring.

A total of 25 samples of Made Ground and 14 samples of natural ground were analysed at Alcontrol Laboratories for a suite of inorganic and organic chemical parameters. The results were compared to generic assessment criteria (GAC) suitable for three possible end uses: residential with gardens, residential without without gardens and commercial. The comparison indicated that the soil chemistry does not represent an unacceptable risk to human health regardless of the end use scenario.

Asbestos Containing Materials (ACMs): During the site investigation suspected ACMs were observed as fragmented tiles from one exploratory hole (BH4A between ground level and 1.3m bgl). A total of twenty-six samples of Made Ground were also visually screened at the analytical laboratory (by microscope) and asbestos fibres were observed in eight samples. Asbestos quantification analysis on the eight samples measured a concentration of ACMs <0.1% and below the hazardous waste criteria threshold.

Asbestos in soils is not considered an unacceptable risk for future residential and or commercial site use given the relatively low volumes measured in the samples. Future below ground works should consider the potential for asbestos to be present in Made Ground and appropriate standard construction controls adopted.

Groundwater Quality: During groundwater monitoring no obvious visual or olfactory indication of contamination was identified from the sampled groundwater. A total of fourteen groundwater samples were analysed at Alcontrol Laboratories for a suite of inorganic and organic chemical parameters. The results were compared to GAC protective of the adjacent River Thames (marine Environmental Quality Standards)



and England Drinking Water Standards. The comparison indicated that the majority of chemical parameters were below the relevant GAC and, although some minor exceedances were measured at isolated locations, the groundwater quality is considered commensurate with that in an urban environment.

Conclusions: The site characterisation has not encountered soil and groundwater conditions that represent a constraint to redevelopment of the Site for mixed commercial and residential use above what would normally be expected from previously developed land.

The chemical analysis of the Site soils and groundwater has not identified concentrations that represent an environmental risk to human health or controlled waters. No environmental improvement works are considered necessary at the Site based on a mixed use development scheme.

It is likely that works to remove relict buried foundations and slabs will be required to allow construction of deep structures and foundations. Furthermore, it is unlikely that the physical composition of the existing shallow Made Ground soils will be of suitable composition for use in soft planted areas. Imported soils are therefore likely to be required for green open spaces and landscaping.



1. INTRODUCTION

1.1 General Introduction

This report presents the findings of a Phase 2 Environmental Site Assessment (ESA) at the Stag Brewery, Mortlake, London, SW14 7ET (the "Site"). A site location plan is presented in **Figure 1**.

The Stag Brewery has been used for the production and packaging of alcoholic beverages since the late 1850s. However, the Stag Brewery will cease manufacturing operations in 2015 and the site is to be divested for redevelopment.

1.2 Objectives

The objective of this report is to present an assessment of the environmental ground conditions at the Site. Specifically, the objectives are to:

- Perform an environmental assessment of the site to evaluate the chemical status of the underlying soil and groundwater conditions. The results of this assessment will be used to refine the conceptual site model (CSM) and to evaluate the potential for plausible contaminant linkages and unacceptable environmental risk at the Site; and
- 2. Evaluate whether the soil and groundwater conditions represent a constraint to site redevelopment for mixed residential, retail and commercial uses and determine whether a contamination remediation and verification scheme will be required.

1.3 Scope of Work

A summary of the scope of work performed to meet the objectives of this study are set out below. The scope was designed following the review of existing Site information (Section 2) and based on the proposed site redevelopment for mixed uses. The rationale for each exploratory hole is provided in Section 3.1.

- The drilling of a borehole (BH201A) using rotary drilling techniques to 6.0m bgl adjacent to the Site boundary with the River Thames in the north of the Site.
- The drilling of two boreholes (BH203 & BH203A) using rotary drilling techniques in the east of the Site.
- The drilling of twenty-eight soil bores (BH2A to BH5A, BH7A to BH10A, BH201 to BH214A) using percussive drilling techniques to 5.0m bgl to provide shallow ground conditions assessment across the Site.
- Sampling and laboratory chemical analysis of soil samples from twenty-four boreholes for a suite of inorganic and organic chemical parameters.
- Installation of a groundwater monitoring well in the superficial gravels at BH201A and in the Made Ground at BH203 & BH203A.
- A return visit to monitor and sample groundwater from BH201A and the existing network of thirteen monitoring wells across the site.
- Laboratory chemical analysis of thirteen groundwater samples and one duplicate for a suite of inorganic and organic chemical parameters.



• Evaluation of the chemical soil and groundwater results by performing a generic quantitative risk assessment (GQRA) considering risks to human health and controlled waters.

The scope of work listed above was completed between 20 August and 21 September 2015.

47075502/ PH2 ESA 22 SEPTEMBER 2015



2. PROJECT BACKGROUND

2.1 Site Location & Description

The site is located in Mortlake, London, SW14 7ET. The Site is centered at National Grid Reference 520360, 175990. A site location plan is presented in **Figure 1**.

The site covers a total area of 84,697m², which is divided between an East Site and West Site, separated by Ship Lane:

- East Site covers an area of 54,057m² and includes seven buildings, a trailer park with a weighbridge, a warehouse, an energy centre and storage blocks.
- West Site covers an area of 30,640m². The West Site comprises production buildings, workshop and stores, bulk gas storage, fabrication shop, ancillary plant, the former effluent plant, car park and Watney's sports ground.

The general site layout is shown on Figure 2.

2.2 Surrounding Land Use

Surrounding land uses are indicated on Figure 2 and include the following:

- North: The River Thames is adjacent to the northern boundary of the East Site. Residential properties and a public house are located immediately north of the West Site between the site boundary and the River Thames.
- South: The A3003 (Lower Richmond Road) is adjacent to the southern Site boundary. Beyond this are residential and commercial properties, Mortlake Green and Mortlake Station. The Richmond Line of the London and South Western Railway runs east-west and is located approximately 100m south of the site at its closest point;
- East: The land use to the east mostly comprises residential properties with some commercial properties; and
- West: Residential properties are located adjacent to the western site boundary, with Clifford Avenue running south-west-north-east 115m from the site. Beyond this is Mortlake Crematorium and cemetery.

2.3 Site Topography

The site topography has been evaluated based on the topographic survey completed across the proposed development site in 2015¹.

The topographical survey has indicated the general current site elevations to be generally between 5.72m and 6.55m above Ordnance Datum (mAOD).

2.4 Previous Site Evaluation

AECOM completed a Phase 1 ESA (ESA) in July 2015. In preparation of the Phase 1 ESA, AECOM were provided with seven historical environmental assessment reports (see **Section**

¹ Data provided by AB Inbev following survey of a specialist contractor (August 2015). Topographical Survey at Stag Brewery Mortlake.



8; **References**) completed between 1995 and 2012. Pertinent information extracted from the Phase 1 ESA and the historical reports is detailed below.

- The brewery has been present in East Site since at least 1868, with the remainder of the East Site occupied by residential properties. The brewery expanded or was redeveloped by 1896, replacing the residential houses. The brewery buildings are first shown in West Site in the mid- 1960s, at which time the whole of the East Site is developed with brewery buildings. Both sites are in their current 2015 layout by 2006.
- The Stag Brewery Site is underlain by Made Ground followed by Superficial Deposits (River Terrace Gravels) and by London Clay.
- Groundwater rests within the Superficial Deposits at depths between approximately 2.0m to 5.5m bgl. Groundwater is not abstracted for use within 230m of the Site and is not within a groundwater source protection zone.
- The River Thames, the Superficial Deposits and the residents located immediately south and west of the Site represent sensitive receptors.
- A network of thirteen boreholes with groundwater monitoring wells was installed across the Brewery between 1995 and 2003. Groundwater from these wells has been monitored and samples collected for laboratory analytical testing on four occasions between 2003 and 2012. Results of this monitoring have not identified unacceptable or widespread groundwater contamination at the Stag Brewery.
- Soil sampling from seven soil bores drilled in 2003 did not indicate elevated concentrations of metal and total petroleum hydrocarbon concentrations in soils.

Overall, the lack of widespread measurable chemical contamination in soil and groundwater beneath the Site suggested that there is not an unacceptable risk of adverse impact to human health, groundwater or the River Thames. However, localized areas of potential impact to chemical soil and groundwater quality could not be discounted. This Phase 2 ESA was therefore commissioned to further investigate the ground conditions beneath the Site with a higher density of exploratory boreholes and additional soil and groundwater chemical testing to update the site conceptual site model (CSM).



3. METHODOLOGY & APPROACH

3.1 Site Investigation Rationale

The evaluation of the existing environmental assessment data and CSM presented in the Phase 1 ESA has indicated that a higher density of exploratory holes is required on the Site to evaluate the current soil and groundwater conditions. In particular, the previous site assessment data was principally from the West Site, with limited information for the East Site. The rationale was therefore to determine:

- The nature and thickness of the Made Ground and the shallow geology across the East and West Site area; and
- Inspect and sample shallow soil and groundwater from across the site for laboratory chemical analysis.

An exploratory hole location plan is included as **Figure 3**. The rationale for the positioning of each exploratory hole is given in **Table 3.1**.

Table 3.1: Site Investigation Rationale			
Investigation Location ID	Location and Rationale		
BH2 (existing well) BH2A (proposed soil bore)	BH2A to be drilled adjacent to above ground heavy fuel oil storage tanks on the western edge of the East Site. Groundwater monitoring well BH2 is located approximately 1.0m from BH2A.		
BH3 (existing well) BH3A (proposed soil bore)	BH3A to be drilled down topographic gradient of a diesel storage tank in the north of the West Site. Groundwater monitoring well BH3 is located approximately 1.0m from BH3A.		
BH4 (existing well) BH4A (proposed soil bore)	BH4A and BH5A to be drilled in the contractors' storage area in the north of West Site.		
BH5 (existing well) BH5A (proposed soil bore)	Groundwater monitoring wells BH4 and BH5 are located within approximately 1.0m from BH4A and BH5A respectively.		
BH7 (existing well) BH7A (proposed soil bore)	BH7A to be drilled south of workshop building in west of the West Site in the area of tanker clean in place (CIP). Groundwater monitoring well BH7 is located approximately 1.0m from BH7A.		
BH8 (existing well) BH8A (proposed soil bore)	BH8A to be drilled within the empty waste container and waste storage area in the west of the West Site. Groundwater monitoring well BH8A is located approximately 1.0m from BH8A.		
BH9 (existing well) BH9A (proposed soil bore)	BH9A to be drilled adjacent to area of suspected trade drain leakage between the Brew House and Fermentation Block (eastern half of the West Site). Groundwater monitoring well BH9 is located approximately 1.0m from BH8A.		
BH109 (existing well) BH109A (proposed soil bore)	BH9A to be drilled in a storage area for acids and alkalis to the north of the beer conditioning building (north-east of the West Site). Groundwater monitoring well BH109 is located approximately 1.0m from BH109A.		



Fable 3.1: Site Investigation Rationale		
Investigation Location ID	Location and Rationale	
BH201 & BH201A	 BH201 & BH201A are adjacent to a former heavy fuel storage vault in the B Block building and also down-gradient of the Packaging Building (north-west corner of the East Site). This location is at the Site northern boundary and 20m from the River Thames. BH201 and BH201A represent two attempts to penetrate or avoid the obstruction. BH201A was able to reach the intended depth (6m bgl) and a well installed to monitor the groundwater quality. 	
BH202 & BH202A	To be drilled in the north of the East Site to provide general Site coverage. The presence of an obstruction at 1.8m bgl meant that the intended drilling depth and installation of a groundwater monitoring well in the superficial gravels could not be completed. BH202 and BH202A represent two attempts to penetrate or avoid the obstruction.	
BH203 & BH203A	BH203 & BH203A were drilled in the east of East Site where vehicle maintenance and oil storage areas were historically located and to provide general Site coverage. The presence of an obstruction at 3.0m meant that the intended drilling depth and installation of a groundwater monitoring well in the superficial gravels could not be completed. BH203 and BH203A represent two attempts to penetrate or avoid the obstruction. Groundwater monitoring well were installed in both boreholes within the Made Ground.	
BH204	To be drilled in the south of the East Site to provide general Site coverage south of the Packaging Building.	
BH205	To be drilled in the east of the East Site to provide general Site coverage east of the Packaging Building.	
BH206	To be drilled in the south-east of the East Site to provide general Site coverage south-east of the Packaging Building.	
BH207	To be drilled on the south-western corner of the Packaging Building between the Power House chemical store (Area 13) and Packaging Waste Oil storage area (Area 14).	
BH208 / BH208A	To be drilled to investigate the soil conditions within the Trailer Park immediately north of the Energy Block. BH208 and BH208A represent two attempts to penetrate or avoid an obstruction.	
BH209	To be drilled in the south of the East Site to provide general Site coverage.	
BH210	Targeted to investigate the soil conditions south of the operational area.	
BH211	Targeted to investigate the soil conditions in the vicinity of the KG Slurry Tank and the remaining operational area.	
BH212	To be drilled to investigate an oil storage area adjacent to the engineering workshop (north- west of West Site). Groundwater monitoring well BH112 is located approximately 2m from BH212.	
BH213	To be drilled within contractors' storage area in the north of West Site.	



Table 3.1: Site Investigation Rationale			
Investigation Location ID Location and Rationale			
BH214 / BH214A	To be drilled in the north of the East Site to provide general Site coverage. The presence of an obstruction at 2.6m meant that the intended drilling depth and installation of a groundwater monitoring well in the superficial gravels could not be completed. BH214 and BH204A represent two attempts to penetrate or avoid the obstruction.		

The exploratory investigation work was undertaken between 20 and 28 August 2015. The following methodology and approach was undertaken to meet the objectives of this study.

3.2 Health and Safety Planning

The site works were conducted in accordance with AECOM pre-determined health, safety and environment arrangements, standard operating procedures and method statements. A detailed site inspection was undertaken on 20 August 2015 by AECOM to select sampling locations and determine the most appropriate sequence of work.

A detailed survey of the buried services in the vicinity of the proposed exploratory locations was undertaken by a specialist contractor employed by Site Vision Surveys Limited the 20th of August 2015. This was undertaken with reference to Site supplied buried services and utility plans.

The 28 exploratory positions were also pre-excavated by hand to a minimum depth of 1.2m bgl as a secondary precaution and as a pre-drill check. No buried services were exposed in the hand excavated pits.

3.3 Hand Excavated Pits

The pre-drill pits were excavated at the 28 drilling locations using concrete coring or hand-held breaker to penetrate site hardstanding and then hand tools to a depth of 1.2m. These pits allowed environmental soil inspection, sampling and logging in the upper 1.2m of soil and also as a precautionary pre-drill check of the shallow subsurface for potential buried services.

The depths of twenty-three excavated positions were extended by drilling (see **Sections 3.5** & **3.6**). Hand pits BH201, BH202, BH208, BH7B failed to penetrate a shallow concrete slab obstructions at 0.8m bgl and was therefore unable to progress as a soil bore.

3.4 Soil Bores

Twenty-three soil bores (BH2A, BH3A, BH4A, BH5A, BH7A, BH8A, BH9A, BH109A, BH202A, BH203, BH203A, BH204, BH205, BH206, BH207, BH208A, BH209, BH210, BH211, BH212, BH213, BH214 and BH214A) were drilled using dynamic percussive drilling techniques to a maximum depth of 5.0m bgl. The boreholes were drilled at 100mm diameter and soil arisings were recovered in plastic lined cores for detailed inspection, logging and sampling.

On completion of the inspection and soil sampling the exploratory positions that had penetrated the full thickness of Made Ground were infilled with bentonite clay pellets and hydrated to seal the boreholes. Where the boreholes failed to penetrate the Made Ground, the



boreholes were infilled with the excavated spoil in the general order of excavation. The site surfacing was reinstated to a similar condition to previous. The borehole logs are included in **Appendix B**.

3.5 Borehole Drilling & Well Construction

Borehole BH201A was drilled to a depth of 6.0m bgl using rotary techniques and a 350mm diameter auger. The monitoring well was constructed with 50mm diameter High Density Polyethylene (HDPE) monitoring standpipes. The well installation in BH201A has a screened section between 2.0m and 5.5m bgl designed to intersected the groundwater table in the Superficial gravels (at approximately 3.7m bgl) to allow for possible groundwater fluctuation across the well screen due to the tidal influence from the adjacent River Thames. The response zone annulus was filled with washed 4mm gravel and the annulus above the response zone sealed with bentonite pellets hydrated with site tap water. The well was completed with lockable headwork concreted into place flush with the surrounding ground surface. The borehole logs, including monitoring well construction details, is included in **Appendix B**.

BH203 was initially targeted to investigate soil and groundwater, however due to the presence of underground obstructions it was abandoned and location BH203A was selected. Another obstruction in BH203A was found. A groundwater monitoring well was installed in both boreholes within the Made Ground.

It was considered that Made Ground collapsed when the drilling augers were pulled from the excavations just before the insertion of the well pipe. Following the wells development, it was decided to exclude these wells from the monitoring stage as the excessive amount of sand and silt accumulated in both standpipes within a short period may influence the quality and representativeness of the groundwater samples.

3.6 Soil Logging & Sampling

The soil cores and excavated materials were logged by an experienced field geologist as drilling progressed. The logging was undertaken in general accordance with BS EN ISO14688, BS EN ISO14689 and BS5930:1999.

During logging the field geologist inspected the excavated for possible visual and olfactory indications of hydrocarbon contamination or discoloured/ stained soils. These observations (if any) are also presented on the exploratory borehole logs.

A portable monitoring instrument (Photo Ionisation Detector (PID)) was used to measure soil headspace for ionisable hydrocarbons. Soil samples were taken at regular intervals through the unsaturated soil profile, placed in sealed plastic bags, manipulated by hand and left for a short time (typically 5 minutes). The headspace above the soil in the bags was then tested for the presence of ionisable hydrocarbons using the PID (fitted with a 10.6 eV lamp and calibrated to isobutylene).

Soil samples were selected for laboratory testing at the discretion of the AECOM field engineer and based on the PID readings and site observations. Soil samples were transferred directly into laboratory-supplied containers and labelled for shipment, under chain of custody procedures. Soils containers were stored in cooler boxes containing ice packs to maintain low temperatures during storage and shipment to the laboratory.



3.7 Groundwater Monitoring

On 20 August 2015 AECOM completed an inspection of the existing monitoring well network to confirm the locations of the thirteen existing groundwater monitoring wells (BH2, BH3, BH4, BH5, BH7, BH8, BH9, BH10, BH104B, BH109, BH110, BH111 and BH112). Each of these thirteen wells was located and the headworks and standpipes intact. The inspection included the measurement of the groundwater level in the wells and comparison with the as-built borehole logs to determine the thickness of sediment in the well bases. This indicated significant sediment accumulations, up to 2.13m, in the wells that required de-silting followed by well development to determine whether the wells represented robust groundwater sampling locations.

On 24 and 25 August 2015 AECOM undertook the de-silting of all existing groundwater monitoring wells. Air lift surging technique was used to de-silt all monitoring wells. The monitoring wells were alternatively surged and pumped with air using a petrol operated compressor in combination with a peristaltic pump. In air surging, air was injected into the wells to lift the water to the surface. As the air bubbles rose, they created a surging effect that carried water and dislodged the sediments out of the well. As the groundwater reached the top of the casing, the air supply was shut off, allowing the aerated water column to fall. A peristaltic pump was used to pump each well periodically to remove the silt and sand deposits from the screen and bottom of the boreholes.

The desilting works were successful and further details are included in **Appendix A**. Following the desilting and purging, standing water levels ranging between 4.15m and 5.25m bgl were measured in the monitoring wells, with the exception of well BH112 which remained dry due to stiff mass of silt and sand deposits on the bottom of the well that could not be removed.

With the exception of BH9 where fast drawdown and slow recharge of groundwater was noted, all monitoring wells displayed slow drawdown and fast recharge. This, along with the amount of water available, suggested that the monitoring network was adequate to collect a good quality sample set from the saturated zone of the superficial deposits.

The groundwater was left to equilibrate for a period of three days following the successful desilting and development the twelve existing wells and development of the new well (BH201A). AECOM then returned to the Site to install water level loggers in three monitoring wells (BH201A, BH4 and BH10). The loggers were left in the wells for 2.5 days (between 28 August and 31 August 2015) to measure potential tidal influences on groundwater elevation.

Level loggers were installed at the following locations:

- BH4: At the northern boundary of the West Site and approximately 65m from the River Thames;
- BH10: In the central portion of the West Site and approximately 200m from the River Thames); and
- BH201A: On the northern boundary of the East Site and approximately 20m from the River Thames.

These locations were selected to evaluate the tidal influence at variable distance from the River Thames and to provide good spatial representation across the Site. A barologger was installed in monitoring well BH2 for the entire period of tidal monitoring to enable data corrections to account for variations in barometric pressure. Graphs showing groundwater



elevation versus time for each of the tidal monitoring locations are presented in the **Graphs Section**.

3.8 Groundwater Sampling

Groundwater monitoring and sampling was completed by an AECOM site engineer on 1st and 2nd September 2015 and six days following the well de-silting and development. Prior to purging and sampling, the groundwater levels and volumes of groundwater within the monitoring wells were established using an air/oil/water interface probe. Monitoring wells were purged of at least three well volumes or until groundwater parameters (pH, temperature, electrical conductivity, reduction-oxidation (redox) potential and dissolved oxygen content) had stabilised across at least three consecutive readings taken at intervals during purging. Purging and sampling was carried out using a dedicated low-flow sampling peristaltic pump and flow cell in order to provide accurate parameter measurements and to minimise groundwater agitation.

3.9 Environmental Laboratory Analysis

The soil and groundwater samples were shipped to ALcontrol Laboratories for chemical analysis. The analytical schedule of tests is included as **Table 3.9a** and **3.9b** and with details for each sample included in **Tables 1** and **2** appended to this report. The results of the laboratory analysis included on appended **Tables 3** and **4** attached with this report.

Table 3.9: Laboratory Soil Chemical Analysis			
Analysis Suite	Made Ground	Superficial Deposits	
Metals in solid samples	23	14	
Hexavalent Chromium	23	14	
РАН	23	14	
TPH CWG	23	14	
VOC MS	23	14	
EPH CWG (Aliphatic)	23	14	
EPH CWG (Aromatic)	23	14	
GRO	23	14	
рН	23	14	
Total Organic Carbon	23	14	
Total Sulphate	23	14	
Easily Liberated Sulphide	22	14	
Ammoniacal Nitrogen	22	14	
Asbestos ID	21	3	
Asbestos Quantification	10	1	



Table 3.9: Laboratory Soil Chemical Analysis				
Analysis Suite Made Ground Superficial Deposits				
PCB 7 & WHO 12 (S) by GC MS	1	0		

Metals suite (Arsenic, Boron, Cadmium, Chromium (III+VI), Copper, Lead, Mercury, Nickel, Selenium, Zinc).

EPH - Extractable Petroleum Hydrocarbons including aliphatic & aromatic carbon banded speciation.

VOC - Volatile Organic Compounds

PAH - Polycyclic Aromatic Hydrocarbons (PAHs).

PCB - Polychlorinated Biphenyls.

Asbestos (visual identification and quantification)

Table 3.9b: Laboratory Groundwater Chemical Analysis				
Analysis Suite	Number of Samples			
COD, unfiltered	14			
Ammoniacal Nitrogen as N	14			
Ammoniacal Nitrogen as NH4	14			
Nitrate as NO3	14			
Phosphate as PO4	14			
Sulphate	14			
Metals (suite of nine dissolved metals)	14			
SVOC (W) by GC MS	13			
VOC (W) by GC MS	14			
pH Value	14			
TPH CWG (W) by GC FID	14			
TPH Total (Includes EPH Total and GRO Total)	14			

The laboratory soil and groundwater certificates are included as Appendices C.

3.10 Screening Criteria

Analytical soil and groundwater data reported as part of this Environmental Assessment report have been evaluated by comparison against generic assessment criteria (GAC). The selected GAC are based on the receptor assumptions associated with the proposed site use and



underlying ground conditions. These include the health of site occupants and controlled waters, which has been evaluated against a number of different end use scenarios:

- Residential with gardens,
- Residential without gardens; and
- Commercial

The main controlled water receptor is the River Thames, located immediately north of the East Site. Groundwater concentrations have therefore been compared to marine Environment Quality Standards (EQS) as a preference. Although not considered a suitable viable resource, given the limited thickness of the saturated aquifer, the groundwater in the River Terrace Gravel Formation has been compared to England Drinking Water Standards (EDWS).

GAC have been selected or derived by AECOM in accordance with the most recent UK regulatory guidance. For human health receptors, this comprises the EA's Contaminated Land Exposure Assessment (CLEA) methodology, most recently updated in January 2009. For controlled waters receptors, the prevailing technical guidance is the EA's Remedial Targets Methodology. Where criteria are unavailable based on these UK sources, they have been selected from reputable international and national agencies external to the UK. Such external sources have no Regulatory authority in the UK; however, since they are derived using risk-based techniques, they may be acceptable in the absence of UK guidelines.

In summary, analytical data have been screened against the criteria shown in **Table 3.10** and in order of preference.

Table 3.10: Summary of Adopted GAC			
Human Health	Controlled Water		
Defra C4SL 12/2014	Water Supply (Water Quality) Regulations 2010		
AECOM (modified LQM/CIEH S4ULs)	Drinking Water Standards (UK, 2010)		
AECOM (modified EIC)	Resource Protection Values (Scottish Environmental Protection Agency, 2013)		
USEPA RSL	World Health Organisation (WHO) Drinking Water Guidelines (DWG) 2011		
Dutch Serious 2009	PNEC (EU REACH) - Coastal		
Dutch Intervention 2009	Groundwater Target Values (Water Framework Directive 2010 (England & Wales))		
	PNEC (EU REACH) - Coastal		
	New Hampshire DES (2009)		
	California Draft health protective concentration		
	USEPA RSL (tapwater)		



4. SITE INVESTIGATION FINDINGS

4.1 Ground Conditions

The stratigraphy beneath the Site has been characterised in the 2003 CRA Baseline Soil and Groundwater Investigation and the previous Dames & Moore 1995 Ground Investigation. The geology encountered during the historical site investigations included a deepening sequence of Made Ground, Superficial Deposits and London Clay.

Table 4.1a summarises the stratigraphy encountered during the September 2015 investigation. **Table 4.1b** summarises the stratigraphy reported in the 2003 CRA Baseline Soil and Groundwater Investigation Report. Borehole logs of the September 2015 investigation are presented in **Appendix B** and borehole logs from the previous investigations are included in the Phase 1 ESA (**Reference 1 Section 8**).

Table 4.1a: Summary of Ground Conditions Encountered during the AECOM, September 2015 Investigation					
	Depth to Bottom of Strata (m bgl)				
Exploratory Hole	Made Ground	Alluvium/ Superficial Deposits	London Clay	Installation Strata	Date Completed
BH2A	1.1	3.5*	-	None	25 August 2015
ВНЗА	1.5	3.0*	-	None	28 August 2015
BH4A	1.3	4*	-	None	27 August 2015
BH5A	1.8	3.0*	-	None	28 August 2015
BH7A/7B	1.2	3*	-	None	27 August 2015
BH8A	2.2	3.5*	-	None	26 August 2015
BH9A	3.3*	-	-	None	26 August 2015
BH109A	1.2	3.5*	-	None	28 August 2015
BH201/201A	1.9	5.1	6.0*	Superficial	24-25 August 2015
BH202 / BH202A	1.8*	-	-	None	24 August 2015
BH203 / BH203A	No recovery	No recovery	5*	None	20 August 2015
BH204	1.2	3.5*	-	None	21 August 2015
BH205	2.5	3.0*	-	None	21 August 2015
BH206	1.8*	-	-	None	21 August 2015
BH207	2.6	3.5*	-	None	25 August 2015
BH208 / BH208A	1.0	3.5*	-	None	25 August 2015
BH209	2.70	3.4*	-	None	25 August 2015
BH210	2.10	3.5*	-	None	26 August 2015
BH211	2.10	3.5*	-	None	26 August 2015
BH212	1.7	3.5*	-	None	27 August 2015



Table 4.1a: Summary of Ground Conditions Encountered during the AECOM, September 2015 Investigation						
	Depth to	Bottom of Strata	a (m bgl)			
Exploratory Hole	Made Ground	Alluvium/ Superficial Deposits	London Clay	Installation Strata	Date Completed	
BH213	1.6	3.0*	-	None	27 August 2015	
BH214 / BH214A	2.6*	-	-	None	25 August 2015	

*Denotes full thickness of strata not penetrated.

Strata not encountered.

The ground conditions encountered included:

- **Made Ground**: Where full penetrated, the thickness of Made Ground measured in the AECOM soil bores ranged between 1.2m and 2.6m.
- An extended thickness of made ground were measured at four locations where full penetration of Made Ground was not possible due to the presence of buried obstructions. These positions included BH9A, BH202/ BH202A, BH206 and BH214/214A. The obstructions ranged in depth from 1.8m to 3.3m bgl.
- Buried hardstandings, which were penetrated, were encountered at:
 - o BH201: Concrete slab of unknown thickness at 0.7m bgl;
 - o BH202: Concrete slab of unknown thickness at 0.8m bgl;
 - o BH202A: Concrete slab of unknown thickness at 1.8m bgl;
 - BH203: A 0.1m thick concrete slab between 0.9m and 1.0m followed by another concrete slab of unknown thickness at 3.0m bgl;
 - BH203A: A 0.1m thick concrete slab between 0.9m and 1.0m followed by another 0.1m thick concrete slab between 3.5m and 3.6m;
 - o BH206: Concrete slab of unknown thickness at 1.8m bgl;
 - o BH208: Concrete slab of unknown thickness at 0.8m bgl;
 - BH214: Concrete slab of unknown thickness at 2.6m bgl;
 - o BH214A: Concrete slab of unknown thickness at 2.0m bgl;
 - o BH7B: Concrete slab of unknown thickness at 0.6m bgl; and
 - o BH9A: Concrete slab of unknown thickness at 3.3m bgl.
- A layer of surface concrete / tarmac hardstanding was encountered at all locations with the exception of BH4A and BH5A AECOM soil bore locations (Note: two attempts at drilling were undertaken at six positions: BH7A/B, BH201/A, BH202/A, BH203/A, BH208/A and BH214/A). The underlying Made Ground generally comprised loose roadstone, red/yellow brick and concrete gravels, sand and gravels of flint and occasional reworked clay.



- **Superficial Deposits**: Generally comprising clayey, silty sand with varying gravel content with areas of soft, brown, sandy clay. The full thickness (3.2m) of the superficial deposits was proven in one AECOM 2015 botehole (BH201A) and the base of this stratum measured at 5.1m bgl.
- London Clay: Grey to brown clay. The top of the London Clay was encountered at 5.1m in one AECOM borehole (BH201A).

	Depth to Bottom of Strata (m bgl)				
Exploratory Hole	Made Ground	Alluvium/ Superficial Deposits	London Clay	Installation Strata	Date Completed
BH2	0.25	6.6	6.8*	Superficial	09 October 2003
BH3	0.3	6.5	6.6*	Superficial	05 October 2003
BH4	0.2	6.6	6.7*	Superficial	06 October 2003
BH5	0.5	6.9	7.0*	Superficial	05 October 2003
BH7	0.6	6.6	6.7*	Superficial	06 October 2003
BH8	0.4	7.2*	-	Superficial	06 October 2003
BH9	2.2*	-	-	Made Ground	06 October 2003
BH10	0.35	6.9	7.0*	Superficial	06 October 2003

BH100.356.97.0*Superficial06 October 200It is noted that the Made Ground encountered during the August 2015 investigation is
thicker than that reported in the 2003 baseline investigation. During the 2015
investigation works, soil cores were collected in plastic liners which allow an accurate
logging of the soil. During the 2003 baseline investigation a rotary auger drilling
technique was used to extract soils to the ground surface on the auger flights. This
method is a less accurate sampling and logging methodology. The thicknesses of Made
Ground reported in the 2015 investigation are therefore considered to be more

The base of the superficial deposits were encountered in six baseline investigation locations (2003) and to depths between 6.5m and 6.9m (with the exception of BH8, where the base of the superficial deposit was not fully penetrated by 7.2m bgl; the full depth of this borehole).

The top of the London Clay was encountered at depths between and 6.5 and 6.9m bgl at six baseline investigation locations and to a maximum depth of 7.0m bgl. The full thickness of London Clay was not proven during the investigations.

4.2 Field Observations

accurate.

Visual and olfactory observations of note were made at the following borehole locations:

- Contractor Storage area, north portion of the West Site:
- BH4A, Possible asbestos fragments were noted in the Made Ground between ground level and 1.3m bgl.
- The Waste Storage area located in the west of the West Site:

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 BH8A, Black ash was noted in the Made Ground between 0.4m and 0.8m bgl with PID readings of 2.1 parts per million (ppm) at 0.5m bgl and <0.1ppm at 1.0m bgl.

During groundwater purging and sampling no measurable free phase product was identified. In addition, no oily sheen or staining was observed and no hydrocarbon odours detected. The following visual and olfactory observations of note were made at BH9:

PID measurements of ionisable hydrocarbons were taken from soils at regular intervals during drilling. In total, 113 soil headspace measurements were undertaken. In 112 of the 113 measurements the result was less than the limit of detection of the PID (<0.1 parts per million (ppm)). One headspace measurement of 2.1ppm was measured from soil sampled from BH8A (0.5m bgl).

4.3 Hydrogeology

Groundwater Elevations

During drilling, water strikes were encountered at two of the nine locations at depths of 2.2m bgl (3.70m Above Ordnance Datum (AOD)) in BH9A and 3.7m bgl (2.27m AOD) in BH201A.

Groundwater elevation measurements from the thirteen wells located on the Site was undertaken on 28th August 2015 between 12.25pm and 13.10pm to reliably estimate the groundwater flow direction and to minimise the potential influence of the River Thames tidal effect. **Table 3** indicates groundwater level measurement data.

A static perched water level was measured at 1.75m bgl (4.025m AOD) at BH9.

Static groundwater levels within the superficial deposits were measured between 3.586m bgl in BH201A (5.575m AOD) and 5.14m bgl (6.49m AOD) at BH3.

The groundwater elevation trend from five groundwater monitoring rounds completed between 2003 and 2015 is included as appended **Graph 1**. The graph indicates that groundwater elevations are relatively consistent during the five monitoring rounds.

Groundwater Flow Direction

Inferred groundwater flow contours for the superficial aquifer beneath the site, based on the results of this 2015 monitoring round, are presented as **Figure 4**. The elevated groundwater levels in BH9 have been omitted from the groundwater contour evaluation as this installation is indicative of perched water in the Made Ground.

The 2015 monitoring results indicate the inferred groundwater flow direction to be to the west.

Tidal Effects on Groundwater Elevation

Following the groundwater elevation monitoring, three pressure transducers were installed in monitoring wells BH4, BH10 and BH201A to continuously measure groundwater elevations within the superficial deposits for a period of approximately 2.5 days and assess the tidal influence of the River Thames on the groundwater levels beneath the Site. The results are included on Graphs xxx to xxx appended to this report.

The assessment of the transducers data indicates that only the groundwater levels of the northern boundary of the East Site, represented by BH201A, is moderately affected by the tidal influence of the River Thames with daily fluctuations ranging from



approximately 40 to 60mm with a peak of approximately 120mm during the early hours of the 31st of August possibly due to rainfall. This monitoring well is located approximately 20m from the southern bank of the River Thames.

In the monitoring well BH4 located approximately 65m from the southern bank of the River Thames along the northern boundary of the West Site, the tidal effect appears to be time lagged from BH201A due to the distance from the river but not significant. The groundwater level fluctuations in this area are comparable to those detected 150m further south within the central portion of the site represented by BH10.

It is noted that from the visual inspection of the River Thames in proximity of the site, the banks are constructed with concrete and stone blocks.

5. LABORATORY QA/QC

5.1 Quality Control

The majority of laboratory analytical techniques undertaken are certified by the United Kingdom Accreditation Service (UKAS). The range of accredited analyses offered by the selected sub-contract laboratory (ALcontrol) is considered to be as comprehensive as is available from commercial laboratories in the UK. UKAS and the Environment Agency's Monitoring Certification Scheme (MCERTS) status for all analyses undertaken is shown on the laboratory certificates presented in **Appendix C**.

5.2 Duplicate Analysis

One duplicate groundwater sample was collected during the September 2015 sampling event from BH4 and labelled DUP01. The duplicate was tested for the same analytical suite as the primary sample and for QA/QC purposes.

The evaluation of the duplicate samples is based on the Relative Percent Difference (RPD), which is defined as:

 $\mathsf{RPD} = 100 \text{ x } (|X1 - X2|/(X1 + X2))$

where X1 and X2 are the values of the concentration obtained for an analyte X in the duplicate sample, and |X1-X2| is the absolute difference of X1 and X2.

Relative percentage differences (RPDs) have been calculated for chemical concentrations recorded above the method detection limits between a primary sample from BH4 and a duplicate sample (DUP01). The 'limits' of $\pm 25\%$ for inorganic analysis and $\pm 100\%$ for organic analyses are based on AECOM's experience from a large number of projects and should be viewed as a guideline for the expected RPD values in a water matrix. These guideline limits should be used with caution with laboratory results within ten-times the laboratory method detection limit (MDL). The RPD assessment is presented in **Table 11**.

- Elevated RPDs for inorganics were observed for copper (40%) and selenium (43%) above the guideline value of 25% for organic parameters. The elevated RPDs for these two parameters are not a significant concern given that the other eight metal parameters were within the acceptable range. In the remainder of the report the higher concentrations from either the primary or duplicate sample from BH4 will be used.
- The calculated RPDs for the remaining inorganics analysis were in the range 0 to 11% which is within the acceptable range.
- RPD assessment for the organics analysis was not possible given the results were below the analytical method detection limits.

5.3 Conclusion

The laboratory analytical results are considered suitable for review based on the sampling methodologies described in **Section 3.8**, the laboratory accreditation and the results of the RPD assessment.

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6. GENERIC QUANTITATIVE RISK ASSESSMENT

6.1 Stage 2 Generic Assessment

Given that the final development scheme is not yet finalized, AECOM have elected screening criteria based on three possible end uses: residential without gardens, residential with gardens and commercial.

The most sensitive controlled waters receptor is considered to be the River Thames, which flows along the northern site boundary in a west to east direction and the Secondary A Aquifer within the underlying River Terrace Deposits. Further details of the selected generic assessment criteria (GAC) are given in **Section 3.10**.

6.2 Soil

6.2.1 Heavy Metals

A total of 37 soil samples were analysed for a suite of eleven metals. The results are included in appended **Table 4**. A summary of the GAC exceedances is presented in the following Table and discussed below.

			GAC (mg/kg)		Range in	Number o	f GAC Excee	dences	Location
Analyte	Number of detects	Human Health - Res. Without Gardens	Human Health - Res. With Gardens	Human Health - Commerc.	Detected Conc. (mg/kg)	Human Health - Res. Without Gardens	Human Health - Res. With Gardens	Human Health - Commerc.	with Maximum Conc.
Arsenic	37	40	37	640	9.55 to 94	1	1	0	BH7A; 0.7m
Lead	37	310	200	2300	5.73 to 2,910	2	6	1	BH213, 0.6m

The concentrations of cadmium, chromium (III+VI), copper, mercury, nickel, selenium, zinc and hexavalent chromium were measured at concentration below the GAC for the three land use scenarios and are therefore not considered to represent an unacceptable risk to human health.

The detected concentrations of arsenic in the 37 samples tested ranged between 9.55mg/kg and 94mg/kg. None of these concentrations exceeded the human health GAC for a commercial end use. The measured concentration from BH7A (94mg/kg; 0.7m bgl) exceeded the GACs for both residential with and without gardens scenarios. The average arsenic concentration from the 37 samples is 19mg/kg and well below the GAC for the possible end use scenarios. Arsenic is therefore not considered to represent an unacceptable risk to human health regardless of the end use.

The detected concentrations of lead in the 37 samples tested ranged between 5.73mg/kg and 2,910mg/kg. The measured concentration from BH213 (2,910mg/kg; 0.6m bgl) exceeded the GACs for commercial use. The measured concentrations from BH208 at 0.8m, BH212 at 0.6m bgl, and BH4A at 0.9m bgl exceeded the GAC for residential with gardens and the samples from BH213 at 0.6m bgl and BH7A at 0.7m bgl exceeded the GAC for residential without gardens. The average lead concentration from the 37 samples is 156mg/kg and well below the GAC for the three possible end use scenarios.



6.2.2 Total Petroleum Hydrocarbons, BTEX and MTBE

A total of 37 soil samples were analysed for total petroleum hydrocarbons (TPH), BTEX and MTBE. TPH data were reported with a carbon banded aliphatic/aromatic split to enable risk assessment following the Criteria Working Group (CWG) methodology. The results are included in appended **Table 5**.

No TPH, BTEX and MTBE were detected at concentrations in excess of human health GAC for the three end use scenarios in in the 37 soil samples from the Site.

6.2.3 Poly-cyclic Aromatic Hydrocarbons

A total of 37 soil samples were analysed for the presence of poly-cyclic aromatic hydrocarbons (PAHs). The results are included in appended **Table 5**.

The suite of PAH tests included twenty-one parameters. The PAH detections in the remaining thirty-seven samples were below the GAC for all proposed end uses with the exception of coal tar.

The detected concentrations of coal tar in the 37 samples tested ranged between <0.015mg/kg and 1.47mg/kg. None of these concentrations exceeded the human health GAC for a commercial end use.

The measured concentration from BH4A (1.47mg/kg; 0.9m bgl) exceeded the GACs for both residential with and without gardens scenarios. In addition, the concentration from two further samples from BH212 (1.05mg/kg; 0.6m) and BH7A (1.05mg/kg; 0.7m bgl) exceeded the GAC for residential without gardens end use. The average coal tar concentration from the 37 samples is 0.24mg/kg and well below the GAC for the possible end use scenarios. Coal tar is therefore not measured at unacceptable concentration widespread across the site and is not considered to represent an unacceptable risk to human health regardless of the end use.

6.2.4 Volatile Organic Compounds

A total of 37 soil samples were analysed for a suite of sixty-four volatile organic compounds (VOCs) parameters. The results are included in appended **Table 6**. No VOCs were detected at concentrations in excess of the MDL in the 37 soil samples analysed for these compounds.

It is noted that the MDLs for chloromethane, vinyl chloride, trichloroethene, 1,2dichloroethane, 1,2,3-trichloropropane and 1,2-dibromo-3-chloropropane exceed GACs for human health in a residential scenario. Given that VOCs have not been measured at concentration below the MDL in the 37 samples, it is considered unlikely that these parameters represent an unacceptable risk or environmental concern.

6.2.5 Polychlorinated biphenyl (PCB)

One soil sample was analysed for the presence of a suite of Poly-Chlorinated Biphenyls (PCBs). The results are included in appended **Table 5**. No PCB compounds were detected at concentrations in excess of the MDL in the sample analysed for these compounds.

The laboratory MDLs for pentachlorobiphenyl, 3,3,4,4,5- (PCB 126) and hexachlorobiphenyl, 3,3,4,4,5,5- (PCB 169) exceed the associate human health residential GACs. Given that none of the PCB congeners in the suite of parameters have been measured at concentration above the MDL in this sample, it is considered



unlikely that these parameters represent an unacceptable risk or environmental concern.

6.2.6 Asbestos

A total of twenty-six samples of Made Ground were visually assessed at the laboratory for the presence of ACMs. The results are included in appended **Table 5**. Asbestos was visually identified (by microscope) in eight samples, including:

- BH2A (0.5m to 1.0m bgl): Amosite trace detected (loose fibres in soil);
- BH4A (0.9m bgl): Amosite and Chrysotile detected (loose fibres in soil);
- BH201A (0.7m bgl): Amosite detected;
- BH203A (0.5m bgl): Soil containing loose fibres and debris of asbestos bitumen;
- BH207 (0.7m bgl): Chrysotile detected (loose fibres in soil);
- BH208 (0.8m bgl): Chrysotile detected (loose fibres in soil);
- BH209 (0.5m bgl): Chrysotile detected (loose fibres in soil); and
- BH210 (0.8m bgl): Amosite detected.

Further quantification testing was undertaken in the laboratory on the eight samples. This quantification test indicates that the visually identified ACMs were below the hazardous waste threshold limit of <0.1% volume in the samples.

During the intrusive works, possible asbestos fragments were noted in the Made Ground of location BH4A between ground level and 1.3m bgl. There is no prescribed human health value for asbestos concentrations in soils in the UK. The system for evaluation is site-specific and dependent on site use and receptor. It is usually preferred that soils containing asbestos remain sealed in the ground and future disturbance controlled by code of construction practices.

Overall we consider that asbestos in soils is not presently an unacceptable risk for future residential and or commercial site use given the relatively low volumes measured in the samples. Future below ground works should consider the potential for asbestos to be present in Made Ground and appropriate standard construction controls adopted.

6.2.7 Miscellaneous Inorganic Compounds

A total of 37 soil samples were analysed for the presence of sulphide, sulphate, ammoniacal nitrogen as NH4 and pH. The results are included in appended **Table 4**.

None of these parameters were measured at concentrations that exceed the human health GAC for the three end use scenarios.

6.3 Groundwater

Groundwater analytical data from the 2015 sampling round are presented in **Tables 7** to **10** alongside the GAC used for generic risk assessment screening purposes.

The GAC used for protection of controlled waters in this assessment have been selected as England and Wales Environmental Quality Standards (EQSs) appropriate for protection of the River Thames. Where EQSs are not available drinking water standards (DWSs) from the UK or World Health Organisation have been selected.

Exceedances of GAC are summarised below.



6.3.1 Metals

A total of fourteen groundwater samples were analysed for metals. The results are included in appended **Table 7**. A summary of the results is in the following Table and discussed below.

Apoluto	Number of	_	AC g/l)	Range in Detected Concentrations	Average		r of GAC edences	Location with Maximum
Analyte	detections	Controlled Waters DWS	Controlled Waters EQS	(μg/l)	concentration	Controlled Waters DWS	Controlled Waters EQS	Concentration
Arsenic	14	10	25	3.79 - 45.4	17	8	3	BH7
Cadmium	14	5	0.2	<0.1 - 0.228	0.063	0	1	BH9
Chromium (III+VI)	14	50	0.6	1.21 - 7.52	3.1	0	14	BH9
Cobalt	14	6	3	0.262 - 11.8	3.6	3	6	BH201A
Copper	13	2000	5	0.939 - 61.3	5.5	0	1	BH9
Lead	12	25	7.2	0.028 - 22.8	1.7		1	BH9
Manganese	14	50		7.19 - 2270	691	11	0	BH111
Selenium	14	10		0.781 – 13.2	4.1	1	0	BH110
Silver	0	94	0.5	<1.5	<1.5	0	13	Not detected
Thallium	0	0.2		<0.96	<0.96	13	0	Not detected
Zinc	14	6000	40	1.27 - 280	30	0	1	BH9

The groundwater sampled from BH9 is from perched water within Made Ground and is therefore not representative of the groundwater in the underlying superficial aquifer. A total of seven of the eighteen metals exceeded the EQS and three metals exceeded the DWS in the groundwater sample from BH9. The concentrations from BH9 are omitted from the discussion below.

The concentrations of silver and thallium were below the laboratory MDL in the fourteen samples tested. However, the laboratory MDL is marginally higher than the applicable EQS and DWS.

The concentrations of cadmium, chromium, copper, lead, silver and zinc were below the drinking water standards in the fourteen samples tested. Furthermore, the concentration of manganese, selenium and thallium were below the EQS in the fourteen samples tested.

The measured concentrations of arsenic exceeded the EQS in three samples and the DWS in eight samples of the fourteen samples tested. The average concentration from the fourteen samples is $17\mu g/l$ and exceeds the DWS, but is below the EQS.

The measured concentrations of cadmium exceeded the EQS in one (BH9 (0.228 μ g/l) of the fourteen samples tested. The average cadmium concentration from the fourteen samples is 0.063 μ g/l and is below the EQS. None of the measured concentrations of cadmium exceed the DWS.



The measured concentrations of chromium (III & VI) exceeded the EQS in the fourteen samples tested, but did not exceed the DWS. The EQS GAC considers that the chromium detected is the more toxic chromium VI. However, the results of the analysis of soils have not detected chromium IV above the laboratory MDL in the 37 soils tested. The chromium detected in groundwater is therefore likely to be the less toxic chromium III. The application of the EQS is therefore over-conservative. In addition, the chromium concentrations are below the DWS.

The measured concentrations of cobalt exceeded the EQS in six (BH109, BH110, BH201A, BH5, BH7, BH9) of the fourteen samples tested. The measured concentrations of cobalt also exceeded the DWS in three (BH109, BH201A and BH9) of the fourteen samples tested. The average cobalt concentration from the fourteen samples is $3.6\mu g/l$ and is below the DWS ($6\mu g/l$) but exceeds the EQS ($3\mu g/l$).

EQS are not available for selenium and therefore the DWS have been adopted. The detected concentration of selenium exceeded the DWS in the groundwater sample collected from BH110. The average selenium concentration $(4.1\mu g/l)$ is below the DWS $(10\mu g/l)$.

The measured concentrations of manganese exceeded the DWS in eleven of the fourteen samples tested. The average concentration from the fourteen samples is $691\mu g/l$ and exceeds the DWS ($50 \mu g/l$).

The measured concentration of metals exceeded the DWS and EQS in groundwater from across the site. However, the measured concentrations are variable and in many cases are within one order of magnitude of the screening criteria. AECOM considers the metal concentrations detected to be representative of the quality of urban groundwater in a shallow perched aquifer.

The sensitivity of this aquifer is further reduced given that the aquifer does not represent a significant resource and is not within a source protection zone for an abstraction for potable use. In addition, the selected DWS GAC are applicable for groundwater at the consumers tap and after the necessary treatment for human consumption and the EQS are applicable for the quality at the receiving water. The use of these GAC is therefore considered conservative in this application.

6.3.2 Total Petroleum Hydrocarbons, BTEX and MTBE

A total of fourteen groundwater samples were analysed for TPH, BTEX and MTBE. The results are included in appended **Table 8**.

TPH was not measured above the laboratory MDL in eleven of fourteen samples tested. TPH was measured in samples from three monitoring wells (BH9, BH109 and BH111) at total TPH concentrations between 65.8µg/l and 1,430µg/l. DWS or EQS are not available for these compounds.

BTEX and MTBE concentrations were below the laboratory MDL in the fourteen samples tested and below the corresponding EQS and DWS.

6.3.3 Polycyclic Aromatic Hydrocarbons

A total of fourteen groundwater samples were analysed for a suite of 16 PAH compounds. The results are included in appended **Table 9** and summarized in the Table below.

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	Number of		AC g/l)	Range in Detected	Number Exceed		Location with
Analyte			Controlle d Waters EQS	Concentrations	Controlled Waters DWS	Controlled Waters EQS	Maximum Concentration
Anthracene	0	90	0.1	<1		13	All below MDL
Fluoranthene	1	4	0.1	<1 – 6.12		13	BH9
Benz(a)anthracene	0	0.1		<1	13		All below MDL
Chrysene	0	1		<1	2		BH9
Benzo(a) pyrene	1	0.01	0.05	<1 – 4.69	13	13	BH9
Dibenz(a,h)anthracene	0	0.01		<1	13		BH9
Benzo(b)&(k)fluoranthene	1		0.03	<2 - 8.42		13	BH9
PAHs (sum of 4)	1	0.1		<4 - 14.47	13		BH9
benzo(g,h,i)perylene + indeno(1,2,3-cd)pyrene	1		0.002	<2 - 6.05		13	BH9

The concentrations of PAHs in thirteen groundwater samples from the superficial River Gravels were below the laboratory MDL (<1 to <4 μ g/l).

The MDL for six PAHs are above the EQS and four PAHs above the EQS. However, the lack of PAH detections above MDL indicate that this is not a significant concern.

One groundwater sample was from groundwater perched above a concrete slab and within the Made Ground at BH9. The concentrations of fluoranthene, benzo(a)pyrene, benzo(b)&(k)fluoranthene, PAHs (sum of 4) and benzo(g,h,i)perylene + indeno(1,2,3-cd)pyrene exceed the relevant EQS and/or DWS in groundwater sampled from location BH9. These exceedances are not considered a significant concern as the detected concentrations are representative of the perched water quality and none of these parameters are measured above the GAC in groundwater from the superficial River Gravels.

6.3.4 Volatile Organic Compounds and Semi-volatile Organic Compounds

A total of fourteen groundwater samples were analysed for a suite of sixty-five VOC and thirteen samples were analysed for a suite of sixty SVOC parameters. The results are included in appended **Table 10**.

VOCs have not been identified in excess of the MDL in ten of the fourteen samples tested. Chlorobenzene was measured in samples from four monitoring wells (BH111, BH201A, BH7 and BH9). These results are below the DWS ($300 \mu g/l$).

SVOCs have not been identified in excess of the MDL in ten of the fourteen samples tested. 1,1,1-trichloroethane, trihalomethanes, 4-methylphenol and carbon disulfide were measured in samples from three monitoring wells (BH4, BH9 and BH111). These results are below the available EQS and DWS.



The concentration of phenol in groundwater from BH9 (10.7µg/l) exceeded the EQS (7.7µg/l), but not the DWS (5,800µg/l).

The laboratory MDL for 24 VOC & SVOC parameters exceeded the relevant EQS and/or DWS. Given the lack of detections of VOC and SVOC parameters in groundwater, this is not considered to be a significant concern.

6.3.5 Miscellaneous Inorganic Compounds

The miscellaneous inorganic suite included nitrate (as NO3-), phosphate, ammoniacal nitrogen as N, ammoniacal nitrogen (as NH4), sulphate, COD and pH. The results are included in appended **Table 7**.

The groundwater pH at the Site ranged between 7.10 and 8.09 indicating slightly alkaline groundwater conditions.

Nitrate was not detected above the laboratory MDL (<0.3 mg/l) in two of the fourteen samples tested. The concentration of nitrate in twelve groundwater samples ranged between 0.94 and 21.9mg/l. The nitrate concentrations in these samples do not exceed the DWS (50 mg/l).

Phosphate was not detected above the laboratory MDL (<0.05 mg/l) in two of the fourteen samples tested. The concentration of phosphate in twelve groundwater samples ranged between 0.056 and 14.1mg/l. EQS or DWS are not available for this compound.

Sulphate was not detected above the laboratory MDL (<2 mg/l) in one of the fourteen samples tested. The concentration of sulphate in thirteen groundwater samples ranged between 37.5 and 457mg/l. EQS or DWS are not available for this compound.

Ammoniacal nitrogen was not detected above the laboratory MDL (<0.2 mg/l) in seven of the fourteen samples tested. The concentration of ammoniacal nitrogen in seven groundwater samples ranged between 0.508 and 5.66mg/l. The ammoniacal nitrogen concentration in six of these samples exceeded the DWS (0.389 mg/l). The most elevated concentration of ammoniacal nitrogen was measured in groundwater perched within the Made Ground at BH9. The average ammoniacal nitrogen concentration from groundwater sampled from the superficial River Gravels was 0.67mg/l and marginally exceeds the DWS.

COD was not detected above the laboratory MDL (<7 mg/l) in six of the fourteen samples tested. The concentration of COD in eight groundwater samples ranged between 8.09 and 3,330mg/l. EQS or DWS are not available for this compound.



7. CONCLUSIONS

7.1 General Site Description

This report presents the findings of a Phase 2 ESA at the Stag Brewery Mortlake facility, Mortlake, London, SW14 7ET. The Stag Brewery has been used for the production and packaging of alcoholic beverages since the late 1850s. However, the Stag Brewery will cease manufacturing operations in 2015 and the site is to be divested for redevelopment. The objective of this report is to present an assessment of the environmental ground conditions at the Site.

The site investigation undertaken included the drilling of two boreholes with a groundwater monitoring well installations to supplement the existing network of thirteen groundwater monitoring wells installed during previous phases of investigation. Twenty-eight soil bores were also drilled across the Site to provide a higher density of exploratory points, better understand the ground conditions and collect soil samples for laboratory chemical analysis.

7.2 Site Characterisation Findings

Ground Conditions

The ground conditions at the site were assessed from twenty-eight soil bores were drilled using dynamic percussive drilling techniques to a maximum depth of 5.0m bgl. The drilling work was undertaken between 20 and 28 August 2015. The deepening sequence of geology encountered in the site investigation includes Made Ground, superficial deposits of River Terrace Gravels and London Clay bedrock.

Made Ground is between 1.2m and 2.6m thick and comprised loose roadstone, red/yellow brick and concrete gravels, sand and gravels of flint and occasional reworked clay. Buried obstructions, thought to represent relict concrete slabs, were encountered at eleven locations.

The boundary between the River Terrace Deposits and London Clay was encountered at depths between 6.5 and 6.9m bgl. The London Clay was encountered to the maximum depth of drilling (7.0 bgl).

Hydrogeology

Groundwater elevation monitoring on 28 August 2015 indicated the groundwater to be between 3.57 and 5.14 mbgl. Groundwater flow direction is inferred to be west. The tidal effects of the River Thames were measured in three boreholes across the site by continuous monitoring over 2.5 days. The results indicated a maximum fluctuation of 60mm in a well 20m from the River Thames. However, no measurable effect on groundwater elevation was recorded on the two wells located 65m and 200m from the River Thames.

Soil Quality

No obvious visual or olfactory evidence of hydrocarbon contaminated soils was noted from the drilling arisings. Furthermore, only one result (2.1ppm) out of 113 screening tests performed was above the detection limit (<0.1ppm) of the Photo-Ionisation Detector (PID) equipment during soil headspace monitoring.

A total of 25 samples of Made Ground and 14 samples of natural ground were analysed at Alcontrol Laboratories for a suite of inorganic and organic chemical parameters. The results were compared to generic assessment criteria (GAC) suitable for thee end use scenarios: residential with gardens, residential without gardens and commercial. The comparison



indicated that the soil chemistry does not represent an unacceptable risk to human health regardless of the end use scenario.

Asbestos Containing Materials (ACMs): During the site investigation suspected ACMs were observed as fragmented tiles from one exploratory hole (BH4A between ground level and 1.3m bgl). A total of twenty-six samples of Made Ground were also visually screened at the analytical laboratory and asbestos fibres were observed in eight samples. Asbestos quantification analysis on the eight samples measured a concentration of ACMs <0.1% and below hazardous waste criteria.

Overall we consider that asbestos in soils is not presently an unacceptable risk for future residential and or commercial site use given the relatively low volumes measured in the samples. Future below ground works should consider the potential for asbestos to be present in Made Ground and appropriate standard construction controls adopted.

Groundwater Quality

During groundwater monitoring no obvious visual or olfactory indication of contamination was identified from the sampled groundwater. A total of fourteen groundwater samples were analysed at Alcontrol Laboratories for a suite of inorganic and organic chemical parameters. The results were compared to GAC protective of the adjacent River Thames (marine Environmental Quality Standards) and England Drinking Water Standards. The comparison indicated that the majority of chemical parameters were below the relevant GAC and although some minor exceedances were measured at isolated locations, the groundwater quality is considered commensurate with that in an urban environment.

7.3 Conclusions

The site characterization has not encountered soil and groundwater conditions that represent a constraint to redevelopment of the Site for mixed commercial and residential use above what would normally be expected from previously developed land.

The chemical analysis of the Site soils and groundwater has not identified concentrations that represent an environmental risk to human health or controlled waters. No environmental improvement works are considered necessary at the Site based on a mixed use development scheme.

It is likely that works to remove relict buried foundations and slabs will be required to allow construction of deep structures and foundations. Furthermore, it is unlikely that the physical composition of the existing shallow Made Ground soils will be of suitable composition for use in soft planted areas. Imported soils are therefore likely to be required for soft planting and landscaping.



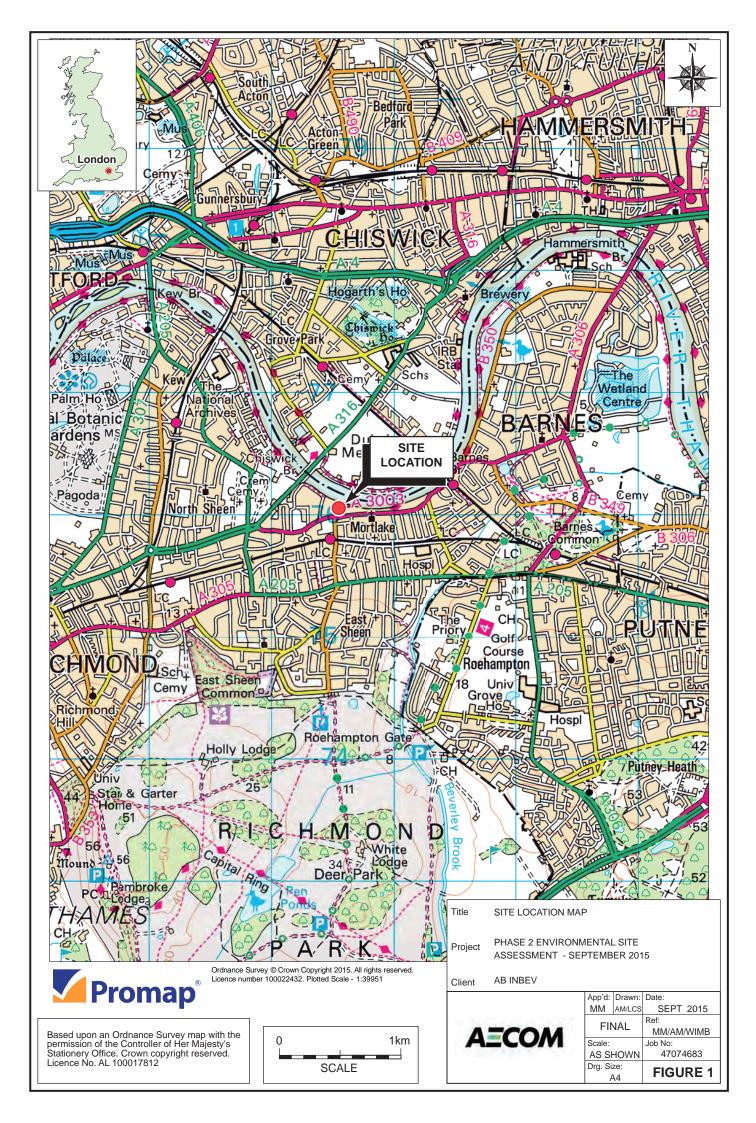
8. **REFERENCES**

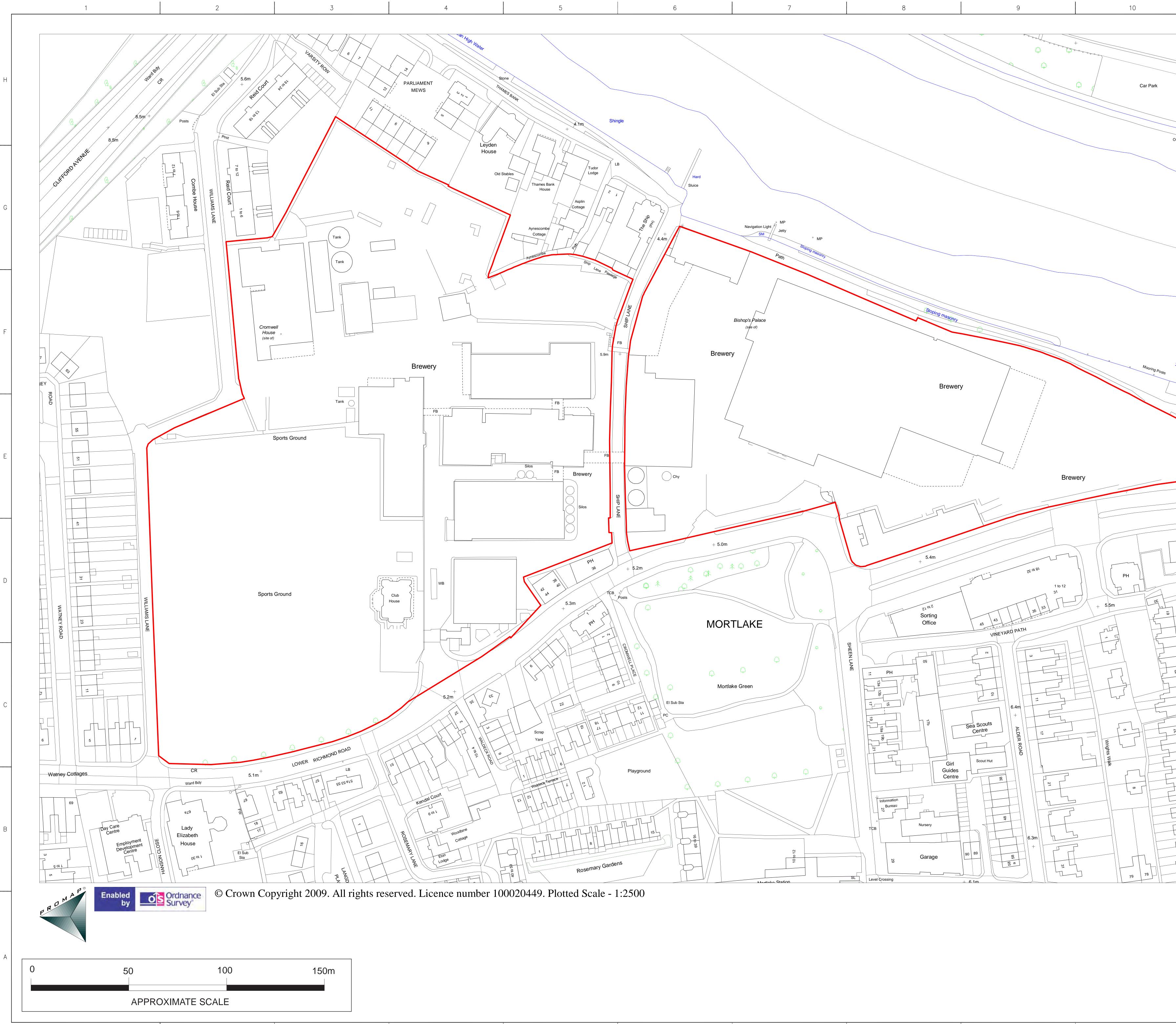
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FIGURES

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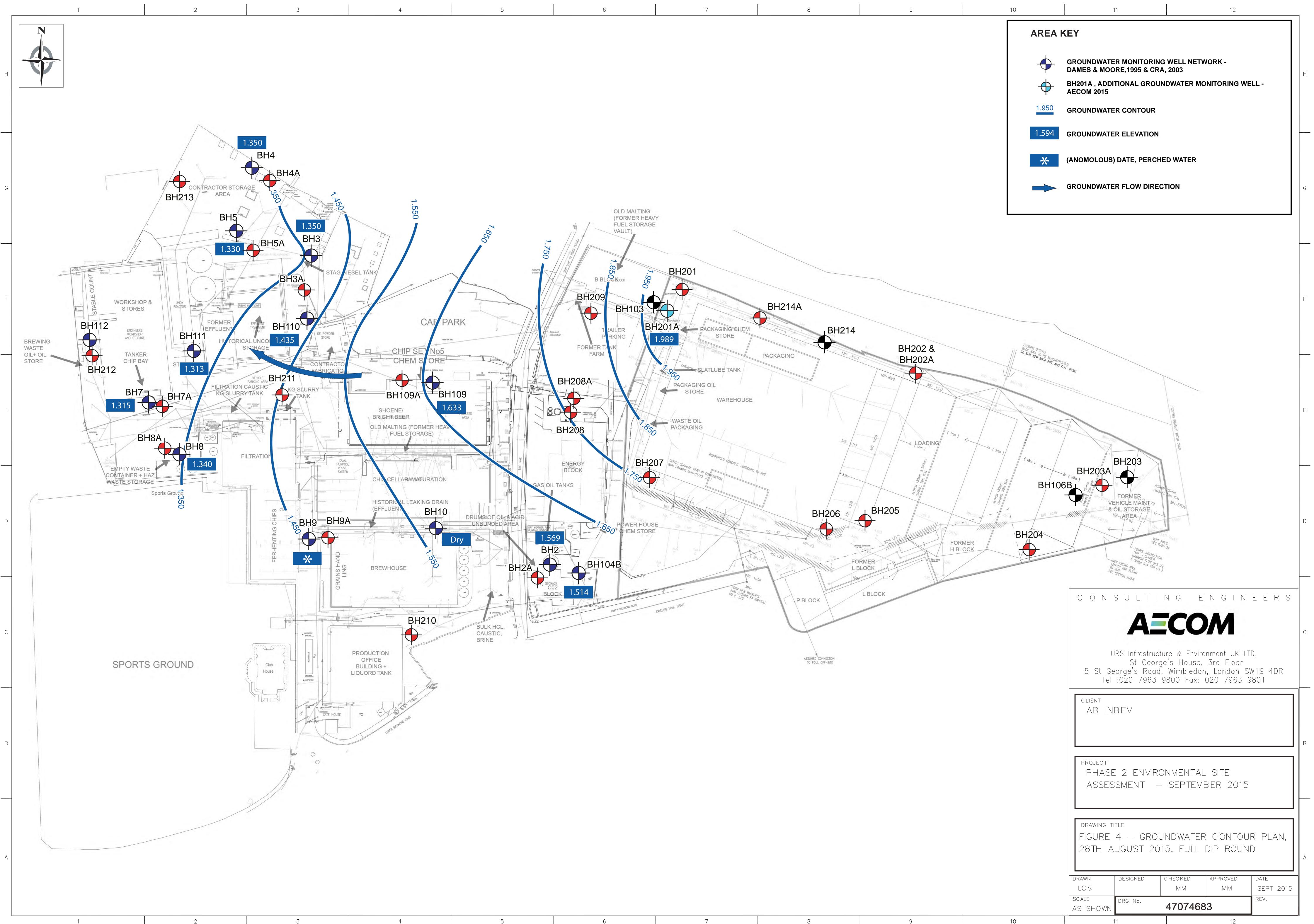




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TABLES

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Table 1 - Soil Sampling Schedule

	Sample ID	BH109A	BH201A	BH201A	BH202A	BH203A	BH204	BH204	BH205	BH205	BH206	BH207	BH207
	Depth	0.8	0.7	1.90 - 2.00	0.8	0.50	1.30	3.3	1.00	2.50	1.1	0.70	2.60 - 3.50
	ampling Date	28/08/2015	25/08/2015	25/08/2015	25/08/2015	20/08/2015	21/08/2015	21/08/2015	21/08/2015	21/08/2015	21/08/2015	25/08/2015	25/08/2015
Samp	le Description	MADE GROUND:	MADE GROUND:	Light brown, dense,	MADE GROUND:	MADE GROUND:	MADE GROUND:	Brown, sandy, fine-	MADE GROUND:	MADE GROUND:	MADE GROUND:	MADE GROUND:	Brown, dense,
		Soft, dark brown,	Brown/red/ yellow,	medium-fine SAND	Brown, gravelly, fine	Very dense, sandy,	Very soft, brown/	medium,		Very dense, brown,	Soft brown sandy	Grey/red, dense,	gravelly SAND.
		sandy, gravelly clay.			coarse sand. Gravel	angular to sub-	red, very sandy	subangular-	sandy, fine-	sandy, fine-	clay. Gravel is fine-	fine to coarse sand	Gravel fine,
		Sand is fine to	sand. Gravel is fine-	rounded flint.	is fine-medium,	angular gravel of	clay. Sand is fine-	subrounded	medium, angular-	medium, angular-	medium, angular-	and gravel of	occasionally
		coarse. Gravel is	coarse, angular-		subangular-	brick, granite and	coarse.	GRAVEL.	subangular gravel	subangular gravel	subangular of brick	concrete and brick.	medium of flint.
		fine to medium,	subangular of brick,		subrounded of	concrete.			of brick, concrete,	of brick, concrete,	and concrete.		Sand is fine to
		angular to	flint and natural		concrete.				flint, glass. Sand is	flint, glass. Sand is			medium.
		subangular of flint,	stone.						fine-coarse.	fine-coarse.			
		crushed concrete											
		and brick.											
Scheduled Chem. Group	Total												
	Analyses												
Metals in solid samples by OES	12	1	1	1	1	1	1	1	1	1	1	1	1
Hexavalent Chromium	12	1	1	1	1	1	1	1	1	1	1	1	1
PAH by GCMS	12	1	1	1	1	1	1	1	1	1	1	1	1
TPH CWG GC	12	1	1	1	1	1	1	1	1	1	1	1	1
VOC MS	12	1	1	1	1	1	1	1	1	1	1	1	1
EPH CWG (Aliphatic) GC	12	1	1	1	1	1	1	1	1	1	1	1	1
EPH CWG (Aromatic) GC	12	1	1	1	1	1	1	1	1	1	1	1	1
GRO by GC-FID	12	1	1	1	1	1	1	1	1	1	1	1	1
pH	12	1	1	1	1	1	1	1	1	1	1	1	1
Total Organic Carbon	12	1	1	1	1	1	1	1	1	1	1	1	1
Total Sulphate	12	1	1	1	1	1	1	1	1	1	1	1	1
Easily Liberated Sulphide	12	1	1	1	1	1	1	1	1	1	1	1	1
Ammonium Soil by Titration	12	1	1	1	1	1	1	1	1	1	1	1	1
Asbestos ID	10		1	1	1	1	1	1	1	1	1	1	
Asbestos Quant	6		1	1	1	1			1			1	
PCB 7 & WHO 12 (S) by GC MS	0												

	Sample ID		BH208A	BH209	BH209	BH210	BH210	BH211	BH211	BH212	BH212	BH213	BH213	BH214
	Depth	0.8	1.1	0.5	2.70 - 3.40	0.8	2.20 - 2.80	0.7	2.2	0.6	1.80 - 2.50	0.6	1.70 - 2.00	0.85
	Sampling Date	25/08/2015	25/08/2015	25/08/2015	25/08/2015	26/08/2015	26/08/2015	26/08/2015	26/08/2015	27/08/2015	27/08/2015	27/08/2015	27/08/2015	25/08/2015
	ample Description		Medium density,	MADE GROUND:	Brown, gravelly, fine	MADE GROUND:	Brown, gravelly, fine	MADE GROUND:	Brown, gravelly, fine	MADE GROUND:	Dense, brown,	MADE GROUND:	Dense, brown,	MADE GROUND:
			brown, gravelly, fine	Brown, grey/ black,	to coarse SAND.	Dense, brown,	to coarse SAND.	Brown, sandy, fine	to coarse SAND.	Pink / red, gravelly,		Brown / grey,	gravelly, fine to	Light brown, dense
		clayey, gravelly, fine	to coarse SAND.	gravelly, fine to	Gravel is fine to	sandy, fine to	Gravel is fine to	to coarse,	Gravel is fine to	fine to coarse sand.	coarse SAND.	slightly clayey,	coarse SAND.	gravelly sand. Sand
		to coarse sand.	Gravel is fine to	coarse sand. Gravel	medium,	coarse, subangular	medium to	subangular to	medium,	Gravel is fine to	Gravel is fine to	sandy, fine to	Gravel is fine to	is medium to
		Gravel fine	medium,	is fine to coarse,	subangular to	to rounded gravel of	subrounded of flint.	rounded gravel of	subangular to	medium of flint with	medium subangular	coarse, angular to	medium, angular to	coarse. Gravel is
		occasionally coarse,	subangular to	angular to	subrounded of flint.	natural stones.	Becoming more	natural stone, wood	rounded of flint.	occasional coarse	to rounded.	subangular gravel	subrounded of flint.	medium to coarse,
		subangular to	subrounded of flint.	subangular of brick	Very little gravel		gravelly with depth.	and occasional		brick and crushed	Becoming more	of brick, concrete,		subangular to
		subrounded of brick		and concrete.	between 3.0 -3.2m.			brick. Becoming		concrete.	gravelly with depth.	tile and plastic.		subrounded of flint
		and flint.						clayey with depth.				Sand is fine to		and concrete.
												coarse.		
Scheduled Chem. Group	Total													
	Analyses													
Metals in solid samples by OES		1	1	1	1	1	1	1	1	1	1	1	1	1
Hexavalent Chromium	13	1	1	1	1	1	1	1	1	1	1	1	1	1
PAH by GCMS	13	1	1	1	1	1	1	1	1	1	1	1	1	1
TPH CWG GC	13	1	1	1	1	1	1	1	1	1	1	1	1	1
VOC MS	13	1	1	1	1	1	1	1	1	1	1	1	1	1
EPH CWG (Aliphatic) GC	13	1	1	1	1	1	1	1	1	1	1	1	1	1
EPH CWG (Aromatic) GC	13	1	1	1	1	1	1	1	1	1	1	1	1	1
GRO by GC-FID	13	1	1	1	1	1	1	1	1	1	1	1	1	1
ъH	13	1	1	1	1	1	1	1	1	1	1	1	1	1
Total Organic Carbon	13	1	1	1	1	1	1	1	1	1	1	1	1	1
Fotal Sulphate	13	1	1	1	1	1	1	1	1	1	1	1	1	1
Easily Liberated Sulphide	13	1	1	1	1	1	1	1	1	1	1	1	1	1
Ammonium Soil by Titration	13	1	1	1	1	1	1	1	1	1	1	1	1	1
Asbestos ID	6	1		1		1		1		1		1		
Asbestos Quant	3	1		1		1								
		1 .					1	1			1			1
PCB 7 & WHO 12 (S) by GC M	S 1	1												

	Sample ID		BH2A	BH3A	BH4A	BH4A	BH5A	BH5A	BH7A	BH7A	BH8A	BH8A	BH9A	BH9A
	Depth	0.5	1.5	0.5	0.9	3.50 - 4.00	0.5	2.5-3	0.7	2.50 - 3.00	0.5	3.00 - 3.50	0.5	2.2-3.3
S	ampling Date	25/08/2015	25/08/2015	28/08/2015	27/08/2015	27/08/2015	28/08/2015	28/08/2015	27/08/2015	27/08/2015	26/08/2015	26/08/2015	26/08/2015	26/08/2015
Sampl	le Description	MADE GROUND:	Soft, brown, sandy	MADE GROUND:	MADE GROUND:	Brown, very	MADE GROUND:	Dense, brown,	MADE GROUND:	Dense, brown,	MADE GROUND:	Dense, brown,	MADE GROUND:	MADE GROUND:
		Brown sandy fine-	clay.	Brown, gravelly, fine	Brown, grey, slightly	gravelly, fine-coarse			Soft, dark	gravelly, fine-coarse	Black sand and	gravelly, fine-coarse	Dense, brown,	Black, sandy, fine-
		medium angular		coarse sand. Gravel	clayey, gravelly, fine	SAND. Gravel is	clayey, gravelly, fine	SAND. Gravel is	brown/grey, slightly	SAND. Gravel	gravel. Gravel is	SAND. Gravel is	gravelly, fine-coarse	medium, angular,
		gravel of flint and		is fine-medium,	coarse sand. Gravel		coarse sand. Grave	fine-medium,	gravelly, silty clay.	content increases	medium to coarse,	fine-medium	sand. Gravel is fine-	red/grey gravel of
		crushed concrete.		occasionally coarse.	is fine-medium.	subangular-	is fine-medium.	subangular-	Gravel is fine and	with depth. Gravel	angular to sub-	subangular-	medium.	fint and crushed
		Sand is fine-coarse.		angular-subangular	angular-subangular	subrounded of flint.	occasionally coarse	rounded of flint.	subangular of red	is fine-medium,	rounded of flint.	rounded of flint.	subrounded-	concrete, Sand is
				of brick, glass and	of concrete, brick		subangular-		brick with fragments		Sand is fine-coarse		rounded of natural	fine-coarse.
				concrete.	tile and rootlets.		subrounded of red		of wood.	subrounded of flint.	of ash.		stone, becoming	
							brick.						clayey with depth.	
													Poor recovery.	
cheduled Chem, Group	Total													
cheduled chem. Group	Analyses													
letals in solid samples by OES	13													
lexavalent Chromium	13	1	1		1		1	1	1	1	1	1		1
AH by GCMS	13													
PH CWG GC	13													
OC MS	13													
PH CWG (Aliphatic) GC	13													
PH CWG (Aliphatic) GC	13													
RO by GC-FID	13													
H H	13				1									
otal Organic Carbon	13			-										
otal Sulphate	13													
asily Liberated Sulphide	13	1	-	-		-	1	1	1	1	1 4	1	-	1
mmonium Soil by Titration	13	1			1		1	1	1	1	1	1		1
sbestos ID	8	1			1		1	1	1		1			
Asbestos Quant	2	1			4						1			
ouesius viudin	2													
CB 7 & WHO 12 (S) by GC MS	0	1	1	1		1	1	1	1		1	1	1	
001 4 1110 12 (0) by 60 100			-	-		-	-	-	-	1	1	-	-	

Table 2 - Groundwater Sampling Schedule

	Sample ID	BH2	BH3	BH4	BH5	BH7	BH8	BH9	BH10
	Sampling Date	02/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015
Scheduled Chem. Group	Total Analyses								
Toxic 9 Metals Filtered (W)	7	1	1	1	1	1	1	1	1
COD, unfiltered	7	1	1	1	1	1	1	1	1
Ammoniacal Nitrogen as N	7	1	1	1	1	1	1	1	1
Ammoniacal Nitrogen as NH4	7	1	1	1	1	1	1	1	1
Nitrate as NO3	7	1	1	1	1	1	1	1	1
Phosphate (ortho) as PO4	7	1	1	1	1	1	1	1	1
Sulphate	7	1	1	1	1	1	1	1	1
Boron (diss.filt)	7	1	1	1	1	1	1	1	1
Metals Prep	7	1	1	1	1	1	1	1	1
VOC (W) by GC MS	7	1	1	1	1	1	1	1	1
pH Value	7	1	1	1	1	1	1	1	1
TPH Total (Includes EPH Total and GRO Total)	7	1	1	1	1	1	1	1	1
BTEX & MTBE	7	1	1	1	1	1	1	1	1

	Sample ID	BH104B	BH109	BH110	BH111	BH201A	DUP01 (BH4)
	Sampling Date	02/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015
Scheduled Chem. Group	Total Analyses						
Toxic 9 Metals Filtered (W)	6	1	1	1	1	1	1
COD, unfiltered	6	1	1	1	1	1	1
Ammoniacal Nitrogen as N	6	1	1	1	1	1	1
Ammoniacal Nitrogen as NH4	6	1	1	1	1	1	1
Nitrate as NO3	6	1	1	1	1	1	1
Phosphate (ortho) as PO4	6	1	1	1	1	1	1
Sulphate	6	1	1	1	1	1	1
Boron (diss.filt)	6	1	1	1	1	1	1
Metals Prep	6	1	1	1	1	1	1
VOC (W) by GC MS	5	1	1	1	1	1	0
pH Value	6	1	1	1	1	1	1
TPH Total (Includes EPH Total and GRO Total)	6	1	1	1	1	1	1
BTEX & MTBE	6	1	1	1	1	1	1

Table 3 - Field Observations of Fluid Levels in Wells and Groundwater Quality

Well ID	Date	Depth to NAPL [m bgl]	Depth to Water (DTW) [m bgl]	Depth to Bottom (DTB) [m bgl]	Relative Elevation of Well Cover [m AOD]	Relative Elevation of Top of Well Casing [m AOD]	Relative Elevation of Water Level [m AOD]	O.d.P [mV]	Temperature [deg C]	рН	Conductivity [µS/cm@25C]	Dissolved Oxygen [%]	Sampling Method	Comments
	Oct 2003 - 1st Round (BASELINE EVENT)		5.2	6.7								-	No Info. Provided.	Data from CRA 2003 borehole log. NVO.
	Dec 2005 - 2nd Round		4.18	6.88									HDPE Bailer	Good yield. Recovered purged water observed to be clear. NVO.
BH2	Apr 2007 - Third Round		4.08	6.98	5.82	5.69		-					HDPE Bailer	Good yield. Recovered purged water observed to be clear with no streaks or odour. NVO.
	Sep 2012 - Fourth Round		4.4	6.84	1								HDPE Bailer	Dark brown for first 5L. Organic matter and orange colouring from 5L to 24L purge. Slight oil sheen noted.
	Sep 2015 - Fifth Round		4.121	6.764			1.569	-107.1	14.7	6.82	1609	0.374	Peristaltic Pump	Well de-silted. Light brown turning clear after approx. 3L. NVO.
	Oct 2003 - 1st Round (BASELINE EVENT)		5.5	6.5			-	-				-	No Info. Provided.	Data from CRA 2003 borehole log. NVO.
·	Dec 2005 - 2nd Round		5.27	6.18				-					HDPE Bailer	Good yield. Water brown in colour. Some very fine, white possibly living organisms noted. NVO.
внз	Apr 2007 - Third Round		4.91	5.94	6.55	6.49		-				-	HDPE Bailer	Good yield. Initially slightly grey in colour with small amount of organic matter. Cleared after initial 20L to become brown in colour. No streaks or odour.
	Sep 2012 - Fourth Round		5.23	5.38									HDPE Bailer	Dark brown/black purge water, lots of organic material in water. NVO.
	Sep 2015 - Fifth Round		5.14	6.035			1.35	-81	15.1	6.88	1449	0.946	Peristaltic Pump	Well de-silted. Light brown turning clear after approx. 1L. NVO.
	Oct 2003 - 1st Round (BASELINE EVENT)		4.8	6.7			-						No Info. Provided.	Data from CRA 2003 borehole log. NVO.
	Dec 2005 - 2nd Round		4.96	6.31									HDPE Bailer	Good yield to final purge volume of 40L. No odour. Slight oily sheen on water surface.
BH4	Apr 2007 - Third Round		4.72	6.23	6.21	6.18	-						HDPE Bailer	Good yield. NVO.
	Sep 2012 - Fourth Round		4.9	4.95										No sample obtainable - insufficient water volume.
	Sep 2015 - Fifth Round		4.83	6.169			1.35	32.8	15	6.6	522	5.61	Peristaltic Pump	Well de-silted. Light brown turning clear after approx. 0.5L. NVO.
	Oct 2003 - 1st Round (BASELINE EVENT)		5	7			-						No Info. Provided.	Data from CRA 2003 borehole log. NVO.
	Dec 2005 - 2nd Round		4.94	6.47									HDPE Bailer	Good yield. NVO.
BH5	Apr 2007 - Third Round		4.57	6.23	6.185	6.085							HDPE Bailer	Good yield. NVO.
	Sep 2012 - Fourth Round		Dry	4.87										No sample obtainable - insufficient water volume.
	Sep 2015 - Fifth Round		4.755	6.07			1.33	25.5	16.1	6.73	775	1.518	Peristaltic Pump	Well de-silted. Light brown turning clear after approx. 0.5L. NVO.
	Oct 2003 - 1st Round (BASELINE EVENT)		5.3	6.7			-						No Info. Provided.	Data from CRA 2003 borehole log. NVO.
	Dec 2005 - 2nd Round		5.07	6.84									HDPE Bailer	Good yield. Clear grey water. NVO.
BH7	Apr 2007 - Third Round		4.93	6.84	6.45	6.425	-						HDPE Bailer	Good yield.Clear grey water. NVO.
	Sep 2012 - Fourth Round		5.21	6.49									HDPE Bailer	No comments provided.
	Sep 2015 - Fifth Round		5.11	6.947			1.315	-98.6	16.8	7.09	1707	0.539	Peristaltic Pump	Well de-silted. Clear water NVO.

Table 3 - Field Observations of Fluid Levels in Wells and Groundwater Quality

Well ID	Date	Depth to NAPL [m bgl]	Depth to Water (DTW) [m bgl]	Depth to Bottom (DTB) [m bgl]	Relative Elevation of Well Cover [m AOD]	Relative Elevation of Top of Well Casing [m AOD]	Relative Elevation of Water Level [m AOD]	O.d.P [mV]	Temperature [deg C]	рН	Conductivity [uS/cm@25C]	Dissolved Oxygen [%]	Sampling Method	Comments
	Oct 2003 - 1st Round		4.9	7.2		or their obtaining [in AOD]			[d0g 0] 				No Info. Provided.	Data from CRA 2003 borehole log. NVO.
	(BASELINE EVENT) Dec 2005 - 2nd Round		4.86	6.34				-				-	HDPE Bailer	Good yield. Slight oil streak observed on the water surface of the firs 10L that were removed. No oil streaks were observed on the purge water removed thereafter.
BH8	Apr 2007 - Third Round		4.88	6.39	6.2	6.155							HDPE Bailer	Good yield. NVO.
ľ	Sep 2012 - Fourth Round		4.95	6.25									HDPE Bailer	No comments provided.
ľ	Sep 2015 - Fifth Round		4.815	6.822			1.34	4.4	15.2	6.74	1350	1.793	Peristaltic Pump	Well de-silted. Clear water. NVO.
	Oct 2003 - 1st Round (BASELINE EVENT)	-	1.9	2.2				-				-	No Info. Provided.	Data from CRA 2003 borehole log. NVO.
ľ	Dec 2005 - 2nd Round											-	-	No information reported by CRA.
	Apr 2007 - Third Round											-	-	No information reported by CRA.
BH9	Sep 2012 - Fourth Round				5.9	5.775								No information reported by CRA.
	Sep 2015 - Fifth Round		1.75	2.497			4.025	-138.7	24.5	7.45	1544	0.374	Peristaltic Pump	Well de-silted. Black water turning grey after approx. 1L purge. Black sediments noted with organic odour. No sheen noted. Well turned dry after approx. 2L purge. Sample collected after approx. 50mins recharge. Shallow groundwater well within the Perched Water.
	Oct 2003 - 1st Round (BASELINE EVENT)		5	7				-				-	No Info. Provided.	Data from CRA 2003 borehole log. NVO.
	Dec 2005 - 2nd Round		4.41	7.13									HDPE Bailer	Recovered purge water observed as grey and clear. NVO.
BH10	Apr 2007 - Third Round	-	4.39	7.17	5.94	5.835		-				-	HDPE Bailer	Good yield.Clear grey groundwater. NVO.
	Sep 2012 - Fourth Round	-	4.96	5.53				-				-	HDPE Bailer	Continuous slight orange colour during purge. NVO.
	Sep 2015 - Fifth Round	-	4.277	7.031			1.558	24.6	15.5	6.8	748	0.55	Peristaltic Pump	Well de-silted. Light brown water turning clear after approx. 3L purge. NVO.
	Oct 2003 - 1st Round (BASELINE EVENT)	-	4	6									No Info. Provided.	Data from Dames & Moore 1995 borehole log. NVO.
	Dec 2005 - 2nd Round	-	4.13	5.09				-				-	HDPE Bailer	Good yield. Brown in colour. Some oily streaks were initially observed on surface water but cleared after 20L.
BH104B	Apr 2007 - Third Round	-	4.12	5.89	5.81	5.715		-					HDPE Bailer	Good yield. Brown in colour. NVO.
	Sep 2012 - Fourth Round	-	4.39	5.92				-					HDPE Bailer	Light orange in the first 2L of purge, clear thereafter to 14L. NVO.
	Sep 2015 - Fifth Round	-	4.141	4.931			1.574	-88.6	15.7	6.84	1153	1.067	Peristaltic Pump	Well de-silted. Clear water NVO.
	Oct 2003 - 1st Round (BASELINE EVENT)	-	4.500	6									No Info. Provided.	Data from Dames & Moore 1995 borehole log. NVO.
	Dec 2005 - 2nd Round	-						-				-	-	No information reported by CRA.
BH109	Apr 2007 - Third Round		4.400	6.18	6.28	6.14								No information reported by CRA.
ľ	Sep 2012 - Fourth Round													No information reported by CRA.
	Sep 2015 - Fifth Round	-	4.507	6.142			1.633	-68.9	12.5	7.1	1409	4.686	Peristaltic Pump	Well de-silted. Light brown water turning clear after approx. 1.5L. NVO
	Oct 2003 - 1st Round (BASELINE EVENT)	-	4.600	5.6									No Info. Provided.	Data from Dames & Moore 1995 borehole log. NVO.
	Dec 2005 - 2nd Round	-	4.880	5.52									HDPE Bailer	Good yield. Some very fine white possible live organisms observed. Pipe installation too marrow to use standard baller. Sampled directly from HDPE pipe. No streaks or odour.
BH110	Apr 2007 - Third Round	-	4.650	5.49	6.3	6.24		-					HDPE Bailer	Good yield. Initially slightly grey in colour with small amount of organic matter. Cleared after initial 30L to become brown in colour. NVO.
ĺĺ	Sep 2012 - Fourth Round	-	4.960	5.53									HDPE Bailer	Dark brown colour, clearing up throughout purge. NVO.
ĺ	Sep 2015 - Fifth Round	-	4.805	5.516			1.435	-18.4	17.2	6.99	1183	1.991	Peristaltic Pump	Well de-silted. Clear water NVO.

