

REPORT QUALITY ASSURANCE SHEET

Title:

REPORT ON A GROUND INVESTIGATION

AT

NEW M4 PROJECT – MAGOR TO CASTLETON - SECOND PRELIMINARY GROUND AND CHEMICAL INVESTIGATION ADDENDUM

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GROUND INVESTIGATION: M4 – SECOND PRELIMINARY GROUND INVESTIGATION

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1.0 INTRODUCTION

In October 2007 Norwest Holst Limited - Soil Engineering Division (NHSED) were instructed by Ove Arup Partners Ltd (The Engineer) acting for and on behalf of Transport Wales, The Welsh Assembly Government (The Employer) to carry out a ground investigation between Magor and Castleton to the south of Newport. It is proposed to construct a new section of the M4 motorway from Junction 29 (Castleton) to Junction 23 (Magor) to the south of Newport to reduce congestion on the existing M4 to the north of Newport. The investigation comprised the formation of cable percussion and rotary boreholes, together with trial pitting, window sampling, cone penetration testing and in situ shear vane testing.

This addendum factual report presents the results of post site water monitoring, sampling and laboratory contamination testing. The monitoring was carried out between 30th January and 18th April 2008.

2.0 PURPOSE, SCOPE AND REPORT FORMAT

2.1 Purpose

The purpose of this investigation was to determine groundwater conditions and establish contamination levels at selected positions along the proposed route. This information was to be obtained from a combination of monitoring, in-situ testing and laboratory contamination testing.

Additional contamination testing was also carried out on five soil samples obtained during the main investigation following the results of the initial testing.

2.2 Scope of Work

The brief for this factual addendum report comprised the following items:

1. To monitor and sample on site installations.
2. Carry out in-situ testing in on site installations
3. To undertake laboratory tests on soil and groundwater samples recovered from exploratory holes.

This Addendum report should be read in conjunction with the main factual report referenced on page 7 of the report

The sources of information used in the compilation of this report are detailed in the list of references on page 7.

2.3 Report Format

This report is presented in the following format:

Factual information comprising: -

- Description of fieldwork
- In situ testing results
- Monitoring results
- Laboratory test results

3.0 DESK STUDY INFORMATION

3.1 Scope of Study

No formal desk study was requested by the Engineer for this investigation. For details of site location and description and site geology as ascertained from published maps, reference should be made to the full factual report referenced on page 7 of this report.

4.0 FIELDWORK

4.1 Scope of Fieldwork

The scope of the fieldwork was specified by the Engineer and was undertaken in general accordance with Eurocode 7 Part 2 (BS EN 1992-2: 2007) and where there is no conflict also with BS5930: 1999. In accordance with the specification and drawings provided by the Engineer, NHSED were required to monitor exploratory hole installations and to undertake in-situ testing and sampling regime. Groundwater level monitoring and in-situ was carried out in selected boreholes installations as instructed by the Engineer.

4.2 Groundwater Monitoring and Sampling

In accordance with the Engineer's instruction monitoring of groundwater in borehole installations was carried out at approximately fortnightly intervals for three months after completion of the site works. Two rounds of water sampling were also undertaken at intervals instructed by the engineer, all holes were developed prior to sampling. During development in-situ testing was carried. The results of the groundwater monitoring are presented in Section B of this report and the results of the groundwater testing are presented in Section C of this report.

4.3 In situ Testing

In accordance with the engineers instruction in-situ water monitoring was carried out for pH, Temperature, Dissolved Oxygen and Electrical Conductivity during development. Readings were taken following well purging at 0.5, 1, 2 and 3 times well volumes. The results of this in-situ testing are presented in Section B of this report

5.0 LABORATORY TESTING

5.1 Scope of Testing

All chemical (contamination) testing was scheduled by the Engineer. The scope of the testing was required to establish potential groundwater and soil contamination levels at various locations on site.

5.2 Contamination Testing

A programme of contamination testing was scheduled by the Engineer. Soil and water samples were sent to ALcontrol Geochem of Chester, which is registered as UKAS Testing laboratory No. 1291.

Testing was carried out in accordance with a combination of the 'Methods for Examination of Water and Associated Materials (the 'Blue Book') published by H.M.S.O., documented in-house methods and other published methods, to determine the presence of the analytes listed on page 5.

SOIL SUITE	LEACHATE SUITE
Chromium Hexvalent	Arsenic Cadmium Chromium Copper Lead Mercury Nickel Selenium Zinc Antimony Barium Boron Molybdenum Cyanide

WATER SUITE	WATER SUITE
pH Value BOD COD Alkalinity Hardness Arsenic (dissolved) Cadmium (Total) Chromium (dissolved) Chromium Hexavalent Copper (dissolved) Lead (dissolved) Mercury (Total) Nickel (dissolved) Selenium (dissolved) Zinc (Total) Calcium (dissolved) Vanadium (dissolved) Beryllium (dissolved)	Iron (dissolved) Magnesium (dissolved) Manganese (dissolved) Sodium (dissolved) Potassium (dissolved) Ammonial nitrogen Chlorides Cyanide – total Cyanide – Ferro Cyanide – Ferri Cyanide – Free Thiocyanates Sulphates Sulphides Nitrate Phenols (total) VOC SVOC TPH by GC FID

The results of the contamination testing are presented in Section C of this report.

6.0 RESULTS OF THE INVESTIGATION

6.1 Scope of Commentary

The results of the monitoring and in-situ testing are presented in Section B of this report and the results of the contamination testing are presented in Section C of this report.

For and on behalf of
Norwest Holst Limited - Soil Engineering Division

I Swain
Senior Geotechnical Engineer

P.A. Rodgers
Regional Manager

REPORT REFERENCES

- BRE Special Digest 1: (2005): Concrete in Aggressive Ground. BRE Construction Division.
- BS 5930: (1999): Code of Practice for Site Investigation. British Standards Institution.
- BS 1377: (1990): Parts 1 to 9: Methods of Test for Soils For Civil Engineering Purposes. British Standards Institution.
- BS EN 1997-2: (2007): Eurocode 7 – Geotechnical Design – Part 2: Ground Investigation and Testing
- BS EN ISO 14688-1: (2002): Geotechnical Investigation and testing – Identification and Classification of Soil – Part 1: Identification and Description.
- BS EN ISO 14688-2: (2004): Geotechnical Investigation and testing – Identification and Classification of Soil – Part 2: Principles for a Classification
- BS EN ISO 14689-1: (2003): Geotechnical Investigations and testing – Identification and Classification of Rock – Part 1: Identification and description.
- BS EN ISO 22476-3: (2005): Geotechnical Investigation and Testing – Field Testing – Part 3: Standard Penetration Test.
- Report on a ground investigation at new M4 project – Magor to Castleton – Second Preliminary Ground And Chemical investigation, F15056 (2008)



SUPPORTING FACTUAL DATA

SECTION A

Notes on Fieldwork, Logging and Laboratory Testing

FIELDWORK PROCEDURES



SECTION A 1: FIELDWORK PROCEDURES

1.0 CABLE PERCUSSION BORING TECHNIQUES

Unless otherwise stated the light cable percussion technique of 'soft ground' boring has been employed in the formation of boreholes for this contract. In cohesive soils a clay cutter has been used to advance the boreholes whilst in granular deposits a shell has been employed. The combination of clay cutter and shell bring up disturbed material which is generally sufficiently representative to permit identification of the strata. Whilst these particular techniques allow the maximum data to be obtained on strata conditions, a degree of mixing of some layered soils (e.g thin layers of coarse and fine granular material) is inevitable.

2.0 DYNAMIC SAMPLING

As an alternative to cable percussion boring, NHSED employs a number of techniques for the sampling of soils. The most common alternative techniques comprise some form of dynamic sampling system which involves sampling tubes being driven into the ground by means of a sliding weight.

'Window sampling' techniques form the most common type of dynamic sampling and typically comprises 1.0m long steel cylinders with elongated windows. These are driven to the required depth by the use of a percussive hammer. In the 'windowless' mode a plastic liner can be placed in the steel cylinders such that effectively continuous sampling can be undertaken. This method of sampling only produces Class 2 or 3 samples which are generally not suitable for any form of laboratory machine testing.

3.0 ROUTINE SAMPLING

In the UK "undisturbed" samples of predominantly cohesive soils are generally obtained in a 102mm diameter open drive sampler as defined in the British Standard Code of Practice BS 5930 (1999) (ref 01). The British Standard notes however that conventional and lined open drive samplers do not produce Class 1 samples for laboratory testing and for this reason NHSED has incorporated a taper into the cutting shoe of all its lined open drive samplers. This taper significantly reduces sample disturbance and for the majority of cohesive soils allows samples to be recovered which are suitable for laboratory machine testing. However it should be appreciated that no sample can be truly undisturbed when sampled in this manner and the effects of disturbance can best be seen in laminated clays in which the laminations may be turned downward on the margins of the sample due to the driving effects of the sampler. Where it is necessary to minimise the effects of sample disturbance e.g in 'sensitive' clays and silts, alternative sampling techniques may be specified and where used, are described in the report text.

In granular deposits and mixed cohesive-granular deposits where it is not possible to recover undisturbed samples, either large or small disturbed samples are normally obtained. The size of these samples are in accordance with the requirements of BS 5930 (1999) whilst the frequency of sampling is unique to this contract.

SECTION A 1: FIELDWORK PROCEDURES

It is important to note that the number of blows taken to drive any kind of sampling tube is not necessarily indicative of the strength of the material being sampled. For this reason NHSED recommends that no attempt is made to correlate such blows with the consistency of cohesive strata.

4.0 ROTARY DRILLING

Where rotary open hole drilling techniques have been employed it is important to note that descriptions of the strata encountered are generally solely based on the foreman drillers observations of cuttings and drill flush returns. Whilst such techniques can provide useful information in certain ground conditions it should be recognised that an accurate determination of subsurface rock strata can only be obtained by rotary coring techniques.

An examination of rock cores obtained by rotary drilling generally enables bedding planes, fissuring and consistency to be observed but does not necessarily reveal the presence of vertical fissures or joints.

Details of the strata encountered are given on the borehole log along with the geologist's assessment of Total Core Recovery (TCR), Solid Core Recovery (SCR) and Rock Quality Designation (RQD) each expressed as a percentage of the individual core runs. When appropriate the Fracture Index (FI) or Fracture Spacing (If) is also given on the logs and represents respectively the number of natural fractures per metre run of core for core that has a similar intensity of fracturing, or the minimum, average and maximum spacing of such natural fractures over an arbitrary length of core of similar intensity of fracturing.

The symbols and abbreviations used on the rotary borehole logs are explained on the exploratory hole legend and notation sheet that precedes the exploratory hole records. It is considered however that the meaning of the abbreviations NI and NA (not shown in the key) needs further clarification. NI denotes material recovered non intact and applies to material that has numerous fractures or incipient fractures and which is either naturally broken up or which becomes broken up by drilling activities. The result in both cases is that the core is recovered in a highly fragmented state, generally as a gravel. The term NA is the abbreviation for not applicable and refers to any materials to which determination of a fracture index would be inappropriate, i.e for clay bands.

Where significant core loss (>300mm) has occurred, it is NHSED general policy to insert a separate 'stratum' on the log to coincide with the inferred zone of core loss. Unless there is good evidence as to the rock (or soil) type that has been lost, the legend column is left blank. For zones of inferred mine workings, an appropriate legend is used and this together with all the legends used on the logs is shown on the log notation sheet that precedes the exploratory logs in the report.

A summary of logging methodology for rock strata and core measurements is given in Section A5: Terminology used in the Description and Classification of Rocks.

SECTION A 1: FIELDWORK PROCEDURES

5.0 IN SITU DYNAMIC PENETRATION TESTS

Standard or Cone Penetration Testing (SPT/CPT) is generally employed where undisturbed samples cannot be obtained e.g in granular soils, fill and rock etc, in order to obtain an indication of the in situ density, compaction or hardness. Inherent difficulties are present in obtaining true SPT or CPT "N" values in water bearing fine grained granular deposits and careful consideration of the test technique and groundwater conditions are necessary before test results are used for design purposes.

The full procedure for carrying out the Standard Penetration Test (SPT) is given in BS EN ISO 22476-3 (2005) (ref 02). Essentially the test consists of driving a 50mm external diameter split barrel sampler into the soil using a 63.5kg hammer dropping 760mm. The penetration resistance is expressed as the number of blows required to obtain 300mm penetration below an initial seating drive of 150mm through any disturbed ground at the bottom of the borehole. The number of blows for the 300mm test drive penetration is recorded on the borehole logs as the "N" value. A full record of the number of blows required to drive the sampler at 75mm intervals throughout the total 450mm drive is also tabulated along with the groundwater level at the time of test. It is important to distinguish how the blow count relates to the penetration of the sampler and this may be achieved in the following manner:

- (i) Where the test drive is terminated at 50 blows the number of blows for the partial test drive (usually 50) and the penetration of the sampler within the test drive are recorded. An approximate "N" value may be obtained by linear extrapolation of the number of blows recorded for the partial test drive.
- (ii) If the total penetration is equal to or less than the 150mm seating drive then the number of blows (usually 25) and the depth of penetration within the initial seating penetration are recorded on the borehole logs.

The "N" value obtained from the Standard Penetration Test may be used to assess the relative density of sands and gravels in accordance with Clause 41.3.2 of BS 5930 (1999) (ref 01), as shown in table 1:

TABLE 1: DETERMINATION OF RELATIVE DENSITY FROM PENETRATION TESTS (from BS 5930)

Term	SPT N-Value: Blows/300mm Penetration
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

Standard Penetration Testing may also be performed in very stiff/hard clays in which it would be difficult to obtain undisturbed samples. In such cases the SPT "N" values may be used for design purposes based on correlations between "N" value and various soil parameters such as those proposed by Stroud and Butler (1975) (ref 03).

SECTION A 1: FIELDWORK PROCEDURES

6.0 GROUNDWATER

The groundwater conditions entered on the exploratory hole records are those encountered at the time of the investigation. These however, may not represent the actual conditions or those which may apply in large excavations. The normal rate of boring does not always permit the recording of an equilibrium water level for any one water strike, particularly because the entry of water into a borehole may be reduced or even eliminated due to casing off a water bearing layer or due to a skin being formed on the borehole wall by the drilling tools. It should also be noted that groundwater conditions may vary seasonally and/or tidally and that the water levels as shown at the time of investigation should not necessarily be taken as being constant because they may be subject to such fluctuations.

More accurate information on groundwater conditions can be obtained from exploratory hole installations such as piezometers and standpipes. Normally three or four monitoring visits are required at the site to provide this information.

References

- 01) BS 5930 (1999) Code of Practice for Site Investigation. British Standards Institution.
- 02) BS EN ISO 22476-3 (2005). Geotechnical Investigation and Testing - Field Testing - Part 3: Standard Penetration Test.
- 03) Stroud, M.A, Butler, F.G (April 1975) 'The Standard Penetration Test and the Engineering Properties of Glacial Materials'. The Engineering Behaviour of Glacial Materials Proc. of Symp.



SUPPORTING FACTUAL DATA

SECTION A

Notes on Fieldwork, Logging and Laboratory Testing



ASSESSMENT OF AGGRESSIVE GROUND AND GROUNDWATER CONDITIONS

SECTION A 6: ASSESSMENT OF AGGRESSIVE GROUND AND GROUNDWATER CONDITIONS

Certain ground and groundwater conditions may be described as aggressive depending on their chemical composition which is related to previous industrial use. Where foundations are proposed to be constructed on industrial sites or on landfill sites in which the ground or groundwater may be contaminated with chemical waste, detailed consideration needs to be given to both the method of investigation and the severity of ground and groundwater conditions with respect to construction materials. For such sites it will usually be necessary to undertake a full chemical analysis in order to identify the potentially aggressive compounds.

On sites where new concrete foundations are to be constructed in natural ground it is usually only necessary to examine the sulfate content and pH level of the ground. The sulfate content of soils varies widely and can range from being virtually absent to extremely high concentrations in crystals such as gypsum. In between these two extremes sulfate may be disseminated throughout a soil or may be present in discrete bands or lenses. Because of this wide variation in the sulfate content of soils, the most reliable indication of possible aggressive conditions can be obtained by testing representative samples of groundwater. In order to take account of natural variations in the distribution of sulfates in the ground, samples should be taken at a number of locations that are well spaced across the site and at different depths.

The methods for the determination of total sulfate of soil and the sulfate content of groundwater and 2:1 aqueous soil extracts are given in various specifications including BS 1377 (1990) Part 3: Section 5 (ref 01). The results of tests performed in accordance with BS 1377 yield results which are expressed as percentage of dry weight retained or grammes/litre SO_3 . Tests performed in accordance with other specifications however, tend to express results as SO_4 .

The classification of natural sulfate conditions is based on BRE Special Digest 1 (2005) (ref 02). This digest makes most use of sulfate values expressed as milligrammes/litre SO_4 . In order to convert the results expressed as SO_3 (BS 1377) to SO_4 (BRE Special Digest 1) it is necessary to apply a multiplication factor of 1.2. In the following discussion of sulfate conditions values given in the tables are expressed in terms of SO_4 .

The current approach to the classification of aggressive ground conditions given in BRE Special Digest 1 is based on the Aggressive Chemical Environment for Concrete (ACEC). This takes into account the type of site, sulfate concentration and ground water acidity and mobility. Different site assessment procedures are used for natural ground, for brownfield sites that contain industrial waste and pyritic ground. The reactions of sulfates in the presence of other ions, notably carbonate and magnesium are also taken into account.

As with the previous Special Digest 1, there are five design sulfate classes (designated DS1 to DS5) for the site, although in the current digest natural ground and brownfield sites are now covered by separate tables. More subdivision of ACEC Class is given in the table for brownfield locations and this reflects the complexity of conditions that often apply.

In general when the results of sulfate determinations are assessed emphasis must be given to the samples which fall in the higher classes. Therefore if eight out of ten samples are found to be non aggressive and fall within Class DS1 and the remainder fall within Class DS2 it will be necessary to adopt the precautions appropriate to Class DS2 conditions for the whole site. The current digest differentiates between 'natural ground locations' and brownfield locations'.

Table 1 on page 2 is reproduced from the digest and deals with natural ground locations.