Table 3 - Field Observations of Fluid Levels in Wells and Groundwater Quality

Well ID	Date	Depth to NAPL [m bgl]	Depth to Water (DTW) [m bgl]	Depth to Bottom (DTB) [m bgl]	Relative Elevation of Well Cover [m AOD]	Relative Elevation of Top of Well Casing [m AOD]	Relative Elevation of Water Level [m AOD]	O.d.P [mV]	Temperature [deg C]	рН	Conductivity [µS/cm@25C]	Dissolved Oxygen [%]	Sampling Method	Comments
	Oct 2003 - 1st Round (BASELINE EVENT)	-	4.900	7.6 (*)									No Info. Provided.	Data from Dames & Moore 1995 borehole log. NVO.
BH111	Dec 2005 - 2nd Round	-	5.090	7.53	6.45	6.41		-	-				HDPE Bailer	Iniatial purged water recovered dark brown / black. Soon cleared on purging. Purged then left overnight before purging again. Total purged volume 150L. Some sand recovered from well during purging. NVO.
BIIII	Apr 2007 - Third Round		4.880	7.58	0.45	0.41							HDPE Bailer	Initial purged water recovered dark grey. Soon cleared on purging. NVO.
	Sep 2012 - Fourth Round		5.220	7.59				-					HDPE Bailer	Orange colour throghout purge. NVO.
	Sep 2015 - Fifth Round		5.097	7.653			1.313	-132.6	15.9	6.97	1486	0.44	Peristaltic Pump	Well de-silted. Clear water. NVO.
	Oct 2003 - 1st Round (BASELINE EVENT)	-	Dry	3				-				-	No Info. Provided.	Data from Dames & Moore 1995 borehole log. NVO.
	Dec 2005 - 2nd Round		1.19					-						No information reported by CRA.
BH112	Apr 2007 - Third Round		Dry	2.67	6.35	6.305		-						Well dry. Sample not collected.
	Sep 2012 - Fourth Round													Well not located.
	Sep 2015 - Fifth Round	-	Dry	2.766				-					-	Dry. NVO.
BH201A	Sep 2015	-	3.586	5.559	5.72	5.575	1.989	-52.7	15.7	7.14	900	0.638	Peristaltic Pump	Light brown water turning clear after approx. 2L purge. NVO.

Table 4 - Metals and Inorganics

						Location	n ID BH20	D1A BH2	201A B	3H202A	BH203A	BH204	BH204	BH205	BH205	BH206	BH207	BH207	BH208A	BH208A	BH209	BH209	BH210	BH210	BH211	BH211	BH212	BH212	BH213	BH213	BH214	BH2A	BH2A	BH3A	BH4A	BH4A	BH5A	BH5A	BH7A	BH7A	BH8A	BH8A	BH9A	BH9A
						Sample De	pth 0.7	7 1.9	9-2	0.8		1.3	3.3	1	2.5	1.1		2.6-3.5	0.8	1.1	0.5	2.7-3.4	0.8	2.2-2.8	0.7	2.2	0.6	1.8-2.5	0.6	1.7-2	0.85	0.5	1.5		0.9	3.5-4	0.5		0.7	2.5-3	0.5	3-3.5		2.2-3.3
						Sample D	ate 25/08/2	2015 25/08	3/2015 25	/08/2015 2	20/08/2015	5 21/08/2015	5 21/08/201	5 21/08/2015	21/08/2015	21/08/2015	25/08/2015	25/08/2015	25/08/2015	25/08/2015 2	25/08/2015	25/08/2015	26/08/2015 2	6/08/2015	26/08/2015 2	26/08/2015	27/08/2015	27/08/2015 2	7/08/2015 2	27/08/2015	25/08/2015	25/08/2015	25/08/2015	28/08/2015	27/08/2015	27/08/2015	28/08/2015	28/08/2015	27/08/2015	27/08/2015	26/08/2015	26/08/2015	26/08/2015	26/08/2015
Chemi	cal Gr Chemical	ai Name	Unit	GAC_I OM/IN ND_1 3.48%	HH_C GAC_H D_SA RES+PL .45- AND_1.4 TOC 3.48%T	IGAC_HH_I _S S- 5- PL_SAND_ 0C 5-3.48%TC	RE 1.4 DC																																					
Metals	Arsenic		mg/kg	0.6 640	#5 37#5	40#5	15	i 14	4.5	9.55	12.1	10.9	30	13.7	21.8	19.9	17.8	16.3	16.6	16.6	12.7	13.4	23.6	20.2	11.8	19.5	19.2	18.8	19.1	19.1	11.8	14.5	11.6	18.9	14.2	21.4	19.1	22.4	94	16.4	13.7	14.7	16.5	15.5
	Cadmium	m	mg/kg	0.02 190	#5 11#5	85#5	0.3	5 0.2	255	0.227	0.29	0.21	0.319	0.414	0.263	0.324	0.609	0.377	0.377	0.328	0.378	0.308	0.449	0.341	0.347	0.391	1.44	0.393	0.547	0.389	0.265	0.289	0.219	0.475	0.603	0.385	1.13	0.533	2.03	0.325	0.344	0.338	0.395	0.378
	Chromium	um (III+VI)	mg/kg	0.9			17.	2 15	5.4	10.4	31.2	17.4	15.2	20	20.6	21.9	15.9	16.8	18.5	18.8	20.4	17.6	25.9	16.6	17	24.1	6.94	16.9	17.1	20.2	18.5	16.7	25.8	19.5	16.9	21.5	25.4	21.6	28.7	16.5	13.9	19.1	18.9	21.1
	Copper		mg/kg	1.4 6800	0#5 2400#	7100#5	22.0	6 2.	.33	6.09	35.3	8.93	3.08	25.8	4.42	12.8	48	6.14	66.5	8.23	54.3	3.25	31.2	5.29	9.01	6.47	13.9	4.3	29.6	6.42	19.8	41	9.74	49.3	31.4	6.36	28	3.56	82.3	4.42	80.7	5.98	8.36	12
	Lead		mg/kg	0.7 230)#4 200#4	310#4	151	1 5	.8	13.2	59.6	10.6	6.08	96.4	10.2	39.4	264	8.15	251	19.7	140	8.4	32.7	5.73	44.5	7.8	271	5.92	2910	6.91	38.9	191	16.9	178	309	8.03	85.7	9.05	468	5.77	41.4	6.89	12.4	23.7
	Mercury	(mg/kg	0.14 110	0#5 40#5	56#5	0.28	39 <0).14	< 0.14	< 0.14	< 0.14	< 0.14	0.162	< 0.14	< 0.14	0.487	< 0.14	0.608	< 0.14	< 0.14	< 0.14	<0.14	< 0.14	0.152	< 0.14	< 0.14	<0.14	<0.14	< 0.14	< 0.14	0.493	< 0.14	0.151	< 0.14	< 0.14	1.9	< 0.14	0.702	< 0.14	< 0.14	< 0.14	< 0.14	< 0.14
	Nickel		mg/kg	0.2 980		180#5	17.9	9 14	4.8	12.2	38.2	16.5	21.8	17.4	20	22.4	18	18.5	19.3	17.1	18.7	20.3	24.5	21.2	16.5	22.6	6.81	19.2	14.7	22	16.6	17.9	21.4	29.2	15.6	24.2	17.1	20.7	36	19.4	37.6	18.8	23.6	20.7
	Selenium	m	mg/kg	1 1200	0#5 250#5	430#5	<1	<	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Zinc		mg/kg	1.9 7300		40000#5	50	19	9.7	25.3	96.4	44.4	25.3	93	28.2	54.2	131	25.9	69.9	35.6	118	22.7	43.4	21.9	41.3	28.4	276	23.4	906	26.2	58.5	63.9	47.4	89.3	217	28.5	101	28.6	1640	20.8	24.4	25.5	34.5	62.4
	Chromium	um (hexavalent)	mg/kg	0.6 33	¥5 6#5	6#5	<0.	6 <0	0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Inorgan	nics Sulphate	e	mg/kg	48			<48	8 <	48	<48	8120	4280	2040	3750	883	573	<48	<48	<48	<48	<48	<48	481	<48	545	88.2	1090	49.6	7440	80.7	<48	<48	<48	579	841	63.9	356	95.9	601	74.7	775	80.9	212	1040
	Moisture	9	%				14	3	1.8	9.9	11	16	7.2	8.8	5.2	12	14	7.7	17	11	9.4	6	13	6.9	12	8.9	7	5.7	17	6.5	8	15	15	6.3	7.1	4.4	7	5.8	28	4.8	17	9.5	7.3	14
	Ammoniac	iacal Nitrogen as NH4	mg/kg	15			<15	5 <	15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	45.6	<15	<15	<15	18.2	<15	<15	<15	<15	<15	<15	<15	23.8	<15	27.7	<15	35.3	15.8	18.4	18.4	<15	71.4
	Easily Libe	iberated Sulphide (Moisture ((mg/kg	15			<15	5 <	15	<15	20	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	40.4	<15	<15	252
	pH (Lab))	pH_Units	1			9.3	2 8.	.74	11	11.7	9.55	8.43	11.3	9.88	8.95	9	8.36	8.77	8.17	12	10.9	9.67	8.35	10.3	8.66	8.95	7.72	8.04	7.84	12	10.6	8.45	8.22	7.92	8.01	7.86	7.86	7.67	8.01	8.38	7.66	10.2	11.2

Comments GAC: Generic Assessment Criteria (blank): No assessment criteria available

- : Not analysed

#3 Dutch Intervention 2009 #4 Defra C4SL 12/2014 #5 AECOM (modified LQM/CIEH S4ULs) #6 AECOM (modified EIC)

#2 Dutch Serious 2009

#1 USEPA RSL

 Key

 XXX
 Exceedance of HH Soil. Commercial/Industrial. Sand. TOC >=1.45 to <3.48%</td>

 XXX
 Exceedance of HH Soil. Residential with Plant Uptake. Sand. TOC >=1.45 to <3.48%</td>

 XXX
 Exceedance of HH Soil. Residential without Plant Uptake. Sand. TOC >=1.45 to <3.48%</td>

Table 5 - TPH, BTEX, Oxygenates, Chlorinated Hydrocarbons, PAHs, PCBs, Hydrogenated Benzenes, Hydrogenated Hydrocarbons, Solvents, Organics, Other and Asbestos Concentrations in Soils

	Location Sample Dep Sample Dep	ID BH201A BH2 oth 0.7 1.1 ate 25/08/2015 25/08	201A BH202A 9-2 0.8 8/2015 25/08/2015	BH203A BH204 0.5 1.3 20/08/2015 21/08/2015	BH204 BH2 3.3 1 21/08/2015 21/08	205 BH205 2.5 (2015 21/08/2015	BH206 E	H207 BH207 0.7 2.6-3.5 08/2015 25/08/201	BH208A 0.8	BH208A 1.1 25/08/2015 2	BH209 E	BH209 BH210 2.7-3.4 0.8 /08/2015 26/08/201	BH210 2.2-2.8 5 26/08/2015	BH211 BH21 0.7 2.2 26/08/2015 26/08/20	BH212 0.6	BH212 1.8-2.5	BH213 0.6	BH213 1.7-2 27/08/2015 2	BH214 0.85	BH2A 0.5	BH2A BH3A 1.5 0.5	BH4A 0.9	E
Chemical Gr Chemical Name Unit EQL GM/CL ND_1.	45- AND_1.45- PL_SAND_1	1.4																					
GRO >C5-C12 mg/kg 0.04 >C5-C6 Alphatics mg/kg 0.01 3300 >C6-C6 Alphatics mg/kg 0.01 9200 >C6-C6 Alphatics mg/kg 0.01 9200	15 34#5 34#5 15 93#5 93#5 15 26#5 26#5	<0.044 <0. <0.01	0.01 <0.01	<0.044 <0.044 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01	<0.01 0.01 <0.01 0.02	01 <0.01 29 <0.01 259 <0.01	<0.01	0.044 <0.044 c0.01 <0.01 c0.01 <0.01 c0.01 <0.01 c0.01 <0.01	<0.01 0.0312 <0.01	<0.044 <0.01 <0.01 <0.01	<0.01 <0.01 <0.01	<0.044 <0.044 <0.01	<0.01 <0.01 <0.01	<pre><0.01 <0.01 0.0342 <0.01 1.01 0.013</pre>	<0.01 <0.01 <0.01	<0.01 <0.01 <0.01	<0.01 <0.01 <0.01	<0.01 <0.01 <0.01	<0.01 0.012 <0.01	<0.01 <0.01 <0.01	<0.044 <0.044 <0.01	<0.01 <0.01 <0.01	
>C10-C12 Aliphatics mg/kg 0.01 12000 >C12-C16 Aliphatics mg/kg 0.1 6600 >C16-C21 Aliphatics mg/kg 0.1 616 >C16-C32 Aliphatics mg/kg 0.1 616 >C21-G35 Aliphatics mg/kg 0.1 1.6EE >C23-C35 Aliphatics mg/kg 0.1 1.6EE	#5 1000#5 1000#5 #5 64000#5 64000#5	<0.1 <0 <0.1 <0 <0.2 <0 <0.1 <0	0.01 <0.01 0.1 <0.1	<0.01 <0.01 2.5 0.48 9.99 <0.1	<0.01 0.09 0.808 5.1 <0.1 30 <0.2 15 <0.1 12 <0.1 39	15 0.466 0 <0.1	0.337 (<0.1 1.71 1.66	<0.01 <0.01 0.682 <0.1	0.876	<0.01 <0.1 <0.2 <0.1 <0.2 <0.1	5.72 29.7 128.6 98.9	<0.01 <0.01 <0.1 <0.1 <0.1 3.15 0.9 21.75 0.85 18.6 <0.1 1.92	<0.01 <0.1 <0.2 <0.1 <0.2 <0.1 <0.1	2.06 <0.01 15.1 <0.1	<0.1 <0.1 <0.2	<0.01 <0.1 <0.2 <0.1 <0.2 <0.1 <0.1	<0.01 <0.1 6.11 6.06 <0.1	<0.01 <0.1 <0.2 <0.1 <0.2 <0.1	4.97 20.7	<0.1 0.177 2.277	<0.01 <0.01 <0.1	<0.1 1.68 56.18	
>C12-C44 Aliphatics mg/kg 0.1 >EC5-EC7 Aromatics mg/kg 0.01 2300 >EC7-EC8 Aromatics mg/kg 0.01 5800 >EC8-EC10 Aromatics mg/kg 0.01 4300 >EC14-EC10 Aromatics mg/kg 0.01 4300	#5 100#5 250#5 #5 230#5 690#5 #5 41#5 45#5 #5 140#5 240#5	<0.1 <0 <0.01	0.1 14.3 0.01 <0.01 0.01 <0.01 0.01 <0.01 0.01 <0.01 0.01 <0.01	180 0.48 <0.01	0.808 19 <0.01	5 0.466 01 <0.01	2 <0.01 <0.01 <0.01 <0.01	26.4 <0.1 <0.01	5.9 <0.01 <0.01 <0.01 <0.01	<0.1 <0.01 <0.01 <0.01 <0.01	173 <0.01 <0.01 <0.01 <0.01	0.85 23.7 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01	<0.1 <0.01 <0.01 <0.01 <0.01	106 <0.1 <0.01	<0.1 <0.01 <0.01 <0.01 <0.01	<0.1 <0.01 <0.01 <0.01 <0.01	6.06 <0.01 <0.01 <0.01 <0.01	<0.1 <0.01 <0.01 <0.01 <0.01	154 <0.01 <0.01 <0.01 <0.01	2.28 <0.01 <0.01 <0.01 <0.01	<0.1 15.9 <0.01	88.5 <0.01 <0.01 <0.01 <0.01	
L=C12-EC16 Aromatics mg/kg 0.1 37000 L=C16-EC21 Aromatics mg/kg 0.1 28000 S=C21-EC35 Aromatics mg/kg 0.1 28000 S=C34-EC34 Aromatics mg/kg 0.1 28000 S=C440-EC44 Aromatics mg/kg 0.1 S=C12-EC444 Aromatics mg/kg 0.1	#5 540#5 1900#5 #5 1500#5 1900#5	2.79 <0 8.85 <0 3.15 <0 1.14 <0	0.1 <0.1 0.1 <0.1 0.1 3.8 0.1 1.07 0.1 <0.1 0.1 4.86	1.61 0.486 6.76 <0.1	0.402 4.4 <0.1	.9 <0.1 .1 0.693 .1 <0.1	<0.1 3.46 <0.1 <0.1	0.705 <0.1 3.83 <0.1	3.99 1.48	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1	17.8 71 39.9 17.4	<0.1 <0.1 <0.1	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1	4.15 <0.1 10.5 <0.1	0.496 4.6 <0.1	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1	2.15 10.6 31.1 10.9 3.97 54.8	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1	10.6 50.3 33.3 14.8	1.86 9.32 4.61 1.93	1.7 0.714 1.41 4.78 6.2 24.7 4 12.7 1.7 5.16 13.3 42.9	1.61 17.1 74.7 37.3 14.2 131	+
>CS-C44 Alphatics & Aromatics mg/kg 0.1 BTEX Benzene mg/kg 0.1 24# Totuene mg/kg 0 5800(6800(690(600(600(600(6200(X/viene (m & p) mg/kg 0.01 24#	#5 230#5 710#5 #5 55#5 70#5	<0.009 <0. <0.002	0.1 19.1 0.09 <0.009 0.02 <0.002 0.03 <0.003 0.06 <0.006 0.09 <0.009	385 1.23 <0.009	1.68 35 <0.009 <0.0 <0.002 0.007 -	i2 1.68 009 <0.009	<0.009 < <0.002 < <0.003 < <0.006 <	67.5 <0.1	<0.01 <0.002 <0.003 <0.006	<0.002 <0.003 <0.006	<0.009 < <0.002 < <0.003 < <0.006 <	<pre><0.002 <0.002 <0.003 <0.003 <0.006 <0.006</pre>	<0.003 <0.006	163 <0.1 <0.009	<0.009 <0.002	<0.002 <0.003 <0.006	60.9 <0.009 <0.002 <0.003 <0.006 <0.009	<0.002 <0.003 <0.006	<0.009 <0.002 <0.003 <0.006	<0.009 < <0.002 < <0.003 < <0.006 <	13.3 58.9 <0.009	<0.009 <0.002 005 <0.003 <0.006	~
Xytem of total mg/kg 0.01 2500 Xytem of (0) mg/kg 0.02 7200 Total BTEX mg/kg 0.01 5740 Oxygenates MTBE mg/kg 0.01 5740 Choirnated Holtromentane mg/kg 0.01 0.01 5730	45 64#5 74#5 #6 35.3#6 40.5#6	<0.003 <0. <0.024 <0.	.003 <0.003 .024 <0.024 .005 <0.005	<0.003 <0.003 <0.024 <0.024 <0.005 <0.005	<0.003 <0.0 <0.024 <0.0 <0.005 <0.0	003 <0.003 024 <0.024 005 <0.005	<0.003 < <0.024 < <0.005 <	0.009 <0.009 0.003 <0.003 0.024 <0.024 0.005 <0.005 0.01 <0.01 0.007 <0.007	<0.003 <0.024 <0.005	<0.003 <0.024 <0.005	<0.003 < <0.024 < <0.005 <	<0.003 <0.003 <0.024 <0.024 <0.005 <0.005	< 0.024	<0.005 <0.00	8 <0.003 4 <0.024 5 <0.005	<0.003 <0.024 <0.005	<0.003 <0.024	<0.003 <0.024 <0.005	<0.003 <0.024 <0.005	<0.003 < <0.024 < <0.005 <	<0.009	<0.003 <0.024 <0.005	<
Vinvi chloride mg/kg 0.01 0.04 Chloroethane mg/kg 0.01 640/ 1.1-dichloroethene mg/kg 0.01 22.6 Dichloromethane mg/kg 0.01 162/ trans-1.2-dichloroethene mg/kg 0.01 162/	15 0.00037#5 0.0004#5 6 4.22#6 5.12#6 16 0.153#6 0.184#6 6 0.608#6 1.16#6 16 0.126#6 0.127#6	<0.01 <0 <0.01 <0 <0.01 <0	006 <0.006 0.01 <0.01	<0.006 <0.006 <0.01	<0.01 <0. <0.01 <0. <0.01 <0.	01 <0.01 01 <0.01	<0.01 · · · · · · · · · · · · · · · · · · ·	0.006 <0.006 <0.01	<0.1 <0.1 <0.1	< 0.01	<0.01 <0.01 <0.01	<0.006 <0.006 <0.01	< 0.01	<0.006 <0.00 <0.01	<0.01 <0.01 <0.01	<0.01	<0.006 <0.01 <0.01 <0.01 <0.01	<0.01	<0.01 <0.01 <0.01	<0.01 <0.01 <0.01	0.006 <0.006 <0.01	<0.01 <0.01 <0.01	~
1,1-dichioroethane mg/kg 0.01 206/k Gis-1,2-dichioroethane mg/kg 0.01 81/k Chioroform mg/kg 0.01 81/k 1,1-1richioroethane mg/kg 0.01 84/k Carbon tetrachloride mg/kg 0.01 34/k Trichioroethane mg/kg 0.01 1.2k	0.0699#6 0.0854#6 0.68#5 0.75#5 5 6.6#5 6.7#5 0.021#5 0.021#5 0.021#5	 <0.006 <0.008 <0.007 <0.01 <0 	.008 <0.008 .006 <0.006	<0.008	<0.008 <0.0 <0.006	006 <0.006 008 <0.008	<0.006 < <0.008 < <0.007 < <0.01 <	0.008 <0.008 0.006 <0.006	<0.06 <0.08 <0.07 <0.01	<0.006 <0.008 <0.007 <0.01	<0.006 < <0.008 < <0.007 < <0.01		<0.008 <0.006 <0.008 <0.007 <0.01 <0.009	<0.008 <0.00 <0.006	6 <0.006 8 <0.008 7 <0.007 <0.01	<0.006 <0.008 <0.007 <0.01	<0.008 <0.006 <0.008 <0.007 <0.01 <0.009	<0.006 <0.008 <0.007 <0.01	<0.006 <0.008 <0.007 <0.01	<0.006 < <0.008 < <0.007 < <0.01	<0.008	<0.006 <0.008 <0.007 <0.01	<
1,1.2-tinchloroethane mg/kg 0.01 89.7 Tetrachloroethane mg/kg 0.01 19# Sum of PCE and TCE mg/kg 17 TCE+DCE+VC mg/kg 10 10 PCE+TCE+DCE+VC mg/kg 10 10 10	5 0.14#5 0.14#5	<0.005 <0. <0.014	0.01 <0.01 .005 <0.005	<0.01 <0.01 <0.005	<0.01	041 <0.041 046 <0.046	<0.005 < <0.014 < <0.041 < <0.046 <	0.01 <0.01	<0.05 0.279 0.414 0.439	0.0206 0.0341 0.0366	<0.01 <0.005 <0.014 <0.041 <0.046	<0.01		<0.041 <0.04 <0.046 <0.04	6 <0.005 4 <0.014 <0.041 6 <0.046	<0.005 <0.014 <0.041 <0.046	<0.01 <0.005 <0.014 <0.041 <0.046	<0.01 <0.005 <0.014 <0.041 <0.046	<0.01 <0.005 <0.014 <0.041 <0.046	<0.01 <0.005 <0.014 <0.041 <0.046	<0.01 <0.01 <0.005 <0.005 <0.014 <0.014 <0.041 <0.041 <0.046 <0.046	<0.01 <0.005 <0.014 <0.041 <0.046	< < <
Acenaphthene mg/kg 0.01 90000 Fluorene mg/kg 0.01 66000 Phenanthrene mg/kg 0.02 22000	#5 400#5 <u>3300#5</u> #5 480#5 <u>3300#5</u>	0.0574 <0. <0.008 <0. 0.0183 <0 0.512 <0.	.009 <0.009 .012 <0.012	0.013 - 0.010 <0.009 <0.012 <0.012 <0.008 <0.008 <0.01 <0.01 0.16 <0.015 0.041 <0.016	<0.009 0.173 - <0.012 0.04 <0.012 0.07 <0.008 0.07 <0.01 0.07 <0.015 0.8 <0.016 0.1	IS3 <0.012 '32 <0.008	<0.012 0 <0.008 < <0.01 < 0.0284 0	13 - 0.04: <0.009	<0.012 <0.008 <0.01 0.128	<0.012 <0.008	0.0566 < 0.0606 < 0.0479 1.3 <	<0.009 <0.009 <0.012		0.013 - 0.053 <0.00 0.0148 <0.01	2 0.0205 3 <0.008 <0.01 5 0.218	<0.012 <0.008 <0.01 <0.015	0.013 - 0.027 0.0278 0.0159 0.0121 0.329 0.0718	<0.012 <0.008	0.0171 0.0505 0.0387 1.01	<0.012 < <0.008 < <0.01 0.119 <	<0.009 0.013 - 0.0 <0.012	0.083 0.0418 0.0482	<
Fluoranthene mp/kg 0.02 230000 Pyrene mg/kg 0.02 54000 Benz(a)anthracene mg/kg 0.01 1707 Chrysene mg/kg 0.01 366 Benz(a) pyrene mg/kg 0.02 366	#5 560#5 1600#5 #5 1200#5 3700#5 5 11#5 14#5 5 22#5 31#5 5 2.7#5 3.2#5	0.835 <0. 0.682 <0. 0.401 <0. 0.382 <0 0.357 <0.	.017 <0.017 .015 <0.015	0.429 <0.017 0.412 <0.015	<0.017 1.3 <0.015	31 <0.017 51 <0.015	0.0473 (0.0532 (<0.014 (0.0163 (0.0382 (0.592 <0.017 0.534 <0.015 0.419 <0.014 0.414 <0.01 0.632 <0.015	0.118 0.0873 0.0863 0.0594	<0.017 <0.015 <0.014 <0.01 <0.015	2.18 < 1.89 < 1.06 < 0.988 0.837 <	<0.017 0.047 <0.015	<0.017 <0.015 <0.014 <0.01 <0.015	0.174 <0.01 0.151 <0.01 0.147 <0.01	0.975 0.927 0.908 1.05	<0.014 <0.01 <0.015	0.82 0.729 0.449 0.414 0.485	< 0.015	1.26 0.66 0.608 0.545	0.0839 0.0909 0.103 0.0834	0.017 0.445 0.015 0.384 0.014 0.245 <0.01	1.32 1.06 1.47	< <
Indeno(1,2,3-c,d)pyrene mg/kg 0.02 51/0 Dibenz(a,h)anthracene mg/kg 0.02 36/0 Benzo(g,h)perylene mg/kg 0.02 40/0 Benzo(b)fluoranthene mg/kg 0.02 45% Benzo(b)fluoranthene mg/kg 0.01 1200 Benzo(b)fluoranthene mg/kg 0.01 1200	5 0.28#5 0.32#5 15 340#5 360#5 5 3.3#5 4#5	0.0606 <0. 0.233 <0. 0.47 <0. 0.192 <0.	.018 <0.018 .023 <0.023	0.124 <0.018 0.0327 <0.023	<0.024 0.6 <0.015 1. <0.014 0.5	86 <0.023 76 <0.024 3 <0.015	<0.023 (0.0301 (0.0377 (0.0197 (0.408 <0.018 0.124 0.521 <0.024 0.805 <0.015 0.281 <0.014 1.086 <0.029	<0.023 0.0442 0.0973 0.0345		0.151 < 0.556 < 1.25 < 0.434 <	<0.018	<0.018 <0.023 <0.024 <0.015 <0.014 <0.029	0.199 <0.01	8 0.195 0.755 1.46 0.503	<0.023 <0.024 <0.015 <0.014	0.27 0.0732 0.358 0.588 0.255 0.843	<0.023 <0.024 <0.015 <0.014	0.0882 0.385 0.715 0.287	<0.023 < 0.0682 < 0.135 < 0.0553 <	0.018 0.21 0.023 0.0634 0.024 0.245 0.015 0.459 0.014 0.134 0.029 0.593		
PAHs (sum of 4) mg/kg PAH 16 Total mg/kg Deal mg/kg Coal mg/kg Coal mg/kg Tetrachiorobiphenyl, 3.3,4.4 (PCB // mg/kg 0	1 0.037#1 0.037#1	1.087 <0. 4.53 <0.	.071 <0.071 .118 <0.118	0.575 <0.071 2.25 <0.118	<0.071 3.0 <0.118 10	65 <0.071 .4 <0.118 19 <0.042	0.1165 2 0.3 0.0591 0	2.015 <0.071 5.09 <0.118 0.929 <0.042 0.632 <0.015 	0.2066 0.861 0.0748 0.0594 <0.003	<0.071 <0.118 <0.042	2.787 < 11.6 < 1.103 <	<0.071 0.0945	<0.071 <0.118	0.4722 <0.07	3.386 9.03 1.423	<0.071 <0.118	1.471	<0.071 <0.118 <0.042	1.684 7.74 0.682	0.3066 0.905 0.1163	0.071 1.048 0.118 3.05 0.042 0.455 0.015 0.289	4.063	<
Tetrachtorobiphenyl, 3.4,4.5. (PCB 8(mg/kg 0 0.065) Pentachtorobiphenyl, 2.3,3.4.4. (PCG mg/kg 0 0.653) Pentachtorobiphenyl, 2.3,3.4.4.5 (PCG mg/kg 0 0.53) PCB 118 mg/kg 0 0.533 Pentachtorobiphenyl, 2.3,4.4.5. (PCG mg/kg 0 0.053) Pentachtorobiphenyl, 3.3,4.5.5. (PCG mg/kg 0 0.0000)	1 0.12#1 0.12#1 1 0.12#1 0.12#1 1 0.12#1 0.12#1 1 0.12#1 0.12#1		· · ·	· · · · · · · · · · · · · · · · · · ·	· · ·			· · · · · · · · · · · · · · · · · · ·	<0.003 <0.003 <0.003 <0.003 <0.003 <0.003		-	· · · · · · · · · · · · · · · · · · ·		· · ·			-			· · ·	· · · · · · · · · · · · · · · · · · ·		+
Hexachlorobiphenyl, 2.3,3,4,5; (PC mg/kg 0 0.53; Hexachlorobiphenyl, 2.3,3,4,5; (PC mg/kg 0 0.53; Hexachlorobiphenyl, 2.3,4,4,5; (PC mg/kg 0 0.53; Hexachlorobiphenyl, 2.3,4,4,5; (PC mg/kg 0 0.63; Hexachlorobiphenyl, 2.3,4,4,5; (PC mg/kg 0 0.63; Hexachlorobiphenyl, 2.3,4,4,5; (PC mg/kg 0 0.000; Heptachlorobiphenyl, 2.3,4,4,5; (PC mg/kg 0 0.000;	1 0.12#1 0.12#1 1 0.12#1 0.12#1 3#1 0.00012#1 0.00012#1		· · ·	· · ·					<0.003 <0.003 <0.003 <0.003 <0.003		-	· · · · · · · · · · · · · · · · · · ·		· · ·	-		-		-	- - -	· · ·		
Total PCB WHO 12 marka 0.04 PCB 28 marka 0 PCB 52 marka 0 PCB 52 marka 0 PCB 53 marka 0 PCB 101 marka 0 PCB 138 marka 0 PCB 153 marka 0			· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·	<0.036 <0.003 <0.003 <0.003 <0.003 <0.003	-	-	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·					-	• • • •	· · · · · · · · · · · · · · · · · · ·		
PCB 180 mg/kg 0 Total PCB 7 Congeners mg/kg 0.02 Halogenated Chlorobenzene mg/kg 0.01 599 Gromobenzene mg/kg 0.01 1057 2-chlorobluene mg/kg 0.01 2090 4-chlorobluene mg/kg 0.01 23000 4-schlorobluene mg/kg 0.01 23000	6 0.75#6 0.892#6 #1 1600#1 1600#1	<0.01 <0 <0.009 <0.	.01 <0.01		<0.01 <0. <0.009 <0.0	01 <0.01 009 <0.009	<0.01 <		<0.1	<0.01 <0.009	<0.01 <0.009 <	<0.01 <0.01 <0.009 <0.009	<0.01 <0.009	<pre></pre>	<0.01	<0.01 <0.009	<0.01 <0.009	<0.01 <0.009	<0.01	<0.01 <0.009		<0.01	<
1.3-dichlorobenzene mg/kg 0.01 34# 1.4-dichlorobenzene mg/kg 0.01 4800 1.2-dichlorobenzene mg/kg 0.01 2200 1.2-dichlorobenzene mg/kg 0.01 2200 1.2-dichlorobenzene mg/kg 0.02 2401 1.2-3-trichlorobenzene mg/kg 0.02 1401	0.37#5 0.38#5 45 52#5 52#5 45 20#5 20#5 5 2.3#5 2.3#5 5 1.3#5 1.3#5	<0.005	.005 <0.005 .0.01 <0.01	<0.02 <0.02	<0.005 <0.0 <0.01	005 <0.005 01 <0.01	<0.005 < <0.01 < <0.02 < <0.02	0.008 <0.008 0.005 <0.005 c0.01 <0.01 c0.02 <0.02 c0.02 <0.02	<0.05 <0.1 <0.2 <0.2	<0.005 <0.01 <0.02 <0.02	<0.005 < <0.01 < <0.02 <	<0.005 <0.005 <0.01	<0.005 <0.01 <0.02 <0.02	<0.02 <0.02	i <0.005 <0.01 <0.02 <0.02	<0.008 <0.005 <0.01 <0.02 <0.02	<0.008 <0.005 <0.01 <0.02 <0.02	<0.008 <0.005 <0.01 <0.02 <0.02	<0.008 <0.005 <0.01 <0.02 <0.02	<0.008 < <0.005 < <0.01 < <0.02	<0.008 <0.008 <0.005	<0.008 <0.005 <0.01 <0.02 <0.02	× • •
Halogenated Dichicrodifucormethane mg/kg 0.01 3700 Trichiordhuoromethane mg/kg 0.01 300 Trichiordhuoromethane mg/kg 0.01 3100 L_2.dibromosthane mg/kg 0.01 0.10 Solvents Carbon disultide mg/kg 0.01 116 Organics TOC % 0.2 2	6.8#1 6.8#1 #1 730#1 730#1 #1 0.036#1 0.036#1	<0.01 <0 <0.006	0.01 <0.01 .006 <0.006	<0.006 <0.006 <0.01	<0.01 <0. <0.006	01 <0.01 006 <0.006 01 <0.01 007 <0.007	<0.01	0.006 <0.006 <0.01	<0.1 <0.06 <0.01 <0.07	<0.01 <0.006 <0.01	<0.01 <0.006 <0.01 <0.007	<0.01 <0.01 <0.006 <0.006	<0.01 <0.006 <0.01 <0.007	<0.01 <0.01	<0.01 <0.006 <0.01 <0.007	<0.01 <0.006 <0.01 <0.007	<0.01 <0.006	<0.01 <0.006 <0.01 <0.007	<0.01 <0.006 <0.01 <0.007	<0.01 <0.006 <0.01	<0.01 <0.01 <0.006	<0.01 <0.006 <0.01 <0.007	<
Organics 10C 7% 0.2 Other Waste Limit, Total % 0.1 Asbestos Amosile Asbestos - Crocicolite Asbestos - Additional Asbestos Components (U-		- 1 0	0 0	0.396 0.266 0 0 1 0 0 0 1 -	<0.2 0.6 	- 0		1.96 0.785 <0.1	3.76 <0.1 0 1 0 1		0.615 <0.1 0 1 0 1	<0.2 0.358 - - 0 1 0 0 0 0 - 1	-	<0.2 <0.2 		-	- 0 0 0 -	~U.2	0.216 - 0 0 0 - -		- 0 - 0 - 0 - 0	2.08 - 1 1 0 1	+
Floraux Activativa Substance Substan		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 - 0 - 0 - 0 -	0 0 0 0	-	0 0 0 0	0 0 0 0 0 0 0 0 0 0	-	0 - 0 - 0 - 1 -	0 0 0		0 0 0 0	-	0 0 0 0	0 0 0 0	- 0 - 0 - 0	0	Ŧ

Comments GAC: Generic Assessment Criteria (blank): No assessment criteria available - : Not analysed

#1 USEPA RSL #2 Dutch Serious 2009 #3 Dutch Intervention 2009 #4 Defra C4SL 12/2014 #5 AECOM (modified LQM/CIEH S4ULs) #6 AECOM (modified EIC)

 Key

 XXX
 Exceedance of HH Soil. Commercial/Industrial. Sand. TOC >=1.45 to <3.48%</td>

 XXX
 Exceedance of HH Soil. Residential with Plant Uptake. Sand. TOC >=1.45 to <3.48%</td>

 XXX
 Exceedance of HH Soil. Residential without Plant Uptake. Sand. TOC >=1.45 to <3.48%</td>

BH4A	RH5A	BH5A	BH7A	BH7A	BH8A	BH8A	BH9A	BH9A
3.5-4	0.5	2.5-3	0.7	2.5-3	0.5	3-3.5	0.5	2.2-3.3
27/08/2015	28/08/2015	28/08/2015	27/08/2015	27/08/2015	26/08/2015	26/08/2015	26/08/2015	26/08/201
<0.044 <0.01	<0.044 <0.01	<0.044 <0.01	<0.044 <0.01	<0.044 <0.01	<0.044 <0.01	<0.044 <0.01	0.178 <0.01	0.106
<0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.0145	<0.01 <0.01	<0.01 0.0119	0.0197
< 0.01	<0.01 <0.01	<0.01	<0.01	<0.01	0.0109	< 0.01	0.0874	0.0255
<0.1	<0.1	<0.1	<0.1	<0.1	0.555	<0.1	<0.1	1.29
<0.2	6.894	<0.2	21.95	<0.2	7.06	<0.2	<0.2	9.75
<0.1	6.66 0.968	<0.1	21.9 5.13	<0.1	5.83 0.567	<0.1	<0.1	6.69 <0.1
<0.1 <0.01	7.86 <0.01	<0.1 <0.01	27 <0.01	<0.1 <0.01	8.18 <0.01	<0.1 <0.01	<0.1 <0.01	11 <0.01
<0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
<0.01	<0.01 <0.01	<0.01	<0.01 <0.01	<0.01 <0.01	<0.01 <0.01	<0.01 <0.01	<0.01 0.0583	0.0151 0.0174
<0.1	0.358	<0.1	1.92	<0.1	<0.1	<0.1	<0.1	2.81
<0.1	2.62	<0.1 <0.1	8.47 70	<0.1 <0.1	<0.1	<0.1 <0.1	<0.1 <0.1	19.4 66.3
<0.1	8.05	<0.1	28.5 10.5	<0.1	<0.1	<0.1	<0.1	16.4 5.98
<0.1 <0.1	2.87 27.1	<0.1 <0.1	10.5	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1	5.98
<0.1	35 <0.009	<0.1 <0.009	136 <0.01	<0.1	8.22 <0.01	<0.1	0.111	116 <0.009
<0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.07 - 0.0024	< 0.002	< 0.002	< 0.002
<0.003	<0.003	<0.003	<0.003 <0.006	<0.003 <0.006	<0.003 <0.006	<0.003	<0.003 <0.006	<0.003
<0.009	< 0.009	< 0.009	< 0.009	< 0.009	<0.009	< 0.009	< 0.009	< 0.009
<0.003	<0.003 <0.024	<0.003	<0.003 <0.024	<0.003	<0.003 <0.024	<0.003	<0.003	<0.003 <0.024
<0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
<0.01 <0.007	<0.01 <0.007	<0.01 <0.007	<0.1 <0.07	<0.01 <0.007	<0.1 <0.07	<0.01 <0.007	<0.01 <0.007	<0.01 <0.007
<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
<0.01 <0.01	<0.01 <0.01	<0.01 <0.01	<0.1 <0.1	<0.01	<0.1 <0.1	<0.01 <0.01	<0.01 <0.01	<0.01 <0.01
<0.01	<0.01 <0.01	<0.01 <0.01	<0.1	<0.01 <0.01	<0.1 <0.1	<0.01 <0.01	<0.01 <0.01	<0.01
<0.008	<0.008	<0.008	< 0.08	< 0.008	<0.08	<0.008	< 0.008	< 0.008
<0.006	<0.006	<0.006	<0.06	<0.006	<0.06	<0.006	<0.006	<0.006
< 0.007	< 0.007	< 0.007	< 0.07	< 0.007	< 0.07	<0.007	< 0.007	< 0.007
<0.009	<0.01	<0.01 <0.009	<0.01 <0.009	<0.01	<0.01 <0.009	<0.01	<0.01 <0.009	<0.01 <0.009
< 0.01	< 0.01	< 0.01	<0.1	< 0.01	<0.1	< 0.01	<0.000	< 0.01
<0.005 <0.014	<0.005 <0.014	<0.005 <0.014	<0.05 <0.14	<0.005 <0.014	<0.14	<0.005 <0.014	< 0.014	<0.005 <0.014
<0.041 <0.046	<0.041 <0.046	<0.041 <0.046	<0.41 <0.46	<0.041 <0.046	<0.41 <0.46	<0.041 <0.046	<0.041 <0.046	<0.041 <0.046
<0.009	0.013 - 0.015	< 0.009	0.13 - 0.069	< 0.009	<0.13 - 0.111	< 0.009	<0.009	0.013 - 0.03
<0.012	0.0289 0.00932	<0.012	0.0843	<0.012	0.016	<0.012	<0.012 <0.008	0.015
<0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.01	0.0546
<0.015 <0.016	0.147 0.0399	<0.015 <0.016	0.307	<0.015 <0.016	0.215 0.0332	<0.015 <0.016	<0.015 <0.016	0.36 0.105
<0.017	0.417	<0.017 0.0298	0.967	<0.017 <0.015	0.237 0.186	<0.017 <0.015	<0.017	0.4
< 0.014	0.227	< 0.014	0.63	< 0.014	0.128	< 0.014	0.0247	0.283
<0.01 <0.015	0.236	0.0245	0.684	<0.01 <0.015	0.137 0.122	<0.01 <0.015	<0.01 0.0182	0.218 0.259
<0.018	0.156	<0.018	0.975	<0.018	0.0766	< 0.018	<0.018	0.121
<0.023 <0.024	0.0468 0.196	<0.023	0.269	<0.023	<0.023 0.108	<0.023	<0.023	0.0404 0.144
<0.015	0.391	0.0235	1.93	<0.015	0.193	<0.015	0.0246	0.306
<0.014 <0.029	0.132 0.523	<0.014 0.0305	0.724 2.654	<0.014 <0.029	0.0599 0.2529	<0.014 <0.029	<0.014 0.0316	0.108 0.414
<0.071 <0.118	0.875	0.0515	4.789 9.95	<0.071 <0.118	0.4375	<0.071	0.0526	0.679
< 0.042	0.352	< 0.042	2.135	< 0.042	0.1846	< 0.042	< 0.042	0.265
<0.015	0.26	<0.015	1.05	<0.015	0.122	<0.015	0.0182	0.259
		-	-		-		-	
-		-	-		-		-	-
-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-			
	-	-	-	-	-			-
	-	-	-	-	-		-	-
		-	-	-	-	-	-	-
			-		-			
	-	-						
	< 0.005	<0.005	<0.05	0.0955	<0.05 <0.1	<0.005 <0.01	<0.005	<0.005 <0.01
<0.005	<0.01		<0.09	< 0.009	< 0.09	< 0.009	< 0.009	< 0.009
<0.01 <0.009	<0.01 <0.009	< 0.009		< 0.01	<0.1	<0.01 <0.008	<0.01 <0.008	<0.01 <0.008
<0.01		<0.009 <0.01 <0.008	<0.1 <0.08	<0.008				
<0.01 <0.009 <0.01 <0.008 <0.005	<0.009 <0.01 <0.008 <0.005	<0.01 <0.008 <0.005	<0.08 <0.05	<0.008 <0.005	<0.05	< 0.005	<0.005	< 0.005
<0.01 <0.009 <0.01 <0.008	<0.009 <0.01 <0.008	<0.01 <0.008	< 0.08	<0.008	<0.05 <0.1 <0.2	<0.005 <0.01 <0.02	<0.005 <0.01 <0.02	<0.005 <0.01 <0.02
<0.01 <0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.02	<0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.02	<0.01 <0.008 <0.005 <0.01 <0.02 <0.02	<0.08 <0.05 <0.1 <0.2 <0.2	<0.008 <0.005 <0.01 <0.02 <0.02	<0.1 <0.2 <0.2	<0.01 <0.02 <0.02	<0.01 <0.02 <0.02	<0.01 <0.02 <0.02
<0.01 <0.009 <0.01 <0.008 <0.005 <0.01 <0.02	<0.009 <0.01 <0.008 <0.005 <0.01 <0.02	<0.01 <0.008 <0.005 <0.01 <0.02	<0.08 <0.05 <0.1 <0.2	<0.008 <0.005 <0.01 <0.02	<0.1 <0.2	<0.01 <0.02	<0.01 <0.02 <0.02 <0.006 <0.01	<0.01 <0.02
<0.01 <0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.02 <0.006 <0.01 <0.006	<0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006	<0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006	<0.08 <0.05 <0.1 <0.2 <0.2 <0.06 <0.01 <0.006	<0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006	<0.1 <0.2 <0.2 <0.06 <0.01 <0.006	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006
<0.01	<0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007	<0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007	<0.08 <0.05 <0.1 <0.2 <0.02 <0.06 <0.01 <0.006 <0.01 <0.07	<0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007	<0.1 <0.2 <0.2 <0.06 <0.01 <0.006 <0.01 <0.07	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007	<0.01 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007	<0.01 <0.02 <0.02 <0.01 <0.01 <0.01 <0.007
<0.01 <0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01	<0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01	<0.01 <0.008 <0.005 <0.01 <0.02 <0.002 <0.006 <0.01 <0.006 <0.01	<0.08 <0.05 <0.1 <0.2 <0.2 <0.06 <0.01 <0.006 <0.01	<0.008 <0.005 <0.01 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2	<0.1 <0.2 <0.2 <0.06 <0.01 <0.006 <0.01	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01
<0.01 <0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.02 <0.02 <0.01 <0.006 <0.01 <0.007	<0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 1.33 0	<0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2 - 0	<0.08 <0.05 <0.1 <0.2 <0.02 <0.06 <0.01 <0.006 <0.01 <0.07 3.51 - 0	<0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007	<0.1 <0.2 <0.2 <0.06 <0.01 <0.006 <0.01 <0.07 19.1 - 0	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2 - 0	<0.01 <0.02 <0.02 <0.01 <0.01 <0.01 <0.007
<0.01 <0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2	<0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.002 <0.006 <0.01 <0.006 <0.01 <0.007 1.33 - 0 0	<0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2 - - 0 0	<0.08 <0.05 <0.1 <0.2 <0.2 <0.06 <0.01 <0.006 <0.01 <0.07 3.51 0 0	<0.008 <0.005 <0.01 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2	<0.1 <0.2 <0.0 <0.01 <0.006 <0.01 <0.006 <0.01 <0.07 19.1 - 0 0	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2 - - 0 0 0	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 0.443
<0.01 <0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2	<0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 1.33 - 0 0 0	<0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2 0 0 0 -	<0.08 <0.05 <0.1 <0.2 <0.2 <0.06 <0.01 <0.006 <0.01 <0.006 <0.01 <0.07 3.51 - 0 0 0 -	<0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2 -	<0.1 <0.2 <0.06 <0.01 <0.006 <0.01 <0.006 <0.01 - - - 0 0 - - -	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2 - - 0 0 0 - -	<0.01 <0.02 <0.02 <0.006 <0.01 <0.007 0.443
<0.01 <0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2	<0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.002 <0.006 <0.01 <0.006 <0.01 <0.007 1.33 - 0 0	<0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2 - - 0 0	<0.08 <0.05 <0.1 <0.2 <0.2 <0.06 <0.01 <0.006 <0.01 <0.006 <0.01 <0.07 3.51 - 0 0 0	<0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2 - -	<0.1 <0.2 <0.2 <0.06 <0.01 <0.006 <0.01 <0.07 19.1 - 0 0 0 0	<0.01 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2 0 0 0	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 0.443 - -
<0.01 <0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2	<0.009 <0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.006 -0.01 -0.00 -0.01 -0.00 -0.01 -0.000 -0.0000 -0.00000 -0.0000 -0.0000 -0.0000 -0.00000 -0.0000 -0.00000 -	<0.01 <0.008 <0.005 <0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2 - 0 0 0 0 0	<0.08 <0.05 <0.1 <0.2 <0.2 <0.06 <0.01 <0.006 <0.01 <0.01 - 0 0 0 - 0 0 0	<0.008 <0.005 <0.01 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2 - - - - - -	<0.1 <0.2 <0.2 <0.06 <0.01 <0.006 <0.01 <0.07 19.1 - 0 0 0 0 0	<0.01 <0.02 <0.02 <0.006 <0.01 <0.007 <0.2 - - - - - -	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 <0.2 0 0 0 0 0 0	<0.01 <0.02 <0.02 <0.006 <0.01 <0.006 <0.01 <0.007 0.443 - - -

Table 6 - VOC Concentrations in Soils

					[Location I	D BH201A	BH201A	BH202A	BH203A	BH204	BH204	BH205	BH205	BH206	BH207	BH207	BH208A	BH208A	BH209	BH209	BH210	BH210	BH211	BH211	BH212	BH212	BH213	BH213	BH214	BH2A E	I2A BH	BA BH	4A F	3H4A BI	H5A	BH5A	BH7A	BH7A	BH8A	BH8A	BH9A	BH9A
						Sample Dept	h 0.7	1.9-2	0.8	0.5	1.3	3.3	1	2.5	1.1	0.7	2.6-3.5	0.8	1.1	0.5	2.7-3.4	0.8	2.2-2.8	0.7	2.2	0.6	1.8-2.5	0.6	1.7-2	0.85	0.5	.5 0.	5 0.	6 1	3.5-4 0	0.5	2.5-3	0.7	2.5-3	0.5	3-3.5	0.5 7	2.2-3.3
							05/00/00/	-									0.5/00/00/15	0.5 /0.0 /0.0 /		05/00/00/15	0.5 40 0 40 5 4 5																						
						Sample Dat	e 25/08/201	5 25/08/201	5 25/08/2015	20/08/2015	21/08/2015	21/08/2015	21/08/2015	21/08/2015	21/08/2015	25/08/201	25/08/2015	25/08/201	5 25/08/2015	25/08/2015	25/08/2015	26/08/2015	26/08/2015	26/08/2015	26/08/2015	27/08/2015	2//08/2015 2	//08/2015 2	//08/2015 2	5/08/2015 25	/08/2015 25/0	8/2015 28/08	2015 27/08/	2015 2//0	08/2015 28/08	8/2015 28/	108/2015 2	27/08/2015	27/08/2015	26/08/2015	26/08/2015 2	26/08/2015 26/0	08/2015
Chemical	Sr Chemical Name	Unit	EQL OM NI 3.4	C_HH_C /IND_SA F 0_1.45- 8%TOC	GAC_HH_ RES+PL_S AND_1.45- 3.48%TOC	GAC_HH_RE S- PL_SAND_1. 5-3.48%TOC	E 4																																				
VOC	2,2-dichloropropane		0.01				< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.1	< 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 <	.01 <0.	01 <0.	J1 <	<0.01 <0	0.01 •	< 0.01	< 0.01	< 0.01	< 0.01		<0.01 <	
	Bromochloromethane	mg/kg	0.01 6	30#1	150#1	150#1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.1	< 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 <	.01 <0.	01 <0.	J1 <	:0.01 <0	J.01	< 0.01	<0.01	< 0.01	< 0.01	< 0.01	<0.01 <	< 0.01
	1,1-dichloropropene	mg/kg	0.01				< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.1	< 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 <	.01 <0.	01 <0.	J1 <	:0.01 <0	J.01	<0.01	< 0.01	<0.01	<0.01	<0.01	<0.01	< 0.01
	1,2-dichloroethane	mg/kg	0.01 0		0.0041#5	0.0044#5	< 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	<0.005	<0.005	<0.005	<0.005	<0.005	< 0.005 <	005 <0.0	05 <0.0	/05 <(0.005 <0	.005 🛛 🤘	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005 <	<i><0.005</i>
	1,2-dichloropropane	mg/kg	0.01 2	.65#6	0.0146#6	0.0172#6	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.01 <	.01 <0.	01 <0.	.01 <	<0.01 <0	J.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.01	< 0.01
	Dibromomethane	mg/kg	0.01	98#1	23#1	23#1	< 0.009	< 0.009	< 0.009	< 0.009	< 0.009	< 0.009	< 0.009	< 0.009	< 0.009	< 0.009	< 0.009	< 0.09	< 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 <	.009 <0.0	09 <0.0	-/ e0u	.0.009 <0	.009 <	< 0.009	< 0.09	< 0.009	< 0.09	< 0.009	< 0.009 <	< 0.009
	Bromodichloromethane	mg/kg	0.01	1.3#1	0.29#1	0.29#1	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.07	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007 <	.007 <0.0	07 <0.0	J07 < ^r	.0.007 <0	.007 .	< 0.007	< 0.07	< 0.007	< 0.07	< 0.007	<0.007 <	< 0.007
	cis-1,3-dichloropropene	mg/kg	0.01				< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.1	< 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 <	.01 <0.	01 <0.	.01 <	<0.01 <c< td=""><td>J.01</td><td>< 0.01</td><td><0.1</td><td>< 0.01</td><td>< 0.1</td><td>< 0.01</td><td>< 0.01</td><td>< 0.01</td></c<>	J.01	< 0.01	<0.1	< 0.01	< 0.1	< 0.01	< 0.01	< 0.01
	trans-1,3-dichloropropene	mg/kg	0.01				< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.1	< 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 <	.01 <0.	01 <0.	.01 <	<0.01 <0	J.01	< 0.01	<0.1	< 0.01	<0.1	< 0.01	<0.01	< 0.01
		mg/kg	0.01 23	8000#1	1600#1	1600#1	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.07	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007 <	.007 <0.0	07 <0.0	J07 <ſ	.0.007 <0	.007 <	< 0.007	< 0.07	< 0.007	<0.07	< 0.007	< 0.007 <	< 0.007
	Chlorodibromomethane	mg/kg	0.01	3.2#1	0.73#1	0.73#1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.1	< 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 <	.01 <0.	01 <0.	.01 <	<0.01 <0	J.01	< 0.01	<0.1	< 0.01	<0.1	< 0.01	<0.01	< 0.01
	1,1,1,2-tetrachloroethane	mg/kg	0.01	20#5	1.2#5	1.3#5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.1	< 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 <	.01 <0.	01 <0.	.01 <	<0.01 <0	J.01	< 0.01	<0.1	< 0.01	<0.1	< 0.01	<0.01	< 0.01
	Styrene	mg/kg	0.01 3	550#6	13.4#6	29.5#6	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.1	< 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 <	.01 <0.	01 <0.	.01 <	<0.01 <0	J.01	< 0.01	<0.1	< 0.01	<0.1	< 0.01	<0.01 <	< 0.01
	Bromoform	mg/kg	0.01	30#6	3#6	4.55#6	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.1	< 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 <	.01 <0.	01 <0.	.01 <	<0.01 <c< td=""><td>J.01</td><td>< 0.01</td><td><0.1</td><td>< 0.01</td><td>< 0.1</td><td>< 0.01</td><td>< 0.01</td><td>< 0.01</td></c<>	J.01	< 0.01	<0.1	< 0.01	< 0.1	< 0.01	< 0.01	< 0.01
	Isopropylbenzene	mg/kg	0.01 1	540#6	9.87#6	10.1#6	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	< 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 <	.005 <0.0	05 <0.0	J05 < ⁽	<0.005 <0.	0.005 <	< 0.005	< 0.05	< 0.005	< 0.05	< 0.005	< 0.005 <	< 0.005
	1,1,2,2-tetrachloroethane	mg/kg	0.01	260#5	1.9#5	2.9#5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.1	< 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 <	.01 <0.	01 <0.	.01 <	<0.01 <c< td=""><td>J.01</td><td>< 0.01</td><td><0.1</td><td>< 0.01</td><td>< 0.1</td><td>< 0.01</td><td>< 0.01</td><td>< 0.01</td></c<>	J.01	< 0.01	<0.1	< 0.01	< 0.1	< 0.01	< 0.01	< 0.01
	1,2,3-trichloropropane	mg/kg	0.02 0	.11#1	0.0051#1	0.0051#1	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	<0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	<0.016	< 0.016	< 0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016 <	016 <0.0	16 <0.0	J16 </td <td>.0.016 <0</td> <td>.016 +</td> <td><0.016</td> <td><0.016</td> <td>< 0.016</td> <td>< 0.016</td> <td>< 0.016</td> <td><0.016 <</td> <td><0.016</td>	.0.016 <0	.016 +	<0.016	<0.016	< 0.016	< 0.016	< 0.016	<0.016 <	<0.016
	n-propylbenzene 1,3,5-trimethylbenzene	mg/kg	0.01 4	530#6	32.4#6	34.4#6	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.1	< 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 <	.01 <0.	01 <0.	.01 <	<0.01 <0	J.01	< 0.01	<0.1	< 0.01	<0.1	< 0.01	<0.01	< 0.01
	1,3,5-trimethylbenzene	mg/kg	0.01 12	2000#1	780#1	780#1	< 0.008	< 0.008	< 0.008	<0.008	<0.008	< 0.008	< 0.008	< 0.008	<0.008	< 0.008	<0.008	< 0.08		< 0.008	<0.008	< 0.008	<0.008	<0.008	<0.008	< 0.008	<0.008	<0.008	<0.008	< 0.008	< 0.008 <	.008 <0.0	08 <0.0	/>> 80t	.0.008 <0	· 800.u	< 0.008	< 0.08	<0.008	<0.08	<0.008	< 0.008 <	<0.008
	tert-butylbenzene	mg/kg	0.01 12	0000#1	7800#1	7800#1	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.14	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014 <	.014 <0.0	14 <0.0	J14 < ^r	.0.014 <0	J.014 ·	< 0.014	<0.14	< 0.014	<0.14	< 0.014	<0.014 <	< 0.014
	1,2,4-trimethylbenzene	mg/kg	0.01 4	6.6#6	0.335#6	0.411#6	< 0.009	< 0.009	< 0.009	< 0.009	< 0.009	< 0.009	< 0.009	< 0.009	< 0.009	< 0.009	< 0.009	< 0.09	< 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 <	.009 <0.0	09 <0.0	/>> 00	.0.009 <0	.009 •	< 0.009	< 0.09	< 0.009	< 0.09	< 0.009	<0.009 <	< 0.009
	sec-butylbenzene	mg/kg	0.01 12	0000#1	7800#1	7800#1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.1	< 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 <	.01 <0.)1 <0.	.01 <	<0.01 <	J.01	< 0.01	<0.1	<0.01	<0.1	< 0.01	<0.01	< 0.01
	p-isopropyltoluene	mg/kg	0.01				< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.1	< 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 <	.01 <0.)1 <0.	.01 <	<0.01 <	J.01	< 0.01	<0.1	<0.01	<0.1	< 0.01		< 0.01
	n-butylbenzene	mg/kg	0.01 58	3000#1	3900#1	3900#1	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.11	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011 <	.011 <0.0	11 <0.0	J11 <′	.0.011 <0	J.011	< 0.011	<0.11	< 0.011	<0.11	<0.011	<0.011 <	< 0.011
	1,2-dibromo-3-chloropropane	mg/kg	0.01 0	064#1	0.0053#1	0.0053#1	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	< 0.014	<0.014	<0.014 <	014 <0.0	14 <0.0	J14 </td <td>.0.014 <0</td> <td>.014 🦂</td> <td><0.014</td> <td><0.014</td> <td>< 0.014</td> <td>< 0.014</td> <td>< 0.014</td> <td><0.014 <</td> <td>< 0.014</td>	.0.014 <0	.014 🦂	<0.014	<0.014	< 0.014	< 0.014	< 0.014	<0.014 <	< 0.014
	Hexachlorobutadiene	mg/kg	0.02	33#5	0.26#5	0.27#5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.2	< 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 <	.02 <0.)2 <0.	.02 <	<0.02 <	J.02	< 0.02	< 0.2	< 0.02	< 0.2	< 0.02	< 0.02	< 0.02
	1,2-Dichloroethene	mg/kg			0.2#3	0.2#3	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	<0.16	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016	< 0.016 <	.016 <0.0	16 <0.0	J16 < ⁽	.0.016 <0	.016 ·	< 0.016	<0.16	< 0.016	<0.16	< 0.016	<0.016 <	< 0.016
	Trihalomethanes	mg/kg					< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.35	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035 <	.035 <0.0	35 <0.0	/35 </td <td>.0.035 <0</td> <td>.035 <</td> <td><0.035</td> <td>< 0.35</td> <td>< 0.035</td> <td>< 0.35</td> <td>< 0.035</td> <td>< 0.035 <</td> <td>< 0.035</td>	.0.035 <0	.035 <	<0.035	< 0.35	< 0.035	< 0.35	< 0.035	< 0.035 <	< 0.035

Comments GAC: Generic Assessment Criteria (blank): No assessment criteria available - : Not analysed

#1 USEPA RSL #2 Dutch Serious 2009 #3 Dutch Intervention 2009 #4 Defra C4SL 12/2014 #5 AECCM (modified LQM/CIEH S4ULs) #6 AECCM (modified EIC)

 Key
 XXX
 Exceedance of HH Soil. Commercial/Industrial. Sand. TOC >=1.45 to <3.48%</th>
 XXX
 Exceedance of HH Soil. Residential with Plant Uptake. Sand. TOC >=1.45 to <3.48%</th>
 XXX
 Exceedance of HH Soil. Residential without Plant Uptake. Sand. TOC >=1.45 to <3.48%</th>

Table 7 - Metals and Inorganics Concentrations in Groundwater

					Well ID	BH2	BH3	BH4	BH5	BH7	BH8	BH9	BH10	BH104B	BH109	BH110	BH111	BH201A	DUP01 (BH4)
					Date Sampled	02/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015
	Analyte	Units	EQL	DWS GAC	EQS Coastal GAC														
Metals	Antimony (Filtered)	µg/L	0.16	5#1		0.171	0.415	0.36	<0.16	0.681	0.726	2.06	0.27	0.172	0.64	0.464	0.199	0.306	0.816
	Arsenic (Filtered)	µg/L	0.12	10#1	25#4	39.4	7.32	5.08	5.12	45.4	15.7	14.4	3.79	17.3	32.6	14	22	6.51	4.8
	Barium (Filtered)	µg/L	0.03	700#3		116	64.2	22.1	47.9	73.4	83.4	39.9	15.4	66	18.2	40.7	104	79.1	21.4
	Beryllium (Filtered)	µg/L	0.07	25#5		<0.07	<0.07	< 0.07	< 0.07	<0.07	< 0.07	<0.07	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07
	Boron (Filtered)	µg/L	9.4	1000#1	7000#7	133	152	52.7	99.2	138	130	27.8	82.3	140	107	137	65.1	106	52.2
		µg/L	0.1	5#1	0.2#4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.228	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		µg/L	0.22	50#1	0.6#4	2.23	3.62	1.53	2.26	5.24	3.98	7.52	1.21	1.71	3.56	3.44	3.75	2.27	1.22
	Cobalt (Filtered)	µg/L	0.06	6#5	3#7	0.3	2.33	0.594	3.15	3.29	2.77	9.27	0.337	1.25	9.39	4.36	1.79	11.8	0.262
	Copper (Filtered)	µg/L	0.85	2000#1	5#4	1.95	1.13	0.939	1.09	1.59	1.4	61.3	1.16	1.74	1.26	1.29	<0.85	1.08	1.13
	Lead (Filtered)	µg/L	0.02	25#1	7.2#4	0.059	0.034	0.066	0.057	0.072	0.033	22.8	< 0.02	0.057	0.085	0.04	< 0.02	0.098	0.028
	Manganese (Filtered)	µg/L	0.04	50#1		772	91.2	8.89	860	1200	169	983	23	665	1320	126	2270	1180	7.19
		µg/L	0.01	1#1	0.05#4	<0.01	<0.01	<0.01	< 0.01	<0.01	<0.01	0.0171	<0.01	<0.01	< 0.01	< 0.01	< 0.01	<0.01	< 0.01
	Nickel (Filtered)	µg/L	0.15	20#1	20#4	6.63	6.92	1.77	5.5	8.43	7.03	12.3	2.26	8.43	11	6.1	3.85	18.4	1.81
	Selenium (Filtered)	µg/L	0.39	10#1		9.71	9.06	0.781	1.67	1.13	1.92	1.87	1.86	7.19	3	13.2	2.87	1.76	0.897
	Silver	µg/L	1.5	94#5	0.5#7	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
	Thallium (Filtered)	µg/L	0.96	0.2#5		<0.96	<0.96	<0.96	<0.96	<0.96	<0.96	<0.96	<0.96	<0.96	<0.96	<0.96	<0.96	<0.96	<0.96
		µg/L	0.24	86#5	100#7	0.657	1.56	1.61	1.33	2.35	1.56	7.67	0.759	0.67	1.57	1.33	1.07	0.941	1.45
		µg/L	0.41	6000#5	40#4	15.7	8.79	12.6	5.59	11.2	9.92	280	1.27	11.9	27.4	4.62	6	17.5	5.01
Inorganics		mg/L	0.3	50#1		<0.3	5.18	21.5	6.42	0.926	4.42	<0.3	18.7	2.01	0.942	5.64	0.94	9.17	21.9
		mg/L	0.05			< 0.05	0.465	7.3	1.55	0.07	0.302	14.1	4.46	< 0.05	0.297	0.216	< 0.05	0.056	7.28
		mg/L	0.2	0.389#1		0.268	<0.2	<0.2	0.508	0.707	0.619	5.66	<0.2	<0.2	1.23	<0.2	4.74	<0.2	<0.2
1	Ammonium as NH4 BRE	mg/L	0.3			0.345	<0.3	<0.3	0.653	0.909	0.796	7.28	<0.3	<0.3	1.58	<0.3	6.09	<0.3	<0.3
1	Sulphate (soluble)	mg/l	2			457	57.4	43	79.9	74.5	61.6	<2	70.1	287	75	55.2	37.5	82.2	42.3
1	COD	mg/L	7			<7	<7	8.09	21.2	10.1	10.5	3330	<7	7.65	190	<7	43.5	<7	<7
	pH (Lab)	pH_Units	1			7.59	7.45	7.1	7.39	7.9	7.38	7.55	7.56	7.22	7.49	7.52	7.32	8.09	7.14

Notes:

GAC Generic Assessment Criteria

DWS UK Drinking Water Standards

EQS Coastal Environmental Water Quality Standard - Coastal Waters

EQL Estimated Quantitation Limit

Laboratory Method Detection Limit is greater than GAC GAC Exceedance

#1 WS Regs 2010 (Eng/Wal)

#2 WHO Petroleum In DW 2008

#3 WHO DWG 2011

#4 WFD EQS 2010 Coastal (Eng/Wal)

#5 USEPA RSL (tapwater)

#6 SEPA WAT-SG-53 Marine EQS - MAC - 2013

#7 SEPA WAT-SG-53 Marine EQS - AA - 2013

#8 PNEC (EU REACH) - Coastal

#9 New Hampshire DES (2009)

#10 California Draft health protective concentration

#11 Calc WHO

Table 8 - TPH, BTEX, MTBE and TAME Concentrations in Groundwater

				Well ID	BH2	BH3	BH4	BH5	BH7	BH8	BH9	BH10	BH104B	BH109	BH110	BH111	BH201A	DUP01 (BH4)
				Date Sampled	02/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015
	Analyte	Units	EQL	DWS GAC														
	GRO >C5-C10	μg/L	10		<10	<10	<10	<10	<10	<10	281	<10	<10	<10	<10	<10	<10	<10
	EPH >C6-C10	µg/L	100		<100	<100	<100	<100	<100	<100	<100	-	<100	<100	<100	<100	<100	<100
	EPH >C6-C40	µg/L	100		<100	<100	<100	<100	<100	<100	1430	<100	<100	159	<100	<100	<100	<100
	EPH >C10-C40	µg/L	46		<46	<46	<46	<46	<46	<46	1430	<46	<46	159	<46	65.8	<46	<46
	>C12-C16 Aliphatics	µg/L	10	300 ^{#2}	-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
	>C16-C21 Aliphatics	μg/L	10	300#2	-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
трн	>C16-C35 Aliphatics	μg/L	-		-	<20	<20	<20	-	<20	-	-	-	<20	<20	<20	-	<20
IPH	>C21-C35 Aliphatics	µg/L	10	300 ^{#2}	-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
	>C12-C35 Aliphatics	μg/L	10		-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
	>EC12-EC16 Aromatics	µg/L	10	90 ^{#2}	-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
	>EC16-EC21 Aromatics	µg/L	10	90 ^{#2}	-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
	>EC21-EC35 Aromatics	µg/L	10	90 ^{#2}	-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
	>EC12-EC35 Aromatics	µg/L	10		-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
	>C5-C35 Aliphatics & Aromatics	µg/L	10		-	<10	<10	<10	-	<10	-	-	-	<10	<10	<10	-	<10
	Benzene	µg/L	1	1#1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	1	700 ^{#3}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Ethylbenzene	µg/L	1	300 ^{#3}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BTEX	Xylene (m & p)	µg/L	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Xylene Total	µg/L	-	500 ^{#3}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	1	9.9900000000018E11 ^{#1}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Total BTEX	µg/L	28		<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28	<28
Overenetes	MTBE	µg/L	1	900 ^{#11}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Oxygenates	Tert Amyl Methyl Ether	µg/L	1	140 ^{#9}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:

GAC Generic Assessment Criteria

UK Drinking Water Standards DWS

EQL Estimated Quantitation Limit

#1 WS Regs 2010 (Eng/Wal)#2 WHO Petroleum In DW 2008#3 WHO DWG 2011

#4 WFD EQS 2010 Coastal (Eng/Wal) #5 USEPA RSL (tapwater) #6 SEPA WAT-SG-53 Marine EQS - MAC - 2013

#7 SEPA WAT-SG-53 Marine EQS - MAC - 2013
#8 PNEC (EU REACH) - Coastal

#9 New Hampshire DES (2009)

#10 California Draft health protective concentration

#11 Calc WHO

Table 9 - PAH Concentrations in Groundwater

				Well ID	BH2	BH3	BH4	BH5	BH7	BH8	BH9	BH10	BH104B	BH109	BH110	BH111	BH201A	DUP01 (BH4)
				Date Sampled	02/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015
Analyte	Units	EQL	DWS GAC	EQS Coastal GAC														
Naphthalene	µg/L	1	6#11	1.2#4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthylene	µg/L	1	18#11		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Acenaphthene	µg/L	1	18#11		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Fluorene	µg/L	1	12#11		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Phenanthrene	µg/L	1	4#11		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Anthracene	µg/L	1	90#11	0.1#4	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Fluoranthene	μg/L	1	4#11	0.1#4	<1	<1	<1	<1	<1	<1	6.12	<1	<1	<2	<1	<1	<1	-
Pyrene	μg/L	1	9#11		<1	<1	<1	<1	<1	<1	4.78	<1	<1	<2	<1	<1	<1	-
Benz(a)anthracene	μg/L	1	0.1#11		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Chrysene	µg/L	1	1#11		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Benzo(a) pyrene	μg/L	1	0.01#1	0.05#4	<1	<1	<1	<1	<1	<1	4.69	<1	<1	<2	<1	<1	<1	-
Indeno(1,2,3-c,d)pyrene	µg/L	1	9.9900000000029E11#1		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Dibenz(a,h)anthracene	µg/L	1	0.01#11		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Benzo(g,h,i)perylene	µg/L	1	9.9900000000029E11#1		<1	<1	<1	<1	<1	<1	4.05	<1	<1	<2	<1	<1	<1	-
Benzo(b)fluoranthene	µg/L	1	9.9900000000029E11#1		<1	<1	<1	<1	<1	<1	6.42	<1	<1	<2	<1	<1	<1	-
Benzo(k)fluoranthene	µg/L	1	9.9900000000029E11#1		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Benzo(b)&(k)fluoranthene	µg/L	-		0.03#4	<2	<2	<2	<2	<2	<2	8.42	<2	<2	<4	<2	~2	<2	-
PAHs (sum of 4)	µg/L	-	0.1#1		<4	<4	<4	<4	<4	<4	14.47	<4	<4	<8	<4	<4	<4	-
benzo(g,h,i)perylene + indeno(1,2,3-cd)pyrene	µg/L	-		0.002#4	<2	<2	<2	<2	<2	<2	6.05	<2	<2	<4	<2	<2	<2	-
Coal Tar (Bap as surrogate marker)	µg/L	-			<1	<1	<1	<1	<1	<1	4.69	<1	<1	<2	<1	<1	<1	-

Notes:

Generic Assessment Criteria GAC UK Drinking Water Standards Environmental Water Quality Standard - Coastal Waters DWS EQS Coastal Estimated Quantitation Limit EQL Laboratory Method Detection Limit is greater than GAC GAC Exceedance

#1 WS Regs 2010 (Eng/Wal)#2 WHO Petroleum In DW 2008#3 WHO DWG 2011

#3 WHO DWG 2011 #4 WFD EQS 2010 Coastal (Eng/Wal) #5 USEPA RSL (tapwater) #6 SEPA WAT-SG-53 Marine EQS - MAC - 2013

#7 SEPA WAT-SG-53 Marine EQS - AA - 2013

#8 PNEC (EU REACH) - Coastal

#9 New Hampshire DES (2009)#10 California Draft health protective concentration

#11 Calc WHO

Table 10 - VOCs and SVOCs Concentrations in Groundwater

					Well ID	BH2	BH3	BH4	BH5	BH7	BH8	BH9	BH10	BH104B	BH109	BH110	BH111	BH201A	DUP01 (BH4)
					Date Sampled	02/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	i 01/09/2015
Ai	nalyte	Units	EQL	DWS GAC	EQS Coastal GAC														
VOC	2,2-dichloropropane	µg/L	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Bromochloromethane	µg/L	1	83#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,1-dichloropropene	µg/L	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,2-dichloroethane	µg/L	1	3#1	10#4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,2-dichloropropane	µg/L	1	0.1#1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Dibromomethane	µg/L	1	8#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Bromodichloromethane	μg/L	1	0.13#5		<1 <1	<1 <1	<1 <1	<1	<1	<1	<1	<1	<1	<1	<1 <1	<1 <1	<1 <1	<1 <1
	cis-1,3-dichloropropene trans-1,3-dichloropropene	µg/L µg/L	1			<1	<1	<1	<1 <1	<1	<1	<1	<1						
	1,3-dichloropropane	µg/L	1	0.1#1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Chlorodibromomethane	µg/L	1	9.99000000000015E11 #1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,1,1,2-tetrachloroethane	µg/L	1	0.57#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1	Styrene	µg/L	1	20#3	50#7	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Bromoform	µg/L	1	9.9900000000015E11		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Isopropylbenzene	µg/L	1	450#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,1,2,2-tetrachloroethane	μg/L μg/L	1	0.076#5 0.00075#5		<1 <1													
	1,2,3-trichloropropane n-propylbenzene	µg/L µg/L	1	660#5		<1 <1	<1	<1 <1	<1 <1	<1	<1	<1 <1	<1 <1	<1	<1	<1 <1	<1	<1	<1
	1,3,5-trimethylbenzene	µg/L	1	120#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	tert-butylbenzene	µg/L	1	690#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1.2.4-trimethylbenzene	µg/L	1	15#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	sec-butylbenzene	µg/L	1	2000#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	p-isopropyltoluene	µg/L	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	n-butylbenzene	µg/L	1	1000#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,2-dibromo-3-chloropropane	µg/L	1	0.1#1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Hexachlorobutadiene	µg/L	1	0.6#3	0.1#4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,2-Dichloroethene	µg/L		50#3		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
SVOC	Trihalomethanes	µg/L	4	100#1 24#3		<4	<4	3.07	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	2.91
SVOC	2-methylnaphthalene	µg/L	1	24#3		<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<4 <4	<1 <1	<1 <1	<2 <2	<1 <1	<1 <1	<1 <1	-
	4-bromophenyl phenyl ether	µg/L	1			<1													
	4-chlorophenyl phenyl ether	μg/L	1	0.12#5			<1	<1	<1	<1	<1	<4 <4	<1	<1	<2 <2	<1	<1	<1 <1	
	Azobenzene	µg/L	· ·			<1	<1	<1	<1	<1	<1		<1	<1		<1	<1		
	Bis(2-chloroethoxy) methane	µg/L	1	59#5		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	Bis(2-chloroethyl)ether	µg/L	1	0.014#5		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	· ·
	Carbazole	µg/L	1			<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	Dibenzofuran	µg/L	1	7.9#5		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	Hexachlorocyclopentadiene	µg/L	1	31#5		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	Hexachloroethane	µg/L	1	0.9#5		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Chlorinated Hydrocarbons	Chloromethane	µg/L	1	20#3		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Vinyl chloride	µg/L	1	0.5#1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Chloroethane	µg/L	1	21000#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,1-dichloroethene	µg/L	1	30#3		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Dichloromethane	µg/L	3	20#3	20#4	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
	trans-1,2-dichloroethene	µg/L	1	360#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,1-dichloroethane	µg/L	1	2.7#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	cis-1,2-dichloroethene	µg/L	1	36#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Chloroform	µg/L	1).99000000000015E11#	2.5#4	<1	<1	1.57	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.41
	1,1,1-trichloroethane	µg/L	1	2000#3	100#4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
			-	3#1															
	Carbon tetrachloride	µg/L	1	÷	12#4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Trichloroethene	µg/L	1	0.9900000000017E11#	10#4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,1,2-trichloroethane	µg/L	1	0.28#5	300#4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Tetrachloroethene	µg/L	1	.99000000000017E11#	10#4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1	Sum of PCE and TCE	µg/L		10#1		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1		0				-	-	-	·F	·F	-	-	5	5	.E	5	5	-E	<5
	TCE+DCE+VC PCE+TCE+DCE+VC	μg/L μg/L				<5 <6	<5	<5 <6	<5	<5	<5	<5 <6	<5	<5 <6	<5 <6	<5	<5	<5	<3

Table 10 - VOCs and SVOCs Concentrations in Groundwater

					Well ID	BH2	BH3	BH4	BH5	BH7	BH8	BH9	BH10	BH104B	BH109	BH110	BH111	BH201A	DUP01 (BH4)
					Date Sampled	02/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	5 01/09/20
Ai	nalyte	Units	EQL	DWS GAC	EQS Coastal GAC														
Phenolics	2-methylphenol	µg/L	1	930#5		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	2-nitrophenol	µg/L	1			<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	2,4-dimethylphenol	µg/L	1	360#5		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	4-chloro-3-methylphenol	µg/L	1	1400#5	40#4	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	4-methylphenol	µg/L	1	1900#5		<1	<1	<1	<1	<1	<1	172	<1	<1	<2	<1	5.42	<1	-
	4-nitrophenol	µg/L	1			<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	Phenol	µg/L	1	5800#5	7.7#4	<1	<1	<1	<1	<1	<1	10.7	<1	<1	<2	<1	<1	<1	-
	2-chloronaphthalene	µg/L	1	750#5		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Amino Aliphatics	N-nitrosodi-n-propylamine	µg/L	1	0.011#5		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Anilines	2-nitroaniline	µg/L	1	190#5	1	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	3-nitroaniline	µg/L	1		1	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	4-chloroaniline	µg/L	1	0.36#5		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	4-nitroaniline	µg/L	1	3.8#5		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
xplosives	2,4-Dinitrotoluene	µg/L	1	0.24#5		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
-	2,6-dinitrotoluene	µg/L	1	0.048#5		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	
	Nitrobenzene	µg/L	1	0.14#5		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
Halogenated Benzenes	1,3,5-Trichlorobenzene	µg/L	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
-	Chlorobenzene	µg/L	1	300#3		1.7	<1	<1	<1	1.77	<1	1.89	<1	<1	<1	<1	<1	1.8	<1
	Bromobenzene	µg/L	1	62#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	2-chlorotoluene	µg/L	1	240#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	4-chlorotoluene	µg/L	1	250#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,3-dichlorobenzene	µg/L	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,4-dichlorobenzene	µg/L	1	300#3		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,2-dichlorobenzene	µg/L	1	1000#3		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,2,4-trichlorobenzene	µg/L	1	1.1#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,2,3-trichlorobenzene	µg/L	1	7#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Hexachlorobenzene	µg/L	1	1#3	0.01#4	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	
alogenated Hydrocarbons	Dichlorodifluoromethane	µg/L	1	200#5	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
,	Bromomethane	µg/L	1	7.5#5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Trichlorofluoromethane	μg/L	1	1100#5	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1,2-dibromoethane	µg/L	1	0.1#1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
alogenated Phenols	2-chlorophenol	μg/L	1	0.1#3	50#4	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	2,4-dichlorophenol	µg/L	1	0.3#3	20#4	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	
	2,4,5-trichlorophenol	µg/L	1	9#3	2011	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	2,4,6-trichlorophenol	μg/L	1	200#3	1	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-
	Pentachlorophenol	µg/L	1	9#3	0.4#4	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	

Table 10 - VOCs and SVOCs Concentrations in Groundwater

					Well ID	BH2	BH3	BH4	BH5	BH7	BH8	BH9	BH10	BH104B	BH109	BH110	BH111	BH201A	DUP01 (BH4)
					Date Sampled	02/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015	02/09/2015	01/09/2015	01/09/2015	01/09/2015	02/09/2015	01/09/2015
	Analyte	Units	EQL	DWS GAC	EQS Coastal GAC														
Phthalates	Bis(2-ethylhexyl) phthalate	µg/L	2	8#3	1.3#4	<2	<2	<2	<2	<2	<2	<8	<2	<2	<4	<2	<2	<2	· · ·
	Butyl benzyl phthalate	µg/L	1	16#5	20#7	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	- 1
	Di-n-butyl phthalate	µg/L	1	900#5	8#7	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	- 1
	Di-n-octyl phthalate	µg/L	5	200#5	20#7	<5	<5	<5	<5	<5	<5	<20	<5	<5	<10	<5	<5	<5	- 1
	Diethylphthalate	µg/L	1	15000#5	200#7	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	- 1
	Dimethyl phthalate	µg/L	1		800#7	<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	- 1
Solvents	Carbon disulfide	µg/L	1	810#5		<1	<1	<1	<1	<1	<1	2.28	<1	<1	<1	<1	<1	<1	<1
	Isophorone	µg/L	1	78#5		<1	<1	<1	<1	<1	<1	<4	<1	<1	<2	<1	<1	<1	-

Notes:

Generic Assessment Criteria
UK Drinking Water Standards
Environmental Water Quality Standard - Coastal Waters
Estimated Quantitation Limit
Laboratory Method Detection Limit is greater than GAC
GAC Exceedance

#1 WS Regs 2010 (Eng/Wal) #2 WHO Petroleum In DW 2008 #3 WHO DWG 2011 #4 WFD EQS 2010 Coastal (Eng/Wal)

WTD EQS 2010 Coastal (Eng/Wal)
SEPA RSL (tapwater)
SEPA WAT-SG-53 Marine EQS - MAC - 2013
PNEC (EU REACH) - Coastal

#9 New Hampshire DES (2009) #10 California Draft health protective concentration #11 Calc WHO

Table 11 - Field Duplicate QA Check

Well ID	BH4	DUP01	RPD
Date Sampled	01/09/2015	01/09/2015	

Method Type	Analyte	Units	EQL			
EPH by GC-FID	>C10-C40	µg/l		<46	<46	0
GRO by Headspace GC-FID	>C5-C10	µg/l		<10	<10	0
	MTBE	µg/l		<1	<1	0
	Benzene	µg/l		<1	<1	0
	Toluene	µg/l		<1	<1	0
	Ethylbenzene	µg/l		<1	<1	0
	Xylene (m & p)	µg/l		<1	<1	0
	Xylene (o)	µg/l		<1	<1	0
Metals by ICP-OES	Arsenic (Filtered)	µg/l		52.7	52.2	0
	Boron (Filtered)	µg/l		<0.1	<0.1	0
	Cadmium (Filtered)	µg/l		1.53	1.22	11
	Chromium (III+VI) (Filtered)	µg/l		0.939	1.13	9
	Copper (Filtered)	µg/l		0.066	0.028	40
	Lead (Filtered)	µg/l		<0.01	<0.01	0
	Mercury (Filtered)	µg/l		1.77	1.81	1
	Nickel (Filtered)	µg/l		0.781	0.897	7
	Selenium (Filtered)	µg/l		12.6	5.01	43
	Zinc (Filtered)	µg/l		21.5	21.9	1
bH by Metrohm	pH (Lab)	-		7.1	7.14	0
SO4 CL NO2 NO2 DO4 Amm N2 Thissupports Ha	Nitrata (ap NO2)	mg/l		7.3	7.28	0
SO4, CI, NO3, NO2, PO4, Amm N2, Thiocyanate, He	Nitrate (as NO3-)	U U				0
	ORTHOPHOSPHATE (PO4-P)	mg/l		<0.2	<0.2	÷
	Ammoniacal Nitrogen as N	mg/l		< 0.3	< 0.3	0
	Ammonium as NH4 BRE	mg/l		43	42.3	1
	Sulphate (soluble)	µg/l		28.2	28.4	0

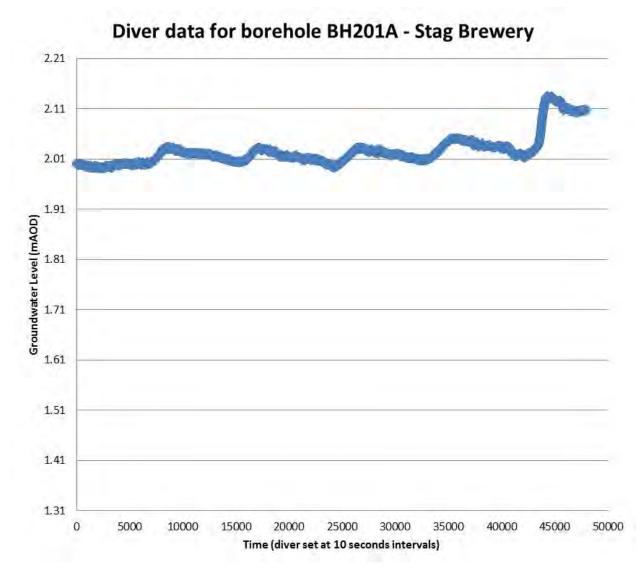
*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 100 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

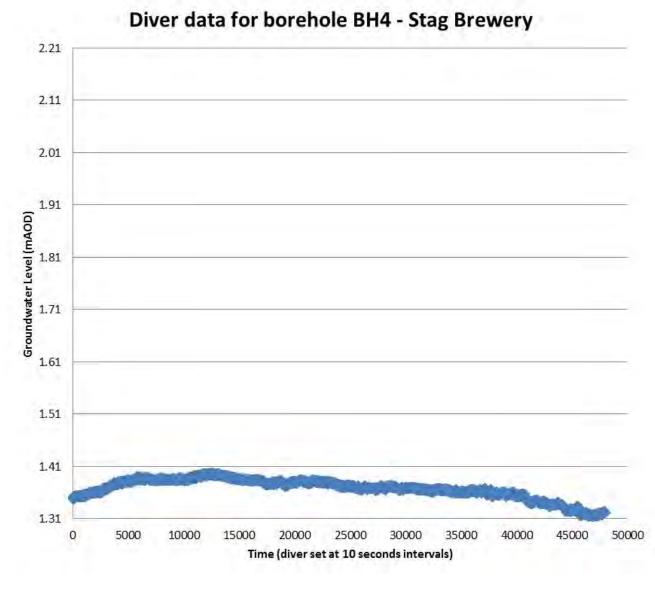


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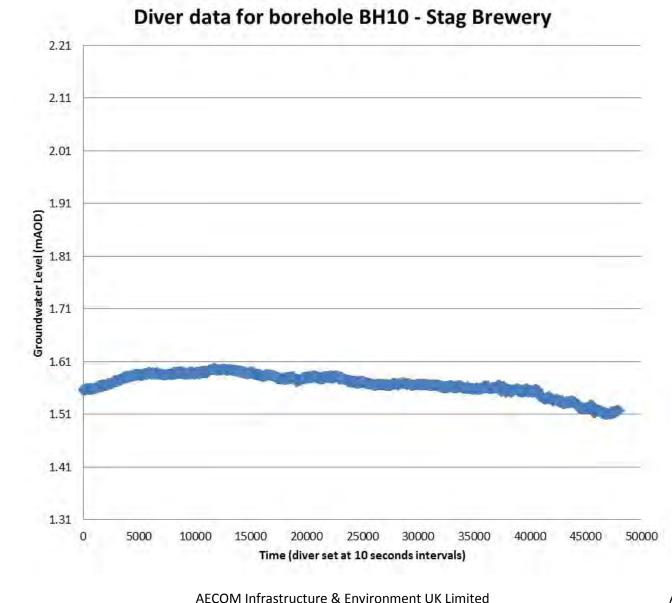
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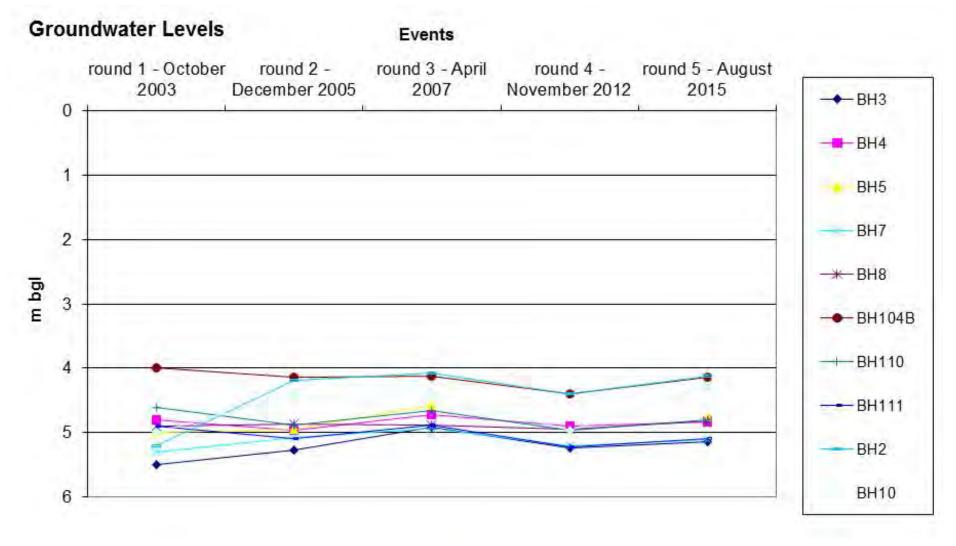


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APPENDIX A – DE-SILTING & DEVELOPMENT OF EXISTING MONITORING WELLS

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DE-SILTING OF MONITORING WELLS

The review of the historical information in the previous SPMP reports between October 2003 and November 2012 indicated the depths of four groundwater monitoring wells to have decreased due to accumulation of sand and silt in the standpipes. The changes in depth are presented in **Table A1**.

Table A1 – Cha	anges in Wells De	pths			
Well ID	Dip Round 1 October 2003 [m bgl]	Dip Round 2 December 2005 [m bgl]	Dip Round 3 April 2007 [m bgl]	Dip Round 4 November 2012 [m bgl]	Change in Depth [m]
BH3	6.60	6.18	5.94	5.38	-1.22
BH4	6.70	6.31	6.23	4.95	-1.75
BH5	7.00	6.47	6.23	4.87	-2.13
BH10	7.13	7.13	7.13	5.53	-1.47

On 24 and 25 August 2015 AECOM undertook the de-silting of the thirteen existing groundwater monitoring wells: BH2, BH3, BH4, BH5, BH7, BH8, BH9, BH10, BH104B, BH109, BH110, BH111 and BH112.

Air lift surging techniques were used to de-silt the thirteen monitoring wells. The monitoring wells were alternatively surged and pumped with air using a compressor in combination with a peristaltic pump. Air is injected into the base of the silted wells and the air bubbles created a surging effect that carries water and dislodged sediments upwards and out of the well. As the groundwater reaches the top of the casing, the air supply is shut off, allowing the aerated water column to fall. A peristaltic pump is then used to pump the well to remove the silt and sand deposits from the screen from the base of the wells.

A summary of the results of the de-silting works is in Table A2.

Table A2: De	-silting of Grour	ndwater Moni	itoring Wells (AECOM, 24-25 Au	gust 2015)
Well ID	Well Screen Interval [m bgl] (Formation)	Standing Water Level [m bgl]	Initial Depth to Bottom of Well [m bgl]	Final Depth to Bottom of Well After De-silting [m bgl]	Comments
BH2	3.0 – 6.8 (Gravel)	4.150	6.540	6.800	Good recharge. 2 litres of sludge / silt removed and the well returned to its as constructed depth.
BH3	2.5 – 6.5 (Sand)	5.250	5.130	6.095	Initially dry. Organic material removed. Good recharge thereafter.
BH4	2.5 – 6.7m (Sand)	4.895	4.090	6.190	Initially dry. Organic material removed. Good groundwater recharge thereafter.
BH5	3.0 – 7.0m (Sand)	4.840	4.750	6.100	Initially dry. Organic material removed. Good recharge thereafter.
BH7	2.5 – 6.7m (*) (Sand)	5.140	6.470	7.150	Good recharge. 3 litres of sludge / silt removed.



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Well ID	Well Screen Interval [m bgl] (Formation)	Standing Water Level [m bgl]	Initial Depth to Bottom of Well [m bgl]	Final Depth to Bottom of Well After De-silting [m bgl]	Comments
BH8	3.0 – 7.2m (Sand)	4.875	6.240	6.900	Good recharge. 1.5 litres of sludge a silt removed.
BH9	No information available. (**)	Dry	2.360	2.650	Initially dry. Very little sludge removed. Recharges slowly.
BH10	3.0 – 7.0m (Sand)	4.375	5.015	7.035	Good recharge. Silty sludge removed. Well returned to its as constructed depth.
BH104B	1.0 – 6.0m (MG + sandy Clay+Sand)	4.190	4.880	4.980	Good recharge. Very little sludge removed.
BH109	1.0 – 6.0m (sandy Clay + Sand)	4.550	6.130	6.150	Good recharge. 1 litre of sand / sludge removed.
BH110	0.8 – 5.70m (MG + Sand + Gravel)	4.855	4.750	5.530	Initially dry. Silty sludge removed. Good groundwater recharge thereafter.
BH111	1.0 – 7.6m (MG + Sand)	5.150	7.470	7.657	Good recharge. Well returned to its as constructed depth.
BH112	1.0 – 3.0m (MG+Grave)	Dry	2.680	2.780	Well found dry. Very little sludge removed. Remaining deposits could not be removed as very compacted

MG – Made Ground

m bgl – metres below ground level

(*) Well Assumed deeper. Original CRA, 2003 BH7 borehole log indicates 6.70m bgl as the final depth to installation but the well measurements carried out in August 2015 indicate that the depth to bottom of this well reached 7.150m bgl. During the September 2015 groundwater monitoring event this was measured to 6.947m bgl as a result of further silt deposited after the de-silting event.

(**) Based on the original CRA, 2003 borehole log, no monitoring well was installed within the Made Ground in this location. However, analyses of groundwater samples were carried out. Following the initial AECOM July 2015 site walkover, a 50mm well standpipe was noted within a steel cover flush to the ground. Based on the review of the historical groundwater monitoring reports and September 2015 dipping activities, BH9 is considered complete with a groundwater monitoring installation. No information on the well screen interval is available for review.

The volume of groundwater/silt/sand sludge removed from the wells was between 1.5 and 50 litres. Following the purging, standing water levels ranging between 4.150m and 5.250m bgl were measured in the monitoring wells, with the exception of well BH112 which remained dry. The post-desilting and development water column thicknesses for monitoring and sampling ranged between 0.675m (BH110) and 2.660m (BH10).

No historical information is reported to detail the construction of the monitoring well at BH9. However, the drilling of BH9A, immediately adjacent to BH9, recorded an obstruction at 3.3m bgl, thought to represent a relict concrete slab. This is consistent with the drilling refusal reported on the BH9 at 2.2m bgl. It is therefore considered that BH9 is installed within the Made Ground and groundwater samples collected from this location are representative of perched water. With the exception of BH9, where fast drawdown and slow recharge of the perched groundwater was noted, the monitoring wells displayed relatively slow drawdown



and rapid recharge. This, along with the amount of water available, suggested that the monitoring network is suitable for monitoring and sampling from the superficial aquifer beneath the Site.



APPENDIX B – EXPLORATORY HOLE LOGS

47075502/ PH2 ESA 22 SEPTEMBER 2015



Proje	ect Name and Site					Client AB Inbey						BOREHOL	E No	
	Stag Brewer	y, M	ortla	ke, Londo	on SW	14			AB	B Inbev			BH109	۸
Job N			Date Start Da	ate 28-08-	15	Ground	Level (n	1)	Co-Ordin	nates ()			BIII03	~
	47075502	1	End Da	te 28-08-	15									
Cont	ractor					Method	l / Plant U		1.D.	р'			Sheet	
	ESL		1	1			Concrete	e Corer and		_			1 of 1	
		bpm	ter		and h			S	TRATA	A				E
Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend (T	ess)			SCRIPTIO	DN		C	OMMEN	NTS	Installation
-					0.35) - 0.35 -	CONCRE	TE							
- 0.5		<0.1			-	MADE G	ROUND	Brown, g	rey, sandy	, fine	Dry NVO			
-				×× "	0.70	fine to coa	urse. Grav	o subagula vel is conc	rete, red a	Sand is	Damp NVC			_
- 1.0	BH109A_0.8	<0.1						atural ston andy, grav		/)		
-					1.20	is fine to c	oarse. G	ravel is fin lar of flint	e to mediu					
- 1.5		<0.1			-	Brown, sa	ndy, slig	htly gravel	ly CLAY.	Sand	Damp NVC)		
- 1.5						is fine to c subrounde		ravel is fin	e to mediu	um				
				000	1.90	Duorra oo	ndri fina	40 mg dinm		dadta	Damp NVC			_
- 2.0		<0.1			2.10	subangula	r GRAV	to medium EL of flint	. Sand is f	ine to	Damp NVC			
-				· · · · · ·	0.700 -	coarse. Brown, gr	ey, slight	ly gravelly	, fine to c	oarse				
-2.5		<0.1		0	-	SAND. G	ravel is fi	ine, subrou	inded of fl	lint.				
-				0	2.80	Brown/ora	prange, gravelly, fine to coarse SAND. Damp N)		
- 3.0		<0.1			-	Gravel is t subrounde	ine to me	to medium, subangular to						
					-									
3.5 -		<0.1		a .	3.50	Borehole	erminate	d at 3.5m	bgl.					
Ē					-									
F					-									
ŀ					-									
Ē					-									
E .					-									
-					-									
Ē														
E .					-									
-					-									
È					-									
-					-									
					-									
					-									
DT 52					-									
	Backfill				Sam	ple Deta	ails	Le	gend				GENERA	
	Cement seal					Small disturl sample		Concrete	0	Made	Ground		REMARK	
G 📕 I	Bentonite Fill					sample		Sandy grave	lly CLAY		y Gravel		NVO - No visual or Olfact Evidence of Contamination	
								Gravelly Sar	ıd				m bgl - meters below grou Hand pitted to 1.2mbgl	
- S														
GLOC										4				
							Ţ	Groundwater Table						
.02.10														
1E_08								Logged By CG				Appr	roved By MM	



Proje	ct Name and Sit					Client AD Lubra							BOREH	IOLE	No
	Stag Brewe	-				14			AB	B Inbev					
Job N	10	1	Date	_{ate} 20-0 te 20-0	8-15	Groun	d Level (n	n)	Co-Ordir	nates ()			БП	201	
	47075502	1	End Da	te 20-0	8-15										
Cont	ractor					Metho	d / Plant						Sheet		
	ESL						Concret	e Corer.					1	of 1	
		(mq	r					S	STRATA	Ą	1				
Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	ness)			ESCRIPTIO			C	OMMEN	TS		Installation
Ē					0.25	TARMA	C over CO	ONCRETE	1						
- 0.5					(0.45)	MADE C fine-med brick and	GROUND ium, angu l concrete	: Dense, sa ilar-subang . Sand is fi	undy, jular grave ne to coar	el of se.	Dry NVO.				
						Borehole on concr	eterminate	ed at 0.7m	bgl due to	refusal					
	Backfill		Sam	ple De	tails	Le	gend				GENE	ERAL			
	Cement seal					Ashphalt Made Ground						REMA			
						⊈ Groundwater Table ⊥ Groundwater Strike ⊥						NVO - No visual or Evidence of Contar m bgl - meters belo Hand pitted to 0.7n	nination. w ground l		
								Logged H	Зу	CG		Appro	oved By	MM	



Bor	eho	le	Log

Proje	ect Name and Site						Client A B. Inhey						BOREHOLE	E No
	Stag Brewer	ry, M	lortla	ke, Lon	don S	W14			AE	B Inbev			PU201	•
Job N	√o		Date Start Da	_{ate} 24-0	8-15	Grou	nd Level (r	n)	Co-Ordin	nates ()			BH201	A
	47075502		End Da	te 25-0	8-15									
Cont	tractor					Meth	od / Plant						Sheet	
	ESL						Concret	te Corer an	d Solid St	em Auger.			1 of 1	
		(mq	er			1			STRATA	A	1			
Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thick ness)			ESCRIPTI			C	OMME	NTS	Installation
:					0.25	- TARMA -	AC over C	ONCRETH	Ξ					
- 0.5 	BH201A_0.7	<0.1			(0.95)	gravelly fine-coa	, fine-coar): Brown/re se sand. G ar-subangu	ravel is		Damp NVC)		
- 1.0		<0.1			1.20	-								
- - 		<0.1				 Light br 	own, dens al rounde	e, medium d flint.	-fine SAN	ID with	Dry NVO			
-2.0	BH201A_1.9-2.	.0 <0.1			(2.00)	-								
- 2.5		<0.1				-								
- 3.0		<0.1			3.20									
- 		<0.1	Ţ	<u> </u>		- medium	and GRAVEL. Gravel is n-coarse flint. Sand is fine-coarse ight brown.			se	Wet from 3	.7mbgl	NVO	
- 4.0 					(1.90)	- - - -								
- 4.5 				<u>×1, 71</u> 1 <u>, 71</u> 7 71 ×11		- - - -								
- 5.0				1 <u>/ 11/ 1</u>	5.10									
- - 5.5					(0.90)	- Grey, m - CLAY (- -	ottled dark LONDON	c brown, po V CLAY).	ossibly stil	ff	Dry, NVO.			
E					6.00	- -								
6.0					6.00		e terminate	ed at 6.0m	bgl.					
2						- - -								
						-								
	Backfill				Sa	ample De	tails	Le	egend				GENERAL	_
	Cement seal riser					Small dist sample	urbed	Ashphalt		Made	e Ground		REMARKS	
	Bentonite seal riser							Sand		Silty/	clayey PEAT		NVO - No visual or Olfactor Evidence of Contamination.	
	Filter pack riser							Clay					m bgl - meters below ground Hand pitted to 1.2mbgl	u 10 VCI.
	Filter pack screen													
	Hole Collapse						Ţ	Groundwate	r Table	$\underbrace{\frac{1}{}}_{\overline{-}}$ Groundwater Strike				
					I		11	Logged I	gged By CG/MM Appr			roved By GM		



Proje	ct Name and Sit					Client							BOREH	OLE	No
	Stag Brewer	ry, Mo	ortla	ke, Lon	don SW	14			AB Int	bev					
Job N	lo	I	Date	_{ite} 24-0	8-15	Grour	nd Level (r	n)	Co-Ordinates	0			BH	202	
	47075502	I	End Da	te 24-0	8-15										
Cont	ractor					Meth	od / Plant	Used					Sheet		
	ESL						Concret	e Corer.					1 0	f 1	
) m						S	STRATA						
Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	ness)			ESCRIPTIO			C	OMMEN	ITS		Installation
-					0.25	TARMA	AC over C	ONCRETE	2						
		<0.1			(0.35)	gravel of	f concrete.	: Grey, der Sand is fin gular-suba	nse, sand and ne-coarse. Grav ngular.	vel	Dry NVO				
-				KXXX	0.80	MADE	GROUND	: Brown, s	andv.	/	Dry NVO				
F					<u> </u>				gular gravel of						
-					-	Borehole on conci		ed at 0.8m	bgl due to refu	ısal					
-					-	on conci									
-					-										
È.															
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jE															
	Backfill Sa						tails	Le	gend				GENE	RAL	
	Cement seal						Ashphalt Made Ground						REMA	RKS	
E E	Bentonite Fill									NVO - No visual or Evidence of Contam	ination.				
													m bgl - meters below Hand pitted to 1.2ml	ground l gl	level.
						Groundwater Table									
							₹	Groundwater	Table $\sum_{=}^{1}$	Grou	ndwater Strike				
					I			Logged H	Зу	CG		Appro	oved By	мМ	



Proje	ct Name and Site					Client							BOREHOLE	No
	Stag Brewer	y, M	ortla	ke, Lor	ndon SW				AB	Inbev			PH202	•
Job N	lo]	Date	ata 24-0	8-15	Groun	d Level (r	n)	Co-Ordina	tes ()			BH202	4
	47075502		End Da	te 24-0	8-15									
Cont	ractor					Metho	d / Plant	Used					Sheet	
	ESL						Concret	e Corer an	d Solid Ster	n Auger	r.		1 of 1	
		(m						<u>s</u>	STRATA					
Depth	Sample / Test	PID (ppm)	Water		Depth								77.0	ation
BĜL	Details	PID	>	Legend	(Thick- ness)		Dł	ESCRIPTI	ON		0	OMMEN	15	Installation
E					0.25	TARMA	C over C	ONCRETI	E					
-		<0.1		\boxtimes	- :	MADE (ROUND	: Grey, sa	ndy,	of	Wet NVO			
0.5 -				\bigotimes	0.60	concrete.	Sand is f	ine-coarse			Dry NVO			
E	BH202A_0.8	< 0.1		\bigotimes		MADE (ROUND): Brown, g Gravel is fi	gravelly, ne-medium,		DIVINVO			
- 1.0				\bigotimes		subangul	ar-subrou	inded of co	oncrete.					
-				\bigotimes	(1.20) -									
- 		< 0.1		\bigotimes	-									
-					1.80									
Ŀ						Borehole on concre		ed at 1.8m	bgl due to r	efusal				
-					-	on concr								
ŀ					-									
-														
-														
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	Backfill				Sam	nle Dei	ails	Le	egend				GENERAL	
							ample Details Legend						REMARKS	
	Bentonite Fill					Small disturbed Ashphalt Made Ground							NVO - No visual or Olfactor	
· ·	Sentonite i ili												Evidence of Contamination. m bgl - meters below ground	-
5											Hand pitted to 1.2mbgl			
								Groundwate	r Table	∫ ⊥ Gro	undwater Strike			
							-⊻			<u> </u>				
					I			Logged I	By	CG		Appro	oved By MM	
í I										CU			- 101101	



Proje	ect Name and Site					Client							BOR	REHOLE	No
	Stag Brewer	ry, Mo	ortla	ke, Lon	don SV					B Inbev			F	3H203	
Job N			Date Start Da	ate 20-0	8-15	Groun	d Level (n	n)	Co-Ordi	nates ()				511205	
	47075502	H	End Da	te 20-0	8-15		1 / D1 - 1								
Cont	ractor					Metho	od / Plant U		10 110				Sheet	1 - 6 1	
	ESL						Concrete			tem Auger				1 of 1	
		(und	er					5	STRAT	А	1				
Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thick- ness)		DE	SCRIPTIO	ON		C	OMMEN	NTS		Installation
Ē					0.20		C over CO				-				
- 0.5		<0.1			(0.70)	MADE of fine-med yellow a	GROUND lium, angu nd red bric	: Very den lar-subang ck, granite	se, sandy gular grav and conc	yel of prete.	Dry NVO				
E .				\bowtie	0.90	a .	/ 11		1						
-					- 1.00	No reco	e / possible verv.	e granite sl	ab.	/					
Ē					-										
ŀ					-										
-					-										
-					(2.00)	-									
-					-										
-					-										
-					-										
-					3.00-										
-					-	Borehole on conci	e terminate ete.	ed at 3.0m	bgl due to	o refusal					
-					-										
-					-										
-					-										
-					-	-									
-					-										
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-					-										
E					-										
-					-										
	Backfill				Sar	nple De	tails	Le	gend				GE	ENERAL	
	Cement seal riser				- Dui			Ashphalt	Bena	Mad	e Ground		RE	MARKS	
	Bentonite seal riser							Ashphan			Coround			ual or Olfactory	ý
	Filter pack riser													Contamination. s below ground	level.
	Filter pack screen												riana pittea to	1.2m0gi	
								Groundwater	Table	$\stackrel{1}{\underline{\lor}}$ Grou	ndwater Strike				
							Logged By CG Ap				Appr	oved By	MM		
1								1							



TE_08.02.10 STAG LOGS - FULL.GPJ AGS3_ALL.GDT 22/9/15

Project Name and Site Location Client BOREHO													POPEUOI E	No	
Fioje		ag Brewer			ke Lor	odon SV	W14	Chem		AB	Inbev		BUKERULE	INO	
Job N			- T					d Level (n	2)	Co-Ordin			BH203/	4	
JODI		075502	5	Start Do	ate 20-0 te 20-0	18-15 18-15	Groun	d Level (n	11)	Co-Ordin	ates ()				
Cont	racto	or					Metho	od / Plant	Used				Sheet		
	E	SL						Concret	e Corer an	d Solid Ste	em Auger.		1 of 1		
			(uic	r					í L	STRATA	1				
Depth BGL	Sa	mple / Test Details	PID (ppm)	Water	Legend	Depth (Thick- ness)		DE	ESCRIPTI	ON		COMME	NTS	Installation	
-						0.20	TARMA	C over CO	ONCRETI	E				N N	
-0.5	M	BH203A_0.5	<0.1			(0.70)	MADE C angular t and conc	to sub-ang	: Very der gular grave	nse, sandy, l of brick, g	granite	Dry NVO			
1.0			<0.1					e / granite	slab.			Dama NWO			
						-	No recov	/ery.				Damp, NVO.			
- 1.5			<0.1			-									
-						-	•								
- 2.0			<0.1			-	-								
-						(2.50)									
-2.5			<0.1			-	•								
-						-									
- 3.0						-	-								
-															
- 3.5					P. N. A. P.	3.50 3.60	Concrete	e / granite	slab.			Damp NVO			
-							No recov	/ery.				Damp, NVO.			
- 4.0						-	-								
-						(1.20) -	•								
-4.5						-	-								
-					<u> </u>	4.80	Possibly	CLAY (n	o recovery	/).		Wet. NVO.			
- 5.0						-		e terminate	ed at 5.0m	bgl.				<u></u>	
-						-	•								
-						-									
-						-									
-						-	-								
-						-									
-						-	•								
-						-	•								
-	R:	ackfill				- 	mple De	taile	Le	egend			CENEDAL		
		ent seal riser							Ashphalt	lgenu	Made	e Ground	GENERAL REMARKS	•	
-		nite seal riser					sample		Concrete		Clay		NVO - No visual or Olfactor	у	
		pack riser						لوغا					Evidence of Contamination. m bgl - meters below ground Hand pitted to 1.2mbgl	l level.	
E	Filter	pack screen											Find pitted to 1.2mogr		
									Groundwate	r Table	ndwater Strike				

Logged By

CG

Approved By

MM



								chiote i						
Proje	ct Name and Sit			. T	1	\$71.4	Client					BORI	EHOLE	No
.	Stag Brewer						17 11		AB Inbev			- B	H204	
Job N	47075502	St	ate art Dat	e 21-0	8-15	Groun	d Level (r	n)	Co-Ordinates ()					
Cont	47073302 ractor	Er	nd Date	e 21-0	8-15	Metho	d / Plant	Used				Sheet		
	ESL								d Premier Rig.				l of 1	
		Ē							STRATA					
Denth	Sample / Test	PID (ppm)	Water		Depth			•	JIKAIA					noi
BGL	Details	PID	à	Legend	(Thick- ness)		DE	ESCRIPTI	N	CC	OMMEN	NTS		Installation
-					-	TARMA	C over C	ONCRETI	Ξ	Dry NVO				<u> V</u> 7/X
-				\times	0.28			: Pea shin	gle.	Dry NVO				-
- 0.5					0.70	CONCR	ETE			Dry NVO				
		< 0.1			0.80			Red bric		Dry NVO				-
- 1.0			K	\times	(0.40) 1.20	fine-med	JROUND ium, angu	: Brown/ 1 Ilar-subang	ed, sandy, gular brick	Dry NVO				
-	BH204_1.3	<0.1	<pre></pre>	$\widehat{\times}$	-	gravel.	ROUND	· Very sof	t, brown/ red,	Dry NVO				
- 1.5			Ŕ	\rightarrow	1.50	very sand	ly clay. S	and is fine	-coarse.	Dry NVO				
		<0.1	K	\times	-	 MADE C fine-med 	GROUND	: Dark gre	y/ black, sandy, gular gravel of	21,911,10				
- 2.0			k	\times	-	flint. San	d is fine-	coarse.						
			K	\times	(1.50)	- -								
			K	\times	-									
-			k	\times	-									
- 3.0		<0.1	k	\times	3.00	-								
- 3.0		<0.1			3.20				-coarse SAND. Dry N [*] nedium, Damp					
-	BH204_3.3	< 0.1	ľ	0.00	3.50	 Brown, s subangul 	andy, fine ar-subrou	-medium, Damp I nded GRAVEL.)			
3.5 -			ľ		- 5.50			ed at 3.5m						
Ē					-	- -								
-					-	-								
-					-	-								
Ē					-	- -								
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F					-									
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-					-									
9/15					-									
0T 22					-									
	Backfill				S a	mple De	tails	Ι¢	egend	1		CEN	NERAL	
V N 1						7 Small distu			_	le Ground			NERAL MARKS	
AGS AGS	Cement seal Bentonite Fill					sample		Ashphalt Concrete	San			NVO - No visua	al or Olfactory	7
LL.G.	Somorino I III							Sandy Grav		-		Evidence of Cor m bgl - meters b	ntamination. below ground	
- FU												Hand pitted to 1	.2mogi	
LOG														
STAG								Groundwate	r Table $\stackrel{1}{\sqsubseteq}$ Grou	undwater Strike				
:10 S														
08.02								Logged By CG Approved By N			MM			
۳														



R (Project Name and Site Location Client BOREHOL														
Proje	ct Name and Sit Stag Brewei			ke Lon	don S	W14	Client		AB	Inbev			BOR	EHOLE	No
Job N	-						d Level (1	m)	Co-Ordina				B	H205	
0001	47075502		tart Da	ate 21-0 te 21-0	8-15 8-15)	ee oraina						
Cont	ractor					Meth	od / Plant	Used					Sheet		
	ESL						Concret	te Corer an	d Premier R	lig.			-	1 of 1	
		(mi							STRATA						
Depth	Sample / Test	PID (ppm)	Water	Legend	Depth (Thick		וח	ESCRIPTI	- M		CC) MMEN	TS		llation
BĞL _	Details	μ	-		ness)				511						Installation
Ē					0.27	- CONCR									
- 0.5				\bigotimes	(0.53)		GROUNE and and g	D: Grey, de ravel of co	nse, fine to ncrete.		Dry NVO				
Ē		<0.1			0.80	-									
	BH205_1.0	<0.1		\otimes		- MADE	GROUNE): Very der m. angular	ise, brown, -subangular		Dry NVO				
Ē		< 0.1		\bigotimes		gravel o	f brick, co rse. Little	ncrete, flir	it, glass. Sar	nd is					
- 1.5				\otimes			ise. Little	neovery.							
-				\bigotimes	(1.70)	-									
- 2.0		<0.1		\times		- - 									
-				\bigotimes		-									
- 2.5	BH205_2.5	<0.1			2.50										-
-		<0.1		0	(0.50)	- Gravel i	s fine-med	lium,	e-coarse SA		Dry NVO				
- 3.0		<0.1		0.0	3.00	_ subangu	lar-subrou with dept	inded, beco h. Little re	oming more covery.						
-		<0.1						ed at 3.0m		/					
Ē						- - -									
-						-									
-						-									
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E .						-									
9/15						-									
						- - -									
	Backfill		<u> </u>	1	S	ample De	tails	I é	gend		1		GEI	NERAL	1
	Cement seal					Small dist sample		Concrete	0	Made	e Ground		REN	MARKS	
A LA I	Bentonite Fill					sample		Gravelly Sa	nd				NVO - No visu Evidence of Co		/
NTL-G													m bgl - meters l Hand pitted to	below ground	level.
- S5															
(G LO										1.					
0 ST/							₹	Groundwate	r I able	$\frac{1}{\underline{v}}$ Grou	ndwater Strike				
								Logged	By	00		Appro	ved By	<u> </u>	
0_ 									J	CG		- PPIO		MM	



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Client Project Name and Site Location **BOREHOLE** No Stag Brewery, Mortlake, London SW14 AB Inbev **BH206** Job No Ground Level (m) Co-Ordinates () Date 21-08-15 21-08-15 Start Date 47075502 End Date Contractor Method / Plant Used Sheet ESL Concrete Corer and Premier Rig 1 of 1 PID (ppm) STRATA Water Depth Depth BGL Sample / Test Details Istallation Legend (Thick DESCRIPTION COMMENTS ness) TARMAC over CONCRETE 0.20 MADE GROUND: Grey, dense, fine to coarse sand and gravel of concrete. Dry, NVO. -0.5 (0.80)1.00 1.0 < 0.1BH206_1.1 MADE GROUND: Soft brown sandy clay. Dry, NVO. Gravel is fine-medium, angular-subangular of brick and concrete. (0.80) < 0.1 1.5 1.80 Borehole terminated at 1.8m bgl due to refusal on concrete 22/9/15 GDT ALL Backfill Sample Details Legend **GENERAL** REMARKS 08.02.10 STAG LOGS - FULL.GPJ AGS3 Small disturbed sample Cement seal Ashphalt Made Ground NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl Bentonite Fill Groundwater Table Groundwater Strike Logged By Approved By CG MM



	Project Name and Site Location Client BOREHOLE No													
Proje	ct Name and Site Stag Brewer			ke. Lon	don S	W14	Client		AB Inbev			BOR	EHOLE	No
Job N	-	·					d Level (1	n)	Co-Ordinates ()			B	H207	
	47075502	I S	Start Da End Da	ate 25-0 te 25-0	8-15 8-15									
Cont	ractor					Metho	d / Plant	Used				Sheet		
	ESL						Concret		d Premier Rig.			-	1 of 1	
		(und	er			1			STRATA	1				
Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend			DI	ESCRIPTI	ON	СС	OMMEN	NTS		Installation
-					ness) 0.20	- TARMA	C							
È				\boxtimes	0.20	- MADE C	GROUNE	: Grey/red	, dense, fine to ncrete and brick.	Dry, NVO.				
0.5 -	BH207 0 7	<0.1			(0.90)	-	nu anu gi		iciele and offer.					
-	BH207_0.7			\bigotimes	(0120)									
- 1.0		<0.1			1.10		velly bro	wn CLAY	Gravel is	Dry, NVO.				
-		<0.1				fine-med (Possibly	ium, suba	angular-sul	prounded of flint.	Diy, ivo.				
1.5				<u> </u>		- -	leworke	u)						
-		<0.1			(1.50)	-								
- 2.0						-								
- 2.5		<0.1		<u> </u>		-								
-	BH207_2.6-3.5				2.60	- Brown d	ense, gra	velly SAN	D. Gravel fine,	Dry, NVO.				
- 3.0		<0.1		· · · · · · ·	(0.00)	[medium	ally medi	um of flint	. Sand is fine to					
-					(0.90)	-								
- 3.5	\square	<0.1		· · · · ·	3.50	-		1						
-						- Borehole	terminat	ed at 3.5m	bgl.					
-						-								
-						-								
-						-								
E						-								
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-						-								
-						-								
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-						- -								
Ē						- -								
9/15						-								
1 22/						-								
	Backfill	1			S	ample Det	ails	Le	gend			GFI	NERAL	
	Cement seal					Small distu sample		Ashphalt	_	le Ground		REN	MARKS	
Eg F	Bentonite Fill					Sample		Gravelly Cla	iy 🧿 Gra	velly Sand		NVO - No visu Evidence of Co	ntamination.	
FULL												m bgl - meters Hand pitted to	elow ground	ievel.
- 850														
TAG L								Groundwate	r Table $\sum_{=}^{1}$ Grou	undwater Strike				
2.10 S									Ť					
								Logged I	By CG		Appr	oved By	MM	
≝∟														



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Client Project Name and Site Location **BOREHOLE** No Stag Brewery, Mortlake, London SW14 AB Inbev **BH208** Job No Ground Level (m) Co-Ordinates () Date 25-08-15 25-08-15 Start Date End Date 47075502 Method / Plant Used Contractor Sheet **ESL** Concrete Corer. 1 of 1 PID (ppm) STRATA Water Depth Depth BGL Sample / Test Details nstallation (Thick Legend DESCRIPTION COMMENTS ness) 4 CONCRETE -0.25 MADE GROUND: Brown, sandy, medium gravel of concrete, brick and flint. Dry, NVO. < 0.1 -0.5 (0.55) 0.80 Borehole terminated at 0.8m bgl due to refusal on concrete. 22/9/15 GDT ALL Backfill Sample Details Legend GENERAL 08.02.10 STAG LOGS - FULL.GPJ AGS3 REMARKS Cement seal Concrete Made Ground NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl Bentonite Fill Groundwater Table Groundwater Strike Logged By Approved By CG MM



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Borehole Log Client Project Name and Site Location **BOREHOLE** No Stag Brewery, Mortlake, London SW14 AB Inbev **BH208A** Job No Ground Level (m) Co-Ordinates () Date 25-08-15 25-08-15 Start Date 47075502 End Date Contractor Method / Plant Used Sheet ESL Concrete Corer and Premier Rig 1 of 1 PID (ppm) STRATA Water Depth Depth BGL Sample / Test Details Istallation Legend (Thick COMMENTS DESCRIPTION ness) CONCRETE 0.25 MADE GROUND: Fine to medium, angular to subangular concrete gravel. Dry NVO 0.50 -0.5 < 0.1 Dry NVO MADE GROUND: Dark brown, slightly clayey, gravelly, fine to coarse sand. Gravel fine occasionally coarse, subangular to subrounded of brick and flint. (0.50) BH208A_0.8 1.00 1.0 < 0.1 BH208A 1.1 Dry NVO 0 Medium density, brown, gravelly, fine to coarse SAND. Gravel is fine to medium, ò subangular to subrounded of flint. Very sandy 0 < 0.1 1.5 between 1.5m and 1.9m. Ò. 0 2.0 < 0.1 ο. 0 (2.50) Ō < 0.1 2.5 0 ò 3.0 < 0.1 0 ò 0 3.50 3.5 Borehole terminated at 3.5m bgl. 22/9/15 GDT ALL Backfill Sample Details Legend **GENERAL** REMARKS .02.10 STAG LOGS - FULL.GPJ AGS3_ Small disturbed sample Cement seal Concrete Made Ground NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl Bentonite Fill Gravelly Sand Groundwater Table Groundwater Strike Logged By Approved By 80 CG MM



	1.01								8			DODI		
Proje	ct Name and Sit Stag Brewe			ka Lon	don S	X714	Client		AB Inbev			BORI	EHOLE	No
T 1 X		-		ke, Loii	uon s		T 1/	<u>``</u>				B	H209	
Job N	47075502		Date Start Da End Da	ate 25-0 te 25-0	8-15 8-15	Ground	Level (n	n)	Co-Ordinates ()					
Cont	ractor					Method	/ Plant U	Used				Sheet		
	ESL						Concrete	e Corer an	d Premier Rig.			1	1 of 1	
		(mo						,	STRATA					
Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	ness)		DE	SCRIPTI	DN	CO	OMMENT	ГS		Installation
-					0.27	- CONCRE	ГЕ							<i>Ŵ</i>
-0.5	BH209_0.5	<0.1			0.27	MADE GF gravelly, fi coarse, ang concrete. Becoming	ne to co	arse sand.	rey/ black, Gravel is fine to of brick and	Dry NVO				
-		<0.1				-								
- 1.5					(2.43)	- - - - -								
- 2.5					2.70	- - - -								
- 3.0	BH209_2.7-3.4	4 <0.1			(0.70)	 is fine to m of flint. Ve 	nedium, erv little	subangula gravel bet	se SAND. Gravel r to subrounded ween 3.0 -3.2m. - 3.4m. Driller 7m.	Dry NVO				
. GDT 22/9/15						- Borehole to								
3_ALL	Backfill				Sa	mple Deta		Le	gend			GEN	NERAL	
< <u></u> <	Cement seal Bentonite Fill					Small disturb sample		Concrete Gravelly Sat	nd 1	ade Ground pundwater Strike	1	REN NVO - No visua Evidence of coc n bgl - meters h Hand pitted to 1	ntamination. below ground	
TE_08.02.1(Logged I	^{3y} CC	ł	Approv	ved By	MM	



Drojo	ot N	Jama and Sit	e Location Client BOREHOLE No													
Proje		tag Brewei			ke Lon	don SV	W14	Chent		AF	3 Inbev			BOR	EHOLE	NO
Job N		lug biewei	- 					d Level (i	m)	Co-Ordin				— B	H210	
J00 I		075502	5	start D	ate 26-0 te 26-0	8-15	Gioui	iu Levei (111)	Co-Oluli	liates ()					
Cont		075502	E	End Da	te 20-0	8-13	Meth	od / Plant	Used					Sheet		
Cont		SL					Wiedi		te Corer an	d Premier	Rig				1 of 1	
<u> </u>		5L						Collete							1 01 1	
			bpm	ter		Dopth				STRAT	4					ų
Depth BGL	Sa	mple / Test Details	PID (ppm)	Water	Legend	(Thick-		D	ESCRIPTIO	ON		CC	OMMEN	VTS		stallati
					P A A P A	ness)	- CONCR	ETE								Installation
-						0.30	_				1 (*	D NUO				-
-0.5			< 0.1		\bigotimes		to coarse	e, subangi	D: Dense, b ular to roun	rown, sand ded grave	dy, fine l of	Dry NVO				
E		BH210_0.8			\bigotimes	(0.90)	natural s	stones.		-						
- 		511210_0.0			\otimes		-									
-						1.20	-					D 1940				-
-			<0.1				 Soft, bro clay). 	own, sand	y CLAY (p	ossibly re	worked	Dry NVO				
						(0.90)	-									
E						Ì,	-									
- 2.0			< 0.1			2.10		11 (C*	CAND	0 1	D NUO				-
F		BH210_2.2-2.8	3 <0.1		0		- is fine to	medium	fine to coar to subroun	ded of flin	t.	Dry NVO				
-2.5	X				· · · · · ·		Becomin	ng more g	ravelly with	n depth.						
-	\square		<0.1		· · · · · · ·	(1.40)	-									
- 3.0					· • · · · · ·	Ì, Í	-									
F							-									
- 3.5			<0.1		0	3.50	-									
-							- Borehol	e terminat	ted at 3.5m	bgl.						
-							-									
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-							-									
	B	ackfill				Sa	mple De	tails	Ιe	gend				CE	NERAL	
		ent seal					-			0-114	Mad	e Ground		REN	MARKS	
		onite Fill					⊔ sample		Sandy Clay			velly Sand		NVO - No visu	al or Olfactory	/
 `	5.110								oldy					Evidence of Co m bgl - meters Hand pitted to	below ground	level.
														Hand pitted to	1.2110gi	
									Groundwate	Table	∫ ∑ Grou	Indwater Strike				
											÷					
									Logged I	Ву	CG		Appro	oved By	MM	
1																



-									0						
Proje	ct Name and Site Stag Brewer			ka Lon	don S	W14	Client		Λ Ι	B Inbev			BOR	EHOLE	No
Job N	-	- г	2.4.				d Level (r	n)	Co-Ordi				- B	H211	
3001	47075502	S	start Da	_{tte} 26-0 te 26-0	8-15 8-15	Groun	u Level (I	11)	Co-Orun	naus ()					
Cont	ractor			200	0 10	Metho	od / Plant	Used					Sheet		
	ESL						Concret	te Corer an	d Premier	Rig.			-	1 of 1	
		(mc	r					C L	STRAT	A					
Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thick ness)			ESCRIPTI	ON		CO	OMMEN	NTS		Installation
					0.25	- MADE (GROUND): Brown, s	andy, fin d gravel o	e to	Dry NVO				~~~~~
- 1.0	BH211_0.7	<0.1			(1.25)	 natural s Becomin 	tone, woo	d and occa with depth	sional bri	ck.					
		<0.1			1.50		wn. grev.	sandy, gra	velly CLA	AY.	Dry NVO				
- 2.0		<0.1			(0.60) 2.10	Gravel is	fine to m and subrou	unded of fl y reworked	angular to	0					
	BH211_2.2	<0.1		0		 is fine to 	medium,	ine to coar subangula ore gravell	r to round	led of	Dry NVO				
		<0.1		· · · · · · · · · · · · · · · · · · ·	(1.40)	- - - -									
-				· • · · · · ·	3.50	- - Borehole	e terminate	ed at 3.5m	bgl.						
-						- - - -									
- - - -						- - - -									
- - -						- -									
-						- - -									
-						- - -									
DT 22/9/15						- - - -									
ALLG	Backfill		: 		Sa	ample De	tails	Le	gend		·			NERAL	
V 🛛 Vess	Cement seal					Small distu sample	urbed	Concrete		Mad	e Ground		REN	MARKS	
S - FULL.GPJ	Bentonite Fill						1	Gravelly Sa	ndy Clay	Grav	velly Sand		NVO - No visu Evidence of Co m bgl - meters Hand pitted to	ntamination. below ground	
							I	Groundwate	Table	⊥ Ţ_Grou	ndwater Strike				
TE_08.02.					1		11	Logged I	Зу	CG		Appr	oved By	MM	



Proje	ct Name and Site	e Loca	tion				Clien	-8				BOREH	OLE	No	
5	Stag Brewer			ke, Lon	don S	W14			AI	B Inbev					1.10
Job N	No 47075502		Date Start Da	ate 27-0 te 27-0	8-15	Grour	d Level	(m)	Co-Ordi	nates ()			BH	212	
Cont	ractor				0 10	Meth	od / Plan	t Used					Sheet		
	ESL						Concre	ete Corer ai	nd Premier	Rig.			1 o	f 1	
		n)				I			STRAT	A					
Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thick-		E	DESCRIPTI			СС	OMMEN	VTS		Installation
-					ness)	- CONCR	ETE								
-0.5	BH212_0.6	<0.1			0.30	- MADE	e sand. G h occasio	D: Pink / re bravel is fine onal coarse	e to mediu	m of	Dry NVO				
- 1.0		<0.1			(1.40)	- - -									
- 		<0.1			1.70	- - -									
- 2.0	BH212_1.8-2.5	<0.1		0	11/0	 Dense, b Gravel is 	s fine to	avelly fine medium sul	oangular to)	Dry NVO				
-2.5		<0.1			(1.80)	- - - -									
- 3.0		<0.1			3.50	- - - -									
3.5 		<0.1				- Borehole - - -	e termina	ated at 3.5m	ı bgl.						
-						- - - -									
-						- - - -									
-						- - - -									
-						- 									
G1/6/22 10						- - - -									
	Backfill			!	Sa	imple De	tails	L	egend		·		GENE	RAL	
	Cement seal					Small dist	urbed			Mad	e Ground		REMA	RKS	
<u> </u>	Bentonite Fill							g Gravelly Sa	and				NVO - No visual or (Evidence of Contami m bgl - meters below Hand pitted to 1.2mb	nation. ground l	
10 SIAG LOG								Groundwate	er Table	⊥ ⊥ Grou	indwater Strike				
IE_08.02.								Logged	By	CG		Appr	oved By	ИM	



Proje		ame and Site						Client						BORE	EHOLE	No
	Sta	ag Brewer	y, M	ortla	ke, Lor	idon S	W14			AB I	nbev				1040	
Job N	lo			Date	ate 27-0	8-15	Grour	nd Level (r	n)	Co-Ordinat	es ()			B	H213	
	470	075502		Start Da End Da	te 27-0	8-15										
Cont	racto	or					Meth	od / Plant	Used					Sheet		
	ES	SL						Concret	e Corer an	d Premier R	ig.			1	of 1	
			n)							STRATA						
Depth	Sar	nple / Test	PID (ppm)	Water		Depth										tion
BGL	Jui	Details	PID	B	Legend	(Thick- ness)		DE	ESCRIPTIO	NC		C	OMMEN	TS		Installation
-						0.24	- CONCR	RETE								Ŵ
[0.24	MADE	GROUND	Brown /	grey, slightly	/	Damp NVC)			-
-0.5	\times	BH213_0.6	<0.1		\bigotimes	(0.76)	 clayey, s subangu 	sandy, fine lar gravel	to coarse, of brick, c	angular to oncrete, tile	and					
-					\bigotimes	(0.70)	plastic.	Sand is fin	e to coarse							
- 1.0			< 0.1		\swarrow	1.00	Soft bro	wn grev sl	ightly gray	velly CLAY.						-
[(0.60)	(Possibl	y reworke	d clay)	CITY CLAT.						
- 1.5					<u> </u>	1.60	-									
-		BH213_1.7-2.0	<0.1		0	1.00	- Dense, t	orown, gra	velly, fine	to coarse SA	ND.	Damp NVC)			-
-	X						 Gravel is subround 	s fine to m ded of flin	edium, ang t. Occasio	gular to nal sand and						
- 2.0					0		gravel p	ockets thro	oughout.							
Ŀ					a	(1.40)	-									
2.5 -			<0.1				-									
-					0		-									
- 3.0			< 0.1			3.00	- Borehol	e terminate	ed at 3.0m	hơl						
ŀ							-	e terminat	24 at 5.011	05.						
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		1 011					-									
j 	Ba	ckfill				Sa	mple De		Le	egend					IERAL	
	Cemei	nt seal					Small dist sample	urbed	Concrete	[Mac	de Ground			IARKS	
	Bentor	nite Fill							Gravelly Cla	iy [o Gra	velly Sand		NVO - No visual Evidence of Con	tamination.	
1														m bgl - meters be Hand pitted to 1.	2mbgl	level.
3																
											1					
								⊻	Groundwate	r Table	⊥ ⊥ Gro	undwater Strike				
									I. 1*					1 D		
									Logged I	зу	CG		Appro	oved By	MM	



Pro	ject l	Name and Sit	e Loca	ation				Client						BORE	HOLE	No
	S	Stag Brewer	ry, M	ortla	ke, Londo	on SW	14			A	B Inbev				1044	
Job	No			Date	_{ate} 25-08-	15	Groun	d Level (n	n)	Co-Ordi	inates ()			BI	H214	
	4′	7075502		Start Da End Da		15										
Co	ntrac	ctor					Metho	d / Plant	Used					Sheet		
	F	ESL						Concret	e Corer an	d Solid S	tem Auger.			1	of 1	
			Û							TRAT	Δ					
Den	h c	1- / T(PID (ppm)	Water	D	epth				, 11(211)	11					noi
BG	L Si	ample / Test Details	E.	N.	Legend (T	hick- ss)		DE	ESCRIPTIO	ON		C	OMMEN	NTS		Installation
-						0.05	TARMA	C			/					
÷							CONCR					Dry NVO				
-0.5						0.60) -	gravel. S	and is me	: Light bro dium to co	arse. Gra	vel is					
Ē						0.00-	medium	to coarse, nd concre	subangula	r to subro	ounded					
- 		≤ BH214_0.85	< 0.1						e. Elight bro d is mediu	wn, dens	ie	Dry NVO				
-						-	gravelly Gravel is	sand. San	d is mediu	n to coar	rse. ar to					
-						-	subround	led of flin	to coarse, s t and conc	rete.	a 10					
1.5 -						1.80) -										
-						1.80) -										
- 2.0						-										
						-										
- 2.5						2.60										
E						-	Borehole on concr	e terminate	ed at 2.6m	bgl due to	o refusal					
Ŀ						-	on conci	cic.								
È.						-										
-						-										
F						-										
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	В	ackfill				Sam	ple De	tails	Le	gend				GEN	ERAL	
		nent seal					Small distu sample		Ashphalt	~	Con	crete		REM	IARKS	
		tonite Fill					sample		Made Grour	d	<u></u>			NVO - No visual		ý
														Evidence of Cont m bgl - meters be	elow ground	level.
1														Hand pitted to 1.2	Zmogi	
1																
									Groundwater	Table	√ Grou	ndwater Strike				
											<u> </u>					
									Logged H	By	MM		Appr	roved By	GM	



Proje	ct Name and Si						Client						BOREHOI	LE No
	Stag Brewe	ery, M	lortla	ke, Lon	don SW	14			AE	3 Inbev			DU04	4 4
Job N	10		Date	25-0	8-15	Groun	d Level (n	n)	Co-Ordin	nates ()			BH21	4A
	47075502		Start Da End Da	ate 25-0 te 25-0	8-15									
Cont	ractor					Metho	d / Plant	Used					Sheet	
	ESL						Concret	e Corer an	d Solid St	em Auger			1 of	1
		n)						5	STRATA	A				
Depth	Sample / Test	PID (ppm)	Water		Depth									tion
BGL	Details	DID	B	Legend	(Thick- ness)		DE	ESCRIPTIO	ON		C	OMMEN	NTS	Installation
F				P N A P	0.05	TARMA				/	/			- \$777
Ē					-_'			u Lioht huo		/	Dry NVO			
-0.5				\bigotimes	(0.60) -	gravel. S	and is me	: Light bro dium to co	arse. Grav	el is				
ŀ					0.00	of flint a	nd concre	subangula te.		/				
- 1.0				\bigotimes		MADE (ROUND	: Light bro d is mediu to coarse, s t and conc	wn, dense	e	Dry NVO			
F				\bigotimes	-	gravelly : Gravel is	sand. San medium	d is mediu to coarse, s	m to coars subangula	se. r to				
				\bigotimes	(1.20)	subround	led of flin	t and conc	rete.					
-				\bigotimes	-									
-				\bigotimes	2.00									
- 2.0					- 1	Borehole	terminate	ed at 2.0m	bgl due to	refusal				
-					-	on concre	ete.							
-					-									
-					-									
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Ľ					-		<u></u>		<u> </u>					
	Backfill				Sam	ple De	tails	Le	gend				GENERA	
	Cement seal							Ashphalt		Con	crete		REMARI	KS
	Bentonite Fill							Made Grour	d				NVO - No visual or Olfa Evidence of Contaminati	ctory
													m bgl - meters below gro Hand pitted to 1.2mbgl	
-														
								Groundwater	Table	∫ ∑ Grou	Indwater Strike			
										-				
								Logged I	By	MM		Appr	oved By GM	[



	· NI 1.0"	T (enore	- 8				DODE		N.T.
Proje	ect Name and Sit Stag Brewer			ka Lon	don S	W/1/	Client		41	B Inbev			BORE	HOLE	No
	-	- 											B	H2A	
Job N	NO 47075502	S	Date Start Da End Da	ate 25-0 te 25-0	8-15 8-15	Groui	nd Level (1	m)	Co-Ordi	nates ()					
Cont	ractor					Meth	od / Plant	Used					Sheet		
	ESL						Concre	te Corer ar	d Premier	r Rig.			1	of 1	
		m)							STRAT	А					
Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thick	L 	DI	ESCRIPTI	ON		CO	OMME	NTS		Installation
-		H		P A A P A	ness)	- CONCE	ETE								
0.5	BH2A_0.5	<0.1			0.25 (0.55) 0.80	- MADE - fine-me - crushed	lium angu	D: Brown s Ilar gravel Sand is fir	of flint an	d	Dry NVO				
						- CONCE	ETE				Dry NVO				
- 1.0 -		<0.1			1.10		own, sand d clay)	y CLAY. (Possibly		Dry NVO				
- 1.5	BH2A_1.5	< 0.1				-									
- 2.0		<0.1			(1.40)	- - - - -									
		<0.1		· · · · · · ·	2.50	- Dense, l	prown, gra	velly, fine	-coarse SA	AND.	Dry NVO				
- 3.0 		<0.1		· · · · · · · · · · · · · · · · · · ·	(1.00)	_ subangu	s fine-med lar-subrou	unded of fl	int.						
-				0	3.50	-									
	Backfill					- Borehol		ed at 3.5m	bgl.				GEN	ERAL	
	Cement seal							Concrete	- <u>5</u> 0110	Mad	le Ground			ERAL ARKS	
	Cement seal					스 sample		Sandy Clay	r Table	G Grav	velly Sand undwater Strike		NVO - No visual Evidence of Cont m bgl - meters be Hand pitted to 1.2	or Olfactory amination.	
TE_08.02								Logged	By	CG		Appı	roved By	MM	



Project Name and Site Location Client BOREHOIL															
Proje	Stag Brewe			ke Lon	don S	W14	Client	t	ΔĪ	3 Inbev			BORE	HOLE	No
	-	-					17 1.	()					- B	H3A	
Job N	47075502	S	Date Start Da End Da	ate 28-0 te 28-0	8-15 8-15	Grour	d Level ((m)	Co-Ordi	nates ()					
Cont	ractor					Meth	od / Plan	t Used					Sheet		
	ESL						Concre	ete Corer ar	d Premier	Rig.			1	of 1	
		(mg	r					2	STRAT	А					
Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	Depth (Thick ness)	-	D	DESCRIPTI	ON		CO	OMMEI	NTS		Installation
-					0.25	- CONCR	ETE.								Ŵ.
-0.5	BH3A_0.5	<0.1			0.23	MADE	rse sand. ally coar	D: Brown, g Gravel is fi rse, angular- concrete.	ne-mediu	m, ar of	Dry NVO				-
- 1.0		<0.1			(1.25)	- - - -									
- 1.5 - -		<0.1		°0 ° 0 0 ° 0 ° 0 0 ° 0 ° 0		- Dense, b - subangu - Sand is t	orown, sa lar-subro fine-coar	ndy, fine-m ounded GRA	edium, VEL of f	lint.	Dry NVO				-
-2.0		<0.1			2.00	- Dense, b	orown, gr	avelly, fine ular-subrou	coarse SA	AND. coarse	Dry NVO				
-2.5		<0.1		0	(1.00)	- - -									
- 3.0		<0.1			3.00		e termina	ted at 3.0m	bgl.						
-						- - - -									
						 - - -									
- - - -						- - - -									
						 - - -									
-						- - -									
-						- - - -									
GDT 22/9/15						- - -									
ZALL.	Backfill				S	ample De		Le	gend				GEN	ERAL	
V 🛛 Versi	Cement seal					Small dist sample	urbed	Concrete		Mad	e Ground			IARKS	
E FULL.GPJ	3entonite Fill							Sandy Grav	el	o Grav	elly Sand		NVO - No visual Evidence of Com m bgl - meters be Hand pitted to 1.	amination.	
								Groundwate	Table	1 ∑_ Grou	ndwater Strike				
TE_08.02.					I			Logged	Зу	CG		Аррі	roved By	MM	



Client Project Name and Site Location **BOREHOLE** No Stag Brewery, Mortlake, London SW14 AB Inbev BH4A Job No Ground Level (m) Co-Ordinates () Date 27-08-15 27-08-15 Start Date 47075502 End Date Contractor Method / Plant Used Sheet ESL Concrete Corer and Premier Rig 1 of 1 PID (ppm) STRATA Water Depth Depth BGL Sample / Test Details nstallation Legend (Thick-DESCRIPTION COMMENTS ness) MADE GROUND: Brown, grey, slightly Dry. Possible asbestos fragments. clayey, gravelly, fine-coarse sand. Gravel is fine-medium, angular-subangular of concrete, brick tile and rootlets. -0.5 < 0.1 (1.30)BH4A_0.9 1.0 < 0.1 1.30 Brown, very gravelly, fine-coarse SAND. Dry NVO 0 < 0.1 1.5 Gravel is fine-medium, Ó subangular-subrounded of flint. 0 ο. 2.0 < 0.1 0 Ò. < 0.1 -2.5 0 (2.70)o 0 3.0 < 0.1 ò 0 - 3.5 BH4A_3.5-4.0 $<\!0.1$ ò 0 o 4.00 4.0 < 0.1 Borehole terminated at 4.0m bgl. 22/9/15 GDT ALL Backfill Sample Details Legend **GENERAL** REMARKS 08.02.10 STAG LOGS - FULL.GPJ AGS3 Small disturbed sample Made Ground Cement seal Gravelly Sand NVO - No visual or Olfactory Evidence of Contamination. m bgl - meters below ground level. Hand pitted to 1.2mbgl Bentonite Fill Groundwater Table Groundwater Strike Logged By Approved By CG MM Щ



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Proje	ect Name	and Sit	te Loca	tion				Client	t					BOF	REHOLE	No
	Stag F	Brewe	ry, M	ortla	ke, Lon	idon S	W14			AI	B Inbev					
Job N	Лo		1	Date	ate 28-0	18-15	Grou	nd Level ((m)	Co-Ordi	nates ()				BH5A	
	47075	502	1	Start Da	te 28-0	8-15										
Cont	tractor						Meth	od / Plant	t Used					Sheet		
	ESL							Concre	ete Corer an	d Premier	Rig.				1 of 1	
			(mi						S.	STRAT	A					
Depth BGL	Sample	/ Test ils	PID (ppm)	Water	Legend	ness)			DESCRIPTI			C	OMMEN	NTS		Installation
ł.					\bigotimes	0.10	MADE	GROUN	D: Pea grav	el. lightly als		Dry NVO				
- 0.5 -	≫ BH	15A_0.5	<0.1				- fine-me	dium, occ	D: Brown, s urse sand. G casionally co ounded of re	oarse,	iyey,					
- 			<0.1			(1.70)	- 									
- 			<0.1			1.80	- - -		<u>11</u> <u>C</u>			DerNWO				_
-2.0			<0.1				- Dense, f Gravel i flint.	brown, gr is fine-me	avelly, fine- dium, subar	coarse SA 1gular-rou	and. inded of	Dry NVO				
			<0.1			(1.20)	- - - -									
- 3.0			<0.1			3.00	- - Borehol -	le termina	ted at 3.0m	bgl.						
- - -																
-							- - -									
- - -							- - -									
- - -							- - 									
-							- - -									
- - - -							- - - -									
/9/15							- - - -									
1 22							-									
	Backf	i11				SE	imple De	etails	Le	gend				GE	ENERAL	<u> </u>
	Cement sea										o Grav	elly Sand		RE	MARKS	
	Bentonite Fi						Sample Sample				<u> </u>			Evidence of C	sual or Olfactory Contamination. s below ground o 1.2mbgl	
.10 STAG LOG								Ţ	Groundwate	r Table	$\stackrel{1}{\underline{\nabla}}$ Grou	ndwater Strike				
E_08.02									Logged 1	Зу	CG		Appr	oved By	MM	



D.		T							8				DODEIIOI	E 11
Proje	ct Name and Site Stag Brewer			ka Lon	don S	W14	Clien	it	٨E	3 Inbev			BOREHOL	E No
L.L.N	.	-					111	(BH7	4
Job N			Date Start Da	ate 27-0	8-15	Grour	d Level	(m)	Co-Ordir	iates ()				
Cont	47075502	I	End Da	te 27-0	8-15	Math	od / Plan	4 Uaad					Sheet	
Cont	ractor ESL					Meth			1.0.	D'				1
	ESL		1	1			Concr	ete Corer ar		-			1 of 2	
		(mdc	er						STRATA	4	1			
Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend			Γ	DESCRIPTI	ON		C	OMME	NTS	tallatio
-		- D		PANP	ness)	- CONCR	FTF							Installation
E					(0.55)	-	LIL							
- 0.5					0.55	-								
ŀ	BH7A_0.7	< 0.1		\bigotimes		MADE	GROUN	D: Soft, daı silty clay. (k brown/g	rey,	Damp NVC)		
-				\bigotimes	(0.65)	- subangu	lar of red	d brick with	fragments	of				
- 1.0				\mid	1.20									
l.		< 0.1			1.50		slightly g to coars	gravelly CL	AY. Grave	l is	Dry NVO			
- 1.5				0.0	1.50	- Dense, t	rown, g	ravelly, fine	-coarse SA	ND.	Dry NVO			
Ē		< 0.1				 Gravel c fine-med 	ontent 1r lium, sul	ncreases wit bangular-su	h depth. Gi brounded c	ravel 1s of flint.				
- 2.0				0				0						
ŀ					(1.50)	-								
-2.5	BH7A_2.5-3.0	< 0.1		· · · · · ·		-								
Ē				· · · · ·		-								
- 3.0	Д	<0.1		· · · · · ·	3.00	-					-			
È.						- Borehole -	e termina	ated at 3.0m	bgl.					
Ē						-								
F						-								
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112						-								
. 22/6						-								
						-							1	
3 AL	Backfill					mple De			egend				GENERA	L
V N V	Cement seal					Small dist sample		_		Mad	e Ground		REMAR	
GP E	Bentonite Fill							Gravelly Cl	ау	Grav	elly Sand		NVO - No visual or Olfac Evidence of Contamination m bgl - meters below gro	on.
FULL													Hand pitted to 1.2mbgl	
- SOC														
AG LC							_	Groundurg	r Tabla	1	ndwater Strike			
								Groundwate	n Iadie	⊥ Grou	nuwaler Strike			
8.02.1								Logged	Bv			Appr	roved By MM	
								105500	J	CG		, .bbi	roved By MM	



Proje	ct Name and Si						Client						BOR	EHOLE	No
	Stag Brewe	ery, Mo	ortla	ke, Lon	don SW	/14			AB Int	bev					
Job N	lo	I	Date	ate 27-0	8-15	Groun	d Level (n	n)	Co-Ordinates	0				BH7B	
	47075502	E	End Da	te 27-0	8-15										
Cont	ractor					Metho	d / Plant V						Sheet		
	ESL						Concret	e Corer.						1 of 1	
		(uud	I						STRATA						
Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	ness)			ESCRIPTI	NC		C	OMMEN	NTS		Installation
-					0.20	CONCR									
ŀ					0.30	MADE Of fine-med	GROUND ium, angu	: Brown, s ilar-subans	andy, gular gravel of ne-coarse.	/	Dry NVO			/	
- 0.5				0 0 0 0	0.60	flint and	concrete. ETE with	Sand is fi	ne-coarse.	/					
-					-				bgl due to refu	usal /					
-					-	on concr	ete.		-						
Ē					-										
E					-										
-					-										
-					-										
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-					-										
9/19					-										
	Backfill		I		Sor	nple De	tail	L	egend						I
N N S3					Sal	ipie De				1	Cround		REI	NERAL MARKS	
	Cement seal						Pa	Concrete	\boxtimes	l wade	e Ground		NVO - No visu	al or Olfactory	/
LL.GF													Evidence of Co m bgl - meters	ntamination. below ground	
- FU													Hand pitted to	u.ombgl	
LOGS															
TAG								Groundwate	r Table $\stackrel{1}{\underline{\checkmark}}$	7 Grour	ndwater Strike				
.10 S									<u> </u>	-					
								Logged I	Ву	CG		Appr	oved By	MM	
ш															



Proje	ct Name and Si						Client						BOR	EHOLE	No
	Stag Brewe	ry, M	ortla	ke, Lor	ndon S	W14			AB I	nbev					
Job N	lo		Date	ate 26-0	8-15	Groun	d Level (n	n)	Co-Ordinat	es ()				3H8A	
	47075502		Start Da End Da	te 26-0)8-15)8-15										
Cont	ractor					Metho	d / Plant	Used					Sheet		
	ESL						Concret	e Corer an	d Premier R	ig.				1 of 1	
		п)						5	STRATA						
Depth	Sample / Test	PID (ppm)	Water		Depth										tion
BGL	Sample / Test Details	PID	₿	Legend	(Thick- ness)		DE	ESCRIPTIO	NC		C	OMMEN	ITS		Installation
-					0.20	- CONCR	ETE								Ŵ
E					0.40	- MADE (GROUND concrete.	: Grey, sar	ndy, fine-me	dium	Dry NVO				
0.5 -	BH8A	2.1		\bigotimes	(0.40)	- MADE (GROUND	: Black sa	nd and grave	/	Dry. Black	ash note	d.		
È.					0.80	 Gravel is 	medium	to coarse, a	angular to fine-coarse		Dry NVO				-
- 1.0		< 0.1				∖ash.				/					
E						Soft, bro (Possibly	wn/ grey, / reworked	sandy, gra d clay).	velly CLAY	•					
- 		<0.1			(1.40)	-									
-						-									
-2.0		<0.1		<u> </u>	-	-									
- 2.0		<0.1			2.20										_
-		< 0.1				 Dense, b Gravel is 	rown, gra fine-med	velly, fine- ium suban	coarse SAN gular-rounde	D. ed of	Dry NVO				
-2.5				0		_ flint.			8						
Ē				· · · · ·	(1.30)	-									
- 3.0	BH8A_3.0-3.	5 <0.1		0.0		-									
-	X			a .		-									
- 	Д	< 0.1		° ° ° ° ° ° °	3.50	- Boraholo	tormonot	ed at 3.0m	hal						
[- -	termonat	cu at 5.0m	l Ugi.						
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E						-									
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	Backfill				Sa	mple De	tails	Le	egend				GE	NERAL	
	Cement seal				D			Concrete		Mad	le Ground		REN	MARKS	
	Bentonite Fill					sampie		Gravelly Sa			velly Sand		NVO - No visu		у
									·				Evidence of Co m bgl - meters Hand pitted to	below ground	level.
													rillou to	- 0-	
								Groundwater	r Table	∫ └ Grou	undwater Strike				
										-					
1								Logged H	Зу	CG		Appro	oved By	MM	



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Proje	ct Name and Si			1T	1	3714	Client			.1			BOREH	OLE	No
	Stag Brewe	-		ke, Lon	don S			<u> </u>	AB Ir				BH	9A	
Job N	No 47075502		Date Start Da End Da	ate 26-0 te 26-0	8-15 8-15	Ground	l Level (n	n)	Co-Ordinate	es ()				•	
Cont	ractor					Metho	d / Plant I	Used					Sheet		
	ESL						Concret	e Corer an	d Premier Rig	g.			1 0	f 1	
		(m						S	STRATA						
Depth BGL	Sample / Test Details	PID (ppm)	Water	Legend	ness)		DE	ESCRIPTIO	ON		CO	OMMEI	NTS		Installation
-						- CONCRE	ETE								Ŵ.
	BH9A_0.5	3			0.30 (1.90) 2.20 (1.10) 3.30	 MADE G fine-coars subrounde becoming - -	ROUND wm, angued concre very.	Gravel is fi ed of natur vith depth. : Black, sa ilar, red/gr ete. Sand is	Poor recover	y. lint	Dry NVO Wet NVO				
. GDT 22/9/15															
33_ALL	Backfill					mple Det		Le	gend				GENEI REMA	RAL	
AGS	Cement seal					Small distur sample	bed	Concrete	\triangleright	Made	e Ground				
	3entonite Fill						Ţ	Groundwater	Table S	1 Groui	ndwater Strike		NVO - No visual or C Evidence of Contami m bgl - meters below Hand pitted to 1.2mb	nation. ground l	
TE_08.02								Logged I	Зу	CG		Appi	roved By N	ſМ	



APPENDIX C – LABORATORY CERTIFICATE

47075502/ PH2 ESA 22 SEPTEMBER 2015



AECOM St. George's House 2nd Floor 5 St. George's Road Wimbledon Greater London SW19 4DR

Attention: Gary Marshall

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 08 September 2015 H_URS_WIM 150822-16

Stag Brewery 328751

We received 8 samples on Saturday August 22, 2015 and 6 of these samples were scheduled for analysis which was completed on Monday September 07, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan Operations Manager



Alcontrol Laboratories is a trading division of ALcontrol UK Limited Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. ALcontrol Laboratories

CERTIFICATE OF ANALYSIS

Validated

_				
SDG:	150822-16	Location:	Stag Brewery	Order Number:
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number: 328751
Client Reference:		Attention:	Gary Marshall	Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11942793	BH204		1.30	21/08/2015
11942794	BH204		1.80	21/08/2015
11942796	BH204		3.30	21/08/2015
11942797	BH205		1.00	21/08/2015
11942798	BH205		2.50	21/08/2015
11942799	BH206		1.10	21/08/2015
11942791	BH203A		0.50	20/08/2015
11942792	BH203A		2.50	21/08/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

										IAI		010	·		
SDG: Job: Client Reference:	150822-16 H_URS_WIM-273	3	Location: Customer Attention:	: AB	EČC	Brew DM Mars	-							Order Number: Report Number: Superseded Report:	3287
SOLID						-		<u> </u>	-		_		<u> </u>		
Results Legend	L	ab Sample No	o(s)	11942793		11942796	19421	11049707	11942798		11942799		11942791		
X Test				33	5	6		ž	86		99		ž		
No Determin Possible		Customer ample Refere	nce	BHZU4		BH204		BHODA	BH205		BH206		BH203A		
		AGS Reference	ce												
		Depth (m)		1.30		3.30	1.00	100	2.50		1.10		0.50		
		Container		400g Tub (ALE215) 250g Amber Jar (AL	250g Amber Jar (AL	60g VOC (ALE215) 400a Tub (ALE214)	400g Tub (ALE214) 250g Amber Jar (AL	250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214)	400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215)	400g Tub (ALE214) 250g Amber Jar (Al	60g VOC (ALE215)		
Ammonium Soil by Titrati	ion All		NDPs: 0 Tests: 6	x		X	x		x	x		X			
Asbestos ID in Solid Sam	nples All		NDPs: 0 Tests: 6	x		x	x		x	x		X			
Asbestos Quant Waste	Limit All		NDPs: 0 Tests: 2				x					x			
Easily Liberated Sulphide			NDPs: 0 Tests: 6	x		×	x		×	x		×			
EPH CWG (Aliphatic) GC			NDPs: 0 Tests: 6	x	x		<mark>x</mark>	×		x		×			
EPH CWG (Aromatic) GC			NDPs: 0 Tests: 6	x	x		<mark>x</mark>	×		x		×			
GRO by GC-FID (S)	All		NDPs: 0 Tests: 6	×	2	×	2	x	×		x		×		
Hexavalent Chromium (s			NDPs: 0 Tests: 6	x		<mark>x</mark>	x		x	x		×			
Metals in solid samples b				x	x		x	×		x		×			
PAH by GCMS	All			x	x		x	×		x		×			
pH	All		NDPs: 0 Tests: 6	×		×	x		×	x		×			
Sample description	All			x	x		x	×				x			
Total Organic Carbon	All			x	x		x	×		x		x			
Total Sulphate	All			x	x		x	×		x		×			
TPH CWG GC (S)	All		NDPs: 0 Tests: 6												

		Level the Chan Drewer								
	150822-16 H_URS_WIM-273	Location: Customer: Attention:	AE	ig Brew COM ry Mars	-				Order Number: Report Number: Superseded Report:	3287
SOLID Results Legend	Lab Sampl	le No(s)	11942793	11942796	11942797	11942798	11942799	11942791		
No Determinati Possible	on Custor Sample Re		BH204	BH204	BH205	BH205	BH206	BH203A		
	AGS Refe	erence								
	Depth	(m)	1.30	3.30	1.00	2.50	1.10	0.50		
	Contai	iner g	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (Al	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL		
VOC MS (S)	All	NDPs: 0 Tests: 6	x	x	x	x	x	x		

CERTIFICATE OF ANALYSIS

Validated

SDG:	150822-16	Location:	Stag Brewery	Order Number:	328751
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Sample Descriptions

Grain Sizes							
very fine <0.0	063mm fine 0.0	063mm - 0.1mm m	edium 0.1mm	- 2mm coa	rse 2mm - 1	0mm very coa	arse >10mm
Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
11942793	BH204	1.30	Dark Brown	Sandy Clay	0.1 - 2 mm	Stones	Vegetation
11942796	BH204	3.30	Light Brown	Loamy Sand	0.1 - 2 mm	Stones	Vegetation
11942797	BH205	1.00	Light Brown	Sandy Loam	0.1 - 2 mm	Brick	Stones
11942798	BH205	2.50	Light Brown	Loamy Sand	0.1 - 2 mm	Stones	Vegetation
11942799	BH206	1.10	Dark Brown	Sandy Clay Loam	0.1 - 2 mm	Brick	Stones
11942791	BH203A	0.50	Light Brown	Sandy Loam	0.1 - 2 mm	Brick	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

Validated

			CEF	STIE	FICATE O	F A	NALYSIS				
	822-16 JRS_WIM-27	73	Location: Customer: Attention:	AE	ag Brewery COM ry Marshall				Order Number: Report Number: Superseded Repo	328751 rt:	
					,						
Results Legend		Customer Sample R	BH204		BH204	_	BH205		BH205	BH206	BH203A
# ISO17025 accredited. M mCERTS accredited.			211201		511201		511200		2/1200	511200	2.120071
aq Aqueous / settled sample.		Depth (m)	1.30		3.30		1.00		2.50	1.10	0.50
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid		Soil/Solid		Soil/Solid		Soil/Solid	Soil/Solid	Soil/Solid
* Subcontracted test. ** % recovery of the surrogate star	idard to	Date Sampled Sampled Time	21/08/2015		21/08/2015		21/08/2015		21/08/2015	21/08/2015	20/08/2015
check the efficiency of the method	od. The	Date Received	22/08/2015		22/08/2015		22/08/2015		22/08/2015	22/08/2015	. 22/08/2015
results of individual compounds samples aren't corrected for the		SDG Ref	150822-16 11942793		150822-16 11942796		150822-16 11942797		150822-16 11942798	150822-16 11942799	150822-16 11942791
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	11942793		11942790		11942797		11942796	11942799	11942791
Component	LOD/Unit										
Moisture Content Ratio (%	%	PM024	16	_	7.2	_	8.8	_	5.2	12	11
of as received sample)											
Exchangeable Ammonia	<15	TM024	<15		<15		<15		<15	<15	<15
as NH4	mg/kg			м		м		М	М	М	N
Organic Carbon, Total	<0.2 %	TM132	0.266		<0.2		0.627		<0.2	0.522	0.396
				М		М		м	м	М	N
рН	1 pH	TM133	9.55		8.43		11.3		9.88	8.95	11.7
	Units			М		М		М	М	М	N
Chromium, Hexavalent	<0.6	TM151	<0.6		<0.6		<0.6		<0.6	<0.6	<0.6
	mg/kg			#		#		#	#	#	#
Sulphide, Easily liberated	<15	TM180	<15		<15		<15		<15	<15	20
	mg/kg			#		#		#	#	#	#
Arsenic	<0.6	TM181	10.9		30		13.7		21.8	19.9	12.1
	mg/kg			М		М		М	M	М	N
Cadmium	<0.02	TM181	0.21		0.319		0.414		0.263	0.324	0.29
	mg/kg			М		М		М	М	М	N
Chromium	<0.9	TM181	17.4		15.2		20		20.6	21.9	31.2
	mg/kg			М		Μ		Μ	M	M	N
Copper	<1.4	TM181	8.93		3.08		25.8		4.42	12.8	35.3
	mg/kg			М		М		М	M	М	N
Lead	<0.7	TM181	10.6		6.08		96.4		10.2	39.4	59.6
	mg/kg			М		М		М	М	М	N
Mercury	<0.14	TM181	<0.14		<0.14		0.162		<0.14	<0.14	<0.14
	mg/kg			М		М		М	M	М	N
Nickel	<0.2	TM181	16.5		21.8		17.4		20	22.4	38.2
	mg/kg			М		М		М	M	М	N
Selenium	<1 mg/k	g TM181	<1		<1		<1		<1	<1	<1
				#		#		#	#	#	#
Zinc	<1.9	TM181	44.4		25.3		93		28.2	54.2	96.4
	mg/kg	T1 400 4	1000	М	00.40	М	0750	М	M	M	N
Sulphate, Total	<48	TM221	4280		2040		3750		883	573	8120
	mg/kg			М		М		М	M	M	N
								_			
								_			
								_			
		+ +						_			

SDC:	150000 16			Stag Brewery	71 / *11		Orden Number		
SDG: Job:	150822-16 H_URS_WIM-	273	Location: Customer:	AECOM			Order Number: Report Number:	328751	
Client Reference:			Attention:	Gary Marshall			Superseded Repo	rt:	
AH by GCMS Results Leg	end	Customer Sample R	BH204	BH204		BH205	BH205	BH206	BH203A
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled san		oustomer Sample K	ВП204	BH204		BH205		ВП200	вп203А
diss.filt Dissolved / filtered san tot.unfilt Total / unfiltered sam * Subcontracted test. ** % recovery of the sun	mple. de.	Depth (m) Sample Type Date Sampled	1.30 Soil/Solid 21/08/2015	3.30 Soil/Solid 21/08/2015	5	1.00 Soil/Solid 21/08/2015	2.50 Soil/Solid 21/08/2015	1.10 Soil/Solid 21/08/2015	0.50 Soil/Solid 20/08/2015
check the efficiency o results of individual c samples aren't correc	f the method. The ompounds within ted for the recovery	Sampled Time Date Received SDG Ref	22/08/2015 150822-16	22/08/2015 150822-16		22/08/2015 150822-16	22/08/2015 150822-16	22/08/2015 150822-16	22/08/2015
(F) Trigger breach confire I-5&+§@ Sample deviation (see	appendix)	Lab Sample No.(s) AGS Reference	11942793	11942796		11942797	11942798	11942799	11942791
Component Naphthalene-d8 %	LOD/Un %	its Method TM218	106	103		104	102	104	104
recovery** Acenaphthene-d10 %	%	TM218	103	102	_	103	102	105	105
recovery** Phenanthrene-d10 %	%	TM218	104	102		105	101	107	107
recovery** Chrysene-d12 %	%	TM218	96.7	99.7		112	101	98.9	101
recovery** Perylene-d12 %	%	TM218	104	99.7		112	102	105	107
recovery**									
Naphthalene	<9 µg/		<9	<9 M	м	173	<9 M M		10.3 /
Acenaphthylene	<12 µg/kç	J	<12	<12 M	м	45.3	<12 M M		<12 //
Acenaphthene	<8 µg/	/kg TM218	<8	<8 M	м	73.2	<8 M M	<8 N	<8 /
Fluorene	<10 μg/kg		<10	<10 M	м	79.6	<10 M M	<10 N	<10 /
Phenanthrene	<15 μg/kg	TM218	<15	<15 M	м	811	<15 M M	28.4	160 И И
Anthracene	<16 μg/kg	TM218	<16	<16 M	м	179	<16 M M	<16	41 Л М
Fluoranthene	μg/kg <17 μg/kg	TM218	<17	M <17	M	1310	M	47.3	429
Pyrene	μg/κg <15 μg/kg	TM218	<15	<15		1510	<15	53.2	412
Benz(a)anthracene	<14	TM218	<14	M <14	M	1060	M M <14	<14	A 192
Chrysene	μg/kg <10	TM218	<10	M <10	M	976	M M <10	16.3	/ N 194
Benzo(b)fluoranthene		TM218	<15	M <15	M	1300	M M <15	37.7	A 206
Benzo(k)fluoranthene		TM218	<14	M <14	M	546	M M <14	19.7	103
Benzo(a)pyrene	μg/kg <15	TM218	<15	M <15	M	970	M M <15	38.2	A 203
Indeno(1,2,3-cd)pyrei		TM218	<18	M <18	М	543	M M <18	29	124
Dibenzo(a,h)anthrace	ne <23		<23	M <23	М	186	M M <23	<23	A 32.7
Benzo(g,h,i)perylene	µg/kg <24]	<24	M <24	М		M M		<u>л 142</u>
PAH, Total Detected	 μg/kg <118]	<118	M <118	м	10400	M M <118		A 2250
USEPA 16	µg/kg			-110					
		_			$ \square$				
					-+				

				<i>c</i> :									—
SDG: Job: Client Reference:	150822-16 H_URS_WIM-2	273	Location: Customer: Attention:	Stag Br AECON	M				Order Number: Report Number: Superseded Repo	328751			
PH CWG (S)			Attention:	Gary M	arsnall				Superseded Repo	11.			
Results Leger # ISO17025 accredited. M mCERTS accredited.	nd	Customer Sample R	BH204		BH204		BH205		BH205	BH206		BH203A	
aq Aqueous / settled samp diss.filt Dissolved / filtered sam tot.unfilt Total / unfiltered sample * Subcontracted test.	ple. a.	Depth (m) Sample Type Date Sampled	1.30 Soil/Solid 21/08/2015		3.30 Soil/Solid 21/08/2015		1.00 Soil/Solid 21/08/2015		2.50 Soil/Solid 21/08/2015	1.10 Soil/Solid 21/08/2015		0.50 Soil/Solid 20/08/2015	
 ** % recovery of the surro check the efficiency of 1 results of individual cor samples aren't correcte (F) Trigger breach confirmed 	the method. The npounds within d for the recovery	Sampled Time Date Received SDG Ref Lab Sample No.(s)	22/08/2015 150822-16 11942793		22/08/2015 150822-16 11942796		22/08/2015 150822-16 11942797		22/08/2015 150822-16 11942798	22/08/2015 150822-16 11942799		22/08/2015 150822-16 11942791	
I-5&+§@ Sample deviation (see a		AGS Reference											
Component GRO Surrogate % recovery**	CD/UN %	TM089	74		96		72	_	98	80		73	
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44	м	<44	м	243	м	<44 M	<44	м	<44	N
Methyl tertiary butyl eth (MTBE)			<5	M	<5	M	<5	м	<5 M	<5	M	<5	N
Benzene	<10 μg/kg	TM089	<10	м	<10	м	<10	м	<10 M	<10	M	<10	N
Toluene	<2 µg/	kg TM089	<2	м	<2	м	5.4	м	<2 M	<2	м	<2	Ν
Ethylbenzene	<3 µg/		<3	м	<3	М	<3	М	<3 M	<3	M	<3	N
m,p-Xylene	<6 µg/		<6	м	<6	М	7.55	м	<6 M	<6	м	<6	N
o-Xylene	<3 µg/	-	<3	м	<3	м	<3	м	<3 M	<3	м	<3	N
sum of detected mpo xylene by GC	<9 µg/		<9		<9		<9		<9	<9		<9	
sum of detected BTEX GC	μg/kg		<24		<24		<24		<24	<24		<24	
Aliphatics >C5-C6	<10 µg/kg		<10		<10		<10		<10	<10		<10	
Aliphatics >C6-C8	<10 µg/kg		<10		<10		12.9		<10	<10		<10	
Aliphatics >C8-C10	<10 µg/kg		<10		<10		25.9		<10	<10		<10	
Aliphatics >C10-C12	<10 µg/kg		<10		<10		93.9		<10	<10		<10	
Aliphatics >C12-C16	<100 µg/kg		480		808		5150		466	337		2500 9990	
Aliphatics >C16-C21	<100 µg/kg <100		<100		<100		30000		<100	<100		9990	
Aliphatics >C21-C35	μg/kg <100		<100		<100		39400		<100	<100		70000	
Total Aliphatics >C35-C44	µg/kg		480		808		195000		466	2000		180000	
Aromatics >EC5-EC7	μg/kg		<10		<10		<10		<10	<10		<10	
	µg/kg				-								
Aromatics >EC7-EC8 Aromatics >EC8-EC10	<10 µg/kg <10		<10		<10		<10		<10	<10		<10	
Aromatics >EC8-EC10 Aromatics >EC10-EC1	µg/kg		<10		<10		62.6		<10	<10		<10	
Aromatics >EC10-EC1	µg/kg		486		402		4430		519	<10		1610	
Aromatics >EC12-EC1	µg/kg		<100		<100		21900		<100	<100		6760	
Aromatics >EC21-EC3	µg/kg		269		462		75100		693	3460		78300	
Aromatics >EC35-EC4	µg/kg		<100		<102		55100		<100	<100		118000	
Aromatics >EC40-EC4	µg/kg		<100		<100		25300		<100	<100		46400	
Total Aromatics	μg/kg <100		755		864		156000		1210	3460		205000	
>EC12-EC44 Total Aliphatics &	μg/kg <100		1230		1680		352000		1680	5470		385000	
Aromatics >C5-C44	μg/kg		.200				002000						

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SDG: Job: Client Referenc	_	22-16 RS_WIM-27	73	Location: Customer: Attention:	AB	ag Brewery ECOM ary Marshall			Order Numbe Report Numb Superseded	oer:	328751 rt:		
VOC MS (S)													
# ISO17025 accre M mCERTS accre	dited.		Customer Sample R	BH204		BH204		BH205	BH205		BH206		BH203A
check the effici results of indivi samples aren't (F) Trigger breach	red sample. d sample. test. he surrogate standa ency of the method idual compounds w corrected for the re	. The rithin	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference s Method	1.30 Soil/Solid 21/08/2015 22/08/2015 150822-16 11942793		3.30 Soil/Solid 21/08/2015 22/08/2015 150822-16 11942796		1.00 Soil/Solid 21/08/2015 22/08/2015 150822-16 11942797	2.50 Soii/Solid 21/08/2015 22/08/2015 150822-16 11942798		1.10 Soil/Solid 21/08/2015 22/08/2015 150822-16 11942799		0.50 Soil/Solid 20/08/2015 22/08/2015 150822-16 11942791
Dibromofluorome	thane**	%	TM116	117		102		96.6	98.9		116	_	71.6
Toluene-d8**		%	TM116	99.6		99.9		91.2	97.9		101		87.7
4-Bromofluorober	nzene**	%	TM116	101		101		77.1	101		90.4		70.8
Dichlorodifluorom	lethane	<6 µg/k	g TM116	<6		<6		<6	<6		<6		<6
Chloromethane		<7 µg/k	g TM116	<7	M	<7	M	M <7	<7	M	<7	M	<7
Vinyl Chloride		<6 µg/k	g TM116	<6	#	<6	#	# <6	<6	#	<6	#	<6
Bromomethane		<10 µg/kg	TM116	<10	M M	<10	M M	M <10 M	<10	M	<10	M M	<10
Chloroethane		<10 µg/kg	TM116	<10	M	<10	M	<10 M	<10	M	<10	M	<10
Trichlorofluororm	ethane	<6 µg/k	g TM116	<6	M	<6	M	<6 M	<6	M	<6	M	<6
1,1-Dichloroether	ne	<10 µg/kg	TM116	<10	#	<10	#	<10	<10	#	<10	#	<10
Carbon Disulphid	е	<7 µg/k	g TM116	<7	M	<7	M	<7 M	<7	M	<7	M	<7
Dichloromethane		<10 µg/kg	TM116	<10	#	<10	#	<10	<10	#	<10	#	<10
Methyl Tertiary B	utyl Ether	<10 µg/kg	TM116	<10	м	<10	м	<10 M	<10	м	<10	м	<10
trans-1,2-Dichloro	oethene	<10 µg/kg	TM116	<10	м	<10	м	<10 M	<10	м	<10	м	<10
1,1-Dichloroethar	ne	<8 µg/k	g TM116	<8	М	<8	м	<8 M	<8	м	<8	м	<8
cis-1,2-Dichloroet	thene	<6 µg/k	g TM116	<6	М	<6	м	<6 M	<6	м	<6	м	<6
2,2-Dichloropropa	ane	<10 µg/kg	TM116	<10	М	<10	М	<10 M	<10	М	<10	м	<10
Bromochlorometh	nane	<10 µg/kg	TM116	<10	М	<10	м	<10 M		м	<10	м	<10
Chloroform		<8 µg/k	-	<8	М	<8	М	<8 M		м	<8	м	<8
1,1,1-Trichloroeth	nane	<7 µg/k		<7	М	<7	М	<7 M		м	<7	М	<7
1,1-Dichloroprope		<10 µg/kg	TM116	<10	М	<10	м	<10 M		м	<10	м	<10
Carbontetrachlori		<10 µg/kg	TM116	<10	М	<10	м	<10 M		м	<10	М	<10
1,2-Dichloroethar	ne	<5 µg/k	-	<5	М	<5	м	<5 M		м	<5	м	<5
Benzene		<9 µg/k		<9	М	<9	м	<9 M		м	<9	м	<9
Trichloroethene		<9 µg/k		<9	#	<9	#	<9		#	<9	#	<9
1,2-Dichloropropa		<10 µg/kg	TM116	<10	М	<10	м	<10 M		м	<10	м	<10
Dibromomethane		<9 µg/k	-	<9	М	<9	м	<9 M		м	<9	М	<9
Bromodichlorome		<7 µg/k	-	<7	М	<7	м	<7 M		м	<7	М	<7
cis-1,3-Dichlorop	ropene	<10 µg/kg	TM116	<10	М	<10	м	<10 M		м	<10	м	<10
Toluene		<7 µg/k	g TM116	<7	М	<7	м	<7 M	<7	м	<7	м	<7

trans-1,3-Dichloropropene

1,1,2-Trichloroethane

<10

µg/kg

<10

µg/kg

TM116

TM116

<10

<10

М

М

М

М

<10

<10

М

М

<10

<10

М

М

<10

<10

М

М

<10

<10

CERTIFICATE OF ANALYSIS

Validated

SDG:	150822-16	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	328751
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

VOC MS (S)

VUC IV									
м	Results Legend ISO17025 accredited. mCERTS accredited.		Customer Sample R	BH204	BH204	BH205	BH205	BH206	BH203A
diss.filt tot.unfilt *	Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample. Subcontracted test.		Depth (m) Sample Type Date Sampled	1.30 Soil/Solid 21/08/2015	3.30 Soil/Solid 21/08/2015	1.00 Soil/Solid 21/08/2015	2.50 Soil/Solid 21/08/2015	1.10 Soil/Solid 21/08/2015	0.50 Soil/Solid 20/08/2015
	% recovery of the surrogate standa check the efficiency of the method.		Sampled Time						
	results of individual compounds w	ithin	Date Received SDG Ref	22/08/2015 150822-16	22/08/2015 150822-16	22/08/2015 150822-16	22/08/2015 150822-16	22/08/2015 150822-16	22/08/2015 150822-16
	samples aren't corrected for the re- Trigger breach confirmed	covery	Lab Sample No.(s)	11942793	11942796	11942797	11942798	11942799	11942791
1-5&+§@	Sample deviation (see appendix)		AGS Reference						
Compor	nent	LOD/Unit	s Method						
1,3-Dic	chloropropane	<7 µg/k	g TM116	<7 M	<7 N	<7	<7 M M	<7 M	<7 M
Tetrach	nloroethene	<5 µg/k	g TM116	<5 M	<5 N	<5	<5 M M	<5	<5 M
Dibrom	nochloromethane	<10 µg/kg	TM116	<10 M	<10 N	<10	<10 M M	<10	<10 M
1,2-Dib	promoethane	<10 µg/kg	TM116	<10 M	<10 N	<10	<10 M M	<10	<10 M
Chlorol	benzene	<5 µg/k	g TM116	<5 M	<5 N	<5	<5 M M	<5	<5 M
1117	-Tetrachloroethane	<10	TM116	N <10	<10	<10	<10	<10	<10
1,1,1,2	- Tetrachior dethane	µg/kg	TINITIO	M	N		м м		M
Ethylbe	enzene	<4 µg/k	g TM116	<4 M	<4 N	<4	<4 M M	<4	<4 M
p/m-Xy	lene	<10 µg/kg	TM116	<10 #	<10	<10	<10 # #	<10	<10 #
o-Xyler	ne	<10 µg/kg	TM116	<10	<10	<10	<10	<10	<10
Styrene	e	<10	TM116	M <10	<10	<10	M M <10	<10	M <10
Bromot	form	µg/kg <10	TM116	# <10	<10 <i>#</i>	<10	# #	# <10	# <10
Вютно	IOIIII	μg/kg	TIVITIO	M	N		м м		M
Isoprop	bylbenzene	<5 µg/k	g TM116	<5 #	<5	<5	<5 # #	<5	<5 #
1,1,2,2	-Tetrachloroethane	<10 µg/kg	TM116		<10 N	<10	" " <10 M M	<10	<10
123-T	richloropropane	µg/kg <16	TM116	<16	<16	<16	<16	<16	<16
1,2,01	nomoropropuno	µg/kg		M	N		M M		M
Bromol	benzene	<10 µg/kg	TM116	<10 M	<10 N	<10	<10 M M	<10 M	<10 M
Propylk	benzene	<10 µg/kg	TM116	<10 M	<10 N	<10	<10 M M	<10 M	<10 M
2-Chloi	rotoluene	<9 µg/k	g TM116	<9 M	<9 N	<9	<9 M M	<9 M	<9 M
1,3,5-T	rimethylbenzene	<8 µg/k	g TM116	<8 M	<8	<8	<8 M M	<8	<8
4-Chloi	rotoluene	<10 µg/kg	TM116	<10 M	<10 N	<10	<10 M M	<10	<10
tert-But	tylbenzene	<14	TM116	<14	<14	<14	<14	<14	<14
	,	μg/kg		M	N		м м		M
1,2,4-T	rimethylbenzene	<9 µg/k	g TM116	<9 #	<9	<9	<9 # #	<9	<9 #
sec-Bu	tylbenzene	<10 µg/kg	TM116	<10 M	<10	<10	<10 M M	<10	<10
4-Isopr	ropyltoluene	<10 µg/kg	TM116	<10 M	<10 N	<10	<10 M M	<10	<10 M
1,3-Dic	chlorobenzene	<8 µg/k	g TM116	<8 M	<8	<8	<8	<8	<8
1,4-Dic	chlorobenzene	<5 µg/k	g TM116	<5	<5	<5	<5	<5	<5
n-Butyl	benzene	<11 µg/kg	TM116	M <11	<11 N	<11	M M <11	M <11	M <11
1,2-Dic	chlorobenzene	<10	TM116	<10	<10	<10	<10	<10	<10
10.0%	promo-3-chloroprop	µg/kg <14	TM116	M <14	N <14	<14	M M <14	M <14	M <14
ane		µg/kg		M	N		м	М	М
	nyl methyl ether	<10 µg/kg	TM116	<10 #	1		<10 # #		<10 #
1,2,4-T	richlorobenzene	<20 µg/kg	TM116	<20	<20	<20	<20	<20	<20
Hexach	nlorobutadiene	<20 µg/kg	TM116	<20	<20	<20	<20	<20	<20
Naphth	alene	<13 µg/kg	TM116	<13 M	<13 N	196 I	<13 M M	<13 M	<13 M
		µg/kg <13			<13	196	<13	<13	М

CERTIFICATE OF ANALYSIS

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VOC MS (S)								
Results Legend # ISO17025 accredited.	Cu	istomer Sample R	BH204	BH204	BH205	BH205	BH206	BH203A
M mCERTS accredited. aq Aqueous / settled sample. biss.httl Dissloved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate standa check the efficiency of the method.	The	Depth (m) Sample Type Date Sampled Sampled Time Date Received	1.30 Soil/Solid 21/08/2015 22/08/2015	3.30 Soil/Solid 21/08/2015 22/08/2015	1.00 Soil/Solid 21/08/2015 22/08/2015	2.50 Soil/Solid 21/08/2015 22/08/2015	1.10 Soil/Solid 21/08/2015 22/08/2015	0.50 Soii/Solid 20/08/2015 22/08/2015
results of individual compounds wi samples aren't corrected for the rec (F) Trigger breach confirmed 1-5&+\$@ Sample deviation (see appendix)	covery L	SDG Ref ab Sample No.(s) AGS Reference	150822-16 11942793	150822-16 11942796	150822-16 11942797	150822-16 11942798	150822-16 11942799	150822-16 11942791
Component 1,2,3-Trichlorobenzene	LOD/Units <20	Method TM116	<20	<20	<20	<20	<20	<20
	µg/kg	- Imirio	-20	-20	-20	·20 #	-20	-20

CERTIFICATE OF ANALYSIS

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-						
	SDG:	150822-16	Location:	Stag Brewery	Order Number:	
	Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	328751
	Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Asbestos Identification - Soil

						cation	- 0011				
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH204 1.30 SOLID 21/08/2015 00:00:00 22/08/2015 16:18:39 150822-16 11942793 TM048	24/08/2015	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH204 3.30 SOLID 21/08/2015 00:00:00 22/08/2015 16:12:02 150822-16 11942796 TM048	24/08/2015	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH205 1.00 SOLID 21/08/2015 00:00:00 22/08/2015 16:24:15 150822-16 11942297 TM048	24/08/2015	Chris Swindells	Loose fibres in soil	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH205 2.50 SOLID 21/08/2015 00:00:00 22/08/2015 15:28:37 150822-16 11942798 TM048	24/08/2015	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH206 1.10 SOLID 21/08/2015 00:00:00 22/08/2015 15:33:31 150822-16 11942799 TM048	24/08/2015	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

Validated

12											
SDG: Job: Client Refere	150822-16 H_URS_W nce:		Cust	tomer: AEC	Brewery OM Marshall		R	rder Number: eport Number uperseded Re		51	
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH203A 0.50 SOLID 20/08/2015 00:00:00 24/08/2015 07:59:04 150822-16 11942791 TM048	25/08/15	Martin Cotterell	Soil containing loose fibres and debris typical of asbestos bitumen	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

Validated

SDG:	150822-16	Location: Sta	ag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer: AE	COM	Report Number: 328751	
Client F	Reference:	Attention: Ga	iry Marshall	Superseded Report:	

Asbestos Quantification - Waste Limit

		Additional Asbestos Components (Using TM048)	Analysts Comments	Waste Limit, Total - %
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH205 1.00 SOLID 21/08/2015 00:00:00 27/08/2015 15:58:07 150822-16 11942797 TM 304	Chrysotile (#)	Loose fibres in soil	<0.1 (#)
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH203A 0.50 SOLID 20/08/2015 00:00:00 03/09/2015 06:41:42 150822-16 11942791 TM 304	None (#)	N/C	<0.1 (#)

CERTIFICATE OF ANALYSIS

Validated

 SDG:
 150822-16
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 328751

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:
 Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM 304				
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C.