SECTION A 6: ASSESSMENT OF AGGRESSIVE GROUND AND GROUNDWATER CONDITIONS

TABLE 1: AGGRESSIVE CHEMICAL ENVIRONMENT FOR CONCRETE (ACEC) CLASSIFICATION FOR NATURAL GROUND LOCATIONS ^(a) (From BRE Special Digest 1)

SULFATE				GROUNDWATER		
DESIGN SULFATE CLASS FOR LOCATION	2:1 WATER/SOIL EXTRACT ^(b)	GROUNDWATER	TOTAL POTENTIAL SULFATE ^(c)	STATIC WATER	MOBILE WATER	ACEC CLASS FOR LOCATION
1	2 (SO ₄ mg/l)	3 (SO ₄ mg/l)	4 (SO ₄ %)	5 (pH)	6 (pH)	7
DS-1	<500	<400	<0.24	>2.5	>5.5 ^(d) 2.5-5.5	AC-1s AC-1 ^(d) AC-2z
DS-2	500-1500	400-1400	0.24-0.6	>3.5 2.5-3.5	>5.5 2.5-5.5	AC-1s AC-2 AC-2s AC-3z
DS-3	1600-3000	1500-3000	0.7-1.2	>3.5 2.5-3.5	>5.5 2.5-5.5	AC-2s AC-3 AC-3s AC-4
DS-4	3100-6000	3100-6000	1.3-2.4	>3.5 2.5-3.5	>5.5 2.5-5.5	AC-3s AC-4 AC-4s AC-5
DS-5	>6000	>6000	>2.4	>3.5 2.5-3.5	>2.5	AC-4s AC-5

NOTES

- a) Applies to locations on sites that comprise either undisturbed ground that is in its natural state or clean fill derived from such ground.
b) The limits of Design Sulfate Classes based on 2:1 water/soil extracts have been lowered relative to previous digests.
c) Applies only to locations where concrete will be exposed to sulphate ions (SO₄) which may result from the oxidation of sulfides (eg pyrite) following ground disturbance.
d) For flowing water that is potentially aggressive to concrete owing to high purity or an aggressive carbon dioxide level greater than 15mg/l, increase the ACEC Class to AC-2z.

Explanation of suffix symbols to ACEC Class

Suffix 's' indicates that the water has been classified as static

Concrete placed in a ACEC Class that includes the suffix 'z' primarily have to resist acid conditions and may be made with any of the cements listed in Table D2 in the Digest.

Additional testing is required for those natural sites that contain pyrite. In particular it is essential to take account of the total potential sulfate content which might result from oxidation following ground disturbance. On such sites it is necessary to determine total sulfate content (AS% SO₄), total sulfur (TS%). The total potential sulfate is then determined from $TPS\%SO_4 = 3.0 \times TS\%$. Finally the amount of oxidisable sulfides (OS as %SO₄) is determined by subtracting the acid soluble sulfates (AS%SO₄) from the total potential sulfate content: $OS\%SO_4 = TPS\%SO_4 - AS\%SO_4$. It is important to note that this testing is in addition to and not instead of the standard sulfate determination testing.

Unless the site can be demonstrated to comprise natural ground, Table 2 for brownfield locations must be used in all assessments for the design of concrete. It should be noted that the effects of the magnesium ion become relevant to concrete design for certain Design Sulfate Classes.

SECTION A 6: ASSESSMENT OF AGGRESSIVE GROUND AND GROUNDWATER CONDITIONS

TABLE 2: AGGRESSIVE CHEMICAL ENVIRONMENT FOR CONCRETE (ACEC) CLASSIFICATION FOR BROWNFIELD LOCATIONS ^(a) (From BRE Special Digest 1)

SULFATE AND MAGNESIUM						GROUNDWATER		
DESIGN SULFATE CLASS FOR LOCATION	2:1 WATER/SOIL EXTRACT ^(b)		GROUNDWATER		TOTAL POTENTIAL SULFATE ^(c)	STATIC WATER	MOBILE WATER	ACEC CLASS FOR LOCATION
1	2 (SO ₄ mg/l)	3 (Mg mg/l)	4 (SO ₄ mg/l)	5 (Mg mg/l)	6 (SO ₄ %)	7 (pH) ^(d)	8 (pH) ^(d)	9
DS-1	<500	-	<400	-	<0.24	>2.5	>6.5 ^(d) 5.5-6.5 4.5-5.5 2.5-4.5	AC-1s AC-1 AC-2z AC-3z AC-4z
DS-2	500-1500	-	400-1400	-	0.24-0.6	>5.5 2.5-3.5	>6.5 5.5-6.5 4.5-5.5 2.5-4.5	AC-1s AC-2 AC-2s AC-3z AC-4z AC-5z
DS-3	1600-3000	-	1500-3000	-	0.7-1.2	>5.5 2.5-5.5	>6.5 5.5-6.5 2.5-5.5	AC-2s AC-3 AC-3s AC-4 AC-5
DS-4	3100-6000	<1200	3100-6000	<1000	1.3-2.4	>5.5 2.5-3.5	>6.5 2.5-6.5	AC-3s AC-4 AC-4s AC-5
DS-4m	3100-6000	>1200 ^(e)	3100-6000	>1000 ^(e)	1.3-2.4	>5.5 2.5-5.5	>6.5 2.5-6.5	AC-3s AC-4m AC-4ms AC-5m
DS-5	>6000	<1200	>6000	<1000	>2.4	>5.5 2.5-3.5	>2.5	AC-4s AC-5
DS-5m	>6000	>1200 ^(e)	>6000	>1000 ^(e)	>2.4	>5.5 2.5-5.5	>2.5	AC-4ms AC-5m

NOTES

a) Brownfield locations are those sites or parts of sites that might contain chemical residues produced by industrial processes.

b) The limits of Design Sulfate Classes based on 2:1 water/soil extracts have been lowered relative to previous digests.

c) Applies only to locations where concrete will be exposed to sulfate ions (SO₄) which may result from the oxidation of sulfides (eg pyrite) following ground disturbance.

d) An additional account is taken of hydrochloric and nitric acids by adjustment to sulfate content

e) The limit on water soluble magnesium does not apply to brackish groundwater (chloride content between 12000mg/l and 17000mg/l). This allows 'm' to be omitted from the relevant ACEC classification. Sea water (chloride about 18000mg/l) and stronger brines are not covered by this table.

Explanation of suffix symbols to ACEC Class

Suffix 's' indicates that the water has been classified as static

Concrete placed in ACEC Classes that include the suffix 'z' primarily have to resist acid conditions and may be made with any of the cements listed in Table D2 in the Digest.

Suffix 'm' relates to the higher levels of magnesium in Design Sulfate Classes 4 and 5.

SECTION A 6: ASSESSMENT OF AGGRESSIVE GROUND AND GROUNDWATER CONDITIONS

The pH value of groundwater provides a crude measure of the potential aggressiveness due to the presence of organic acids. The standard procedure for measuring the acidity of soils and groundwater is the electrometric method using a pH meter and is described in BS 1377 (1990) Part 3: Section 5. The pH value of pure water is 7.0 and the presence of acid substances will yield results with values less than 7. It should be noted however that the pH of most natural waters depends mainly on the dissolved carbon dioxide content and therefore lies between pH values of 6.5 and 8.5. It is generally accepted that soils or groundwater with pH values in the range 6 to 9 may be classified as near neutral. It should be noted that the pH value of soil and groundwater can change with time and it is therefore necessary to carry out testing on fresh samples of soil or water.

The pH value of the soil or groundwater also needs to be taken into consideration when the recorded sulfate content is borderline between two classes or approaches the upper limit of a given class. In these circumstances both the pH value and the mobility of the groundwater needs to be assessed and where doubt exists, the sample should be placed in the more severe class of the sulfate classification. This general approach may be justified on the grounds that the acids present will tend to break down the concrete surface and therefore make it more susceptible to sulfate attack. This will be especially so if the sample contains large amounts of sulfides since these can be converted to sulfuric acid.

Organic acids are often found in peaty or marshy soils in which the pH value is below 6.0. In such soils it will be necessary to take specific precautions to protect any concrete which would be exposed to organic acids. The recommended precautionary measures outlined in Tomlinson (2001) (ref 03) could be followed. In all cases where mineral acids are present the groundwater is likely to be aggressive with regard to foundation concrete and in these circumstances the recommendations given in BRE Special Digest 1 Part C will need to be followed.

Apart from acid groundwater, the effects of static and mobile ground water tables are taken into account in BRE Special Digest 1 in 'Box C9' and the incremental rules in this table need to be viewed in relation to Tables C1 and C2 in the Digest.

Alkaline groundwater is not generally considered aggressive to concrete unless present in high concentrations. Unless the aggregate used in foundation concrete is of a reactive type, pH values of groundwater up to pH = 14 need not be considered as problematic.

References

- 01) BS 1377 (1990) Methods of Test for Soils for Civil Engineering Purposes. Part 3: Chemical and Electrochemical Tests, British Standards Institution.
- 02) Building Research Establishment (2005) Concrete in Aggressive Ground. BRE Special Digest 1. Building Research Station, Garston
- 03) Tomlinson M.J (2001) Foundation Design and Construction. 7th Edition, Pearson, Prentice Hall.

SUPPORTING FACTUAL DATA
SECTION B
Exploratory Hole Records and
Field Data

GROUNDWATER / GAS MONITORING
/ SAMPLING RESULTS



Project Name New M4 Preliminary Ground Investigation						Groundwater Readings For Installations			Fig no. 01			
Project No. F15056												
Engineer Ove Arup & Partners Ltd												
Client Transport Wales, Welsh Assembly Government												
NOTES: SPIE=Piezometer, SP=Standpipe For multiple installations, use different Installation IDs. For piezometers installation depth = tip depth. For standpipes = base of pipe												
COMMENTS SBHM01 RC installation extends 0.50m above ground level. - symbol indicates water level is above GL All groundwater levels are recorded from ground level												
Exploratory Hole ID	Installation Details			Recorded Water Level								
	Type	Depth m	ID	Date dd/mm/yyyy	Time hh:mm	Reading m	Date dd/mm/yyyy	Time hh:mm	Reading m	Date dd/mm/yyyy	Time hh:mm	Reading m
SBHC01 RC	SPIE	8.05		30/01/2008	09:50	2.45	25/02/2008	14:34	2.48	07/03/2008	14:25	2.60
SBHD03 CP	SPIE	10.00		30/01/2008	11:01	0.47	25/02/2008	14:52	0.43	07/03/2008	14:05	0.56
SBHD05 RC	SPIE	12.00		31/01/2008	09:00	1.02	25/02/2008	15:35	1.05	07/03/2008	13:50	1.77
SBHD06 RC	SP	15.00		30/01/2008	13:00	1.13	21/02/2008	10:30	1.39	07/03/2008	13:30	1.39
SBHD08 RC	SPIE	29.50		30/01/2008	13:50	1.20	25/02/2008	15:58	2.02	07/03/2008	13:35	1.40
SBHE02RD	SPIE	25.00		31/01/2008	09:25	2.18	25/02/2008	16:20	2.09	07/03/2008	13:10	2.48
SBHE04 RC	SPIE	17.20		31/01/2008	09:15	2.31	25/02/2008	16:11	2.51	07/03/2008	13:20	2.59
SBHF01 RC	SPIE	19.00		31/01/2008	09:40	5.69	25/02/2008	16:32	5.72	07/03/2008	12:50	5.43
SBHF02A CP	SPIE	17.00		01/02/2008	14:40	7.61	25/02/2008	17:13	7.57	07/03/2008	12:30	9.00
SBHF03 RC	SPIE	18.00		31/01/2008	10:35	6.97	26/02/2008	08:55	6.77	07/03/2008	12:15	7.22
SBHH01 RC	SPIE	25.00		31/01/2008	11:15	3.45	26/02/2008	09:39	3.42	07/03/2008	11:28	3.65
SBHH02 RC	SPIE	14.90		31/01/2008	11:10	3.42	26/02/2008	09:20	3.88	07/03/2008	11:35	3.64
SBHH05 RC	SPIE	21.50		31/01/2008	11:30	2.22	26/02/2008	10:01	2.13	07/03/2008	11:05	3.10
SBHH06 CP	SP	12.30		30/01/2008	15:30	3.75	21/02/2008	08:00	3.76	07/03/2008	11:10	3.87
SBHH07A RC	SPIE	24.85		30/01/2008	14:50	1.70	26/02/2008	10:40	1.34	07/03/2008	11:00	1.07
SBHJ01 CP	SP	7.50		01/02/2008	12:20	1.34	21/02/2008	11:45	5.98	06/03/2008	12:28	1.82
SBHJ03 CP	SP	5.20		01/02/2008	08:00	0.54	27/02/2008	16:15	0.70	07/03/2008	10:45	0.68
SBHJ04	SP	13.10		01/02/2008	11:55	6.61	22/02/2008	13:55	6.67	06/03/2008	11:46	6.75
SBHJ05	SP	11.50		01/02/2008	11:10	8.91	22/02/2008	09:00	9.07	06/03/2008	11:23	9.16
SBHJ06 CP	SP	4.10		01/02/2008	11:45	1.31	21/02/2008	15:30	1.32	06/03/2008	10:50	1.33
SBHJ07 CP	SP	10.40		01/02/2008	11:43	1.35	21/02/2008	14:40	1.40	06/03/2008	12:05	1.56
SBHJ08A CP	SP	7.40		01/02/2008	11:35	3.49	21/02/2008	13:05	2.31	06/03/2008	10:57	2.67
SBHJ09 CP	SP	2.20		01/02/2008	11:30	0.65	21/02/2008	12:25	0.85	06/03/2008	11:00	0.90
SBHJ10 CP	SP	10.00		01/02/2008	10:40	2.30	21/02/2008	13:45	2.24	06/03/2008	10:40	2.16
SBHK01 CP	SP	6.80		01/02/2008	10:55	0.70	25/02/2008	10:30	1.00	06/03/2008	14:24	1.06
SBHK02 CP	SP	11.20		01/02/2008	10:50	1.34	25/02/2008	11:20	1.33	06/03/2008	14:18	1.47
SBHK03 CP	SP	5.90		01/02/2008	10:45	0.87	25/02/2008	12:00	0.89	06/03/2008	14:15	1.00
SBHK04 CP	SP	12.20		01/02/2008	10:25	1.45	25/02/2008	12:30	1.60	06/03/2008	12:30	1.60
SBHL02 RC	SPIE	15.20		01/02/2008	10:35	2.27	25/02/2008	12:49	2.31	06/03/2008	14:00	2.42
SBHL03 RC	SPIE	15.00		31/01/2008	16:20	0.61	26/02/2008	11:15	0.51	07/03/2008	10:25	0.66
SBHM01 RC	SPIE	21.00		01/01/1900	08:20	-0.26	26/02/2008	11:30	-0.26	07/03/2008	10:17	0.05
SBHM02 RC	SPIE	20.00		01/02/2008	08:25	0.19	26/02/2008	11:41	0.49	07/03/2008	10:14	0.68
SBHN01A RC	SPIE	14.90		01/02/2008	15:20	8.49	27/02/2008	17:15	12.23	07/03/2008	14:45	13.18
SBHN02 RC	SPIE	20.40		31/01/2008	15:55	3.67	26/02/2008	11:57	4.19	07/03/2008	10:05	4.84
SBHN03 RC	SPIE	15.00		31/01/2008	15:45	1.07	26/02/2008	12:03	1.73	07/03/2008	09:55	2.34
SBHN04 RC	SPIE	10.00		31/01/2008	15:30	9.99	26/02/2008	14:42	DRY	07/03/2008	09:45	DRY
Recorded by: S Davis			Checked by: I Swain			Approved by: I Swain						
Date: 30/01/08-07/03/08			Date: 16/04/2008			Date: 17/04/2008						
Form No. SI GWR			Revision No. 2.03			Issue Date 07/01/2008						

[illegible]