NA = not applicable.

CERTIFICATE OF ANALYSIS

Stag Brewery

Gary Marshall

AEČOM

Order Number: Report Number

Order Number: Report Number: 328751 Superseded Report:

Test Completion Dates

	· · · · · · · · · · · · · · · · · · ·						
Lab Sample No(s)	11942793	11942796	11942797	11942798	11942799	11942791	
Customer Sample Ref.	BH204	BH204	BH205	BH205	BH206	BH203A	
•							
AGS Ref.							
Depth	1.30	3.30	1.00	2.50	1.10	0.50	
Туре	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	
Ammonium Soil by Titration	26-Aug-2015	26-Aug-2015	26-Aug-2015	26-Aug-2015	26-Aug-2015	26-Aug-2015	
Asbestos ID in Solid Samples	24-Aug-2015	24-Aug-2015	24-Aug-2015	24-Aug-2015	24-Aug-2015	25-Aug-2015	
Asbestos Quant Waste Limit			03-Sep-2015			07-Sep-2015	
Easily Liberated Sulphide	27-Aug-2015	28-Aug-2015	27-Aug-2015	27-Aug-2015	27-Aug-2015	27-Aug-2015	
EPH CWG (Aliphatic) GC (S)	28-Aug-2015	28-Aug-2015	03-Sep-2015	28-Aug-2015	28-Aug-2015	03-Sep-2015	
EPH CWG (Aromatic) GC (S)	28-Aug-2015	28-Aug-2015	03-Sep-2015	28-Aug-2015	28-Aug-2015	03-Sep-2015	
GRO by GC-FID (S)	29-Aug-2015	29-Aug-2015	29-Aug-2015	29-Aug-2015	29-Aug-2015	29-Aug-2015	
Hexavalent Chromium (s)	25-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015	
Metals in solid samples by OES	26-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015	
PAH by GCMS	26-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015	25-Aug-2015	
pH	02-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015	
Sample description	24-Aug-2015	22-Aug-2015	22-Aug-2015	22-Aug-2015	22-Aug-2015	22-Aug-2015	
Total Organic Carbon	01-Sep-2015	01-Sep-2015	02-Sep-2015	01-Sep-2015	01-Sep-2015	02-Sep-2015	
Total Sulphate	28-Aug-2015	28-Aug-2015	28-Aug-2015	28-Aug-2015	28-Aug-2015	28-Aug-2015	
TPH CWG GC (S)	29-Aug-2015	29-Aug-2015	03-Sep-2015	29-Aug-2015	29-Aug-2015	03-Sep-2015	
VOC MS (S)	26-Aug-2015	26-Aug-2015	26-Aug-2015	26-Aug-2015	26-Aug-2015	26-Aug-2015	

Location:

Customer:

Attention:



150822-16

H_URS_WIM-273

CERTIFICATE OF ANALYSIS

Location: Stag Brewery Customer: AECOM Attention: Gary Marshall

Order Number: Report Number: 33 Superseded Report:

328751

Validated

ASSOCIATED AQC DATA

Ammonium Soil by Titration

SDG:

Job:

Client Reference:

Component	Method Code	QC 1157
Exchangeable Ammonium as NH4	TM024	93.03 79.30 : 104.61

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Easily Liberated Sulphide

Component	Method Code	QC 1159	QC 1129
Easily Liberated Sulphide	TM180	106.83 49.14 : 123.89	95.34 49.14 : 123.89

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1124	QC 1179
Total Aliphatics	TM173	98.33	92.29
>C12-C35		71.67 : 116.67	68.25 : 114.73

EPH CWG (Aromatic) GC (S)

Componen	t Method Code	QC 1124	QC 1179
Total Aromat		84.0	82.0
>EC12-EC3		59.92 : 107.95	60.67 : 124.27

GRO by GC-FID (S)

Component	Method Code	QC 1197
Benzene by GC (Moisture Corrected)	TM089	96.0 82.67 : 117.96
Ethylbenzene by GC (Moisture Corrected)	TM089	90.0 80.45 : 118.61
m & p Xylene by GC (Moisture Corrected)	TM089	89.75 79.25 : 119.43
MTBE GC-FID (Moisture Corrected)	TM089	99.0 79.10 : 122.51
o Xylene by GC (Moisture Corrected)	TM089	90.5 80.03 : 117.19
QC	TM089	107.33 75.74 : 124.65
Toluene by GC (Moisture Corrected)	TM089	94.0 82.06 : 117.54

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H_URS_WIM-273

CERTIFICATE OF ANALYSIS

Location:Stag BreweryCustomer:AECOMAttention:Gary Marshall

Order Number: Report Number: 328751 Superseded Report:

Hexavalent Chromium (s)

SDG:

Job:

Client Reference:

Component	Method Code	QC 1111	QC 1157
Hexavalent Chromium	TM151	98.0 92.20 : 106.60	98.0 92.20 : 106.60

Metals in solid samples by OES

Component	Method Code	QC 1164	QC 1154	QC 1117
Aluminium	TM181	120.77 86.49 : 129.71	94.62 86.49 : 129.71	102.31 86.49 : 129.71
Antimony	TM181	100.0 77.50 : 122.50	92.83 77.50 : 122.50	108.96 77.50 : 122.50
Arsenic	TM181	95.58 82.63 : 117.37	85.93 82.63 : 117.37	106.19 82.63 : 117.37
Barium	TM181	100.0 79.45 : 120.55	92.48 79.45 : 120.55	102.26 79.45 : 120.55
Beryllium	TM181	101.71 85.92 : 121.27	92.09 85.92 : 121.27	104.96 85.92 : 121.27
Boron	TM181	132.82 77.41 : 143.83	93.13 77.41 : 143.83	105.34 77.41 : 143.83
Cadmium	TM181	93.78 81.95 : 118.05	88.57 81.95 : 118.05	105.04 81.95 : 118.05
Chromium	TM181	100.39 81.29 : 118.71	88.24 81.29 : 118.71	96.47 81.29 : 118.71
Cobalt	TM181	97.5 83.86 : 116.14	88.0 83.86 : 116.14	103.5 83.86 : 116.14
Copper	TM181	101.22 78.57 : 121.43	92.7 78.57 : 121.43	106.49 78.57 : 121.43
Iron	TM181	107.59 87.50 : 122.82	95.86 87.50 : 122.82	102.07 87.50 : 122.82
Lead	TM181	88.19 74.18 : 117.25	90.94 74.18 : 117.25	98.82 74.18 : 117.25
Manganese	TM181	104.2 82.91 : 117.09	95.2 82.91 : 117.09	100.0 82.91 : 117.09
Mercury	TM181	92.46 81.99 : 118.01	87.6 81.99 : 118.01	105.03 81.99 : 118.01
Molybdenum	TM181	96.97 81.45 : 118.55	92.04 81.45 : 118.55	110.19 81.45 : 118.55
Nickel	TM181	100.0 79.64 : 120.36	90.7 79.64 : 120.36	104.65 79.64 : 120.36
Phosphorus	TM181	99.7 81.03 : 118.97	91.21 81.03 : 118.97	100.15 81.03 : 118.97
Selenium	TM181	104.79 87.05 : 121.93	95.73 87.05 : 121.93	114.87 87.05 : 121.93
Strontium	TM181	105.75 83.64 : 116.36	89.27 83.64 : 116.36	99.23 83.64 : 116.36
Thallium	TM181	93.37 77.50 : 122.50	84.25 77.50 : 122.50	97.84 77.50 : 122.50
Tin	TM181	97.67 78.30 : 113.98	96.01 78.30 : 113.98	111.3 78.30 : 113.98
Titanium	TM181	121.88 71.02 : 128.98	99.22 71.02 : 128.98	103.91 71.02 : 128.98

05:01:08 08/09/2015

150822-16

H_URS_WIM-273

CERTIFICATE OF ANALYSIS

Location:Stag BreweryCustomer:AECOMAttention:Gary Marshall

Order Number: Report Number: 328751 Superseded Report:

Metals in solid samples by OES

		QC 1164	QC 1154	QC 1117
Vanadium	TM181	103.82 86.61 : 113.39	91.18 86.61 : 113.39	102.94 86.61 : 113.39
Zinc	TM181	99.51 90.81 : 120.30	91.88 90.81 : 120.30	108.12 90.81 : 120.30

PAH by GCMS

Client Reference:

SDG:

Job:

Component	Method Code	QC 1112	QC 1121	QC 1102
Acenaphthene	TM218	99.5	97.0	97.5
		70.00 : 130.00	76.50 : 121.50	76.50 : 121.50
Acenaphthylene	TM218	87.5	89.0	90.0
		70.00 : 130.00	73.50 : 118.50	73.50 : 118.50
Anthracene	TM218	93.0	93.0	96.0
		70.00 : 130.00	74.25 : 117.75	74.25 : 117.75
Benz(a)anthracene	TM218	97.0	108.5	101.0
		70.00 : 130.00	82.07 : 118.33	82.07 : 118.33
Benzo(a)pyrene	TM218	98.5	101.5	105.5
		70.00 : 130.00	79.75 : 116.97	79.75 : 116.97
Benzo(b)fluoranthene	TM218	98.5	101.0	101.0
		70.00 : 130.00	82.41 : 117.15	82.41 : 117.15
Benzo(ghi)perylene	TM218	94.5	107.5	96.0
	T 14040	70.00 : 130.00	77.09 : 114.38	77.09 : 114.38
Benzo(k)fluoranthene	TM218	95.0	100.5	100.5
01	T14040	70.00 : 130.00	81.43 : 115.17	81.43 : 115.17
Chrysene	TM218	95.0	104.0	97.0
Dibenzo(ah)anthracene	TM218	70.00 : 130.00	82.50 : 113.51	82.50 : 113.51
Dibenzo(an)antinacene	TIVIZ TO	95.0 70.00 : 130.00	106.0 81.00 : 120.00	98.0 81.00 : 120.00
Fluoranthene	TM218			
i la ciulta la ciu	111210	97.0 70.00 : 130.00	96.0 78.67 : 117.61	96.5 78.67 : 117.61
Fluorene	TM218			
		98.0 70.00 : 130.00	93.5 76.50 : 121.50	95.5 76.50 : 121.50
Indeno(123cd)pyrene	TM218	92.5	104.0	96.0
		9 2.5 70.00 : 130.00	79.19 : 117.60	79.19 : 117.60
Naphthalene	TM218	96.0	91.0	94.5
		70.00 : 130.00	77.00 : 117.50	77.00 : 117.50
Phenanthrene	TM218	98.5	95.5	98.0
		70.00 : 130.00	75.00 : 123.00	75.00 : 123.00
Pyrene	TM218	95.5	94.0	95.0
		70.00 : 130.00	77.82 : 116.98	77.82 : 116.98

рH

Component	Method Code	QC 1188	QC 1135
рН	TM133	100.5 96.22 : 103.78	99.75 97.19 : 102.81

Total Organic Carbon

CERTIFICATE OF ANALYSIS

4					
SDG:	150822-16	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number: 32	28751
Client Reference	ə:	Attention:	Gary Marshall	Superseded Report:	

Total Organic Carbon

Component	Method Code	QC 1110	QC 1121
Total Organic Carbon	TM132	98.63 88.82 : 111.18	94.06 89.40 : 103.09

Total Sulphate

Component	Method Code	QC 1128
Total Sulphate	TM221	112.12 78.49 : 121.51

VOC MS (S)

Component	Method Code	QC 1125	QC 1180
1,1,1,2-tetrachloroethane	TM116	101.8	100.6
		83.24 : 124.28	83.24 : 124.28
1,1,1-Trichloroethane	TM116	88.8	107.6
		81.77 : 121.07	81.77 : 121.07
1,1,2-Trichloroethane	TM116	97.0 79.24 : 112.23	94.6 79.24 : 112.23
1,1-Dichloroethane	TM116		107.4
,		91.6 72.58 : 116.06	72.58 : 116.06
1,2-Dichloroethane	TM116	94.8	109.8
		77.50 : 122.50	77.50 : 122.50
1,4-Dichlorobenzene	TM116	88.0	97.4
		73.23 : 116.39	73.23 : 116.39
2-Chlorotoluene	TM116	88.4	93.0
		69.22 : 110.64	69.22 : 110.64
4-Chlorotoluene	TM116	86.2	92.0
	TM116	68.57 : 106.26	68.57 : 106.26
Benzene	TIMITIO	95.4 84.33 : 124.27	107.2 84.33 : 124.27
Carbon Disulphide	TM116	98.6	110.4
		77.20 : 122.80	77.20 : 122.80
Carbontetrachloride	TM116	100.2	107.6
		84.20 : 119.90	84.20 : 119.90
Chlorobenzene	TM116	103.4	106.4
		85.28 : 129.96	85.28 : 129.96
Chloroform	TM116	92.4	106.8
		82.73 : 119.72	82.73 : 119.72
Chloromethane	TM116	128.8	122.4
	Thirds	55.16 : 145.46	55.16 : 145.46
Cis-1,2-Dichloroethene	TM116	96.4	107.4
Dibromomethane	TM116	73.56 : 118.93	73.56 : 118.93
Distomornethane	TIVITO	95.2 73.40 : 116.60	92.0 73.40 : 116.60
Dichloromethane	TM116	94.8	107.4
		76.16 : 121.98	76.16 : 121.98

CERTIFICATE OF ANALYSIS

	CERTIFICATE OF ANALISIS			
SDG:	150822-16	Location:	Stag Brewery	Order Number
Job:	H_URS_WIM-273	Customer:	AECOM	Report Numbe
Client Referen	nce:	Attention:	Gary Marshall	Superseded R
VOC MS (S)			

der Number: port Number: 328751 perseded Report:

		QC 1125	QC 1180
Ethylbenzene	TM116	94.0 80.07 : 125.98	103.0 80.07 : 125.98
Hexachlorobutadiene	TM116	68.8 30.92 : 132.28	120.0 30.92 : 132.28
Isopropylbenzene	TM116	82.2 69.27 : 125.32	102.8 69.27 : 125.32
Naphthalene	TM116	110.0 79.15 : 121.98	102.2 79.15 : 121.98
o-Xylene	TM116	86.8 75.46 : 111.52	88.2 75.46 : 111.52
p/m-Xylene	TM116	94.9 76.97 : 121.75	101.0 76.97 : 121.75
Sec-Butylbenzene	TM116	74.6 49.27 : 129.90	108.8 49.27 : 129.90
Tetrachloroethene	TM116	106.2 87.96 : 133.65	113.6 87.96 : 133.65
Toluene	TM116	92.6 79.23 : 114.58	103.2 79.23 : 114.58
Trichloroethene	TM116	91.8 84.09 : 114.24	100.8 84.09 : 114.24
Trichlorofluoromethane	TM116	90.8 76.22 : 114.82	107.0 76.22 : 114.82
Vinyl Chloride	TM116	77.8	97.4

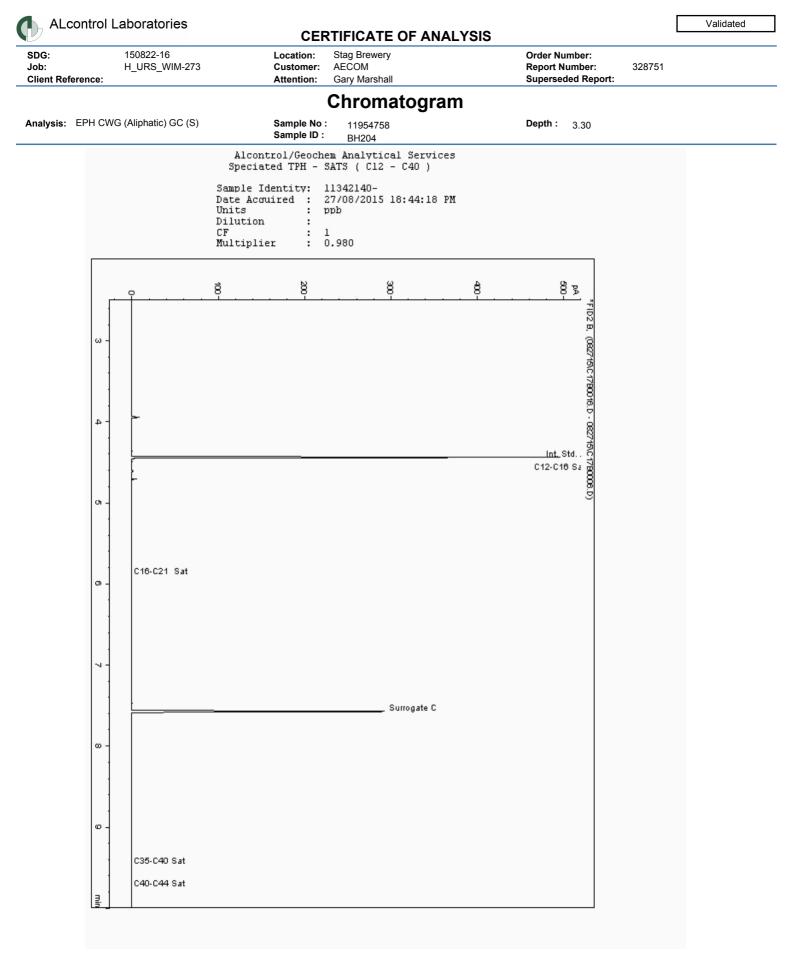
The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

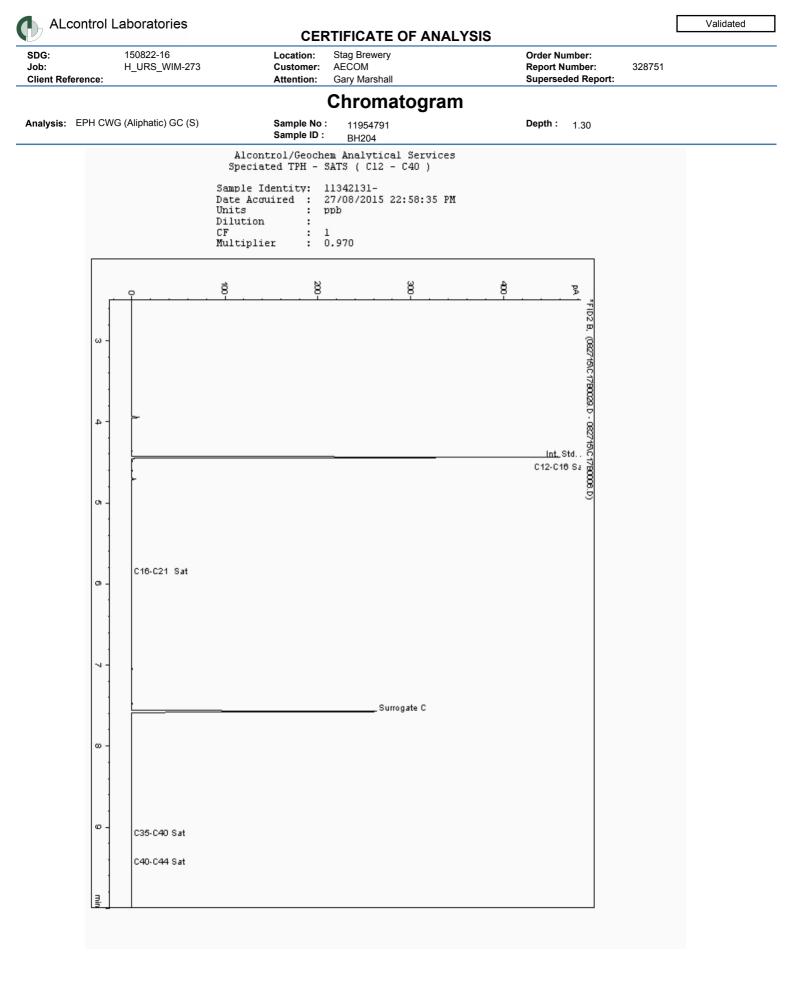
59.68 : 118.68

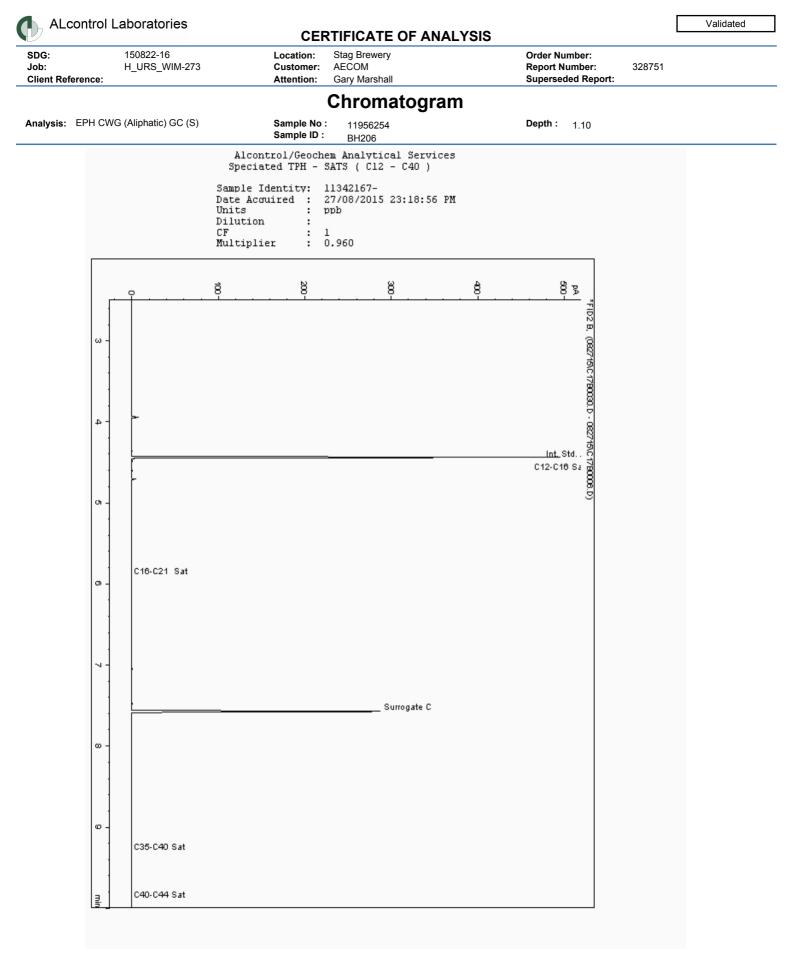
The figure detailed is the percentage recovery result for the AQC.

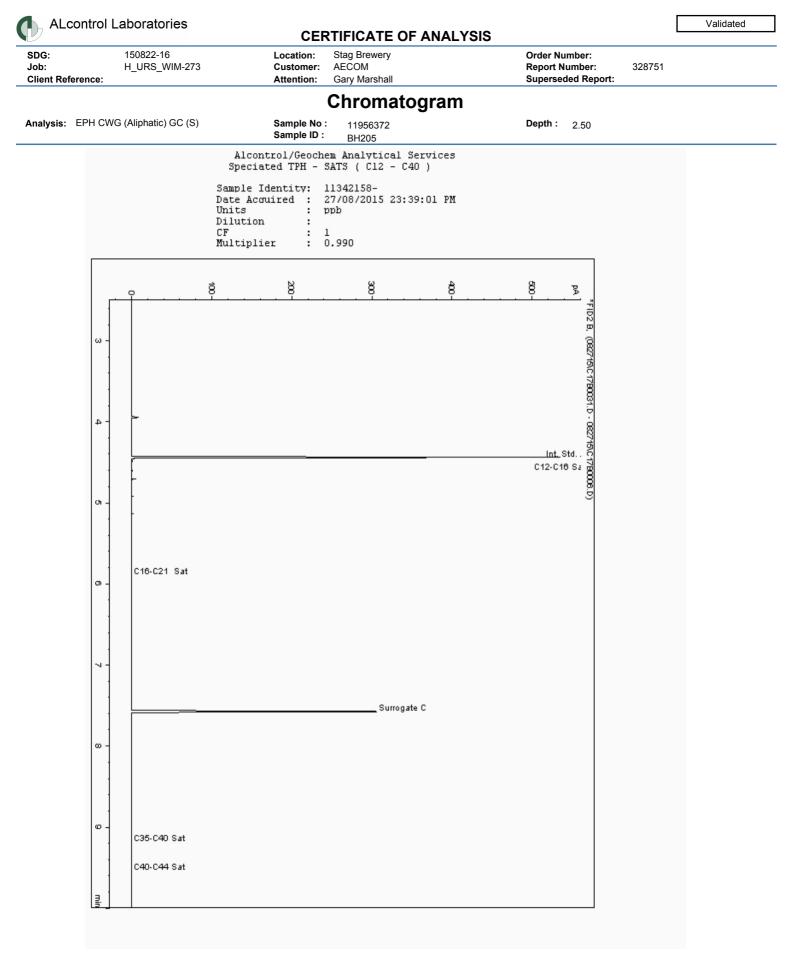
59.68 : 118.68

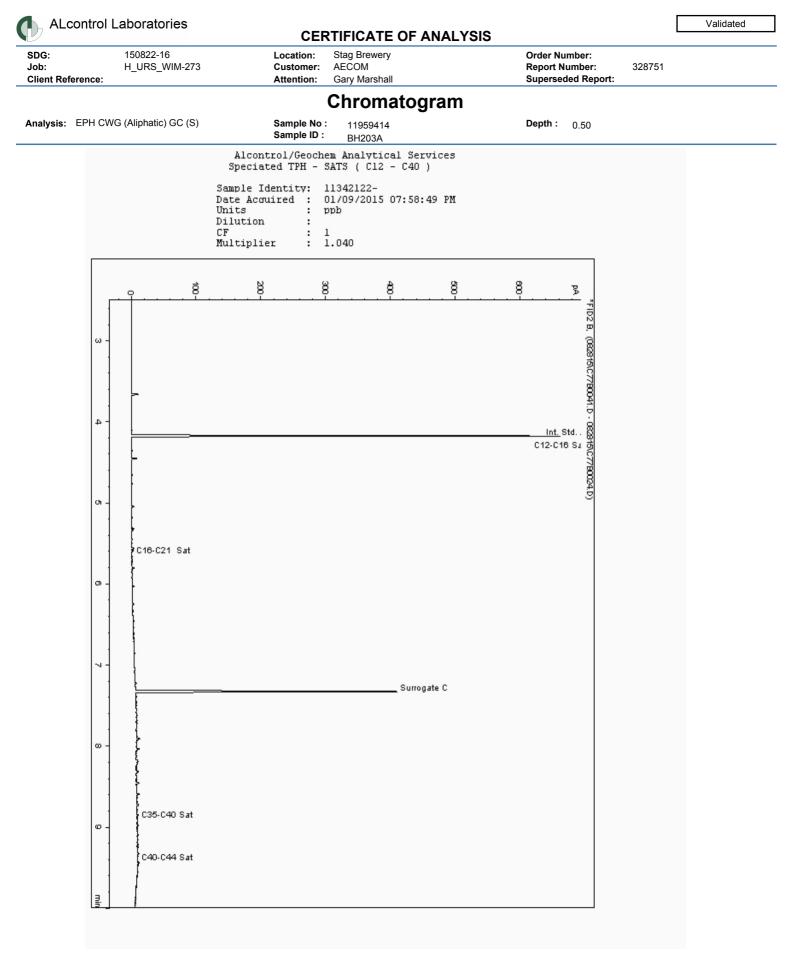
The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

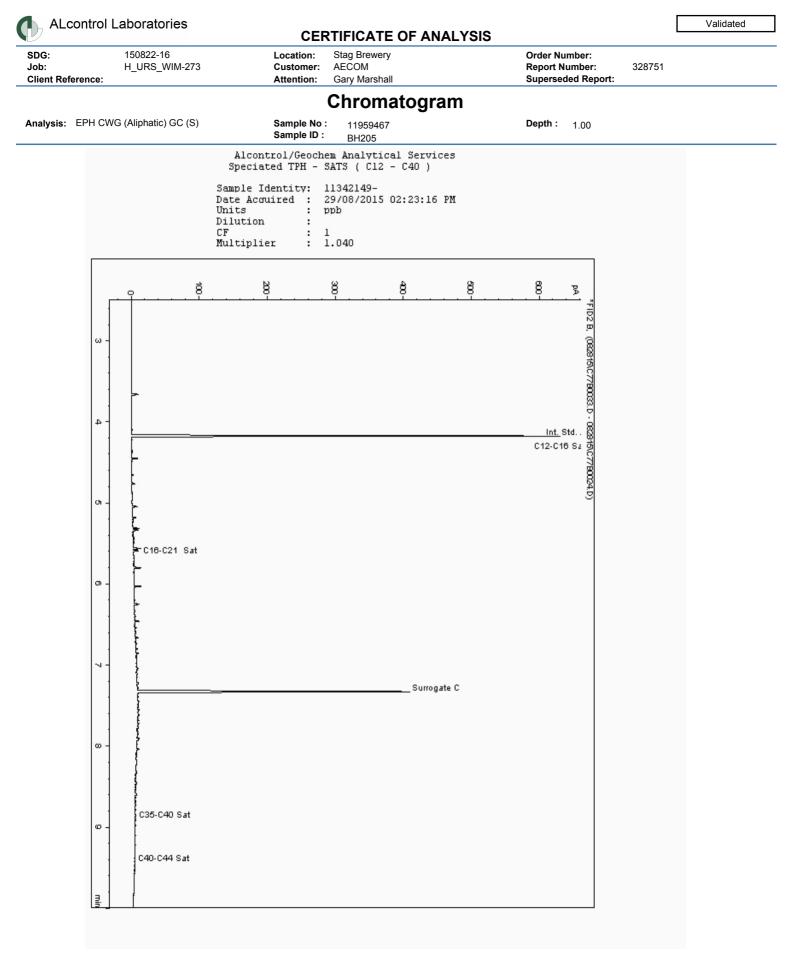


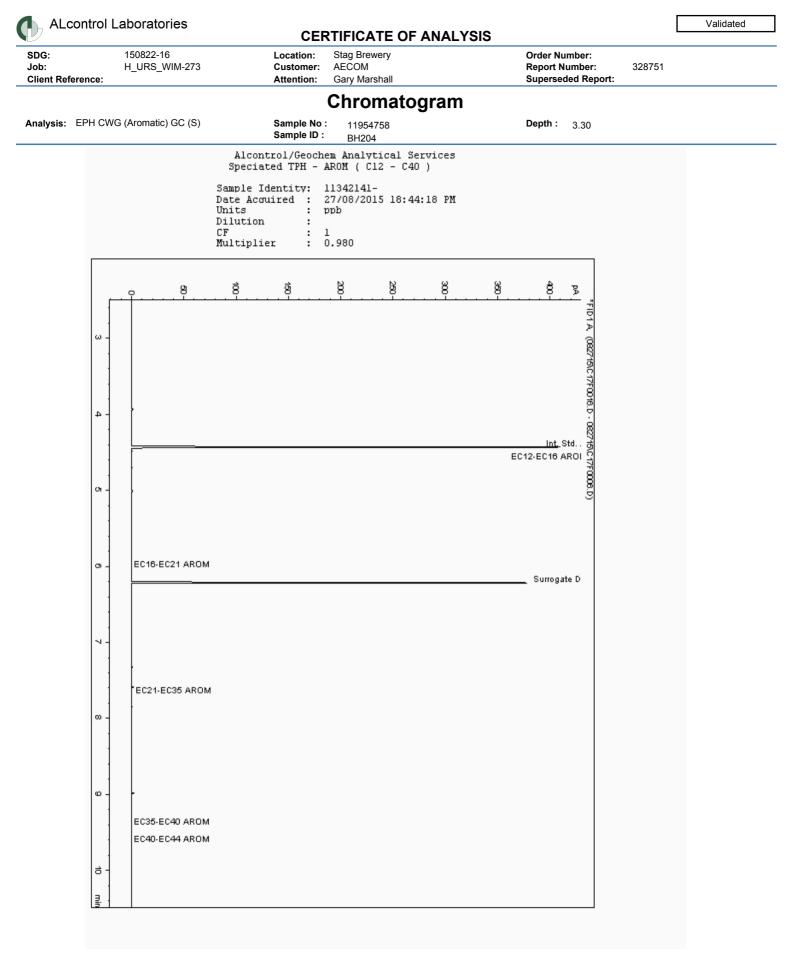


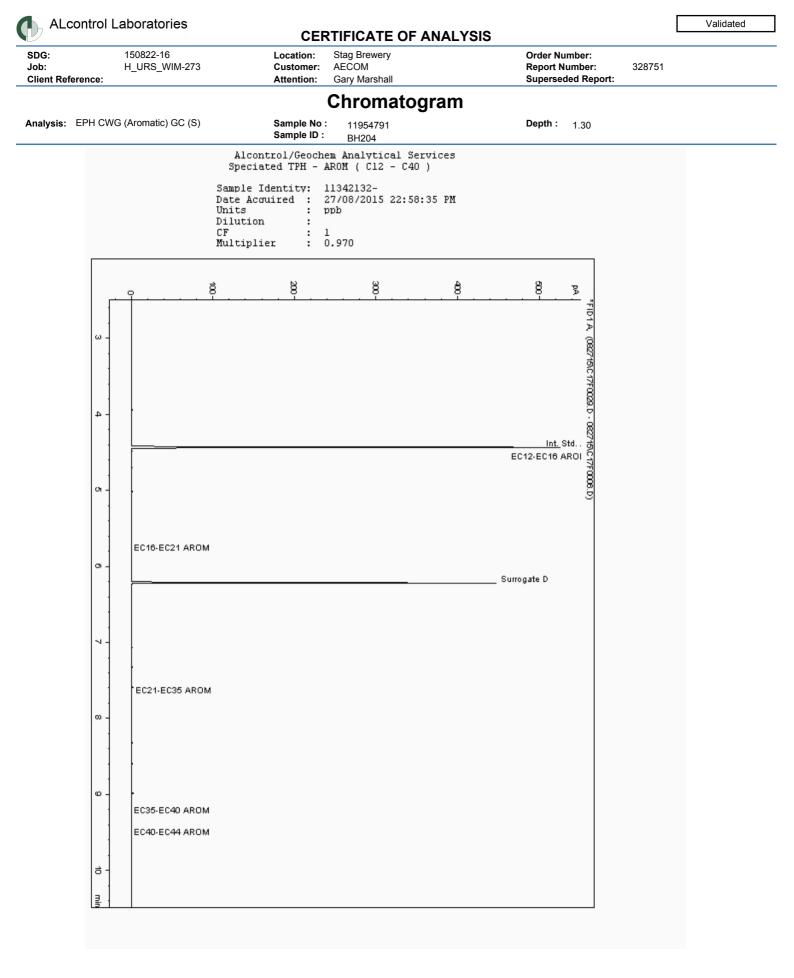


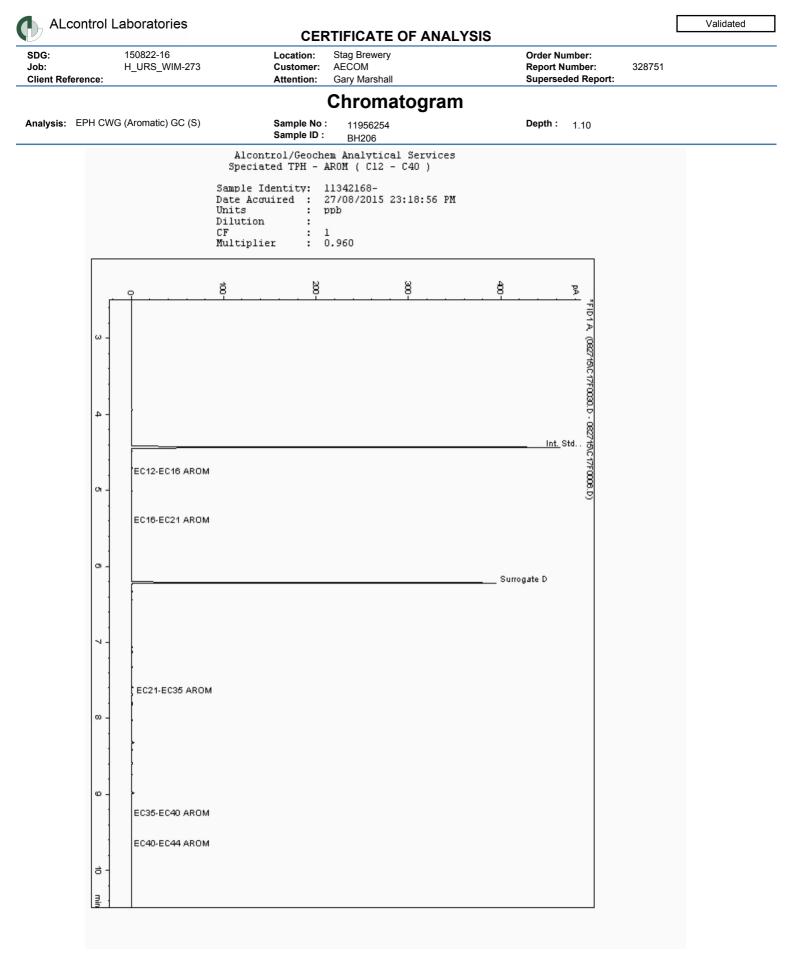


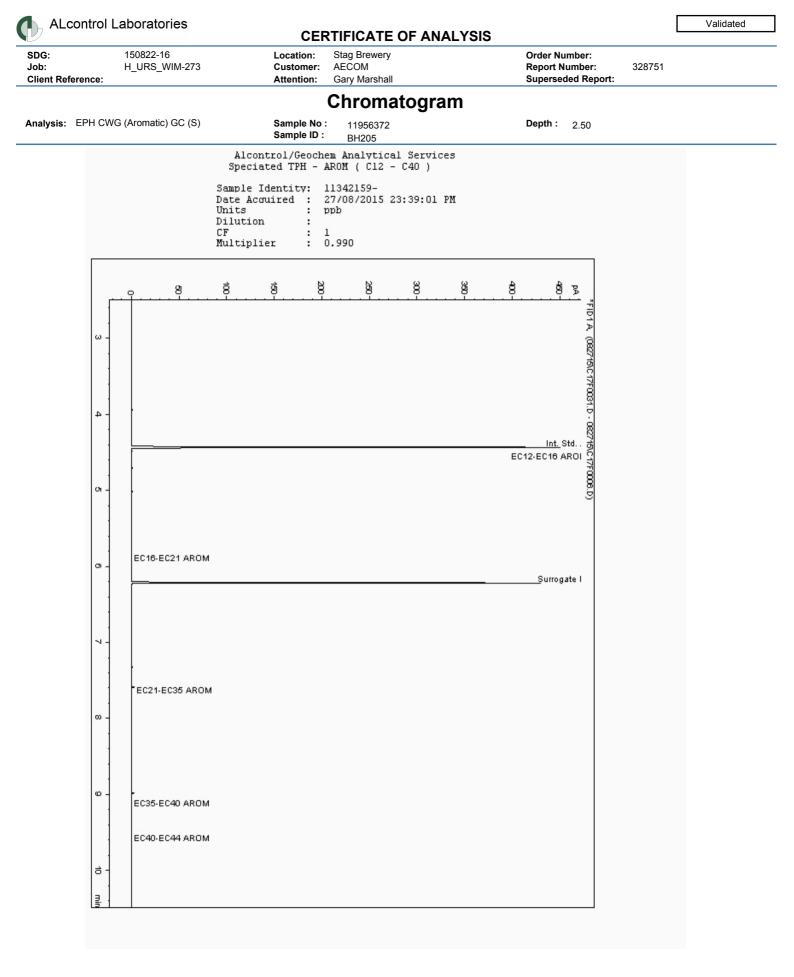


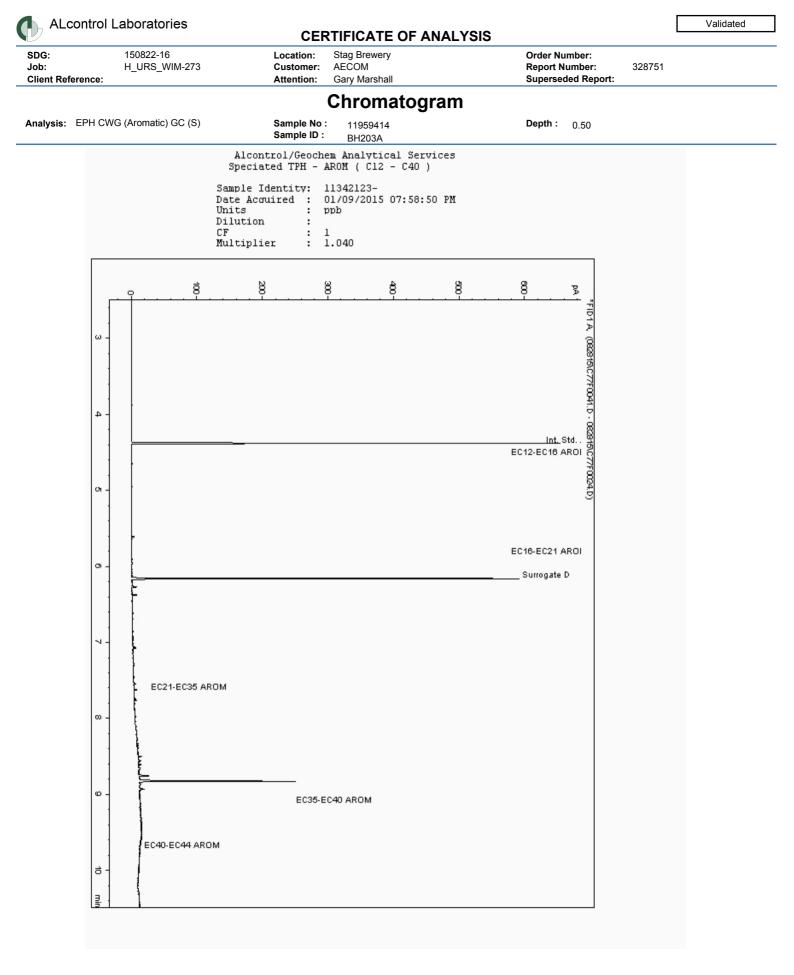


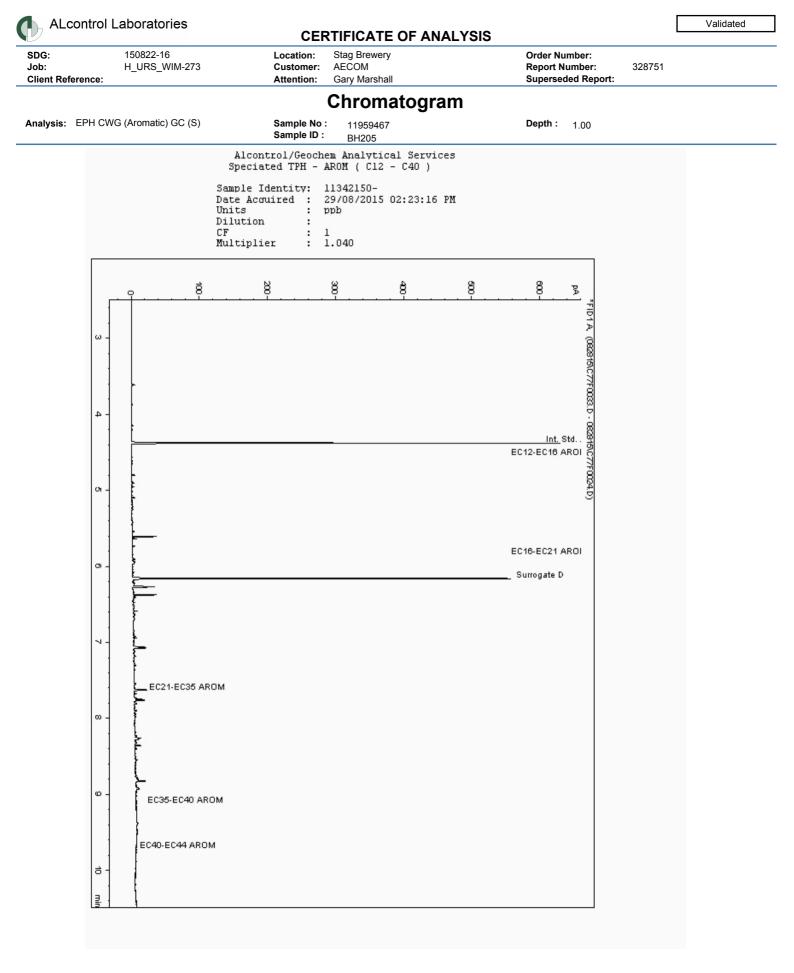


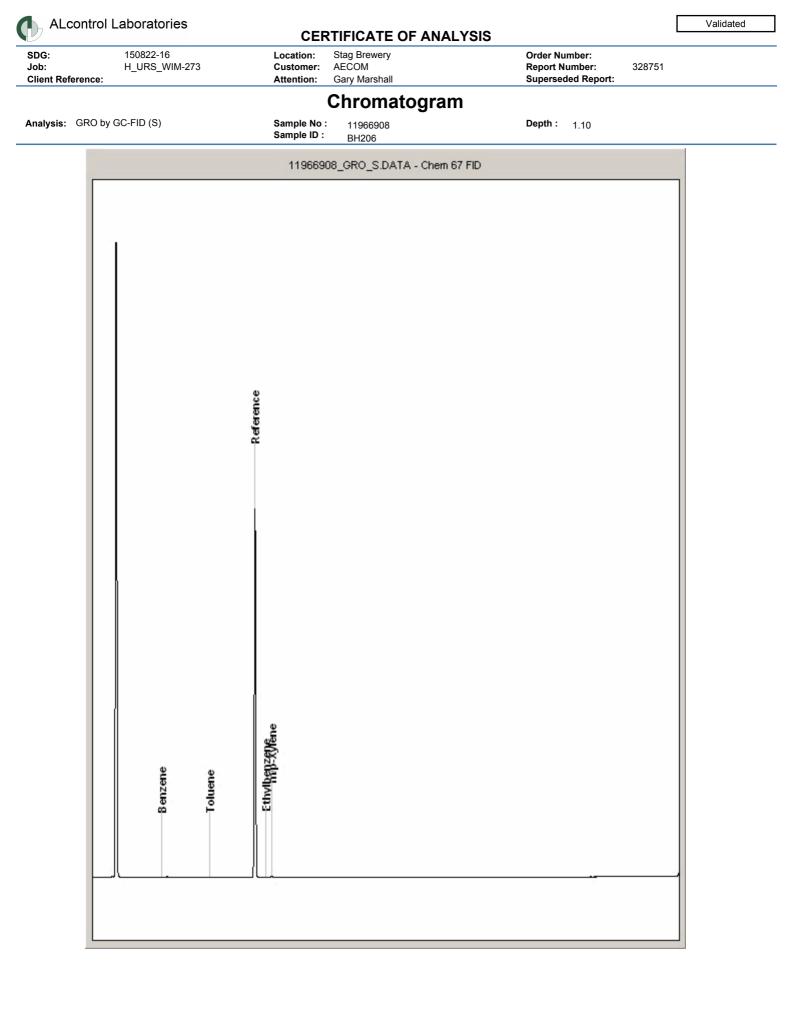


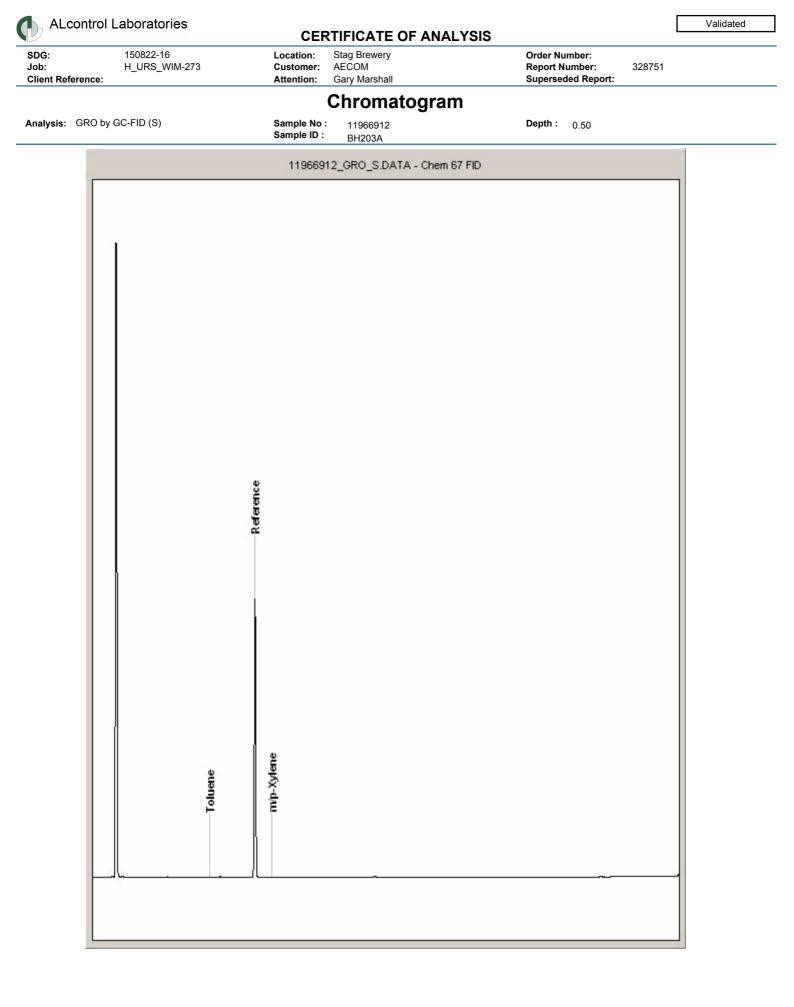


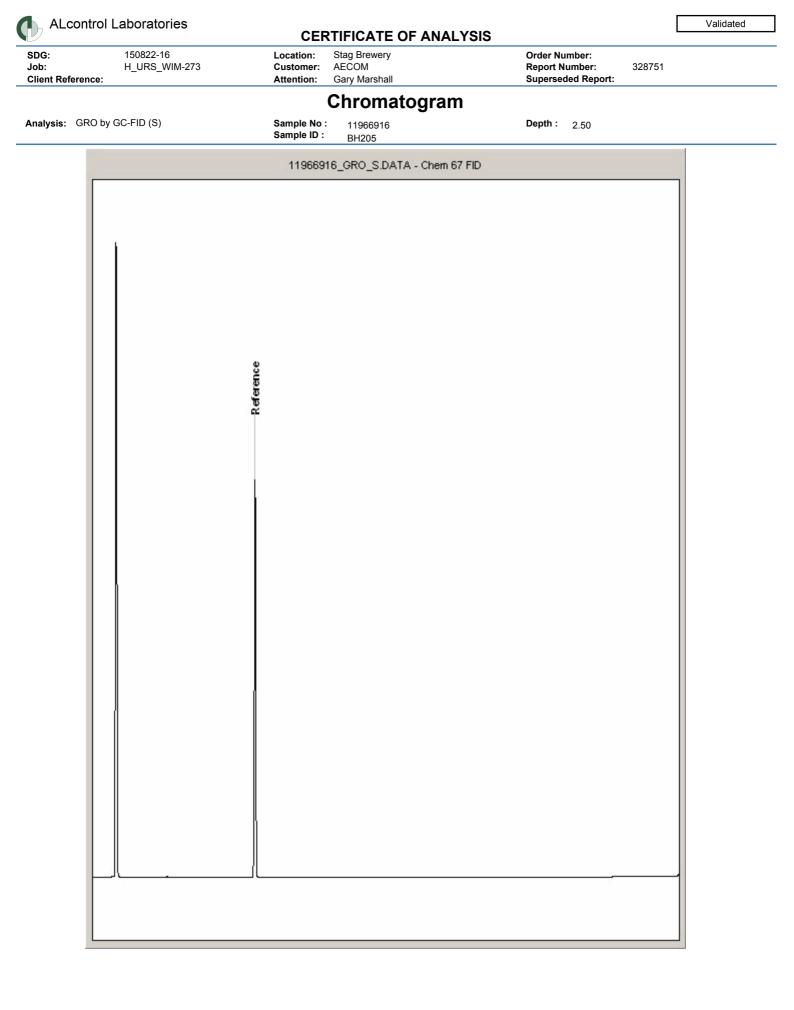


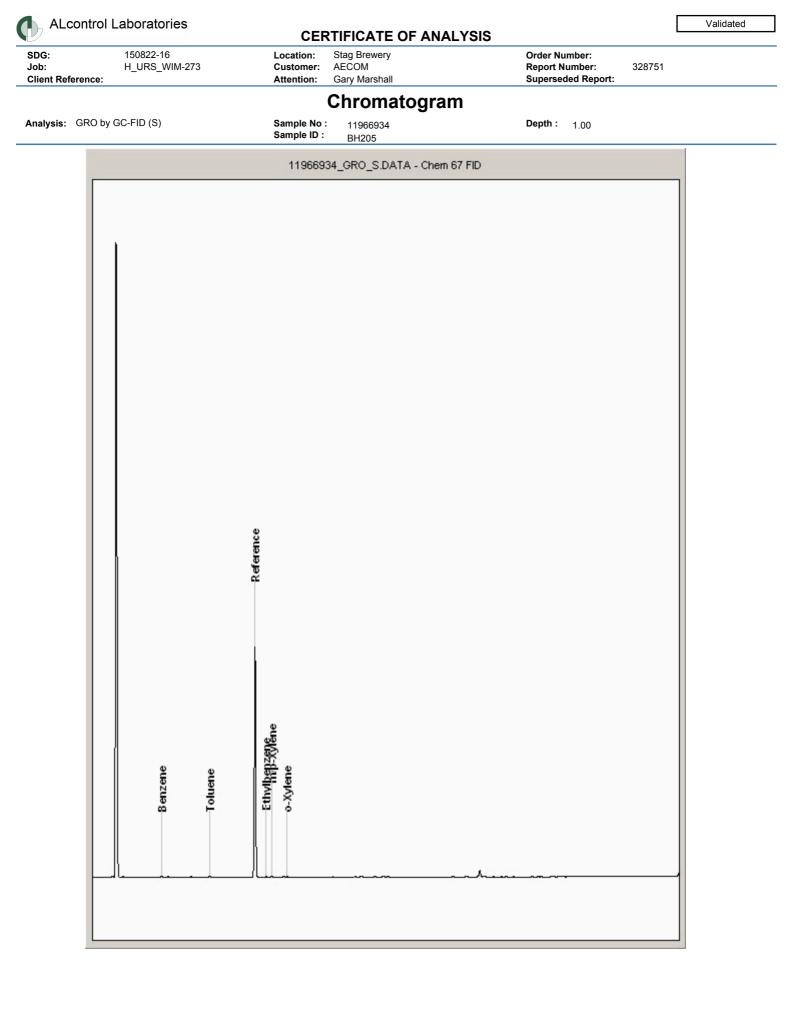




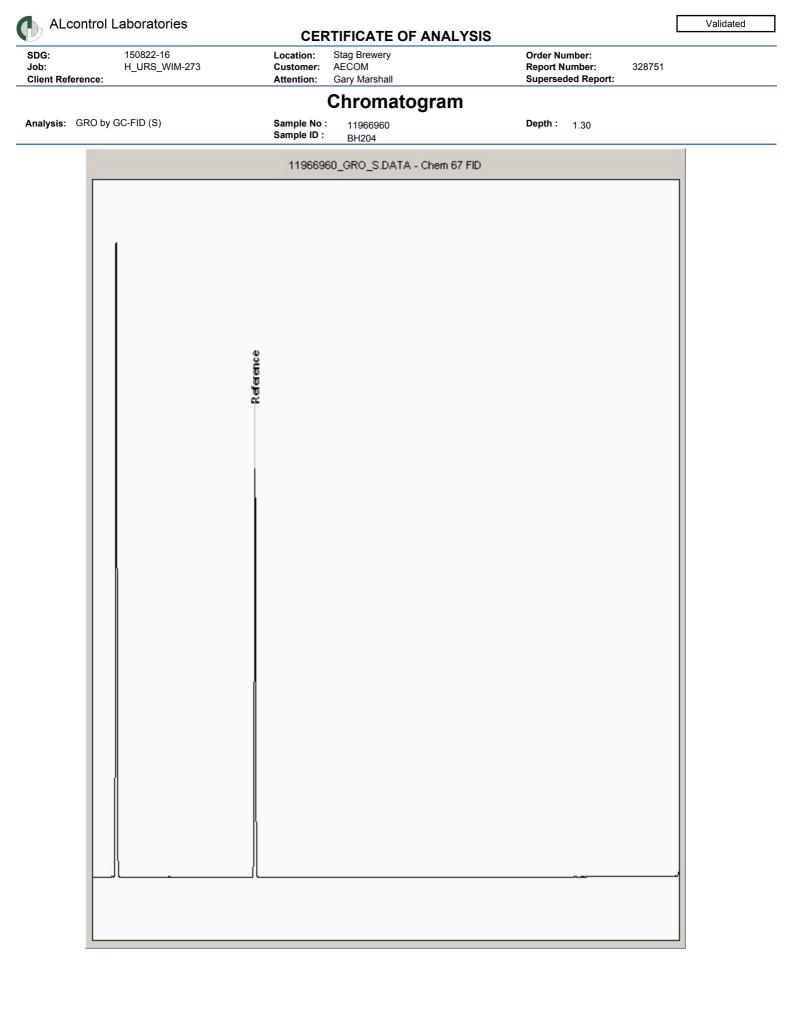








):	150822-16	Location:	Stag Brewery	Order Number:		
: nt Reference:	H_URS_WIM-273	Customer: Attention:	AECOM Gary Marshall	Report Number: Superseded Report:	328751	
			Chromatogran			
ysis: GRO by	GC-FID (S)	Sample No	: 11966959	Depth : 3.30		
		Sample ID	BH204			
		119669	959_GRO_S.DATA - Chem 6	7 FID		
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CERTIFICATE OF ANALYSIS

SDG:	150822-16	Location:	Stag Brewery
Job:	H_URS_WIM-273	Customer:	AECOM
Client Reference:		Attention:	Gary Marshall

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

12. Results relate only to the items tested

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.

19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute themajor part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

24. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Order Number: Report Number: 328751 Superseded Report:

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS		
SOLVENT EXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC		
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAMMETRIC		
THIN LAYER CHROMATOGRAPHY	D&C	DOM	SOXTHERM	IATROSCAN		
ELEMENTALSULPHUR	D&C	DOM	SOXTHERM	HPLC		
PHENOLSBYGOMS	WET	DOM	SOXTHERM	GCMS		
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS		
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS		
EPH (DRO)	D&C	HEXANEACETONE	END OVEREND	GCFD		
EPH (MINOL)	D&C	HEXANEACETONE	END OVEREND	GCFD		
EPH (OLEANED UP)	D&C	HEXANEACETONE	END OVEREND	GCFD		
EPH CWG BYGC	D&C	HEXANEACETONE	END OVEREND	GCFD		
POB TOT / POB CON	D&C	HEXANEACETONE	ENDOVEREND	GCMS		
POL VAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MCROWAVE TM218.	GCMS		
08-040(06-040) EZ FLASH	WET	HEXANEACETONE	SHAVER	GCEZ		
POLVAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAVER	GCEZ		
SEM VOLATILEORGANIC COMPOUNDS	WET	DOMAGETONE	SONICATE	GCMS		

LIQUID MATRICES EXTRACTION SUMMARY

EXTRACTION		
SOLVENT	EXTRACTION METHOD	ANALYSS
HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
DOM	LIQUID/LIQUID SHAKE	GCMS
DOM	SOLID PHASE EXTRACTION	HPLC
DOM	LIQUID/LIQUID SHAKE	GCMS
DOM	LIQUID/LIQUID SHAKE	GCMS
DOM	SOLID PHASE EXTRACTION	GCMS
TCE	LIQUID/LIQUID SHAKE	HPLC
TCE	LIQUID/LIQUID SHAKE	HPLC
NONE	DIRECT NJECTION	GCMS
	HEXANE HEXANE HEXANE HEXANE HEXANE DOM DOM DOM DOM DOM DOM TCE	HEXANE STIRREDEXTRACTION(STIR-BAR) DCM LIQUIDIQUD SHAKE DCM LIQUIDIQUD SHAKE DCM LIQUIDIQUD SHAKE DCM LIQUIDIQUD SHAKE DCM SOLD PHASE BKTRACTION TCE LIQUIDIQUD SHAKE

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed 'Screening of during the soils Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) method of transmitted/polarised in-house light microscopy and central stor dispersion staining, based on HSG 248 (2005)

Asbestos Type	Common Name				
Chrysofile	WhiteAsbestos				
Amoste	BrownAsbestos				
Croddalte	Blue Asbestos				
Fibrous Adindite	-				
Fibrous Anthophylite	-				
Fibrous Trendile	-				

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

CERTIFICATE OF ANALYSIS

SDG:	150822-16	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number: 328751	
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt . However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-lsopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name				
Chrysolile	White Asbestos				
Amoste	BrownAsbestos				
Orodolite	Blue Asbestos				
Fibrous Adinaite	-				
Fibrous Anthophylite	-				
Fibrous Trendile	-				

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than : - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

DG: ob: lient Ref ocation:	erence:	150826-58 ⊣_URS_WII Stag Brewer	URS_WIM-273 Attention: Gary Marshall Order No.:								
Asbestos Identification											
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fi
istomer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Priginal Sample lethod Number	BH201A NS Z 0.70 SOLID 25/08/2015 00:00:0 27/08/2015 13:33:2 150826-58 11963169 TM048 11351888		Kevin Hughes	Loose fibres in soil	Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
istomer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG riginal Sample lethod Number	BH201A NS Z 1.90 - 2.00 SOLID 25/08/2015 00:00:0 27/08/2015 13:47:5 150826-58 11963171 TM048 11351923		Kevin Hughes	-	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
istomer Sample Ref. Depth (m) Sample Type Date Sampled vate Receieved SDG priginal Sample lethod Number	BH202A NS Z 0.80 SOLID 25/08/2015 00:00:0 27/08/2015 13:38:2 11963170 TM048 11351909		Kevin Hughes	-	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detecte
stomer Sample Ref. Depth (m) Sample Type Date Sampled SDG vriginal Sample lethod Number	BH207 NS Z 0.70 SOLID 25/08/2015 14:00:0 150826-58 11963172 TM048 11351937		Kevin Hughes	Loose fibres in soil	Not Detected	Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
istomer Sample Ref. Depth (m) Sample Type Date Sampled Jate Receieved SDG Original Sample lethod Number	BH208A NS Z 0.80 SOLID 25/08/2015 01:00:00:0 150826-58 11963174 TM048 11351964		Kevin Hughes	Loose fibres in soil	Not Detected	Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected

Prelin	ninary	ALco	ontrol	Labor	atorie	s Ana	lytical	Servi	ces		
SDG: Job: Client Ref Location:	H_	0826-58 _URS_WIN ag Brewer				Customer Attention: Order No.: Report No					
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH209 NS Z 0.50 SOLID 25/08/2015 00:00:00 28/08/2015 12:31:33 150826-58 11963177 TM048 11351994	3/9/15	Kevin Hughes	Loose fibres in soil	Not Detected	Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Customer Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH2A NS Z 0.50 SOLID 25/08/2015 00:00:00 28/08/2015 12:46:35 150826:58 11963166 TM048 11351834	3/9/15	Kevin Hughes	-	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected



AECOM St. George's House 2nd Floor 5 St. George's Road Wimbledon Greater London SW19 4DR

Attention: Gary Marshall

PRELIMINARY/INTERIM REPORT

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 09 September 2015 H_URS_WIM 150828-41

Stag Brewery 329009

We received 4 samples on Friday August 28, 2015 and 4 of these samples were scheduled for analysis which was completed on Wednesday September 09, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

This is a preliminary report which has not had final authorisation.

Approved By:



Alcontrol Laboratories is a trading division of ALcontrol UK Limited Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No.

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PRELIMINARY/INTERIM REPORT

Preliminary

 SDG:
 150828-41
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329009

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11977605	BH4A		0.90	27/08/2015
11977606	BH4A		3.50 - 4.00	27/08/2015
11977603	BH7A		0.70	27/08/2015
11977604	BH7A		2.50 - 3.00	27/08/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

									EPORT				
SDG: Job: Client Reference:	150828-41 H_URS_WI	М-273	Location: Customer Attention:	r: AE	ag Brev ECOM ary Mar					Repor	Number: : Number: seded Report:	329009	
SOLID								<u>+</u>					
Results Legend		Lab Sample	No(s)	11977605	11977606	11977603		11977604					
X Test				05	06	03		04					
No Determinat Possible	tion	Custom	or										
		Sample Refe		BH4A	BH4A	BH7A		BH7A					
		AGS Refer	ence										
		Depth (r	n)	0.90	3.50 - 4.00	0.70		2.50 - 3.00					
	_	Contain	er	60g VOC (ALE215 400g Tub (ALE214 250g Amber Jar (A	60g VOC (ALE215 400g Tub (ALE214 250g Amber Jar (Al	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	400g Tub (ALE214 250g Amber Jar (Al	60g VOC (ALE215					
Ammonium Soil by Titration	μ. Α	JI	NDPs: 0 Tests: 4	x	X	X	x						
Asbestos ID in Solid Sampl	les A	JI	NDPs: 0 Tests: 2	x		x							
Asbestos Quant Waste Li	imit A	JI	NDPs: 0 Tests: 1	x									
Easily Liberated Sulphide	Α	NI.	NDPs: 0 Tests: 4	x	x	x	x						
EPH CWG (Aliphatic) GC (\$	S) A	JI	NDPs: 0 Tests: 4	x	x	x	x						
EPH CWG (Aromatic) GC (S) A	JI	NDPs: 0 Tests: 4	x	X	x	x						
GRO by GC-FID (S)	A	JI	NDPs: 0 Tests: 4	x				×					
Hexavalent Chromium (s)	A	JI	NDPs: 0 Tests: 4	x	x	x	x						
Metals in solid samples by (OES A	JI	NDPs: 0 Tests: 4	x	x	x	x						
PAH by GCMS	A	JI	NDPs: 0 Tests: 4	x	x	x	x						
ρΗ	A	JI	NDPs: 0 Tests: 4	x	x	x	x						
Sample description	A	JI	NDPs: 0 Tests: 4	x	x	x	x						
Total Organic Carbon	A	JI	NDPs: 0 Tests: 4	x	x	x	x						
Total Sulphate	A	JI	NDPs: 0 Tests: 4	x	X	x	x						
TPH CWG GC (S)	A	JI	NDPs: 0 Tests: 4	x	X	X	X						

ALcontrol L	ALcontrol Laboratories PRELIMINARY/INTERIM REPORT										Preliminary
SDG: Job: Client Reference:	150828-41 H_URS_W				ig Brew COM ry Mars				Order Number: Report Number: Superseded Report:	329009	
SOLID Results Legend		Lab Sample No(s)	11977605	11977606	11977603	11977604				
No Determin Possible	ation	Customer Sample Referen	ce	BH4A	BH4A	ВН7А	BH7A				
		AGS Reference	Ð								
		Depth (m)		0.90	3.50 - 4.00	0.70	2.50 - 3.00				
		Container	בטעץ אווועפו עמו (אב	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (Al	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL				
VOC MS (S)			DPs: 0 ests: 4	x	x	x	x				

PRELIMINARY/INTERIM REPORT

Preliminary

SDG: 150828-41 Location: Stag Brewery Job: H_URS_WIM-273 Customer: AECOM Client Reference: Attention: Gary Marshall	Order Number: Report Number: 329009 Superseded Report:
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Sample Descriptions

Grain Sizes															
very fine	<0.0)63mm	fine	0.063mm - 0.1mm	me	edium	0.1mm	ı - 2mm	coar	rse	2mm - 1	0mm	very co	arse	>10mm
Lab Sample N	o(s)	Custom	er Sample Re	f. Depth (m)	1	Cole	our	Descript	ion	Gr	ain size	Incl	usions	Incl	usions 2
11977605			BH4A	0.90		Dark E	Brown	Sand	l	0.1	- 2 mm	E	Brick		ete/Aggre gate
11977606			BH4A	3.50 - 4.00	3.50 - 4.00		Light Brown Sar		l	0.1	- 2 mm	St	ones	1	None
11977603	11977603 ВН7А		0.70		Dark Brown		Sandy Clay Loam		y 0.1 - 2 mm		E	Brick	S	tones	
11977604			BH7A	2.50 - 3.00		Light E	Brown	Sand	l	0.1	- 2 mm	St	ones	1	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

PRELIMINARY/INTERIM REPORT

Preliminary

SDG:	150828-41	Location:	Stag Brewery	Order Number:	329009
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

- Results Legend		Customer Sample R	BH4A	BH4A	BH7A	BH7A	
# ISO17025 accredited. M mCERTS accredited.	ľ	otomor oumple it	DINA	DI14/4	DHIA	DHIA	
aq Aqueous / settled sample.		Depth (m)	0.90	3.50 - 4.00	0.70	2.50 - 3.00	
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
* Subcontracted test. ** % recovery of the surrogate standa	and to	Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015	
check the efficiency of the method	. The	Sampled Time Date Received	00:00:00 28/08/2015	28/08/2015	28/08/2015	28/08/2015	
results of individual compounds w samples aren't corrected for the re		SDG Ref	150828-41	150828-41	150828-41	150828-41	
(F) Trigger breach confirmed	,	Lab Sample No.(s)	11977605	11977606	11977603	11977604	
1-5&+§@ Sample deviation (see appendix)	LOD/Units	AGS Reference s Method					
Component			7.4		00	4.0	
Moisture Content Ratio (%	%	PM024	7.1	4.4	28	4.8	
of as received sample)		T1 (00 /			05.0	45.0	
Exchangeable Ammonia	<15	TM024	23.8	<15	35.3	15.8	
as NH4	mg/kg		M	M	M	M	
Organic Carbon, Total	<0.2 %	5 TM132	2.08	<0.2	3.51	<0.2	
			M	M	M	M	
рН	1 pH	TM133	7.92	8.01	7.67	8.01	
	Units		М	M	M	M	
Chromium, Hexavalent	<0.6	TM151	<0.6	<0.6	<0.6	<0.6	
	mg/kg		#	#	#	#	
Sulphide, Easily liberated	<15	TM180	<15	<15	<15	<15	
	mg/kg		♦ #	♦#	♦ #	♦ #	
Arsenic	<0.6	TM181	14.2	21.4	94	16.4	
	mg/kg		М	М	M	M	
Cadmium	<0.02	TM181	0.603	0.385	2.03	0.325	
	mg/kg		М	M	M	M	
Chromium	<0.9	TM181	16.9	21.5	28.7	16.5	
	mg/kg		М	М	М	М	
Copper	<1.4	TM181	31.4	6.36	82.3	4.42	
	mg/kg		М	М	М	М	
Lead	<0.7	TM181	309	8.03	468	5.77	
	mg/kg		М	М	М	М	
Mercury	<0.14	TM181	<0.14	<0.14	0.702	<0.14	
	mg/kg		М	М	М	М	
Nickel	< 0.2	TM181	15.6	24.2	36	19.4	
	mg/kg		М	м	М	М	
Selenium	<1 mg/k	g TM181	<1	<1	<1	<1	
		.9	. #	. #	. #	. #	
Zinc	<1.9	TM181	217	28.5	1640	20.8	
2	mg/kg	initio	2.1. M	20.0 M	M	20.0 M	
Sulphate, Total	<48	TM221	841	63.9	601	74.7	
	mg/kg		M	M	M		
			101	IVI	101	141	
		+ +					
		+ +					
		+ +					
		++					 <u> </u>
		++					 <u> </u>
		++					
		+					
		+					

150828-41

H_URS_WIM-273

SDG:

Job:

PRELIMINARY/INTERIM REPORT

Stag Brewery

AEČOM

Location:

Customer:

REPORT

329009

Order Number:

Report Number:

Preliminary

Client Reference:	(<u>)</u> vviivi-2		Attention:		ary Marshall		Superseded Repo	529009	
PAH by GCMS									
Results Legend # ISO17025 accredited.		Customer Sample R	BH4A		BH4A	BH7A	BH7A		
M mCERTS accredited. aq Aqueous / settled sample.									
diss.filt Dissolved / filtered sample.		Depth (m) Sample Type	0.90 Soil/Solid		3.50 - 4.00 Soil/Solid	0.70 Soil/Solid	2.50 - 3.00 Soil/Solid		
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Date Sampled	27/08/2015		27/08/2015	27/08/2015	27/08/2015		
** % recovery of the surrogate standa check the efficiency of the method.	The	Sampled Time Date Received	00:00:00 28/08/2015		28/08/2015	28/08/2015	28/08/2015		
results of individual compounds wi samples aren't corrected for the rec		SDG Ref	150828-41		150828-41	150828-41	150828-41		
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s)	11977605		11977606	11977603	11977604		
Component	LOD/Uni	AGS Reference ts Method							
Naphthalene-d8 %	%	TM218	97.2		92.6	104	92.3		
recovery**									
Acenaphthene-d10 % recovery**	%	TM218	98.5		92.1	104	91.4		
Phenanthrene-d10 % recovery**	%	TM218	99		89.7	104	89.4		
Chrysene-d12 % recovery**	%	TM218	93.5		79.4	94.8	80.1		
Perylene-d12 %	%	TM218	102		86.9	101	88.5		
recovery** Naphthalene	<9 µg/l	(g TM218	56		<9	69.9	<9		
		-		М	М	М	М		
Acenaphthylene	<12 µg/kg	TM218	83	М	<12 M	84.3 M	<12 M		
Acenaphthene	<8 µg/l		41.8	М	<8 M	11.5 M	<8 M		
Fluorene	<10	TM218	48.2		<10	<10	<10		
Phenanthrene	µg/kg <15	TM218	1190	Μ	M <15	M 307	M <15		
Anthracene	µg/kg <16	TM218	317	Μ	M <16	M 107	M <16		
Fluerenthene	µg/kg <17	TM218	2500	Μ	M <17	M 967	M <17		
Fluoranthene	µg/kg			М	М	M	М		
Pyrene	<15 µg/kg	TM218	2090	М	<15 M	971 M	<15 M		
Benz(a)anthracene	<14 µg/kg	TM218	1320	м	<14 M	630 M	<14 M		
Chrysene	<10	TM218	1060		<10	684	<10		
Benzo(b)fluoranthene	µg/kg <15	TM218	1700	Μ	M <15	M 1930	M <15		
Benzo(k)fluoranthene	µg/kg <14	TM218	609	Μ	M <14	M 724	M <14		
	µg/kg			М		М			
Benzo(a)pyrene	<15	TM218	1470		<15	1050	<15		
	µg/kg		707	Μ	M	M	M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	787	М	<18 M	975 M	<18 M		
Dibenzo(a,h)anthracene	µy/kg <23	TM218	216	IVI	<23	269	<23		
	μg/kg		210	М	~23 M	203 M	~23 M		
Benzo(g,h,i)perylene	<24	TM218	967		<24	1160	<24		
	µg/kg			М	М	М	М		
PAH, Total Detected USEPA 16	<118 µg/kg		14500		<118	9950	<118		

SDG:	15082			Location:		ag Brewery				Order Numbe			
Job: Client Reference:	H_UR	S_WIM-2	273	Customer: Attention:		COM ry Marshall				Report Number Superseded R		329009	
PH CWG (S)				Attention.	Ga					Superseueur	epon.		
Results L # ISO17025 accredite			Customer Sample R	BH4A		BH4A		BH7A		BH7A			
M mCERTS accredite aq Aqueous / settled s	d. ample.		Depth (m)	0.00		0.50 4.00		0.70		0.50 0.00			
diss.filt Dissolved / filtered ot.unfilt Total / unfiltered sa	mple.		Sample Type	0.90 Soil/Solid		3.50 - 4.00 Soil/Solid		0.70 Soil/Solid		2.50 - 3.00 Soil/Solid			
* Subcontracted test ** % recovery of the s check the efficienc	urrogate standa	rd to	Date Sampled Sampled Time	27/08/2015 00:00:00		27/08/2015		27/08/2015		27/08/2015			
results of individua samples aren't con	I compounds wi	thin	Date Received SDG Ref	28/08/2015 150828-41		28/08/2015 150828-41		28/08/2015 150828-41		28/08/2015 150828-41			
(F) Trigger breach con -5&+§@ Sample deviation (firmed		Lab Sample No.(s) AGS Reference	11977605		11977606		11977603		11977604			
Component		LOD/Uni	ts Method										
GRO Surrogate % ecovery**		%	TM089	74		117		28		129			
GRO TOT (Moisture Corrected)	9	<44 µg/kg	TM089	<44	м	<44	м	<44	м	<44	м		
Methyl tertiary butyl MTBE)	ether	<5 µg/	(g TM089	<5	м	<5	м	<5	м	<5	м		
Benzene		<10	TM089	<10		<10		<10		<10			1
Toluene		μg/kg <2 μg/l		<2	М	<2	M	<2	М	<2	M		+
Thulborter			(a. TM000	-0	М	-0	М	-0	М	-0	М		
Ethylbenzene		<3 µg/l	kg TM089	<3	М	<3	м	<3	м	<3	м		
n,p-Xylene		<6 µg/l	kg TM089	<6		<6		<6		<6			
o-Xylene		<3 µg/	kg TM089	<3	M	<3	M	<3	M	<3	M		-
sum of detected mp	0	<9 µg/	kg TM089	<9	М	<9	M	<9	М	<9	M		+
kylene by GC sum of detected BT	EX by	<24	TM089	<24		<24		<24		<24	_		
GC Aliphatics >C5-C6		µg/kg <10	TM089	<10		<10		<10		<10	_		
·		µg/kg											
Aliphatics >C6-C8		<10 µg/kg	TM089	<10		<10		<10		<10			
Aliphatics >C8-C10		<10 µg/kg	TM089	<10		<10		<10		<10			
Aliphatics >C10-C1	2	<10 µg/kg	TM089	<10		<10		<10		<10			
Aliphatics >C12-C1	6	<100		<100		<100		<100		<100	+		
Aliphatics >C16-C2	1	µg/kg <100	TM173	1680		<100	+	<100		<100			
Aliphatics >C21-C3	5	µg/kg <100		54500		<100	+	21900	_	<100			
Aliphatics >C35-C4	4	µg/kg <100		32400		<100	+	5130	_	<100	_		
		µg/kg											
Total Aliphatics >C ²	2-C44	<100 µg/kg		88500		<100		27000		<100			
Aromatics >EC5-EC	7	<10	TM089	<10		<10		<10		<10			
Aromatics >EC7-EC	8	μg/kg <10	TM089	<10		<10	+	<10		<10	+		+
Aromatics >EC8-EC	010	µg/kg <10	TM089	<10		<10	+	<10		<10	+		+
Aromatics >EC10-E	C12	µg/kg <10	TM089	<10		<10	+	<10		<10			+
Aromatics >EC12-E	C16	µg/kg <100	TM173	1610		<100	+	1920		<100			
Aromatics >EC16-E	C21	µg/kg <100		17100		<100		8470		<100			
Aromatics >EC21-E		µg/kg <100		74700		<100		70000		<100	_		_
		µg/kg											
Aromatics >EC35-E	C44	<100 µg/kg		37300		<100		28500		<100			
Aromatics >EC40-E	C44	<100 µg/kg		14200		<100		10500		<100			
otal Aromatics EC12-EC44		<100 µg/kg	TM173	131000		<100		109000		<100			
Total Aliphatics &		<100	TM173	219000		<100	+	136000		<100			+
Aromatics >C5-C44		µg/kg					_						

ALcontrol Labor	atories	5	PRELI	мі	NARY/INTERI	M REPORT			Preliminary
	28-41 RS_WIM-	273	Location: Customer: Attention:	Sta AE	ag Brewery COM ary Marshall		Order Number: Report Number: Superseded Repo	329009	
VOC MS (S)			Autonition.	00					
Results Legend # ISO17025 accredited.		Customer Sample R	BH4A		BH4A	BH7A	BH7A		
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate stand check the efficiency of the method		Depth (m) Sample Type Date Sampled Sampled Time Date Received	0.90 Soil/Solid 27/08/2015 00:00:00 28/08/2015		3.50 - 4.00 Soil/Solid 27/08/2015 28/08/2015	0.70 Soil/Solid 27/08/2015 28/08/2015	2.50 - 3.00 Soil/Solid 27/08/2015 28/08/2015		
results of individual compounds w samples aren't corrected for the re		SDG Ref	150828-41 11977605		150828-41 11977606	150828-41 11977603	150828-41 11977604		
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	11011000		11011000	11077000	11077004		
Component Dibromofluoromethane**	LOD/Un %	its Method TM116	120		103	112	124		
Toluene-d8**	%	TM116	98.1		103	99.5	110		
4-Bromofluorobenzene**	%	TM116	69.9		94.2	74.1	106		
Dichlorodifluoromethane	<6 µg/	/kg TM116	<6	М	<6 M	<60	<6 M M		
Chloromethane	<7 µg/	/kg TM116	<7	#	<7 #	<70	<7 # #		
Vinyl Chloride	<6 µg/	/kg TM116	<6		<6	<60	<6		
Bromomethane	<10		<10	M	M <10	<100	M M <10		
Chloroethane	μg/kg <10	TM116	<10	Μ	M <10	<100	M M <10		
Trichlorofluorormethane	μg/kg <6 μg/		<6	М	M <6	<60	M M <6		
1,1-Dichloroethene	<10	TM116	<10	Μ	M <10	<100	M M <10		
Carbon Disulphide	μg/kg <7 μg/		<7	#	# <7	<70	# #		
Dichloromethane	<10		<10	Μ	M <10	<100	M M <10		
	µg/kg]		#	#		# #		
Methyl Tertiary Butyl Ether	<10 µg/kg		<10	М	<10 M	<100	<10 M M		
trans-1,2-Dichloroethene	<10 µg/kg		<10	М	<10 M	<100 I	<10 M M		
1,1-Dichloroethane	<8 µg/	/kg TM116	<8	М	<8 M	<80	<8 M M		
cis-1,2-Dichloroethene	<6 µg/	/kg TM116	<6	М	<6 M	<60	<6 M M		
2,2-Dichloropropane	<10 µg/kg		<10	М	<10 M	<100	<10 M M		
Bromochloromethane	<10 µg/kg	TM116	<10	м	<10 M	<100	<10 M M		
Chloroform	-8 μg/		<8		<8 M	<80	M K <		
1,1,1-Trichloroethane	<7 µg/	/kg TM116	<7	M	<7	<70	<7		
1,1-Dichloropropene	<10		<10	M	M <10	<100	M M <10		
Carbontetrachloride	μg/kg <10	TM116	<10	M	M <10	<100	M M <10		
1,2-Dichloroethane	μg/kg <5 μg/		<5	Μ	M <5	<50	M M <5		
Benzene	<9 µg/	/kg TM116	<9	Μ	M <9	<90	M M <9		
Trichloroethene	<9 µg/	/kg TM116	<9	Μ	M <9	<90	M M <9		
1,2-Dichloropropane	<10	-	<10	#	# <10	<100	# # <10		
Dibromomethane	μg/kg <9 μg/]	<9	Μ	M		M M		
Bromodichloromethane			<7	Μ	M		M M <7		
	<7 µg/			М	М	I	м		
cis-1,3-Dichloropropene	<10 µg/kg]	<10	М	<10 M		<10 M M		
Toluene	<7 µg/		<7	М	<7 M	<70	<7 M M		
trans-1,3-Dichloropropene	<10 µg/kg		<10		<10	<100	<10		
1,1,2-Trichloroethane	<10 µg/kg	TM116	<10	М	<10 M	<100	<10 M M		

PRELIMINARY/INTERIM REPORT

Preliminary

SDG:	150828-41	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329009
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

VOC MS (S)

		Results Legend		Customer Sample R	BH4A		BH4A		BH7A	BH7A		
Normation water wate					5		511.01		5			
and interverse and and int												
Barbonne material sector Description of the sector Des	diss.filt Dissolved	d / filtered sample.										
Base of the sequence of the s												
Markey Markey			d to				21/00/2013		21/00/2013	21100/2013		
Image: product of a constraint of a co				Date Received	28/08/2015		28/08/2015		28/08/2015	28/08/2015		
substrained Lober of parka Prove and any and any				SDG Ref								
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	Naphilialene											
			µу/кд		N	IVI		IVI	N		M	

PRELIMINARY/INTERIM REPORT

Preliminary

				Allention. Ga	iry ividi Silali		Superseded Kept	
VOC	MS (S)							
	Results Legend	Cu	stomer Sample R	BH4A	BH4A	BH7A	BH7A	
#	ISO17025 accredited.							
м	mCERTS accredited.							
aq diss filt	Aqueous / settled sample. Dissolved / filtered sample.		Depth (m)	0.90	3.50 - 4.00	0.70	2.50 - 3.00	
tot.unfilt	Total / unfiltered sample.		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
•	Subcontracted test.		Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015	
**	% recovery of the surrogate standa	rd to	Sampled Time	00:00:00				
	check the efficiency of the method. results of individual compounds wi	The	Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015	
	samples aren't corrected for the rec	overv	SDG Ref	150828-41	150828-41	150828-41	150828-41	
(F)	Trigger breach confirmed	· L	ab Sample No.(s)	11977605	11977606	11977603	11977604	
	Sample deviation (see appendix)		AGS Reference					
Comp	onent	LOD/Units	Method					
	Trichlorobenzene	<20	TM116	<20	<20	<200	<20	
1,2,3-	Inchiorobenzene		TIVITIO					
		µg/kg		#	#	#	#	
								7
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PRELIMINARY/INTERIM REPORT

Preliminary

 SDG:
 150828-41
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329009

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH4A 0.90 SOLID 27/08/2015 00:00:00 28/08/2015 18:57:49 150828-41 11977605 TM048	3/9/15	Rebecca Rawlings	Loose fibres in soil	Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH7A 0.70 SOLID 27/08/2015 00:00:00 28/08/2015 19:05:13 150828-41 11977603 TM048	4/9/15	Kevin Hughes	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

SDG:

Job:

PRELIMINARY/INTERIM REPORT

Preliminary

150828-41 Location: Stag Brewery Order Number: H_URS_WIM-273 AEČOM 329009 Customer: Report Number: Client Reference: Attention: Gary Marshall Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM 304				
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C.

NA = not applicable.

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SDG:

Job:

PRELIMINARY/INTERIM REPORT

150828-41 Location: Stag Brewery Order Number: H_URS_WIM-273 AEČOM 329009 Customer: Report Number: Client Reference: Attention: Gary Marshall Superseded Report:

Test Completion Dates

Lab Sample No(s)	11977605	11977606	11977603	11977604
Customer Sample Ref.	BH4A	BH4A	BH7A	BH7A
AGS Ref.				
Depth	0.90	3.50 - 4.00	0.70	2.50 - 3.00
Туре	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	09-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
Asbestos ID in Solid Samples	04-Sep-2015		04-Sep-2015	
Easily Liberated Sulphide	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
EPH CWG (Aliphatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
EPH CWG (Aromatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
GRO by GC-FID (S)	04-Sep-2015	04-Sep-2015	03-Sep-2015	04-Sep-2015
Hexavalent Chromium (s)	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Metals in solid samples by OES	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015
PAH by GCMS	03-Sep-2015	03-Sep-2015	03-Sep-2015	03-Sep-2015
pН	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
Sample description	28-Aug-2015	29-Aug-2015	28-Aug-2015	29-Aug-2015
Total Organic Carbon	07-Sep-2015	03-Sep-2015	07-Sep-2015	03-Sep-2015
Total Sulphate	04-Sep-2015	07-Sep-2015	04-Sep-2015	07-Sep-2015
TPH CWG GC (S)	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015
VOC MS (S)	02-Sep-2015	02-Sep-2015	03-Sep-2015	03-Sep-2015

Preliminary

150828-41

H_URS_WIM-273

PRELIMINARY/INTERIM REPORT

Location: Stag Brewery Customer: AECOM Attention: Gary Marshall Order Number: Report Number: 3 Superseded Report:

329009

Preliminary

ASSOCIATED AQC DATA

Ammonium Soil by Titration

SDG:

Job:

Client Reference:

Component	Method Code	QC 1292	QC 1205
Exchangeable	TM024	86.07	98.01
Ammonium as NH4		79.30 : 104.61	79.30 : 104.61

Easily Liberated Sulphide

Component	Method Code	QC 1219	QC 1231
Easily Liberated Sulphide	TM180	93.21 49.14 : 123.89	94.71 49.14 : 123.89

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1182	QC 1194
Total Aliphatics	TM173	85.21	87.08
>C12-C35		62.50 : 112.50	70.80 : 111.51

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1182	QC 1194
Total Aromatics	TM173	82.67	82.67
>EC12-EC35		60.62 : 126.95	65.21 : 121.32

GRO by GC-FID (S)

Component	Method Code	QC 1173	QC 1290
Benzene by GC	TM089	95.0	100.0
(Moisture Corrected)		76.33 : 121.87	76.23 : 120.71
Ethylbenzene by GC (Moisture Corrected)	TM089	99.0 75.73 : 123.83	100.5 73.32 : 122.02
m & p Xylene by GC	TM089	97.5	100.75
(Moisture Corrected)		75.52 : 120.32	72.90 : 122.64
MTBE GC-FID (Moisture	TM089	94.0	101.0
Corrected)		77.89 : 119.70	72.17 : 124.81
o Xylene by GC (Moisture	TM089	93.5	100.5
Corrected)		74.15 : 124.59	71.65 : 124.40
QC	TM089	99.2 62.31 : 122.61	105.5 55.00 : 145.00
Toluene by GC (Moisture	TM089	93.5	100.5
Corrected)		77.91 : 122.33	74.60 : 120.38

PRELIMINARY/INTERIM REPORT

Location:Stag BreweryCustomer:AECOMAttention:Gary Marshall

Order Number: Report Number: 329009 Superseded Report:

Hexavalent Chromium (s)

SDG:

Job:

Client Reference:

Component	Method Code	QC 1285
Hexavalent Chromium	TM151	102.0 92.20 : 106.60

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Metals in solid samples by OES

Component	Method Code	QC 1206	QC 1292
Aluminium	TM181	99.23 86.49 : 129.71	108.46 86.49 : 129.71
Antimony	TM181	94.27 77.50 : 122.50	95.34 77.50 : 122.50
Arsenic	TM181	92.92 82.63 : 117.37	92.92 82.63 : 117.37
Barium	TM181	96.24 79.45 : 120.55	99.25 79.45 : 120.55
Beryllium	TM181	98.91 85.92 : 121.27	100.31 85.92 : 121.27
Boron	TM181	105.34 77.41 : 143.83	109.92 77.41 : 143.83
Cadmium	TM181	95.8 81.95 : 118.05	95.63 81.95 : 118.05
Chromium	TM181	93.33 81.29 : 118.71	96.47 81.29 : 118.71
Cobalt	TM181	95.83 83.86 : 116.14	96.67 83.86 : 116.14
Copper	TM181	97.7 78.57 : 121.43	98.51 78.57 : 121.43
Iron	TM181	95.86 87.50 : 122.82	101.38 87.50 : 122.82
Lead	TM181	93.7 74.18 : 117.25	92.91 74.18 : 117.25
Manganese	TM181	100.0 82.91 : 117.09	100.0 82.91 : 117.09
Mercury	TM181	94.3 81.99 : 118.01	93.47 81.99 : 118.01
Molybdenum	TM181	92.2 81.45 : 118.55	92.36 81.45 : 118.55
Nickel	TM181	95.93 79.64 : 120.36	97.67 79.64 : 120.36
Phosphorus	TM181	97.76 81.03 : 118.97	97.32 81.03 : 118.97
Selenium	TM181	105.3 87.05 : 121.93	105.47 87.05 : 121.93
Strontium	TM181	98.08 83.64 : 116.36	98.47 83.64 : 116.36
Thallium	TM181	87.56 77.50 : 122.50	91.38 77.50 : 122.50
Tin	TM181	92.03 78.30 : 113.98	92.69 78.30 : 113.98
Titanium	TM181	103.91 71.02 : 128.98	103.13 71.02 : 128.98

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PRELIMINARY/INTERIM REPORT

Location:Stag BreweryCustomer:AECOMAttention:Gary Marshall

Order Number: Report Number: 329009 Superseded Report:

Metals in solid samples by OES

		QC 1206	QC 1292
Vanadium	TM181	93.53 86.61 : 113.39	95.0 86.61 : 113.39
Zinc	TM181	97.73 89.82 : 114.54	98.05 89.82 : 114.54

PAH by GCMS

Client Reference:

SDG:

Job:

Component	Method Code	QC 1122	QC 1106
Acenaphthene	TM218	88.5	91.5
		78.75 : 116.25	78.84 : 114.36
Acenaphthylene	TM218	85.0	85.5
		76.45 : 110.05	65.50 : 119.50
Anthracene	TM218	87.5	91.0
		67.15 : 124.45	75.54 : 110.88
Benz(a)anthracene	TM218	95.5	97.5
		82.00 : 127.00	78.02 : 127.38
Benzo(a)pyrene	TM218	97.5	99.5
	714040	75.60 : 124.20	79.21 : 128.01
Benzo(b)fluoranthene	TM218	97.5	96.0
Dearse (alt i) a sur land	T14040	81.20 : 121.77	86.21 : 131.42
Benzo(ghi)perylene	TM218	96.5	95.0 80.11 : 120.52
Benzo(k)fluoranthene	TM218	77.49 : 119.12	
Denzo(k)indoranthene	111/12/10	94.5 83.50 : 116.50	97.0 78.77 : 120.72
Chrysene	TM218		
Chilybonio	1111210	93.0 78.35 : 114.42	94.5 78.77 : 118.99
Dibenzo(ah)anthracene	TM218	94.0	93.5
		94.0 77.15 : 122.45	93.5 76.39 : 122.63
Fluoranthene	TM218	91.0	95.0
		79.08 : 114.40	77.25 : 117.75
Fluorene	TM218	90.5	95.5
		79.03 : 113.38	79.28 : 117.35
Indeno(123cd)pyrene	TM218	96.0	93.0
		75.65 : 125.15	78.87 : 122.50
Naphthalene	TM218	92.0	93.0
		77.25 : 112.60	74.75 : 118.25
Phenanthrene	TM218	90.5	95.0
		78.25 : 115.44	78.61 : 113.98
Pyrene	TM218	90.0	94.0
		78.07 : 114.06	76.15 : 115.26

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Component	Method Code	QC 1218	QC 1227
рН	TM133	100.25 97.19 : 102.81	100.5 97.19 : 102.81

Total Organic Carbon

PRELIMINARY/INTERIM REPORT

SDG:	150828-41	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	
Client Referen	ce:	Attention:	Gary Marshall	Superseded Repo	

eport Number: aport Number: 329009 uperseded Report:

Total Organic Carbon

Component	Method Code	QC 1254	QC 1297
Total Organic Carbon	TM132	100.46 88.82 : 111.18	97.72 89.40 : 103.09

Total Sulphate

Component	Method Code	QC 1235	QC 1273	
Total Sulphate	TM221	102.27 78.49 : 121.51	103.79 78.49 : 121.51	

VOC MS (S)

Component	Method Code	QC 1128	QC 1175	QC 1164
1,1,1,2-tetrachloroethane	TM116	95.6	102.6	105.6
		83.24 : 124.28	83.24 : 124.28	76.60 : 121.00
1,1,1-Trichloroethane	TM116	100.8	102.4	101.0
		81.77 : 121.07	81.77 : 121.07	77.80 : 123.40
1,1,2-Trichloroethane	TM116	100.4	94.2	92.6
		79.24 : 112.23	79.24 : 112.23	75.40 : 119.80
1,1-Dichloroethane	TM116	103.0	106.6	106.8
		72.58 : 116.06	72.58 : 116.06	80.84 : 124.49
1,2-Dichloroethane	TM116	118.8	112.0	108.2
		77.50 : 122.50	77.50 : 122.50	91.00 : 135.67
1,4-Dichlorobenzene	TM116	96.2	95.4	102.4
		73.23 : 116.39	73.23 : 116.39	80.88 : 114.60
2-Chlorotoluene	TM116	85.6	86.6	97.2
	T14440	69.22 : 110.64	69.22 : 110.64	74.00 : 117.20
4-Chlorotoluene	TM116	89.0	87.4	93.4
Benzene	TM116	68.57 : 106.26	68.57 : 106.26	71.20 : 113.20
Denzene	TIVITIO	103.2 84.33 : 124.27	106.0 84.33 : 124.27	99.6 79.60 : 125.20
Carbon Disulphide	TM116			
Carbon Discipline	TWITTO	110.4 77.20 : 122.80	107.4 77.20 : 122.80	101.4 74.91 : 122.14
Carbontetrachloride	TM116			
		98.2 84.20 : 119.90	102.8 84.20 : 119.90	101.0 76.80 : 121.20
Chlorobenzene	TM116	102.4	103.2	102.4
		85.28 : 129.96	85.28 : 129.96	83.47 : 116.82
Chloroform	TM116	108.2	106.6	107.0
		82.73 : 119.72	82.73 : 119.72	82.00 : 128.80
Chloromethane	TM116	123.4	117.2	129.8
		55.16 : 145.46	55.16 : 145.46	74.62 : 135.86
Cis-1,2-Dichloroethene	TM116	108.4	108.4	109.8
		73.56 : 118.93	73.56 : 118.93	81.20 : 128.00
Dibromomethane	TM116	104.4	98.0	90.8
		73.40 : 116.60	73.40 : 116.60	73.40 : 116.60
Dichloromethane	TM116	113.2	108.2	109.2
		76.16 : 121.98	76.16 : 121.98	86.60 : 137.00

SDG:

Job:

Client Reference:

150828-41

H_URS_WIM-273

PRELIMINARY/INTERIM REPORT

Location: Stag Brewery Customer: AECOM Attention: Gary Marshall Order Number: Report Number: 3 Superseded Report:

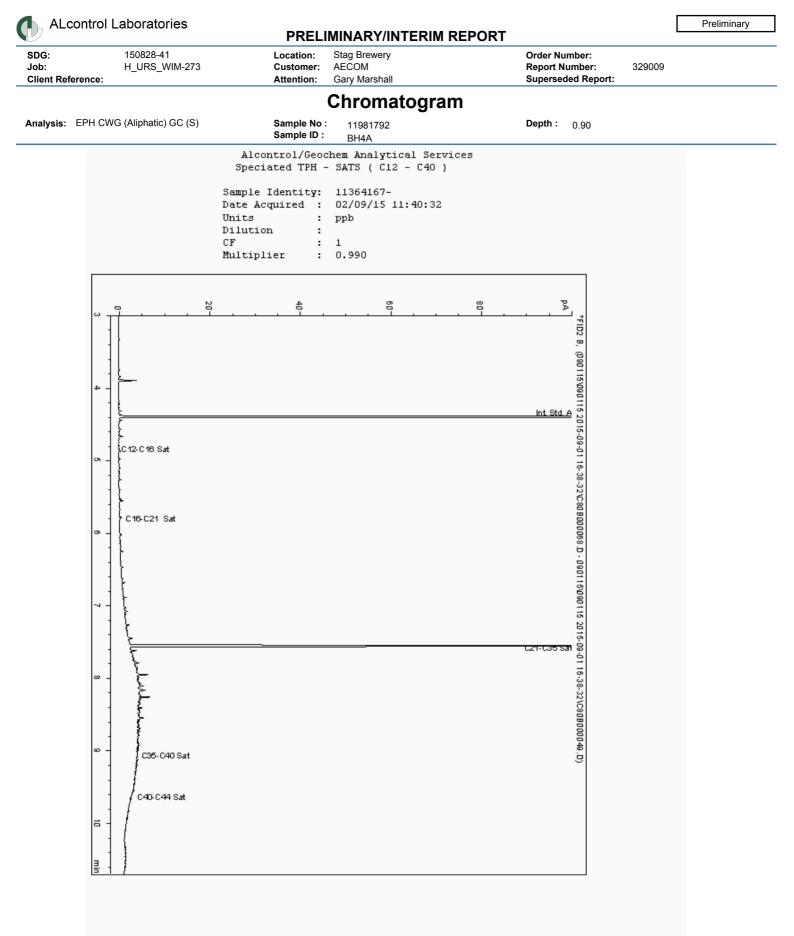
329009

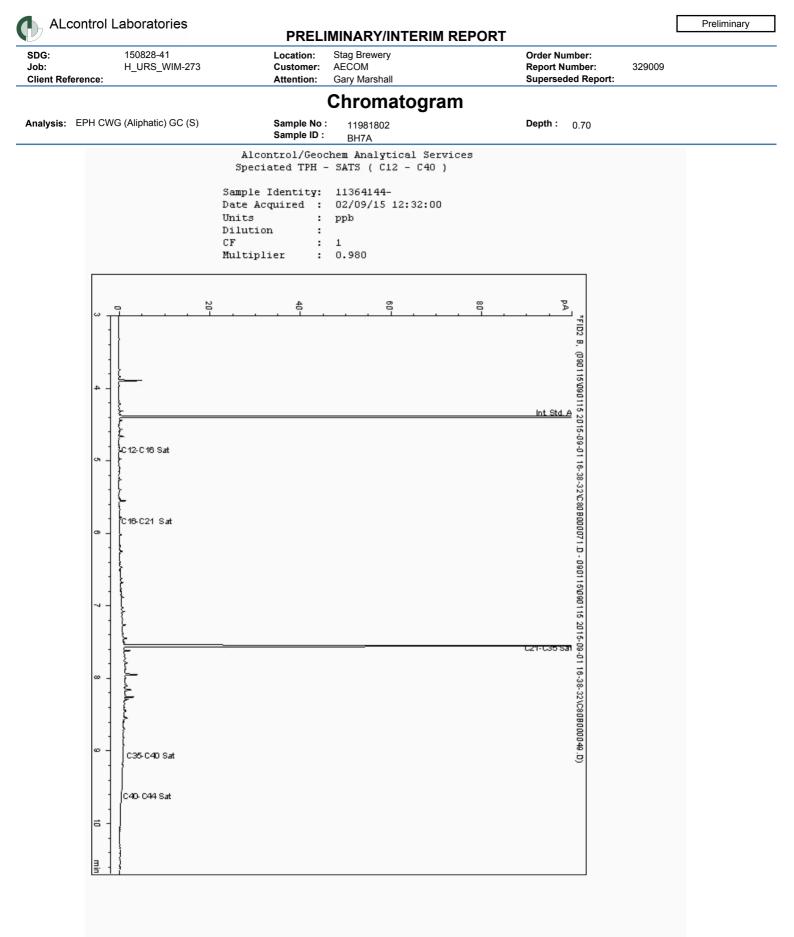
/OC MS (S)				
		QC 1128	QC 1175	QC 1164
Ethylbenzene	TM116	94.0 80.07 : 125.98	99.2 80.07 : 125.98	95.4 73.60 : 115.6
Hexachlorobutadiene	TM116	69.0 30.92 : 132.28	89.2 30.92 : 132.28	70.2 33.65 : 130.5
Isopropylbenzene	TM116	82.6 69.27 : 125.32	92.6 69.27 : 125.32	93.4 72.52 : 117.5
Naphthalene	TM116	110.0 79.15 : 121.98	107.4 79.15 : 121.98	104.4 83.23 : 126.4
o-Xylene	TM116	77.6 75.46 : 111.52	84.8 75.46 : 111.52	93.4 69.60 : 110.4
p/m-Xylene	TM116	90.2 76.97 : 121.75	96.6 76.97 : 121.75	91.4 71.30 : 112.7
Sec-Butylbenzene	TM116	69.6 49.27 : 129.90	85.8 49.27 : 129.90	93.2 59.20 : 125.2
Tetrachloroethene	TM116	102.2 87.96 : 133.65	110.6 87.96 : 133.65	105.2 85.92 : 127.9
Toluene	TM116	99.0 79.23 : 114.58	100.6 79.23 : 114.58	89.6 76.08 : 110.1
Trichloroethene	TM116	94.6 84.09 : 114.24	98.4 84.09 : 114.24	98.6 78.17 : 121.3
Trichlorofluoromethane	TM116	107.4 76.22 : 114.82	104.4 76.22 : 114.82	109.6 83.78 : 132.8
Vinyl Chloride	TM116	98.2 59.68 : 118.68	100.8 59.68 : 118.68	104.0 66.81 : 138.4

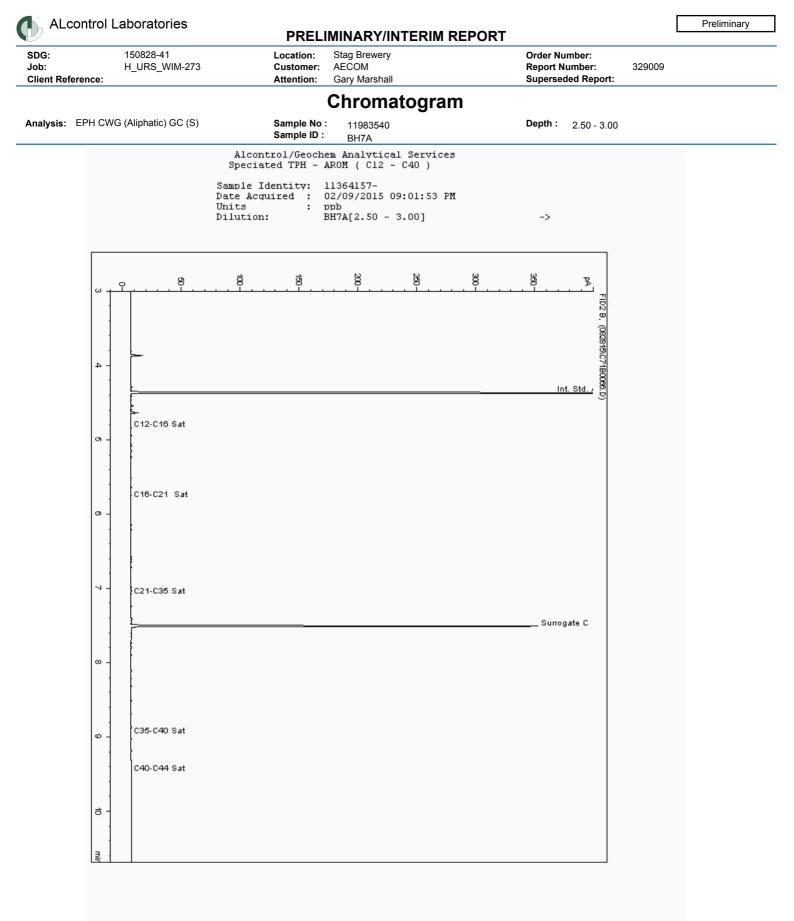
The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

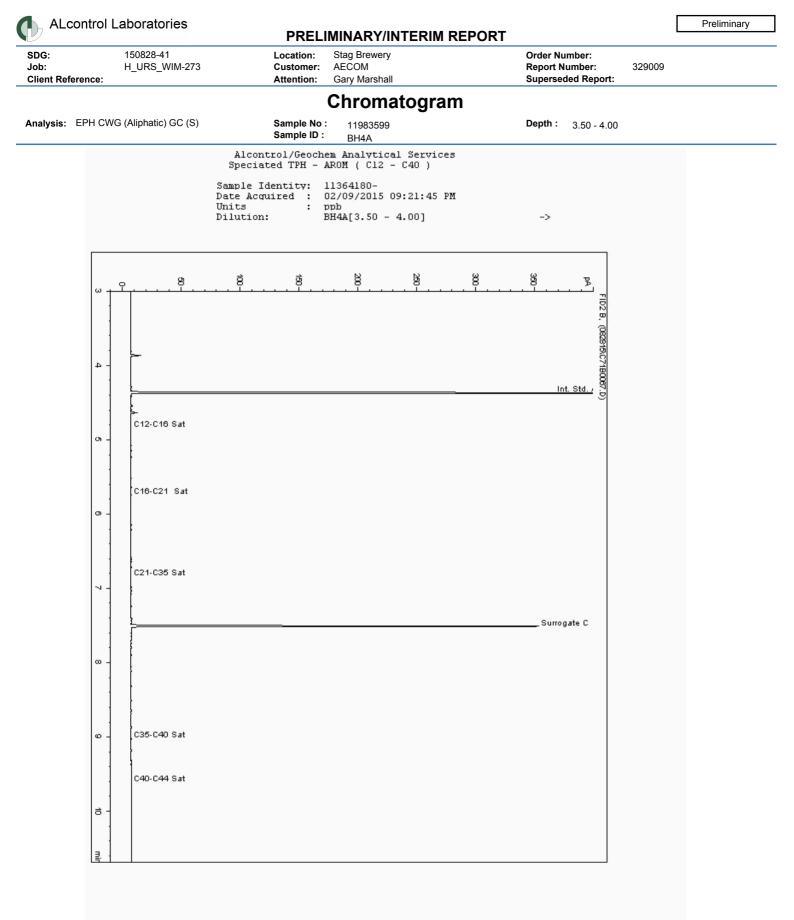
The figure detailed is the percentage recovery result for the AQC.

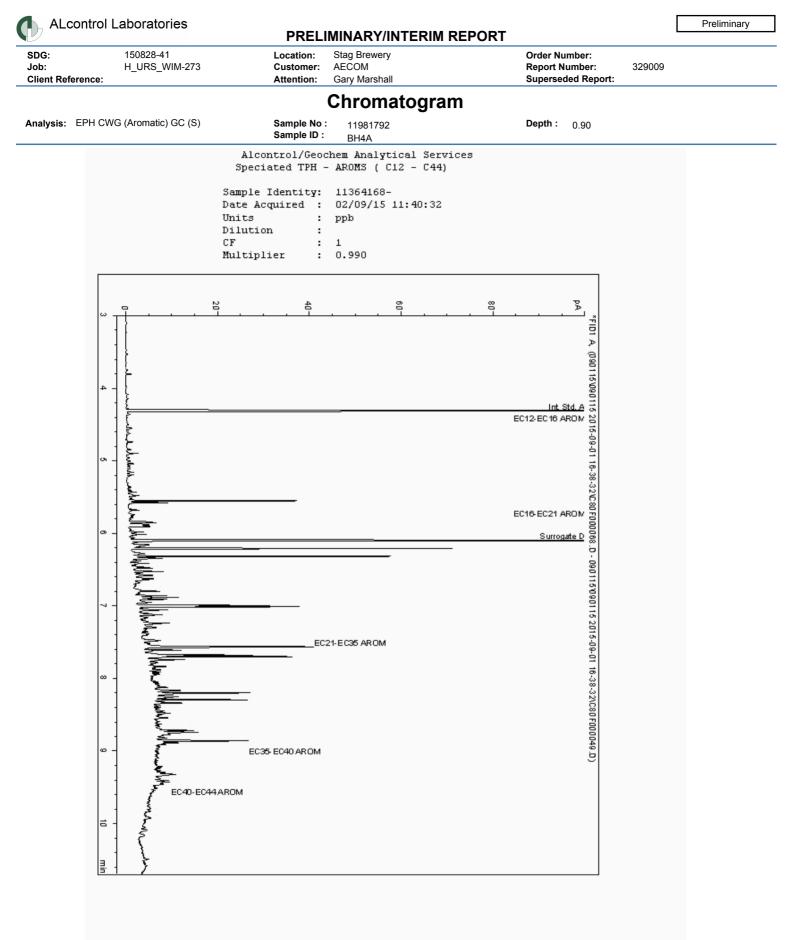
The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

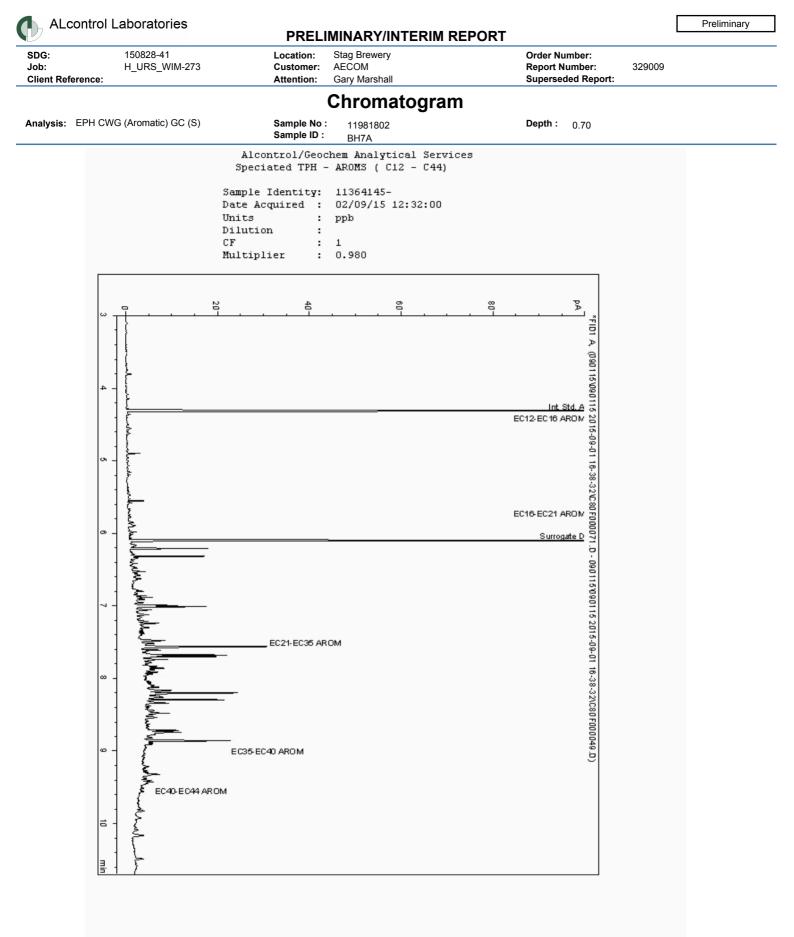


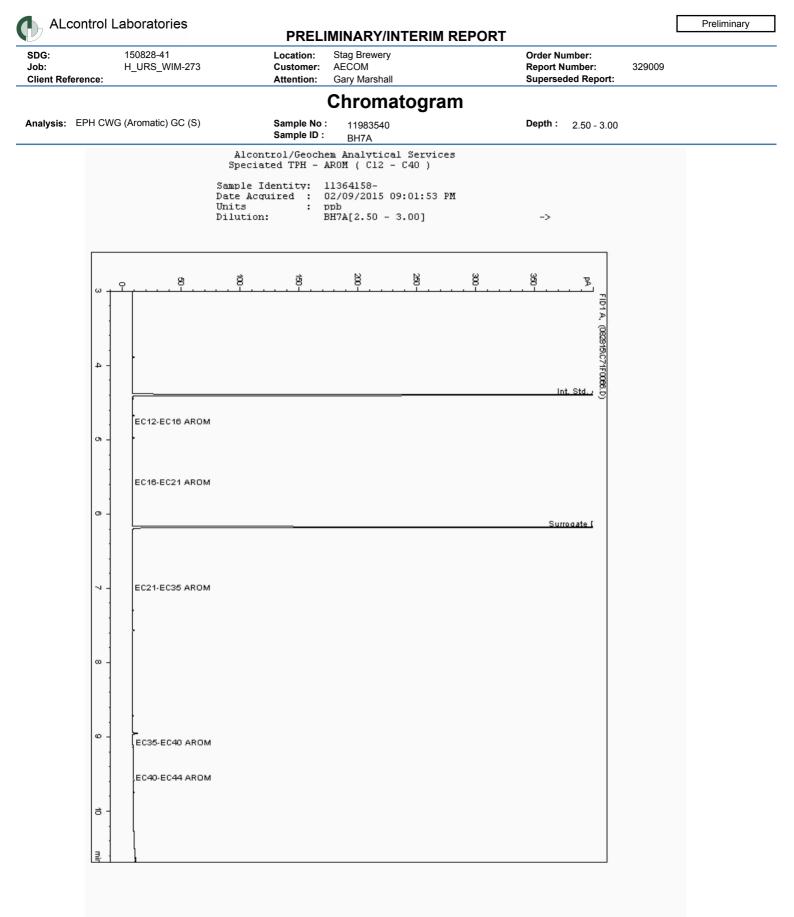


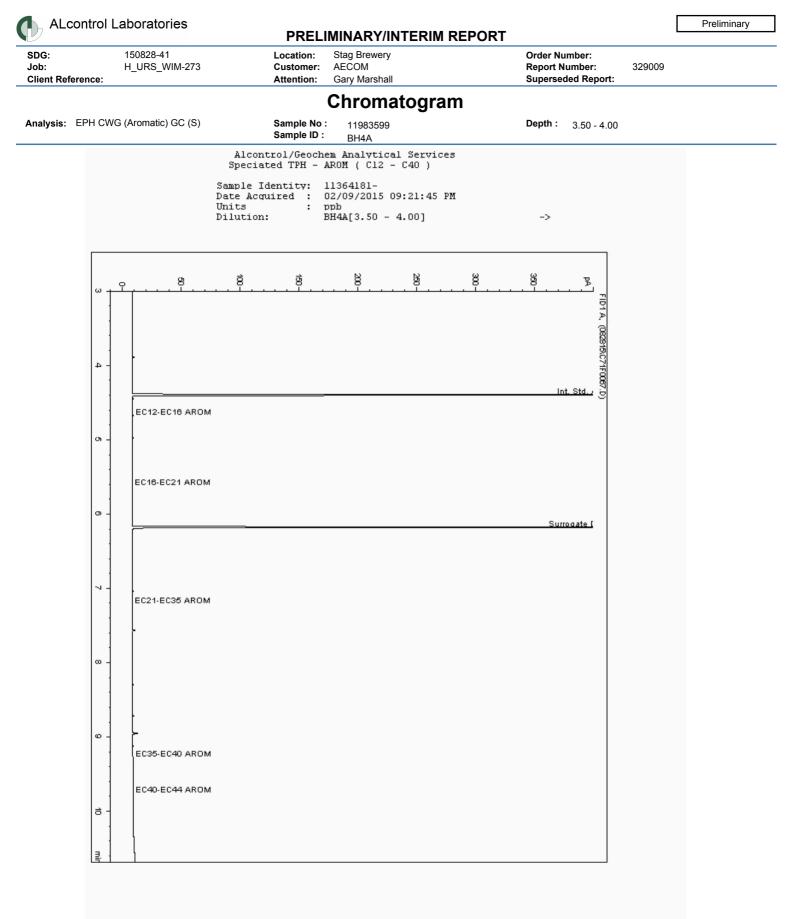


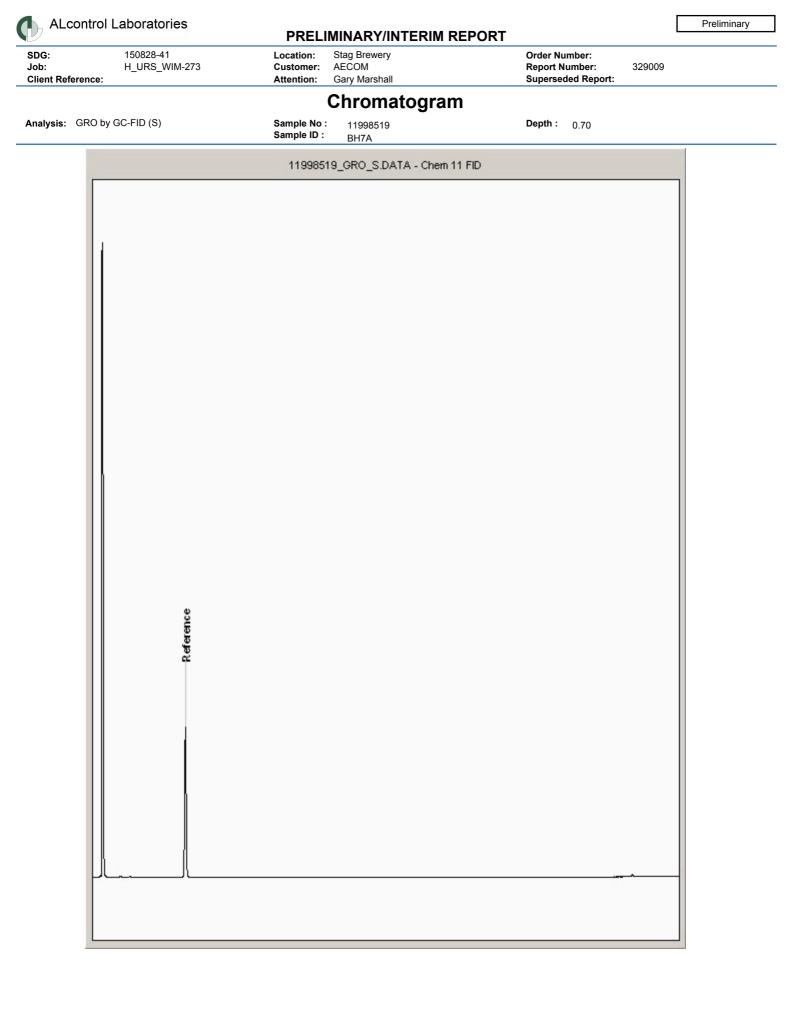


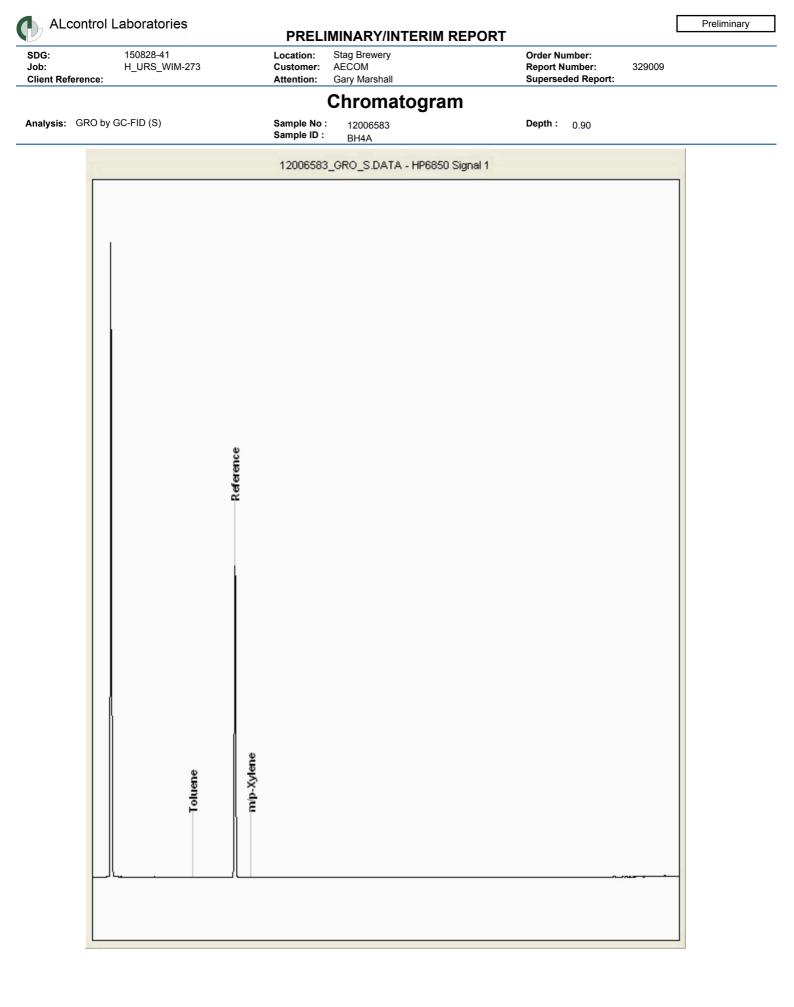


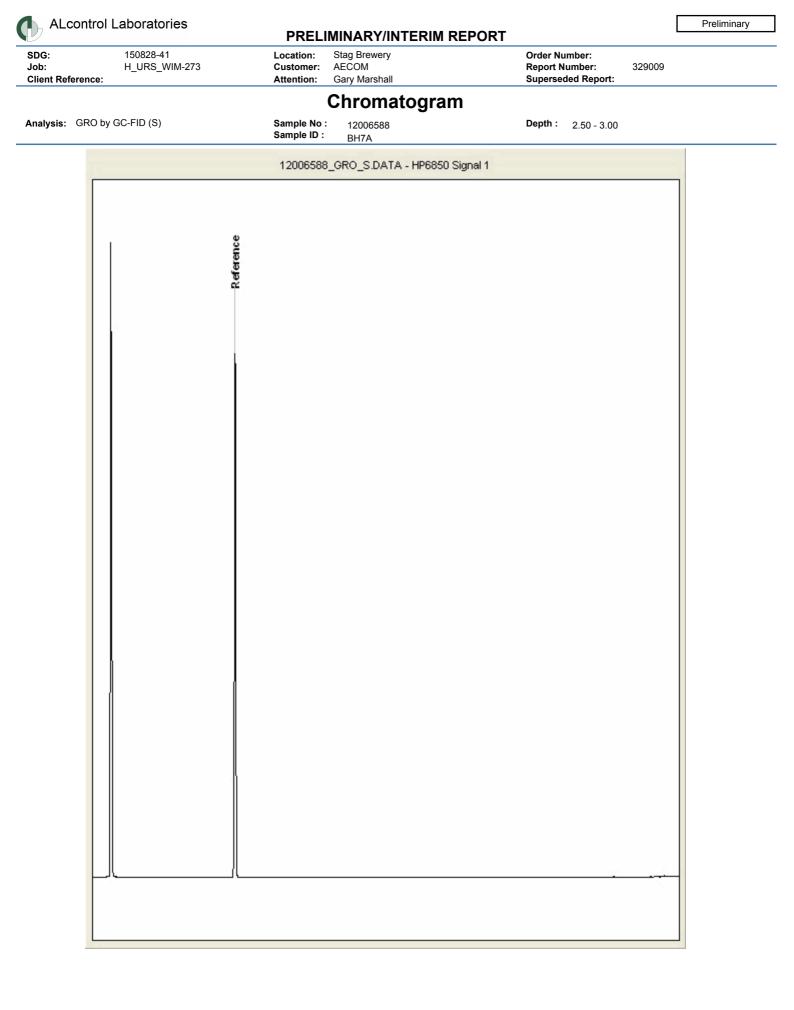


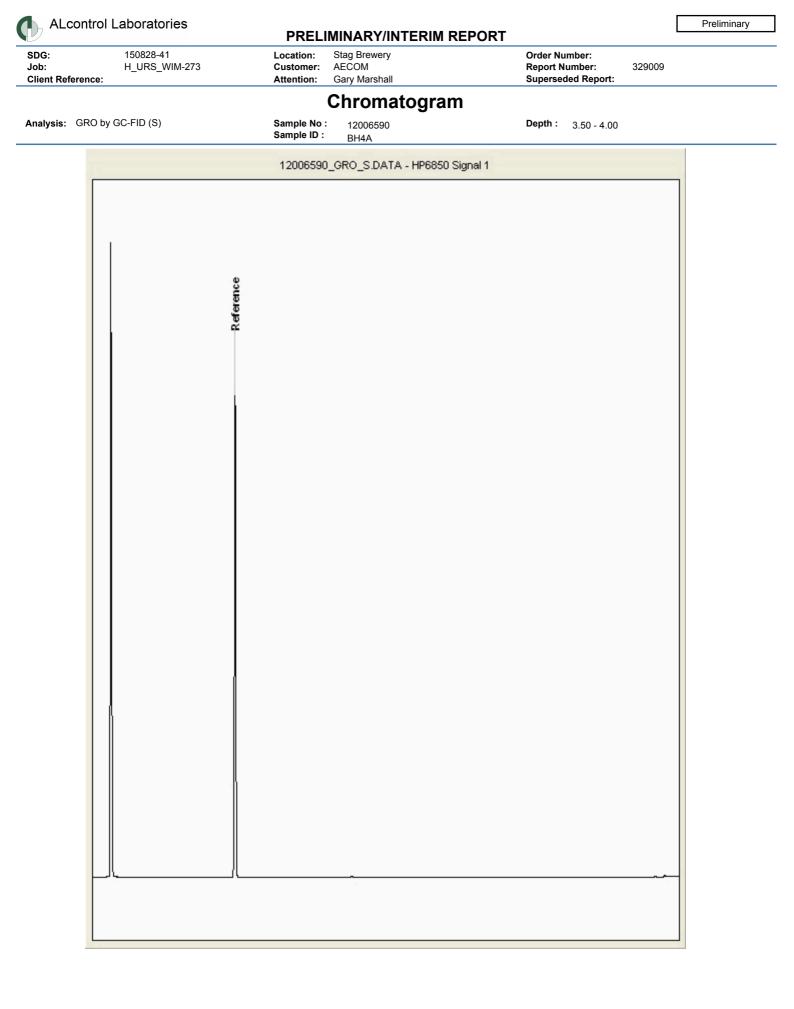












PRELIMINARY/INTERIM REPORT

SDG:	150828-41	Location:	Stag Brewery
Job:	H_URS_WIM-273	Customer:	AECOM
Client Reference:		Attention:	Gary Marshall

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

12. Results relate only to the items tested

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.

19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute themajor part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

24. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Order Number: Report Number: Superseded Report:

Report:

329009

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	d/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYOLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
THIN LAYER CHROMATOGRAPHY	D&C	DCM	SOXTHERM	IATROSCAN
ELEMENTALSULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLSBYGOMS	WET	DOM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GC/MS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GC/MS
EPH (DRO)	D&C	HEXANE/ACETONE	ENDOWEREND	GCFD
EPH (MNOL)	D&C	HEXANEACETONE	END OVEREND	GCFD
EPH (OLEANED UP)	D&C	HEXANEACETONE	END OVEREND	GCFD
EPH CWG BYGC	D&C	HEXANEACETONE	END OVEREND	GCFD
PCB TOT / PCB CON	D&C	HEXANEACETONE	ENDOWEREND	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MCROWAVE TM218.	GCMS
08-040(06-040) EZ FLASH	WET	HEXANEACETONE	SHAVER	GCEZ
POL VAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAVER	6CEZ
SEM VOLATILEORGANIC COMPOUNDS	WET	DOMAGETONE	SONICATE	GCMS

LIQUID MATRICES EXTRACTION SUMMARY

- • -			
ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSS
PAHMS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
E H	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
EPHCWG	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
MNERALOIL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
PCB 7 CONGENERS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
PCB TOTAL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
SVOC	DOM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DOM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DOM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DOM	LIQUID/LIQUID SHAKE	GCMS
PHENOLSMS	DOM	SOLID PHASE EXTRACTION	GCMS
TIH by INFRARED (IR)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT NJECTION	GCMS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Containing Material, Asbestos removed 'Screening of during the soils Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) method of transmitted/polarised in-house light microscopy and central stor dispersion staining, based on HSG 248 (2005)

Asbestos Type	Common Name
Chrysofile	WhiteAsbestos
Amoste	BrownAsbestos
Croddalte	Blue Asbestos
Fibrous Adinatie	-
Fibrous Anthophylite	-
Fibrous Trendile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

PRELIMINARY/INTERIM REPORT

SDG:	150828-41	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329009
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt . However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-lsopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill /made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysolie	White Asbestos
Amoste	BrownAsbestos
Oroddalite	Blue Asbestos
Fibrous Adinate	-
Fibrous Anthophylite	-
Fibrous Trendile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than : - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



AECOM St. George's House 2nd Floor 5 St. George's Road Wimbledon Greater London SW19 4DR

Attention: Gary Marshall

PRELIMINARY/INTERIM REPORT

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 09 September 2015 H_URS_WIM 150828-44

Stag Brewery 329060

We received 4 samples on Friday August 28, 2015 and 4 of these samples were scheduled for analysis which was completed on Wednesday September 09, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

This is a preliminary report which has not had final authorisation.

Approved By:



Alcontrol Laboratories is a trading division of ALcontrol UK Limited Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No.

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PRELIMINARY/INTERIM REPORT

Preliminary

 SDG:
 150828-44
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329060

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11977692	BH210		0.80	26/08/2015
11977693	BH210		2.20 - 2.80	26/08/2015
11977694	BH211		0.70	26/08/2015
11977695	BH211		2.20	26/08/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

SDG:	150828-44		Location		Ċ+	ag B		in and				Order Numbe			
SDG: Job: Client Reference:	H_URS_W	IM-273	Custome	er:	A	ECON ary M	Ν	-				Report Numbe Superseded F	er:	329060	
SOLID						`	_		_		_				
Results Legend		Lab Sample	e No(s)		26977611	10110	11977693		11977694		11977695				
X Test					26	2	93		94		95				
No Determina	ation			┢											
Possible		Custon	ner		щ	2	뿌		뿌		뿌				
		Sample Ref	erence		BH210	20	BH210		BH211		BH211				
		AGS Refe	rence												
				┢			2.2								
		Depth (m)		0.80	8	2.20 - 2.80		0.70		2.20				
	-			25	40	25 40			<u>3</u>	2 4	6				
				i0g An	0g Tu	i0g Tu		i0g Tu		00g Tu	Dg VO				
		Contaiı	ner	iber Ja	b (ALE	b (ALE	C (ALE	b (ALE Iber Ja	C (ALE	b (ALE	C (ALE				
				ır (AL	215) 214)	400g Tub (ALE214) 250g Amber Jar (AL	215)	:214) ar (AL	215)	Ξ214) Γ (ΔΙ	215)				
Ammonium Soil by Titratio	on	All	NDPs: 0 Tests: 4												
		A !!			x	X		X		X					
Asbestos ID in Solid Sam	pies	All	NDPs: 0 Tests: 2		X			X							
Asbestos Quant Waste	Limit	All	NDPs: 0	\square	<u>^</u>			^ 							
			Tests: 1	H	X										
Easily Liberated Sulphide		All	NDPs: 0 Tests: 4							_					
			16515. 4		x	X		x		x					
EPH CWG (Aliphatic) GC	(S)	All	NDPs: 0 Tests: 4												
EPH CWG (Aromatic) GC	· (S)	All	NDPs: 0	X		x		x	2	×					
	(0)		Tests: 4	x		X		x		x					
GRO by GC-FID (S)		All	NDPs: 0	^		^		^	1						
			Tests: 4		×	<mark>(</mark>	X		x		X				
Hexavalent Chromium (s)		All	NDPs: 0 Tests: 4												
			165(5. 4		x	X		x		x					
Metals in solid samples by	y OES	All	NDPs: 0 Tests: 4												
PAH by GCMS		All	NDD- 0	X		x		x		×					
มามัย เป็นเอ			NDPs: 0 Tests: 4	x		X		X		x					
рН		All	NDPs: 0	^											
			Tests: 4	\vdash	X	X		X		X					
Sample description		All	NDPs: 0	Η											
			Tests: 4	x		x		x	2	x					
Total Organic Carbon		All	NDPs: 0 Tests: 4												
				X		x		x		×					
Total Sulphate		All	NDPs: 0 Tests: 4					N N							
TPH CWG GC (S)		All	NDPs: 0	X		x		x		×					
			Tests: 4	x		X		x		x					

ALcontrol	Laboratories		PREL		VAR	//INT	ERIN	I REPORT			Preliminary
SDG: Job: Client Reference:	150828-44 H_URS_WIM-27:	3 (Location: Customer: Attention:	AE	ig Brew COM ry Mars	-			Order Number: Report Number: Superseded Report:	329060	
SOLID Results Legend	L	.ab Sample No	(s)	11977692	11977693	11977694	11977695				
No Determir Possible		Customer Sample Referer	ice	BH210	BH210	BH211	BH211				
		AGS Reference	e								
		Depth (m)		0.80	2.20 - 2.80	0.70	2.20				
		Container	ביטעץ הוווטפו טפו (הב	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (Al	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL				
VOC MS (S)	All		NDPs: 0 Tests: 4	x	x	x	x				

PRELIMINARY/INTERIM REPORT

Preliminary

SDG: 150828-44 Location: Stag Brewery Order Number: Job: H_URS_WIM-273 Customer: AECOM Report Number: 329060 Client Reference: Attention: Gary Marshall Superseded Report: Superseded Report:

Sample Descriptions

Grain Sizes											
very fine <	0.063mm	fine	0.063mm - 0.1mm	mediu	m 0.1mi	n - 2mm	coars	e 2mm - 1	0mm	very coars	e >10mm
Lab Sample No(s)	Custome	er Sample Ref.	Depth (m)		Colour	Descrip	tion	Grain size	Inclu	isions	Inclusions 2
11977692		BH210	0.80		Dark Brown	Sandy C Loan		0.1 - 2 mm	Stones		None
11977693		BH210	2.20 - 2.80	1	Light Brown Loam		Sand	0.1 - 2 mm	Vege	etation	Stones
11977694		BH211	0.70		Dark Brown Sa		Clay n	0.1 - 2 mm	Sto	ones	Vegetation
11977695		BH211	2.20		light Brown	Loamy S	Sand	0.1 - 2 mm	Sto	ones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

PRELIMINARY/INTERIM REPORT

Preliminary

Results Legend	(Customer Sample R	BH210	BH210	BH211	BH211	
# ISO17025 accredited. M mCERTS accredited.							
aq Aqueous / settled sample.		Depth (m)	0.80	2.20 - 2.80	0.70	2.20	
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid	2.20 - 2.80 Soil/Solid	Soil/Solid	2.20 Soil/Solid	
* Subcontracted test.		Date Sampled	26/08/2015	26/08/2015	26/08/2015	26/08/2015	
** % recovery of the surrogate stands check the efficiency of the method		Sampled Time	28/08/2015	28/08/2015	28/08/2015	28/08/2015	
results of individual compounds w	rithin	Date Received SDG Ref	150828-44	150828-44	150828-44	150828-44	
samples aren't corrected for the re (F) Trigger breach confirmed	covery	Lab Sample No.(s)	11977692	11977693	11977694	11977695	
1-5&+§@ Sample deviation (see appendix)		AGS Reference					
Component	LOD/Units	6 Method					
Moisture Content Ratio (%	%	PM024	13	6.9	12	8.9	
of as received sample)							
Exchangeable Ammonia	<15	TM024	45.6	<15	<15	<15	
as NH4	mg/kg		M	М	M	M	
Organic Carbon, Total	<0.2 %	TM132	0.358	<0.2	<0.2	<0.2	
			M	М	M	M	
рН	1 pH	TM133	9.67	8.35	10.3	8.66	
	Units		M	M	M	M	
Chromium, Hexavalent	<0.6	TM151	<0.6	<0.6	<0.6	<0.6	
	mg/kg		#	#	#	#	
Sulphide, Easily liberated	<15	TM180	<15	<15	<15	<15	
A	mg/kg		♦ #	♦#	♦#	♦ #	
Arsenic	<0.6	TM181	23.6	20.2	11.8	19.5	
Cadmium	mg/kg	This	M	M	M	M	
Cadmium	<0.02	TM181	0.449	0.341	0.347	0.391	
Ohannian	mg/kg		M	M	M	M	
Chromium	<0.9	TM181	25.9	16.6	17	24.1	
0	mg/kg		M	M	M	M	
Copper	<1.4	TM181	31.2	5.29	9.01	6.47	
	mg/kg	THEOL	M	M	M	M	
Lead	<0.7	TM181	32.7	5.73	44.5	7.8	
	mg/kg		М	M	M	M	
Mercury	<0.14	TM181	<0.14	<0.14	0.152	<0.14	
	mg/kg		М	M	M	M	
Nickel	<0.2	TM181	24.5	21.2	16.5	22.6	
	mg/kg		M	M	M	M	
Selenium	<1 mg/k	g TM181	<1	<1	<1	<1	
		Thus	#	#	#	#	
Zinc	<1.9	TM181	43.4	21.9	41.3	28.4	
Ordebate Tatal	mg/kg	TN004	M	M	M	M	
Sulphate, Total	<48	TM221	481	<48	545	88.2	
	mg/kg		M	М	M	М	
		1 1					
		7					7
		_					

SDG: Job:	150828-44 H_URS_WIM-2	273	Location: Customer:	Stag AEC	g Brewery			Order Number: Report Number		329060	
Client Reference:		275	Attention:		y Marshall			Superseded Re		329000	
PAH by GCMS Results Lege	and	Customer Sample R	BH210	_	BH210		BH211	BH211	_		
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sam	ple.	Depth (m)	0.80		2.20 - 2.80		0.70	2.20			
diss.filt Dissolved / filtered sam tot.unfilt Total / unfiltered samp * Subcontracted test. ** % recovery of the surr	le.	Sample Type Date Sampled Sampled Time	Soil/Solid 26/08/2015		Soil/Solid 26/08/2015		Soil/Solid 26/08/2015	Soil/Solid 26/08/2015			
check the efficiency of results of individual co samples aren't correct (F) Trigger breach confirm	f the method. The ompounds within and for the recovery	Date Received SDG Ref Lab Sample No.(s)	28/08/2015 150828-44 11977692		28/08/2015 150828-44 11977693		28/08/2015 150828-44 11977694	28/08/2015 150828-44 11977695			
I-5&+§@ Sample deviation (see		AGS Reference									
Component Naphthalene-d8 % recovery**	%	TM218	103		102		97.1	95.7			
Acenaphthene-d10 % recovery**	%	TM218	98.9		94.5		95.1	96.4			
Phenanthrene-d10 % recovery**	%	TM218	95.9		94.2		92.9	96.8			
Chrysene-d12 % recovery**	%	TM218	92.5		78.5		92	88.1			
Perylene-d12 % recovery**	%	TM218	94.6		86.2		97	95.7			
Naphthalene	<9 µg/	kg TM218	<9	м	<9	м	53.8 N	<9	v		
Acenaphthylene	<12 μg/kg	TM218	<12	м	<12	м	14.8 N	<12	v		
Acenaphthene	<8 µg/		<8	м	<8	м	48.1 N	<8	v		
Fluorene	<10 µg/kg	TM218	<10	м	<10	м	48.6 N	<10	v		
Phenanthrene	<15 μg/kg	TM218	27.7	м	<15	м	352 N	<15	v		
Anthracene	<16 μg/kg	TM218	<16	м	<16	м	78.8 N	<16	v		
Fluoranthene	<pre> < 10 < 0 </pre> <pre> < 17 µg/kg</pre>	TM218	47	м	<17	М	389 M	<17	v		
Pyrene	 <15 μg/kg 	TM218	43.6	м	<15	м	317 N	<15	v		
Benz(a)anthracene	<14 μg/kg	TM218	48.1	м	<14	м	174 N	<14	v		
Chrysene	<10 μg/kg	TM218	28.5	м	<10	м	151 M	<10	и		
Benzo(b)fluoranthene		TM218	38.8	м	<15	м	199 M	<15	v		
Benzo(k)fluoranthene		TM218	18.1	м	<14	м	90.7 N	<14	и		
Benzo(a)pyrene	<15 μg/kg	TM218	30	м	<15	м	147 N	<15	v		
Indeno(1,2,3-cd)pyrer		TM218	<18	м	<18	м	77.5 N	<18	v		
Dibenzo(a,h)anthrace		TM218	<23	м	<23	м	<23 N	<23	v		
Benzo(g,h,i)perylene	 <24 μg/kg	TM218	28.6	м	<24	м	105 N	<24	v		
PAH, Total Detected USEPA 16	<118 μg/kg	TM218	311		<118		2250	<118			

Preliminary

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ALcontrol La			PRELI	MI	NARY/INT	ERI	M REPOR	Т				eliminary
Job:	50828-44 I_URS_WIM-:	273	Location: Customer:	AE	ag Brewery COM				Order Numbe Report Numb	er:	329060	
Client Reference:			Attention:	Ga	ary Marshall				Superseded	Repo	rt:	
PH CWG (S) Results Legend		Customer Sample R	BH210		BH210		BH211		BH211			
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * *		Depth (m) Sample Type Date Sampled	0.80 Soil/Solid 26/08/2015		2.20 - 2.80 Soil/Solid 26/08/2015		0.70 Soil/Solid 26/08/2015		2.20 Soil/Solid 26/08/2015			
check the efficiency of the n results of individual compor samples aren't corrected for (F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appe	nethod. The unds within r the recovery	Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference its Method	28/08/2015 150828-44 11977692		28/08/2015 150828-44 11977693		28/08/2015 150828-44 11977694		28/08/2015 150828-44 11977695			
Component GRO Surrogate % recovery**	%	TM089	105		119		109		110			
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44	м	<44	м	5160	м	<44	м		
Methyl tertiary butyl ether (MTBE)			<5	м	<5	м	<5	м	<5	м		
Benzene	<10 µg/kg	TM089	<10	м	<10	м	<10	м	<10	м		
Toluene	<2 µg/	kg TM089	<2	М	<2	м	<2	м	<2	м		
Ethylbenzene	<3 µg/		<3	М	<3	м	<3	М	<3	м		
m,p-Xylene	<6 µg/		<6	М	<6	м	<6	М	<6	м		
o-Xylene	<3 µg/		<3	М	<3	м	<3	м	<3	м		
sum of detected mpo xylene by GC	<9 µg/		<9		<9		<9		<9			
sum of detected BTEX by GC	µg/kg		<24		<24		<24		<24			
Aliphatics >C5-C6	<10 µg/kg		<10		<10		<10		<10			
Aliphatics >C6-C8	<10 µg/kg	_	<10		<10		34.2		<10			
Aliphatics >C8-C10	<10 µg/kg	_	<10		<10		1010		13.1			
Aliphatics >C10-C12	<10 µg/kg		<10		<10		2060		<10			
Aliphatics >C12-C16	<100 µg/kg		<100		<100		15100		<100			
Aliphatics >C16-C21	<100 µg/kg		3150		<100		23200		<100			
Aliphatics >C21-C35	<100 µg/kg		18600		<100		57300		<100			
Aliphatics >C35-C44	<100 µg/kg		1920		<100		10600		<100			
Total Aliphatics >C12-C4	µg/kg		23700		<100		106000		<100			
Aromatics >EC5-EC7	<10 µg/kg		<10		<10		<10		<10			
Aromatics >EC7-EC8	<10 µg/kg		<10		<10		<10		<10			
Aromatics >EC8-EC10	<10 µg/kg		<10		<10		671		<10			
Aromatics >EC10-EC12	<10 µg/kg		<10		<10		1380		<10			
Aromatics >EC12-EC16	<100 µg/kg		<100		<100		4150		<100			
Aromatics >EC16-EC21	<100 µg/kg		<100		<100		10500		<100			
Aromatics >EC21-EC35	<100 µg/kg		4960		<100		26600		<100			
Aromatics >EC35-EC44	<100 µg/kg		1400		<100		10500		<100			
Aromatics >EC40-EC44	<100 µg/kg	TM173	<100		<100		3890		<100			
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	6360		<100		51900		<100			
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	30000		<100		163000		<100			

IOD IOD Area Reserve weak Reserve wea	ALcontrol Laboratories PRELIMINARY/INTERIM REPORT Preliminary											
			273			• •					329060	
Induction Control framework Partie Partie <	Client Reference:			Attention:	Ga	ary Marshall				Superseded Report		
		nd	Customor Sample P	DU040		PU040	_	DU011	_	DU011		
Image: second	# ISO17025 accredited. M mCERTS accredited.											
Burner of encompany of any o	tot.unfilt Total / unfiltered sample * Subcontracted test.	9.	Sample Type Date Sampled	Soil/Solid		Soil/Solid		Soil/Solid		Soil/Solid		
rotice series Local series Antice se	check the efficiency of results of individual cor samples aren't correcte	the method. The mpounds within d for the recovery	Date Received SDG Ref	150828-44		150828-44		150828-44		150828-44		
Disconduronmethane** % TM116 100 119 128 123				11977092		11977093		11977094		11977095		
Image difference diff	-											
Anomelanoclasses NM16 MM MM <td></td>												
Delatocollucomethane -fb upkg TM16 -fb A				-								
Image: contract of the sector of the secto												
1.100 1.100 1.100 m					М	N	и		м	М		
1.00 M <td></td> <td></td> <td>5</td> <td></td> <td>#</td> <td>ŧ</td> <td>#</td> <td></td> <td>#</td> <td>#</td> <td></td> <td></td>			5		#	ŧ	#		#	#		
upply lowerhameupply upplymm<	-		5	-	М	N	и		м	м		
up dy Incharder incharder incharder incharder incharder incharder incharder incharder incharder incharder incharder incharder incharder incharder incharder incharder incharder incharder 		µg/k	9		М	N	и		м	М		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		µg/k	9	-	М	N	и		м	М		
up g/sg vp g/sg vm fill v f			5	-	М	N	и		м	М		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	1,1-Dichloroethene	µg/k	g	<10	#		#		#	#		
up/kg up/kg <t< td=""><td>Carbon Disulphide</td><td><7 µg</td><td>/kg TM116</td><td><7</td><td>М</td><td></td><td>N</td><td></td><td>м</td><td></td><td></td><td></td></t<>	Carbon Disulphide	<7 µg	/kg TM116	<7	М		N		м			
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Dichloromethane			<10	#		#		#			
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Methyl Tertiary Butyl E			<10	М		и		м			
1,1-Dichloroethane <8 µg/kg TM116 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <8 <	trans-1,2-Dichloroethe			<10	М		и		м			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	1,1-Dichloroethane			<8	М		и		м			
2.2-Dichloropropane <10 µg/kg TM116 N <10 M <	cis-1,2-Dichloroethene	<6 µg	/kg TM116	<6		<6	Τ	<6		<6		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	2,2-Dichloropropane			<10	М	<10		<10		<10		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Bromochloromethane	<10	TM116	<10		<10	T	<10		<10		
1,1,1-Trichlorogethane <7 μ g/kg TM116 <7 μ g/kg <7 μ g/kg <th< td=""><td>Chloroform</td><td></td><td></td><td><8</td><td></td><td><8</td><td>T</td><td><8</td><td></td><td><8</td><td></td><td></td></th<>	Chloroform			<8		<8	T	<8		<8		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	1,1,1-Trichloroethane	<7 µg	/kg TM116	<7		<7		<7		<7		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1,1-Dichloropropene			<10		<10	Τ	<10		<10		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Carbontetrachloride	<10	TM116	<10		<10		<10		<10		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	1,2-Dichloroethane			<5		<5	T	<5		<5		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Benzene	<9 µg	/kg TM116	<9		<9	1	<9		<9		
1,2-Dichloropropane<10 µg/kgTM116 N<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<10 M<	Trichloroethene	<9 µg	/kg TM116	<9		<9		<9		<9		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	1,2-Dichloropropane			<10		<10	Τ	<10		<10		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Dibromomethane			<9		<9		<9		<9		
$ \begin{array}{c} cis-1,3-Dichloropropene \\ rank prime \\ cis-1,3-Dichloropropene \\ rank rank rank rank rank rank rank rank$	Bromodichloromethane	e <7 µg	/kg TM116	<7		<7	T	<7		<7		
Toluene <7 μg/kg TM116 <7 <7 <7 <7 trans-1,3-Dichloropropene <10	cis-1,3-Dichloropropen			<10		<10	T	<10		<10		
trans-1,3-Dichloropropene <10 TM116 <10 <10 <10 <10 <10	Toluene			<7		<7		<7		<7		
	trans-1,3-Dichloroprop			<10	M				M			
1,1,2-1 richloroethane <10 IM116 <10 <10 <10 <10 µg/kg M M M M M	1,1,2-Trichloroethane	<10	TM116	<10		<10	+	<10	+	<10		

PRELIMINARY/INTERIM REPORT

Preliminary

SDG:	150828-44	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329060
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

VOC MS (S)

Results Legend # ISO17025 accredited. # 025770 provident		Customer Sample R	BH210		BH210		BH211	BH211		
M mCERTS accredited. aq Aqueous / settled sample.		Depth (m)	0.80		2.20 - 2.80		0.70	2.20		
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test.		Sample Type Date Sampled	Soil/Solid 26/08/2015		Soil/Solid 26/08/2015		Soil/Solid 26/08/2015	Soil/Solid 26/08/2015		
** % recovery of the surrogate stands check the efficiency of the method		Sampled Time								
results of individual compounds w samples aren't corrected for the re	vithin	Date Received SDG Ref	28/08/2015 150828-44		28/08/2015 150828-44		28/08/2015 150828-44	28/08/2015 150828-44		
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)	covery	Lab Sample No.(s) AGS Reference	11977692		11977693		11977694	11977695		
Component	LOD/Unit									
1,3-Dichloropropane	<7 µg/k	g TM116	<7	м	<7	м	<7 N	<7	м	
Tetrachloroethene	<5 µg/k	g TM116	<5	M	<5	м	<5 N	<5	м	
Dibromochloromethane	<10 µg/kg	TM116	<10	M	<10	M	<10 N	<10	M	
1,2-Dibromoethane	<10	TM116	<10		<10		<10	<10		
Chlorobenzene	μg/kg <5 μg/k	g TM116	<5	M	<5	M	<5	<5	M	
1,1,1,2-Tetrachloroethane	<10	TM116	<10	M	<10	M	<10 N	<10	M	
Ethylbenzene	μg/kg <4 μg/k	.g TM116	<4	M	<4	М	N <4	<4	M	
p/m-Xylene	<10	TM116	N <10	M	<10	М	<10	/ <10	М	
o-Xylene	µg/kg <10	TM116	<10	#	<10	#	<10	¥ <10	#	
Styrene	µg/kg <10	TM116	N <10	М	<10	М	N <10	/ <10	М	
-	µg/kg			#		#		¥	#	
Bromoform	<10 µg/kg	TM116		м	<10	м	<10		М	
Isopropylbenzene	<5 µg/k	-		#	<5	#		<5 #	#	
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10 N	м	<10	м	<10 N	<10 1	М	
1,2,3-Trichloropropane	<16 µg/kg	TM116	<16 N	м	<16	м	<16 M	<16 1	М	
Bromobenzene	<10 µg/kg	TM116	<10 N	м	<10	м	<10 N	<10	М	
Propylbenzene	<10 µg/kg	TM116	<10 N	м	<10	м	<10 N	<10	М	
2-Chlorotoluene	<9 µg/k	.g TM116	<9	м	<9	м	<9 M	<9	М	
1,3,5-Trimethylbenzene	<8 µg/k	g TM116	<8	M	<8	М	<8	<8	М	
4-Chlorotoluene	<10 µg/kg	TM116	<10	м	<10	м	<10 N	<10	м	
tert-Butylbenzene	<14 µg/kg	TM116	<14	м	<14	м	<14 N	<14	м	
1,2,4-Trimethylbenzene	<9 µg/kg	g TM116	<9	#	<9	#	<9	// <9 #	#	
sec-Butylbenzene	<10 µg/kg	TM116	<10	# M	<10	т М	<10 N	<10	m m	
4-Isopropyltoluene	<10 µg/kg	TM116	<10	M	<10	M	<10	<10	M	
1,3-Dichlorobenzene	<8 µg/kg	g TM116	<8	M	<8	M	<8	<8	M	
1,4-Dichlorobenzene	<5 µg/k	g TM116	<5	M	<5	м	<5	<5	M	
n-Butylbenzene	<11 µg/kg	TM116	<11	171	<11	IVI	<11	<11	IVI	
1,2-Dichlorobenzene	+μg/kg <10 μg/kg	TM116	<10	N4	<10		<10	<10		
1,2-Dibromo-3-chloroprop	<14	TM116	<14	M	<14	M	<14	<14	M	
ane Tert-amyl methyl ether	μg/kg <10	TM116	<10	M	<10	M	N <10	<10	M	
1,2,4-Trichlorobenzene	μg/kg <20	TM116	<20	#	<20	#	<20	¥ <20	#	
Hexachlorobutadiene	μg/kg <20	TM116	<20	_	<20	_	<20	<20		
Naphthalene	µg/kg <13	TM116	<13	_	<13		<13	<13		
	µg/kg		N	М		М	Ν	1	М	

PRELIMINARY/INTERIM REPORT

Preliminary

VOC MS (S)									
Results Legend # ISO17025 accredited.	Cu	istomer Sample R	BH210	BH210	BH211	BH211			
M mCERTS accredited. aq Aqueous / settled sample.									
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.80 Soil/Solid	2.20 - 2.80 Soil/Solid	0.70 Soil/Solid	2.20 Soil/Solid			
* Subcontracted test. ** % recovery of the surrogate stand	ard to	Date Sampled Sampled Time	26/08/2015	26/08/2015	26/08/2015	26/08/2015			
check the efficiency of the method results of individual compounds v	i. The	Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015			
samples aren't corrected for the re (F) Trigger breach confirmed	covery	SDG Ref ab Sample No.(s)	150828-44 11977692	150828-44 11977693	150828-44 11977694	150828-44 11977695			
1-5&+§@ Sample deviation (see appendix)		AGS Reference							
Component	LOD/Units	Method							
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<20 #	<20 #	<20 #	<20 #			
	P9/19		π	π	<u>π</u>	π			
	ļ								

PRELIMINARY/INTERIM REPORT

Preliminary

SDG:	150828-44	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329060
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH210 0.80 SOLID 26/08/2015 00:00:00 29/08/2015 10:30:50 150828-44 11977692 TM048	03/09/2015	Rebecca Rawlings	Loose fibres in soil	Trace (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH211 0.70 SOLID 26/08/2015 00:00:00 29/08/2015 10:17:28 150828-44 11977694 TM048	03/09/2015	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

SDG:

Job:

PRELIMINARY/INTERIM REPORT

Preliminary

150828-44 Location: Stag Brewery Order Number: H_URS_WIM-273 AEČOM 329060 Customer: Report Number: Client Reference: Attention: Gary Marshall Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM 304				
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C.

NA = not applicable.

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SDG:

Job:

PRELIMINARY/INTERIM REPORT

150828-44 Location: Stag Brewery Order Number: H_URS_WIM-273 AEČOM 329060 Customer: Report Number: Client Reference: Attention: Gary Marshall Superseded Report:

Test Completion Dates

				•
Lab Sample No(s)	11977692	11977693	11977694	11977695
Customer Sample Ref.	BH210	BH210	BH211	BH211
·				
AGS Ref.				
Depth	0.80	2.20 - 2.80	0.70	2.20
Туре	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	09-Sep-2015	08-Sep-2015	09-Sep-2015	08-Sep-2015
Asbestos ID in Solid Samples	03-Sep-2015		03-Sep-2015	
Easily Liberated Sulphide	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
EPH CWG (Aliphatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
EPH CWG (Aromatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
GRO by GC-FID (S)	04-Sep-2015	02-Sep-2015	07-Sep-2015	02-Sep-2015
Hexavalent Chromium (s)	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Metals in solid samples by OES	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015
PAH by GCMS	03-Sep-2015	03-Sep-2015	03-Sep-2015	03-Sep-2015
pН	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
Sample description	29-Aug-2015	28-Aug-2015	29-Aug-2015	28-Aug-2015
Total Organic Carbon	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Total Sulphate	08-Sep-2015	04-Sep-2015	07-Sep-2015	04-Sep-2015
TPH CWG GC (S)	04-Sep-2015	03-Sep-2015	07-Sep-2015	03-Sep-2015
VOC MS (S)	02-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015

150828-44

H_URS_WIM-273

PRELIMINARY/INTERIM REPORT

Location: Stag Brewery Customer: AECOM Attention: Gary Marshall Order Number: Report Number: 3 Superseded Report:

329060

Preliminary

ASSOCIATED AQC DATA

Ammonium Soil by Titration

SDG:

Job:

Client Reference:

Component	Method Code	QC 1292	QC 1205
Exchangeable	TM024	86.07	98.01
Ammonium as NH4		79.30 : 104.61	79.30 : 104.61

Easily Liberated Sulphide

Component	Method Code QC 1219		QC 1231	
Easily Liberated Sulphide	TM180	93.21 49.14 : 123.89	94.71 49.14 : 123.89	

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1165	QC 1197
Total Aliphatics	TM173	97.92	92.08
>C12-C35		69.19 : 111.75	71.67 : 116.67

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1197
Total Aromatics >EC12-EC35	TM173	85.33 59.92 : 107.95

GRO by GC-FID (S)

Component	Method Code	QC 1100	QC 1290	QC 1294
component		QC 1100	QC 1290	QC 1294
Benzene by GC	TM089	110.0	100.0	101.5
(Moisture Corrected)		82.67 : 117.96	76.23 : 120.71	79.00 : 121.00
Ethylbenzene by GC	TM089	110.5	100.5	104.0
(Moisture Corrected)		80.45 : 118.61	73.32 : 122.02	79.00 : 121.00
m & p Xylene by GC	TM089	110.0	100.75	104.25
(Moisture Corrected)		79.25 : 119.43	72.90 : 122.64	79.00 : 121.00
MTBE GC-FID (Moisture	TM089	114.5	101.0	106.5
Corrected)		79.10 : 122.51	72.17 : 124.81	74.48 : 125.29
o Xylene by GC (Moisture	TM089	111.5	100.5	104.5
Corrected)		80.03 : 117.19	71.65 : 124.40	79.00 : 121.00
QC	TM089	102.79 75.74 : 124.65	105.5 55.00 : 145.00	98.6 73.70 : 123.60
Toluene by GC (Moisture	TM089	110.5	100.5	102.5
Corrected)		82.06 : 117.54	74.60 : 120.38	79.00 : 121.00

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H_URS_WIM-273

PRELIMINARY/INTERIM REPORT

Location:Stag BreweryCustomer:AECOMAttention:Gary Marshall

Order Number: Report Number: 329060 Superseded Report:

Hexavalent Chromium (s)

Client Reference:

SDG:

Job:

Component	Method Code	QC 1299	QC 1285
Hexavalent Chromium	TM151	100.0 92.20 : 106.60	102.0 92.20 : 106.60

Metals in solid samples by OES

Component	Method Code	QC 1206	QC 1292
Aluminium	TM181	99.23 86.49 : 129.71	108.46 86.49 : 129.71
Antimony	TM181	94.27 77.50 : 122.50	95.34 77.50 : 122.50
Arsenic	TM181	92.92 82.63 : 117.37	92.92 82.63 : 117.37
Barium	TM181	96.24 79.45 : 120.55	99.25 79.45 : 120.55
Beryllium	TM181	98.91 85.92 : 121.27	100.31 85.92 : 121.27
Boron	TM181	105.34 77.41 : 143.83	109.92 77.41 : 143.83
Cadmium	TM181	95.8 81.95 : 118.05	95.63 81.95 : 118.05
Chromium	TM181	93.33 81.29 : 118.71	96.47 81.29 : 118.71
Cobalt	TM181	95.83 83.86 : 116.14	96.67 83.86 : 116.14
Copper	TM181	97.7 78.57 : 121.43	98.51 78.57 : 121.43
Iron	TM181	95.86 87.50 : 122.82	101.38 87.50 : 122.82
Lead	TM181	93.7 74.18 : 117.25	92.91 74.18 : 117.25
Manganese	TM181	100.0 82.91 : 117.09	100.0 82.91 : 117.09
Mercury	TM181	94.3 81.99 : 118.01	93.47 81.99 : 118.01
Molybdenum	TM181	92.2 81.45 : 118.55	92.36 81.45 : 118.55
Nickel	TM181	95.93 79.64 : 120.36	97.67 79.64 : 120.36
Phosphorus	TM181	97.76 81.03 : 118.97	97.32 81.03 : 118.97
Selenium	TM181	105.3 87.05 : 121.93	105.47 87.05 : 121.93
Strontium	TM181	98.08 83.64 : 116.36	98.47 83.64 : 116.36
Thallium	TM181	87.56 77.50 : 122.50	91.38 77.50 : 122.50
Tin	TM181	92.03 78.30 : 113.98	92.69 78.30 : 113.98
Titanium	TM181	103.91 71.02 : 128.98	103.13 71.02 : 128.98

150828-44

H_URS_WIM-273

PRELIMINARY/INTERIM REPORT

Location:Stag BreweryCustomer:AECOMAttention:Gary Marshall

Order Number: Report Number: 329060 Superseded Report:

Metals in solid samples by OES

		QC 1206	QC 1292
Vanadium	TM181	93.53 86.61 : 113.39	95.0 86.61 : 113.39
Zinc	TM181	97.73 89.82 : 114.54	98.05 89.82 : 114.54

PAH by GCMS

Client Reference:

SDG:

Job:

Component	Method Code	QC 1134	QC 1154	QC 1106
Acenaphthene	TM218	88.5 78.41 : 114.87	92.0 77.34 : 118.20	91.5 78.84 : 114.36
Acenaphthylene	TM218	80.5 72.38 : 111.60	86.5 62.65 : 116.35	85.5 65.50 : 119.50
Anthracene	TM218	89.5 72.78 : 117.53	89.5 73.54 : 114.21	91.0 75.54 : 110.88
Benz(a)anthracene	TM218	88.0 79.50 : 130.50	102.5 74.99 : 132.24	97.5 78.02 : 127.38
Benzo(a)pyrene	TM218	91.0 79.50 : 130.50	102.0 80.75 : 127.25	99.5 79.21 : 128.01
Benzo(b)fluoranthene	TM218	87.5 78.10 : 127.57	99.5 75.84 : 127.12	96.0 86.21 : 131.42
Benzo(ghi)perylene	TM218	95.0 81.67 : 122.61	97.0 74.74 : 124.03	95.0 80.11 : 120.52
Benzo(k)fluoranthene	TM218	97.0 81.20 : 118.10	98.0 80.00 : 125.00	97.0 78.77 : 120.72
Chrysene	TM218	94.5 80.60 : 117.80	98.0 77.24 : 120.84	94.5 78.77 : 118.99
Dibenzo(ah)anthracene	TM218	104.0 77.93 : 124.42	96.5 76.00 : 122.50	93.5 76.39 : 122.63
Fluoranthene	TM218	91.5 80.39 : 114.39	92.5 78.51 : 118.75	95.0 77.25 : 117.75
Fluorene	TM218	92.0 79.50 : 118.50	93.0 76.95 : 117.18	95.5 79.28 : 117.35
Indeno(123cd)pyrene	TM218	100.0 80.30 : 128.30	98.5 75.34 : 127.46	93.0 78.87 : 122.50
Naphthalene	TM218	97.5 82.25 : 118.25	95.0 76.24 : 112.91	93.0 74.75 : 118.25
Phenanthrene	TM218	95.5 71.53 : 114.48	93.5 76.49 : 119.30	95.0 78.61 : 113.98
Pyrene	TM218	91.5 79.12 : 114.39	91.0 78.25 : 118.17	94.0 76.15 : 115.26

pН

Component	Method Code	QC 1218	QC 1227
рН	TM133	100.25 97.19 : 102.81	100.5 97.19 : 102.81

Total Organic Carbon

PRELIMINARY/INTERIM REPORT

SDG:	150828-44	Location:	Stag Brewery	Order Number:		
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number: 329060		
Client Referen	ice:	Attention:	Gary Marshall	Superseded Report:		

Total Organic Carbon

Component	Method Code	QC 1245	QC 1297
Total Organic Carbon	TM132	98.17 89.40 : 103.09	97.72 89.40 : 103.09

Total Sulphate

Component	Method Code	QC 1235	QC 1273	QC 1292
Total Sulphate	TM221	102.27 78.49 : 121.51	103.79 78.49 : 121.51	99.24 78.49 : 121.51

VOC MS (S)

Component	Method Code	QC 1172	QC 1128
1,1,1,2-tetrachloroethane	TM116	101.0	95.6
		76.60 : 121.00	83.24 : 124.28
1,1,1-Trichloroethane	TM116	96.2	100.8
		77.80 : 123.40	81.77 : 121.07
1,1,2-Trichloroethane	TM116	90.6	100.4
		75.40 : 119.80	79.24 : 112.23
1,1-Dichloroethane	TM116	99.8	103.0
		80.84 : 124.49	72.58 : 116.06
1,2-Dichloroethane	TM116	104.8	118.8
		91.00 : 135.67	77.50 : 122.50
1,4-Dichlorobenzene	TM116	105.6	96.2
		80.88 : 114.60	73.23 : 116.39
2-Chlorotoluene	TM116	94.2	85.6
		74.00 : 117.20	69.22 : 110.64
4-Chlorotoluene	TM116	90.2	89.0
		71.20 : 113.20	68.57 : 106.26
Benzene	TM116	97.6	103.2
		79.60 : 125.20	84.33 : 124.27
Carbon Disulphide	TM116	99.4	110.4
		74.91 : 122.14	77.20 : 122.80
Carbontetrachloride	TM116	100.2	98.2
		76.80 : 121.20	84.20 : 119.90
Chlorobenzene	TM116	102.0	102.4
		83.47 : 116.82	85.28 : 129.96
Chloroform	TM116	98.4	108.2
	Thirds	82.00 : 128.80	82.73 : 119.72
Chloromethane	TM116	117.2	123.4
	Third	74.62 : 135.86	55.16 : 145.46
Cis-1,2-Dichloroethene	TM116	103.6	108.4
Diharana dhara	Third	81.20 : 128.00	73.56 : 118.93
Dibromomethane	TM116	88.4	104.4
Disklassestikes	Third	73.40 : 116.60	73.40 : 116.60
Dichloromethane	TM116	101.6	113.2
		86.60 : 137.00	76.16 : 121.98

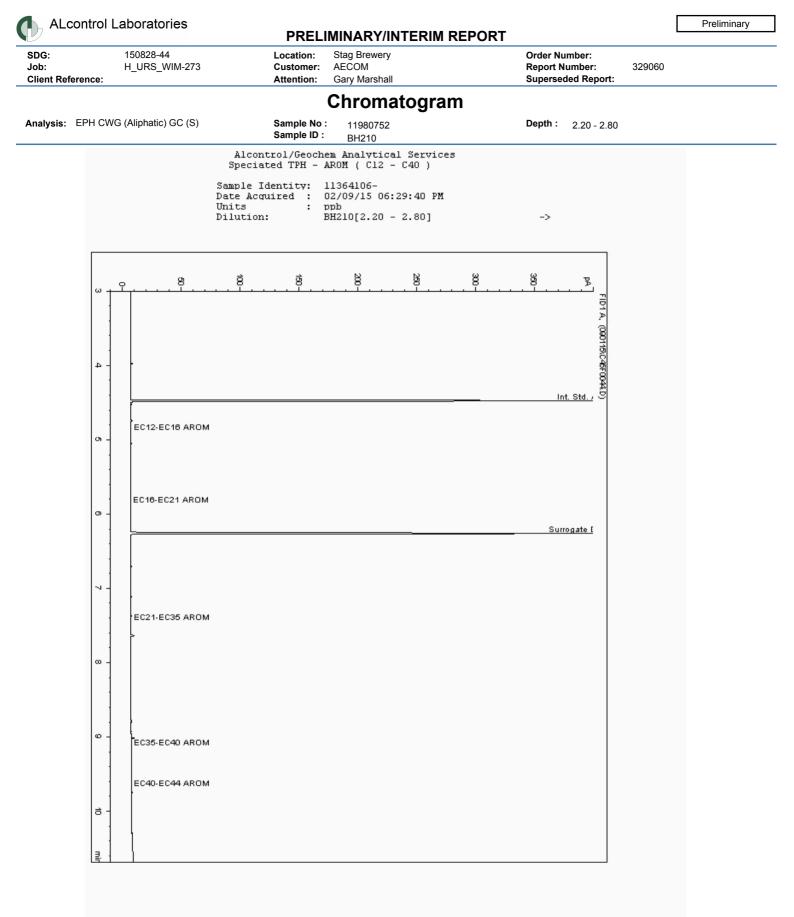
SDG: Job:	150828-44 H_URS_WIM-273	Location: Stag Brewery Customer: AECOM	Order Number: Report Number:	329060
Client Referer	nce:	Attention: Gary Marshall	Superseded Report:	
VOC MS (S)			

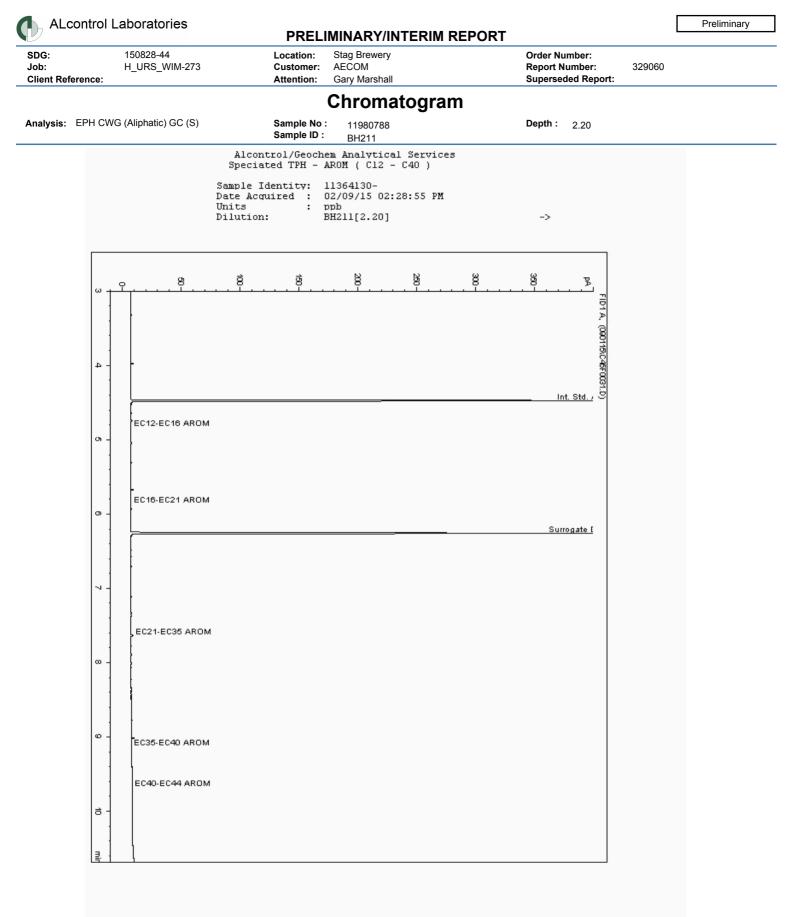
		QC 1172	QC 1128
Ethylbenzene	TM116	96.6 73.60 : 115.60	94.0 80.07 : 125.98
Hexachlorobutadiene	TM116	114.0 33.65 : 130.56	69.0 30.92 : 132.28
Isopropylbenzene	TM116	92.0 72.52 : 117.52	82.6 69.27 : 125.32
Naphthalene	TM116	107.0 83.23 : 126.48	110.0 79.15 : 121.98
o-Xylene	TM116	92.4 69.60 : 110.40	77.6 75.46 : 111.52
p/m-Xylene	TM116	94.1 71.30 : 112.70	90.2 76.97 : 121.75
Sec-Butylbenzene	TM116	116.4 59.20 : 125.20	69.6 49.27 : 129.90
Tetrachloroethene	TM116	104.6 85.92 : 127.92	102.2 87.96 : 133.65
Toluene	TM116	90.2 76.08 : 110.17	99.0 79.23 : 114.58
Trichloroethene	TM116	96.4 78.17 : 121.37	94.6 84.09 : 114.24
Trichlorofluoromethane	TM116	102.2 83.78 : 132.82	107.4 76.22 : 114.82
Vinyl Chloride	TM116	94.6 66.81 : 138.46	98.2 59.68 : 118.68

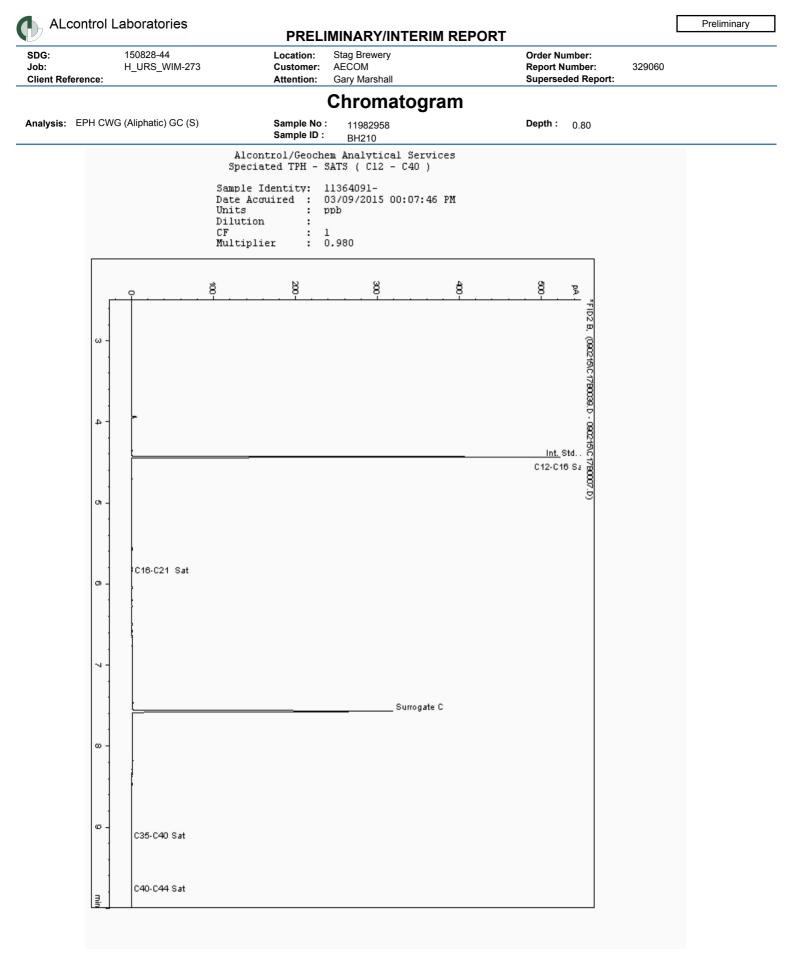
The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

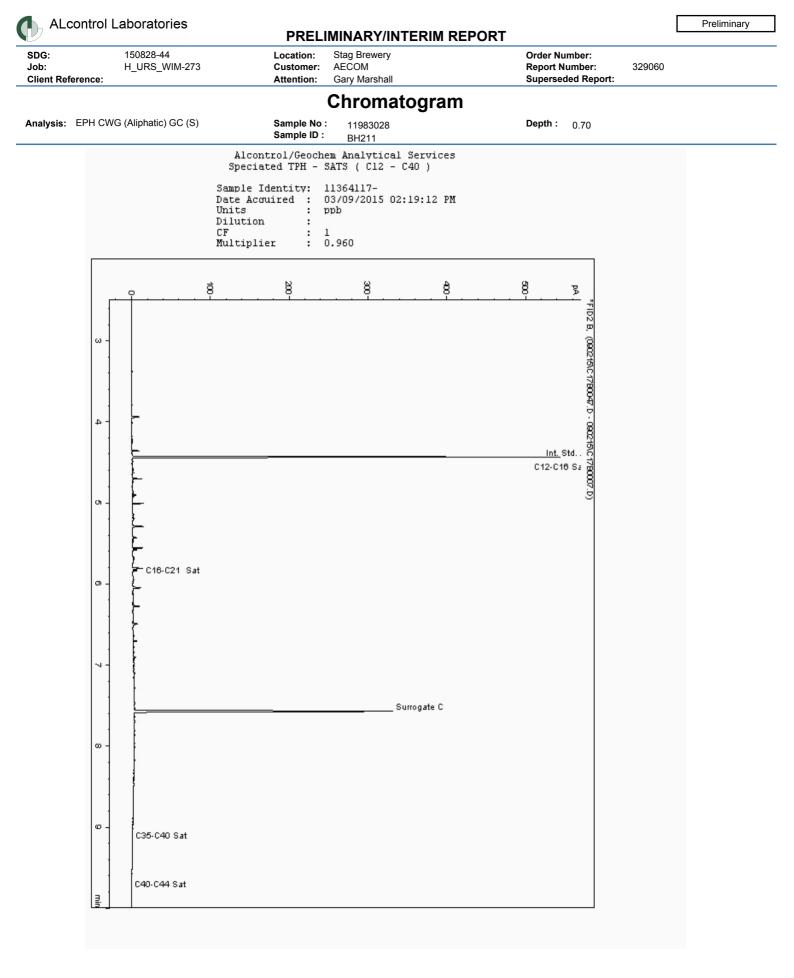
The figure detailed is the percentage recovery result for the AQC.