Project Name New M4 Preliminary Ground Investigation						Groundwater Readings For Installations						
Project No. F15056												
Engineer Ove Arup & Partners Ltd						Fig no.						
Client Transport Wales, Welsh Assembly Government						03						
NOTES: SPIE=Piezometer, SP=Standpipe For multiple installations, use different Installation IDs. For piezometers installation depth = tip depth. For standpipes = base of pipe												
COMMENTS SBHM01 RC installation extends 0.50m above ground level. - symbol indicates water level is above GL All groundwater levels are recorded from ground level												
Exploratory Hole ID	Installation Details			Recorded Water Level								
	Type	Depth m	ID	Date dd/mm/yyyy	Time hh:mm	Reading m	Date dd/mm/yyyy	Time hh:mm	Reading m	Date dd/mm/yyyy	Time hh:mm	Reading m
SBHC01 RC	SPIE	8.05		20/03/2008	16:30	2.57	04/04/2008	08:00	2.59	18/04/2008	07:40	2.66
SBHD03 CP	SPIE	10.00		20/03/2008	16:45	0.58	04/04/2008	08:13	0.53	18/04/2008	08:00	0.60
SBHD05 RC	SPIE	12.00		20/03/2008	16:00	1.08	04/04/2008	09:15	1.22	18/04/2008	08:30	1.32
SBHD06 RC	SP	15.00		20/03/2008	17:55	1.20	04/04/2008	09:30	1.33	18/04/2008	08:40	1.44
SBHD08 RC	SPIE	29.50		19/03/2008	18:30	1.28	04/04/2008	10:00	1.39	18/04/2008	08:52	1.52
SBHE02RD	SPIE	25.00		20/03/2008	16:20	2.23	04/04/2008	08:50	2.46	18/04/2008	09:00	2.54
SBHE04 RC	SPIE	17.20		20/03/2008	15:45	2.20	04/04/2008	09:00	1.80	18/04/2008	08:15	1.80
SBHF01 RC	SPIE	19.00		20/03/2008	15:30	5.50	04/04/2008	08:40	5.55	18/04/2008	13:58	5.58
SBHF02A CP	SPIE	17.00		20/03/2008	15:10	5.60	04/04/2008	10:28	5.70	18/04/2008	13:45	5.77
SBHF03 RC	SPIE	18.00		20/03/2008	14:55	7.20	04/04/2008	10:36	7.38	18/04/2008	13:40	7.42
SBHH01 RC	SPIE	25.00		20/03/2008	14:25	3.60	04/04/2008	15:00	3.60	18/04/2008	13:10	3.62
SBHH02 RC	SPIE	14.90		20/03/2008	14:30	4.27	04/04/2008	15:05	3.64	18/04/2008	13:13	3.70
SBHH05 RC	SPIE	21.50		20/03/2008	17:30	2.17	04/04/2008	15:15	2.78	18/04/2008	11:34	2.90
SBHH06 CP	SP	12.30		17/03/2008	15:20	3.88	04/04/2008	15:20	3.89	17/04/2008	14:15	3.90
SBHH07A RC	SPIE	24.85		20/03/2008	13:55	1.33	04/04/2008	15:28	1.92	18/04/2008	11:43	0.88
SBHJ01 CP	SP	7.50		19/03/2008	14:15	1.81	03/04/2008	16:05	1.90	17/04/2008	12:40	1.80
SBHJ03 CP	SP	5.20		19/03/2008	16:40	0.78	03/04/2008	18:25	0.82	17/04/2008	15:55	0.80
SBHJ04	SP	13.10		17/03/2008	13:35	6.64	03/04/2008	18:10	6.74	17/04/2008	13:08	6.80
SBHJ05	SP	11.50		18/03/2008	13:50	9.02	03/04/2008	17:39	9.10	17/04/2008	13:31	9.11
SBHJ06 CP	SP	4.10		17/03/2008	12:55	1.29	03/04/2008	17:43	1.33	17/04/2008	15:05	1.20
SBHJ07 CP	SP	10.40		17/03/2008	10:25	1.59	03/04/2008	17:47	1.50	17/04/2008	13:58	1.47
SBHJ08A CP	SP	7.40		18/03/2008	10:00	2.50	03/04/2008	17:55	2.50	17/04/2008	15:33	2.50
SBHJ09 CP	SP	2.20		18/03/2008	10:25	0.69	03/04/2008	17:58	0.82	17/04/2008	15:22	0.90
SBHJ10 CP	SP	10.00		17/03/2008	09:15	2.10	03/04/2008	17:50	2.00	17/04/2008	13:55	2.00
SBHK01 CP	SP	6.80		19/03/2008	10:45	0.88	03/04/2008	16:40	1.00	17/04/2008	11:40	0.94
SBHK02 CP	SP	11.20		19/03/2008	11:15	1.46	03/04/2008	16:45	1.48	17/04/2008	11:43	1.46
SBHK03 CP	SP	5.90		19/03/2008	11:45	1.04	03/04/2008	16:48	1.07	17/04/2008	11:46	0.98
SBHK04 CP	SP	12.20		19/03/2008	12:15	1.64	03/04/2008	16:52	1.67	17/04/2008	12:05	1.60
SBHL02 RC	SPIE	15.20		19/03/2008	12:50	2.44	03/04/2008	17:00	2.45	17/04/2008	12:00	2.45
SBHL03 RC	SPIE	15.00		20/03/2008	13:25	0.76	08/04/2008	15:40	0.64	18/04/2008	09:50	0.62
SBHM01 RC	SPIE	21.00		20/03/2008	13:05	-0.21	08/04/2008	15:48	-0.45	18/04/2008	11:55	0.01
SBHM02 RC	SPIE	20.00		20/03/2008	13:10	0.61	08/04/2008	15:52	0.61	18/04/2008	11:50	0.61
SBHN01A RC	SPIE	14.90		20/03/2008	12:55	12.14	08/04/2008	16:05	12.58	18/04/2008	12:48	13.27
SBHN02 RC	SPIE	20.40		20/03/2008	12:45	4.26	08/04/2008	16:12	2.64	18/04/2008	12:45	4.85
SBHN03 RC	SPIE	15.00		20/03/2008	12:30	1.60	08/04/2008	16:17	2.07	18/04/2008	12:35	2.37
SBHN04 RC	SPIE	10.00		20/03/2008	12:10	DRY	08/04/2008	16:28	DRY	18/04/2008	10:55	DRY
Recorded by: S Davis			Checked by: I Swain			Approved by: I Swain						
Date: 17/03/08-17/04/08			Date: 21/04/2008			Date: 21/04/2008						
Form No. SI GWR			Revision No. 2.03			Issue Date 07/01/2008						

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SUPPORTING FACTUAL DATA
SECTION B
Exploratory Hole Records and
Field Data

IN SITU TEST DATA



[illegible]

Project Name New M4 - Second Preliminary Ground Investigation						Record Of In-Situ Water Monitoring							Hole ID SBHH06 CP	
Project No. F15056													Fig no.	
Engineer Ove Arup & Partners Ltd.														
Client Transport Wales, Welsh Assembly Government													06	
Notes Type of Sampling Point: OB = Open Borehole, SP = Standpipe, PZ = Piezometer, GW = Gas Well, SS = Surface Sample, NR = Not Recorded														
Well Type			SP											
Depth to base of installation mbgl			12.3											
Measured Parameter	Units	Detection Limit												
Monitoring round no.	N/A	N/A	2	2	2	2		4	4	4	4			
Well type	N/A	N/A	SP	SP	SP	SP		SP	SP	SP	SP			
Well volume			0.5	1	2	3		0.5	1	2	3			
Date	dd/mm/yyyy	N/A	21/02/2008	21/02/2008	21/02/2008	21/02/2008		17/03/2008	17/03/2008	17/03/2008	17/03/2008			
Time of initial reading	hh:mm	N/A	08:30					15:20						
Water Level	m	0.01	3.76					3.88						
LNAPL	m	0.01												
DNAPL	m	0.01												
pH	pH units	0.01	7.61	7.52	7.54	7.24		7.86	7.41	7.19	6.77			
Temperature	°C	0.01	10.60	9.90	10.00	10.70		11.10	11.00	10.80	10.60			
Conductivity	µS/cm	0.01	8.13ms	3.34ms	3.01ms	3.24ms		3.16ms	3.25ms	3.22ms	3.17ms			
Dissolved Oxygen	%	0.01	5.80	5.50	5.60	4.90		15.40	14.50	14.80	7.60			
ORP	mV	1												
Turbidity	FTU	0.01												
Volume of water purged	litres	0.01	8.40	16.80	33.60	50.40		8.30	16.60	33.20	49.80			
Weather Conditions:														
Equipment Used (list):														
Equipment Last Calibrated (respectie to list above):														
Comments														
Monitored By:														
Date:														
Form No. SI GWM			Revision No. 2.02		Issue Date 30/10/2006									

Project Name New M4 - Second Preliminary Ground Investigation						Record Of In-Situ Water Monitoring				Hole ID SBHJ01 CP	
Project No. F15056										Fig no.	
Engineer Ove Arup & Partners Ltd.										07	
Client Transport Wales, Welsh Assembly Government											
Notes Type of Sampling Point: OB = Open Borehole, SP = Standpipe, PZ = Piezometer, GW = Gas Well, SS = Surface Sample, NR = Not Recorded											
Well Type			SP								
Depth to base of installation mbgl			7.5								
Measured Parameter	Units	Detection Limit									
Monitoring round no.	N/A	N/A	2	2	2	2		4	4	4	4
Well type	N/A	N/A	SP	SP	SP	SP		SP	SP	SP	SP
Well volume			0.5	1	2	3		0.5	1	2	3
Date	dd/mm/yyyy	N/A	21/02/2008	21/02/2008	21/02/2008	21/02/2008		19/03/2008	19/03/2008	19/03/2008	19/03/2008
Time of initial reading	hh:mm	N/A	11:30					14:51			
Water Level	m	0.01	1.42					1.81			
LNAPL	m	0.01									
DNAPL	m	0.01									
pH	pH units	0.01	10.30	10.65	10.34	8.36		8.35	8.00	7.85	771.00
Temperature	°C	0.01	10.20	10.60	11.10	11.20		11.10	11.30	11.30	11.30
Conductivity	µS/cm	0.01	1183.00	1252.00	1225.00	2126.00		1818.00	2039.00	2233.00	2370.00
Dissolved Oxygen	%	0.01	6.20	6.20	6.30	6.30		29.30	13.40	6.60	0.00
ORP	mV	1									
Turbidity	FTU	0.01									
Volume of water purged	litres	0.01	1.50	3.00	6.00	9.00		5.60	11.20	22.40	33.60
Weather Conditions:											
Equipment Used (list):											
Equipment Last Calibrated (respectie to list above):											
Comments											
Monitored By:											
Date:											
Form No. SI GWM			Revision No. 2.02			Issue Date 30/10/2006					

Project Name			New M4 - Second Preliminary Ground Investigation					Record Of In-Situ Water Monitoring				Hole ID			
Project No.			F15056									SBHJ03 CP			
Engineer			Ove Arup & Partners Ltd.									Fig no.			
Client			Transport Wales, Welsh Assembly Government									08			
Notes													Type of Sampling Point: OB = Open Borehole, SP = Standpipe, PZ = Piezometer, GW = Gas Well, SS = Surface Sample, NR = Not Recorded		
Well Type			SP												
Depth to base of installation			mbgl 5.2												
Measured Parameter	Units	Detection Limit													
Monitoring round no.	N/A	N/A	2	2	2	2		4	4	4	4				
Well type	N/A	N/A	SP	SP	SP	SP		SP	SP	SP	SP				
Well volume			0.5	1	2	3		0.5	1	2	3				
Date	dd/mm/yyyy	N/A	27/02/2008	27/02/2008	27/02/2008	27/02/2008		19/03/2008	19/03/2008	19/03/2008	19/03/2008				
Time of initial reading	hh:mm	N/A	16:15					16:40							
Water Level	m	0.01	0.70					0.78							
LNAPL	m	0.01													
DNAPL	m	0.01													
pH	pH units	0.01	3.30	2.37	2.10	2.25		8.00	7.63	7.38	7.15				
Temperature	°C	0.01	9.00	8.60	9.00	9.50		9.30	9.10	9.90	10.20				
Conductivity	µS/cm	0.01	1515.00	1505.00	1510.00	1508.00		596.00	1064.00	766.00	1237.00				
Dissolved Oxygen	%	0.01	41.90	24.30	34.40	25.00		6.10	14.30	12.60	0.30				
ORP	mV	1													
Turbidity	FTU	0.01													
Volume of water purged	litres	0.01	4.45	8.90	17.80	26.70		4.35	8.70	17.40	26.10				
Weather Conditions:															
Equipment Used (list):															
Equipment Last Calibrated (respective to list above):															
Comments															
Monitored By:															
Date:															
Form No.			SI GWM		Revision No. 2.02		Issue Date 30/10/2006								

Project Name						New M4 - Second Preliminary Ground Investigation						
Project No.						F15056						
Engineer						Ove Arup & Partners Ltd.						
Client						Transport Wales, Welsh Assembly Government						
Notes												
Type of Sampling Point: OB = Open Borehole, SP = Standpipe, PZ = Piezometer, GW = Gas Well, SS = Surface Sample, NR = Not Recorded												
Well Type						SP						
Depth to base of installation mbgl						13.1						
Measured Parameter		Units	Detection Limit									
Monitoring round no.		N/A	N/A	2	2	2	2		4	4	4	4
Well type		N/A	N/A	SP	SP	SP	SP		SP	SP	SP	SP
Well volume				0.5	1	2	3		0.5	1	2	3
Date		dd/mm/yyyy	N/A	22/02/2008	22/02/2008	22/02/2008	22/02/2008		17/03/2008	17/03/2008	17/03/2008	17/03/2008
Time of initial reading		hh:mm	N/A	13:55					13:35			
Water Level		m	0.01	6.33					6.64			
LNAPL		m	0.01									
DNAPL		m	0.01									
pH		pH units	0.01	-2.00	-2.00	-2.00	-2.00		8.30	7.68	7.32	8.00
Temperature		°C	0.01	11.50	11.60	11.90	12.00		11.80	11.90	12.00	11.90
Conductivity		µS/cm	0.01	327.00	313.00	2405.00	3.42ms		2486.00	2823.00	2788.00	2439.00
Dissolved Oxygen		%	0.01	54.10	30.40	31.50	34.40		18.20	20.30	25.20	1.30
ORP		mV	1									
Turbidity		FTU	0.01									
Volume of water purged		litres	0.01	6.30	12.60	25.20	37.80		6.35	12.70	25.40	38.10
Weather Conditions:												
Equipment Used (list):												
Equipment Last Calibrated (respectie to list above):												
Comments												
Monitored By:												
Date:												
Form No.						SI GWM			Revision No. 2.02			
									Issue Date 30/10/2006			
NORWEST HOLST SOIL ENGINEERING												

Project Name New M4 - Second Preliminary Ground Investigation Project No. F15056						Record Of In-Situ Water Monitoring				Hole ID SBHJ05			
Engineer Ove Arup & Partners Ltd.						Fig no. 10							
Client Transport Wales, Welsh Assembly Government													
Notes Type of Sampling Point: OB = Open Borehole, SP = Standpipe, PZ = Piezometer, GW = Gas Well, SS = Surface Sample, NR = Not Recorded													
Well Type			SP										
Depth to base of installation mbgl			11.5										
Measured Parameter	Units	Detection Limit											
Monitoring round no.	N/A	N/A	2	2	2	2		4	4	4	4		
Well type	N/A	N/A	SP	SP	SP	SP		SP	SP	SP	SP		
Well volume			0.5	1	2	3		0.5	1	2	3		
Date	dd/mm/yyyy	N/A	22/02/2008	22/02/2008	22/02/2008	22/02/2008		18/03/2008	18/03/2008	18/03/2008	18/03/2008		
Time of initial reading	hh:mm	N/A	13:50					09:00					
Water Level	m	0.01	9.02					9.07					
LNAPL	m	0.01											
DNAPL	m	0.01											
pH	pH units	0.01	9.95	10.68	10.98	11.12		11.59	11.46	11.56	11.68		
Temperature	°C	0.01	14.00	15.30	15.50	15.70		14.50	15.50	15.70	15.50		
Conductivity	µS/cm	0.01	455.00	503.00	541.00	604.00		81.00	917.00	1042.00	1296.00		
Dissolved Oxygen	%	0.01	8.80	9.70	10.70	9.80		14.10	9.80	12.20	6.20		
ORP	mV	1											
Turbidity	FTU	0.01											
Volume of water purged	litres	0.01	2.40	4.80	9.60	14.40		2.45	4.90	9.80	14.70		
Weather Conditions:													
Equipment Used (list):													
Equipment Last Calibrated (respectie to list above):													
Comments													
Monitored By:									NORWEST HOLST SOIL ENGINEERING				
Date:													
Form No. SI GWM			Revision No. 2.02			Issue Date 30/10/2006							

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Project Name New M4 - Second Preliminary Ground Investigation Project No. F15056						Record Of In-Situ Water Monitoring				Hole ID SBHJ10 CP	
Engineer Ove Arup & Partners Ltd.										Fig no.	
Client Transport Wales, Welsh Assembly Government										15	
Notes Type of Sampling Point: OB = Open Borehole, SP = Standpipe, PZ = Piezometer, GW = Gas Well, SS = Surface Sample, NR = Not Recorded											
Well Type			SP								
Depth to base of installation mbgl			10								
Measured Parameter	Units	Detection Limit									
Monitoring round no.	N/A	N/A	2	2	2	2		4	4	4	4
Well type	N/A	N/A	SP	SP	SP	SP		SP	SP	SP	SP
Well volume			0.5	1	2	3		0.5	1	2	3
Date	dd/mm/yyyy	N/A	21/02/2008	21/02/2008	21/02/2008	21/02/2008		17/03/2008	17/03/2008	17/03/2008	17/03/2008
Time of initial reading	hh:mm	N/A	12:40					09:15			
Water Level	m	0.01	2.24					2.10			
LNAPL	m	0.01									
DNAPL	m	0.01									
pH	pH units	0.01	8.58	8.12	7.60	7.31		7.36	7.16	7.07	7.13
Temperature	°C	0.01	10.70	11.10	11.20	10.60		10.40	10.90	10.80	11.20
Conductivity	µS/cm	0.01	1959.00	2083.00	2203.00	2079.00		4.02ms	4.59ms	4.29ms	4.23ms
Dissolved Oxygen	%	0.01	7.70	7.80	9.00	8.80		26.50	13.30	28.10	0.60
ORP	mV	1									
Turbidity	FTU	0.01									
Volume of water purged	litres	0.01	7.65	15.30	30.60	45.90		6.90	13.80	27.60	41.40
Weather Conditions:											
Equipment Used (list):											
Equipment Last Calibrated (relative to list above):											
Comments											
Monitored By:											
Date:											
Form No. SI GWM			Revision No. 2.02			Issue Date 30/10/2006					

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Project Name						New M4 - Second Preliminary Ground Investigation F15056						
Project No.												
Engineer						Ove Arup & Partners Ltd.						
Client						Transport Wales, Welsh Assembly Government						
Notes						Type of Sampling Point: OB = Open Borehole, SP = Standpipe, PZ = Piezometer, GW = Gas Well, SS = Surface Sample, NR = Not Recorded						
Well Type						SP						
Depth to base of installation mbgl						5.9						
Measured Parameter			Units			Detection Limit						
Monitoring round no.			N/A			N/A			2 2 2 2 4 4 4 4			
Well type			N/A			N/A			SP SP SP SP SP SP SP SP			
Well volume									0.5 1 2 3 0.5 1 2 3			
Date			dd/mm/yyyy			N/A			25/02/2008 25/02/2008 25/02/2008 25/02/2008 19/03/2008 19/03/2008 19/03/2008 19/03/2008			
Time of initial reading			hh:mm			N/A			12:00 11:45			
Water Level			m			0.01			0.89 1.04			
LNAPL			m			0.01						
DNAPL			m			0.01						
pH			pH units			0.01			4.50 4.30 4.95 2.64 7.61 7.49 7.47 7.45			
Temperature			°C			0.01			8.70 9.90 10.20 10.90 10.20 10.30 10.60 11.10			
Conductivity			µS/cm			0.01			592.00 1260.00 1307.00 1345.00 1189.00 1091.00 814.00 1169.00			
Dissolved Oxygen			%			0.01			30.60 15.70 19.60 12.20 16.40 9.90 12.40 9.80			
ORP			mV			1						
Turbidity			FTU			0.01						
Volume of water purged			litres			0.01			4.95 9.90 19.80 29.70 4.75 9.50 19.00 28.50			
Weather Conditions:												
Equipment Used (list):												
Equipment Last Calibrated (relative to list above):												
Comments												
Monitored By:												
Date:												
Form No.						SI GWM			Revision No. 2.02			
Issue Date						30/10/2006						
NORWEST HOLST SOIL ENGINEERING												