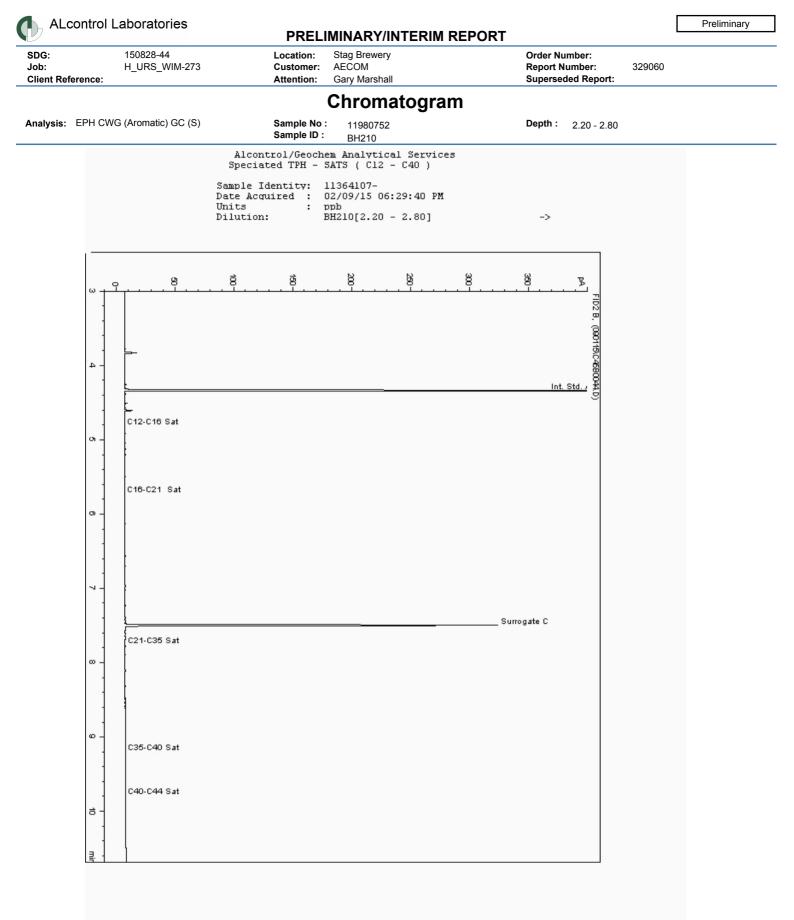
The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

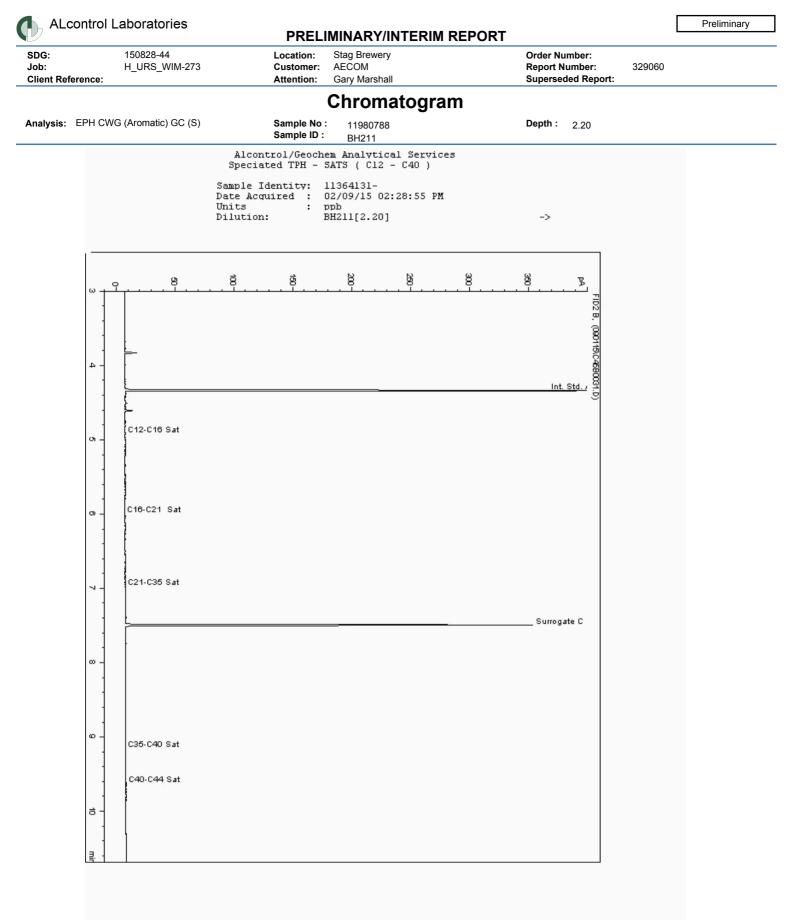


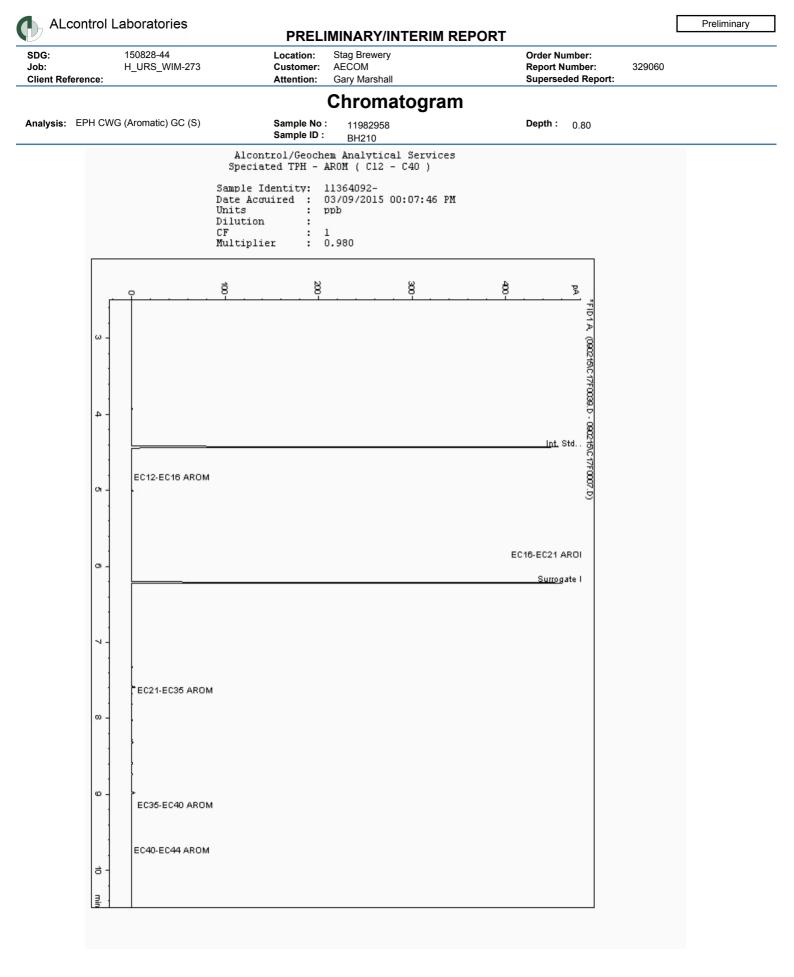


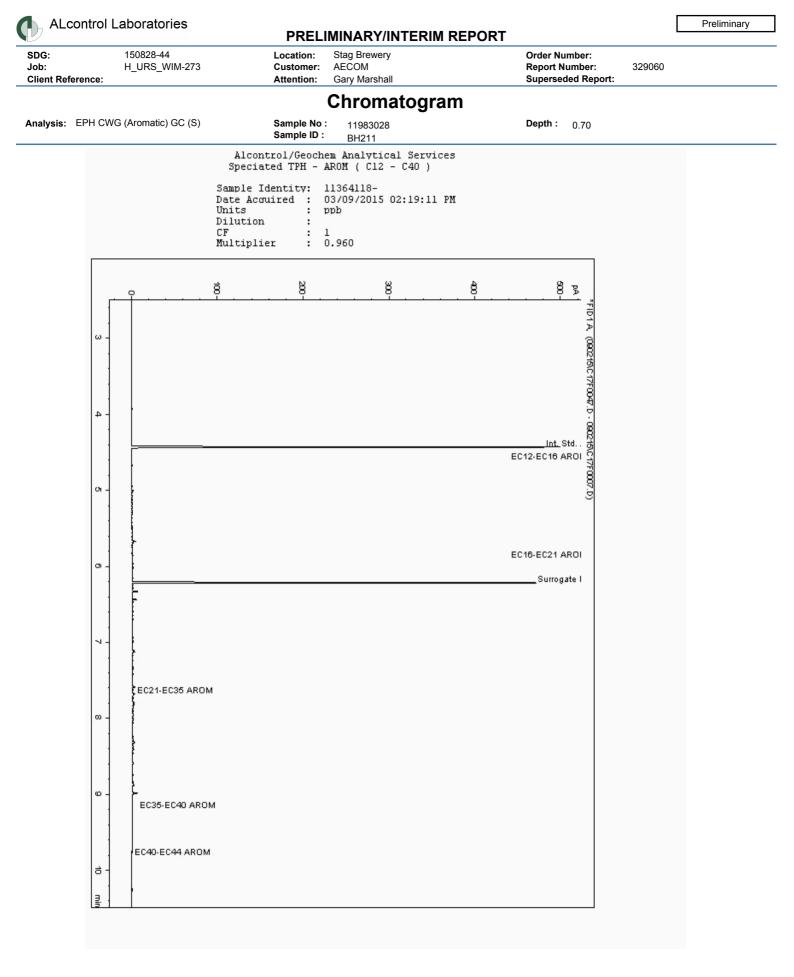


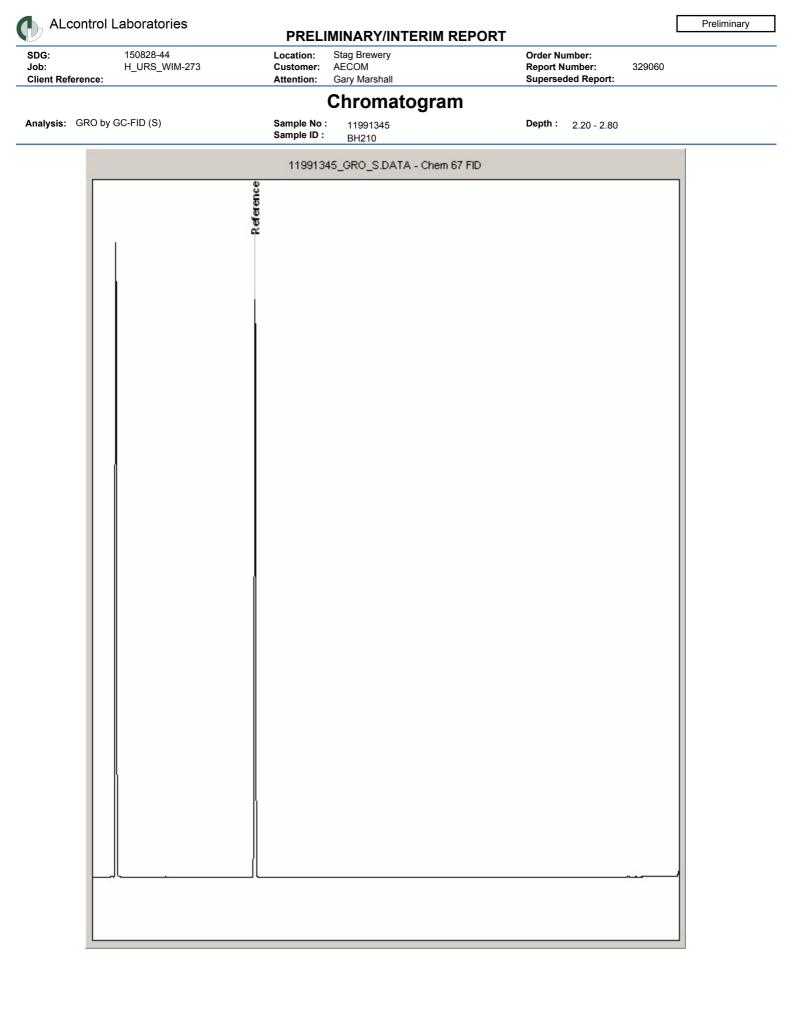


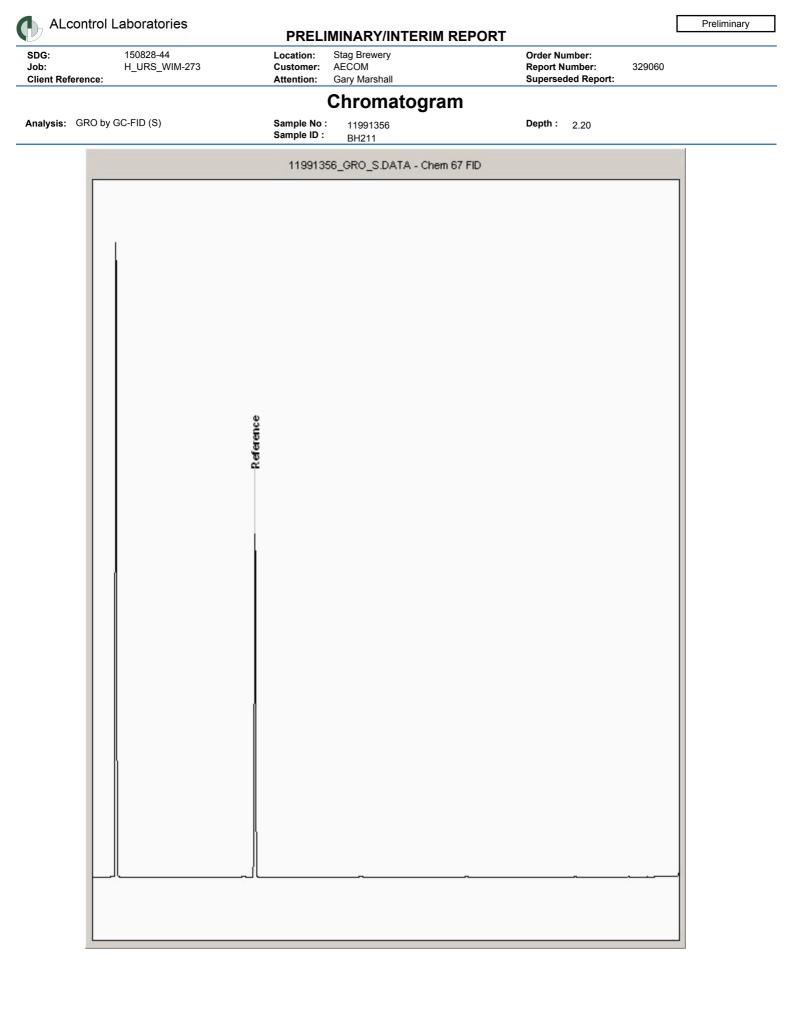




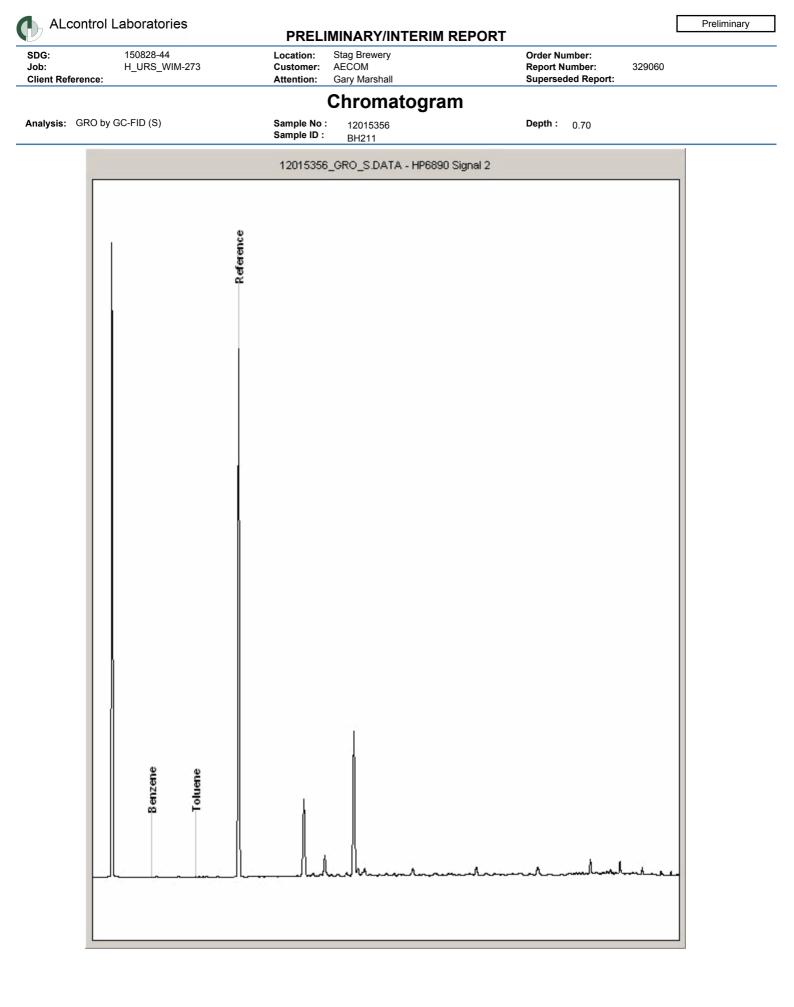








	Laboratories	PREL	MINARY/INTERIM F	REPORT		
G: : ent Reference:	150828-44 H_URS_WIM-273	Location: Customer: Attention:	Stag Brewery AECOM Gary Marshall	Order Number: Report Number: Superseded Report:	329060	
int Reference.						
lysis: GRO by	GC-FID (S)	Sample No	Chromatogran	Depth : 0.80		
		Sample ID :	BH210	Deptil 1 0.80		
		12006569	GRO_S.DATA - HP6850	Signal 1		
		ee				
		Reference				
		9 19 19				
		1				
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		l				
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PRELIMINARY/INTERIM REPORT

SDG:	150828-44	Location:	Stag Brewery
Job:	H_URS_WIM-273	Customer:	AECOM
Client Reference:		Attention:	Gary Marshall

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

12. Results relate only to the items tested

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.

19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute themajor part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

24. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Order Number: Report Number: Superseded Report:

329060

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	d/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
THIN LAYER CHROMATOGRAPHY	D&C	DOM	SOXTHERM	IATROSCAN
ELEMENTALSUPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLSBYGOMS	WET	DOM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE/ACETONE	ENDOVEREND	GCFD
EPH (MINOL)	D&C	HEXANEACETONE	END OVEREND	GCFD
EPH (CLEANED UP)	D&C	HEXANEACETONE	END OVER END	GCFD
EPH CWG BYGC	D&C	HEXANEACETONE	END OVEREND	GCFID
POB TOT / POB CON	D&C	HEXANEACETONE	ENDOWEREND	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MCROWAVE TM218.	GCMS
08-040(06-040)EZ FLASH	WET	HEXANEACETONE	SHAVER	GCEZ
POL VAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAVER	6CEZ
SEM VOLATILEORGANIC COMPOUNDS	WET	DOMAGETONE	SONICATE	GCMS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
EPH	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
EPHCMG	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
MNERALOIL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
POB 7 CONGENERS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
POB TOTAL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
SVOC	DOM	LIQUID'LIQUID SHAKE	GCMS
FREESULPHUR	DOM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DOM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DOM	LIQUID/LIQUID SHAKE	GCMS
PHENOLSMS	DOM	SOLID PHASE EXTRACTION	GCMS
TIH by INFRARED (IR)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERALOIL by IR	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT NJECTION	GCMS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysofile	WhiteAsbestos
Amoste	BrownAsbestos
Croddalte	Blue Asbestos
Fibrous Adindite	-
Fibrous Anthophylite	-
Fibrous Trendile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Preliminary

PRELIMINARY/INTERIM REPORT

SDG:	150828-44	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329060
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt . However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-lsopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

Container with Headspace provided for volatiles analysis
Incorrect container received
Deviation from method
Holding time exceeded before sample received
Samples exceeded holding time before presevation was performed
Sampled on date not provided
Sample holding time exceeded in laboratory
Sample holding time exceeded due to sampled on date
Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysofile	WhiteAsbestos
Amoste	BrownAsbestos
Orodolite	Blue Asbestos
Fibrous Adinate	-
Fibrous Anthophylite	-
Fibrous Trendile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than : - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



AECOM St. George's House 2nd Floor 5 St. George's Road Wimbledon Greater London SW19 4DR

Attention: Gary Marshall

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 09 September 2015 H_URS_WIM 150828-48

Stag Brewery 329008

We received 4 samples on Friday August 28, 2015 and 4 of these samples were scheduled for analysis which was completed on Wednesday September 09, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan Operations Manager



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CERTIFICATE OF ANALYSIS

Validated

 SDG:
 150828-48
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329008

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11977832	BH212		0.60	27/08/2015
11977833	BH212		1.80 - 2.50	27/08/2015
11977835	BH213		0.60	27/08/2015
11977837	BH213		1.70 - 2.00	27/08/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

SDG:	150828-48	Location	: Sta	ag Brev	very	
Job: Client Reference:	H_URS_WIM-273	Custome Attentior	er: AE	COM ary Mar		
SOLID						
Results Legend	Lab S	ample No(s)	11977832	11977833	11977835	11977837
X Test			22	33	5	37
No Determina	tion					
Possible		ustomer	BH212	BH212	BH213	BH213
	Samp	le Reference	12	12	33	ω
	AGS	Reference				
			0.60	1.80 - 2.50	0.60	1.70 -
	D	epth (m)	60	- 2.50	60	1.70 - 2.00
			60g 400 250g	60g 400	400 250	400 250
	с	ontainer	y Tub (Ambe	VOC (3 Tub (1 Ambe	y Tub (Ambe	y Tub (Ambe
			60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	ALE210 ALE214 r Jar (A	ALE21: ALE21: r Jar (A	ALE210 ALE214 r Jar (A
Ammonium Soil by Titration	n All	NDPs: 0	£ € 8	<u>د</u> ج	- 1	
		Tests: 4	x	x	x	x
Asbestos ID in Solid Samp	oles All	NDPs: 0 Tests: 2				
Easily Liberated Sulphide	All	NDPs: 0	X		×	
		Tests: 4	x	x	x	X
EPH CWG (Aliphatic) GC ((S) All	NDPs: 0 Tests: 4				
			x	x	x	x
EPH CWG (Aromatic) GC	(S) All	NDPs: 0 Tests: 4	x	x	X	x
GRO by GC-FID (S)	All	NDPs: 0	<u>^</u>	<u>^</u>	<u>^</u>	<u>^</u>
		Tests: 4	x	X	×	x
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 4				
			X	×	x	X
Metals in solid samples by	OES All	NDPs: 0 Tests: 4	X	X	x	X
PAH by GCMS	All	NDPs: 0	<u>^</u>	<u>^</u>	<u>^</u>	<mark>^</mark>
		Tests: 4	x	x	x	x
pН	All	NDPs: 0 Tests: 4				
Sample description	All	NDPs: 0	x	x	X	X
		Tests: 4	x	X	X	X
Total Organic Carbon	All	NDPs: 0				
		Tests: 4	x	x	x	x
Total Sulphate	All	NDPs: 0 Tests: 4				
TPH CWG GC (S)	All	NDPs: 0	x	x	x	x
	7 41	Tests: 4	X	X	X	X
VOC MS (S)	All	NDPs: 0				
		Tests: 4	x	X	X	x

CERTIFICATE OF ANALYSIS

Validated

SDG: Job: Client Reference:	150828-48 H_URS_WIM-273	Location: Customer: Attention:	Stag Brewery AECOM	Order Number: Report Number: Superseded Report:	329008
Client Reference.		Allention.	Gary Marshall	Superseueu Report.	

Sample Descriptions

Grain Sizes															
very fine	<0.06	3mm	fine	0.063mm - 0.1mm	m	edium	0.1mm	ı - 2mm	coar	se	2mm - 1	0mm	very coa	irse	>10mm
Lab Sample N	o(s)	Custome	er Sample Re	f. Depth (m)	1	Col	our	Descrip	tion	Gra	ain size	Incl	usions	Inclus	sions 2
11977832		I	BH212	0.60		Dark I	Brown	Sandy L	oam	0.1	- 2 mm	St	ones	No	one
11977833		I	BH212	1.80 - 2.50		Light I	Brown	Sano	ł	0.1	- 2 mm	St	ones	No	one
11977835		I	BH213	0.60		Dark I	Brown	Sandy C Loan	-	0.1	- 2 mm	St	ones		ulation ard
11977837		I	BH213	1.70 - 2.00		Light I	Brown	Sand	ł	0.1	- 2 mm	St	ones	No	one

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

Validated

Results Legend # ISO17025 accredited. M mCERTS accredited.	C	ustomer Sample R	BH212	BH212	BH213	BH213	
aq Aqueous / settled sample.		Depth (m)	0.60	1.80 - 2.50	0.60	1.70 - 2.00	
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
* Subcontracted test.		Date Sampled	27/08/2015	27/08/2015	27/08/2015	27/08/2015	
** % recovery of the surrogate stands check the efficiency of the method		Sampled Time	00:00:00	00:00:00 28/08/2015	00:00:00	00:00:00	
results of individual compounds w	ithin	Date Received SDG Ref	28/08/2015 150828-48	150828-48	28/08/2015 150828-48	28/08/2015 150828-48	
samples aren't corrected for the re (F) Trigger breach confirmed		Lab Sample No.(s)	11977832	11977833	11977835	11977837	
1-5&+§@ Sample deviation (see appendix)		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	7	5.7	17	6.5	
Exchangeable Ammonia	<15	TM024	18.2	<15	<15	<15	
as NH4 Organic Carbon, Total	mg/kg <0.2 %	TM132	M <0.2	M <0.2	M 2.07	M <0.2	
-			М	М	М	М	
рН	1 pH Units	TM133	8.95 M	7.72 M	8.04 M	7.84 M	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	<0.6	<0.6	
Sulphide, Easily liberated	<15	TM180	# <15	# <15	# <15	# <15	
	mg/kg	TN404	♦ #	♦#	♦ #	♦ #	
Arsenic	<0.6 mg/kg	TM181	19.2 M	18.8 M	19.1 M	19.1 M	
Cadmium	<0.02 mg/kg	TM181	1.44 M	0.393 M	0.547 M	0.389 M	
Chromium	<0.9	TM181	6.94	16.9	17.1	20.2	
Copper	mg/kg <1.4	TM181	13.9 M	M 4.3	M 29.6	M 6.42	
	mg/kg		Μ	М	М	М	
Lead	<0.7 mg/kg	TM181	271 M	5.92 M	2910 M	6.91 M	
Mercury	<0.14 mg/kg	TM181	<0.14 M	<0.14 M	<0.14 M	<0.14 M	
Nickel	<0.2	TM181	6.81	19.2	14.7	22	
Selenium	mg/kg <1 mg/kg	g TM181	M <1	M <1	M <1	M <1	
Zinc	<1.9	TM181	# 276	# 23.4	# 906	# 26.2	
	mg/kg		М	М	М	М	
Sulphate, Total	<48 mg/kg	TM221	1090 M	49.6 M	7440 M	80.7 M	
00.40.47.00/00/0045							

ALcontrol Lab	oratories		CER		ANALYSIS			Validated
	0828-48 _URS_WIM-2	73	Location: Customer:	Stag Brewery AECOM		Order Number: Report Number:	329008	
Client Reference:			Attention:	Gary Marshall		Superseded Report:		
PAH by GCMS								
Results Legend # ISO17025 accredited.		Customer Sample R	BH212	BH212	BH213	BH213		
M mCERTS accredited. aq Aqueous / settide sample. diss.filt Dissolved / filtered sample. tot.unfit Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate si check the efficiency of the me results of individual compoun samples aren't corrected for tt (F) Trigger breach confirmed	thod. The ds within	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s)	0.60 Soii/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977832	1.80 - 2.50 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977833	0.60 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977835	1.70 - 2.00 Soii/Solid 27/08/2015 00:00:00 28/08/2015 150828-48 11977837		
1-5&+§@ Sample deviation (see append		AGS Reference						
Component	LOD/Unit	s Method TM218	97.6	94.5	98.6	96.2		
Naphthalene-d8 % recovery**	70	111/12/10	97.0	94.5	90.0	90.2		
Acenaphthene-d10 % recovery**	%	TM218	94.2	90.6	95	92.2		
Phenanthrene-d10 % recovery**	%	TM218	91.1	87.3	91.2	89.6		
Chrysene-d12 % recovery**	%	TM218	91.4	77.2	90.4	79		
Perylene-d12 % recovery**	%	TM218	97.3	78.4	95.7	80.7		
Naphthalene	<9 µg/k		<9	<9 M	27.4 M N	<9 1 M		
Acenaphthylene	<12 μg/kg	TM218	20.5	<12 M	27.8 M N			
Acenaphthene	<8 µg/k	g TM218	<8	<8 M	15.9 M N	<8 1 M		
Fluorene	<10 µg/kg	TM218	<10	<10 M	12.1 M N	<10 1 M		
Phenanthrene	<15 µg/kg	TM218	218	<15 M	329 M N	<15 1 M		
Anthracene	<16 µg/kg	TM218	85.9	<16 M	71.8 M N	<16 1 M		
Fluoranthene	<17 µg/kg	TM218	1270	<17 M	820 M N	<17 1 M		
Pyrene	<15 µg/kg	TM218	975	<15 M	729 M N	<15 1 M		
Benz(a)anthracene	<14 µg/kg	TM218	927	<14 M	449 M N			
Chrysene	<10 µg/kg	TM218	908	<10 M	414 M N			
Benzo(b)fluoranthene	<15 µg/kg	TM218	1460	<15 M	588 M N			
Benzo(k)fluoranthene	<14 µg/kg	TM218	503	<14 M	255 M N			
Benzo(a)pyrene	<15 µg/kg	TM218	1050	<15 M	485 M N			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	668	<18 M	270 M N			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	195	<23 M	73.2 M N			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	755	<24 M	358 M M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	9030	<118	4920	<118		

SDG:	150828-48		Location:	Stag Brewery				Order Numbe	er:		
Job:	H_URS_WIM	-273	Customer:	AECOM				Report Numb	er:	329008	
Client Reference:			Attention:	Gary Marshall				Superseded	Report:		
PH CWG (S) Results Leg	end	Customer Sample R	BH212	BH212		BH213		BH213			
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sar diss.filt Dissolved / filtered sa	nple. mple.	Depth (m) Sample Type	0.60 Soil/Solid	1.80 - 2. Soil/Soli	50	0.60 Soil/Solid		1.70 - 2.00 Soil/Solid			
tot.unfilt Total / unfiltered sam Subcontracted test. ** % recovery of the sur check the efficiency of results of individual of	rogate standard to f the method. The ompounds within	Date Sample Type Date Sampled Sampled Time Date Received SDG Ref	27/08/2015 00:00:00 28/08/2015 150828-48	27/08/20 00:00:0 28/08/20 150828-4	15) 15	27/08/2015 00:00:00 28/08/2015 150828-48		27/08/2015 00:00:00 28/08/2015 150828-48			
Samples aren't correc (F) Trigger breach confir -5&+§@ Sample deviation (se	ned	Lab Sample No.(s)	11977832	1197783		11977835		11977837			
Component	LOD/U	AGS Reference nits Method									
GRO Surrogate % recovery**	%		114	127		76		110			
GRO TOT (Moisture Corrected)	<44 μg/k	g	<44	<44 M	М	<44	м	<44	м		
Methyl tertiary butyl e (MTBE)		-	<5	<5 M <10	М	<5	м	<5	м		
Benzene	<10 µg/k <2 µg	g	<10	×10 M <2	М	<10	м	<10	м		
		-		м	М		м		м		
Ethylbenzene m,p-Xylene	<3 µg <6 µg	Ĵ	<3	<3 M <6	М	<3	м	<3	м		
o-Xylene	<o td="" µg<=""><td></td><td><0</td><td>M <3</td><td>М</td><td><0</td><td>м</td><td><0</td><td>м</td><td></td><td></td></o>		<0	M <3	М	<0	м	<0	м		
		Ŭ	<3	<pre><3 M </pre>	М	<3	м	<3	м		
sum of detected mpo xylene by GC sum of detected BTE	<9 µg X by <24	Ŭ	<9	<9		<9 <24		<9			
GC	× by <24 μg/k <10	g	<10	<24		<10		<10			
Aliphatics >C5-C6 Aliphatics >C6-C8	μg/k <10	g	<10	<10		<10		<10			
Aliphatics >C8-C10	μg/k	g	<10	<10		<10		<10			
Aliphatics >C10-C12	μg/k	g	<10	<10		<10		<10			
Aliphatics >C12-C12	μg/k	g	<100	<100		<100		<100			
Aliphatics >C12-C10	μg/k	g	<100	<100		<100		<100			
Aliphatics >C21-C35	μg/k	g	<100	<100		6060		<100			
Aliphatics >C35-C44	μg/k <10	g	<100	<100		<100		<100			
Total Aliphatics >C12	µg/k	g	<100	<100		6060		<100			
Aromatics >EC5-EC7	µg/k	g	<100	<100		<10		<100			
Aromatics >EC5-EC7 Aromatics >EC7-EC8	µg/k	g	<10	<10		<10		<10			
Aromatics >EC7-EC8 Aromatics >EC8-EC1	µg/k	g	<10	<10		<10		<10			
Aromatics >EC10-EC	µg/k	g	<10	<10		<10		<10			
Aromatics >EC10-EC	µg/k	g	<10	<10		2150		<10			
Aromatics >EC16-EC	µg/k	g	496	<100		10600		<100			
Aromatics >EC21-EC	µg/k	g	490	<100		31100		<100			
Aromatics >EC35-EC	µg/k	g	<100	<100		10900		<100			
Aromatics >EC40-EC	µg/k	g	<100	<100		3970		<100			
Total Aromatics	μg/kg	g	5100	<100		54800		<100			
>EC12-EC44 Total Aliphatics &	μg/kg <10	g	5100	<100		60900		<100			
Aromatics >C5-C44	μg/k		5100	<100		00300		-100			
					1						

				CEF							
SDG: Job:	H_	0828-48 URS_WIM-2	273	Location: Customer:	AE	ag Brewery COM			Order Number: Report Number:	329008	
	Reference:			Attention:	Ga	ary Marshall			Superseded Report:		
OC MS	Results Legend		Customer Sample R	BH212		BH212	BH213		BH213		
M <i>m</i> Cl aq Aqu diss.filt Diss	017025 accredited. ERTS accredited. ueous / settled sample. solved / filtered sample.		Depth (m) Sample Type	0.60 Soil/Solid		1.80 - 2.50 Soil/Solid	0.60 Soil/Solid		1.70 - 2.00 Soil/Solid		
* Sub ** % re che resu sam	al / unfiltered sample. bcontracted test. recovery of the surrogate sta ack the efficiency of the mett ults of individual compound mples aren't corrected for th gger breach confirmed	hod. The Is within	Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s)	27/08/2015 00:00:00 28/08/2015 150828-48 11977832		27/08/2015 00:00:00 28/08/2015 150828-48 11977833	27/08/2015 00:00:00 28/08/2015 150828-48 11977835		27/08/2015 00:00:00 28/08/2015 150828-48 11977837		
	mple deviation (see appendi	-	AGS Reference								
Componen Dibromofl	iuoromethane**	LOD/Un %	its Method TM116	114		124	121		116		
Toluene-c	d8**	%	TM116	102		111	108		110		
4-Bromofl	luorobenzene**	%	TM116	94.1		105	85.4		104		
Dichlorod	lifluoromethane	<6 µg/	kg TM116	<6		<6	<6		<6		
Chlorome	ethane	<7 µg/	kg TM116	<7	<u>М</u>	M <7	<7	M	M		
Vinyl Chlo	oride	<6 µg/	kg TM116	<6	#	# <6 M	<6	#	======================================		
Bromome	ethane	<10 µg/kg	TM116	<10	M	M <10 M	<10	M	M <10 M		
Chloroeth	nane	40 μg/kg	TM116	<10	M	<10 M	<10	M	<10 M		
Trichlorof	luorormethane	<6 µg/		<6	м	<6 M	<6	M	<6 M		
1,1-Dichlo	oroethene	<10 µg/kg	TM116	<10	#	<10 #	<10	#	<10 #		
Carbon D	Disulphide	<7 µg/	kg TM116	<7	М	<7 M	<7	М	<7 M		
Dichlorom	nethane	<10 µg/kg		<10	#	<10 #	<10	#	<10 #		
-	ertiary Butyl Ether	<10 µg/kg		<10	М	<10 M	<10	М	<10 M		
	-Dichloroethene	<10 µg/kg		<10	М	<10 M	<10	М	<10 M		
	oroethane	<8 µg/		<8	М	<8 M	<8	М	<8 M		
	ichloroethene	<6 µg/		<6	М	<6 M <10	<6	М	<6 M <10		
	oropropane	<10 μg/kg <10	TM116 TM116	<10	М	<10 M <10	<10	М	<10 <u>M</u>		
		µg/kg		<10	М	М	<10	М	<10 M 		
Chlorofor		<8 µg/		<8	М	<8 M <7	<8	М	<8 M <7		
	chloroethane	<7 µg/	kg TM116 TM116	<7	М	<7 M <10	<7	М	<7 M <10		
	trachloride	<10 µg/kg <10		<10	М	<10 M <10	<10	М	<10 <u>M</u>		
	oroethane	μg/kg <5 μg/		<10	М	<10 M <5	<10	М	<10 M <5		
Benzene		<9 µg/	-	<9	М	<9 <9	<9	М	<5 M <9		
Trichloroe		<9 µg/		<9	М		<9	М	M		
	oropropane	<10	TM116	<10	#	# <10	<10	#	# <10		
Dibromon	nethane	μg/kg <9 μg/		<9	М	M <9	<9	М	M <9		
Bromodic	chloromethane	<7 µg/	kg TM116	<7	Μ	M <7	<7	M	M <7		
cis-1,3-Di	ichloropropene	<10	TM116	<10	M	M <10	<10	M	M <10		
Toluene		μg/kg <7 μg/		<7	M	M <7	<7	M	<7 M		
trans-1,3-	Dichloropropene	<10	TM116	<10	М	M <10	<10	M	M <10		
1,1,2-Tric	chloroethane	μg/kg <10 μg/kg	TM116	<10	М	<10 M	<10	М	<10 M		

CERTIFICATE OF ANALYSIS

Validated

SDG:	150828-48	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329008
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

VOC MS (S)

	Results Legend		0							1	
n n	# ISO17025 accredited.		Customer Sample R	BH212	BH212		BH213	BH213			
Internal Network Description Statistics in the second sec											
	tot.unfilt Total / unfiltered sample.										
Answer of Name											
Bit of additing register is a set of a set	/0 recovery of the surrogate star		•								
Improvementation Improvementation <thimprovementation< th=""> <thimprovementation< t<="" td=""><td>results of individual compounds</td><td>within</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></thimprovementation<></thimprovementation<>	results of individual compounds	within									
Interface Interface <thinterface< th=""> Interface <thinterface< th=""> Interface <thinterface< th=""> <thinterface< th=""> <thint< td=""><td></td><td>recovery</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></thint<></thinterface<></thinterface<></thinterface<></thinterface<>		recovery									
Component Outbody Number of the set of the											
1.3.Dectrosprogue											
N N M	· · ·			.7			.7				
Tandadocebrane 	1,3-Dichloropropane	µg/</td <td>кд пипть</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	кд пипть								
No. 1000No. 1000No. 10000No. 100000No. 1000000000000000000000000000000000000						М			M		
	Tetrachloroethene	<5 µg/	kg TM116	<5	<5		<5	<5			
up%g m <td></td> <td></td> <td></td> <td>M</td> <td></td> <td>M</td> <td></td> <td>M</td> <td>Μ</td> <td></td> <td></td>				M		M		M	Μ		
up%g m <td>Dibromochloromethane</td> <td><10</td> <td>TM116</td> <td><10</td> <td><10</td> <td></td> <td><10</td> <td><10</td> <td></td> <td></td> <td></td>	Dibromochloromethane	<10	TM116	<10	<10		<10	<10			
12-Diomenshame <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 <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 <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 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10		ua/ka		M		М		м	м		
up%gup%gup%gum	1.2 Dibromoethane										
	1,2-Dibioindetnane										
No. M		-				IVI			IVI		
1,1,2.7etrachlorophane <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 <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 <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 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10	Chlorobenzene	<5 µg/	kg IM116	<5	<5		<5	<5			
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				M		М		M	Μ		
Effylenzene <4 µghq TM110 <4 µ <4 µ <4 µ<	1,1,1,2-Tetrachloroethane	<10	TM116	<10	<10		<10	<10			
Effylenzene <4 µghq TM110 <4 µ <4 µ <4 µ<		µg/kg		M		М		М	М		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Ethylbenzene									1	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		· ۳9/	5			N.4			N.4		
y y y y y y y y y y	n/m Xulora	-10	TNAAAO			IVI			IVI	<u> </u>	┟────┤
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	рлп-луюне						<1U				
ypkg m M <td></td> <td>_</td> <td></td> <td></td> <td></td> <td>#</td> <td></td> <td></td> <td>#</td> <td></td> <td> </td>		_				#			#		
Styrene (-10) TM116 (-10)	o-Xylene										
μ g/kg μ g/kg μ g/kg μ m		-		M		Μ			Μ		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Styrene	<10	TM116	<10	<10		<10	<10			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		µg/kg		#	:	#		#	#		
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Bromoform	<10	TM116				<10				
$\begin{split} \text{isopropylbenzene} & <5 & <5 & <5 & <5 & <5 & <5 & <5 & <$				М		М		м	м		
1.1.2.2-Tetrachtoroethane μ </td <td>Isopropylbenzene</td> <td></td>	Isopropylbenzene										
1,1,2,2-Tetrachlorogethane <10 TM116 <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 <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 <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 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <1		νο μg/	ing initia			#			#		
up kg m M <td>1 1 2 2 Totrachlaraethana</td> <td><10</td> <td>TM116</td> <td></td> <td></td> <td>#</td> <td><10</td> <td></td> <td>#</td> <td></td> <td></td>	1 1 2 2 Totrachlaraethana	<10	TM116			#	<10		#		
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\mug/kg mg/kg <	1,2-Dichlorobenzene			<10	<10		<10	<10			
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ane $\mu g/kg$ M	1 2-Dibromo-3-chloroprop									1	
Tert-amyl methyl ether<10 µg/kgTM116<10 $\mu g/kg$ <10 $\#$ <						M			M		
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μg/kg μg/kg Image: Constraint of the state of the s						#			#	 	
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Naphthalene <13 TM116 <13 <13 <13 <13 <13	Hexachlorobutadiene			<20	<20		<20	<20			
	Naphthalene	<13	TM116	<13	<13		<13	<13			
		µg/kg				М			М		
				•						•	·

CERTIFICATE OF ANALYSIS

Validated

VOC MS (S)

VOC MS (S)							
Results Legend # ISO17025 accredited.	c	ustomer Sample R	BH212	BH212	BH213	BH213	
M mCERTS accredited. aq Aqueous / settled sample. diss.fit Dissolved / fittered sample. tot.unfit Total / unfittered sample. * % recovery of the surrogate stand. check the efficiency of the method results of individual compounds w	. The rithin	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref	0.60 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48	1.80 - 2.50 Soil/Solid 27/08/2015 00:00:00 28/08/2015 150828-48	0.60 Soil/Solid 27/08/2015 00:000 28/08/2015 150828-48	1.70 - 2.00 Soil/Solid 27/08/2015 00:000 28/08/2015 150828-48	
samples aren't corrected for the re (F) Trigger breach confirmed	covery	Lab Sample No.(s)	11977832	11977833	11977835	11977837	
1-5&+§@ Sample deviation (see appendix) Component	LOD/Units	AGS Reference Method					
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<20 #	<20 #	<20 #	<20 #	

CERTIFICATE OF ANALYSIS

Validated

SDG:	150828-48	Location:	Stag Brewerv	Order Number:
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number: 329008
Client Reference:		Attention:	Gary Marshall	Superseded Report:

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH212 0.60 SOLID 27/08/2015 00:00:00 29/08/2015 13:54:20 150828-48 11977832 TM048	03/09/2015	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH213 0.60 SOLID 27/08/2015 00:00:00 29/08/2015 13:59:40 150828-48 11977835 TM048	03/09/2015	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

 SDG:
 150828-48
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329008

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

CERTIFICATE OF ANALYSIS

 SDG:
 150828-48
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329008

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Test Completion Dates

				•
Lab Sample No(s)	11977832	11977833	11977835	11977837
Customer Sample Ref.	BH212	BH212	BH213	BH213
AGS Ref.				
Depth	0.60	1.80 - 2.50	0.60	1.70 - 2.00
Туре	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	08-Sep-2015	08-Sep-2015	09-Sep-2015	08-Sep-2015
Asbestos ID in Solid Samples	03-Sep-2015		03-Sep-2015	
Easily Liberated Sulphide	08-Sep-2015	07-Sep-2015	08-Sep-2015	08-Sep-2015
EPH CWG (Aliphatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
EPH CWG (Aromatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
GRO by GC-FID (S)	04-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015
Hexavalent Chromium (s)	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Metals in solid samples by OES	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015
PAH by GCMS	03-Sep-2015	03-Sep-2015	03-Sep-2015	03-Sep-2015
pН	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
Sample description	29-Aug-2015	28-Aug-2015	29-Aug-2015	28-Aug-2015
Total Organic Carbon	07-Sep-2015	03-Sep-2015	07-Sep-2015	03-Sep-2015
Total Sulphate	04-Sep-2015	07-Sep-2015	04-Sep-2015	07-Sep-2015
TPH CWG GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
VOC MS (S)	02-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015

06:10:17 09/09/2015

150828-48

H_URS_WIM-273

CERTIFICATE OF ANALYSIS

Location:Stag BreweryCustomer:AECOMAttention:Gary Marshall

Order Number: Report Number: 329008 Superseded Report:

ASSOCIATED AQC DATA

Ammonium Soil by Titration

SDG:

Job:

Client Reference:

Component	Method Code	QC 1292	QC 1205
Exchangeable	TM024	86.07	98.01
Ammonium as NH4		79.30 : 104.61	79.30 : 104.61

Easily Liberated Sulphide

Component	Method Code	QC 1262	QC 1219
Easily Liberated Sulphide	TM180	88.38 49.14 : 123.89	93.21 49.14 : 123.89

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1165	QC 1197
Total Aliphatics	TM173	97.92	92.08
>C12-C35		69.19 : 111.75	71.67 : 116.67

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1197
Total Aromatics >EC12-EC35	TM173	85.33 59.92 : 107.95

GRO by GC-FID (S)

Component	Method Code	QC 1100	QC 1232
component	Wethou Coue		QC 1232
Benzene by GC	TM089	110.0	104.0
(Moisture Corrected)		82.67 : 117.96	76.33 : 121.87
Ethylbenzene by GC	TM089	110.5	105.5
(Moisture Corrected)		80.45 : 118.61	75.73 : 123.83
m & p Xylene by GC	TM089	110.0	104.5
(Moisture Corrected)		79.25 : 119.43	75.52 : 120.32
MTBE GC-FID (Moisture	TM089	114.5	101.5
Corrected)		79.10 : 122.51	77.89 : 119.70
o Xylene by GC (Moisture	TM089	111.5	100.0
Corrected)		80.03 : 117.19	74.15 : 124.59
QC	TM089	102.79	101.18
		75.74 : 124.65	62.31 : 122.61
Toluene by GC (Moisture	TM089	110.5	101.0
Corrected)		82.06 : 117.54	77.91 : 122.33

CERTIFICATE OF ANALYSIS

150828-48 SDG: Location: Stag Brewery H_URS_WIM-273 AEČOM Customer: **Client Reference:** Attention: Gary Marshall

Order Number: 329008 Report Number: Superseded Report:

Hexavalent Chromium (s)

Job:

Component	Method Code	QC 1299	QC 1285
Hexavalent Chromium	TM151	100.0 92.20 : 106.60	102.0 92.20 : 106.60

Metals in solid samples by OES

Component	Method Code	QC 1235	QC 1206
Aluminium	TM181	98.46 86.49 : 129.71	99.23 86.49 : 129.71
Antimony	TM181	97.13 77.50 : 122.50	94.27 77.50 : 122.50
Arsenic	TM181	92.92 82.63 : 117.37	92.92 82.63 : 117.37
Barium	TM181	95.49 79.45 : 120.55	96.24 79.45 : 120.55
Beryllium	TM181	100.47 85.92 : 121.27	98.91 85.92 : 121.27
Boron	TM181	99.24 77.41 : 143.83	105.34 77.41 : 143.83
Cadmium	TM181	96.47 81.95 : 118.05	95.8 81.95 : 118.05
Chromium	TM181	93.73 81.29 : 118.71	93.33 81.29 : 118.71
Cobalt	TM181	96.5 83.86 : 116.14	95.83 83.86 : 116.14
Copper	TM181	99.46 78.57 : 121.43	97.7 78.57 : 121.43
Iron	TM181	97.24 87.50 : 122.82	95.86 87.50 : 122.82
Lead	TM181	94.09 74.18 : 117.25	93.7 74.18 : 117.25
Manganese	TM181	100.0 82.91 : 117.09	100.0 82.91 : 117.09
Mercury	TM181	92.46 81.99 : 118.01	94.3 81.99 : 118.01
Molybdenum	TM181	93.79 81.45 : 118.55	92.2 81.45 : 118.55
Nickel	TM181	95.93 79.64 : 120.36	95.93 79.64 : 120.36
Phosphorus	TM181	98.21 81.03 : 118.97	97.76 81.03 : 118.97
Selenium	TM181	108.21 87.05 : 121.93	105.3 87.05 : 121.93
Strontium	TM181	96.55 83.64 : 116.36	98.08 83.64 : 116.36
Thallium	TM181	88.72 77.50 : 122.50	87.56 77.50 : 122.50
Tin	TM181	92.69 78.30 : 113.98	92.03 78.30 : 113.98
Titanium	TM181	97.66 71.02 : 128.98	103.91 71.02 : 128.98

CERTIFICATE OF ANALYSIS

10					
SDG: Job:	150828-48 H_URS_WIM-273	Location: Customer:	Stag Brewery AECOM	Order Number: Report Number:	329008
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Metals in solid samples by OES

		QC 1235	QC 1206
Vanadium	TM181	93.53 86.61 : 113.39	93.53 86.61 : 113.39
Zinc	TM181	98.05 89.82 : 114.54	97.73 89.82 : 114.54

PAH by GCMS

Component	Method Code	QC 1154	QC 1196
Acenaphthene	TM218	92.0	89.5
		77.34 : 118.20	78.75 : 116.25
Acenaphthylene	TM218	86.5	85.5
		62.65 : 116.35	76.45 : 110.05
Anthracene	TM218	89.5	89.0
	714040	73.54 : 114.21	67.15 : 124.45
Benz(a)anthracene	TM218	102.5	97.5
	TM218	74.99 : 132.24	82.00 : 127.00
Benzo(a)pyrene	1 11/12 10	102.0 80.75 : 127.25	99.5 75.60 : 124.20
Benzo(b)fluoranthene	TM218		
Denzo(b)ndoranthene	1111210	99.5 75.84 : 127.12	99.0 81.20 : 121.77
Benzo(ghi)perylene	TM218		
		97.0 74.74 : 124.03	96.0 77.49 : 119.12
Benzo(k)fluoranthene	TM218	98.0	96.5
		80.00 : 125.00	83.50 : 116.50
Chrysene	TM218	98.0	95.5
		77.24 : 120.84	78.35 : 114.42
Dibenzo(ah)anthracene	TM218	96.5	95.0
		76.00 : 122.50	77.15 : 122.45
Fluoranthene	TM218	92.5	92.5
		78.51 : 118.75	79.08 : 114.40
Fluorene	TM218	93.0	91.5
	TMO40	76.95 : 117.18	79.03 : 113.38
Indeno(123cd)pyrene	TM218	98.5	96.5
Naabthalana	TM218	75.34 : 127.46	75.65 : 125.15
Naphthalene	111/210	95.0 76.24 : 112.91	92.5 77.25 : 112.60
Phenanthrene	TM218		
ritenantinene	101210	93.5 76.49 : 119.30	92.0 78.25 : 115.44
Pyrene	TM218	91.0	91.0
		78.25 : 118.17	78.07 : 114.06

рH

Component	Method Code	QC 1218	QC 1227
рН	TM133	100.25 97.19 : 102.81	100.5 97.19 : 102.81

Total Organic Carbon

CERTIFICATE OF ANALYSIS

SDG:	150828-48	Location:	Stag Brewery	Order Number:	20000
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number: 3	329008
Client Reference:		Attention:	Gary Marshall	Superseded Report:	
					-

Total Organic Carbon

Component	Method Code	QC 1254	QC 1297
Total Organic Carb	on TM132	100.46 88.82 : 111.18	97.72 89.40 : 103.09

Total Sulphate

	Component	Method Code	QC 1235	QC 1273
Γ	Total Sulphate	TM221	102.27 78.49 : 121.51	103.79 78.49 : 121.51

VOC MS (S)

Component	Method Code	QC 1172	QC 1128
1,1,1,2-tetrachloroethane	TM116	101.0	95.6
		76.60 : 121.00	83.24 : 124.28
1,1,1-Trichloroethane	TM116	96.2	100.8
		77.80 : 123.40	81.77 : 121.07
1,1,2-Trichloroethane	TM116	90.6	100.4
		75.40 : 119.80	79.24 : 112.23
1,1-Dichloroethane	TM116	99.8	103.0
		80.84 : 124.49	72.58 : 116.06
1,2-Dichloroethane	TM116	104.8	118.8
		91.00 : 135.67	77.50 : 122.50
1,4-Dichlorobenzene	TM116	105.6	96.2
		80.88 : 114.60	73.23 : 116.39
2-Chlorotoluene	TM116	94.2	85.6
		74.00 : 117.20	69.22 : 110.64
4-Chlorotoluene	TM116	90.2	89.0
		71.20 : 113.20	68.57 : 106.26
Benzene	TM116	97.6	103.2
		79.60 : 125.20	84.33 : 124.27
Carbon Disulphide	TM116	99.4	110.4
		74.91 : 122.14	77.20 : 122.80
Carbontetrachloride	TM116	100.2	98.2
		76.80 : 121.20	84.20 : 119.90
Chlorobenzene	TM116	102.0	102.4
		83.47 : 116.82	85.28 : 129.96
Chloroform	TM116	98.4	108.2
		82.00 : 128.80	82.73 : 119.72
Chloromethane	TM116	117.2	123.4
		74.62 : 135.86	55.16 : 145.46
Cis-1,2-Dichloroethene	TM116	103.6	108.4
		81.20 : 128.00	73.56 : 118.93
Dibromomethane	TM116	88.4	104.4
		73.40 : 116.60	73.40 : 116.60
Dichloromethane	TM116	101.6	113.2
		86.60 : 137.00	76.16 : 121.98

CERTIFICATE OF ANALYSIS

				. 1 515
SDG:	150828-48	Location:	Stag Brewery	Order Numb
Job:	H_URS_WIM-273	Customer:	AECOM	Report Num
Client Referen	ice:	Attention:	Gary Marshall	Superseded
VOC MS (S))			

der Number: port Number: 329008 perseded Report:

		QC 1172	QC 1128
Ethylbenzene	TM116	96.6 73.60 : 115.60	94.0 80.07 : 125.98
Hexachlorobutadiene	TM116	114.0 33.65 : 130.56	69.0 30.92 : 132.28
Isopropylbenzene	TM116	92.0 72.52 : 117.52	82.6 69.27 : 125.32
Naphthalene	TM116	107.0 83.23 : 126.48	110.0 79.15 : 121.98
o-Xylene	TM116	92.4 69.60 : 110.40	77.6 75.46 : 111.52
p/m-Xylene	TM116	94.1 71.30 : 112.70	90.2 76.97 : 121.75
Sec-Butylbenzene	TM116	116.4 59.20 : 125.20	69.6 49.27 : 129.90
Tetrachloroethene	TM116	104.6 85.92 : 127.92	102.2 87.96 : 133.65
Toluene	TM116	90.2 76.08 : 110.17	99.0 79.23 : 114.58
Trichloroethene	TM116	96.4 78.17 : 121.37	94.6 84.09 : 114.24
Trichlorofluoromethane	TM116	102.2 83.78 : 132.82	107.4 76.22 : 114.82
Vinyl Chloride	TM116	94.6	98.2

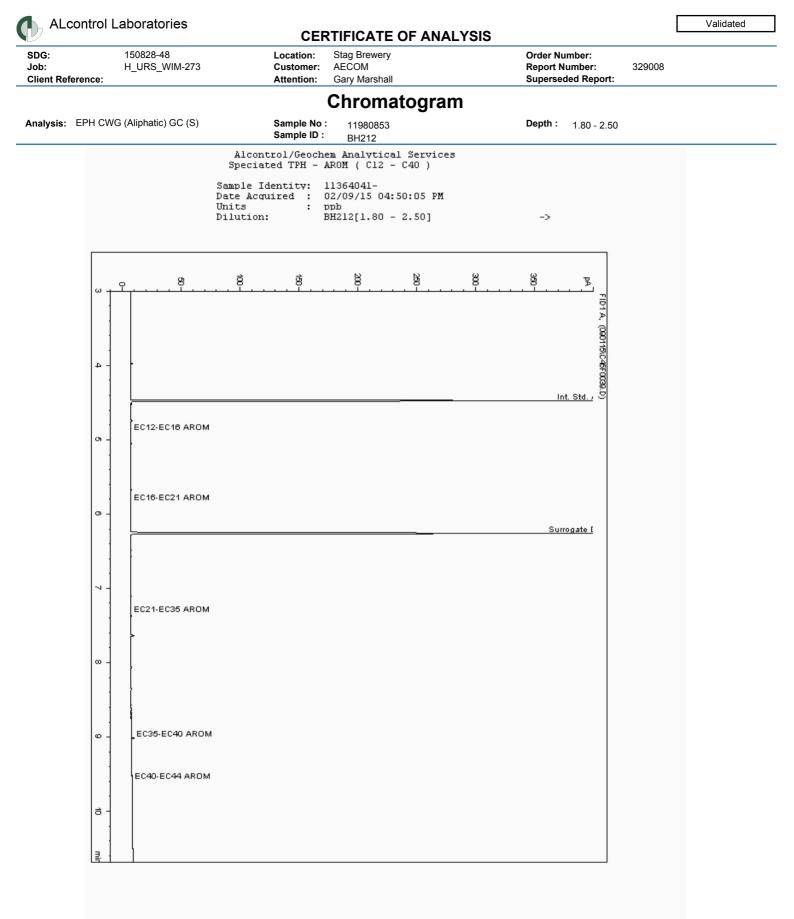
The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

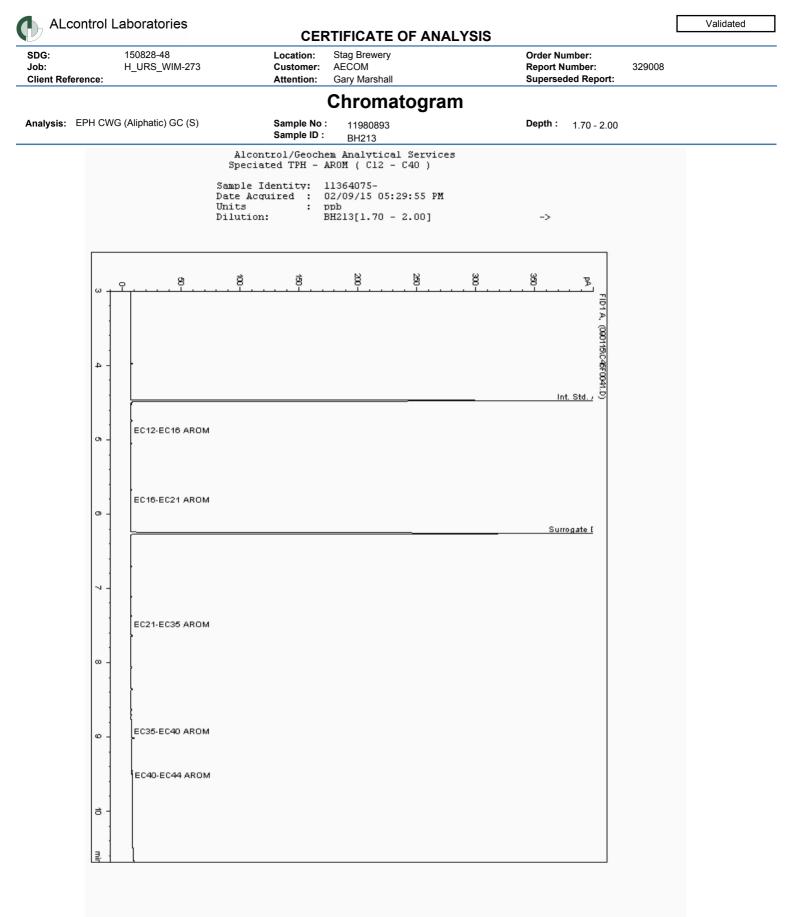
59.68 : 118.68

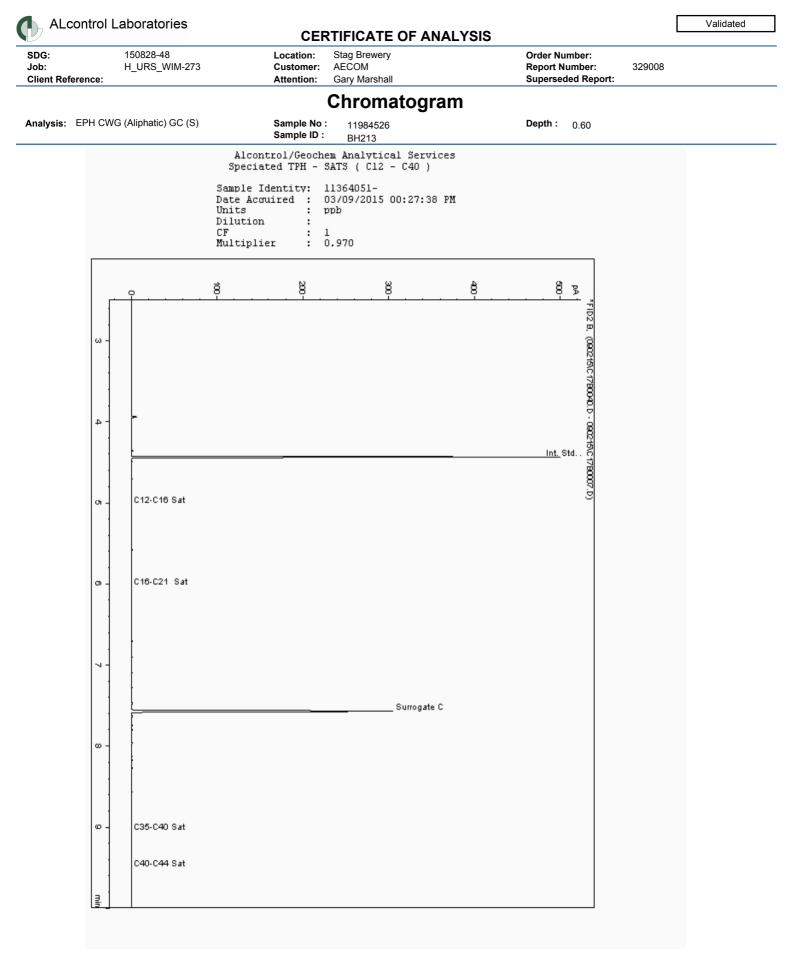
The figure detailed is the percentage recovery result for the AQC.

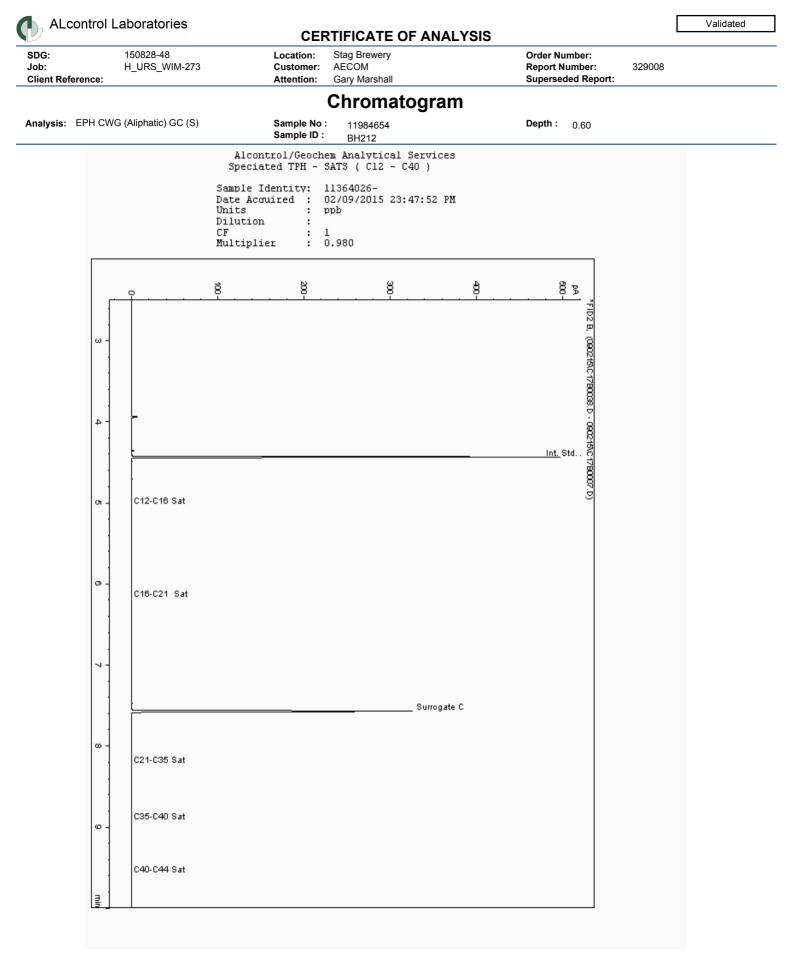
66.81 : 138.46

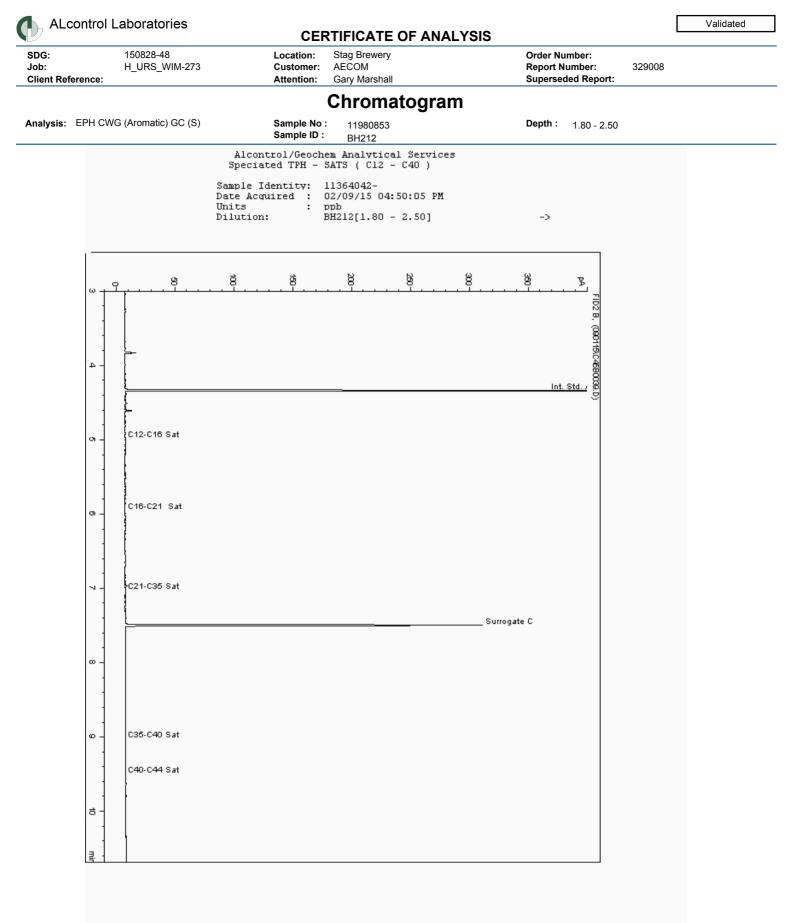
The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

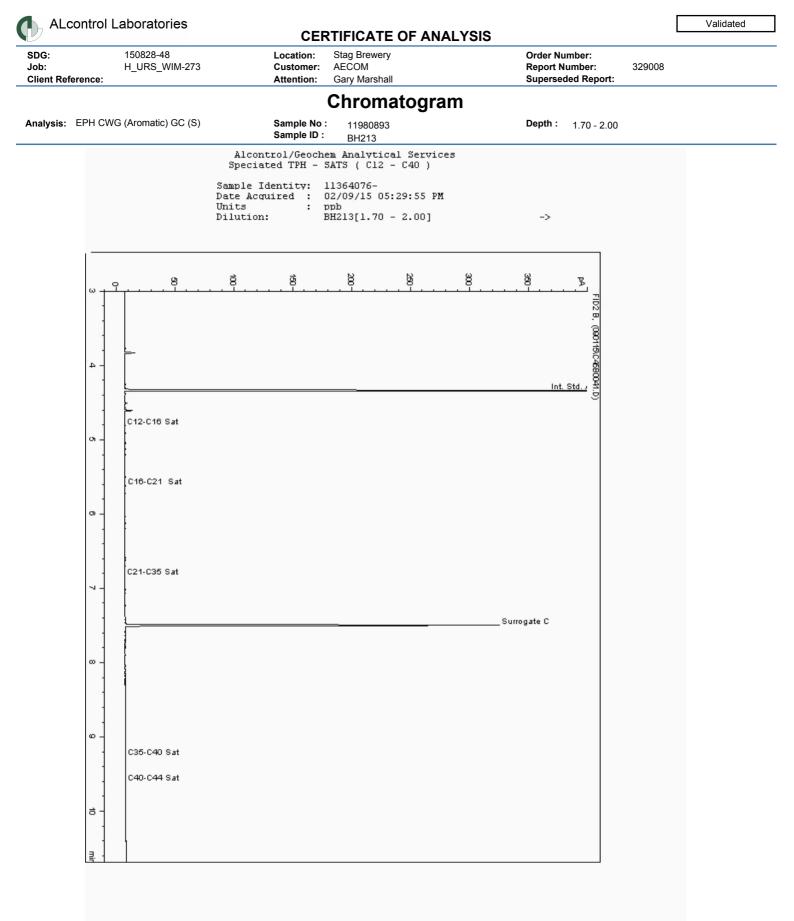


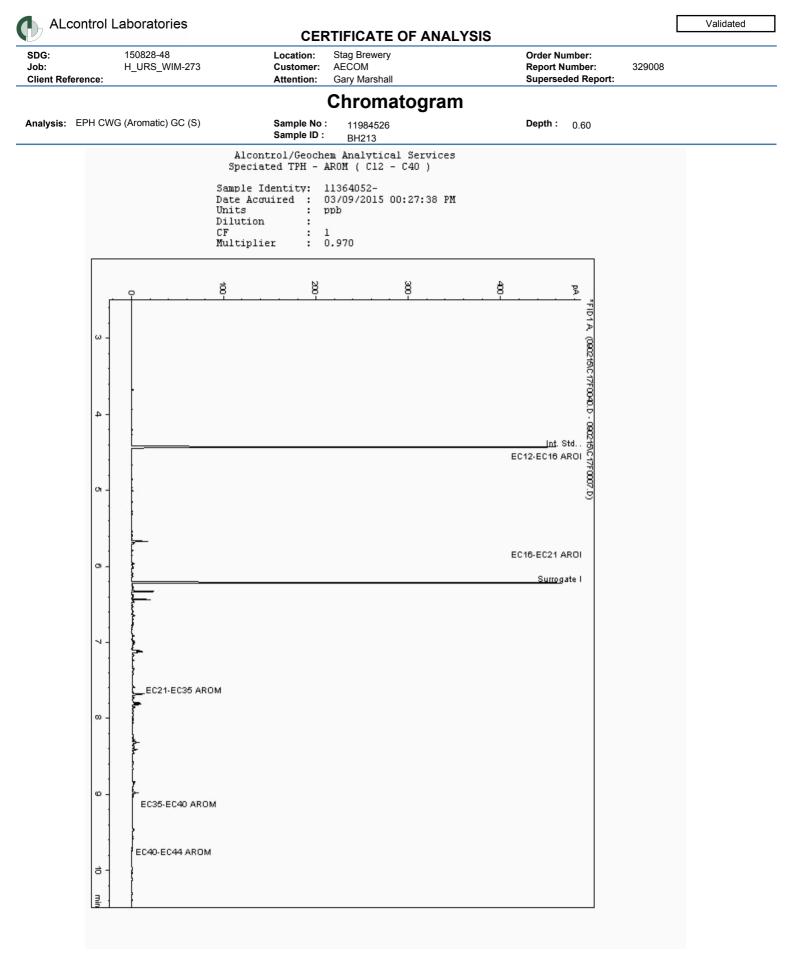


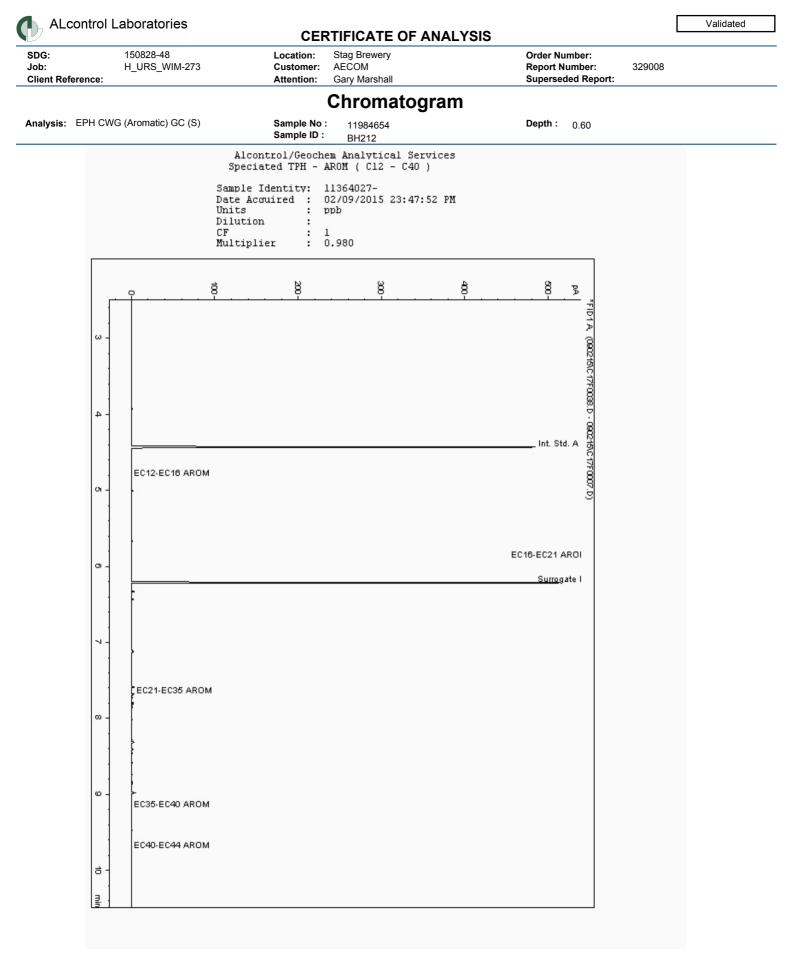


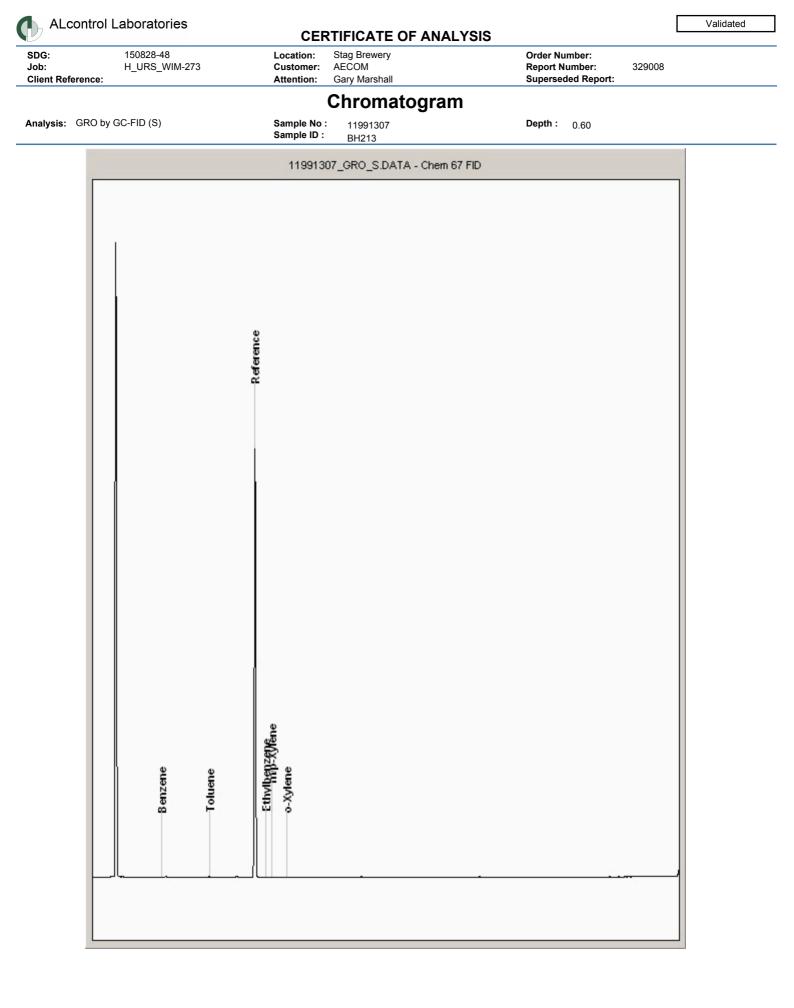


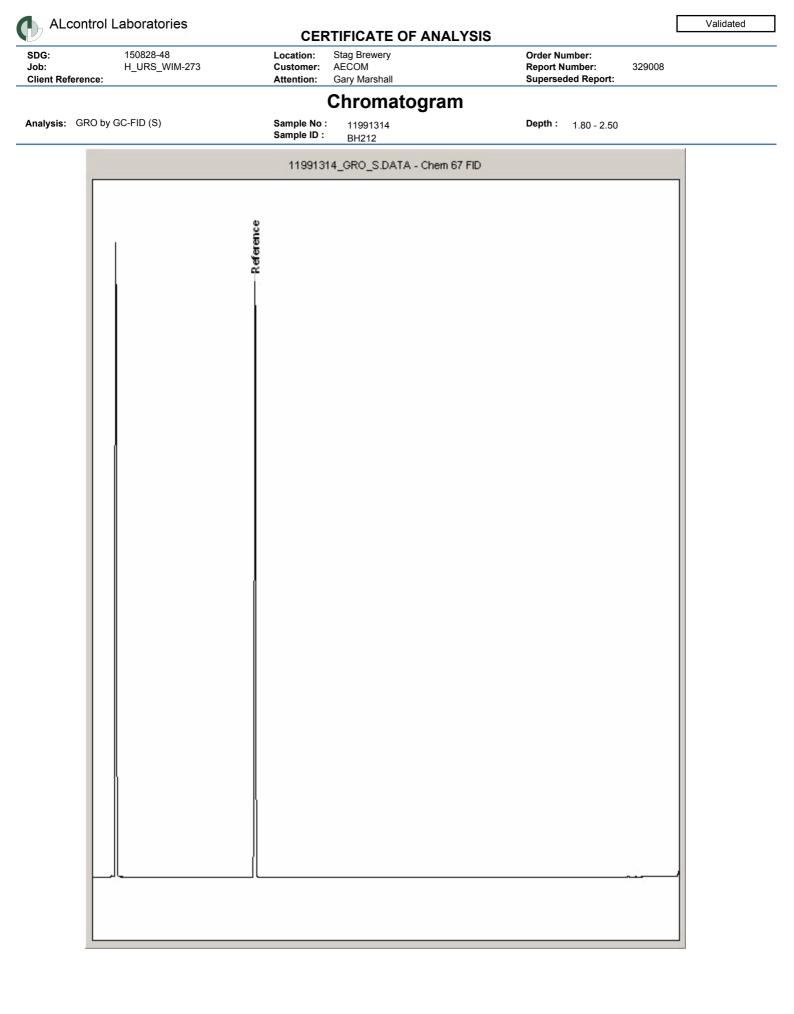


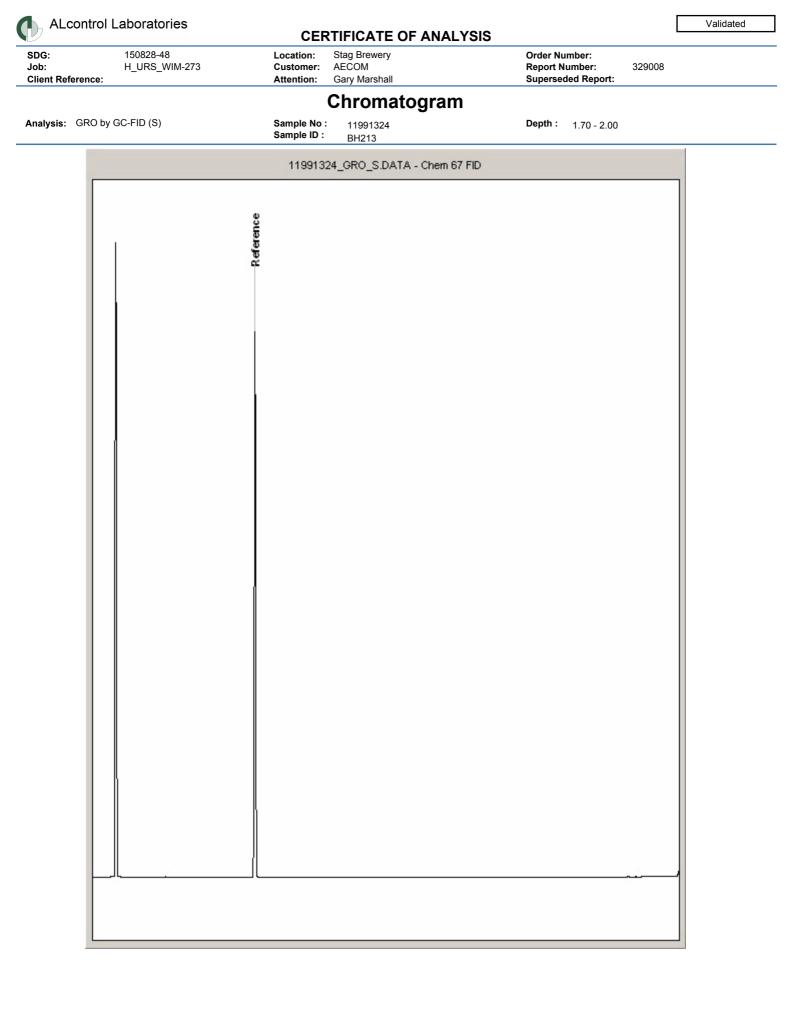


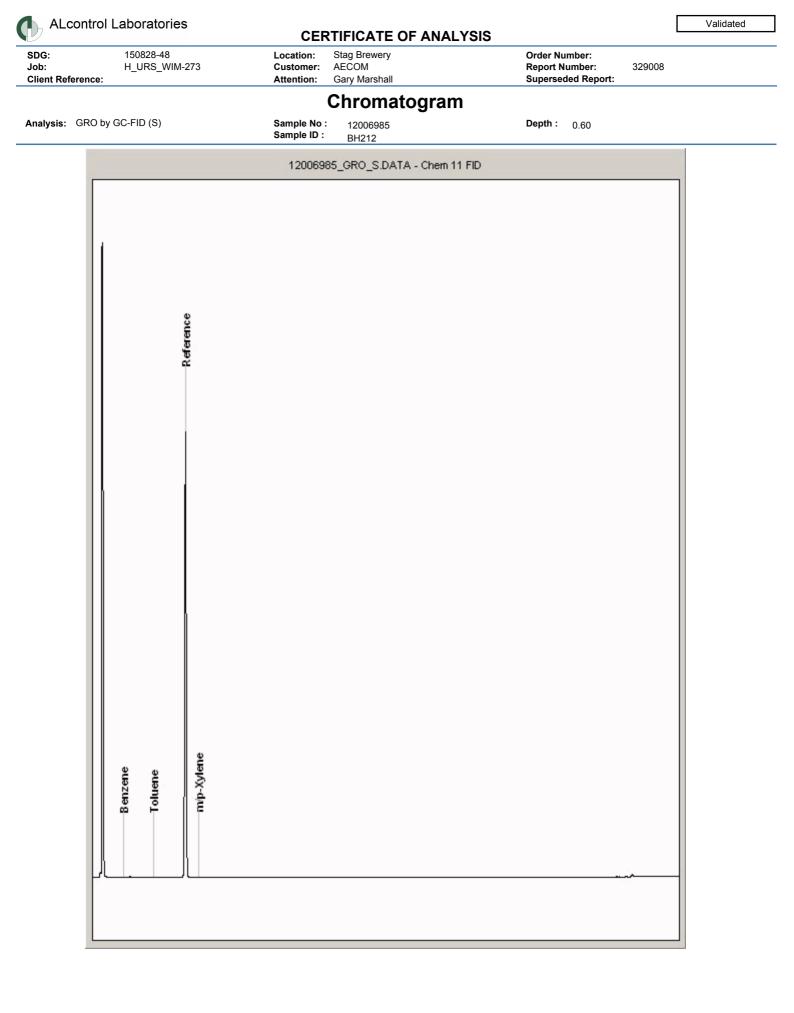












CERTIFICATE OF ANALYSIS

SDG:	150828-48	Location:	Stag Brewery
Job:	H_URS_WIM-273	Customer:	AECOM
Client Reference:		Attention:	Gary Marshall

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

12. Results relate only to the items tested

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.