Project Name		New M4 - Second Preliminary Ground Investigation				Record Of In-Situ Water Monitoring				Hole ID	
Project No.		F15056								SBHK04 CP	
Engineer		Ove Arup & Partners Ltd.								Fig no.	
Client		Transport Wales, Welsh Assembly Government						19			
Notes Type of Sampling Point: OB = Open Borehole, SP = Standpipe, PZ = Piezometer, GW = Gas Well, SS = Surface Sample, NR = Not Recorded											
Well Type			SP								
Depth to base of installation mbgl			12.2								
Measured Parameter	Units	Detection Limit									
Monitoring round no.	N/A	N/A	2	2	2	2		4	4	4	4
Well type	N/A	N/A	SP	SP	SP	SP		SP	SP	SP	SP
Well volume			0.5	1	2	3		0.5	1	2	3
Date	dd/mm/yyyy	N/A	25/02/2008	25/02/2008	25/02/2008	25/02/2008		19/03/2008	19/03/2008	19/03/2008	19/03/2008
Time of initial reading	hh:mm	N/A	12:30					12:15			
Water Level	m	0.01	1.60					1.64			
LNAPL	m	0.01									
DNAPL	m	0.01									
pH	pH units	0.01	19.50	1.15	-0.07	-1.10		7.27	6.83	6.90	5.63
Temperature	°C	0.01	9.60	10.30	10.70	10.90		10.60	10.90	10.60	10.70
Conductivity	µS/cm	0.01	339.00	386.00	416.00	410.00		2693.00	3.24ms	3.21ms	3.24ms
Dissolved Oxygen	%	0.01	19.60	7.10	14.70	20.30		28.60	15.70	18.60	19.10
ORP	mV	1									
Turbidity	FTU	0.01									
Volume of water purged	litres	0.01	10.40	20.80	41.60	62.40		10.40	20.80	41.60	62.40
Weather Conditions:											
Equipment Used (list):											
Equipment Last Calibrated (respective to list above):											
Comments											
Monitored By:											
Date:											
Form No.		SI GWM		Revision No.		2.02					

Project Name New M4 - Second Preliminary Ground Investigation						Record Of In-Situ Water Monitoring								Hole ID SWSJ08	
Project No. F15056														Fig no.	
Engineer Ove Arup & Partners Ltd.															
Client Transport Wales, Welsh Assembly Government														20	
Notes Type of Sampling Point: OB = Open Borehole, SP = Standpipe, PZ = Piezometer, GW = Gas Well, SS = Surface Sample, NR = Not Recorded															
Well Type			SP												
Depth to base of installation mbgl			3.3												
Measured Parameter	Units	Detection Limit													
Monitoring round no.	N/A	N/A	2	2	2	2		4	4	4	4				
Well type	N/A	N/A	SP	SP	SP	SP		SP	SP	SP	SP				
Well volume			0.5	1	2	3		0.5	1	2	3				
Date	dd/mm/yyyy	N/A	21/02/2008	21/02/2008	21/02/2008	21/02/2008		19/03/2008	19/03/2008	19/03/2008	19/03/2008				
Time of initial reading	hh:mm	N/A	11:45					15:10							
Water Level	m	0.01	0.37					0.44							
LNAPL	m	0.01													
DNAPL	m	0.01													
pH	pH units	0.01	7.61	6.94	6.86	6.80		8.35	8.15	8.03	7.93				
Temperature	°C	0.01	8.30	7.60	7.30	7.30		9.10	8.20	8.00	8.00				
Conductivity	µS/cm	0.01	1016.00	652.00	612.00	816.00		968.00	531.00	498.00	499.00				
Dissolved Oxygen	%	0.01	6.80	6.20	6.10	6.00		10.70	11.30	13.50	13.60				
ORP	mV	1													
Turbidity	FTU	0.01													
Volume of water purged	litres	0.01	2.90	5.80	11.60	17.40		2.80	5.60	11.20	16.80				
Weather Conditions:															
Equipment Used (list):															
Equipment Last Calibrated (relative to list above):															
Comments															
Monitored By:															
Date:															
Form No. SI GWM Revision No. 2.02 Issue Date 30/10/2006															
NORWEST HOLST SOIL ENGINEERING															

Project Name	New M4 - Second Preliminary Ground Investigation F15056	Record Of In-Situ Water Monitoring							Hole ID SWSJ21		
Engineer	Ove Arup & Partners Ltd.										Fig no. 21
Client	Transport Wales, Welsh Assembly Government										
Notes	Type of Sampling Point: OB = Open Borehole, SP = Standpipe, PZ = Piezometer, GW = Gas Well, SS = Surface Sample, NR = Not Recorded										
Well Type			SP								
Depth to base of installation mbgl			6								
Measured Parameter	Units	Detection Limit									
Monitoring round no.	N/A	N/A	2	2	2	2		4	4	4	4
Well type	N/A	N/A	SP	SP	SP	SP		SP	SP	SP	SP
Well volume			0.5	1	2	3		0.5	1	2	3
Date	dd/mm/yyyy	N/A	22/02/2008	22/02/2008	22/02/2008	22/02/2008		18/03/2008	18/03/2008	18/03/2008	18/03/2008
Time of initial reading	hh:mm	N/A	10:00					14:30			
Water Level	m	0.01	5.72					4.42			
LNAPL	m	0.01									
DNAPL	m	0.01									
pH	pH units	0.01	11.63	11.75	11.84	10.25		11.82	12.06	12.14	11.96
Temperature	°C	0.01	11.40	11.50	11.90	11.60		10.00	10.80	11.00	11.20
Conductivity	µS/cm	0.01	1868.00	1775.00	2019.00	1960.00		2120.00	2348.00	2625.00	2696.00
Dissolved Oxygen	%	0.01	8.20	8.40	8.60	8.80		19.60	13.10	6.80	0.00
ORP	mV	1									
Turbidity	FTU	0.01									
Volume of water purged	litres	0.01	0.30	0.60	1.20	1.80		1.55	3.10	6.20	9.30
Weather Conditions:											
Equipment Used (list):											
Equipment Last Calibrated (respectie to list above):											
Comments											
Monitored By:											
Date:											
Form No.		SI GWM		Revision No.		2.02					

Project Name New M4 - Second Preliminary Ground Investigation						Record Of In-Situ Water Monitoring								Hole ID SWSJ23
Project No. F15056														
Engineer Ove Arup & Partners Ltd.														Fig no.
Client Transport Wales, Welsh Assembly Government														22
Notes Type of Sampling Point: OB = Open Borehole, SP = Standpipe, PZ = Piezometer, GW = Gas Well, SS = Surface Sample, NR = Not Recorded														
Well Type			SP											
Depth to base of installation mbgl			7.8											
Measured Parameter	Units	Detection Limit												
Monitoring round no.	N/A	N/A	2	2	2	2		4	4	4	4			
Well type	N/A	N/A	SP	SP	SP	SP		SP	SP	SP	SP			
Well volume			0.5	1	2	3		0.5	1	2	3			
Date	dd/mm/yyyy	N/A	22/02/2008	22/02/2008	22/02/2008	22/02/2008		18/03/2008	18/03/2008	18/03/2008	18/03/2008			
Time of initial reading	hh:mm	N/A	10:25					15:05						
Water Level	m	0.01	6.62					7.58						
LNAPL	m	0.01												
DNAPL	m	0.01												
pH	pH units	0.01	9.72	9.80	9.83	9.84								
Temperature	°C	0.01	11.10	12.00	12.20	12.20								
Conductivity	µS/cm	0.01	2106.00	2317.00	2305.00	2362.00								
Dissolved Oxygen	%	0.01	8.80	9.30	9.80	10.50								
ORP	mV	1												
Turbidity	FTU	0.01												
Volume of water purged	litres	0.01	1.15	2.30	4.60	6.90								
Weather Conditions:														
Equipment Used (list):														
Equipment Last Calibrated (relative to list above):														
Comments Round four well dry before 0.5 well volume could be achieved														
Monitored By:														
Date:														
Form No.		SI GWM		Revision No. 2.02								Issue Date 30/10/2006		

Project Name		New M4 - Second Preliminary Ground Investigation				Record Of In-Situ Water Monitoring				Hole ID	
Project No.		F15056								SWSJ34	
Engineer		Ove Arup & Partners Ltd.								Fig no.	
Client		Transport Wales, Welsh Assembly Government								23	
Notes Type of Sampling Point: OB = Open Borehole, SP = Standpipe, PZ = Piezometer, GW = Gas Well, SS = Surface Sample, NR = Not Recorded											
Well Type			SP								
Depth to base of installation mbgl			6								
Measured Parameter	Units	Detection Limit									
Monitoring round no.	N/A	N/A	2	2	2	2		4	4	4	4
Well type	N/A	N/A	SP	SP	SP	SP		SP	SP	SP	SP
Well volume			0.5	1	2	3		0.5	1	2	3
Date	dd/mm/yyyy	N/A	22/02/2008	22/02/2008	22/02/2008	22/02/2008		19/03/2008	19/03/2008	19/03/2008	19/03/2008
Time of initial reading	hh:mm	N/A	10:55					08:55			
Water Level	m	0.01	3.33					2.36			
LNAPL	m	0.01									
DNAPL	m	0.01									
pH	pH units	0.01	6.79	7.83	7.48			11.67	11.92	11.94	11.98
Temperature	°C	0.01	18.40	18.70	19.80			18.20	19.40	19.00	19.30
Conductivity	µS/cm	0.01	4.10ms	4.12ms	3.98ms			2560.00	3.36ms	3.27	3.29
Dissolved Oxygen	%	0.01	21.50	20.30	19.70			3.80	1.10	1.70	0.00
ORP	mV	1									
Turbidity	FTU	0.01									
Volume of water purged	litres	0.01	2.65	5.30	10.60			3.60	7.20	14.40	21.60
Weather Conditions:											
Equipment Used (list):											
Equipment Last Calibrated (respective to list above):											
Comments											
Round 2 well dry before 3 well volumes could be achieved											
Monitored By:											
Date:											
Form No.		SI GWM		Revision No. 2.02		Issue Date 30/10/2006					

Project Name	New M4 - Second Preliminary Ground Investigation	Record Of In-Situ Water Monitoring							Hole ID		
Project No.	F15056								SWSJ37		
Engineer	Ove Arup & Partners Ltd.								Fig no.		
Client	Transport Wales, Welsh Assembly Government								24		
Notes	Type of Sampling Point: OB = Open Borehole, SP = Standpipe, PZ = Piezometer, GW = Gas Well, SS = Surface Sample, NR = Not Recorded										
Well Type			SP								
Depth to base of installation			mbgl 5.6								
Measured Parameter	Units	Detection Limit									
Monitoring round no.	N/A	N/A	2	2	2	2		4	4	4	4
Well type	N/A	N/A	SP	SP	SP	SP		SP	SP	SP	SP
Well volume			0.5	1	2	3		0.5	1	2	3
Date	dd/mm/yyyy	N/A	22/02/2008	22/02/2008	22/02/2008	22/02/2008		18/03/2008	18/03/2008	18/03/2008	18/03/2008
Time of initial reading	hh:mm	N/A	11:30					11:15			
Water Level	m	0.01	0.55					0.55			
LNAPL	m	0.01									
DNAPL	m	0.01									
pH	pH units	0.01	-2.00	-2.00	-2.00	-2.00		8.40	8.21	7.73	
Temperature	°C	0.01	9.60	9.70	10.40	11.20		9.80	10.50	11.40	
Conductivity	µS/cm	0.01	1126.00	1121.00	1251.00	1475.00		1270.00	935.00	1675.00	
Dissolved Oxygen	%	0.01	17.30	17.40	18.70	20.30		10.00	6.60	0.00	
ORP	mV	1									
Turbidity	FTU	0.01									
Volume of water purged	litres	0.01	4.95	9.90	19.80	29.70		4.95	9.90	19.80	
Weather Conditions:											
Equipment Used (list):											
Equipment Last Calibrated (relative to list above):											
Comments											
Round 4 well dry before 3 well volumes could be achieved											
Monitored By:											
Date:											
Form No.			Revision No.			Issue Date					
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Project Name			New M4 - Second Preliminary Ground Investigation F15056						Record Of In-Situ Water Monitoring			Hole ID LGBH02	
Project No.												Fig no. 25	
Engineer			Ove Arup & Partners Ltd.										
Client			Transport Wales, Welsh Assembly Government										
Notes Type of Sampling Point: OB = Open Borehole, SP = Standpipe, PZ = Piezometer, GW = Gas Well, SS = Surface Sample, NR = Not Recorded													
Well Type			SP										
Depth to base of installation mbgl			8.88										
Measured Parameter	Units	Detection Limit											
Monitoring round no.	N/A	N/A	2	2	2	2		4	4	4	4		
Well type	N/A	N/A	SP	SP	SP	SP		SP	SP	SP	SP		
Well volume			0.5	1	2	3		0.5	1	2	3		
Date	dd/mm/yyyy	N/A	22/02/2008	22/02/2008	22/02/2008	22/02/2008		17/03/2008	17/03/2008	17/03/2008	17/03/2008		
Time of initial reading	hh:mm	N/A	12:55					14:35					
Water Level	m	0.01	7.48					7.50					
LNAPL	m	0.01											
DNAPL	m	0.01											
pH	pH units	0.01	-2.00	-2.00	9.25	4.81		11.44	11.69	11.77	11.93		
Temperature	°C	0.01	13.20	13.80	14.10	14.00		13.40	13.90	13.80	13.90		
Conductivity	µS/cm	0.01	2129.00	2363.00	2381.00	2403.00		2035.00	2375.00	2510.00	2517.00		
Dissolved Oxygen	%	0.01	8.30	12.30	15.50	23.30		27.90	18.40	15.60	11.70		
ORP	mV	1											
Turbidity	FTU	0.01											
Volume of water purged	litres	0.01	1.35	2.70	5.40	8.10		1.40	2.80	5.60	8.40		
Weather Conditions:													
Equipment Used (list):													
Equipment Last Calibrated (respectie to list above):													
Comments													
Monitored By:													
Date:													
Form No.			SI GWM			Revision No.			2.02				
						Issue Date			30/10/2006				

Project Name New M4 - Second Preliminary Ground Investigation						Record Of In-Situ Water Monitoring				Hole ID LGBH03	
Project No. F15056										Fig no.	
Engineer Ove Arup & Partners Ltd.											
Client Transport Wales, Welsh Assembly Government										26	
Notes Type of Sampling Point: OB = Open Borehole, SP = Standpipe, PZ = Piezometer, GW = Gas Well, SS = Surface Sample, NR = Not Recorded											
Well Type			SP								
Depth to base of installation mbgl			8.9								
Measured Parameter	Units	Detection Limit									
Monitoring round no.	N/A	N/A	2	2	2	2		4	4	4	4
Well type	N/A	N/A	SP	SP	SP	SP		SP	SP	SP	SP
Well volume			0.5	1	2	3		0.5	1	2	3
Date	dd/mm/yyyy	N/A	22/02/2008	22/02/2008	22/02/2008	22/02/2008		17/03/2008	17/03/2008	17/03/2008	17/03/2008
Time of initial reading	hh:mm	N/A	14:21					13:35			
Water Level	m	0.01	7.20					6.64			
LNAPL	m	0.01									
DNAPL	m	0.01									
pH	pH units	0.01	3.07	2.91	2.16	3.00		11.73	11.88	11.19	11.65
Temperature	°C	0.01	12.70	13.20	13.40	13.40		12.80	13.00	11.80	13.00
Conductivity	µS/cm	0.01	1665.00	1801.00	1871.00	1972.00		1962.00	2046.00	1598.00	1734.00
Dissolved Oxygen	%	0.01	14.30	17.40	29.80	33.80		16.00	24.10	21.30	30.10
ORP	mV	1									
Turbidity	FTU	0.01									
Volume of water purged	litres	0.01	1.65	3.30	6.60	9.90		1.65	3.30	6.60	9.90
Weather Conditions:											
Equipment Used (list):											
Equipment Last Calibrated (respectie to list above):											
Comments											
Monitored By:											
Date:											
Form No. SI GWM			Revision No. 2.02			Issue Date 30/10/2006					

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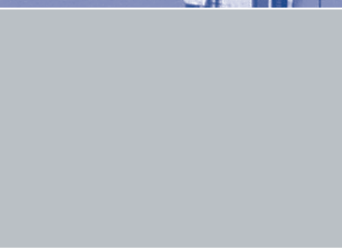
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SUPPORTING FACTUAL DATA

SECTION C

Laboratory Testing



KEY TO LABORATORY TEST RESULTS



SECTION C: KEY TO LABORATORY SUMMARY SHEETS

COMMON TO ALL SUMMARIES

Sample Type	U	Undisturbed sample	AMAL	Amalgamated sample
	P	Piston sample	B	Bulk disturbed sample
	TW	Thin walled sample	BLK	Block sample
	L	Liner sample	C	Core sample
	D	Small disturbed sample		
Test status	Any result in <i>italics</i> indicates a test that is not within the scope of the UKAS accreditation for this laboratory.			

SUMMARY OF LABORATORY SOIL TESTS: INDEX / CLASSIFICATION TESTS

Particle density	p	Small pycnometer method	g	Gas jar method
Plastic index	N/P	Non plastic, although liquid limit will have been determined if requested		
Particle size (PSD)	¹	Following value in silt column denotes combined clay and silt fraction		
	p	Following value in clay column denotes sedimentation by pipette, else sedimentation is by hydrometer.		