19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute themajor part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

24. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Order Number: Report Number: Superseded Report:

SOLID MATRICES EXTRACTION SUMMARY

329008

ANALYSIS	d/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVMETRIC
THIN LAYER CHROMATOGRAPHY	D&C	DOM	SOXTHERM	ATROSCAN
ELEMENTALSULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLSBYGONS	WET	DOM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS
EPH (DRO)	D&C	HEXANEACETONE	ENDOVEREND	GCFD
EPH (MINOL)	D&C	HEXANEACETONE	END OVEREND	GCFD
EPH (OLEANED UP)	D&C	HEXANEACETONE	END OVEREND	GCFD
EPH CWG BYGC	D&C	HEXANEACETONE	END OVER END	GCFD
POB TOT / POB CON	D&C	HEXANEACETONE	ENDOWEREND	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MCROWAVE TM218.	GCMS
08-040(06-040)EZ FLASH	WET	HEXANEACETONE	SHAVER	GCEZ
POL VAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAVER	0CEZ
SEM VOLATILEORGANIC COMPOUNDS	WET	DOMAGETONE	SONICATE	GCMS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSS
PAHMS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
BH	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
EPHCWG	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
MNERALOIL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
PCB 7 CONGENERS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
PCB TOTAL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
SVOC	DOM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DOM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DOM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DOM	LIQUID/LIQUID SHAKE	GCMS
PHENOLSMS	DOM	SOLID PHASE EXTRACTION	GCMS
TIH by INFRARED (IR)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERALOIL by IR	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT NJECTION	GCMS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysofile	WhiteAsbestos
Amoste	BrownAsbestos
Croddalte	Blue Asbestos
Fibrous Adindite	-
Fibrous Anthophylite	-
Fibrous Trendile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

CERTIFICATE OF ANALYSIS

SDG:	150828-48	Location:	Stag Brewery	Order Number:
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number: 329008
Client Reference:		Attention:	Gary Marshall	Superseded Report:

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt . However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-lsopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysolie	WhiteAsbestos
Amoste	BrownAsbestos
Croddalte	Blue Asbestos
Fibrous Adinate	-
Fibrous Anthophylite	-
Fibrous Trendile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than : - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



AECOM St. George's House 2nd Floor 5 St. George's Road Wimbledon Greater London SW19 4DR

Attention: Gary Marshall

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 09 September 2015 H_URS_WIM 150828-57

Stag Brewery 329023

We received 5 samples on Friday August 28, 2015 and 4 of these samples were scheduled for analysis which was completed on Wednesday September 09, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan Operations Manager



CERTIFICATE OF ANALYSIS

Validated

•		ULI.			
SDG:	150828-57	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329023
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Received Sample Overview

Lab Sample No(s) 11978081	Customer Sample Ref. BH8A	AGS Ref.	Depth (m) 0.50	Sampled Date 26/08/2015
11978082	BH8A		0.90	26/08/2015
11978083	BH8A		3.00 - 3.50	26/08/2015
11978079	BH9A		0.50	26/08/2015
11978080	BH9A		2.20 - 3.30	26/08/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol Laboratories								Validated		
SDG: 15082 Job: H_UF Client Reference:	28-57 RS_WIM-273	Location: Custome Attention	r: AE	ag Brew COM Iry Mars	ery			Order Number: Report Number: Superseded Report:	329023	
SOLID Results Legend X Test	Lab Sample	No(s)	11978081	11978083	11978079	11978080				
No Determination Possible	Custom Sample Refe		BH8A	BH8A	ВН9А	BH9A				
	AGS Refer	ence								
	Depth (r		0.50	.50	0.50	.30				
	Contain	er	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (AL				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 4	×	×	x	x				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2	×		x					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 4	x	×	x	×				
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 4	x	×	x	x				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 4	x	x	x	x				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 4	x	x	x	x				
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 4	x	x	x	x				
Metals in solid samples by OES	All	NDPs: 0 Tests: 4	x	x	x	x				
PAH by GCMS	All	NDPs: 0 Tests: 4	x	x	x	x				
Н	All	NDPs: 0 Tests: 4	x	x	x	x				
Sample description	All	NDPs: 0 Tests: 4	x	x	x	x				
Fotal Organic Carbon	All	NDPs: 0 Tests: 4	x	x	x	x				
Total Sulphate	All	NDPs: 0 Tests: 4	x	x	x	x				
TPH CWG GC (S)	All	NDPs: 0 Tests: 4	x	×	x	x				
VOC MS (S)	All	NDPs: 0 Tests: 4	x	x	x	x				

CERTIFICATE OF ANALYSIS

Validated

SDG:	150828-57	Location:	Stag Brewery	Order Number:	329023
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Sample Descriptions

Grain Sizes											
very fine	<0.063mm	fine	0.063mm - 0.1mm	med	dium 0.1mm	ı - 2mm	coarse	2mm - 1	0mm	very coar	se >10mm
Lab Sample No(s) Custon	ner Sample Ro	ef. Depth (m)		Colour	Descript	tion	Grain size	Incl	usions	Inclusions 2
11978081		BH8A	0.50		Black	Sand	l	0.1 - 2 mm	Ste	ones	None
11978083		BH8A	3.00 - 3.50		Light Brown	Sand		0.1 - 2 mm	Ste	ones	None
11978079		BH9A	0.50		Light Brown	Sand		0.1 - 2 mm	Ste	ones	None
11978080		BH9A	2.20 - 3.30		Dark Brown	Sandy C Loarr		0.1 - 2 mm	Ste	ones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

Validated

Results Legend	(Customer Sample R	BH8A	BH8A	BH9A	BH9A	
# ISO17025 accredited. M mCERTS accredited.							
aq Aqueous / settled sample.		Depth (m)	0.50	3.00 - 3.50	0.50	2.20 - 3.30	
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
* Subcontracted test.		Date Sampled	26/08/2015	26/08/2015	26/08/2015	26/08/2015	
** % recovery of the surrogate standa check the efficiency of the method		Sampled Time Date Received	. 28/08/2015	28/08/2015	. 28/08/2015	28/08/2015	
results of individual compounds w samples aren't corrected for the re		SDG Ref	150828-57	150828-57	150828-57	150828-57	
(F) Trigger breach confirmed	covery	Lab Sample No.(s)	11978081	11978083	11978079	11978080	
1-5&+§@ Sample deviation (see appendix)		AGS Reference					
Component	LOD/Units						
Moisture Content Ratio (%	%	PM024	17	9.5	7.3	14	
of as received sample)							
Exchangeable Ammonia	<15	TM024	<15	18.4	<15	71.4	
as NH4	mg/kg		М	М	Μ	М	
Organic Carbon, Total	<0.2 %	TM132	19.1	<0.2	<0.2	0.443	
			М	М	М	М	
рН	1 pH	TM133	8.38	7.66	10.2	11.2	
	Units		М	м	М	М	
Chromium, Hexavalent	<0.6	TM151	<0.6	<0.6	<0.6	<0.6	
	mg/kg		40.0	40.0	40.0	40.0	
Sulphide, Easily liberated	<15	TM180	40.4	# <15	<15	252	
Calphice, Lasily interated	mg/kg						
Arsonic	<0.6	TM181	♦ # 13.7	♦# 14.7	♦ # 16.5	♦ # 15.5	
Arsenic		11/1101					
	mg/kg	TMAC	M	M	M	M	
Cadmium	< 0.02	TM181	0.344	0.338	0.395	0.378	
	mg/kg		M	M	M	M	
Chromium	<0.9	TM181	13.9	19.1	18.9	21.1	
	mg/kg		M	M	M	M	
Copper	<1.4	TM181	80.7	5.98	8.36	12	
	mg/kg		M	M	M	M	
Lead	<0.7	TM181	41.4	6.89	12.4	23.7	
	mg/kg		М	М	М	М	
Mercury	<0.14	TM181	<0.14	<0.14	<0.14	<0.14	
-	mg/kg		М	м	М	М	
Nickel	< 0.2	TM181	37.6	18.8	23.6	20.7	
	mg/kg		М	М	М	М	
Selenium	<1 mg/k	g TM181	<1	<1	<1	<1	
Celeman	st ing/it	g	#	#	#	#	
Zinc	<1.9	TM181	24.4	25.5	34.5	62.4	
ZIIIC	mg/kg	11/1101					
Sulphoto Total	<48	TM221	M 775	M 80.9	M 212	M 1040	
Sulphate, Total	~40 mg/kg	1 10122 1					
	тіу/ку		M	M	M	M	
				7			

SDG: Job:		60828-57 _URS_WIM-2	273	Location: Customer:	AEC				Order Number: Report Number		329023	
Client Ref				Attention:	Gary	y Marshall			Superseded Re	port:		
PAH by G	CMS Results Legend		Customer Sample R	BH8A		BH8A		BH9A	BH9A			
M mCER	025 accredited. TS accredited. us / settled sample.											
diss.filt Dissol tot.unfilt Total / * Subco	ved / filtered sample. unfiltered sample. ntracted test.		Depth (m) Sample Type Date Sampled	0.50 Soil/Solid 26/08/2015		3.00 - 3.50 Soil/Solid 26/08/2015		0.50 Soil/Solid 26/08/2015	2.20 - 3.30 Soil/Solid 26/08/2015			
check	overy of the surrogate s the efficiency of the me s of individual compoun	thod. The	Sampled Time Date Received	28/08/2015		28/08/2015		28/08/2015	28/08/2015			
sample (F) Trigge	es aren't corrected for the r breach confirmed	he recovery	SDG Ref Lab Sample No.(s)	150828-57 11978081		150828-57 11978083		150828-57 11978079	150828-57 11978080			
1-5&+§@ Sample Component	e deviation (see append	lix) LOD/Uni	AGS Reference ts Method									
Naphthalen	e-d8 %	%	TM218	122		101		99	95.4			
Acenaphthe recovery**	ene-d10 %	%	TM218	124		97.4	╈	98.4	94.8			
Phenanthre recovery**	ne-d10 %	%	TM218	118		93.6	╡	96.9	93.4			
Chrysene-d recovery**	12 %	%	TM218	99.3		83.8	+	92.1	84.9			
Perylene-d ² recovery**	12 %	%	TM218	96.2		83.6		99	91.4			
Naphthalen	e	<9 µg/ł	kg TM218	111	м	<9	м	<9	32.7 M	м		
Acenaphthy	/lene	<12 µg/kg	TM218	16	M	<12	м	<12	15	M		
Acenaphthe	ene	<8 µg/ł	kg TM218	<8	м	<8	м	<8	11	м		
Fluorene		<10 µg/kg	TM218	<10	м	<10	м	<10	54.6	м		
Phenanthre	ne	<15 µg/kg	TM218	215	м	<15	м	<15	360 M	м		
Anthracene		<16 µg/kg	TM218	33.2	м	<16	м	<16	105 M	м		
Fluoranther	ne	<17 µg/kg	TM218	237	М	<17	м	<17	400 M	М		
Pyrene		<15 µg/kg	TM218	186	М	<15	м	16.7	317 M	м		
Benz(a)anth	hracene	<14 µg/kg	TM218	128	м	<14	м	24.7	283 M	м		
Chrysene		<10 µg/kg	TM218	137	м		м			м		
Benzo(b)flu		<15 µg/kg		193	м		м			м		
Benzo(k)flu		<14 µg/kg		59.9	М		м			м		
Benzo(a)py		<15 µg/kg	TM218	122	м		м			м		
	3-cd)pyrene	<18 µg/kg		76.6	м		м			м		
	n)anthracene	<23 µg/kg		<23	м		м			м		
Benzo(g,h,i		<24 µg/kg		108	м		м			м		
PAH, Total USEPA 16	Detected	<118 µg/kg		1620		<118		<118	2780			
		_										
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CERTIFICATE OF ANALYSIS												
SDG: Job:	H_U	828-57 JRS_WIM-2	73	Location: Customer:	AE	ig Brewery COM			Order Number Report Number	er:	329023	
	Reference:			Attention:	Ga	ry Marshall			Superseded R	eport:		
PH CV	NG (S) Results Legend		Customer Sample R	BH8A		BH8A	BH9A		BH9A			
M n aq A	SO17025 accredited. CERTS accredited. queous / settled sample.		Depth (m)	0.50		3.00 - 3.50	0.50		2.20 - 3.30			
tot.unfilt T * S	issolved / filtered sample. otal / unfiltered sample. ubcontracted test. s recovery of the surrogate star	ndard to	Sample Type Date Sampled Sampled Time	Soil/Solid 26/08/2015		Soil/Solid 26/08/2015	Soil/Solid 26/08/2015		Soil/Solid 26/08/2015			
ć	heck the efficiency of the meth- esults of individual compounds	od. The	Date Received	28/08/2015		28/08/2015	28/08/2015		28/08/2015			
s	amples aren't corrected for the rigger breach confirmed		SDG Ref Lab Sample No.(s)	150828-57 11978081		150828-57 11978083	150828-57 11978079		150828-57 11978080			
l-5&+§@ S Compone	ample deviation (see appendix)	LOD/Uni	AGS Reference									
•	irrogate %	%	TM089	72		107	113		97			
	DT (Moisture	<44	TM089	<44		<44	178		106			
Methyl t	ertiary butyl ether	μg/kg <5 μg/ł	g TM089	<5	M	M <5	<5	M	<5	M		
(MTBE) Benzen	9	<10	TM089	<10	M	M <10	<10	M	<10	M		
Toluene		μg/kg <2 μg/k	g TM089	2.42	М	M <2	<2	М	<2	M		
Ethylber	nzene	<3 µg/ł	q TM089	<3	М	M <3	<3	М	<3	M		
m,p-Xyle		<6 µg/ł		<6	м	<0 M	<6	м	<6	м		
					м	м		м		м		
o-Xylen		<3 µg/ŀ	-	<3	м	<3 M	<3	м	<3	м		
xylene b	•	<9 µg/ŀ	-	<9		<9	<9		<9			
GC	letected BTEX by	<24 µg/kg	TM089	<24		<24	<24		<24			
Aliphatio	cs >C5-C6	<10 µg/kg	TM089	<10		<10	<10		<10			
Aliphatio	cs >C6-C8	<10 µg/kg	TM089	14.5		<10	<10		19.7			
Aliphatio	cs >C8-C10	<10 µg/kg	TM089	10.9		<10	11.9		22			
Aliphatio	cs >C10-C12	<10 µg/kg	TM089	<10		<10	87.4		25.5			
Aliphatio	cs >C12-C16	<100 µg/kg	TM173	555		<100	<100		1290			
Aliphatio	cs >C16-C21	<100 µg/kg	TM173	1230		<100	<100		3060			
Aliphatio	cs >C21-C35	<100 µg/kg	TM173	5830		<100	<100		6690			
Aliphatio	cs >C35-C44	<100 µg/kg	TM173	567		<100	<100		<100			
Total Ali	phatics >C12-C44	<100 μg/kg	TM173	8180		<100	<100		11000			
Aromati	cs >EC5-EC7	μg/κg <10 μg/kg	TM089	<10		<10	<10		<10			
Aromati	cs >EC7-EC8	<10	TM089	<10		<10	<10		<10	+		
Aromati	cs >EC8-EC10	μg/kg <10	TM089	<10		<10	<10		15.1			
Aromati	cs >EC10-EC12	μg/kg <10	TM089	<10		<10	58.3		17.4			
Aromati	cs >EC12-EC16	μg/kg <100	TM173	<100		<100	<100		2810	+		
Aromati	cs >EC16-EC21	μg/kg <100		<100		<100	<100		19400	+		
Aromati	cs >EC21-EC35	μg/kg <100	TM173	<100	_	<100	<100		66300	+		
Aromati	cs >EC35-EC44	μg/kg <100	TM173	<100		<100	<100		16400			
Aromati	cs >EC40-EC44	µg/kg <100	TM173	<100		<100	<100		5980			
	omatics	μg/kg <100	TM173	<100		<100	<100		105000	_		
>EC12- Total Ali	EC44 phatics &	µg/kg <100	TM173	8220		<100	111		116000			
	cs >C5-C44	µg/kg		-								

CERTIFICATE OF ANALYSIS

		-	CER	TI	FICATE OF A	NALYSIS				
	150828-57 H_URS_WIM	-273		AE	ag Brewery COM			Order Number: Report Number: Superseded Repor	329023	
VOC MS (S)			Attention:	Ga	ary Marshall			Superseded Repor	L	
Results Legend # ISO17025 accredited.		Customer Sample R	BH8A		BH8A	BH9A		BH9A		
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Discolved / filtered sample. * Subcontracted test. * % recovery of the surrogat check the efficiency of the results of individual compr samples aren't corrected fi (F) Trigger breact confirmed 1-5&\$\$@ Sample deviation (see app	e standard to method. The bunds within or the recovery endix)	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.50 Soli/Solid 26/08/2015 28/08/2015 150828-57 11978081		3.00 - 3.50 Soli/Solid 26/08/2015 28/08/2015 150828-57 11978083	0.50 Soil/Solid 26/08/2015 28/08/2015 150828-57 11978079		2.20 - 3.30 Soil/Solid 26/08/2015 28/08/2015 150828-57 11978080		
Component Dibromofluoromethane**	LOD/Ui		114		109	120	_	112		
Dibromondoromethane	70	TIMITIO	114		109	120		112		
Toluene-d8**	%		102		101	102		102		
4-Bromofluorobenzene**	%	TM116	88.1		95	96.1		92.2		
Dichlorodifluoromethane				м	<6 M	<6	м	<6 M		
Chloromethane	<7 µg	/kg TM116	<70	#	<7 #	<7	#	<7 #		
Vinyl Chloride	<6 µg	J/kg TM116	<60	M		<6	M	~6 M		
Bromomethane	<10 µg/k		<100	м	<10 M	<10	М	<10 M		
Chloroethane	<10 μg/k) TM116	<100	M	<10 M	<10	M	<10 M		
Trichlorofluorormethane	<6 µg	/kg TM116	<60		<6	<6		<6		
1,1-Dichloroethene	<10 μg/k		<100	M #	M <10 #	<10	M #	M <10 #		
Carbon Disulphide	<7 μg		<70	M	س <7 M	<7	т М	س 7< M		
Dichloromethane	<10 µg/k	g	<100	#	<10 #	<10	#	<10 #		
Methyl Tertiary Butyl Eth	er <10 μg/k		<100	М	<10 M	<10	м	<10 M		
trans-1,2-Dichloroethene) TM116	<100	м	<10 M	<10	м	<10 M		
1,1-Dichloroethane	<8 µg	/kg TM116	<80		<8	<8	Ν.4	<8		
cis-1,2-Dichloroethene	<6 µg	J/kg TM116	<60	M M	M <6 	<6	M	M <6 		
2,2-Dichloropropane	<10 µg/k	g		м	<10 M	<10	м	<10 M		
Bromochloromethane	<10 µg/k	g		М	<10 M	<10	М	<10 M		
Chloroform	<8 µg	/kg TM116	<80	М	<8 M	<8	м	<8 M		
1,1,1-Trichloroethane	<7 µg		<70	М	<7 M	<7	М	<7 M		
1,1-Dichloropropene	<10 μg/k		<100	м	<10 M	<10	М	<10 M		
Carbontetrachloride	<10 μg/k) TM116	<100	M	<10 M	<10	M	<10 M		
1,2-Dichloroethane	<5 µg		<50	м	<5 M	<5	М	<5 M		
Benzene	<9 µg	J/kg TM116	<90	м	<9 M	<9	м	<9 M		
Trichloroethene	<9 µg	-	<90	#	<9 #	<9	#	<9 #		
1,2-Dichloropropane	<10 µg/k	g		м	<10 M	<10	М	<10 M		
Dibromomethane	<9 µg			М	<9 M		М	<9 M		
Bromodichloromethane	<7 µg	-		М	<7 M		м	<7 M		
cis-1,3-Dichloropropene	<10 μg/k		<100	М	<10 M	<10	м	<10 M		
Toluene	<7 µg	J/kg TM116	<70	м	<7 M		M	<7 M		
trans-1,3-Dichloroproper	ne <10 μg/k		<100		<10	<10		<10		
1,1,2-Trichloroethane	<10 μg/k) TM116	<100	М	<10 M	<10	м	<10 M		
				-						

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SDG:	150828-57	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329023
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

VOC MS (S)

	Results Legend		Customer Sample R	BH8A	BH8A		BH9A	BH9A			
Matrix											
image of the second s	diss.filt Dissolved / filtered sample.										
Burning and all services and all s											
SectorSect		ard to		20/00/2015	20/00/2013	,	20/06/2015	20/00/2015			
Number of the sectorNumber of the sector <th< td=""><td>check the efficiency of the method</td><td>. The</td><td></td><td>28/08/2015</td><td>28/08/2015</td><td>5</td><td>28/08/2015</td><td>28/08/2015</td><td></td><td></td><td></td></th<>	check the efficiency of the method	. The		28/08/2015	28/08/2015	5	28/08/2015	28/08/2015			
Phy Expression Laborate scale P110200 P1102000 P1102000 P1102000 1.3.Dichkorporpane -7 µp/kg TM10 -70 -7 -7 -7 -7 1.3.Dichkorporpane -7 µp/kg TM10 -70 M -7 -7 -7 -7 1.3.Dichkorporpane -7 µp/kg TM10 -700 M -7 -7 -7 -7 1.3.Dichkorporpane -7 µp/kg TM10 -700 M -70 -7 -7 -7 -7 1.1.1.2.Dicronochizone -10 µp/kg TM10 -700 M -700 -7					150828-57						
Composing La. DichlorographineOffice Property Property Prope	(F) Trigger breach confirmed		Lab Sample No.(s)	11978081	11978083		11978079	11978080			
13-Dickinspondene <7 up/kg	1-5&+§@ Sample deviation (see appendix)										
Introductor of Support Multi Support <t< td=""><td>Component</td><td>LOD/Unit</td><td>ts Method</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Component	LOD/Unit	ts Method								
Introductor of Support Multi Support <t< td=""><td>1,3-Dichloropropane</td><td><7 µg/k</td><td>g TM116</td><td><70</td><td><7</td><td></td><td><7</td><td><7</td><td></td><td></td><td></td></t<>	1,3-Dichloropropane	<7 µg/k	g TM116	<70	<7		<7	<7			
Tetrachiosebare Signage Title Signage Title Signage Signage<			с -	N		М	N		м		
No.No	Tetrachloroethene	<5.00/k	70 TM116								
	reliacilloroculenc	·o µg/i	ig invitto								
ip9% 1.2.Diversembane hg/bgTM116TM16MM <th< td=""><td></td><td></td><td></td><td></td><td></td><td>IVI</td><td></td><td></td><td>IVI</td><td></td><td></td></th<>						IVI			IVI		
1.2.Disconschane <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 <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 <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 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10	Dibromochloromethane		IM116	<100	<10		<10	<10			
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	1,2-Dibromoethane	<10	TM116	<100	<10		<10	<10			
		µg/kg		N		М	N		М		
1.0.3 $1.0.4$ M <th< td=""><td>Chlorobenzene</td><td>-</td><td>a TM116</td><td></td><td></td><td></td><td><5</td><td><5</td><td></td><td></td><td></td></th<>	Chlorobenzene	-	a TM116				<5	<5			
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	Styrene		TM116								
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		µg/kg		N		М	N		М		
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upply tert-Butylbenzeneupg/kg(m) <t< td=""><td>4-Chlorotoluene</td><td><10</td><td>TM116</td><td><100</td><td><10</td><td></td><td><10</td><td><10</td><td></td><td></td><td></td></t<>	4-Chlorotoluene	<10	TM116	<100	<10		<10	<10			
tert-Butylbenzene <14 TM116 <140 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14 <14						М	N		м		
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$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	sec-Butylbenzene		TM116	<100	<10		<10	<10			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		µg/kg		N		Μ	N		Μ		
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1,2,4-Trichlorobenzene<20 $\mu g/kg$ TM116 200<200<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 <20<20 	I ert-amyl methyl ether		TM116								
μg/kg μg/kg Image: Constraint of the state of the s						#			#		
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Hexachlorobutadiene <20 μg/kg TM116 <200 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <2		µg/kg									
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Naphthalene <13 TM116 <130 <13 <13 <13											
	Naphthalene		TM116	<130	<13		<12	<12			
			TWITTO								
	L	P9/N9		IV		IVI	N N		IVI	L	

CERTIFICATE OF ANALYSIS

Validated

VOC M	/OC MS (S)								
# 15	Results Legend SO17025 accredited.	Cu	stomer Sample R	BH8A	BH8A	BH9A	BH9A		
M n	nCERTS accredited. Aqueous / settled sample.		Danéh (m)	0.50	0.00.0.50	0.50			
diss.filt D tot.unfilt T	Dissolved / filtered sample. Total / unfiltered sample.		Depth (m) Sample Type	0.50 Soil/Solid	3.00 - 3.50 Soil/Solid	0.50 Soil/Solid	2.20 - 3.30 Soil/Solid		
* s	Subcontracted test. 6 recovery of the surrogate standa	rd to	Date Sampled Sampled Time	26/08/2015	26/08/2015	26/08/2015	26/08/2015		
c	heck the efficiency of the method. esults of individual compounds with	The	Date Received	28/08/2015	28/08/2015	28/08/2015	28/08/2015		
s	amples aren't corrected for the rec rigger breach confirmed	overy	SDG Ref ab Sample No.(s)	150828-57 11978081	150828-57 11978083	150828-57 11978079	150828-57 11978080		
1-5&+§@ S	Sample deviation (see appendix)	LOD/Units	AGS Reference Method						
	ichlorobenzene	<20	TM116	<200	<20	<20	<20		
1.1-		µg/kg		#	#	#	#		

CERTIFICATE OF ANALYSIS

Validated

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	SDG:	150828-57	Location:	Stag Brewery	Order Number:
	Job:	H_URS_WIM-273	Customer:	AECOM	Report Number: 329023
	Client Reference:		Attention:	Gary Marshall	Superseded Report:

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH8A 0.50 SOLID 26/08/2015 00:00:00 01/09/2015 12:03:31 150828-57 11978081 TM048	4/9/15	Kevin Hughes	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH9A 0.50 SOLID 26/08/2015 00:00:00 01/09/2015 11:54:18 150828-57 11978079 TM048	4/9/15	Kevin Hughes	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

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CERTIFICATE OF ANALYSIS

Validated

 SDG:
 150828-57
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329023

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		
TM243		Mixed Anions In Soils By Kone		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

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CERTIFICATE OF ANALYSIS

 SDG:
 150828-57
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329023

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Test Completion Dates

				•
Lab Sample No(s)	11978081	11978083	11978079	11978080
Customer Sample Ref.	BH8A	BH8A	BH9A	BH9A
AGS Ref.				
Depth	0.50	3.00 - 3.50	0.50	2.20 - 3.30
Туре	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	09-Sep-2015	08-Sep-2015	09-Sep-2015	08-Sep-2015
Asbestos ID in Solid Samples	04-Sep-2015		04-Sep-2015	
Easily Liberated Sulphide	08-Sep-2015	07-Sep-2015	08-Sep-2015	07-Sep-2015
EPH CWG (Aliphatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
EPH CWG (Aromatic) GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
GRO by GC-FID (S)	02-Sep-2015	02-Sep-2015	03-Sep-2015	02-Sep-2015
Hexavalent Chromium (s)	07-Sep-2015	07-Sep-2015	07-Sep-2015	07-Sep-2015
Metals in solid samples by OES	04-Sep-2015	04-Sep-2015	04-Sep-2015	04-Sep-2015
PAH by GCMS	03-Sep-2015	03-Sep-2015	08-Sep-2015	04-Sep-2015
pН	08-Sep-2015	08-Sep-2015	08-Sep-2015	04-Sep-2015
Sample description	01-Sep-2015	29-Aug-2015	01-Sep-2015	29-Aug-2015
Total Organic Carbon	07-Sep-2015	03-Sep-2015	07-Sep-2015	03-Sep-2015
Total Sulphate	07-Sep-2015	07-Sep-2015	07-Sep-2015	04-Sep-2015
TPH CWG GC (S)	04-Sep-2015	03-Sep-2015	04-Sep-2015	03-Sep-2015
VOC MS (S)	03-Sep-2015	02-Sep-2015	02-Sep-2015	02-Sep-2015

09:10:12 09/09/2015

150828-57

H_URS_WIM-273

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SDG:

Job:

Client Reference:

CERTIFICATE OF ANALYSIS

Location: Stag Brewery Customer: AECOM Attention: Gary Marshall

Order Number: Report Number: 3 Superseded Report:

329023

Validated

ASSOCIATED AQC DATA

Ammonium Soil by Titration

Component	Method Code	QC 1292	QC 1205
Exchangeable	TM024	86.07	98.01
Ammonium as NH4		79.30 : 104.61	79.30 : 104.61

Easily Liberated Sulphide

Component	Method Code	QC 1262	QC 1219
Easily Liberated Sulphide	TM180	88.38 49.14 : 123.89	93.21 49.14 : 123.89

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1182	QC 1194	QC 1146
Total Aliphatics	TM173	85.21	87.08	90.21
>C12-C35		62.50 : 112.50	70.80 : 111.51	71.67 : 116.67

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1182	QC 1194	QC 1146
Total Aromatics	TM173	82.67	82.67	83.33
>EC12-EC35		60.62 : 126.95	65.21 : 121.32	59.92 : 107.95

GRO by GC-FID (S)

Component	Method Code	QC 1105	QC 1173
Benzene by GC	TM089	83.5	95.0
(Moisture Corrected)		79.00 : 121.00	76.33 : 121.87
Ethylbenzene by GC	TM089	83.5	99.0
(Moisture Corrected)		79.00 : 121.00	75.73 : 123.83
m & p Xylene by GC	TM089	83.75	97.5
(Moisture Corrected)		79.00 : 121.00	75.52 : 120.32
MTBE GC-FID (Moisture	TM089	85.5	94.0
Corrected)		74.48 : 125.29	77.89 : 119.70
o Xylene by GC (Moisture	TM089	83.5	93.5
Corrected)		79.00 : 121.00	74.15 : 124.59
QC	TM089	112.68 73.70 : 123.60	99.2 62.31 : 122.61
Toluene by GC (Moisture	TM089	83.5	93.5
Corrected)		79.00 : 121.00	77.91 : 122.33

CERTIFICATE OF ANALYSIS

150828-57 Location: Stag Brewery H_URS_WIM-273 AEČOM Customer: **Client Reference:** Attention: Gary Marshall

Order Number: 329023 Report Number: Superseded Report:

Hexavalent Chromium (s)

SDG:

Job:

Component	Method Code	QC 1299	QC 1285
Hexavalent Chromium	TM151	100.0 92.20 : 106.60	102.0 92.20 : 106.60

Metals in solid samples by OES

Component	Method Code	QC 1272	QC 1286	QC 1235
Aluminium	TM181	108.46 86.49 : 129.71	109.23 86.49 : 129.71	98.46 86.49 : 129.71
Antimony	TM181	98.92 77.50 : 122.50	98.21 77.50 : 122.50	97.13 77.50 : 122.50
Arsenic	TM181	94.69 82.63 : 117.37	93.81 82.63 : 117.37	92.92 82.63 : 117.37
Barium	TM181	99.25 79.45 : 120.55	99.25 79.45 : 120.55	95.49 79.45 : 120.55
Beryllium	TM181	101.09 85.92 : 121.27	101.24 85.92 : 121.27	100.47 85.92 : 121.27
Boron	TM181	112.21 77.41 : 143.83	115.27 77.41 : 143.83	99.24 77.41 : 143.83
Cadmium	TM181	97.65 81.95 : 118.05	97.31 81.95 : 118.05	96.47 81.95 : 118.05
Chromium	TM181	109.41 81.29 : 118.71	99.22 81.29 : 118.71	93.73 81.29 : 118.71
Cobalt	TM181	97.83 83.86 : 116.14	97.17 83.86 : 116.14	96.5 83.86 : 116.14
Copper	TM181	100.68 78.57 : 121.43	100.14 78.57 : 121.43	99.46 78.57 : 121.43
Iron	TM181	102.76 87.50 : 122.82	100.69 87.50 : 122.82	97.24 87.50 : 122.82
Lead	TM181	95.28 74.18 : 117.25	93.7 74.18 : 117.25	94.09 74.18 : 117.25
Manganese	TM181	100.0 82.91 : 117.09	100.0 82.91 : 117.09	100.0 82.91 : 117.09
Mercury	TM181	94.47 81.99 : 118.01	93.97 81.99 : 118.01	92.46 81.99 : 118.01
Molybdenum	TM181	100.64 81.45 : 118.55	94.75 81.45 : 118.55	93.79 81.45 : 118.55
Nickel	TM181	109.88 79.64 : 120.36	98.26 79.64 : 120.36	95.93 79.64 : 120.36
Phosphorus	TM181	99.11 81.03 : 118.97	97.91 81.03 : 118.97	98.21 81.03 : 118.97
Selenium	TM181	106.5 87.05 : 121.93	107.01 87.05 : 121.93	108.21 87.05 : 121.93
Strontium	TM181	102.3 83.64 : 116.36	102.68 83.64 : 116.36	96.55 83.64 : 116.36
Thallium	TM181	92.21 77.50 : 122.50	90.55 77.50 : 122.50	88.72 77.50 : 122.50
Tin	TM181	94.35 78.30 : 113.98	93.69 78.30 : 113.98	92.69 78.30 : 113.98
Titanium	TM181	103.91 71.02 : 128.98	103.13 71.02 : 128.98	97.66 71.02 : 128.98

150828-57

H_URS_WIM-273

CERTIFICATE OF ANALYSIS

Location:Stag BreweryCustomer:AECOMAttention:Gary Marshall

Order Number: Report Number: 329023 Superseded Report:

Metals in solid samples by OES

		QC 1272	QC 1286	QC 1235
Vanadium	TM181	97.06 86.61 : 113.39	96.76 86.61 : 113.39	93.53 86.61 : 113.39
Zinc	TM181	100.97 89.82 : 114.54	100.32 89.82 : 114.54	98.05 89.82 : 114.54

PAH by GCMS

Client Reference:

SDG:

Job:

Component	Method Code	QC 1191	QC 1196	QC 1106	QC 1137
Acenaphthene	TM218	85.5 70.00 : 130.00	89.5 78.75 : 116.25	91.5 78.84 : 114.36	96.0 78.84 : 114.36
Acenaphthylene	TM218	78.0 70.00 : 130.00	85.5 76.45 : 110.05	85.5 65.50 : 119.50	90.0 65.50 : 119.50
Anthracene	TM218	79.0 70.00 : 130.00	89.0 67.15 : 124.45	91.0 75.54 : 110.88	97.5 75.54 : 110.88
Benz(a)anthracene	TM218	81.0 70.00 : 130.00	97.5 82.00 : 127.00	97.5 78.02 : 127.38	104.0 78.02 : 127.38
Benzo(a)pyrene	TM218	80.0 70.00 : 130.00	99.5 75.60 : 124.20	99.5 79.21 : 128.01	105.5 79.21 : 128.01
Benzo(b)fluoranthene	TM218	78.0 70.00 : 130.00	99.0 81.20 : 121.77	96.0 86.21 : 131.42	101.5 86.21 : 131.42
Benzo(ghi)perylene	TM218	83.0 70.00 : 130.00	96.0 77.49 : 119.12	95.0 80.11 : 120.52	100.0 80.11 : 120.52
Benzo(k)fluoranthene	TM218	79.0 70.00 : 130.00	96.5 83.50 : 116.50	97.0 78.77 : 120.72	103.0 78.77 : 120.72
Chrysene	TM218	77.5 70.00 : 130.00	95.5 78.35 : 114.42	94.5 78.77 : 118.99	100.5 78.77 : 118.99
Dibenzo(ah)anthracene	TM218	79.0 70.00 : 130.00	95.0 77.15 : 122.45	93.5 76.39 : 122.63	100.0 76.39 : 122.63
Fluoranthene	TM218	83.5 70.00 : 130.00	92.5 79.08 : 114.40	95.0 77.25 : 117.75	101.0 77.25 : 117.75
Fluorene	TM218	86.0 70.00 : 130.00	91.5 79.03 : 113.38	95.5 79.28 : 117.35	98.5 79.28 : 117.35
Indeno(123cd)pyrene	TM218	78.5 70.00 : 130.00	96.5 75.65 : 125.15	93.0 78.87 : 122.50	99.0 78.87 : 122.50
Naphthalene	TM218	91.5 70.00 : 130.00	92.5 77.25 : 112.60	93.0 74.75 : 118.25	95.0 74.75 : 118.25
Phenanthrene	TM218	84.0 70.00 : 130.00	92.0 78.25 : 115.44	95.0 78.61 : 113.98	100.5 78.61 : 113.98
Pyrene	TM218	82.5 70.00 : 130.00	91.0 78.07 : 114.06	94.0 76.15 : 115.26	99.5 76.15 : 115.26

pН

Component	Method Code	QC 1208	QC 1218	QC 1227	QC 1293
рН	TM133	100.13 97.19 : 102.81	100.25 97.19 : 102.81	100.5 97.19 : 102.81	100.63 97.19 : 102.81

Total Organic Carbon

CERTIFICATE OF ANALYSIS

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SDG:	150828-57	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329023
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Total Organic Carbon

Component	Method Code	QC 1254	QC 1245
Total Organic Carbon	TM132	100.46 88.82 : 111.18	98.17 89.40 : 103.09

Total Sulphate

Component	Method Code	QC 1218	QC 1273
Total Sulphate	TM221	115.15 78.49 : 121.51	103.79 78.49 : 121.51

VOC MS (S)

Component	Method Code	QC 1128	QC 1175
1,1,1,2-tetrachloroethane	TM116	95.6	102.6
		83.24 : 124.28	83.24 : 124.28
1,1,1-Trichloroethane	TM116	100.8	102.4
		81.77 : 121.07	81.77 : 121.07
1,1,2-Trichloroethane	TM116	100.4	94.2
		79.24 : 112.23	79.24 : 112.23
1,1-Dichloroethane	TM116	103.0	106.6
		72.58 : 116.06	72.58 : 116.06
1,2-Dichloroethane	TM116	118.8	112.0
		77.50 : 122.50	77.50 : 122.50
1,4-Dichlorobenzene	TM116	96.2	95.4
		73.23 : 116.39	73.23 : 116.39
2-Chlorotoluene	TM116	85.6	86.6
		69.22 : 110.64	69.22 : 110.64
4-Chlorotoluene	TM116	89.0	87.4
		68.57 : 106.26	68.57 : 106.26
Benzene	TM116	103.2	106.0
		84.33 : 124.27	84.33 : 124.27
Carbon Disulphide	TM116	110.4	107.4
		77.20 : 122.80	77.20 : 122.80
Carbontetrachloride	TM116	98.2	102.8
		84.20 : 119.90	84.20 : 119.90
Chlorobenzene	TM116	102.4	103.2
		85.28 : 129.96	85.28 : 129.96
Chloroform	TM116	108.2	106.6
		82.73 : 119.72	82.73 : 119.72
Chloromethane	TM116	123.4	117.2
		55.16 : 145.46	55.16 : 145.46
Cis-1,2-Dichloroethene	TM116	108.4	108.4
		73.56 : 118.93	73.56 : 118.93
Dibromomethane	TM116	104.4	98.0
		73.40 : 116.60	73.40 : 116.60
Dichloromethane	TM116	113.2	108.2
		76.16 : 121.98	76.16 : 121.98

CERTIFICATE OF ANALYSIS

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SDG: Job:	150828-57 H URS WIM-273	Location: Customer:	Stag Brewery AECOM	Order Number Report Numbe
Client Reference:		Attention:	Gary Marshall	Superseded R

VOC MS (S)

329023

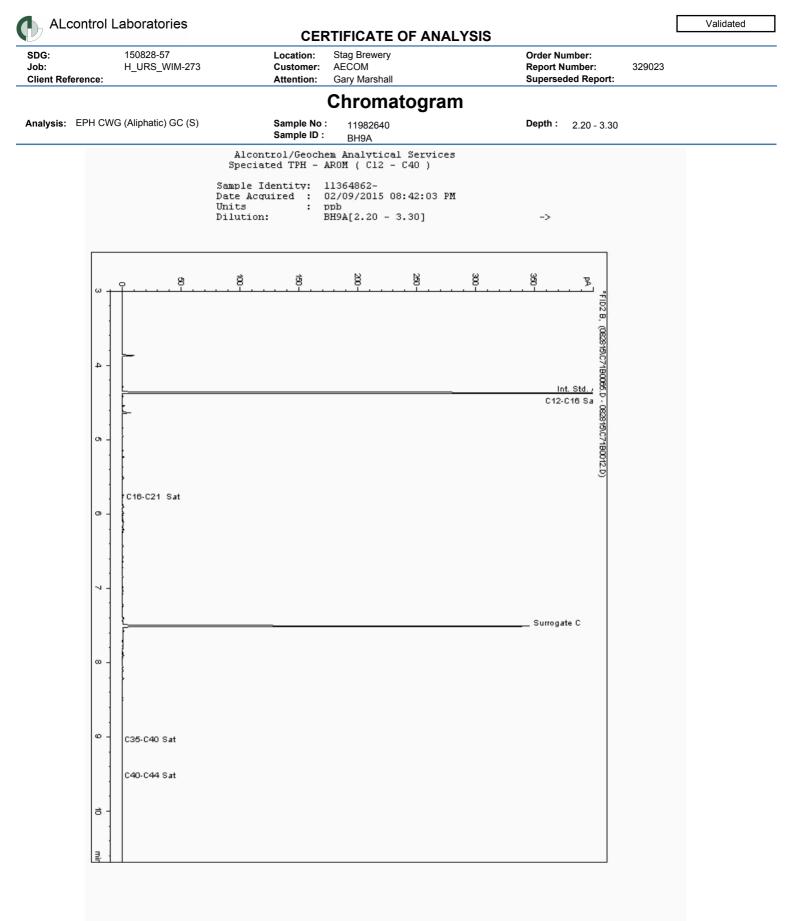
Order Number: Report Number: Superseded Report:

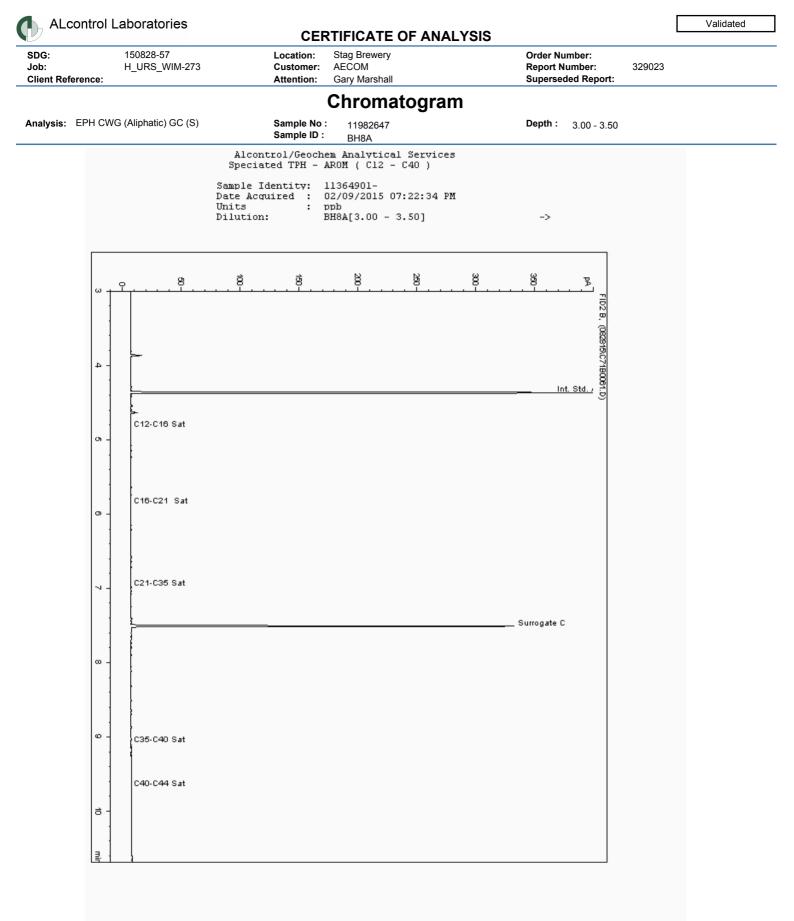
	1	QC 1128	QC 1175
Ethylbenzene	TM116	94.0 80.07 : 125.98	99.2 80.07 : 125.98
Hexachlorobutadiene	TM116	69.0 30.92 : 132.28	89.2 30.92 : 132.28
Isopropylbenzene	TM116	82.6 69.27 : 125.32	92.6 69.27 : 125.32
Naphthalene	TM116	110.0 79.15 : 121.98	107.4 79.15 : 121.98
o-Xylene	TM116	77.6 75.46 : 111.52	84.8 75.46 : 111.52
p/m-Xylene	TM116	90.2 76.97 : 121.75	96.6 76.97 : 121.75
Sec-Butylbenzene	TM116	69.6 49.27 : 129.90	85.8 49.27 : 129.90
Tetrachloroethene	TM116	102.2 87.96 : 133.65	110.6 87.96 : 133.65
Toluene	TM116	99.0 79.23 : 114.58	100.6 79.23 : 114.58
Trichloroethene	TM116	94.6 84.09 : 114.24	98.4 84.09 : 114.24
Trichlorofluoromethane	TM116	107.4 76.22 : 114.82	104.4 76.22 : 114.82
Vinyl Chloride	TM116	98.2 59.68 : 118.68	100.8 59.68 : 118.68

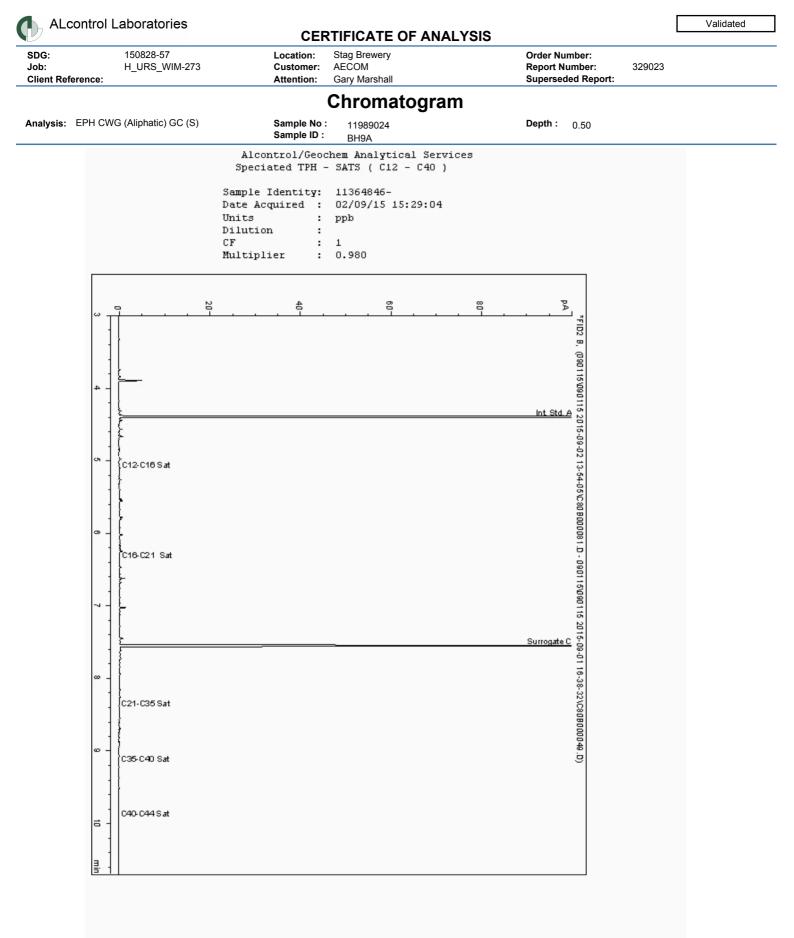
The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

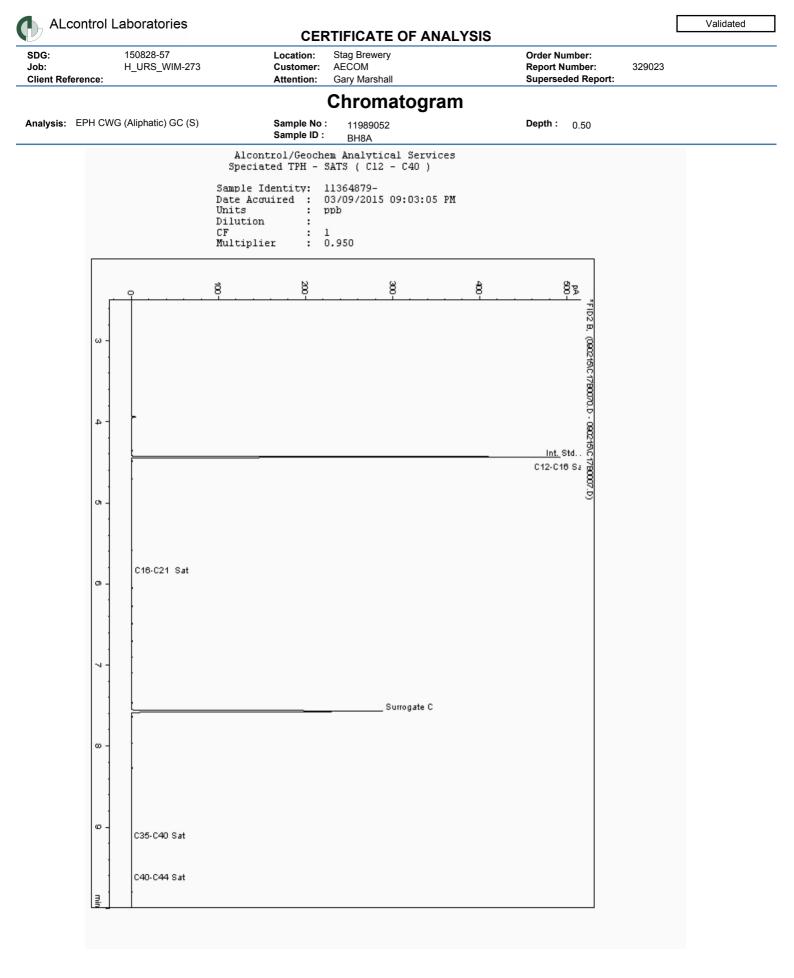
The figure detailed is the percentage recovery result for the AQC.

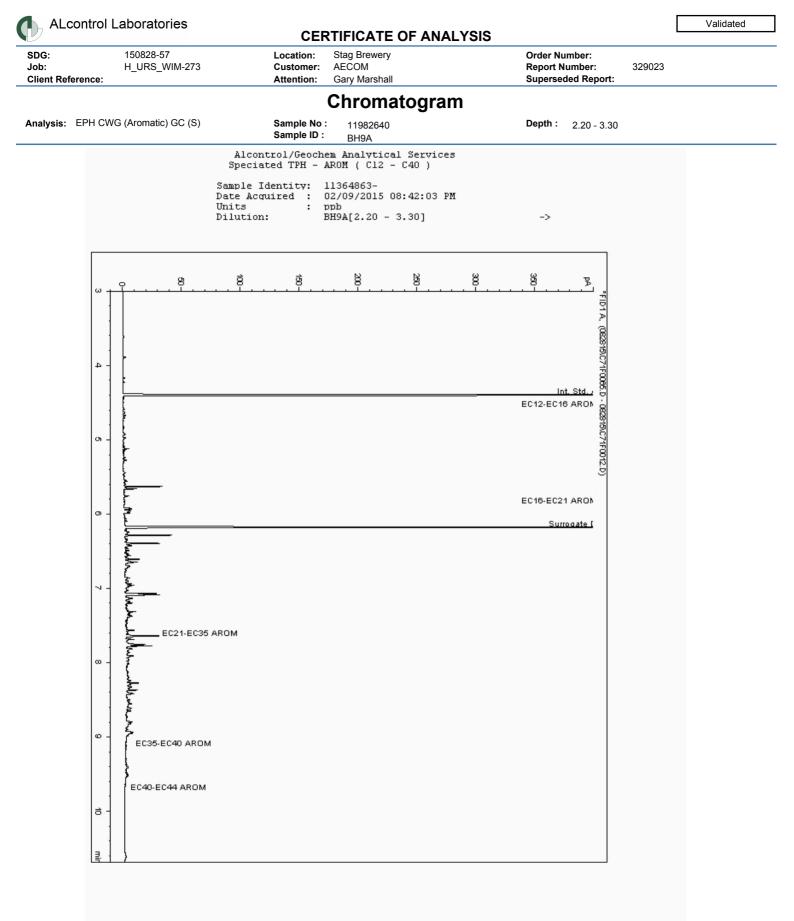
The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

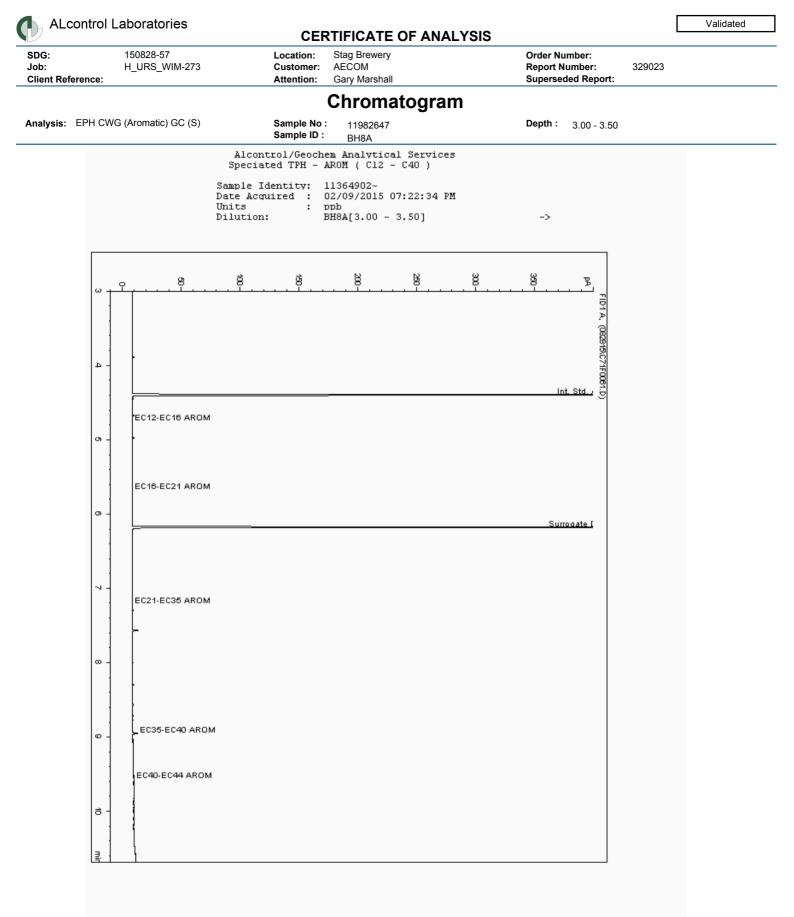


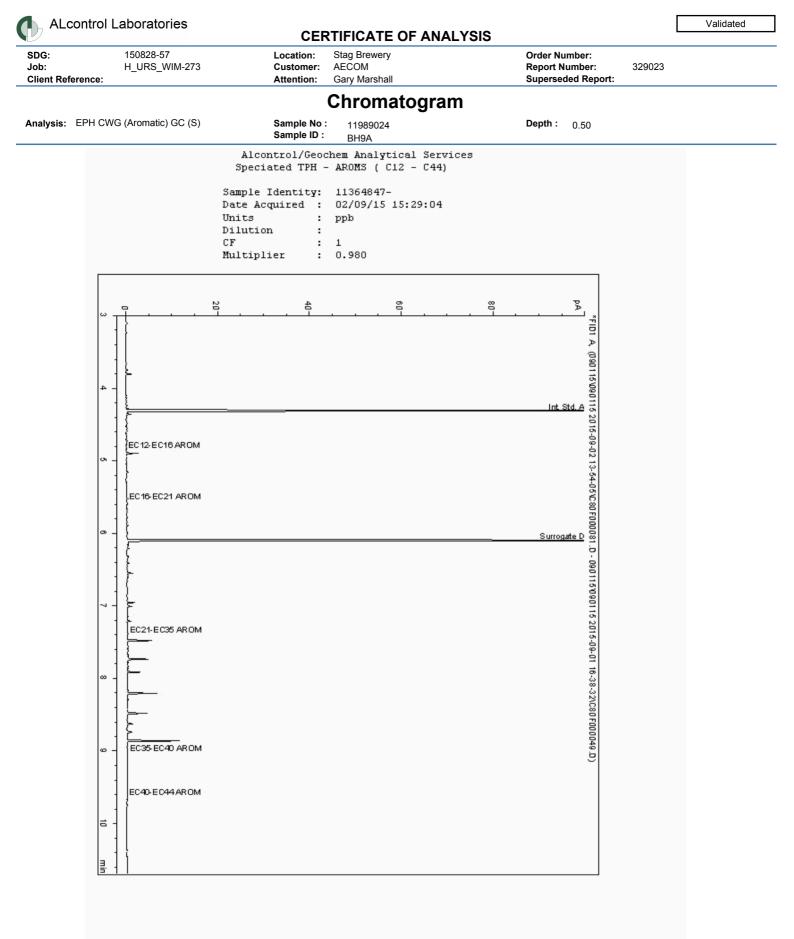


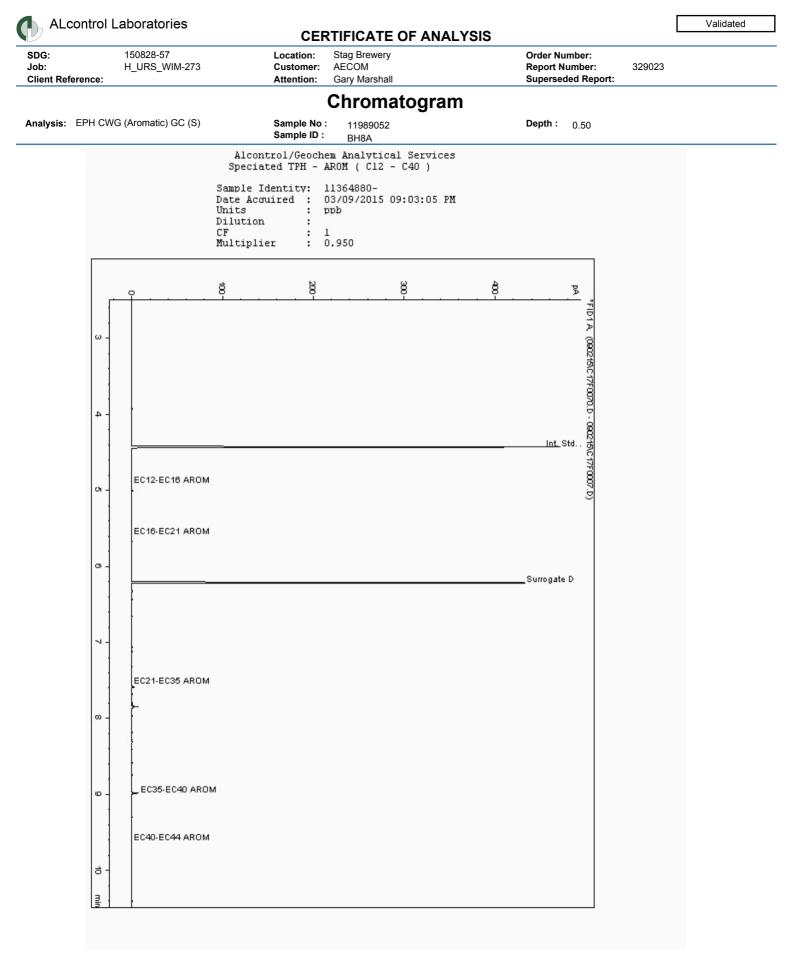




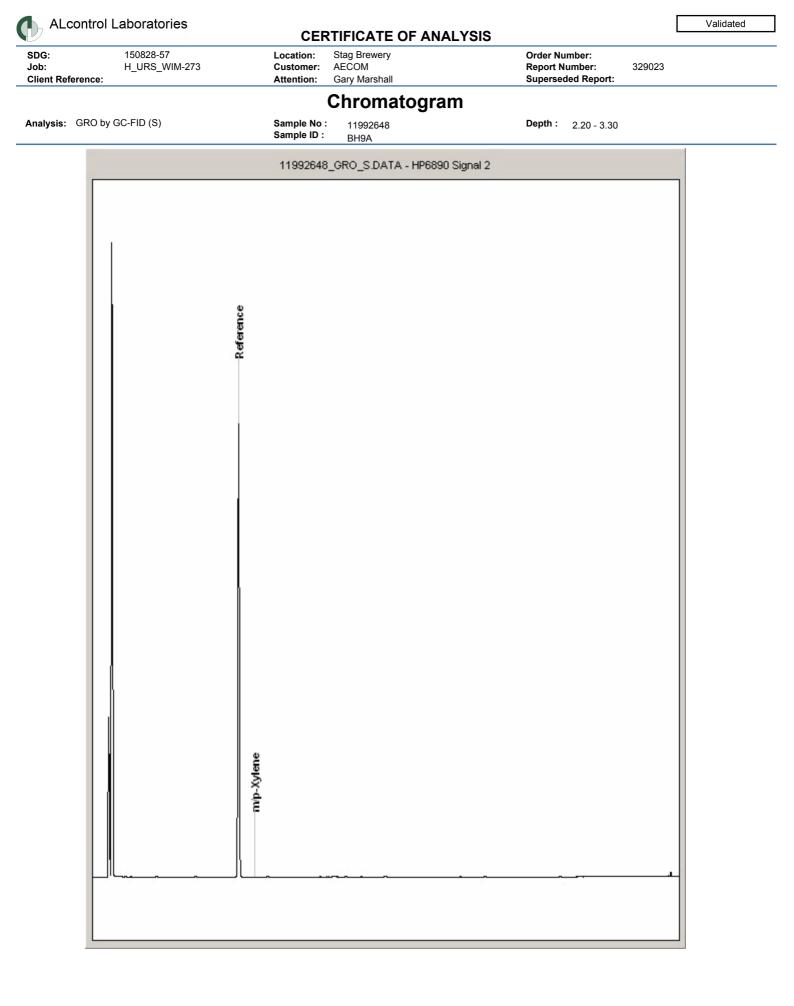


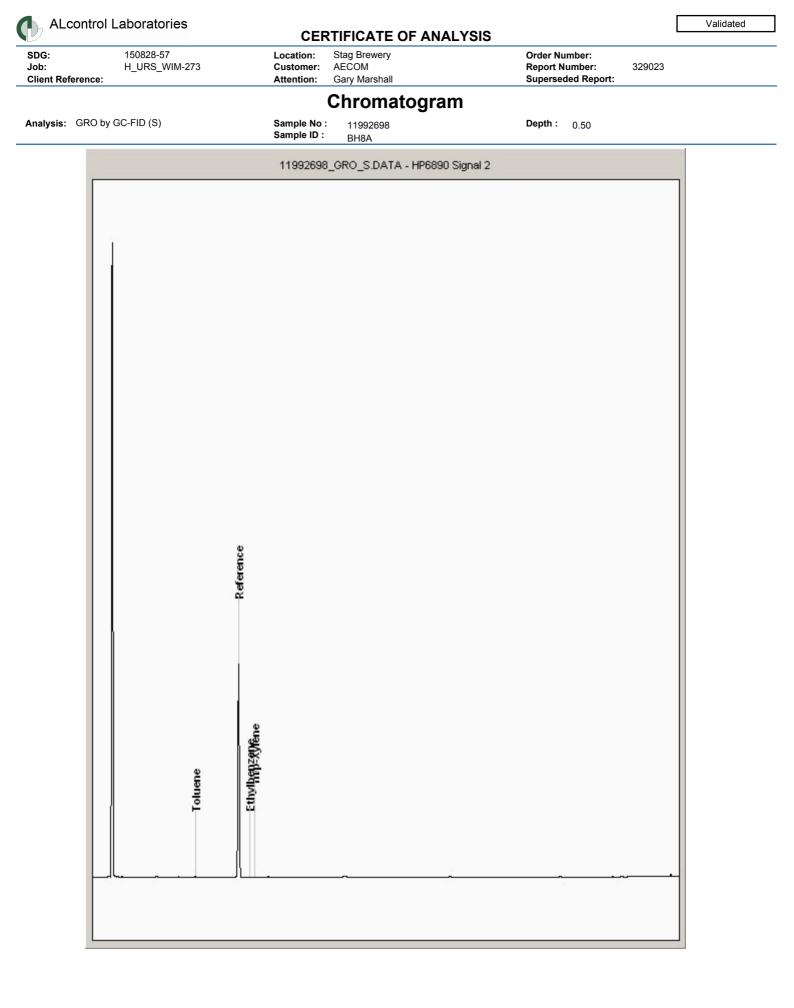


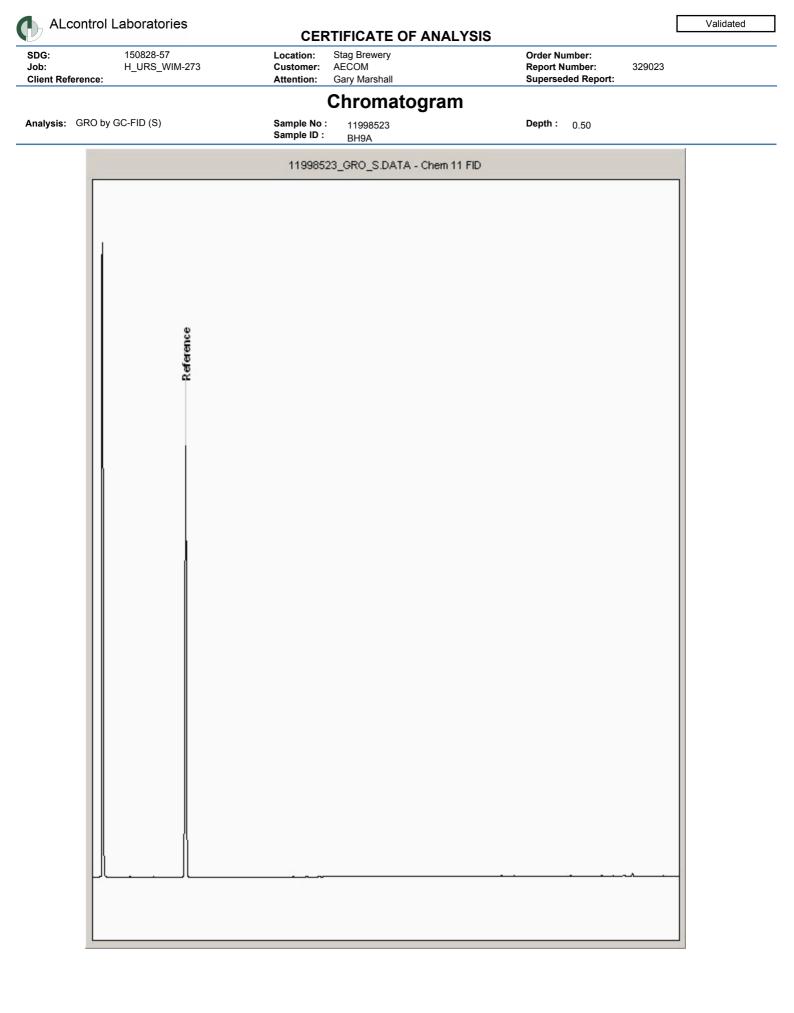




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G: b: ent Reference:	150828-57 H_URS_WIM-273	Location: Customer: Attention:	Stag Brewery AECOM Gary Marshall	Order Number: Report Number: Superseded Repo	329023 t :	
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CERTIFICATE OF ANALYSIS

SDG:	150828-57	Location:	Stag Brewery
Job:	H_URS_WIM-273	Customer:	AECOM
Client Reference:		Attention:	Gary Marshall

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

12. Results relate only to the items tested

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.

19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute themajor part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

24. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Order Number: Report Number: Superseded Report:

SOLID MATRICES EXTRACTION SUMMARY

329023

D/C OF ANALYSIS WE		EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
THIN LAYER CHROMATOGRAPHY	D&C	DCM	SOXTHERM	ATROSCAN
ELEMENTALSUPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLSBYGOMS	WET	DOM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS
PESTICIDES			SOXTHERM	GC-MS
EPH (DRO)			END OVEREND	GCFD
EPH (MINOL)	D&C	HEXANEACETONE	END OVEREND	GCFD
EPH (CLEANED UP)	D&C HEXANEACETONE		ENDOWEREND	GCFD
EPH CWG BYGC	D&C	HEXANEACETONE	ENDOWEREND	GCFD
POB TOT / POB CON	D&C	HEXANEACETONE	END OVEREND	GCMS
POLYAROMATIC HYDROCARBONS (MS) WET I		HEXANEACETONE	MCROWAVE TM218.	GCMS
08-040(06-040)EZ FLASH	WET	HEXANEACETONE	SHAVER	GCFZ
POL VAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAVER	6CEZ
SEM VOLATILEORGANIC COMPOUNDS WET D		DOMAGETONE	SONICATE	GCMS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
BH	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
EPHCWG	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
MINERALOIL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
PCB 7 CONGENERS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
PCB TOTAL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
SVOC	DOM	LIQUID'LIQUID SHAKE	GCMS
FREESULPHUR	DOM	SOLID PHASE EXTRACTION	HPLC
PEST COP/OPP	DOM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DOM	LIQUID/LIQUID SHAKE	GCMS
PHENOLSMS	DOM	SOLID PHASE EXTRACTION	GCMS
TIH by INFRARED (IR)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERALOIL by IR	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT NJECTION	GCMS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysofile	WhiteAsbestos
Amoste	BrownAsbestos
Croddalte	Blue Asbestos
Fibrous Adindite	-
Fibrous Anthophylite	-
Fibrous Trendile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

CERTIFICATE OF ANALYSIS

SDG:	150828-57	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329023
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt . However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-lsopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill /made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name	
Chrysolie	White Asbestos	
Amoste	Brown Asbestos Blue Asbestos	
Oroddalite		
Fibrous Adinate	-	
Fibrous Anthophylite	-	
Fibrous Trendile	-	

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than : - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



AECOM St. George's House 2nd Floor 5 St. George's Road Wimbledon Greater London SW19 4DR

Attention: Gary Marshall

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 10 September 2015 H_URS_WIM 150829-68

Stag Brewery 329373

We received 4 samples on Saturday August 29, 2015 and 4 of these samples were scheduled for analysis which was completed on Thursday September 10, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan Operations Manager



Alcontrol Laboratories is a trading division of ALcontrol UK Limited Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No.

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CERTIFICATE OF ANALYSIS

Validated

SDG: Job:	150829-68 H_URS_WIM-273	Location: Customer:	Stag Brewery AECOM	Order Number: Report Number:	329373
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11984669	BH3A		0.50	28/08/2015
11984670	BH3A		1.50 - 2.00	28/08/2015
11984671	BH5A		0.50	28/08/2015
11984672	BH5A		2.50 - 3.00	28/08/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

SDG: Job:	150829-68 H_URS_WIM-27	3	Location: Customer	: AE	ECC					Order Numbe Report Numb	er:	329373	
Client Reference:			Attention:	Ga	ary I	Marsha	all		 	Superseded F	Report:		 _
SOLID				110	11	110	-	4					
Results Legend		Lab Sample N	o(s)	98466	11984670	11984671	0	11084672					
X Test				99	0	7	1	3					
No Determina	ation				\square								
Possible		Customer											
	5	Sample Refere	ence	знза	BH3A	BH5A		вна					
					++			-					
		AGS Referen	се										
					1		!	5					
		Depth (m)		0.50	1.50 - 2.00	0.50		ッ たの - 3 00					
				400g 250g	2500	60g VOC (ALE215) 400g Tub (ALE214) 250g Amber Jar (Al	400c	800					
		Container		1 Tub Amb	Amb	1 Tub	1 Tub Amb	YOC					
		Container		(ALE2 (ALE2) er Jar	er Jar	(ALE2 (ALE2	(ALE2) er Jar						
				215) (AL	Â.	215) (Al	214) (AL	01J)					
Ammonium Soil by Titratio	on All		NDPs: 0 Tests: 3										
				x		x	X						
Asbestos ID in Solid Sam	ples All		NDPs: 0 Tests: 3										
				X		x	X						
Easily Liberated Sulphide	All		NDPs: 0 Tests: 3										
				x		x	x						
EPH CWG (Aliphatic) GC	(S) All		NDPs: 0 Tests: 3										
				x		x	x						
EPH CWG (Aromatic) GC	(S) All		NDPs: 0 Tests: 3										
				x		×	x						
GRO by GC-FID (S)	All		NDPs: 0 Tests: 3										
				x		X		×					
Hexavalent Chromium (s)	All		NDPs: 0 Tests: 3					_					
	.050			x		x	X	_					
Metals in solid samples by	y OES All		NDPs: 0 Tests: 3										
PAH by GCMS	All			x		×	x	4					
	All		NDPs: 0 Tests: 3	V				-					
рН	All		NDPs: 0	×		×	x	-					
			Tests: 3	X		X	x	-					
Sample description	All		NDPs: 0			^	^	-					
			Tests: 4	X	X	×	X	-					
Fotal Organic Carbon	All		NDPs: 0	^	^	^		-					
ena enganio contorn			Tests: 3	x		×	x	-					
Total Sulphate	All		NDPs: 0	^		^	^	-					
	7.0		Tests: 3	X		x	x	-					
TPH CWG GC (S)	All		NDPs: 0	^	$\left \right ^{\prime}$		^	-					
	7.0		Tests: 3	x		x	X	-					
/OC MS (S)	All		NDPs: 0	^	+		^	-					
	All		NDPs: 0 Tests: 3										

CERTIFICATE OF ANALYSIS

Validated

SDG:	150829-68	Location:	Stag Brewery	Order Number:	329373
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Sample Descriptions

Brain Sizes										
very fine <0.	063mm fine	0.063mm - 0.1mm	medium	0.1mm	- 2mm 🛛 😋	oarse	2mm - 1	Omm	very coars	e >10mm
Lab Sample No(s)	Customer Sample	Ref. Depth (m)	Colo	our	Description	G	rain size	Inclu	usions	Inclusions 2
11984669	BH3A	0.50	Dark B	Brown	Sand	0.	1 - 2 mm	Sto	ones	None
11984670	BH3A	1.50 - 2.00	Dark B	Brown	Sandy Loam	n 0.	1 - 2 mm	Sto	ones	None
11984671	BH5A	0.50	Light B	Brown	Sand	and 0.1 - 2 mm		1 - 2 mm Stones		Vegetation
11984672	BH5A	2.50 - 3.00	Dark B	Brown	Sandy Loam	ı 0.	1 - 2 mm	Sto	ones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

Validated

Results Legend # ISO17025 accredited.		Customer Sample R	BH3A	BH5A	BH5A		
M mCERTS accredited. aq Aqueous / settled sample.							
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.50 Soil/Solid	0.50 Soil/Solid	2.50 - 3.00 Soil/Solid		
* Subcontracted test.		Date Sampled	28/08/2015	28/08/2015	28/08/2015		
check the efficiency of the method.	. The	Sampled Time Date Received	. 29/08/2015	29/08/2015	29/08/2015		
results of individual compounds window samples aren't corrected for the re-		SDG Ref	150829-68	150829-68	150829-68		
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	11984669	11984671	11984672		
Component	LOD/Units						
Moisture Content Ratio (%	%	PM024	6.3	7	5.8		
of as received sample)							
Exchangeable Ammonia as NH4	<15	TM024	<15	27.7	<15		
Organic Carbon, Total	mg/kg <0.2 %	TM132	M 1.52	M 1.33	M <0.2		
	~0.2 /0	111132	1.52 M	1.55 M			
рН	1 pH	TM133	8.22	7.86	7.86		
·	Units		М	М			
Chromium, Hexavalent	<0.6	TM151	<0.6	<0.6	<0.6		
	mg/kg	T14400	#	#			
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 & #	<15 & #	<15 & #		
Arsenic	<0.6	TM181	18.9	&# 19.1</td><td>22.4</td><td></td><td></td></tr><tr><td></td><td>mg/kg</td><td></td><td>M</td><td>M</td><td></td><td></td><td></td></tr><tr><td>Cadmium</td><td><0.02</td><td>TM181</td><td>0.475</td><td>1.13</td><td>0.533</td><td></td><td></td></tr><tr><td></td><td>mg/kg</td><td></td><td>М</td><td>M</td><td></td><td></td><td></td></tr><tr><td>Chromium</td><td><0.9</td><td>TM181</td><td>19.5</td><td>25.4</td><td>21.6</td><td></td><td></td></tr><tr><td>Copper</td><td>mg/kg <1.4</td><td>TM181</td><td>49.3</td><td>M 28</td><td>M 3.56</td><td> </td><td> </td></tr><tr><td>Cohhei</td><td><1.4 mg/kg</td><td>1111101</td><td>49.3 M</td><td>28 M</td><td></td><td></td><td></td></tr><tr><td>Lead</td><td><0.7</td><td>TM181</td><td>178</td><td>85.7</td><td>9.05</td><td></td><td></td></tr><tr><td></td><td>mg/kg</td><td></td><td>М</td><td>Μ</td><td>М</td><td></td><td></td></tr><tr><td>Mercury</td><td><0.14</td><td>TM181</td><td>0.151</td><td>1.9</td><td><0.14</td><td></td><td></td></tr><tr><td></td><td>mg/kg</td><td>THIOL</td><td>M</td><td>M</td><td></td><td></td><td></td></tr><tr><td>Nickel</td><td><0.2 mg/kg</td><td>TM181</td><td>29.2 M</td><td>17.1 M</td><td>20.7 M</td><td></td><td></td></tr><tr><td>Selenium</td><td><1 mg/kg</td><td>g TM181</td><td>M <1</td><td>M <1</td><td><1 M</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td>#</td><td>#</td><td></td><td></td><td></td></tr><tr><td>Zinc</td><td><1.9</td><td>TM181</td><td>89.3</td><td>101</td><td>28.6</td><td></td><td></td></tr><tr><td></td><td>mg/kg</td><td></td><td>М</td><td>M</td><td></td><td></td><td></td></tr><tr><td>Sulphate, Total</td><td><48</td><td>TM221</td><td>579</td><td>356</td><td>95.9</td><td></td><td></td></tr><tr><td></td><td>mg/kg</td><td></td><td>M</td><td>M</td><td>M</td><td></td><td> </td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td> </td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td> </td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>			

ALcontrol Laboratories Validated **CERTIFICATE OF ANALYSIS** 150829-68 Stag Brewery SDG: Location: Order Number: Job: H_URS_WIM-273 Customer: AECOM Report Number: 329373 Superseded Report: **Client Reference:** Attention: Gary Marshall PAH by GCMS Customer Sample R BH3A BH5A BH5A ISO17025 accredited mCERTS accredited. # M Aqueous / settled sample Depth (m) 0.50 0.50 2.50 - 3.00 diss.filt Dissolved / filtered sample tot.unfilt Total / unfiltered sample Sample Type Soil/Solid Soil/Solid Soil/Solid Total / unfiltered sample. Subcontracted test. % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery Trigger breach confirmed Sample deviation (see appendix) Date Sampled 28/08/2015 28/08/2015 28/08/2015 ... Sampled Time Date Received 29/08/2015 29/08/2015 29/08/2015 150829-68 150829-68 SDG Ref 150829-68 11984669 11984671 11984672 Lab Sample No.(s) (F) 1-5&+§@ AGS Reference LOD/Units Component Method Naphthalene-d8 % TM218 95 96.9 97.3 % recovery** % TM218 90.7 92.6 96 Acenaphthene-d10 % recovery* Phenanthrene-d10 % % TM218 89.2 90.5 94.6 recovery**

85

92.4

15.9

28.9

9.32

<10

147

39.9

417

359

227

236

391

132

260

156

46.8

196

2660

Μ

Μ

Μ

Μ

Μ

Μ

Μ

Μ

Μ

Μ

Μ

Μ

Μ

Μ

Μ

Μ

86.6

90.2

<9

<12

<8

<10

<15

<16

<17

29.8

<14

24 5

23.5

<14

<15

<18

<23

<24

<118

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Μ

Μ

Μ

Μ

Μ

Chrysene-d12 %

Acenaphthylene

Acenaphthene

Phenanthrene

Anthracene

Fluoranthene

Benz(a)anthracene

Benzo(b)fluoranthene

Benzo(k)fluoranthene

Indeno(1,2,3-cd)pyrene

Dibenzo(a,h)anthracene

Benzo(g,h,i)perylene

PAH, Total Detected

USEPA 16

Benzo(a)pyrene

Pyrene

Chrysene

Fluorene

recovery** Perylene-d12 %

recovery** Naphthalene %

%

<9 µg/kg

<12

µg/kg

<8 µg/kg

<10

µg/kg

<15

µg/kg

<16

µg/kg

<17 µg/kg

<15 µg/kg

<14

µg/kg

<10

µg/kg

<15

µg/kg

<14

µg/kg

<15

µg/kg

<18

µg/kg

<23

µg/kg

<24

µg/kg

<118

µg/kg

TM218

83.6

877

34.7

29.9

<8

<10

188

36

445

384

245

291

459

134

289

210

63.4

245

3050

Μ

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ALcontrol Laboratories Validated **CERTIFICATE OF ANALYSIS** 150829-68 Stag Brewery SDG Location: Order Number: Job: H_URS_WIM-273 Customer: AECOM Report Number: 329373 **Client Reference:** Attention: Gary Marshall Superseded Report: Customer Sample R BH5A s I en BH3A BH5A ISO17025 accredited # M mCERTS accredited Aqueous / settled sample Depth (m) 0.50 0.50 2.50 - 3.00 diss.filt Dissolved / filtered sample Total / unfiltered sample tot.unfilt Sample Type Soil/Solid Soil/Solid Soil/Solid Total / unfiltered sample. Subcontracted test. % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery Trigger breach confirmed Sample deviation (see appendix) Date Sampled 28/08/2015 28/08/2015 28/08/2015 ... Sampled Time Date Received 29/08/2015 29/08/2015 29/08/2015 150829-68 SDG Ref 150829-68 150829-68 11984669 11984671 11984672 Lab Sample No.(s) (F) 1-5&+§@ AGS Reference LOD/Units Component Method GRO Surrogate % TM089 69 72 99 % recovery** GRO TOT (Moisture <44 TM089 <44 <44 <44 Corrected) µg/kg Μ Μ Μ

<5

<10

<2

<3

<6

<3

<9

<24

<10

<10

<10

<10

<100

234

6660

968

7860

<10

<10

<10

<10

358

2620

16100

8050

2870

27100

35000

Μ

Μ

Μ

Μ

Μ

Μ

<5

<10

<2

<3

<6

<3

<9

<24

<10

<10

<10

<10

<100

<100

<100

<100

<100

<10

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<10

<10

<100

<100

<100

<100

<100

<100

<100

Μ

Μ

Μ

Μ

Μ

Μ

Methyl tertiary butyl ether

(MTBE)

Benzene

Toluene

Ethylbenzene

m,p-Xylene

xylene by GC

Aliphatics >C5-C6

Aliphatics >C6-C8

Aliphatics >C8-C10

Aliphatics >C10-C12

Aliphatics >C12-C16

Aliphatics >C16-C21

Aliphatics >C21-C35

Aliphatics >C35-C44

Aromatics >EC5-EC7

Aromatics >EC7-EC8

Aromatics >EC8-EC10

Aromatics >EC10-EC12

Aromatics >EC12-EC16

Aromatics >EC16-EC21

Aromatics >EC21-EC35

Aromatics >EC35-EC44

Aromatics >EC40-EC44

Total Aromatics

Total Aliphatics &

Aromatics >C5-C44

>EC12-EC44

Total Aliphatics >C12-C44

sum of detected mpo

sum of detected BTEX by

o-Xylene

GC

<5 µg/kg

<10

µg/kg

<2 µg/kg

<3 µg/kg

<6 µg/kg

<3 µg/kg

<9 µg/kg

<24

µg/kg

<10

µg/kg

<10

µg/kg

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TM089

TM173

TM173

TM173

TM173

TM173

TM089

TM089

TM089

TM089

TM173

TM173

TM173

TM173

TM173

TM173

TM173

<5

<10

<2

5 34

<6

<3

<9

<24

<10

<10

<10

<10

<100

3140

9790

3030

15900

<10

<10

<10

<10

714

4780

24700

12700

5160

42900

58900

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Μ

Μ

Μ

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SDG:

Job:

Client Reference:

Client Reference:			Attention:	Ga	ry Marshall				Superseded Repo	ort:	
VOC MS (S)											
Results Legend	С	ustomer Sample R	BH3A		BH5A		BH5A				
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.50 Soil/Solid		0.50 Soil/Solid		2.50 - 3.00 Soil/Solid				
* Subcontracted test. ** % recovery of the surrogate stand check the efficiency of the method results of individual compounds w	l. The /ithin	Date Sampled Sampled Time Date Received SDG Ref	28/08/2015 29/08/2015 150829-68		28/08/2015		28/08/2015 29/08/2015 150829-68				
samples aren't corrected for the re (F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix) Component		Lab Sample No.(s) AGS Reference	11984669		11984671		11984672				
Dibromofluoromethane**	%	TM116	116		122		120				
Toluene-d8**	%	TM116	104	_	103		113	_			
4-Bromofluorobenzene**	%	TM116	69.3		72.4		102				
Dichlorodifluoromethane	<6 µg/kg) TM116	<6	м	<6	м	<6	м			
Chloromethane	<7 µg/kg	1 TM116	<7	#	<7	#	<7	#			
Vinyl Chloride	<6 µg/kg	g TM116	<6	М	<6	М	<6	М			
Bromomethane	<10 µg/kg	TM116	<10	м	<10	м	<10	м			
Chloroethane	<10 µg/kg	TM116	<10	м	<10	м	<10	М			
Trichlorofluorormethane	<6 µg/kg	7 TM116	<6	м	<6	м	<6	м			
1,1-Dichloroethene	<10 µg/kg	TM116	<10	#	<10	#	<10	#			
Carbon Disulphide	<7 µg/kg) TM116	<7	" M	<7	,, M	<7	" M			
Dichloromethane	<10 µg/kg	TM116	<10	#	<10	#	<10	#			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10	м	<10	м	<10	м			
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<10	м	<10	м	<10	м			
1,1-Dichloroethane	<8 µg/kg) TM116	<8	м	<8	м	<8	м			
cis-1,2-Dichloroethene	<6 µg/kg	g TM116	<6	М	<6	М	<6	М			
2,2-Dichloropropane	<10 µg/kg	TM116	<10	М	<10	м	<10	М			
Bromochloromethane	<10 µg/kg	TM116	<10	М	<10	м	<10	М			
Chloroform	<8 µg/kg	1 TM116	<8	м	<8	м	<8	М			
1,1,1-Trichloroethane	<7 µg/kg	1 TM116	<7	м	<7	м	<7	М			
1,1-Dichloropropene	<10 µg/kg	TM116	<10	м	<10	м	<10	М			
Carbontetrachloride	<10 µg/kg	TM116	<10	М	<10	м	<10	М			
1,2-Dichloroethane	<5 µg/kg	1 TM116	<5	м	<5	м	<5	м			
Benzene	<9 µg/kg	1 TM116	<9	м	<9	м	<9	м			
Trichloroethene	<9 µg/kg	1 TM116	<9	#	<9	#	<9	#			
1,2-Dichloropropane	<10 µg/kg	TM116	<10	M	<10	м	<10	M			
Dibromomethane	<9 µg/kg	1 TM116	<9	М	<9	м	<9	М			
Bromodichloromethane	<7 µg/kg	1 TM116	<7	М	<7	м	<7	М			
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<10	м	<10	м	<10	м			
Toluene	<7 µg/kg	g TM116	<7	м	<7	м	<7	М			
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<10		<10	-	<10	·			
1,1,2-Trichloroethane	<10 µg/kg	TM116	<10	м	<10	м	<10	м			
	10.0										

CERTIFICATE OF ANALYSIS

Validated

SDG:	150829-68	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329373
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

VOC MS (S)

		0			_			
Results Legend # ISO17025 accredited. M mCERTS accredited.		Customer Sample R	BH3A	BH5A		BH5A		
aq Aqueous / settled sample.		Depth (m)	0.50	0.50		2 50 2 00		
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	0.50 Soil/Solid	0.50 Soil/Solid		2.50 - 3.00 Soil/Solid		
* Subcontracted test.		Date Sampled	28/08/2015	28/08/2015		28/08/2015		
** % recovery of the surrogate stand		Sampled Time						
check the efficiency of the methor results of individual compounds		Date Received	29/08/2015	29/08/2015		29/08/2015		
samples aren't corrected for the r		SDG Ref	150829-68 11984669	150829-68 11984671		150829-68 11984672		
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	11304003	11304071		11304072		
Component	LOD/Uni							
	-		_	_	_			
1,3-Dichloropropane	<7 µg/l	kg TM116	<7	<7		<7		
			M		М	N	1	
Tetrachloroethene	<5 µg/l	kg TM116	<5	<5		<5		
			М		М	Ν	1	
Dibromochloromethane	<10	TM116	<10	<10		<10		
Disformounioronneurarie								
	µg/kg		M		М	N	//	
1,2-Dibromoethane	<10	TM116	<10	<10		<10		
	µg/kg		М		М	Ν	1	
Chlorobenzene	<5 µg/l	kg TM116	<5	<5		<5		
		-	М		М	Ν	1	
1,1,1,2-Tetrachloroethane	<10	TM116	<10	<10		<10		
1, 1, 1, 2-1 ett achior oethane								
	µg/kg		M		М	N	/1	
Ethylbenzene	<4 µg/l	kg TM116	4.45	<4		<4		
			M		М	Ν	1	
p/m-Xylene	<10	TM116	<10	<10		<10		
	µg/kg		#		#	:	¥	
o-Xylene	<10	TM116	<10	<10		<10		
							4	
	µg/kg		M		М	N	1	
Styrene	<10	TM116	<10	<10		<10		
	µg/kg		#		#	;	¥	
Bromoform	<10	TM116	<10	<10		<10		
	µg/kg		М		м	Ν	1	
laapropylbanzana	<5 µg/l		<5	<5	IVI	<5		
Isopropylbenzene	<5 µg/i	NY INTIO						
			#		#		#	
1,1,2,2-Tetrachloroethane	<10	TM116	<10	<10		<10		
	µg/kg		М		М	Ν	1	
1,2,3-Trichloropropane	<16	TM116	<16	<16		<16		
	µg/kg		M		м	. U	A	
Bromohonzono	-	TM116	<10	<10	IVI	<10		
Bromobenzene	<10							
	µg/kg		M		М	Ν	1	
Propylbenzene	<10	TM116	<10	<10		<10		
	µg/kg		М		М	Ν	1	
2-Chlorotoluene	<9 µg/l	kg TM116	<9	<9		<9		
		5	М		м	N	4	
125 Trimothylbonzono	<9 ug/	kg TM116		1	101	<8		
1,3,5-Trimethylbenzene	<8 µg/l	kg IIVITTO	<8	<8				
			M		М	Ν	1	
4-Chlorotoluene	<10	TM116	<10	<10		<10		
	µg/kg		M		М	Ν	1	
tert-Butylbenzene	<14	TM116	<14	<14		<14		
	µg/kg		М		м	Ν	1	
1,2,4-Trimethylbenzene	<9 µg/l		<9	<9		<9		
	-9 µg/i	'y INTIO			ц.			
Det ille an		T14440	#		#		#	
sec-Butylbenzene	<10	TM116	<10	<10		<10		
	µg/kg		M		М	N	1	
4-Isopropyltoluene	<10	TM116	<10	<10		<10		
	µg/kg		М		М	Ν	1	
1,3-Dichlorobenzene	<8 µg/l		<8	<8		<8		
.,	·• µ9/1				м	~~ N	4	
1.4 Diablanchanner	ar		M		IVI		1	
1,4-Dichlorobenzene	<5 µg/l	kg TM116	<5	<5		<5		
			M		М	Ν	1	
n-Butylbenzene	<11	TM116	<11	<11		<11		
	µg/kg							
1,2-Dichlorobenzene	<10	TM116	<10	<10		<10		
	µg/kg		M		м	N	4	
1.2 Dibrores 2 ablesses					IVÍ		1	
1,2-Dibromo-3-chloroprop	<14	TM116	<14	<14		<14		
ane	µg/kg		M		М	Ν	1	
Tert-amyl methyl ether	<10	TM116	<10	<10		<10		
	µg/kg		#		#	;	¥	
1,2,4-Trichlorobenzene	<20	TM116	<20	<20		<20		
, ,	µg/kg					*		
Hexaplorobutadiana	<20	TM116	<20	<20		<20		
Hexachlorobutadiene			< <u>2</u> 0	~20		~ 20		
	µg/kg							
Naphthalene	<13	TM116	<13	<13		<13		
	µg/kg		М		М	Ν	1	

CERTIFICATE OF ANALYSIS

Validated

VOC MS (S)

/OC MS (S)							
Results Legend	C	ustomer Sample R	BH3A	BH5A	BH5A		
# ISO17025 accredited. M mCERTS accredited.							
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.50	0.50	2.50 - 3.00		
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid	Soil/Solid	Soil/Solid		
* Subcontracted test. ** % recovery of the surrogate standa	and to	Date Sampled	28/08/2015	28/08/2015	28/08/2015		
check the efficiency of the method	. The	Sampled Time Date Received	29/08/2015	29/08/2015	29/08/2015		
results of individual compounds w	ithin	SDG Ref	150829-68	150829-68	150829-68		
samples aren't corrected for the re (F) Trigger breach confirmed	covery	Lab Sample No.(s)	11984669	11984671	11984672		
1-5&+§@ Sample deviation (see appendix)		AGS Reference					
Component	LOD/Units	Method					
1,2,3-Trichlorobenzene	<20	TM116	<20	<20	<20		
	µg/kg		#	#	#		
							7

Validated

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	SDG:	150829-68	Location:	Stag Brewery	Order Number:	
	Job:	H_URS_WIM-273	Customer:	AECOM	Report Number: 329373	
	Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH3A 0.50 SOLID 28/08/2015 00:00:00 01/09/2015 10:13:47 150829-68 11984669 TM048	2/9/15	Kevin Hughes	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH5A 0.50 SOLID 28/08/2015 00:00:00 01/09/2015 10:15:44 150829-68 11984671 TM048	2/9/15	Kevin Hughes	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	BH5A 2.50 - 3.00 SOLID 28/08/2015 00:00:00 03/09/2015 03:31:51 150829-68 11984672 TM048	09/09/2015	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

CERTIFICATE OF ANALYSIS

 SDG:
 150829-68
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329373

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogat Correcte
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

CERTIFICATE OF ANALYSIS

 SDG:
 150829-68
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329373

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Test Completion Dates

Lab Sample No(s)	11984669	11984670	11984671	11984672
Customer Sample Ref.	BH3A	BH3A	BH5A	BH5A
AGS Ref.				
Depth	0.50	1.50 - 2.00	0.50	2.50 - 3.00
Туре	SOLID	SOLID	SOLID	SOLID
Ammonium Soil by Titration	09-Sep-2015		09-Sep-2015	09-Sep-2015
Asbestos ID in Solid Samples	02-Sep-2015		02-Sep-2015	09-Sep-2015
Easily Liberated Sulphide	08-Sep-2015		08-Sep-2015	08-Sep-2015
EPH CWG (Aliphatic) GC (S)	02-Sep-2015		02-Sep-2015	03-Sep-2015
EPH CWG (Aromatic) GC (S)	02-Sep-2015		02-Sep-2015	03-Sep-2015
GRO by GC-FID (S)	02-Sep-2015		02-Sep-2015	02-Sep-2015
Hexavalent Chromium (s)	04-Sep-2015		04-Sep-2015	10-Sep-2015
Metals in solid samples by OES	07-Sep-2015		07-Sep-2015	04-Sep-2015
PAH by GCMS	03-Sep-2015		03-Sep-2015	03-Sep-2015
рН	09-Sep-2015		09-Sep-2015	09-Sep-2015
Sample description	01-Sep-2015	29-Aug-2015	01-Sep-2015	29-Aug-2015
Total Organic Carbon	07-Sep-2015		10-Sep-2015	07-Sep-2015
Total Sulphate	04-Sep-2015		04-Sep-2015	04-Sep-2015
TPH CWG GC (S)	02-Sep-2015		02-Sep-2015	03-Sep-2015
VOC MS (S)	02-Sep-2015		02-Sep-2015	02-Sep-2015

150829-68

H_URS_WIM-273

CERTIFICATE OF ANALYSIS

Location: Stag Brewery Customer: AECOM Attention: Gary Marshall

Order Number: Report Number: 329373 Superseded Report:

ASSOCIATED AQC DATA

Ammonium Soil by Titration

SDG:

Job:

Client Reference:

Component	Method Code	QC 1205
Exchangeable Ammonium as NH4	TM024	98.01 79.30 : 104.61

Easily Liberated Sulphide

Component	Method Code	QC 1231
Easily Liberated Sulphide	TM180	94.71 49.14 : 123.89

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1182	QC 1194
Total Aliphatics	TM173	85.21	87.08
>C12-C35		62.50 : 112.50	70.80 : 111.51

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1182	QC 1194
Total Aromatics	TM173	82.67	82.67
>EC12-EC35		60.62 : 126.95	65.21 : 121.32

GRO by GC-FID (S)

Component	Method Code	QC 1141
Benzene by GC (Moisture Corrected)	TM089	93.0 76.33 : 121.87
Ethylbenzene by GC (Moisture Corrected)	TM089	91.5 75.73 : 123.83
m & p Xylene by GC (Moisture Corrected)	TM089	92.0 75.52 : 120.32
MTBE GC-FID (Moisture Corrected)	TM089	95.0 77.89 : 119.70
o Xylene by GC (Moisture Corrected)	TM089	91.0 74.15 : 124.59
QC	TM089	93.51 62.31 : 122.61
Toluene by GC (Moisture Corrected)	TM089	92.0 77.91 : 122.33

CERTIFICATE OF ANALYSIS

 SDG:
 150829-68
 Location:
 Stag Brewery

 Job:
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 Customer:
 AECOM

 Client Reference:
 Attention:
 Gary Marshall

Order Number: Report Number: 329373 Superseded Report:

Hexavalent Chromium (s)

Component	Method Code	QC 1187	QC 1229
Hexavalent Chromium	TM151	96.0 92.20 : 106.60	100.0 92.20 : 106.60

Metals in solid samples by OES

Component	Method Code	QC 1293	QC 1251
Aluminium	TM181	96.15 86.49 : 129.71	118.46 86.49 : 129.71
Antimony	TM181	95.34 77.50 : 122.50	94.62 77.50 : 122.50
Arsenic	TM181	90.27 82.63 : 117.37	95.58 82.63 : 117.37
Barium	TM181	100.75 79.45 : 120.55	100.75 79.45 : 120.55
Beryllium	TM181	98.76 85.92 : 121.27	101.55 85.92 : 121.27
Boron	TM181	88.55 77.41 : 143.83	129.01 77.41 : 143.83
Cadmium	TM181	93.28 81.95 : 118.05	94.29 81.95 : 118.05
Chromium	TM181	90.2 81.29 : 118.71	102.75 81.29 : 118.71
Cobalt	TM181	92.33 83.86 : 116.14	98.17 83.86 : 116.14
Copper	TM181	99.32 78.57 : 121.43	99.05 78.57 : 121.43
Iron	TM181	96.55 87.50 : 122.82	104.83 87.50 : 122.82
Lead	TM181	93.7 74.18 : 117.25	91.34 74.18 : 117.25
Manganese	TM181	98.0 82.91 : 117.09	103.4 82.91 : 117.09
Mercury	TM181	90.28 81.99 : 118.01	93.63 81.99 : 118.01
Molybdenum	TM181	91.24 81.45 : 118.55	91.88 81.45 : 118.55
Nickel	TM181	92.44 79.64 : 120.36	100.0 79.64 : 120.36
Phosphorus	TM181	94.34 81.03 : 118.97	97.32 81.03 : 118.97
Selenium	TM181	102.05 87.05 : 121.93	102.91 87.05 : 121.93
Strontium	TM181	90.04 83.64 : 116.36	103.07 83.64 : 116.36
Thallium	TM181	93.03 77.50 : 122.50	86.57 77.50 : 122.50
Tin	TM181	90.03 78.30 : 113.98	91.69 78.30 : 113.98
Titanium	TM181	90.63 71.02 : 128.98	114.06 71.02 : 128.98

CERTIFICATE OF ANALYSIS

4					
SDG:	150829-68	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number: 329373	
Client Reference	e:	Attention:	Gary Marshall	Superseded Report:	
				• •	•

Metals in solid samples by OES

		QC 1293	QC 1251
Vanadium	TM181	89.12 86.61 : 113.39	97.94 86.61 : 113.39
Zinc	TM181	95.29 89.82 : 114.54	101.14 89.82 : 114.54

PAH by GCMS

Component	Method Code	QC 1179	QC 1161
Acenaphthene	TM218	92.5	85.0 76.50 : 121.50
Acenaphthylene	TM218	87.0 76.25 : 113.75	84.5 73.50 : 118.50
Anthracene	TM218	92.0 75.14 : 109.30	86.0 74.25 : 117.75
Benz(a)anthracene	TM218	96.0 82.90 : 120.19	95.5 82.07 : 118.33
Benzo(a)pyrene	TM218	96.0 82.80 : 121.21	92.0 79.75 : 116.97
Benzo(b)fluoranthene	TM218	96.0 81.11 : 119.79	98.5 82.41 : 117.15
Benzo(ghi)perylene	TM218	88.5 81.23 : 116.67	89.0 77.09 : 114.38
Benzo(k)fluoranthene	TM218	92.0 79.07 : 114.76	95.5 81.43 : 115.17
Chrysene	TM218	93.5 77.94 : 118.46	94.5 82.50 : 113.51
Dibenzo(ah)anthracene	TM218	92.0 79.94 : 120.03	92.5 81.00 : 120.00
Fluoranthene	TM218	94.0 77.89 : 110.15	90.0 78.67 : 117.61
Fluorene	TM218	95.0 80.93 : 113.54	87.5 76.50 : 121.50
Indeno(123cd)pyrene	TM218	92.5 80.37 : 120.17	91.0 79.19 : 117.60
Naphthalene	TM218	94.5 79.70 : 112.37	90.0 77.00 : 117.50
Phenanthrene	TM218	95.0 78.44 : 113.95	88.5 75.00 : 123.00
Pyrene	TM218	92.0 81.17 : 112.33	88.0 77.82 : 116.98

pН

Component	Method Code	QC 1220	QC 1256
рН	TM133	101.39 96.22 : 103.78	100.88 97.19 : 102.81

Total Organic Carbon

CERTIFICATE OF ANALYSIS

Validated

SDG:	150829-68	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329373
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Total Organic Carbon

Component	Method Code	QC 1297	QC 1208	QC 1227
Total Organic Carbon	TM132	97.72 89.40 : 103.09	99.54 89.40 : 103.09	95.89 89.40 : 103.09

Total Sulphate

Comp	oonent	Method Code	QC 1235	QC 1298
Total S	Sulphate	TM221	102.27 78.49 : 121.51	117.42 78.49 : 121.51

VOC MS (S)

Component	Method Code	QC 1154
1,1,1,2-tetrachloroethane	TM116	105.0
		76.60 : 121.00
1,1,1-Trichloroethane	TM116	102.2
		77.80 : 123.40
1,1,2-Trichloroethane	TM116	94.4
	T 1440	75.40 : 119.80
1,1-Dichloroethane	TM116	107.0
	TN440	80.84 : 124.49
1,2-Dichloroethane	TM116	109.4
1,4-Dichlorobenzene	TM116	91.00 : 135.67
1,4-Dichiolobenzene	TIVITIO	105.4 80.88 : 114.60
2-Chlorotoluene	TM116	
		102.8 74.00 : 117.20
4-Chlorotoluene	TM116	97.2
		71.20 : 113.20
Benzene	TM116	100.6
		79.60 : 125.20
Carbon Disulphide	TM116	104.4
		74.91 : 122.14
Carbontetrachloride	TM116	101.4
		76.80 : 121.20
Chlorobenzene	TM116	103.4
		83.47 : 116.82
Chloroform	TM116	108.0
Oblassesthans	T1440	82.00 : 128.80
Chloromethane	TM116	129.8
Cia 1 2 Diablaraathana	TM116	74.62 : 135.86
Cis-1,2-Dichloroethene	11/11/10	113.4 81.20 : 128.00
Dibromomethane	TM116	
Distrimine that		94.4 73.40 : 116.60
Dichloromethane	TM116	111.8
		86.60 : 137.00

Validated

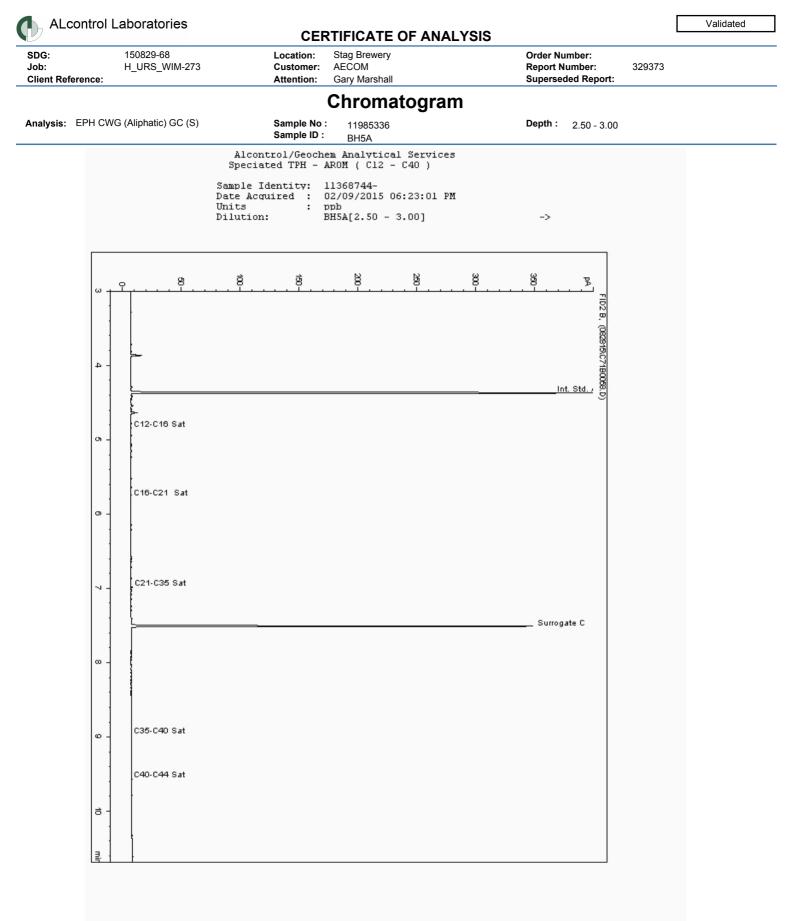
		4			
SDG: Job:	150829-68 H_URS_WIM-273	Location: Customer:	Stag Brewery AECOM	Order Number: Report Number:	329373
Client Reference:		Attention:	Gary Marshall	Superseded Report:	
VOC MS (S)					

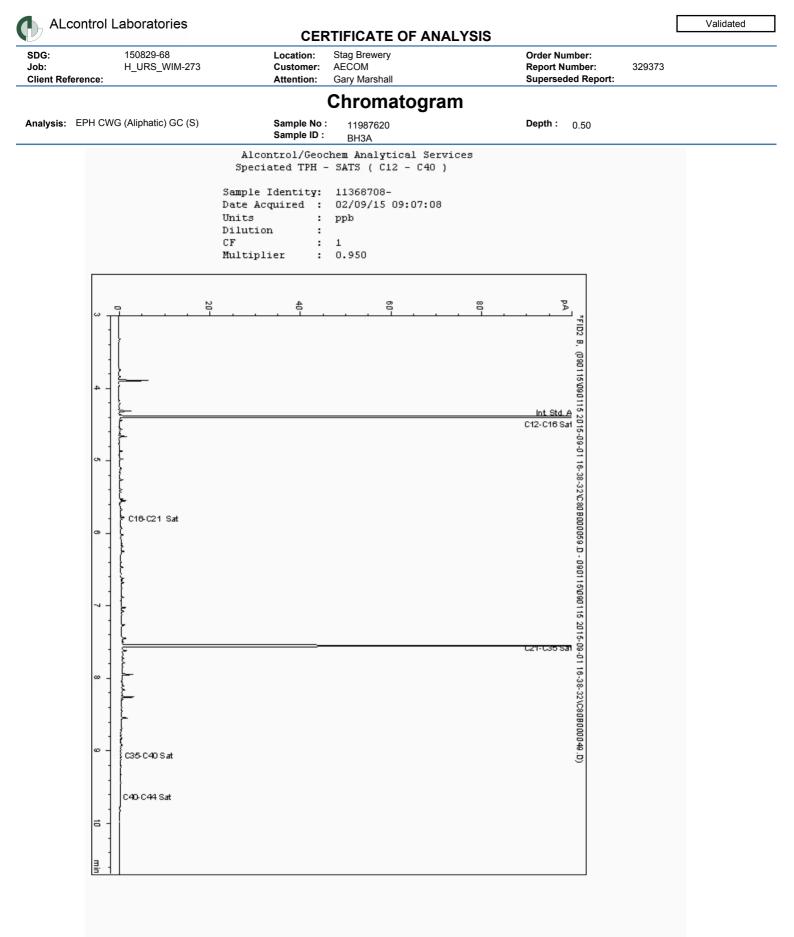
		QC 1154
Ethylbenzene	TM116	97.8 73.60 : 115.60
Hexachlorobutadiene	TM116	86.2 33.65 : 130.56
Isopropylbenzene	TM116	101.0 72.52 : 117.52
Naphthalene	TM116	106.0 83.23 : 126.48
o-Xylene	TM116	92.2 69.60 : 110.40
p/m-Xylene	TM116	93.6 71.30 : 112.70
Sec-Butylbenzene	TM116	105.0 59.20 : 125.20
Tetrachloroethene	TM116	105.8 85.92 : 127.92
Toluene	TM116	92.6 76.08 : 110.17
Trichloroethene	TM116	101.2 78.17 : 121.37
Trichlorofluoromethane	TM116	109.0 83.78 : 132.82
Vinyl Chloride	TM116	101.6 66.81 : 138.46

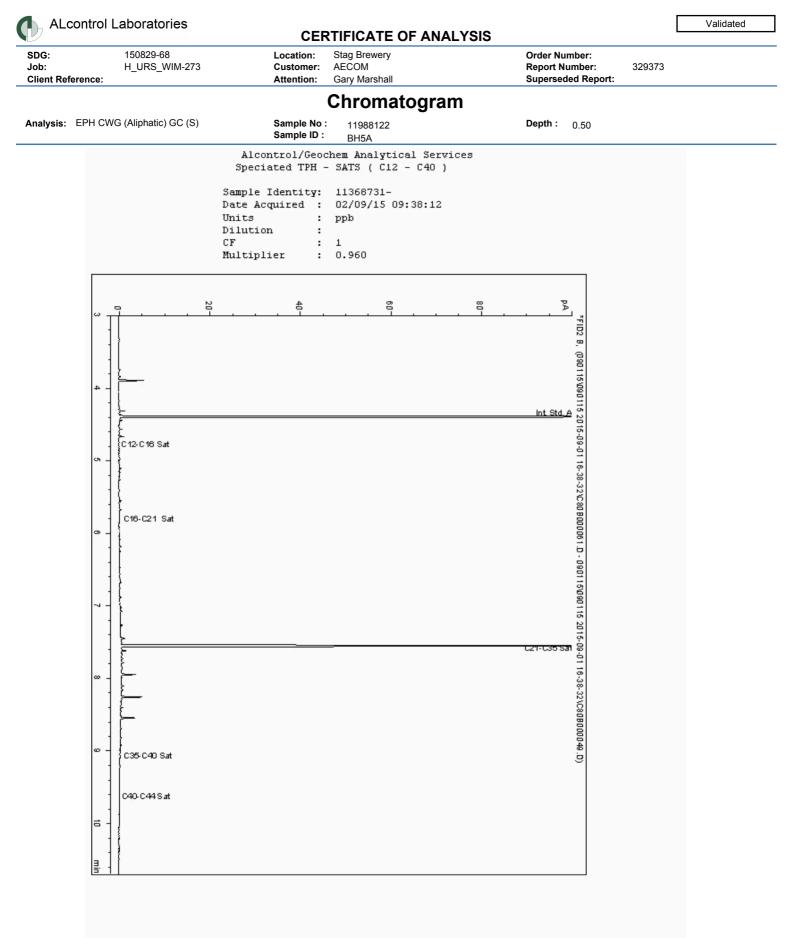
The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.