SUMMARY OF LABORATORY SOIL TESTS: STRENGTH AND PERMEABILITY TESTS

Triaxial	UU	Single stage unconsolidated quick undrained		
	UUM	Multi stage unconsolidated quick undrained		
	UU3	Set of 3 unconsolidated quick undrained		
	CU	Single stage consolidated undrained		
	CUM	Multi stage consolidated undrained		
	CU3	Set of 3 consolidated undrained		
	CD	Single stage consolidated drained		
	CDM	Multi stage consolidated drained		
	CD3	Set of 3 consolidated drained		
Note that single stage tests are reported assuming $\phi = 0$ for total stress and $c' = 0$ for effective stress				
Consol	Oed	One-dimensional oedometer	Hyd	Hydraulic cell consolidation
	m_v	Coefficient of compressibility quoted for p_0 to $p_0 + 100\text{kPa}$, where determined		
Permeability	C	Constant head permeability	T	Triaxial permeability
Shearbox	SSB	Small shear box	LSB	Large shear box
	P	Peak value	r	Residual value
	RS	Ring shear		

SECTION C: KEY TO LABORATORY SUMMARY SHEETS

SUMMARY OF LABORATORY SOIL RE-USE TEST

MCV	s	MCV value at natural or specified moisture content
	int	Intercept of calibration line in MCV calibration

SUMMARY OF LABORATORY ROCK STRENGTH TESTS

Point Load	Type	D	Diametral	A	Axial
	(Combination of)	I	Irregular lump	B	Block
		L	Test performed parallel to planes of weakness		
		P	Test performed perpendicular to planes of weakness		
		X	Invalid failure of point load (not broken between points of load application)		

SUMMARY OF LABORATORY ROCK MATERIALS TESTS

Ten% fines	w	Soaked test	d	Dry test
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POINT LOAD INDEX RESULT

Point Load	Type	D	Diametral	A	Axial
	(Combination of)	I	Irregular lump	B	Block
		L	Test performed parallel to planes of weakness		
		P	Test performed perpendicular to planes of weakness		
		X	Invalid failure of point load (not broken between points of load application)		
Dimensions		W	Diameter of core or average smallest width perpendicular to axis of loading in a block or irregular lump		
		D	Distance between platens when just in contact with specimen		
		D'	Distance between platens at point of failure		
		De	Equivalent core diameter	Is	P/De^2
		Is(50)	$F \times Is$	F	$(De/50)^{0.45}$
		Is(50) point load strength index corrected for a diametral test of core diameter 50mm			
		For Axial/Lump tests $De^2 = (4/\pi) \times (W \times D')$			
		For Diametral tests $De^2 = D \times D'$			

Important note:

Summary sheets are provided for convenience and in no way replace individual test result sheets which shall, without exception, be regarded as the definitive result.

SUPPORTING FACTUAL DATA
SECTION C
Laboratory Testing

CONTAMINATION TEST RESULTS





ALcontrol Laboratories

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Norwest Holst Ltd
Soil Engineering Division
Parkside Lane
Dewsbury Road
LS11 5SX
Leeds

ATTN: Ian Swain

CERTIFICATE OF ANALYSIS

Date: 17 December, 2008
Our Reference: 08/00393/02/05
Your Reference: F15056
Location: M4 NEWPORT

This report supersedes all previous reports for Batches 14, 15, 16 and 18.

A total of 814 samples was received for analysis between Wednesday, 09 January 2008 and Saturday, 19 April 2008 and completed on Tuesday, 29 April 2008. Accredited laboratory tests are defined in the log sheet, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation. We are pleased to enclose our final report, it was a pleasure to be of service to you, and we look forward to our continuing association.

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

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 materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample. Asbestos testing - we are not accredited for screen testing of asbestos fibres. We are only accredited for asbestos containing materials found in bulk samples.

Signed

Diane Whittlestone David O'Hare
Tech. Support Manager Project Manager

Kim Harrison
Project Coordinator
Team Leader

Byron Hagan
Project Coordinator
Team Leader

Valid if signed by any of the above signatories.

Compiled By

Kim Harrison



ALcontrol Laboratories

TEST SCHEDULE

JOB NUMBER : 08/393/02

CLIENT : Norwest Holst Ltd

CONTACT : Ian Swain

DATE OF RECEIPT : 21/02/08

LOCATION : M4 NEWPORT

BATCH NUMBER : 14

CLIENT REF/ CODE : F15056

ORDER NUMBER : STC/2627

TURNAROUND : 7 days

Numeric values indicate additional scheduling

* indicates test subcontracted

Sample Number	Sample Identity	P / V	Depth	Sample Type	UKAS Accredited ?	pH (W)	BOD Unfiltered (W)	COD Unfiltered (W)	Alkalinity Total (W)	Hardness Total (W) (ICP-MS)	Arsenic ICP-MS (W)	Cadmium Total MS (HNO3) (W)	Chromium ICP-MS (W)	Copper ICP-MS (W)	Lead ICP-MS (W)	Mercury Total (CVAF) (Aqua Regia) (W)	Nickel ICP-MS (W)	Selenium ICP-MS (W)	Zinc Total MS (HNO3) (W)	Calcium ICP-MS (W)	Iron ICP-MS (W)	Magnesium ICP-MS (W)	Manganese ICP-MS (W)	Sodium Dissolved (W)	Potassium Dissolved (W)	Ammoniacal Nitrogen as N (W)	Chloride Kone (W)	Cyanide Total (W)	Sulphate Kone (W)
395	SBHD6	25ml Plasti	UNKNOWN	LIQUID			X	X																					
396	SBHD6	1lglass	UNKNOWN	LIQUID												X													
397	SBHD6	1plastic	UNKNOWN	LIQUID		X			X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
398	SBHD6	2SO4 125l	UNKNOWN	LIQUID																									
399	SBHD6	NaOH	UNKNOWN	LIQUID																									X
400	SBHD6	Vial	UNKNOWN	LIQUID																									
401	SBHD6	ZnAc	UNKNOWN	LIQUID																									
402	SBHD6	25ml Plasti	UNKNOWN	LIQUID			X	X																					
403	SBHD6	1lglass	UNKNOWN	LIQUID												X													
404	SBHD6	1plastic	UNKNOWN	LIQUID		X			X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
405	SBHD6	2SO4 125l	UNKNOWN	LIQUID																									
406	SBHD6	NaOH	UNKNOWN	LIQUID																									X
407	SBHD6	Vial	UNKNOWN	LIQUID																									
408	SBHD6	ZnAc	UNKNOWN	LIQUID																									
409	SBHJ1	25ml Plasti	UNKNOWN	LIQUID			X	X																					
410	SBHJ1	1lglass	UNKNOWN	LIQUID												X													
411	SBHJ1	1plastic	UNKNOWN	LIQUID		X			X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
412	SBHJ1	2SO4 125l	UNKNOWN	LIQUID																									
413	SBHJ1	NaOH	UNKNOWN	LIQUID																									X
414	SBHJ1	ZnAc	UNKNOWN	LIQUID																									
415	SBHJ6	25ml Plasti	UNKNOWN	LIQUID			X	X																					
416	SBHJ6	1lglass	UNKNOWN	LIQUID												X													

Alcontrol Laboratories TEST SCHEDULE

JOB NUMBER : 08/393/02

CLIENT : Norwest Holst Ltd

CONTACT : Ian Swain

DATE OF RECEIPT : 21/02/08

LOCATION : M4 NEWPORT

BATCH NUMBER : 14

CLIENT REF/COE : F15056

ORDER NUMBER : STC/2627

TURNAROUND : 7 days

Numeric values indicate
additional scheduling

* indicates test subcontracted

Sample Number	Sample Identity	P / V	Depth	Sample Type	UKAS Accredited ?	pH (W)	BOD Unfiltered (W)	COD Unfiltered (W)	Alkalinity Total (W)	Hardness Total (W) (ICP-MS)	Arsenic ICP-MS (W)	Cadmium Total MS (HNO3) (W)	Chromium ICP-MS (W)	Copper ICP-MS (W)	Lead ICP-MS (W)	Mercury Total (CVAF) (Aqua Regia) (W)	Nickel ICP-MS (W)	Selenium ICP-MS (W)	Zinc Total MS (HNO3) (W)	Calcium ICP-MS (W)	Iron ICP-MS (W)	Magnesium ICP-MS (W)	Manganese ICP-MS (W)	Sodium Dissolved (W)	Potassium Dissolved (W)	Ammoniacal Nitrogen as N (W)	Chloride Kone (W)	Cyanide Total (W)	Sulphate Kone (W)
417	SBHJ6	1plastic	UNKNOWN	LIQUID	✓	X					X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X
418	SBHJ6	2SO4_125	UNKNOWN	LIQUID	✓																								
419	SBHJ6	NaOH	UNKNOWN	LIQUID	✓																								
420	SBHJ6	Vial	UNKNOWN	LIQUID	✓																								
421	SBHJ6	ZnAc	UNKNOWN	LIQUID	✓																								
422	SBHJ9	25ml Plasti	UNKNOWN	LIQUID	✓		X	X																					
423	SBHJ9	1glass	UNKNOWN	LIQUID	✓											X													
424	SBHJ9	1plastic	UNKNOWN	LIQUID	✓	X			X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X
425	SBHJ9	2SO4_125	UNKNOWN	LIQUID	✓																								
426	SBHJ9	NaOH	UNKNOWN	LIQUID	✓																								
427	SBHJ9	Vial	UNKNOWN	LIQUID	✓																								
428	SBHJ9	ZnAc	UNKNOWN	LIQUID	✓																								
429	SBHJ1	Vial	UNKNOWN	LIQUID	✓																								
430	SWSJ8	25ml Plasti	UNKNOWN	LIQUID	✓		X	X																					
431	SWSJ8	1glass	UNKNOWN	LIQUID	✓											X													
432	SWSJ8	1plastic	UNKNOWN	LIQUID	✓	X			X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X
433	SWSJ8	2SO4_125	UNKNOWN	LIQUID	✓																								
434	SWSJ8	NaOH	UNKNOWN	LIQUID	✓																								
435	SWSJ8	Vial	UNKNOWN	LIQUID	✓																								
436	SWSJ8	ZnAc	UNKNOWN	LIQUID	✓																								
Total Number of Tests						6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6

ALcontrol Laboratories TEST SCHEDULE

JOB NUMBER : 08/393/02

CLIENT : Norwest Holst Ltd

CONTACT : Ian Swain

DATE OF RECEIPT : 21/02/08

LOCATION : M4 NEWPORT

BATCH NUMBER : 14

CLIENT REF/CODE : F15056

ORDER NUMBER : STC/2627

TURNAROUND : 7 days

Numeric values indicate
additional scheduling

* indicates test subcontracted

Sample Number	Sample Identity	P / V	Depth	Sample Type	UKAS Accredited ?												
					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
					Nitrate as NO3 Kone (W)	Phenols HPLC (W)	SVOC inc PAH MS (W)	EPH CWG GC Aqueous (W)	GRO CWG GC (W)	VOC MS (W)	Vanadium ICP-MS (W)	Beryllium (ICP-MS) (W)	Ammonium Total as NH4 (W)	Carbon Dioxide Dissolved (W)	Chromium VI (W)		
395	SBHD6	25ml Plasti	UNKNOWN	LIQUID			X										
396	SBHD6	1lglass	UNKNOWN	LIQUID			X	X									
397	SBHD6	1plastic	UNKNOWN	LIQUID	X												
398	SBHD6	2SO4_125l	UNKNOWN	LIQUID		X						X					
399	SBHD6	NaOH	UNKNOWN	LIQUID													
400	SBHD6	Vial	UNKNOWN	LIQUID					X	X				X			
401	SBHD6	ZnAc	UNKNOWN	LIQUID	X												
402	SBHD6	25ml Plasti	UNKNOWN	LIQUID													
403	SBHD6	1lglass	UNKNOWN	LIQUID			X	X									
404	SBHD6	1plastic	UNKNOWN	LIQUID	X												
405	SBHD6	2SO4_125l	UNKNOWN	LIQUID		X						X					
406	SBHD6	NaOH	UNKNOWN	LIQUID		X											
407	SBHD6	Vial	UNKNOWN	LIQUID					X					X			
408	SBHD6	ZnAc	UNKNOWN	LIQUID	X												
409	SBHJ1	25ml Plasti	UNKNOWN	LIQUID													
410	SBHJ1	1lglass	UNKNOWN	LIQUID			X	X									
411	SBHJ1	1plastic	UNKNOWN	LIQUID	X												
412	SBHJ1	2SO4_125l	UNKNOWN	LIQUID								2	X		3		
413	SBHJ1	NaOH	UNKNOWN	LIQUID		X							X				
414	SBHJ1	ZnAc	UNKNOWN	LIQUID	X												
415	SBHJ6	25ml Plasti	UNKNOWN	LIQUID													
416	SBHJ6	1lglass	UNKNOWN	LIQUID			X	X									

Alcontrol Laboratories

TEST SCHEDULE

JOB NUMBER : 08/393/02

CLIENT: Norwest Holst Ltd

CONTACT Ian Swain

DATE OF RECEIPT: 21/02/08

LOCATION : M4 NEWPORT

BATCH NUMBER: 14

CLIENT REF/CODE : F15056

ORDER NUMBER STC/2627

TURNAROUND: 7 days

Numeric values indicate additional scheduling

* indicates test subcontracted

ALcontrol Laboratories TEST SCHEDULE

JOB NUMBER : 08/393/02

CLIENT : Norwest Holst Ltd

CONTACT : Ian Swain

DATE OF RECEIPT : 23/02/08

LOCATION : M4 NEWPORT

BATCH NUMBER : 15

CLIENT REF/CODE : F15056

ORDER NUMBER : STC/2627

TURNAROUND : 7 days

Numeric values indicate
additional scheduling

* indicates test subcontracted

Sample Number	Sample Identity	P / V	Depth	Sample Type	UKAS Accredited ?	pH (W)	BOD Unfiltered (W)	COD Unfiltered (W)	Alkalinity Total (W)	Hardness Total (W) (ICP-MS)	Arsenic ICP-MS (W)	Cadmium Total MS (HNO3) (W)	Chromium ICP-MS (W)	Copper ICP-MS (W)	Lead ICP-MS (W)	Mercury Total (CVAF) (Aqua Regia) (W)	Nickel ICP-MS (W)	Selenium ICP-MS (W)	Zinc Total MS (HNO3) (W)	Calcium ICP-MS (W)	Iron ICP-MS (W)	Magnesium ICP-MS (W)	Manganese ICP-MS (W)	Sodium Dissolved (W)	Potassium Dissolved (W)	Ammoniacal Nitrogen as N (W)	Chloride Kone (W)	Cyanide Total (W)	Sulphate Kone (W)
437	LGBH2	1lglass	UNKNOWN	LIQUID	✓	X			X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X		X	X	X
438	LGBH2	1plastic	UNKNOWN	LIQUID	✓	X			X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X		X	X	X
439	LGBH2	50ml Plasti	UNKNOWN	LIQUID	✓		X																						
440	LGBH2	2SO4 125l	UNKNOWN	LIQUID	✓		X																			X			
441	LGBH2	NaOH	UNKNOWN	LIQUID	✓																								X
442	LGBH2	Vial	UNKNOWN	LIQUID	✓																								
443	LGBH2	ZnAc	UNKNOWN	LIQUID	✓																								
444	LGBH3	1lglass	UNKNOWN	LIQUID	✓												X												
445	LGBH3	1plastic	UNKNOWN	LIQUID	✓	X			X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X		X	X	X
446	LGBH3	50ml Plasti	UNKNOWN	LIQUID	✓		X																						
447	LGBH3	2SO4 125l	UNKNOWN	LIQUID	✓		X																			X			
448	LGBH3	NaOH	UNKNOWN	LIQUID	✓																								X
449	LGBH3	Vial	UNKNOWN	LIQUID	✓																								
450	LGBH3	ZnAc	UNKNOWN	LIQUID	✓																								
451	LGBH9	1lglass	UNKNOWN	LIQUID	✓												X												
452	LGBH9	1plastic	UNKNOWN	LIQUID	✓	X			X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X		X	X	X
453	LGBH9	50ml Plasti	UNKNOWN	LIQUID	✓		X																						
454	LGBH9	2SO4 125l	UNKNOWN	LIQUID	✓		X																			X			
455	LGBH9	NaOH	UNKNOWN	LIQUID	✓																								X
456	LGBH9	Vial	UNKNOWN	LIQUID	✓																								
457	LGBH9	ZnAc	UNKNOWN	LIQUID	✓																								
458	LGBH12	1lglass	UNKNOWN	LIQUID	✓											X													

ALcontrol Laboratories

TEST SCHEDULE

JOB NUMBER : 08/393/02

CLIENT : Norwest Holst Ltd

CONTACT : Ian Swain

DATE OF RECEIPT : 23/02/08

LOCATION : M4 NEWPORT

BATCH NUMBER : 15

CLIENT REF/CODE : F15056

ORDER NUMBER : STC/2627

TURNAROUND : 7 days

Numeric values indicate
additional scheduling

* indicates test subcontracted

Sample Number	Sample Identity	P / V	Depth	Sample Type	UKAS Accredited ?	pH (W)	BOD Unfiltered (W)	COD Unfiltered (W)	Alkalinity Total (W)	Hardness Total (W) (ICP-MS)	Arsenic ICP-MS (W)	Cadmium Total MS (HNO3) (W)	Chromium ICP-MS (W)	Copper ICP-MS (W)	Lead ICP-MS (W)	Mercury Total (CVAF) (Aqua Regia) (W)	Nickel ICP-MS (W)	Selenium ICP-MS (W)	Zinc Total MS (HNO3) (W)	Calcium ICP-MS (W)	Iron ICP-MS (W)	Magnesium ICP-MS (W)	Manganese ICP-MS (W)	Sodium Dissolved (W)	Potassium Dissolved (W)	Ammoniacal Nitrogen as N (W)	Chloride Kone (W)	Cyanide Total (W)	Sulphate Kone (W)
459	LGBH12	1plastic	UNKNOWN	LIQUID	✓	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
460	LGBH12	50ml Plasti	UNKNOWN	LIQUID	✓		X	X																					
461	LGBH12	2SO4_125r	UNKNOWN	LIQUID	✓																					X			
462	LGBH12	NaOH	UNKNOWN	LIQUID	✓																							X	
463	LGBH12	Vial	UNKNOWN	LIQUID	✓																								
464	LGBH12	ZnAc	UNKNOWN	LIQUID	✓																								
465	SBHJ4	1glass	UNKNOWN	LIQUID	✓												X												
466	SBHJ4	1plastic	UNKNOWN	LIQUID	✓	X			X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
467	SBHJ4	50ml Plasti	UNKNOWN	LIQUID	✓		X	X																					
468	SBHJ4	2SO4_125r	UNKNOWN	LIQUID	✓			X																	X				
469	SBHJ4	NaOH	UNKNOWN	LIQUID	✓																							X	
470	SBHJ4	Vial	UNKNOWN	LIQUID	✓																								
471	SBHJ4	ZnAc	UNKNOWN	LIQUID	✓																								
472	SBHJ5	1glass	UNKNOWN	LIQUID	✓											X													
473	SBHJ5	1plastic	UNKNOWN	LIQUID	✓	X			X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
474	SBHJ5	50ml Plasti	UNKNOWN	LIQUID	✓		X	X																					
475	SBHJ5	2SO4_125r	UNKNOWN	LIQUID	✓																					X			
476	SBHJ5	NaOH	UNKNOWN	LIQUID	✓																							X	
477	SBHJ5	Vial	UNKNOWN	LIQUID	✓																								
478	SBHJ5	ZnAc	UNKNOWN	LIQUID	✓																								
479	SBHJ7	1glass	UNKNOWN	LIQUID	✓												X												
480	SBHJ7	1plastic	UNKNOWN	LIQUID	✓	X			X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X