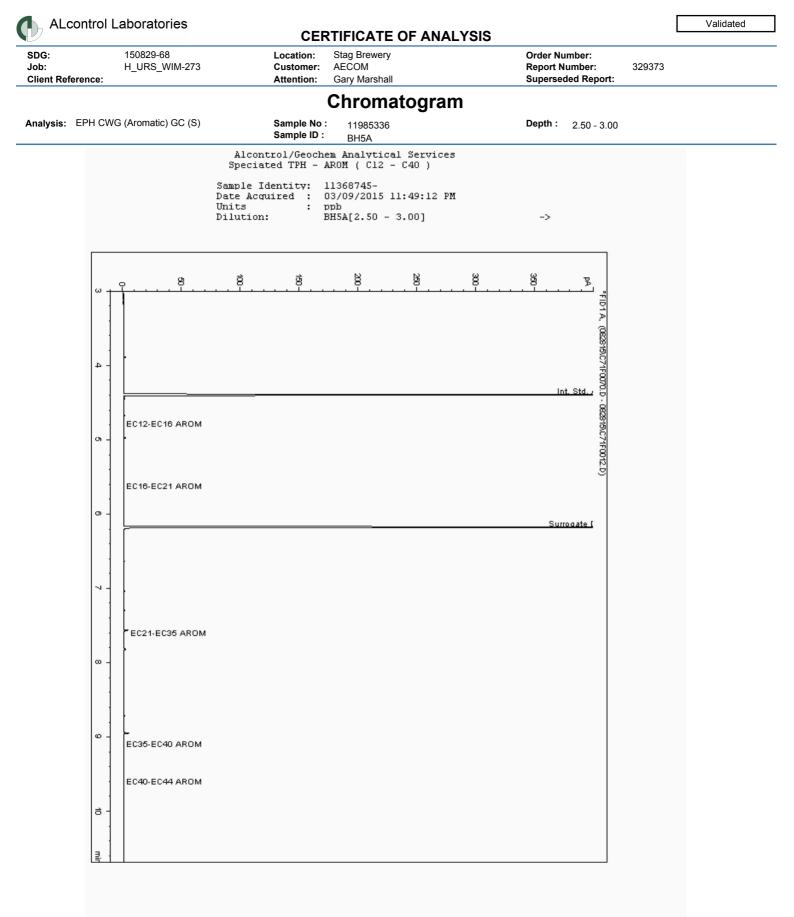
The figure detailed is the percentage recovery result for the AQC.

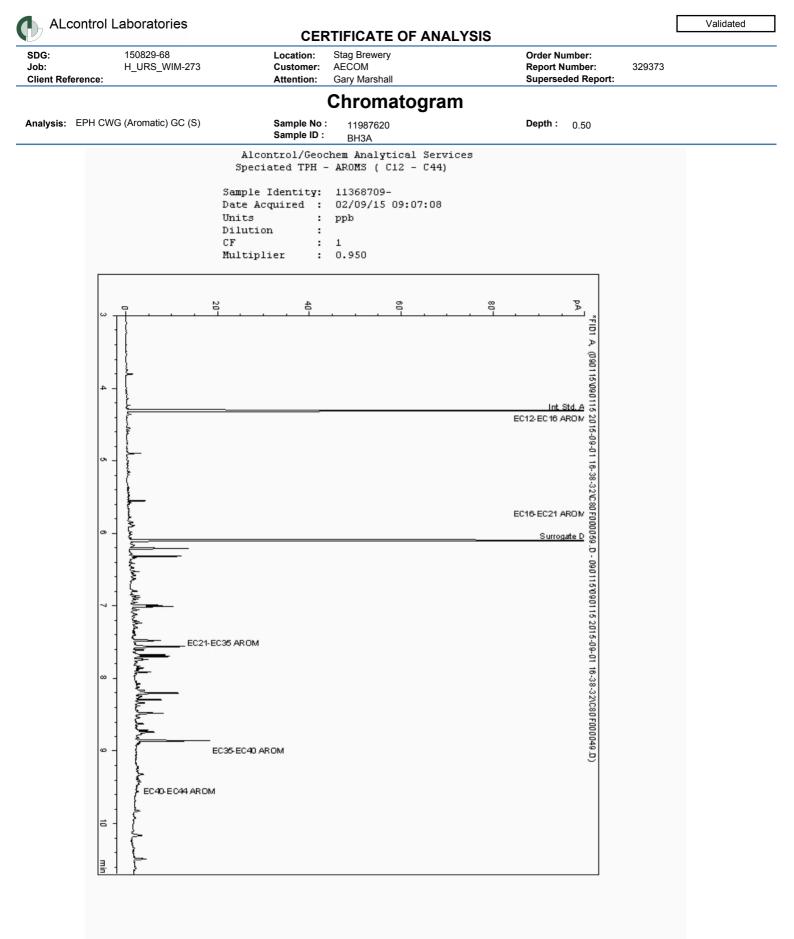
The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

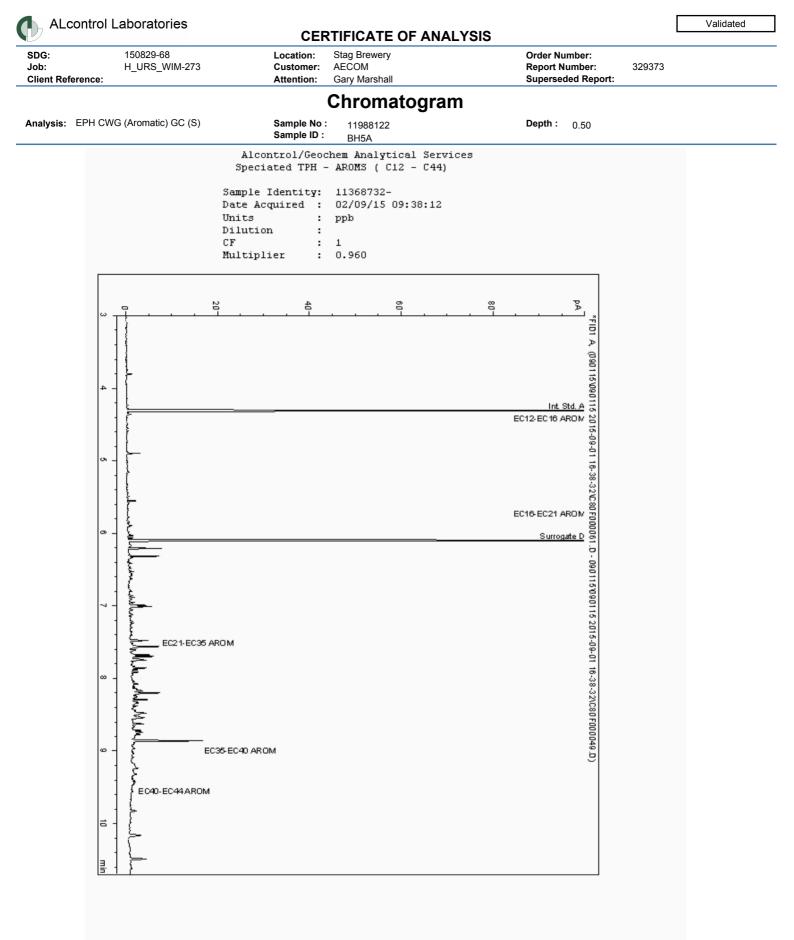


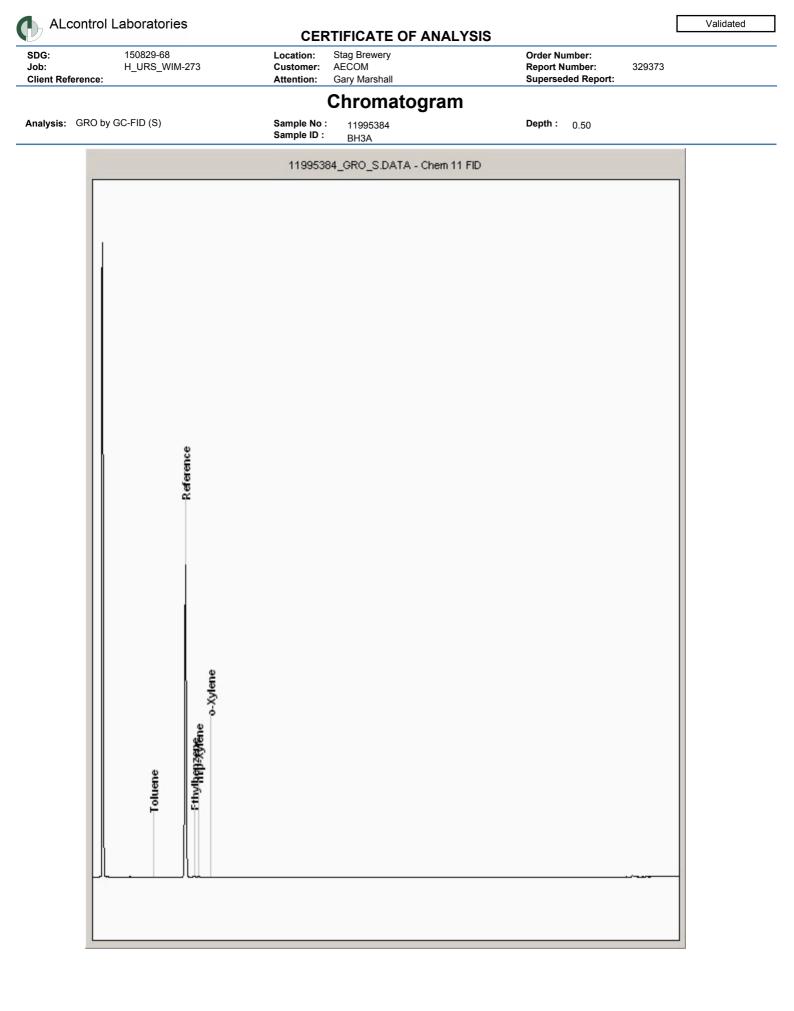


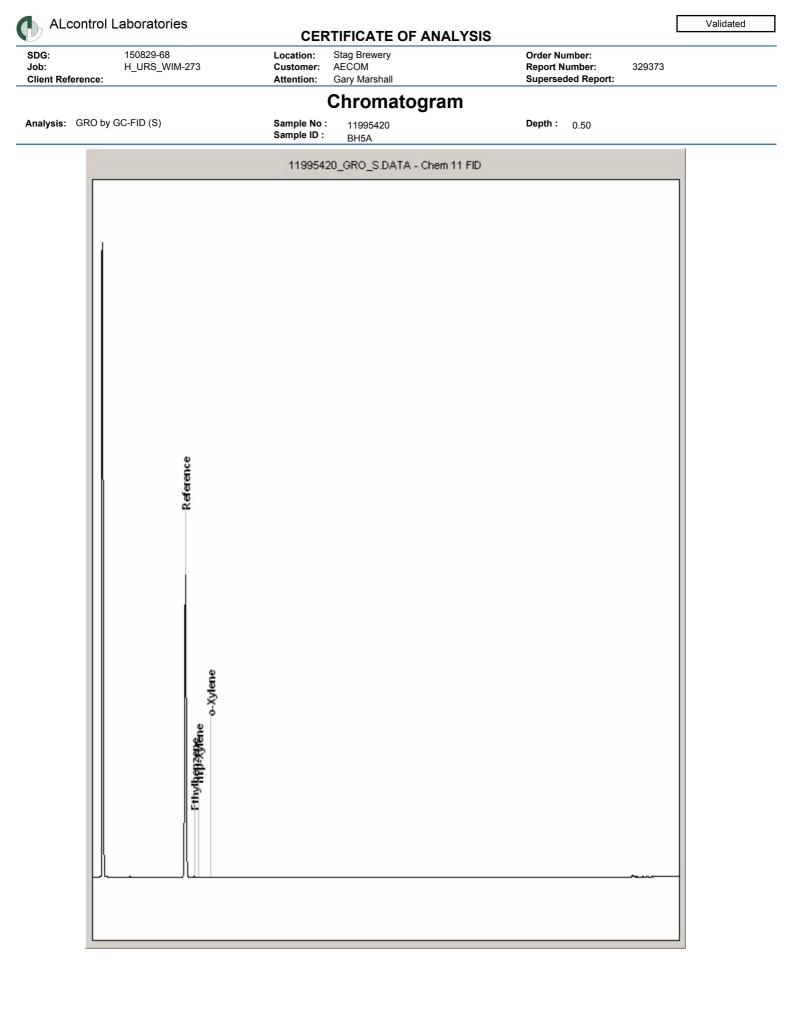


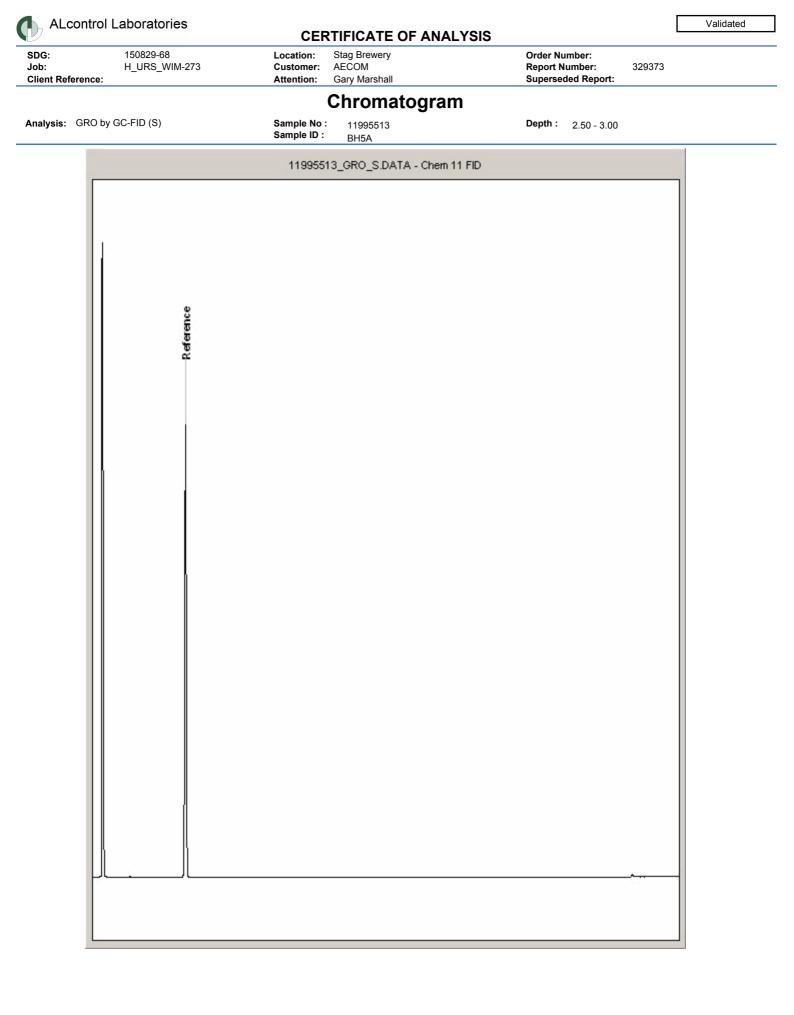












SDG:	150829-68	Location:	Stag Brewery
Job:	H_URS_WIM-273	Customer:	AECOM
Client Reference:		Attention:	Gary Marshall

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

12. Results relate only to the items tested

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.

19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute themajor part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

24. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Order Number: Report Number: Superseded Report:

329373

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
THIN LAYER CHROMATOGRAPHY	D&C	DOM	SOXTHERM	ATROSCAN
ELEMENTALSULPHUR	D&C	DCM	SOXTHERM	HPLC
PHENOLSBYGOMS	WET	DCM	SOXTHERM	GCMS
HERBICIDES	D&C	HEXANE/ACETONE	SOXTHERM	GCMS
PESTICIDES	D&C	HEXANE/ACETONE	SOXTHERM	GCMS
EPH (DRO)	D&C	HEXANE/ACETONE	END OVEREND	GCFD
EPH (MINOL)	D&C	HEXANE/ACETONE	END OVEREND	GCFD
EPH (CLEANED UP)	D&C	HEXANE/ACETONE	END OVEREND	GCFD
EPH CWG BYGC	D&C	HEXANE/ACETONE	END OVEREND	GCFD
POB TOT / POB CON	D&C	HEXANEACETONE	BND OVERBND	GCMS
POL VAROMATIC HYDROCARBONS (MS)	WET	HEXANE/ACETONE	MCROWAVE TM218.	GCMS
08-040(06-040) EZ FLASH	WET	HEXANEACETONE	SHAVER	GC+EZ
POL VAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAKER	6C-EZ
SEM VOLATILEORGANIC COMPOUNDS	WET	DOMAGETONE	SONICATE	GCMS

LIQUID MATRICES EXTRACTION SUMMARY

EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
HEXANE		
I LOVINE	STIRREDEXTRACTION(STIR-BAR)	GCMS
HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
DOM	LIQUID/LIQUID SHAKE	GCMS
DOM	SOLID PHASE EXTRACTION	HPLC
DOM	LIQUID/LIQUID SHAKE	GCMS
DOM	LIQUID/LIQUID SHAKE	GCMS
DOM	SOLID PHASE EXTRACTION	GCMS
TCE	LIQUID/LIQUID SHAKE	HPLC
TCE	LIQUID/LIQUID SHAKE	HPLC
NONE	DIRECT NJECTION	GCMS
	HEXANE HEXANE HEXANE DOM DOM DOM DOM DOM TCE TCE	HEXANE STIRREDEXTRACTION(STIR-BAR) HEXANE STIRREDEXTRACTION(STIR-BAR) HEXANE STIRREDEXTRACTION(STIR-BAR) HEXANE STIRREDEXTRACTION(STIR-BAR) HEXANE STIRREDEXTRACTION(STIR-BAR) HEXANE STIRREDEXTRACTION(STIR-BAR) DOM LIQUIDLQUD SHAKE DOM SQLDPHASE EXTRACTION DOM LIQUIDLQUD SHAKE DOM SQLDPHASE EXTRACTION TCE LIQUIDLQUD SHAKE

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed 'Screening of during the soils Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) method of transmitted/polarised in-house light microscopy and central stop dispersion staining, based on HSG 248 (2005)

Asbestos Type	Common Name
Chrysofile	WhiteAsbestos
Amoste	BrownAsbestos
Oroddalte	Blue Asbestos
Fibrous Adinaite	-
Fibrous Anthophylite	-
Fibrous Trendile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Validated

SDG:	150829-68	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329373
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt . However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-lsopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill /made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysofile	White Asbestos
Amoste	BrownAsbestos
Orodolite	Blue Asbestos
Fibrous Adinate	-
Fibrous Anthophylite	-
Fibrous Trendile	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than : - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



AECOM St. George's House 2nd Floor 5 St. George's Road Wimbledon Greater London SW19 4DR

Attention: Gary Marshall

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 14 September 2015 H_URS_WIM 150902-38

Stag Brewery 329713

We received 8 samples on Wednesday September 02, 2015 and 8 of these samples were scheduled for analysis which was completed on Monday September 14, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan Operations Manager



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CERTIFICATE OF ANALYSIS

Validated

SDG:	150902-38	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329713
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
11995368	BH3			01/09/2015
11995366	BH4			01/09/2015
11995367	BH5			01/09/2015
11995371	BH8			01/09/2015
11995370	BH109			01/09/2015
11995369	BH110			01/09/2015
11995372	BH111			01/09/2015
11995373	DUP01			01/09/2015

Only received samples which have had analysis scheduled will be shown on the following pages.

Job: H_U	902-38 IRS_WIM-273	Location Custome	er:	1	Stag AEC	ON	1	-										R	orde Rep Sup	ort	Nu	mb	er:	~~		32	297	713				
Client Reference: LIQUID Results Legend X Test	Lab Sa	Attentior			Gary	/ 1/1		11005368					11005366					11995367	oup		eae		11995371					11995370			GOCGERIL	0.400011
No Determination Possible		stomer Reference					Ţ	BH3				<u>1</u>	RH4					BH5					BH8					BH109			ВНТЮ	DU110
	AGS F	Reference																														
	Dep	oth (m)																														
	Cor	ntainer	0.5I glass bottle (AL	250ml BOD (ALE21	500ml Plastic (ALE2	H2SO4 (ALE244)	HNO3 Filtered (ALE	0.5l glass bottle (AL Vial (Al E297)	250ml BOD (ALE21	500ml Plastic (ALE2	H2SO4 (ALE244)	HNO3 Filtered (ALE	Vial (ALE297)	250ml BOD (ALE21	500ml Plastic (ALE)	H2SO4 (ALE244)	HNO3 Filtered (ALE	Vial (ALE297)	250ml BOD (ALE21	500ml Plastic (ALE2	Dissolved Metals Pi	HNO3 Filtered (ALE	Vial (ALE297)	0.51 glass bottle (AL	500ml Plastic (ALE2	Dissolved Metals Pr	HNO3 Filtered (ALE	Vial (ALE297)	0.5I glass bottle (AL	500ml Plastic (ALE2	Dissolved Metals Pr	10001 /01 004/
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 8				X					X					×					· •	C				3	K				, ,	×.
Anions by Kone (w)	All	NDPs: 0 Tests: 8			X					X					x					x					X					x		
COD Unfiltered	All	NDPs: 0 Tests: 8		x					x					X					X)	C					×		-
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8					X					X					x					X					×	<hr/>				-
Dissolved W, Nb and Zr by ICP-I	MS All	NDPs: 0 Tests: 8					x					X					x					X					x			_		-
EPH (DRO) (C10-C40) Aqueous W)	All	NDPs: 0 Tests: 8	X					X)	C				>	C					X					X			-
EPH CWG (Aliphatic) Aqueous (W)	GC All	NDPs: 0 Tests: 8	x					X					>	C)	Contraction of the second s					x			_	_	x	_		-
EPH CWG (Aromatic) Aqueous ((W)	GC All	NDPs: 0 Tests: 8	x					x					>	()	C					x			_		x			-
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8						x					×					X					x				_	x				-
Mercury Dissolved	All	NDPs: 0 Tests: 8			×	C)	C				>	Contraction 1 and 1 a					x					x				-	x	-
pH Value	All	NDPs: 0 Tests: 8			x					x					x					x					X					x		-
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 7	x					x					>	C)	C					x					x			-
Total EPH (aq)	All	NDPs: 0 Tests: 8	x					x					>	C)	C					x			_		x			-
TPH CWG (W)	All	NDPs: 0 Tests: 8	x					X					>	<pre>c</pre>)	Contraction of the second s					x			+		x	+		-
VOC MS (W)	All	NDPs: 0 Tests: 8						x					×					Y			+		x				+	×		+	+	-

			CE	ERI		ICP		U	- A	N.	AL	YS
SDG: Job: Client Reference:	150902-38 H_URS_W		Location: Customer Attention	r: /	AEC	∣ Brev OM ∕ Mar	-					
QUID esults Legend X Test		Lab Samp	le No(s)	11995369				11995372				11995373
No Determir Possible	nation .	Custo Sample Re		BH110				BH111				DUP01
		AGS Ref	erence									
		Depth										
		Conta	iner	Vial (ALE297) HNO3 Filtered (ALE	0.51 glass bottle (ALE2	500ml Plastic (ALE2	HNU3 HITERED (ALT H2SO4 (ALE244)	Vial (ALE297)	250ml BOD (ALE2	500ml Plastic (ALE	H2SO4 (ALE244)	Vial (ALE297)
mmoniacal Nitrogen		All	NDPs: 0 Tests: 8				X			2	X	
ions by Kone (w)		All	NDPs: 0 Tests: 8			x				x		
OD Unfiltered		All	NDPs: 0 Tests: 8)	<pre>c</pre>			x			
ssolved Metals by ICP	-MS	All	NDPs: 0 Tests: 8	x			×	2)	< <
issolved W, Nb and Zr	by ICP-MS	All	NDPs: 0 Tests: 8	x			×)	<
PH (DRO) (C10-C40) A V)	Aqueous	All	NDPs: 0 Tests: 8		x) 	<mark>(</mark>			
PH CWG (Aliphatic) Aq V)	ueous GC	All	NDPs: 0 Tests: 8		x)	< Contraction of the second se			
PH CWG (Aromatic) Ac N)	queous GC	All	NDPs: 0 Tests: 8		x)	< Contraction of the second se			
RO by GC-FID (W)		All	NDPs: 0 Tests: 8	x				x				x
lercury Dissolved		All	NDPs: 0 Tests: 8			×				>	<	
H Value		All	NDPs: 0 Tests: 8			x				x		
VOC MS (W) - Aqueou	s	All	NDPs: 0 Tests: 7		x							
otal EPH (aq)		All	NDPs: 0 Tests: 8		x)	<mark>(</mark>			
PH CWG (W)		All	NDPs: 0 Tests: 8		x)	<mark>(</mark>			
OC MS (W)		All	NDPs: 0 Tests: 8	x				X				X

CERTIFICATE OF ANALYSIS

Validated

SDG:	150902-38	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329713
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

Results Legend # ISO17025 accredited. M mCERTS accredited.		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
aq Aqueous / settled sample. diss.fiit Dissolved / filtered sample. tot.unfiit Total / unfiltered sample. * Subcontracted test.		Depth (m) Sample Type Date Sampled	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015
** % recovery of the surrogate standard check the efficiency of the method. results of individual compounds with samples aren't corrected for the results.	. The ithin	Sampled Time Date Received SDG Ref	02/09/2015 150902-38 11995368	00:00:00 02/09/2015 150902-38 11995366	02/09/2015 150902-38 11995367	02/09/2015 150902-38 11995371	02/09/2015 150902-38 11995370	02/09/2015 150902-38 11995369
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix) Component	LOD/Uni	Lab Sample No.(s) AGS Reference	11993300	11993300	11995307	11995371	11885370	11990309
Ammoniacal Nitrogen as	<0.2 m		<0.2	<0.2	0.508	0.619	1.23	<0.2
N Ammoniacal Nitrogen as	<0.3 m	g/I TM099	# <0.3	# <0.3	# 0.653	# 0.796	# 1.58	# <0.3
NH4 COD, unfiltered	<7 mg	/I TM107	# <7	# 8.09	# 21.2	# 10.5	# 190	# <7
Antimony (diss.filt)	<0.16	TM152	# 0.415	# 0.36	# <0.16	# 0.726	# 0.64	# 0.464
Arsenic (diss.filt)	µg/l <0.12	TM152	7.32	5.08	5.12	15.7	32.6	14
Barium (diss.filt)	µg/l <0.03	TM152	# 64.2	# 22.1	# 47.9	# 83.4	# 18.2	40.7
Beryllium (diss.filt)	μg/l <0.07	TM152	<0.07	# <0.07	<0.07	<0.07	<0.07	<0.07
	µg/l		#	#	#	#	#	#
Boron (diss.filt)	<9.4 µç	g/l TM152	152 #	52.7 #	99.2 #	130 #	107 #	137 #
Cadmium (diss.filt)	<0.1 µថ្	g/l TM152	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
Chromium (diss.filt)	<0.22 µg/l	TM152	3.62 #	1.53 #	2.26 #	3.98 #	3.56 #	3.44 #
Cobalt (diss.filt)	<0.06 μg/l	TM152	2.33	0.594 #	3.15 #	2.77 #	9.39 #	4.36 #
Copper (diss.filt)	<0.85 μg/l	TM152	1.13 #	0.939 #	1.09 #	1.4 #	1.26 #	1.29 #
Lead (diss.filt)	<0.02 µg/l	TM152	0.034	0.066	0.057	0.033	0.085	0.04
Manganese (diss.filt)	<0.04 μg/l	TM152	91.2 #	**************************************	# 860 #	# 169 #	# 1320 #	126 #
Nickel (diss.filt)	<0.15 μg/l	TM152	6.92 #	1.77 #	5.5 #	7.03 #	# 11 #	6.1 #
Selenium (diss.filt)	<0.39 μg/l	TM152	9.06 #	0.781 #	1.67 #	1.92 #	3 #	13.2 #
Thallium (diss.filt)	<0.96 μg/l	TM152	<0.96	<0.96	<0.96		<0.96	<0.96
Vanadium (diss.filt)	<0.24 µg/l	TM152	1.56	1.61 #	1.33 #	1.56 #	1.57 #	1.33 #
Zinc (diss.filt)	<0.41 µg/l	TM152	8.79 #	12.6 #	5.59 #	9.92 #	27.4 #	4.62 #
EPH Range >C10 - C40 (aq)	<46 µg	/I TM172	<46 #	<46 #	<46 #	<46 #	159 #	<46 #
Total EPH (C6-C40) (aq)	<100 µ	g/I TM172	<100	<100	<100	، « <100	159	<100
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	<0.01	<0.01	<0.01 #	<0.01
Sulphate	<2 mg	/I TM184	57.4	43 #	79.9	61.6 #	75 #	55.2 #
Phosphate (ortho) as PO4	<0.05 mg/l	TM184	0.465	7.3 #	1.55 #	0.302 #	0.297 #	0.216 #
Nitrate as NO3	<0.3 m	g/I TM184	5.18 #	21.5 #	6.42 #	4.42 #	0.942 #	5.64 #
рН	<1 pH Units	TM256	7.45	7.1 #	7.39	7.38 #	7.49 #	7.52 #
Silver (diss.filt)	<1.5 µç	j/l TM283	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5

CERTIFICATE OF ANALYSIS

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Results Legend		Customer Sample R	BH111	DUP01	_		
# ISO17025 accredited. M mCERTS accredited.		Customer Sample R	вніті	DUPUT			
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)					
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Sample Type Date Sampled	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015			
** % recovery of the surrogate standa check the efficiency of the method.		Sampled Time					
results of individual compounds wi samples aren't corrected for the re-	ithin	Date Received SDG Ref	02/09/2015 150902-38	02/09/2015 150902-38			
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)	covery	Lab Sample No.(s) AGS Reference	11995372	11995373			
Component	LOD/Unit						
Ammoniacal Nitrogen as	<0.2 mg	J/I TM099	4.74	<0.2			
N			#		#		
Ammoniacal Nitrogen as NH4	<0.3 mg	y/I TM099	6.09 #	<0.3	#		
COD, unfiltered	<7 mg/	1 TM107	43.5	<7	#		
			#		#		
Antimony (diss.filt)	<0.16	TM152	0.199	0.816			
Arsenic (diss.filt)	μg/l <0.12	TM152	22	4.8	-		
	μg/l	111102	#		#		
Barium (diss.filt)	<0.03	TM152	104	21.4			
Descrifficates (disce 510)	µg/l	T14450	#		#		
Beryllium (diss.filt)	<0.07 µg/l	TM152	<0.07 #	<0.07	#		
Boron (diss.filt)	<9.4 µg	/I TM152	# 65.1	52.2	π		
			#		#		
Cadmium (diss.filt)	<0.1 µg	/I TM152	<0.1 #	<0.1	#		
Chromium (diss.filt)	<0.22	TM152	3.75	1.22	#		
	µg/l		#		#		
Cobalt (diss.filt)	<0.06	TM152	1.79	0.262			
Copper (diss.filt)	μg/l <0.85	TM152	# <0.85	1.13	#		
	ν0.00 μg/l	1101132	<0.05 #		#		
Lead (diss.filt)	<0.02	TM152	<0.02	0.028			
	µg/l	T14450	#		#		
Manganese (diss.filt)	<0.04 µg/l	TM152	2270 #	7.19	#		
Nickel (diss.filt)	<0.15	TM152	3.85	1.81			
	µg/l		#		#		
Selenium (diss.filt)	<0.39 µg/l	TM152	2.87 #	0.897	#		
Thallium (diss.filt)	< 0.96	TM152	<0.96	<0.96	#		
	µg/l						
Vanadium (diss.filt)	<0.24	TM152	1.07	1.45	"		
Zinc (diss.filt)	μg/l <0.41	TM152	#	5.01	#		
	µg/l		#		#		
EPH Range >C10 - C40	<46 µg	/I TM172	65.8	<46			
(aq) Total EPH (C6-C40) (aq)	<100 µg	j/l TM172	# <100	<100	#		
10(a) = 11 (00-0+0) (ay)	- 100 hế	p. 11v117∠	5100	- 100			
Mercury (diss.filt)	<0.01	TM183	<0.01	<0.01			
Culabata	µg/l		#		#		
Sulphate	<2 mg/	'I TM184	37.5 #	42.3	#		
Phosphate (ortho) as PO4	<0.05	TM184	<0.05	7.28			
	mg/l		#		#		
Nitrate as NO3	<0.3 mg	µ/I TM184	0.94 #	21.9	#		
pH	<1 pH	TM256	7.32	7.14	#		
	Units		#		#		
Silver (diss.filt)	<1.5 µg	/I TM283	<1.5	<1.5			
						I	
					_		

CERTIFICATE OF ANALYSIS

Validated

SVOC MS (W) - Aqueous

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Normal water Normal water<	SVOC MS (W) - Aqueous								
Burning and any and any and any			Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
vide simulation with the second se	aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate standa check the efficiency of the method. results of individual compounds wi	The ithin	Sample Type Date Sampled Sampled Time Date Received	01/09/2015 02/09/2015 150902-38	01/09/2015 00:00:00 02/09/2015 150902-38	01/09/2015 02/09/2015 150902-38	01/09/2015 02/09/2015 150902-38	01/09/2015 02/09/2015 150902-38	01/09/2015 02/09/2015 150902-38
1.24. Finite outcome 94. µµ 7M76 94			AGS Reference	11995368	11995366	11995367	11995371	11995370	11995369
(a) (b) (b) (b) (b) (c) (~1	-1		-1		~1
IncludyInt aInt 		< i µg/							
InclusionIntra	1,2-Dichlorobenzene (aq)	<1 µg/	I TM176						
A-5. Trick incompane (a) TMTB A-1 A-1 </td <td>1,3-Dichlorobenzene (aq)</td> <td><1 µg/</td> <td>I TM176</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1,3-Dichlorobenzene (aq)	<1 µg/	I TM176						
control of up a control up a up a <thup a<="" th=""> <thup< td=""><td>1,4-Dichlorobenzene (aq)</td><td><1 µg/</td><td>I TM176</td><td><1</td><td><1</td><td><1</td><td><1</td><td><2</td><td><1</td></thup<></thup>	1,4-Dichlorobenzene (aq)	<1 µg/	I TM176	<1	<1	<1	<1	<2	<1
control 2.4-bolancybend (a)control 4 lightTMT8control 4 control 4 co	2,4,5-Trichlorophenol (aq)	<1 µg/	I TM176						
1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 24-Dimetyriphenol (ac) 1 1 1 1 1 1 1 1 1 1 1 1 2 1	2,4,6-Trichlorophenol (aq)	<1 µg/	I TM176						
1.4.4.4.4.4 $1.4.4$	2,4-Dichlorophenol (aq)	<1 µg/	I TM176						
1 + 0 $1 + 0$ <	2,4-Dimethylphenol (aq)	<1 µg/	I TM176						
Chor Control Contro Contro <	2,4-Dinitrotoluene (aq)	<1 µg/	I TM176						
Image: Constraint of all point	2,6-Dinitrotoluene (aq)	<1 µg/	I TM176						
LetterLett	2-Chloronaphthalene (aq)	<1 µg/	I TM176						
Image: constraint of the sector of the sec	2-Chlorophenol (aq)	<1 µg/	I TM176						
Image: Constraint of a	2-Methylnaphthalene (aq)	<1 µg/	I TM176						
2.Nitroamline (aq) < 1 µg4 TM176 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1	2-Methylphenol (aq)	<1 µg/	I TM176						
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	2-Nitroaniline (aq)	<1 µg/	I TM176	<1	<1	<1	<1	<2	<1
3-Nitroaniline (aq) r1 µµy TM176 r1 $\#$ r1 $\#$ π	2-Nitrophenol (aq)	<1 µg/	I TM176						
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	3-Nitroaniline (aq)	<1 µg/	I TM176		<1	<1		<2	<1
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		<1 µg/	I TM176		<1			-	<1
Image: constraint of the sector of		<1 µg/	I TM176						
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	4-Chloroaniline (aq)	<1 µg/	I TM176	<1	<1	<1	<1	<2	<1
4-Methylphenol (aq) $< 1 \ \mu g/l$ TM176 $< 1 \ m f$		<1 µg/	I TM176						
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4-Methylphenol (aq)	<1 µg/	I TM176		<1	<1		<2	<1
4-Nitrophenol (aq) $<1 \mu g/l$ TM176 <1 <1 <1 <1 <1 <1 <1 <1 <1 <2 <1 Azobenzene (aq) $<1 \mu g/l$ TM176 <1 <1 <1 <1 <1 <1 <1 <2 <1 Acenaphthylene (aq) $<1 \mu g/l$ TM176 <1 <1 <1 <1 <1 <2 <1 $#$ Acenaphthylene (aq) $<1 \mu g/l$ TM176 <1 <1 <1 <1 <1 <2 <1 $#$ Acenaphthene (aq) $<1 \mu g/l$ TM176 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <	4-Nitroaniline (aq)	<1 µg/	I TM176						
Accurate Accurate (aq) $< 1 \mu g/l$ TM176 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1 < 1	4-Nitrophenol (aq)	<1 µg/	I TM176	<1		<1	<1		
Acenaphthylene (aq) $<1 \mu g/l$ TM176 <1 <1 <1 <1 <1 <2 <1 Acenaphthene (aq) $<1 \mu g/l$ TM176 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Azobenzene (aq)	<1 µg/	I TM176						
Acenaphthene (aq) $<1 \mu g/l$ TM176 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Acenaphthylene (aq)	<1 µg/	I TM176		<1	<1			<1
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Acenaphthene (aq)	<1 µg/	I TM176	<1	<1	<1	<1	<2	<1
bis(2-Chloroethyl)ether (aq) <1 µg/l TM176 <1 <1 <1 <1 <1 <1 <2 <1 bis(2-Chloroethoxy)metha ne (aq) <1 µg/l	Anthracene (aq)	<1 µg/	I TM176	<1	<1	<1	<1	<2	<1
bis(2-Chloroethoxy)metha ne (aq) <1 µg/l TM176 <1 <1 <1 <1 <1 <1 <2 <1 bis(2-Ethylhexyl) phthalate (aq) <2 µg/l		<1 µg/	I TM176		<1	<1			<1
bis(2-Ethylhexyl) phthalate (aq) <2 µg/l TM176 <2 # <2 <2 <2 <2 <2 #		<1 µg/	I TM176	<1	<1	<1		<2	<1
Butylbenzyl phthalate (aq) <1 μg/l TM176 <1 <1 <1 <2 <1		<2 µg/	I TM176	<2	<2	<2	<2	<4	<2
	Butylbenzyl phthalate (aq)	<1 µg/	I TM176	<1	<1	<1		<2	

CERTIFICATE OF ANALYSIS

Validated

SDG:	150902-38	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329713
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

SVOC MS (W) - Aqueous

SVOC MS (W) - Aqueous	3							
Results Legend # ISO17025 accredited. M mCERTS accredited.		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test.		Depth (m) Sample Type Date Sampled	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015
** % recovery of the surrogate stands check the efficiency of the method		Sampled Time	02/09/2015	00:00:00	02/09/2015			
results of individual compounds w	rithin	Date Received SDG Ref	150902-38	02/09/2015 150902-38	150902-38	02/09/2015 150902-38	02/09/2015 150902-38	02/09/2015 150902-38
samples aren't corrected for the re (F) Trigger breach confirmed	covery	Lab Sample No.(s)	11995368	11995366	11995367	11995371	11995370	11995369
1-5&+§@ Sample deviation (see appendix)		AGS Reference						
Component	LOD/Un	_						
Benzo(a)anthracene (aq)	<1 µg	/I TM176	<1	<1	<1	<1	<2	<1
		//	#	#	#	#	#	#
Benzo(b)fluoranthene (aq)	<1 µg	/I TM176	<1	<1	<1	<1	<2	<1
Benzo(k)fluoranthene (aq)	<1 µg	/I TM176	# <1	# <1	# <1	# <1	# <2	# <1
Benzo(k)huoranthene (aq)	×ιμg		×1 #	<r></r> *I	~1 #	~ I #	~2 #	<r></r>
Benzo(a)pyrene (aq)	<1 µg	/I TM176	<1 **	* <1	<1 **	*	<2	<1 **
	1 49		#	#	#	#		#
Benzo(g,h,i)perylene (aq)	<1 µg	/I TM176	<1	<1	<1 "	" <1	<2	<1
			#	#	#	#	- #	#
Carbazole (aq)	<1 µg	/I TM176	<1	<1	<1	<1	<2	<1
			#	#	#	#	#	#
Chrysene (aq)	<1 µg	/I TM176	<1	<1	<1	<1	<2	<1
			#	#	#	#	#	#
Dibenzofuran (aq)	<1 µg	/I TM176	<1	<1	<1	<1	<2	<1
			#	#	#	#	#	#
n-Dibutyl phthalate (aq)	<1 µg	/I TM176	<1	<1	<1	<1	<2	<1
			#	#	#	#	#	#
Diethyl phthalate (aq)	<1 µg	/I TM176	<1	<1	<1	<1	<2	<1
			#	#	#	#	#	#
Dibenzo(a,h)anthracene	<1 µg	/I TM176	<1	<1	<1	<1	<2	<1
(aq)			#	#	#	#	#	#
Dimethyl phthalate (aq)	<1 µg	/I TM176	<1	<1	<1	<1	<2	<1
		// TM470	#	#	#	#	#	#
n-Dioctyl phthalate (aq)	<5 µg	/I TM176	<5	<5	<5	<5	<10	<5
Elucronthono (cg)	<1.00	/I TM176	# <1	# <1	# <1	# <1	# <2	# <1
Fluoranthene (aq)	<1 µg	/1 11/11/0	<1 #			<ı #		
Fluorene (aq)	<1 µg	/I TM176	<1	# <1	# <1	# <1	# <2	# <1
	×τμg		#	#		#	~~ #	*'
Hexachlorobenzene (aq)	<1 µg	/I TM176	<1		π <1			<1
			#	#	#	#	- #	#
Hexachlorobutadiene (aq)	<1 µg	/I TM176	<1	<1	<1	<1	<2	<1
			#	#	#	#	#	#
Pentachlorophenol (aq)	<1 µg	/I TM176	<1	<1	<1	<1	<2	<1
Phenol (aq)	<1 µg	/l TM176	<1	<1	<1	<1	<2	<1
n-Nitroso-n-dipropylamine	<1 µg	/I TM176	<1	<1	<1	<1	<2	<1
(aq)			#		#	#	#	#
Hexachloroethane (aq)	<1 µg	/I TM176	<1	<1	<1	<1	<2	<1
			#		#	#	#	#
Nitrobenzene (aq)	<1 µg	/I TM176	<1	<1	<1	<1	<2	<1
Nonhthologo (ar)		//	#		#	#	#	#
Naphthalene (aq)	<1 µg	/I TM176	<1 #	<1 #	<1 #	<1 #	<2 #	<1 #
Isophorone (aq)	<1 µg	/I TM176	<1	# <1	<1 **	# <1	<2	# <1
ισομποιοπο (αγ)	_ µg		<1 #		<r></r> *I	<1 #	~2 #	<ı #
Hexachlorocyclopentadien	<1 µg	/I TM176	<1	* <1	<1 #	* <1	<2	<1 #
e (aq)	1 49			- 1			-2	.,
Phenanthrene (aq)	<1 µg	/I TM176	<1	<1	<1	<1	<2	<1
	. 49		#		#	#	- #	#
Indeno(1,2,3-cd)pyrene	<1 µg	/l TM176	<1	<1	<1	<1	<2	<1
(aq)			#		#	#	- #	#
Pyrene (aq)	<1 µg	/I TM176	<1	<1	<1	<1	<2	<1
	10		#	#	#	#	#	#

CERTIFICATE OF ANALYSIS

Validated

Client Reference:			Attention:	Gary Marshall	Superseded Repo	rt:	
SVOC MS (W) - Aqueous	6			_			
Results Legend ISO17025 accredited. M mCERYS accredited. Aqueous / settled sample. diss.fitt Dissolved / fittered sample. tot.unfitt Total / unfittered sample. Subcontracted test. ** % recovery of the surrogate standa check the efficiency of the method. results of individual compounds wi	rd to The	Customer Sample R Depth (m) Sample Type Date Sampled Sampled Time Date Received	BH111 Water(GW/SW) 01/09/2015 02/09/2015				
samples aren't corrected for the red (F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		SDG Ref Lab Sample No.(s) AGS Reference	150902-38 11995372				
Component	LOD/Unit						
1,2,4-Trichlorobenzene (aq)	<1 µg/	I TM176	<1	#			
1,2-Dichlorobenzene (aq)	<1 µg/	I TM176	<1	#			
1,3-Dichlorobenzene (aq)	<1 µg/	I TM176	<1	#			
1,4-Dichlorobenzene (aq)	<1 µg/	I TM176	<1				
2,4,5-Trichlorophenol (aq)	<1 µg/	I TM176	<1	#			
2,4,6-Trichlorophenol (aq)	<1 µg/	I TM176	<1	#			
2,4-Dichlorophenol (aq)	<1 µg/		<1	#			
2,4-Dimethylphenol (aq)	<1 µg/		<1	#			
2,4-Dinitrotoluene (aq)	<1 µg/		<1	#			
2,6-Dinitrotoluene (aq)	<1 µg/		<1	#			
2-Chloronaphthalene (aq)	<1 µg/		<1	#			
2-Chlorophenol (aq)	<1 µg/		<1	#			
2-Methylnaphthalene (aq)	<1 µg/		<1	#			
2-Methylphenol (aq)	<1 µg/		<1	#			
2-Nitroaniline (aq)	<1 µg/		<1	#			
2-Nitrophenol (aq)	<1 µg/		<1	#			
3-Nitroaniline (aq)	<1 µg/		<1	#			
4-Bromophenylphenylethe r (aq)	<1 µg/		<1	#			
4-Chloro-3-methylphenol (aq)	<1 µg/		<1	#			
4-Chloroaniline (aq)	<1 µg/		<1				
4-Chlorophenylphenylethe r (aq)	<1 µg/		<1	#			
4-Methylphenol (aq)	<1 µg/		5.42	#			
4-Nitroaniline (aq)	<1 µg/		<1	#			
4-Nitrophenol (aq)	<1 µg/		<1				
Azobenzene (aq)	<1 µg/		<1	#			
Acenaphthylene (aq)	<1 µg/		<1	#			
Acenaphthene (aq)	<1 µg/		<1	#			
Anthracene (aq)	<1 µg/		<1	#			
bis(2-Chloroethyl)ether (aq)	<1 µg/		<1	#			
bis(2-Chloroethoxy)metha ne (aq)	<1 µg/		<1	#			
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/		<2	#			
Butylbenzyl phthalate (aq)	<1 µg/	I TM176	<1	#			

CERTIFICATE OF ANALYSIS

Validated

SVOC MS (W) - Aqueous

SVOC MS (W) - Aqueous	S				-	
Results Legend # ISO17025 accredited.		Customer Sample R	BH111			
M mCERTS accredited. aq Aqueous / settled sample. diss.fitt Dissolved / filtered sample. tot.unfitt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate standa check the efficiency of the method. results of individual compounds wi	The	Depth (m) Sample Type Date Sampled Sampled Time Date Received	Water(GW/SW) 01/09/2015 02/09/2015 150902-38			
samples aren't corrected for the rea (F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)	covery	SDG Ref Lab Sample No.(s) AGS Reference	11995372			
Component	LOD/Unit	_				
Benzo(a)anthracene (aq)	<1 µg/	I TM176	<1 #			
Benzo(b)fluoranthene (aq)	<1 µg/	TM176	<1 #			
Benzo(k)fluoranthene (aq)	<1 µg/	I TM176	<1 #			
Benzo(a)pyrene (aq)	<1 µg/	I TM176	<1 #			
Benzo(g,h,i)perylene (aq)	<1 µg/	TM176	<1 #			
Carbazole (aq)	<1 µg/	TM176	<1 #			
Chrysene (aq)	<1 µg/	TM176	<1 #			
Dibenzofuran (aq)	<1 µg/	TM176	<1 #			
n-Dibutyl phthalate (aq)	<1 µg/	I TM176	<1 #			
Diethyl phthalate (aq)	<1 µg/	TM176	<1 #			
Dibenzo(a,h)anthracene (aq)	<1 µg/	TM176	<1 #			
Dimethyl phthalate (aq)	<1 µg/	TM176	<1 #			
n-Dioctyl phthalate (aq)	<5 µg/	I TM176	<5			
Fluoranthene (aq)	<1 µg/	TM176	<1 #			
Fluorene (aq)	<1 µg/	TM176	<1 #			
Hexachlorobenzene (aq)	<1 µg/	TM176	<1 #			
Hexachlorobutadiene (aq)	<1 µg/	TM176	<1 #			
Pentachlorophenol (aq)	<1 µg/	TM176	<1			
Phenol (aq)	<1 µg/	TM176	<1			
n-Nitroso-n-dipropylamine (aq)	<1 µg/	TM176	<1 #			
Hexachloroethane (aq)	<1 µg/		<1 #			
Nitrobenzene (aq)	<1 µg/	I TM176	<1 #			
Naphthalene (aq)	<1 µg/		<1 #			
Isophorone (aq)	<1 µg/		<1 #			
Hexachlorocyclopentadien e (aq)	<1 µg/		<1			
Phenanthrene (aq)	<1 µg/		<1 #			
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/		<1 #			
Pyrene (aq)	<1 µg/	I TM176	<1 #			

CERTIFICATE OF ANALYSIS

Validated

TPH CWG (W)

TPH CWG (W) Results Legend								
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample.		Customer Sample R	BH3	BH4	BH5	BH8	BH109	BH110
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test.		Depth (m) Sample Type Date Sampled	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015	Water(GW/SW) 01/09/2015
** % recovery of the surrogate standar check the efficiency of the method results of individual compounds w	. The	Sampled Time Date Received	02/09/2015	00:00:00 02/09/2015	02/09/2015	02/09/2015	02/09/2015	02/09/2015
samples aren't corrected for the re (F) Trigger breach confirmed		SDG Ref Lab Sample No.(s)	150902-38 11995368	150902-38 11995366	150902-38 11995367	150902-38 11995371	150902-38 11995370	150902-38 11995369
1-5&+§@ Sample deviation (see appendix) Component	LOD/Uni	AGS Reference ts Method						
Methyl tertiary butyl ether	<3 µg	_	<3	<3	<3	<3	<3	<3
(MTBE) Benzene	<7 µg,	/I TM245	# <7	# <7	# <7	# <7	# <7	# <7
Toluene	<4 µg,	/I TM245	#	# <4	# <4	# <4	# <4	# <4
Ethylbenzene	<5 µg.	/I TM245	# <5	# <5	# <5	# <5	# <5	# <5
m,p-Xylene	<8 hð	/I TM245	#	#	#	#	# <8	#
o-Xylene	<3 µg,		# <3	# <3	# <3	# <3	# <3	# <3
Sum of detected BTEX	<28 µg		# <28	# <28	#	# <28	# <28	# <28
	<10 μg		<10	<10	<10	<10	<10	<10
Aliphatics >C12-C16 (aq)								
Aliphatics >C16-C21 (aq)	<10 µg		<10	<10	<10	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg		<10	<10	<10	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg		<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µg	j/l TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC16-EC21 (aq)	<10 µg	j/l TM174	<10	<10	<10	<10	<10	<10
Aromatics >EC21-EC35 (aq)	<10 µg	J/I TM174	<10	<10	<10	<10	<10	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg	J/I TM174	<10	<10	<10	<10	<10	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg	J/I TM174	<10	<10	<10	<10	<10	<10
GRO >C5-C10	<10 µg	j/l TM245	<10	<10	<10	<10	<10	<10
EPH (C6-C10)	<100 µ	g/I TM245	<100	<100	<100	<100	<100	<100

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CERTIFICATE OF ANALYSIS

Validated

CPH C W3	Client Reference:			Attention: Ga	ary Marshall		Superseded Rej	oort:	
Initial control of the set	TPH CWG (W)								
	Results Legend		Customer Sample R	BH111	DUP01				
Image: Non-Water of Market Autor, Sector of Market Autor, Sec									
Interfact is an uniform a regime is construction is the other basis of the difference of the state of the difference of the state of the difference of the state of the difference of	aq Aqueous / settled sample.		Denth (m)						
Image: sector				Water(GW/SW)	Water(GW/SW)	,			
under the decision of the method of production of the decision of the decisio	* Subcontracted test.			01/09/2015	01/09/2015				
Image and a for the decision with the set output of the set	// recovery of the surrogate a			02/09/2015	02/09/2015				
p) programme continue to approach (see sequence) Leb Sample No.(a) 11995373 Component CODULUIS Method Component									
ComponentLODUnitsMethodMethodMethodMethodMethodMethyl tertiary butyl ether (MTRE) $<3 grid$	(F) Trigger breach confirmed		Lab Sample No.(s)	11995372	11995373				
Methyl tertiary bulyl ether (MTBE) $<3 \mu g l$ TM245 $<3 \\ \#$ $\#$ <									
(MTBE) $ -$									
Benzene $<7 \mu g/l$ TM245 <7 <7 <7 $#$		<3 µg	g/l TM245						
TolueneComparisonTM245ComparisonComp						#			
Toluene $<4 \mu g/l$ TM245 $<4 \mu$ $<4 \mu$ $=4 \mu$ </td <td>Benzene</td> <td><7 µç</td> <td>g/l TM245</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Benzene	<7 µç	g/l TM245						
Image: constraint of the sector of the se						#			
Ethylbenzene $< 5 \mu g/l$ TM245 $< 5 \mu f h f h f h f h f h f h f h f h f h f$	Toluene	<4 µg	g/l TM245	<4	<4				
Imp-Xylene Imp A				#		#			
m.pXylene $< 8 \mu g/l$ TM245 $< 8 \mu g/l$ TM245 $< 8 \mu g/l$ $< 8 \mu g/l$ TM245 $< 3 \mu g/l$ OXylene $< 3 \mu g/l$ TM245 $< 3 \mu g/l$ $< 3 \mu g/l$ $< 10 \mu g/l$	Ethylbenzene	<5 µg	g/l TM245	<5	<5				
$1 \cdot 1$ <				#		#			
o-Xylene <3 µg/l TM245 <3 $\frac{3}{\#}$ <3 $\frac{3}{\#}$ <1 <1 <1 Sum of detected BTEX <28 µg/l	m,p-Xylene	<8 µg	g/l TM245	<8	<8				
Image: constraint of the set of the se				#		#			
Image: constraint of the set of the se	o-Xylene	<3 µg	g/l TM245	<3	<3				
Sum of detected BTEX $< 28 \ µg/l$ TM245 < 28 < 28 Image: Constraint of the second seco	-			#		#			
Aliphatics >C12-C16 (aq) $<10 \mu g/l$ TM174 <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 <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 <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 <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 <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 <10 <10 <10 <10 <10 $<$	Sum of detected BTEX	<28 µ	g/l TM245						
Aliphatics >C16-C21 (aq)<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<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<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<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<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<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<10<10<10<10<10<			0						
Aliphatics >C16-C21 (aq)<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<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<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<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<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<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<10<10<10<10<10<	Aliphatics >C12-C16 (ag)	<10 u	g/l TM174	<10	<10				
Aliphatics >C21-C35 (aq)<10 µg/lTM174<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<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<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<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<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<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<10<10<	,								
Aliphatics >C21-C35 (aq)<10 µg/lTM174<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<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<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<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<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<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<10<10<	Aliphatics >C16-C21 (aq)	<10	g/l TM174	<10	<10				
Image: Constraint of the sector of the se		10 µ	J., INT. 14	-10	-10				
Image: Constraint of the sector of the se	Aliphatics $>C21-C35$ (ag)	<10	g/l TM174	<10	<10				
(aq) \sim	, aipriduos - 02 1-000 (dq)	~10 µ	9'' INT/4	210					
(aq) \sim	Total Aliphatias >C12 C25	<10	a/l TM174	<10	<10				
Aromatics >EC12-EC16 (aq)<10 $\mu g/l$ TM174<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<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<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<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<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<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<10<		<10 μ	g/i 11vi174	<10					
(aq)Image: Constraint of the second sec		<10	~// TM174	<10	<10				
Aromatics >EC16-EC21 <10 $\mu g/l$ TM174 <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 <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 <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 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10		< 10 µ	g/i 11vi174	<10	<10				
(aq) \sim		(10.)	е// TN474		-10				
Aromatics >EC21-EC35 <10 µg/l TM174 <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 <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 <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 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10<		<10 µ	g/i 11vi174	<10	<10				
(aq) Image: Constraint of the state of the									
Total Aromatics <10 µg/l TM174 <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 <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 <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 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10		<10 µ	g/I IM174	<10	<10				
>EC12-EC35 (aq) Image: Constraint of the state of the st									
Total Aliphatics & Aromatics >C5-35 (aq) <10 μg/l TM174 <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 <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 <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 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10<		<10 µ	g/l TM174	<10	<10				
Aromatics >C5-35 (aq) TM245 <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 <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 <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 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
GRO >C5-C10 <10 μg/l TM245 <10 <10		<10 µ	g/l TM174	<10	<10				
EPH (C6-C10) <100 µg/l TM245 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <	GRO >C5-C10	<10 µ	g/l TM245	<10	<10				
EPH (C6-C10)<100 µ0TM245<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<100<10									
Image: selection of the	EPH (C6-C10)	<100 µ	ug/l TM245	<100	<100				
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CERTIFICATE OF ANALYSIS

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cis-1,2-Dichloroethene <1 µg/l TM208 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	:1 1 #
2,2-Dichloropropane <1 µg/l TM208 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <t< td=""><td>:1 1#</td></t<>	:1 1#
Bromochloromethane <1 μg/l TM208 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <t< td=""><td>:1</td></t<>	:1
Chloroform <1 μg/l TM208 <1 1.57 <1 <1 <1	:1 1#
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CERTIFICATE OF ANALYSIS

Validated

SDG:	150902-38	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329713
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

VOC MS (W)

Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample.		Customer Sample R	BH3	BH4		BH5		BH8		BH109		BH110	
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test.		Depth (m) Sample Type Date Sampled	Water(GW/SW) 01/09/2015	Water(GW/S) 01/09/2015		Water(GW/S 01/09/201		Water(GW/S\ 01/09/2015		Water(GW/S 01/09/2015		Water(GW/s 01/09/201	
check the efficiency of the method	d. The	Sampled Time Date Received	02/09/2015	00:00:00 02/09/2015	5	02/09/201	5	02/09/2015	;	02/09/2015	5	02/09/201	15
results of individual compounds v samples aren't corrected for the re		SDG Ref	150902-38 11995368	150902-38 11995366		150902-3 11995367		150902-38 11995371		150902-38 11995370		150902-3 1199536	
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	11990000	11995300		11993301		11995371		11995370		1199530	9
Component	LOD/Un												
1,3-Dichloropropane	<1 µg	j/l TM208	<1 1 #	<1	1 #	<1	1 #	<1	1 #	<1	1 #	<1	1 #
Tetrachloroethene	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1 #	<1	1 #	<1	1 #	<1	1 #
Dibromochloromethane	<1 µg	j/l TM208	<1 1#	<1	1 #	<1	1 #	<1	1#	<1	1 #	<1	1 #
1,2-Dibromoethane	<1 µg	g/l TM208	<1	<1	1#	<1	1 #	<1	1#	<1	1 #	<1	1 #
Chlorobenzene	<1 µg	j/l TM208	<1	<1	1#	<1	1 #	<1	1#	<1	1 #	<1	1 #
1,1,1,2-Tetrachloroethane	<1 µg	y/I TM208	<1 1 #	<1	1#	<1	1 #	<1	1 #	<1	1 #	<1	1 #
Ethylbenzene	<1 µg	g/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
m,p-Xylene	<1 µg	J/I TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
o-Xylene	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
Styrene	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
Bromoform	<1 µg	j/l TM208	<1 <1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
Isopropylbenzene	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
1,1,2,2-Tetrachloroethane	<1 µg	j/l TM208	<1	<1	1	<1	1	<1	1#	<1	1	<1	1
1,2,3-Trichloropropane	<1 µg	g/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
Bromobenzene	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
Propylbenzene	<1 µg	j/l TM208	<1 <1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
2-Chlorotoluene	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
1,3,5-Trimethylbenzene	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
4-Chlorotoluene	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
tert-Butylbenzene	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
1,2,4-Trimethylbenzene	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
sec-Butylbenzene	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
4-iso-Propyltoluene	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
1,3-Dichlorobenzene	<1 µg	J/I TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
1,4-Dichlorobenzene	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
n-Butylbenzene	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
1,2-Dichlorobenzene	<1 µg	j/l TM208	<1 1	<1	1	<1	1	<1	1 #	<1	1	<1	1
1,2-Dibromo-3-chloroprop ane	<1 µg	j/l TM208	<1	<1	1	<1	1	<1	1	<1	1	<1	1
1,2,4-Trichlorobenzene	<1 µg	j/l TM208	<1	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
Hexachlorobutadiene	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
tert-Amyl methyl ether (TAME)	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
Naphthalene	<1 µg	j/l TM208	<1 1 #	<1	1#	<1	1#	<1	1#	<1	1#	<1	1#
L	1		1#		1#		1#		ı#		1#		1#

CERTIFICATE OF ANALYSIS

Validated

SDG:	150902-38	Location:	Stag Brewery	Order Number:	
Job:	H_URS_WIM-273	Customer:	AECOM	Report Number:	329713
Client Reference:		Attention:	Gary Marshall	Superseded Report:	

VOC MS (W)

VUCI	MS (W)								
tot.unfilt * **	Results Legend ISO17025 accredited. mCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample. Subcontracted test. % recovery of the surrogate standa check the efficiency of the method. results of individual compounds wi samples aren't corrected for the ree Trigger breach confirmed Sample deviation (see appendix)	ird to . The ithin covery	Ustomer Sample R Depth (m) Sample Type Date Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference Method	BH3 Water(GW/SW) 01/09/2015 02/09/2015 150902-38 11995368	BH4 Water(GW/SW) 01/09/2015 00:00 02/09/2015 150902-38 11995366	BH5 BH8) Water(GW/SW) Water(GW/S 01/09/2015 01/09/201 02/09/2015 02/09/201 150902-38 150902-3 11995367 11995371		BH109 Water(GW/SW) 01/09/2015 02/09/2015 150902-38 11995370	BH110 Water(GW/SW) 01/09/2015 02/09/2015 150902-38 11995369
	Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
1,2,5-	Themorobenzene	<1 µg/i	111200	1#	1#	1#	1#	1#	1#
1,3,5-	Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1 1

CERTIFICATE OF ANALYSIS

Validated

DUP01

	Results Legend		Cus	stomer Sample R	BH111
# M aq diss.filt tot.unfilt	ISO17025 accredited. mCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample.			Depth (m) Sample Type	Water(GW/SW
* *	Subcontracted test. % recovery of the surrogate standa check the efficiency of the method.	ocontracted test. ecovery of the surrogate standard to the the efficiency of the method. The ults of individual compounds within			01/09/2015
(F) 1-5&+§@	Trigger breach confirmed Sample deviation (see appendix)	Jovery	La	ab Sample No.(s) AGS Reference	11995372
Compo	nent	LOD/Ur	nits	Method	
Dibron	nofluoromethane**	%		TM208	91.7
Toluer	ne-d8**	%		TM208	80.4

diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test.		Sample Type Date Sampled	Water(GW/SW) 01/09/2015	Water(GW/SV 01/09/2015			
 ** % recovery of the surrogate standa check the efficiency of the method. 		Sampled Time					
results of individual compounds wi samples aren't corrected for the red	ithin	Date Received SDG Ref	02/09/2015 150902-38	02/09/2015 150902-38			
(F) Trigger breach confirmed	Lovery	Lab Sample No.(s)	11995372	11995373			
1-5&+§@ Sample deviation (see appendix) Component	LOD/Un	AGS Reference its Method					
Dibromofluoromethane**	%	TM208	91.7	90.5			
Toluene-d8**	%	TM208	1 80.4	80.1	1		
4-Bromofluorobenzene**	%	TM208	1 77.9	78	1		
Dichlorodifluoromethane	<1 µg	a/l TM208	1 <1	<1	1		
Chloromethane	<1 µg		1 <1	<1	1		
Vinyl chloride			1 # <1	<1	1 #		
	<1 µg		1 #		1 #		
Bromomethane	<1 µg		<1 1#	<1	1 #		
Chloroethane	<1 µg	g/l TM208	<1 1 #	<1	1 #		
Trichlorofluoromethane	<1 µg	g/I TM208	<1 1 #	<1	1 #		
1,1-Dichloroethene	<1 µg	g/l TM208	<1 1 #	<1	1 #		
Carbon disulphide	<1 µg	g/l TM208	<1 1 #	<1	1 #		
Dichloromethane	<3 µg	g/l TM208	<3 1 #	<3	1#		
Methyl tertiary butyl ether (MTBE)	<1 µg	g/I TM208	<1 <1 1 #	<1	1 #		
trans-1,2-Dichloroethene	<1 µg	g/l TM208	<1 <1 1 #	<1	1#		
1,1-Dichloroethane	<1 µg	g/I TM208	<1 <1 1 #	<1	1#		
cis-1,2-Dichloroethene	<1 µg	g/l TM208	<1 <1 1 #	<1	1#		
2,2-Dichloropropane	<1 µg	g/l TM208	<1 1	<1	1		
Bromochloromethane	<1 µg	g/I TM208	<1 1 #	<1	1#		
Chloroform	<1 µg	g/l TM208	<1 <1 1 #	1.41	1#		
1,1,1-Trichloroethane	<1 µg	g/l TM208	<1 <1 1 #	<1	1#		
1,1-Dichloropropene	<1 µg	g/l TM208	<1 <1 1 #	<1	1#		
Carbontetrachloride	<1 µg	g/l TM208	<1 <1 1 #	<1	1#		
1,2-Dichloroethane	<1 µg	g/l TM208	<1 1	<1	1		
Benzene	<1 µg	g/l TM208	<1 1 #	<1	1#		
Trichloroethene	<1 µg	g/l TM208	<1 <1 1 #	<1	1#		
1,2-Dichloropropane	<1 µg	g/l TM208	<1	<1	1#		
Dibromomethane	<1 µg	g/l TM208	1# <1 1#	<1			
Bromodichloromethane	<1 µg	g/l TM208	1 # <1 1 #	<1	1 # 1 #		
cis-1,3-Dichloropropene	<1 µg	g/l TM208	<1 <1 1 #	<1	1#		
Toluene	<1 µg	g/l TM208	<1 <1 1 #	<1	1#		
trans-1,3-Dichloropropene	<1 µg	g/l TM208	<1 <1 1 #	<1	1#		
1,1,2-Trichloroethane	<1 µg	g/I TM208	<1	<1			
			1 #		1 #		

CERTIFICATE OF ANALYSIS

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VOC MS (W)

Results Legend		Customer Comple D	DUM	DUDAL			1	
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample.		Customer Sample R Depth (m)	BH111	DUP01				
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate standa	ard to	Sample Type Date Sampled	Water(GW/SW) 01/09/2015	Water(GW/S 01/09/201				
check the efficiency of the method results of individual compounds w	l. The vithin	Sampled Time Date Received	02/09/2015 150902-38	02/09/201 150902-38				
samples aren't corrected for the re (F) Trigger breach confirmed	covery	SDG Ref Lab Sample No.(s)	11995372	11995373				
1-5&+§@ Sample deviation (see appendix)		AGS Reference						
Component	LOD/Un		<1	<1				
1,3-Dichloropropane	<1 µg		1 #		1 #	 		
Tetrachloroethene	<1 µg		<1 1 #	<1	1 #			
Dibromochloromethane	<1 µg		<1 1 #	<1	1 #			
1,2-Dibromoethane	<1 µg		<1 1 #	<1	1 #	 		
Chlorobenzene	<1 µg	J/I TM208	<1 1 #	<1	1 #			
1,1,1,2-Tetrachloroethane	<1 µg	J/I TM208	<1 1 #	<1	1 #			
Ethylbenzene	<1 µg	/l TM208	<1 1 #	<1	1 #			
m,p-Xylene	<1 µg	/l TM208	<1 1 #	<1	1 #			
o-Xylene	<1 µg	J/I TM208	<1 1 #	<1	1 #			
Styrene	<1 µg	j/l TM208	<1 1 #	<1	1 #			
Bromoform	<1 µg	/l TM208	<1 1 #	<1	1 #			
Isopropylbenzene	<1 µg	/l TM208	<1 1#	<1	1 #			
1,1,2,2-Tetrachloroethane	<1 µg	j/l TM208	<1	<1	1			
1,2,3-Trichloropropane	<1 µg	j/I TM208	<1	<1	1 #			
Bromobenzene	<1 µg	/l TM208	<1 1 #	<1	1 #			
Propylbenzene	<1 µg	J/I TM208	<1 1 #	<1	1 #			
2-Chlorotoluene	<1 µg	J/I TM208	<1 1 #	<1	1 #			
1,3,5-Trimethylbenzene	<1 µg	/l TM208	<1 1 #	<1	1 #			
4-Chlorotoluene	<1 µg	/l TM208	<1 1 #	<1	1 #			
tert-Butylbenzene	<1 µg	/l TM208	<1 1 #	<1	1 #			
1,2,4-Trimethylbenzene	<1 µg	j/l TM208	<1 1 #	<1	1 #			
sec-Butylbenzene	<1 µg	j/l TM208	<1 1 #	<1	1 #			
4-iso-Propyltoluene	<1 µg	j/l TM208	<1 1 #	<1	1 #			
1,3-Dichlorobenzene	<1 µg	/l TM208	<1 1 #	<1	1 #			
1,4-Dichlorobenzene	<1 µg	/l TM208	<1 1 #	<1	1#			
n-Butylbenzene	<1 µg	/l TM208	<1 1 #	<1	1 #			
1,2-Dichlorobenzene	<1 µg	/l TM208	<1	<1	1			
1,2-Dibromo-3-chloroprop ane	<1 µg	/l TM208	<1	<1	1			
1,2,4-Trichlorobenzene	<1 µg	/l TM208	<1	<1	1 #			
Hexachlorobutadiene	<1 µg	/l TM208	<1 1 #	<1	1#			
tert-Amyl methyl ether (TAME)	<1 µg	/l TM208	<1 1 #	<1	1#			
Naphthalene	<1 µg	/l TM208	<1 1 #	<1	1#			
I			1 17			 		

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VOC MS (W)

VOC	MS (W)				-		
	Results Legend ISO17025 accredited. mCERTS accredited. Aqueous / settled sample. Disolved / filtered sample. Total / unfiltered sample. Total / unfiltered sample. Subcontracted test. % recovery of the surrogate standa check the efficiency of the method. results of individual compounds wi	ırd to The ithin	Customer Sample R Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref	BH111 Water(GW/SW) 01/09/2015 02/09/2015 150902-38	DUP01 Water(GW/SW) 01/09/2015 02/09/2015 150902-38		
(F) 1-5&+8@	samples aren't corrected for the red Trigger breach confirmed Sample deviation (see appendix)	covery	Lab Sample No.(s)	11995372	11995373		
Compo	onent	LOD/Units					
1,2,3-	Trichlorobenzene	<1 µg/l	TM208	<1 1 #	<1 1 #		
1,3,5-	Trichlorobenzene	<1 µg/l	TM208	<1	<1		
				1	I		
			_				

CERTIFICATE OF ANALYSIS

Validated

 SDG:
 150902-38
 Location:
 Stag Brewery
 Order Number:

 Job:
 H_URS_WIM-273
 Customer:
 AECOM
 Report Number:
 329713

 Client Reference:
 Attention:
 Gary Marshall
 Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		
TM283		Determination of Dissolved Niobium, Tungsten, and Zirconium in Water Matrices by ICP-MS		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

SDG:

Job:

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Test Completion Dates

				•				
Lab Sample No(s)	11995368	11995366	11995367	11995371	11995370	11995369	11995372	11995373
Customer Sample Ref.	BH3	BH4	BH5	BH8	BH109	BH110	BH111	DUP01
AGS Ref.								
Depth								
Туре	LIQUID							
Ammoniacal Nitrogen	08-Sep-2015	08-Sep-2015	07-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015	08-Sep-2015
Anions by Kone (w)	09-Sep-2015							
COD Unfiltered	05-Sep-2015							
Dissolved Metals by ICP-MS	09-Sep-2015	09-Sep-2015	09-Sep-2015	09-Sep-2015	09-Sep-2015	08-Sep-2015	09-Sep-2015	09-Sep-2015
Dissolved W, Nb and Zr by ICP-MS	08-Sep-2015							
EPH (DRO) (C10-C40) Aqueous (W)	10-Sep-2015							
EPH CWG (Aliphatic) Aqueous GC (W)	14-Sep-2015							
EPH CWG (Aromatic) Aqueous GC (W)	14-Sep-2015							
GRO by GC-FID (W)	04-Sep-2015	08-Sep-2015						
Mercury Dissolved	07-Sep-2015							
Nitrite by Kone (w)	06-Sep-2015							
pH Value	10-Sep-2015							
SVOC MS (W) - Aqueous	08-Sep-2015							
Total EPH (aq)	11-Sep-2015							
TPH CWG (W)	14-Sep-2015							
VOC MS (W)	04-Sep-2015	04-Sep-2015	04-Sep-2015	03-Sep-2015	04-Sep-2015	04-Sep-2015	03-Sep-2015	03-Sep-2015

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CERTIFICATE OF ANALYSIS

ASSOCIATED AQC DATA

Location: Stag Brewery Customer: AECOM Attention: Gary Marshall Order Number: Report Number: 33 Superseded Report:

Superseded

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Validated

Ammoniacal Nitrogen

Client Reference:

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SDG:

Job:

Component	Method Code	QC 1224	QC 1233	QC 1270
Ammoniacal Nitrogen as	TM099	96.0	102.8	102.0
N		91.84 : 108.16	91.84 : 108.16	91.84 : 108.16

Anions by Kone (w)

Component	Method Code	QC 1236	QC 1219
Chloride	TM184		
		94.64 : 106.82	94.23 : 107.50
Phosphate (Ortho as	TM184		105.6
PO4)		96.40 : 108.40	96.41 : 109.80
Sulphate (soluble)	TM184	99.6	
		96.47 : 104.74	94.38 : 108.93
TON as NO3	TM184	102.5	
		93.05 : 112.12	93.93 : 110.49

COD Unfiltered

Component	Method Code	QC 1264	QC 1268	QC 1273
COD	TM107	100.57 95.90 : 102.57	100.19 95.90 : 102.57	99.43 95.90 : 102.57

Dissolved Metals by ICP-MS

Component	Method Code	QC 1270	QC 1278
· · · · · · · · · · · · · · · · · · ·		QC 1270	QC 1270
Aluminium	TM152	106.13 88.58 : 117.87	104.93 88.58 : 117.87
	T1450		
Antimony	TM152	101.73 87.01 : 109.33	101.73 87.01 : 109.33
		07.01.109.33	07.01.109.33
Arsenic	TM152	102.4 89.45 : 113.51	98.67 89.45 : 113.51
Destination	Th450		
Barium	TM152	102.4	102.67
		90.47 : 113.85	90.47 : 113.85
Beryllium	TM152	96.27	105.6
		84.68 : 120.26	84.68 : 120.26
Boron	TM152	95.6	100.13
		82.95 : 121.47	82.95 : 121.47
Cadmium	TM152	101.47	103.6
		90.40 : 113.29	90.40 : 113.29
Chromium	TM152		
Chromium	11/11/02	100.13	102.53
		90.01 : 114.05	90.01 : 114.05
Cobalt	TM152	100.67	100.93
		87.14 : 117.85	87.14 : 117.85
Copper	TM152		
Cohhei	1101132	100.67	103.6
		88.43 : 114.27	88.43 : 114.27
Lead	TM152	95.33	96.0
		89.53 : 109.90	89.53 : 109.90

CERTIFICATE OF ANALYSIS

Stag Brewery

Gary Marshall

AEČOM

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Dissolved Metals by ICP-MS

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		QC 1270	QC 1278
Lithium	TM152	97.07 84.32 : 123.11	105.33 84.32 : 123.11
Manganese	TM152	99.87 91.43 : 113.17	103.2 91.43 : 113.17
Molybdenum	TM152	102.13 80.73 : 113.85	101.2 80.73 : 113.85
Nickel	TM152	100.0 87.68 : 113.94	100.53 87.68 : 113.94
Phosphorus	TM152	106.67 86.68 : 118.34	100.8 86.68 : 118.34
Selenium	TM152	101.33 91.03 : 113.34	100.93 91.03 : 113.34
Strontium	TM152	101.07 90.44 : 114.09	102.13 90.44 : 114.09
Tellurium	TM152	104.53 80.93 : 116.91	102.53 80.93 : 116.91
Thallium	TM152	96.13 90.27 : 111.31	96.4 90.27 : 111.31
Tin	TM152	100.27 83.07 : 112.37	100.53 83.07 : 112.37
Titanium	TM152	102.53 92.65 : 111.58	101.87 92.65 : 111.58
Uranium	TM152	92.13 88.60 : 110.35	97.33 88.60 : 110.35
Vanadium	TM152	100.4 88.43 : 116.60	103.07 88.43 : 116.60
Zinc	TM152	99.87 89.84 : 113.06	105.33 89.84 : 113.06

Dissolved W, Nb and Zr by ICP-MS

Component	Method Code	QC 1290
Bismuth	TM283	92.13 66.55 : 123.56
Niobium	TM283	107.6 85.00 : 115.00
Silver	TM283	105.33 81.37 : 112.35
Tungsten	TM283	85.87 85.00 : 115.00
Zirconium	TM283	102.27 85.00 : 115.00

EPH (DRO) (C10-C40) Aqueous (W)

Component	Method Code	QC 1208	QC 1212
EPH (DRO) (C10-C40)	TM172	96.5 59.22 : 112.78	77.0 59.47 : 106.15

EPH CWG (Aliphatic) Aqueous GC (W)

Validated

EPH CWG (Aliphatic) Aqueous GC (W)

Component	Method Code	QC 1219
Total Aliphatics >C12-C35	TM174	79.17 66.67 : 110.42

EPH CWG (Aromatic) Aqueous GC (W)

Component	Method Code	QC 1220
Total Aromatics >EC12-EC35	TM174	88.67 63.00 : 121.00

GRO by GC-FID (W)

Component	Method Code	QC 1199	QC 1175	QC 1286
Benzene by GC	TM245	95.5 76.72 : 118.62	104.5 79.00 : 121.00	90.0 77.50 : 122.50
Ethylbenzene by GC	TM245	90.0 74.74 : 116.76	104.0 79.00 : 121.00	87.5 77.50 : 122.50
m & p Xylene by GC	TM245	89.75 73.06 : 114.58	103.5 79.00 : 121.00	87.75 77.50 : 122.50
MTBE GC-FID	TM245	98.5 80.00 : 121.03	108.0 79.00 : 121.00	92.0 77.50 : 122.50
o Xylene by GC	TM245	90.0 70.00 : 130.00	103.0 79.00 : 121.00	87.5 77.50 : 122.50
QC	TM245	101.89 70.00 : 130.00	104.28 79.00 : 121.00	102.19 74.88 : 125.54
Toluene by GC	TM245	92.0 79.35 : 119.27	105.0 79.00 : 121.00	88.5 77.50 : 122.50

Mercury Dissolved

Component	Method Code	QC 1262	QC 1200
Mercury Dissolved	TM183	98.5	95.5
(CVAF)		73.51 : 120.83	73.51 : 120.83

pH Value

Component	Method Code	QC 1201	QC 1215
рН	TM256	101.08 99.20 : 102.85	100.54 99.37 : 102.65

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SVOC MS (W) - Aqueous

Component	Method Code	QC 1208	QC 1247
4-Bromophenylphenyleth er	TM176	87.2 55.04 : 128.00	82.4 65.62 : 120.95
Benzo(a)anthracene	TM176	87.2 52.64 : 123.68	82.4 62.83 : 114.26
Benzo(a)pyrene	TM176	79.68 49.60 : 114.40	80.8 54.19 : 105.67
Butylbenzyl phthalate	TM176	93.6 49.04 : 127.76	82.4 45.10 : 118.90
Hexachlorobutadiene	TM176	77.52 42.80 : 108.20	61.28 43.12 : 110.32
Naphthalene	TM176	92.0 47.20 : 116.80	85.6 69.48 : 118.94
Nitrobenzene	TM176	88.8 58.70 : 110.90	79.52 69.13 : 107.62
Phenol	TM176	50.08 30.25 : 79.75	49.12 30.92 : 74.19

VOC MS (W)

Component	Method Code	QC 1188	QC 1162
1,1,1,2-Tetrachloroethan e	TM208	91.0 84.25 : 114.84	94.5 87.29 : 112.22
1,1,1-Trichloroethane	TM208	90.0 84.67 : 111.97	91.5 83.02 : 113.68
1,1-Dichloroethane	TM208	93.5 80.19 : 121.45	95.0 77.85 : 123.56
1,2-Dichloroethane	TM208	94.0 77.68 : 127.05	96.5 80.96 : 124.37
2-Chlorotoluene	TM208	91.0 85.81 : 116.77	96.5 84.42 : 112.35
4-Chlorotoluene	TM208	92.0 87.22 : 115.45	96.5 88.70 : 113.67
Benzene	TM208	91.0 82.30 : 120.49	95.0 85.85 : 118.22
Bromomethane	TM208	101.0 76.16 : 123.35	103.0 78.68 : 126.84
Carbontetrachloride	TM208	93.0 83.96 : 117.98	93.5 82.06 : 117.49
Chlorobenzene	TM208	93.0 85.75 : 114.88	97.5 77.50 : 122.50
Chloroform	TM208	95.0 84.84 : 119.97	100.0 77.50 : 122.50
Chloromethane	TM208	117.5 53.63 : 141.38	113.0 64.99 : 145.80
Cis-1,2-Dichloroethene	TM208	104.0 81.65 : 120.44	108.0 82.70 : 120.11
Dichloromethane	TM208	94.0 79.31 : 122.56	99.5 80.45 : 125.21
Ethylbenzene	TM208	89.5 80.74 : 110.74	90.0 81.00 : 111.00
Hexachlorobutadiene	TM208	98.5 68.91 : 121.59	99.0 79.39 : 111.07
o-Xylene	TM208	91.0 85.43 : 113.21	95.0 84.32 : 113.42

p/m-Xylene

Tert-butyl methyl ether

Tetrachloroethene

Toluene

Trichloroethene

Vinyl Chloride

TM208

TM208

TM208

TM208

TM208

TM208

samples contained in this report for the different methods of analysis. The figure detailed is the percentage recovery result for the AQC.

CERTIFICATE OF ANALYSIS

QC 1162

92.75 82.25 : 112.25

93.0

76.57 : 125.98

93.5

84.88 : 110.14

93.0

85.71 : 113.18

94.0

87.32 : 112.88

88.0

67.57 : 130.24

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the

The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The

		CEP	CERTIFICATE OF ANALTS		
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VOC MS (W)					

QC 1188

89.25

80.94 : 113.51

98.0

59.77 : 129.51

91.0

83.21 : 115.40

90.0 86.02 : 114.04

91.0

83.50 : 113.50

92.5

63.71 : 124.88

percentage recovery result for the AQC should be between these limits to be statistically in control.

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