Alcontrol Laboratories TEST SCHEDULE

JOB NUMBER : 08/393/02

CLIENT : Norwest Holst Ltd

CONTACT : Ian Swain

DATE OF RECEIPT : 23/02/08

LOCATION : M4 NEWPORT

BATCH NUMBER : 15

CLIENT REF/ CODE : F15056

ORDER NUMBER : STC/2627

TURNAROUND : 7 days

Numeric values indicate
additional scheduling

* indicates test subcontracted

Sample Number	Sample Identity	P / V	Depth	Sample Type	UKAS Accredited ?	UKAS Accredited ?																						
						pH (W)	BOD Unfiltered (W)	COD Unfiltered (W)	Alkalinity Total (W)	Hardness Total (W) (ICP-MS)	Arsenic ICP-MS (W)	Cadmium Total MS (HNO3) (W)	Chromium ICP-MS (W)	Copper ICP-MS (W)	Lead ICP-MS (W)	Mercury Total (CVAF) (Anala Racial) (W)	Nickel ICP-MS (W)	Selenium ICP-MS (W)	Zinc Total MS (HNO3) (W)	Calcium ICP-MS (W)	Iron ICP-MS (W)	Magnesium ICP-MS (W)	Manganese ICP-MS (W)	Sodium Dissolved (W)	Potassium Dissolved (W)	Ammoniacal Nitrogen as N (W)	Chloride Kone (W)	Cyanide Total (W)
481	SBHJ7	50ml Plasti	UNKNOWN	LIQUID			X																X					✓
482	SBHJ7	2SO4_125r	UNKNOWN	LIQUID																			X					✓
483	SBHJ7	NaOH	UNKNOWN	LIQUID																				X				✓
484	SBHJ7	Vial	UNKNOWN	LIQUID																								✓
485	SBHJ7	ZnAc	UNKNOWN	LIQUID																								✓
486	SBHJ8A	1lglass	UNKNOWN	LIQUID												X												✓
487	SBHJ8A	1plastic	UNKNOWN	LIQUID		X			X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	✓
488	SBHJ8A	50ml Plasti	UNKNOWN	LIQUID			X																					✓
489	SBHJ8A	2SO4_125r	UNKNOWN	LIQUID																			X					✓
490	SBHJ8A	NaOH	UNKNOWN	LIQUID																							X	✓
491	SBHJ8A	Vial	UNKNOWN	LIQUID																								✓
492	SBHJ8A	ZnAc	UNKNOWN	LIQUID																								✓
493	SBHJ10	1lglass	UNKNOWN	LIQUID												X												✓
494	SBHJ10	1plastic	UNKNOWN	LIQUID		X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	✓
495	SBHJ10	50ml Plasti	UNKNOWN	LIQUID			X	X																				✓
496	SBHJ10	2SO4_125r	UNKNOWN	LIQUID																				X				✓
497	SBHJ10	NaOH	UNKNOWN	LIQUID																								✓
498	SBHJ10	Vial	UNKNOWN	LIQUID																								✓
499	SBHJ10	ZnAc	UNKNOWN	LIQUID																								✓
500	SWSJ37	1lglass	UNKNOWN	LIQUID												X												✓
501	SWSJ37	1plastic	UNKNOWN	LIQUID		X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	✓
502	SWSJ37	50ml Plasti	UNKNOWN	LIQUID			X	X																				✓

ALcontrol Laboratories

TEST SCHEDULE

JOB NUMBER : 08/393/02

CLIENT: Norwest Holst Ltd

CONTACT: Ian Swain

DATE OF RECEIPT 23/02/08

LOCATION: M4 NEWPORT

BATCH NUMBER 15

CLIENT REF/CODE : F15056

ORDER NUMBER : STC/2627

TURNAROUND : 7 days

Numeric values indicate additional scheduling

* indicates test subcontracted

ALcontrol Laboratories TEST SCHEDULE

JOB NUMBER : 08/393/02 **BATCH NUMBER :** 15 **CLIENT REF/ CODE :** F15056 **ORDER NUMBER :** STC/2627 **TURNAROUND :** 7 days
CLIENT : Norwest Holst Ltd
CONTACT : Ian Swain
DATE OF RECEIPT : 23/02/08
LOCATION : M4 NEWPORT

Numeric values indicate additional scheduling

* indicates test subcontracted

Sample Number	Sample Identity	P / V	Depth	Sample Type	UKAS Accredited ?										
					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
					Nitrate as NO3 Kone (M)	Phenols HPLC (W)	SVOC inc PAH MS (W)	EPH CWG GC Aqueous (W)	GRO CWG GC (W)	VOC MS (W)	Vanadium ICP-MS (W)	Beryllium (ICP-MS) (W)	Ammonium Total as NH4 (W)	Cyanide Complex/Free/Total	Carbon Dioxide Dissolved (W)
437	LGBH2	1lglass	UNKNOWN	LIQUID			X	X							
438	LGBH2	1plastic	UNKNOWN	LIQUID	X						X	X			
439	LGBH2	50ml Plasti	UNKNOWN	LIQUID											
440	LGBH2	2SO4_125r	UNKNOWN	LIQUID											
441	LGBH2	NaOH	UNKNOWN	LIQUID		X									
442	LGBH2	Vial	UNKNOWN	LIQUID					X	X					
443	LGBH2	ZnAc	UNKNOWN	LIQUID	X										
444	LGBH3	1lglass	UNKNOWN	LIQUID			X	X							
445	LGBH3	1plastic	UNKNOWN	LIQUID	X						X	X			
446	LGBH3	50ml Plasti	UNKNOWN	LIQUID											
447	LGBH3	2SO4_125r	UNKNOWN	LIQUID											
448	LGBH3	NaOH	UNKNOWN	LIQUID		X									
449	LGBH3	Vial	UNKNOWN	LIQUID					X	X					
450	LGBH3	ZnAc	UNKNOWN	LIQUID	X										
451	LGBH9	1lglass	UNKNOWN	LIQUID			X	X							
452	LGBH9	1plastic	UNKNOWN	LIQUID	X					X	X				
453	LGBH9	50ml Plasti	UNKNOWN	LIQUID											
454	LGBH9	2SO4_125r	UNKNOWN	LIQUID											
455	LGBH9	NaOH	UNKNOWN	LIQUID		X									
456	LGBH9	Vial	UNKNOWN	LIQUID					X	X					
457	LGBH9	ZnAc	UNKNOWN	LIQUID	X										
458	LGBH12	1lglass	UNKNOWN	LIQUID			X	X							

Alcontrol Laboratories TEST SCHEDULE

JOB NUMBER : 08/393/02 BATCH NUMBER : 15 Numeric values indicate additional scheduling

CLIENT : Norwest Holst Ltd CLIENT REF/CODE : F15056 ORDER NUMBER : STC/2627 * indicates test subcontracted

CONTACT : Ian Swain TURNAROUND : 7 days

DATE OF RECEIPT : 23/02/08

LOCATION : M4 NEWPORT

Sample Number	Sample Identity	P / V	Depth	Sample Type	UKAS Accredited ?	Nitrate as NO3 Kone (W)	Phenols HPLC (W)	SVOC Inc PAH MS (W)	EPH CWG GC Aqueous (W)	GRO CWG GC (W)	VOC MS (W)	Vanadium ICP-MS (W)	Beryllium (ICP-MS) (W)	Ammonium Total as NH4 (W)	Cyanide Complex/Free/Total	Carbon Dioxide Dissolved (W)
459	LGBH12	1plastic	UNKNOWN	LIQUID	✓	X							X			
460	LGBH12	50ml Plasti	UNKNOWN	LIQUID								X				
461	LGBH12	2SO4_125l	UNKNOWN	LIQUID												
462	LGBH12	NaOH	UNKNOWN	LIQUID			X									
463	LGBH12	Vial	UNKNOWN	LIQUID						X	X					
464	LGBH12	ZnAc	UNKNOWN	LIQUID												
465	SBHJ4	1lglass	UNKNOWN	LIQUID				X	X							
466	SBHJ4	1plastic	UNKNOWN	LIQUID		X					X	X				
467	SBHJ4	50ml Plasti	UNKNOWN	LIQUID												
468	SBHJ4	2SO4_125l	UNKNOWN	LIQUID										X		
469	SBHJ4	NaOH	UNKNOWN	LIQUID			X									
470	SBHJ4	Vial	UNKNOWN	LIQUID						X	X				X	
471	SBHJ4	ZnAc	UNKNOWN	LIQUID				X								
472	SBHJ5	1lglass	UNKNOWN	LIQUID				X	X							
473	SBHJ5	1plastic	UNKNOWN	LIQUID		X					X	X				
474	SBHJ5	50ml Plasti	UNKNOWN	LIQUID												
475	SBHJ5	2SO4_125l	UNKNOWN	LIQUID									X			
476	SBHJ5	NaOH	UNKNOWN	LIQUID			X									
477	SBHJ5	Vial	UNKNOWN	LIQUID						X	X				X	
478	SBHJ5	ZnAc	UNKNOWN	LIQUID				X								
479	SBHJ7	1lglass	UNKNOWN	LIQUID				X	X							
480	SBHJ7	1plastic	UNKNOWN	LIQUID		X						X	X			

ALcontrol Laboratories

TEST SCHEDULE

JOB NUMBER : 08/393/02

CLIENT: Norwest Holst Ltd

CONTACT: Ian Swain

DATE OF RECEIPT 23/02/08

LOCATION: M4 NEWPORT

BATCH NUMBER: 15

CLIENT REF/CODE : F15056

ORDER NUMBER: STC/2627

TURNAROUND : 7 days

Numeric values indicate additional scheduling

* indicates test subcontracted

ALcontrol Laboratories

TEST SCHEDULE

JOB NUMBER: 08/393/02

CLIENT - Norwest Holst Ltd

CONTACT Ian Swain

DATE OF RECEIPT 23/02/08

LOCATION: M4 NEWPORT

BATCH NUMBER: 15

CLIENT REF/CODE : F15056

ORDER NUMBER : STC/2627

TURNAROUND: 7 days

Numeric values indicate additional scheduling

* indicates test subcontracted

ALcontrol Laboratories

TEST SCHEDULE

JOB NUMBER : 08/393/02
 CLIENT : Norwest Holst Ltd
 CONTACT : Ian Swain
 DATE OF RECEIPT : 26/02/08
 LOCATION : M4 NEWPORT

BATCH NUMBER : 16
 CLIENT REF/CODE : F15056
 ORDER NUMBER : STC/2627
 TURNAROUND : 7 days

Numeric values indicate
 additional scheduling

* indicates test subcontracted

Sample Number	Sample Identity	P / V	Depth	Sample Type	UKAS Accredited ?		pH (W)	BOD Unfiltered (W)	COD Unfiltered (W)	Alkalinity Total (W)	Hardness Total (W) (ICP-MS)	Arsenic ICP-MS (W)	Cadmium Total MS (HNO3) (W)	Chromium ICP-MS (W)	Copper ICP-MS (W)	Lead ICP-MS (W)	Mercury Total (CVAF) (Aqua Regia) (W)	Nickel ICP-MS (W)	Selenium ICP-MS (W)	Zinc Total MS (HNO3) (W)	Calcium ICP-MS (W)	Iron ICP-MS (W)	Magnesium ICP-MS (W)	Manganese ICP-MS (W)	Sodium Dissolved (W)	Potassium Dissolved (W)	Ammoniacal Nitrogen as N (W)	Chloride Kone (W)	Take NaOH (W)	Cyanide Total (W)	
507	LGBH4	1glass	UNKNOWN	LIQUID																											
508	LGBH4	1plastic	UNKNOWN	LIQUID			2																								
509	LGBH4	50ml Plastic	UNKNOWN	LIQUID																											
510	LGBH4	2504_125r	UNKNOWN	LIQUID				2																							
511	LGBH4	NaOH	UNKNOWN	LIQUID																											
512	LGBH4	Vial	UNKNOWN	LIQUID																											
513	LGBH4	ZnAc	UNKNOWN	LIQUID																											
514	SBHK1	1glass	UNKNOWN	LIQUID													X														
515	SBHK1	1plastic	UNKNOWN	LIQUID			X			X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	
516	SBHK1	50ml Plastic	UNKNOWN	LIQUID				X																							
517	SBHK1	2504_125r	UNKNOWN	LIQUID																											
518	SBHK1	NaOH	UNKNOWN	LIQUID																											
519	SBHK1	Vial	UNKNOWN	LIQUID																											
520	SBHK1	ZnAc	UNKNOWN	LIQUID																											
521	SBHK2	1glass	UNKNOWN	LIQUID													X														
522	SBHK2	1plastic	UNKNOWN	LIQUID			X			X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	
523	SBHK2	50ml Plastic	UNKNOWN	LIQUID				X																							
524	SBHK2	NaOH	UNKNOWN	LIQUID																											
525	SBHK2	NaOH	UNKNOWN	LIQUID																											
526	SBHK2	Vial	UNKNOWN	LIQUID																											
527	SBHK2	ZnAc	UNKNOWN	LIQUID																											
528	SBHK3	1glass	UNKNOWN	LIQUID													X														

ALcontrol Laboratories TEST SCHEDULE

JOB NUMBER : 08/393/02
CLIENT : Norwest Holst Ltd
CONTACT : Ian Swain
DATE OF RECEIPT : 26/02/08
LOCATION : M4 NEWPORT

BATCH NUMBER : 16
CLIENT REF/CODE : F15056
ORDER NUMBER : STC/2627
TURNAROUND : 7 days

Numeric values indicate
additional scheduling

* indicates test subcontracted

Sample Number	Sample Identity	UKAS Accredited ?			pH (W)	BOD Unfiltered (W)	COD Unfiltered (W)	Alkalinity Total (W)	Hardness Total (W) (ICP-MS)	Arsenic ICP-MS (W)	Cadmium Total MS (HNO3) (W)	Chromium ICP-MS (W)	Copper ICP-MS (W)	Lead ICP-MS (W)	Mercury Total (CVAF) (Anala Rencia) (W)	Nickel ICP-MS (W)	Selenium ICP-MS (W)	Zinc Total MS (HNO3) (W)	Calcium ICP-MS (W)	Iron ICP-MS (W)	Magnesium ICP-MS (W)	Manganese ICP-MS (W)	Sodium Dissolved (W)	Potassium Dissolved (W)	Ammoniacal Nitrogen as N (W)	Chloride Kone (W)	Take NaOH (W)	Cyanide Total (W)	✓
		P / V	Depth	Sample Type																									
529	SBHK3	1plastic	UNKNOWN	LIQUID	X			X	X	X	X	X	X	X		X	X	X	X	X	X	X	X					✓	
530	SBHK3	50ml Plasti	UNKNOWN	LIQUID		X		X	X	X	X	X	X	X										X					✓
531	SBHK3	2SO4_125r	UNKNOWN	LIQUID																				X					✓
532	SBHK3	NaOH	UNKNOWN	LIQUID																									X
533	SBHK3	Vial	UNKNOWN	LIQUID																									X
534	SBHK3	ZnAc	UNKNOWN	LIQUID																									
535	SBHK4	1lglass	UNKNOWN	LIQUID											X														
536	SBHK4	1plastic	UNKNOWN	LIQUID	X		X	X	X	X	X	X	X	X			X	X	X	X	X	X	X		X				
537	SBHK4	50ml Plasti	UNKNOWN	LIQUID		X																							
538	SBHK4	2SO4_125r	UNKNOWN	LIQUID																									
539	SBHK4	NaOH	UNKNOWN	LIQUID																									X
540	SBHK4	ZnAc	UNKNOWN	LIQUID																									
541	SWSJ21	Vial	UNKNOWN	LIQUID																									
542	SWSJ23	1lglass	UNKNOWN	LIQUID																							X	X	
543	SWSJ23	1plastic	UNKNOWN	LIQUID	X		X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X		X			
544	SWSJ23	50ml Plasti	UNKNOWN	LIQUID		X																							
545	SWSJ23	2SO4_125r	UNKNOWN	LIQUID																					X				
546	SWSJ23	ZnAc	UNKNOWN	LIQUID																									
547	SWSJ23	Vial	UNKNOWN	LIQUID																									
Total Number of Tests					6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1	6	

ALcontrol Laboratories TEST SCHEDULE

JOB NUMBER : 08/393/02
CLIENT : Norwest Holst Ltd
CONTACT : Ian Swain
DATE OF RECEIPT : 29/02/08
LOCATION : M4 NEWPORT

BATCH NUMBER : 18
CLIENT REF/CODE : F15056
ORDER NUMBER : STC/2627
TURNAROUND : 7 days

Numeric values indicate
additional scheduling

* indicates test subcontracted

Sample Number	Sample Identity	P / V	Depth	Sample Type	UKAS Accredited ?	pH (W)	BOD Unfiltered (W)	COD Unfiltered (W)	Alkalinity Total (W)	Hardness Total (W)	Arsenic ICP-MS (W)	Cadmium Total MS (HNO3) (W)	Chromium ICP-MS (W)	Copper ICP-MS (W)	Lead ICP-MS (W)	Mercury Total (CVAF) (Aqua Regia) (W)	Nickel ICP-MS (W)	Selenium ICP-MS (W)	Zinc Total MS (HNO3) (W)	Calcium ICP-MS (W)	Iron ICP-MS (W)	Magnesium ICP-MS (W)	Manganese ICP-MS (W)	Sodium Dissolved (W)	Potassium Dissolved (W)	Ammoniacal Nitrogen as N (W)	Chloride Kone (W)	Cyanide Total (W)	Sulphate Kone (W)
553	LGBH10	1glass	-	LIQUID	✓	2										2													✓
554	LGBH10	1plastic	-	LIQUID	✓	2																							✓
555	LGBH10	50ml Plasti	-	LIQUID	✓		2																						✓
556	LGBH10	2SO4 125l	-	LIQUID	✓																								✓
557	LGBH10	NaOH	-	LIQUID	✓																								✓
558	LGBH10	Vial	-	LIQUID	✓																								✓
559	LGBH10	ZnAc	-	LIQUID	✓																								✓
560	LGBH11	1glass	-	LIQUID	✓												2												✓
561	LGBH11	1plastic	-	LIQUID	✓	2																							✓
562	LGBH11	50ml Plasti	-	LIQUID	✓		2																						✓
563	LGBH11	2SO4 125l	-	LIQUID	✓																								✓
564	LGBH11	NaOH	-	LIQUID	✓																								✓
565	LGBH11	Vial	-	LIQUID	✓																								✓
566	LGBH11	ZnAc	-	LIQUID	✓																								✓
567	RBBH7	1glass	-	LIQUID	✓												2												✓
568	RBBH7	1plastic	-	LIQUID	✓	2																							✓
569	RBBH7	50ml Plasti	-	LIQUID	✓		2																						✓
570	RBBH7	2SO4 125l	-	LIQUID	✓																								✓
571	RBBH7	NaOH	-	LIQUID	✓																								✓
572	RBBH7	Vial	-	LIQUID	✓																								✓
573	RBBH7	ZnAc	-	LIQUID	✓																								✓
574	RBBH9	1glass	-	LIQUID	✓												2												✓

ALcontrol Laboratories TEST SCHEDULE

JOB NUMBER : 08/393/02
CLIENT : Norwest Holst Ltd
CONTACT : Ian Swain
DATE OF RECEIPT : 29/02/08
LOCATION : M4 NEWPORT

BATCH NUMBER : 18
CLIENT REF/CODE : F15056
ORDER NUMBER : STC/2627
TURNAROUND : 7 days

Numeric values indicate
additional scheduling

* indicates test subcontracted

Sample Number	Sample Identity	P / V	Depth	UKAS Accredited ?	pH (W)	BOD Unfiltered (W)	COD Unfiltered (W)	Alkalinity Total (W)	Hardness Total (W) (ICP-MS)	Arsenic ICP-MS (W)	Cadmium Total MS (HNO3) (W)	Chromium ICP-MS (W)	Copper ICP-MS (W)	Lead ICP-MS (W)	Mercury Total (CVAF) (Anala Renda) (W)	Nickel ICP-MS (W)	Selenium ICP-MS (W)	Zinc Total MS (HNO3) (W)	Calcium ICP-MS (W)	Iron ICP-MS (W)	Magnesium ICP-MS (W)	Manganese ICP-MS (W)	Sodium Dissolved (W)	Potassium Dissolved (W)	Ammoniacal Nitrogen as N (W)	Chloride Kone (W)	Cyanide Total (W)	Sulphate Kone (W)
575	RBBH9	1plastic	-		LIQUID	2																						
576	RBBH9	50ml Plasti	-		LIQUID	2	2																					
577	RBBH9	2SO4_125l	-		LIQUID																							
578	RBBH9	NaOH	-		LIQUID																							
579	RBBH9	Vial	-		LIQUID																							
580	RBBH9	ZnAc	-		LIQUID																							
581	RBBH10	1glass	-		LIQUID																							
582	RBBH10	1plastic	-		LIQUID	2																						
583	RBBH10	50ml Plasti	-		LIQUID																							
584	RBBH10	2SO4_125l	-		LIQUID		2	2																				
585	RBBH10	NaOH	-		LIQUID																							
586	RBBH10	Vial	-		LIQUID																							
587	RBBH10	ZnAc	-		LIQUID																							
588	SBHJ3	1glass	-		LIQUID																							
589	SBHJ3	1plastic	-		LIQUID	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
590	SBHJ3	50ml Plasti	-		LIQUID		X																					
591	SBHJ3	2SO4_125l	-		LIQUID																							
592	SBHJ3	NaOH	-		LIQUID																							
593	SBHJ3	Vial	-		LIQUID																							
594	SBHJ3	ZnAc	-		LIQUID																							
595	SWSJ21	1plastic	-		LIQUID	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
596	SWSJ21	50ml Plasti	-		LIQUID		X																					

ALcontrol Laboratories TEST SCHEDULE

JOB NUMBER : 08/393/02

CLIENT : Norwest Holst Ltd

CONTACT : Ian Swain

DATE OF RECEIPT : 29/02/08

LOCATION : M4 NEWPORT

BATCH NUMBER : 18

CLIENT REF/CODE : F15056

ORDER NUMBER : STC/2627

TURNAROUND : 7 days

Numeric values indicate
additional scheduling

* indicates test subcontracted

Sample Number	Sample Identity	P / V	Depth	Sample Type	UKAS Accredited ?	pH (W)	BOD Unfiltered (W)	COD Unfiltered (W)	Alkalinity Total (W)	Hardness Total (W) (ICP-MS)	Arsenic ICP-MS (W)	Cadmium Total MS (HNO3) (W)	Chromium ICP-MS (W)	Copper ICP-MS (W)	Lead ICP-MS (W)	Mercury Total (CVAf) (Aqua Regia) (W)	Nickel ICP-MS (W)	Selenium ICP-MS (W)	Zinc Total MS (HNO3) (W)	Calcium ICP-MS (W)	Iron ICP-MS (W)	Magnesium ICP-MS (W)	Manganese ICP-MS (W)	Sodium Dissolved (W)	Potassium Dissolved (W)	Ammoniacal Nitrogen as N (W)	Chloride Kone (W)	Cyanide Total (W)	Sulphate Kone (W)
597	SWSJ21	2SO4 125l	-	LIQUID	✓																					X			✓
598	SWSJ21	NaOH	-	LIQUID	✓																							X	✓
599	SWSJ21	Vial	-	LIQUID	✓																								✓
600	SWSJ21	ZnAc	-	LIQUID	✓																								✓
601	SWSJ34	1lglass	-	LIQUID	✓												X												✓
602	SWSJ34	1lplastic	-	LIQUID	✓				X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X		✓
603	SWSJ34	50ml Plasti	-	LIQUID	✓			X																					✓
604	SWSJ34	2SO4 125l	-	LIQUID	✓																					X			✓
605	SWSJ34	NaOH	-	LIQUID	✓																							X	✓
606	SWSJ34	Vial	-	LIQUID	✓																								✓
607	SWSJ34	ZnAc	-	LIQUID	✓																								✓
Total Number of Tests						8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8

ALcontrol Laboratories

TEST SCHEDULE

JOB NUMBER : 08/393/02

CLIENT : Norwest Holst Ltd

CONTACT : Ian Swain

DATE OF RECEIPT : 29/02/08

LOCATION : M4 NEWPORT

BATCH NUMBER : 18

CLIENT REF/CODE : F15056

ORDER NUMBER : STC/2627

TURNAROUND : 7 days

Numeric values indicate
additional scheduling

* indicates test subcontracted

Sample Number	Sample Identity	P / V	Depth	Sample Type	UKAS Accredited ?										
					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
					Sulphide (W)	Nitrate as NO3 Kone (W)	Phenols HPLC (W)	SVOC inc PAH MS (W)	EPH CWG GC Aqueous (W)	GRO CWG GC (W)	VOC MS (W)	Vanadium ICP-MS (W)	Beryllium (ICP-MS) (W)	Ammonium Total as NH4 (W)	Carbon Dioxide Dissolved (W)
553	LGBH10	1lglass	-	LIQUID				2	2						
554	LGBH10	1plastic	-	LIQUID		2						2	2		
555	LGBH10	50ml Plasti	-	LIQUID											
556	LGBH10	2SO4 125l	-	LIQUID											
557	LGBH10	NaOH	-	LIQUID			2								
558	LGBH10	Vial	-	LIQUID						2	2				
559	LGBH10	ZnAc	-	LIQUID	2										
560	LGBH11	1lglass	-	LIQUID				2	2						
561	LGBH11	1plastic	-	LIQUID		2						2	2		
562	LGBH11	50ml Plasti	-	LIQUID											
563	LGBH11	2SO4 125l	-	LIQUID											
564	LGBH11	NaOH	-	LIQUID			2								
565	LGBH11	Vial	-	LIQUID						2	2				
566	LGBH11	ZnAc	-	LIQUID	2										
567	RBBH7	1lglass	-	LIQUID				2	2						
568	RBBH7	1plastic	-	LIQUID		2						2	2		
569	RBBH7	50ml Plasti	-	LIQUID											
570	RBBH7	2SO4 125l	-	LIQUID											
571	RBBH7	NaOH	-	LIQUID			2								
572	RBBH7	Vial	-	LIQUID						2	2				
573	RBBH7	ZnAc	-	LIQUID	2										
574	RBBH9	1lglass	-	LIQUID				2	2						

Alcontrol Laboratories

TEST SCHEDULE

JOB NUMBER: 08/393/02

CLEAT Norwest Holst Ltd

CONTACT: Ian Swain

DATE OF RECEIPT : 29/02/08

LOCATION: M4 NEWPORT

BATCH NUMBER: 18

CLIENT REF/CODE : F15056

ORDER NUMBER: STC/2627

TURNAROUND: 7 days

Numeric values indicate additional scheduling

* indicates test subcontracted

Numeric values indicate additional scheduling

JOB NUMBER : 08/393/02
CLIENT : Norwest Holst Ltd
CONTACT : Ian Swain
DATE OF RECEIPT : 29/02/08
LOCATION : M4 NEWPORT

Page 23 of 66

ISO 17025 Form		FORM NO:SQS 105		
ALCONTROL LABORATORIES		SHEET 1 OF 1		
		ISSUE NO: 2		
		WRITTEN BY: DOH		
Title of Form		ISSUE DATE: 27/01/05		
Notification of NDP's (No determination possible).		APPROVED BY: DP		
Job Number : 08/393 Client : Norwest Holst Sample Type : Water				
Job No.	Sample No.	Sample ID.	Analyte(s)	Reason
393	595	SWSJ21	SVOC	Plastic bottle

Validated ☒
Preliminary ☐

ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	LGBH2	LGBH3	LGBH4	LGBH4	LGBH9	LGBH10	LGBH11	LGBH12	RBBH7	Method Code	LoD/Units
Depth (m)											
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	22.02.08	22.02.08	22.02.08	25.02.08	22.02.08	27.02.08	27.02.08	22.02.08	27.02.08		
Sample Received Date	23.02.08	23.02.08	26.02.08	26.02.08	23.02.08	29.02.08	29.02.08	23.02.08	29.02.08		
Batch	15	15	16	16	15	18	18	15	18		
Sample Number(s)	437-443 (1)	444-450 (1)	507-508 (1)	509-513 (1)	451-457 (1)	553-559 (1)	560-566 (1)	458-464 (1)	567-573 (1)		
Hardness Total	1200	1200	1100	-	1300	1100	410	510	1900	TM152 [#]	<1 mg/l
Arsenic Dissolved (ICP-MS)	<1	2	3	-	5	12	6	1	1	TM152 [#]	<1 ug/l
Beryllium Dissolved (ICP-MS)	<1	<1	<1	-	<1	<1	<1	<1	<1	TM152 [#]	<1 ug/l
Calcium Dissolved (ICP-MS)	510000	480000	660000	-	160000	160000	110000	90000	710000	TM152 [#]	<160 ug/l
Chromium Dissolved (ICP-MS)	<1	14	2	-	1	10	4	<1	<1	TM152 [#]	<1 ug/l
Copper Dissolved (ICP-MS)	62	20	14	-	1.9	<1.6	<1.6	1.7	<1.6	TM152 [#]	<1.6 ug/l
Iron Dissolved (ICP-MS)	<50	190	140	-	150	5800	6200	250	53	TM152 [#]	<50 ug/l
Lead Dissolved (ICP-MS)	82	3.1	1.4	-	<0.5	<0.5	<0.5	1.4	<0.5	TM152 [#]	<0.5 ug/l
Magnesium Dissolved (ICP-MS)	<40	200	<40	-	190000	170000	39000	68000	<40	TM152 [#]	<40 ug/l
Manganese Dissolved (ICP-MS)	1	16	8	-	1600	1300	2100	1600	1	TM152 [#]	<1 ug/l
Nickel Dissolved (ICP-MS)	5.1	5.6	11	-	3.3	4.7	2.6	1.9	8.1	TM152 [#]	<1.5 ug/l
Selenium Dissolved (ICP-MS)	3	3	5	-	9	7	3	<1	4	TM152 [#]	<1 ug/l
Vanadium Dissolved (ICP-MS)	<1	13	1	-	<1	10	3	2	1	TM152 [#]	<1 ug/l
Cadmium Total (HNO3 Digest)	<0.4	<0.4	21	-	<0.4	0.7	1.1	<0.4	<0.4	TM152	<0.4 ug/l
Zinc Total (HNO3 Digest)	75	86	680	-	100	960	760	76	110	TM152	<3 ug/l
Mercury Total (Aqua Regia)	0.04	<0.01	0.03	-	<0.01	<0.01	<0.01	<0.01	0.01	TM183	<0.01 ug/l
Total Alkalinity as CaCO3	700	750	1800	-	1600	1300	590	670	1700	TM043 [#]	<2 mg/l
BOD	<1	1	-	220	6	18	28	7	<1	TM045 [#]	<1 mg/l
COD	180	38	-	300	210	340	760	130	280	TM107 [#]	<5 mg/l
Potassium Dissolved	110	38	200	-	60	48	66	23	32	TM083	<0.2 mg/l
Sodium Dissolved	30	11	110	-	2000	790	200	230	77	TM083	<0.2 mg/l
Nitrate as NO3	<1.5	<0.6	<0.3	-	<0.3	<0.3	0.6	<0.3	1.3	TM102 [#]	<0.3 mg/l
Sulphate (soluble)	230	100	8	-	<3	<3	210	14	8	TM098 [#]	<3 mg/l
Chloride	36	32	110	-	1500	850	150	140	170	TM097 [#]	<1 mg/l
Sulphide	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	TM101	<0.5 mg/l
Ammoniacal Nitrogen as N	2.8	2.4	-	5.4	13	15	6.0	4.1	8.6	TM099 [#]	<0.2 mg/l
Total Ammonium as NH4	-	-	-	-	-	-	-	-	-	TM099 [#]	<0.3 mg/l
Hexavalent Chromium	-	-	-	-	-	-	-	-	-	TM151 [#]	<0.03 mg/l
Phenols Monohydric	0.02	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	0.09	TM062 [#]	<0.01 mg/l
Total Cyanide	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	TM153 [#]	<0.05 mg/l
Total Cyanide Low	-	-	-	-	-	-	-	-	-	PENDING	<0.01 mg/l

Date 17.12.2008

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Number of items	100% correct	90% correct	80% correct	70% correct
0	0	0	0	0
10	100	90	80	70
20	100	90	80	70
30	100	90	80	70
40	100	90	80	70
50	100	90	80	70
60	100	90	80	70
70	100	90	80	70
80	100	90	80	70
90	100	90	80	70
100	100	90	80	70

ISO 17025 accredited
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* Subcontracted test
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Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Date 17.12.2008

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ALcontrol Laboratories Analytical Services

Table Of Results

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» Shown on prev. report

Job Number: 08/00393/02/01

Matrix: LIQUID

Client: Norwest Holst Ltd

Location: M4 NEWPORT

Client Ref. No.: F15056

Client Contact: Ian Swain

Sample Identity	LGBH2	LGBH3	LGBH4	LGBH4	LGBH9	LGBH10	LGBH11	LGBH12	RBBH7	Method Code	LoD/Units
Depth (m)											
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	22.02.08	22.02.08	22.02.08	25.02.08	22.02.08	27.02.08	27.02.08	22.02.08	27.02.08		
Sample Received Date	23.02.08	23.02.08	26.02.08	26.02.08	23.02.08	29.02.08	29.02.08	23.02.08	29.02.08		
Batch	15	15	16	16	15	18	18	15	18		
Sample Number(s)	437-443 (1)	444-450 (1)	507-508 (1)	509-513 (1)	451-457 (1)	553-559 (1)	560-566 (1)	458-464 (1)	567-573 (1)		
GRO (C4-C12)	<10	<10	-	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
MTBE	<10	<10	-	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Benzene	<10	<10	-	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Toluene	<10	<10	-	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Ethyl benzene	<10	<10	-	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
m & p Xylene	<10	<10	-	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
o Xylene	<10	<10	-	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Aliphatics C5-C6	<10	<10	-	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aliphatics >C6-C8	<10	<10	-	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aliphatics >C8-C10	<10	<10	-	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aliphatics >C10-C12	<10	<10	-	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aliphatics >C12-C16 Aqueous	<10	<10	<10	-	<10	<10	280	<10	<10	TM174	<10 ug/l
Aliphatics >C16-C21 Aqueous	<10	<10	24	-	<10	<10	3000	<10	<10	TM174	<10 ug/l
Aliphatics >C21-C35 Aqueous	<10	<10	170	-	<10	<10	17000	<10	<10	TM174	<10 ug/l
Total Aliphatics C5-C35 Aqueous	<10	<10	190	-	<10	<10	20000	<10	<10	TM61/89	<10 ug/l
Aromatics C6-C7	<10	<10	-	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Aromatics >C7-C8	<10	<10	-	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Aromatics >EC8-EC10	<10	<10	-	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aromatics >EC10-EC12	<10	<10	-	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aromatics >EC12-EC16 Aqueous	<10	<10	75	-	<10	<10	92	<10	12	TM174	<10 ug/l
Aromatics >EC16-EC21 Aqueous	<10	<10	170	-	<10	<10	840	<10	<10	TM174	<10 ug/l
Aromatics >EC21-EC35 Aqueous	<10	<10	1700	-	<10	<10	5600	<10	<10	TM174	<10 ug/l
Total Aromatics C6-C35 Aqueous	<10	<10	1900	-	<10	<10	6500	<10	12	TM61/89	<10 ug/l
TPH (Aliphatics and Aromatics C5-C35) Aqueous	<10	<10	2100	-	<10	<10	27000	<10	12	TM61/89	<10 ug/l

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» Shown on prev. report

Job Number: 08/00393/02/01
 Client: Norwest Holst Ltd
 Client Ref. No.: F15056

Matrix: LIQUID
 Location: M4 NEWPORT
 Client Contact: Ian Swain

Sample Identity	LGBH2	LGBH3	LGBH4	LGBH4	LGBH9	LGBH10	LGBH11	LGBH12	RBBH7	Method Code	LoD/Units
Depth (m)											
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	22.02.08	22.02.08	22.02.08	25.02.08	22.02.08	27.02.08	27.02.08	22.02.08	27.02.08		
Sample Received Date	23.02.08	23.02.08	26.02.08	26.02.08	23.02.08	29.02.08	29.02.08	23.02.08	29.02.08		
Batch	15	15	16	16	15	18	18	15	18		
Sample Number(s)	437-443 (1)	444-450 (1)	507-508 (1)	509-513 (1)	451-457 (1)	553-559 (1)	560-566 (1)	458-464 (1)	567-573 (1)		
SVOC by GCMS											
Phenols											
2-Chlorophenol	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
2-Methylphenol	<1	<1	1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
2-Nitrophenol	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,4-Dichlorophenol	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,4-Dimethylphenol	<1	<1	3	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,4,5-Trichlorophenol	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,4,6-Trichlorophenol	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Chloro-3-methylphenol	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Methylphenol	<1	<1	7	-	<1	<1	<1	<1	3	TM176	<1 ug/l
4-Nitrophenol	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Pentachlorophenol	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Phenol	7	<1	40	-	<1	<1	<1	<1	53	TM176	<1 ug/l

Date 17.12.2008

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Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	LGBH2	LGBH3	LGBH4	LGBH4	LGBH9	LGBH10	LGBH11	LGBH12	RBBH7	Method Code	LoD/Units
Depth (m)											
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	22.02.08	22.02.08	22.02.08	25.02.08	22.02.08	27.02.08	27.02.08	22.02.08	27.02.08		
Sample Received Date	23.02.08	23.02.08	26.02.08	26.02.08	23.02.08	29.02.08	29.02.08	23.02.08	29.02.08		
Batch	15	15	16	16	15	18	18	15	18		
Sample Number(s)	437-443 (1)	444-450 (1)	507-508 (1)	509-513 (1)	451-457 (1)	553-559 (1)	560-566 (1)	458-464 (1)	567-573 (1)		
PAHs											
2-Chloronaphthalene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
2-Methylnaphthalene	<1	<1	2	-	<1	<1	<1	<1	3	TM176	<1 ug/l
Acenaphthene	<1	<1	2	-	<1	<1	<1	<1	4	TM176	<1 ug/l
Acenaphthylene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Anthracene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Benzo(a)anthracene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Benzo(a)pyrene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Benzo(b)fluoranthene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Benzo(ghi)perylene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Benzo(k)fluoranthene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Chrysene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Dibenzo(a,h)anthracene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Fluoranthene	<1	<1	<1	-	<1	<1	2	<1	<1	TM176	<1 ug/l
Fluorene	<1	<1	1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Indeno(1,2,3-cd)pyrene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Naphthalene	<1	<1	5	-	<1	<1	<1	<1	22	TM176	<1 ug/l
Phenanthrene	<1	<1	3	-	<1	<1	3	<1	<1	TM176	<1 ug/l
Pyrene	<1	<1	<1	-	<1	<1	1	<1	<1	TM176	<1 ug/l
Phthalates											
Bis(2-ethylhexyl) phthalate	<2	<2	4	-	<2	<2	3	<2	<2	TM176	<2 ug/l
Butylbenzyl phthalate	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Di-n-butyl phthalate	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Di-n-Octyl phthalate	<5	<5	<5	-	<5	<5	<5	<5	<5	TM176	<5 ug/l
Diethyl phthalate	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Dimethyl phthalate	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Other Semi-volatiles											
1,2-Dichlorobenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
1,2,4-Trichlorobenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l

Date 17.12.2008

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* Subcontracted test

» Shown on prev. report

Job Number: 08/00393/02/01
 Client: Norwest Holst Ltd
 Client Ref. No.: F15056

Matrix: LIQUID
 Location: M4 NEWPORT
 Client Contact: Ian Swain

Sample Identity	LGBH2	LGBH3	LGBH4	LGBH4	LGBH9	LGBH10	LGBH11	LGBH12	RBBH7	Method Code	LoD/Units
Depth (m)											
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	22.02.08	22.02.08	22.02.08	25.02.08	22.02.08	27.02.08	27.02.08	22.02.08	27.02.08		
Sample Received Date	23.02.08	23.02.08	26.02.08	26.02.08	23.02.08	29.02.08	29.02.08	23.02.08	29.02.08		
Batch	15	15	16	16	15	18	18	15	18		
Sample Number(s)	437-443 (1)	444-450 (1)	507-508 (1)	509-513 (1)	451-457 (1)	553-559 (1)	560-566 (1)	458-464 (1)	567-573 (1)		
Other Semi-volatiles (cont)											
1,3-Dichlorobenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
1,4-Dichlorobenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
2-Nitroaniline	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,4-Dinitrotoluene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,6-Dinitrotoluene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
3-Nitroaniline	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Bromophenylphenylether	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Chloroaniline	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Chlorophenylphenylether	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Nitroaniline	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Azobenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Bis(2-chloroethoxy)methane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Bis(2-chloroethyl)ether	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Carbazole	<1	<1	1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Dibenzofuran	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Hexachlorobenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Hexachlorobutadiene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Hexachlorocyclopentadiene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Hexachloroethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Isophorane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
N-nitrosodi-n-propylamine	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l
Nitrobenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM176	<1 ug/l

Date 17.12.2008

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ALcontrol Laboratories Analytical Services

Table Of Results

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Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	LGBH2	LGBH3	LGBH4	LGBH4	LGBH9	LGBH10	LGBH11	LGBH12	RBBH7	Method Code	LoD/Units
Depth (m)											
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	22.02.08	22.02.08	22.02.08	25.02.08	22.02.08	27.02.08	27.02.08	22.02.08	27.02.08		
Sample Received Date	23.02.08	23.02.08	26.02.08	26.02.08	23.02.08	29.02.08	29.02.08	23.02.08	29.02.08		
Batch	15	15	16	16	15	18	18	15	18		
Sample Number(s)	437-443 (1)	444-450 (1)	507-508 (1)	509-513 (1)	451-457 (1)	553-559 (1)	560-566 (1)	458-464 (1)	567-573 (1)		
Volatile Organic Compounds											
Dichlorodifluoromethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Chloromethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Vinyl Chloride	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Bromomethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Chloroethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Trichlorofluoromethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
trans-1-2-Dichloroethene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Dichloromethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Carbon Disulphide	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,1-Dichloroethene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,1-Dichloroethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Methyl Tertiary Butyl Ether	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
cis-1-2-Dichloroethene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Bromochloromethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Chloroform	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
2,2-Dichloropropane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2-Dichloroethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,1,1-Trichloroethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,1-Dichloropropene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Benzene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Carbontetrachloride	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Dibromomethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2-Dichloropropane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Bromodichloromethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Trichloroethene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
cis-1-3-Dichloropropene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
trans-1-3-Dichloropropene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,1,2-Trichloroethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Toluene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,3-Dichloropropane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l

Date 17.12.2008

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ALcontrol Laboratories Analytical Services

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» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: FI5056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	LGBH2	LGBH3	LGBH4	LGBH4	LGBH9	LGBH10	LGBH11	LGBH12	RBBH7	Method Code	LoD/Units
Depth (m)											
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	22.02.08	22.02.08	22.02.08	25.02.08	22.02.08	27.02.08	27.02.08	22.02.08	27.02.08		
Sample Received Date	23.02.08	23.02.08	26.02.08	26.02.08	23.02.08	29.02.08	29.02.08	23.02.08	29.02.08		
Batch	15	15	16	16	15	18	18	15	18		
Sample Number(s)	437-443 (1)	444-450 (1)	507-508 (1)	509-513 (1)	451-457 (1)	553-559 (1)	560-566 (1)	458-464 (1)	567-573 (1)		
Volatile Organic Compounds (cont)											
Dibromochloromethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2-Dibromoethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Tetrachloroethene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,1,1,2-Tetrachloroethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Chlorobenzene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Ethylbenzene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
p/m-Xylene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Bromoform	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Styrene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,1,2,2-Tetrachloroethane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
o-Xylene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2,3-Trichloropropane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Isopropylbenzene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Bromobenzene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
2-Chlorotoluene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Propylbenzene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
4-Chlorotoluene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2,4-Trimethylbenzene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
4-Isopropyltoluene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,3,5-Trimethylbenzene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2-Dichlorobenzene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,4-Dichlorobenzene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
sec-Butylbenzene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
tert-Butylbenzene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,3-Dichlorobenzene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
n-Butylbenzene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2-Dibromo-3-chloropropane	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2,4-Trichlorobenzene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Naphthalene	<1	<1	-	<1	<1	<1	<1	<1	26	TM208 [#]	<1 ug/l
1,2,3-Trichlorobenzene	<1	<1	-	<1	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l

Date 17.12.2008

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Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Date 17.12.2008

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ALcontrol Laboratories Analytical Services

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Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	RBBH9	RBBH10	SBHD6	SBHH6	SBHJ1	SBHJ3	SBHJ4	SBHJ5	SBHJ6	Method Code	LoD/Units
Depth (m)	-	-	-	-	-	-	-	-	-		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	27.02.08	27.02.08	21.02.08	21.02.08	21.02.08	27.02.08	22.02.08	22.02.08	21.02.08		
Sample Received Date	29.02.08	29.02.08	21.02.08	21.02.08	21.02.08	29.02.08	23.02.08	23.02.08	21.02.08		
Batch	18	18	14	14	14	18	15	15	14		
Sample Number(s)	574-580 (1)	581-587 (1)	395-401 (1)	402-408 (1)	409-414,429 (1)	588-594 (1)	465-471 (1)	472-478 (1)	415-421 (1)		
Hardness Total	2200	550	350	1300	1200	580	1200	99	1300	TM152 [#]	<1 mg/l
Arsenic Dissolved (ICP-MS)	<1	6	1	19	12	8	9	5	7	TM152 [#]	<1 ug/l
Beryllium Dissolved (ICP-MS)	<1	<1	-	-	<1	<1	<1	<1	<1	TM152 [#]	<1 ug/l
Calcium Dissolved (ICP-MS)	790000	210000	68000	140000	110000	77000	110000	38000	220000	TM152 [#]	<160 ug/l
Chromium Dissolved (ICP-MS)	8	3	3	19	18	19	2	<1	13	TM152 [#]	<1 ug/l
Copper Dissolved (ICP-MS)	10	2.1	3.1	3.1	5.0	<1.6	5.3	3.1	2.2	TM152 [#]	<1.6 ug/l
Iron Dissolved (ICP-MS)	66	<50	<50	170	5400	7700	1200	83	240	TM152 [#]	<50 ug/l
Lead Dissolved (ICP-MS)	<0.5	<0.5	<0.5	6.3	6.5	<0.5	1.3	1.8	2.8	TM152 [#]	<0.5 ug/l
Magnesium Dissolved (ICP-MS)	<40	<40	43000	250000	250000	94000	190000	790	200000	TM152 [#]	<40 ug/l
Manganese Dissolved (ICP-MS)	<1	<1	630	830	1600	1600	2300	9	2100	TM152 [#]	<1 ug/l
Nickel Dissolved (ICP-MS)	9.6	2.9	3.3	9.9	7.4	2.9	3.6	9.5	7.7	TM152 [#]	<1.5 ug/l
Selenium Dissolved (ICP-MS)	<1	6	4	38	34	8	22	6	19	TM152 [#]	<1 ug/l
Vanadium Dissolved (ICP-MS)	1	21	-	-	2	5	3	110	<1	TM152 [#]	<1 ug/l
Cadmium Total (HNO3 Digest)	<0.4	<0.4	0.6	1.8	5.1	18	<0.4	0.5	3.0	TM152	<0.4 ug/l
Zinc Total (HNO3 Digest)	80	86	150	580	560	1800	240	190	320	TM152	<3 ug/l
Mercury Total (Aqua Regia)	<0.01	<0.01	0.05	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	TM183	<0.01 ug/l
Total Alkalinity as CaCO3	1900	320	380	2100	2100	2000	1700	280	1500	TM043 [#]	<2 mg/l
BOD	<1	<1	<1	<1	8	78	7	47	5	TM045 [#]	<1 mg/l
COD	260	44	40	360	340	1000	1000	1300	290	TM107 [#]	<5 mg/l
Potassium Dissolved	10	12	9.6	78	48	41	78	140	39	TM083	<0.2 mg/l
Sodium Dissolved	25	25	110	3800	2900	1200	2900	120	1300	TM083	<0.2 mg/l
Nitrate as NO3	1.9	0.4	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	TM102 [#]	<0.3 mg/l
Sulphate (soluble)	6	36	29	1000	460	67	89	48	16	TM098 [#]	<3 mg/l
Chloride	34	48	99	3700	3000	820	3200	140	1500	TM097 [#]	<1 mg/l
Sulphide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	TM101	<0.5 mg/l
Ammoniacal Nitrogen as N	2.7	4.2	0.5	23	15	17	31	5.8	9.8	TM099 [#]	<0.2 mg/l
Total Ammonium as NH4	-	-	0.6	29	19	21	39	7.5	-	TM099 [#]	<0.3 mg/l
Hexavalent Chromium	-	-	-	-	<0.30	-	-	-	-	TM151 [#]	<0.03 mg/l
Phenols Monohydric	0.04	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.10	<0.01	TM062 [#]	<0.01 mg/l
Total Cyanide	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	TM153 [#]	<0.05 mg/l
Total Cyanide Low	-	-	-	-	-	-	-	-	-	PENDING	<0.01 mg/l

Date 17.12.2008

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- # ISO 17025 accredited
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Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Date 17.12.2008

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ALcontrol Laboratories Analytical Services

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* Subcontracted test

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Job Number: 08/00393/02/01

Matrix: LIQUID

Client: Norwest Holst Ltd

Location: M4 NEWPORT

Client Ref. No.: F15056

Client Contact: Ian Swain

Sample Identity	RBBH9	RBBH10	SBHD6	SBHH6	SBHJ1	SBHJ3	SBHJ4	SBHJ5	SBHJ6	Method Code	LoD/Units
Depth (m)	-	-	-	-	-	-	-	-	-		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	27.02.08	27.02.08	21.02.08	21.02.08	21.02.08	27.02.08	22.02.08	22.02.08	21.02.08		
Sample Received Date	29.02.08	29.02.08	21.02.08	21.02.08	21.02.08	29.02.08	23.02.08	23.02.08	21.02.08		
Batch	18	18	14	14	14	18	15	15	14		
Sample Number(s)	574-580 (1)	581-587 (1)	395-401 (1)	402-408 (1)	409-414, 429 (1)	588-594 (1)	465-471 (1)	472-478 (1)	415-421 (1)		
GRO (C4-C12)	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
MTBE	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Benzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Toluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Ethyl benzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
m & p Xylene	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
o Xylene	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Aliphatics C5-C6	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aliphatics >C6-C8	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aliphatics >C8-C10	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aliphatics >C10-C12	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aliphatics >C12-C16 Aqueous	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM174	<10 ug/l
Aliphatics >C16-C21 Aqueous	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM174	<10 ug/l
Aliphatics >C21-C35 Aqueous	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM174	<10 ug/l
Total Aliphatics C5-C35 Aqueous	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM61/89	<10 ug/l
Aromatics C6-C7	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Aromatics >C7-C8	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Aromatics >EC8-EC10	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aromatics >EC10-EC12	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aromatics >EC12-EC16 Aqueous	<10	<10	10000	<10	<10	<10	<10	<10	<10	TM174	<10 ug/l
Aromatics >EC16-EC21 Aqueous	<10	<10	1400	<10	<10	<10	<10	<10	<10	TM174	<10 ug/l
Aromatics >EC21-EC35 Aqueous	<10	<10	240	<10	<10	<10	<10	<10	<10	TM174	<10 ug/l
Total Aromatics C6-C35 Aqueous	<10	<10	12000	<10	<10	<10	<10	<10	<10	TM61/89	<10 ug/l
TPH (Aliphatics and Aromatics C5-C35) Aqueous	<10	<10	12000	<10	<10	<10	<10	<10	<10	TM61/89	<10 ug/l

Date 17.12.2008

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ALcontrol Laboratories Analytical Services

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Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	RBBH9	RBBH10	SBHD6	SBHH6	SBHJ1	SBHJ3	SBHJ4	SBHJ5	SBHJ6	Method Code	LoD/Units
Depth (m)	-	-	-	-	-	-	-	-	-		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	27.02.08	27.02.08	21.02.08	21.02.08	21.02.08	27.02.08	22.02.08	22.02.08	21.02.08		
Sample Received Date	29.02.08	29.02.08	21.02.08	21.02.08	21.02.08	29.02.08	23.02.08	23.02.08	21.02.08		
Batch	18	18	14	14	14	18	15	15	14		
Sample Number(s)	574-580 (1)	581-587 (1)	395-401 (1)	402-408 (1)	409-414,429 (1)	588-594 (1)	465-471 (1)	472-478 (1)	415-421 (1)		
SVOC by GCMS											
Phenols											
2-Chlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2-Methylphenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2-Nitrophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,4-Dichlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,4-Dimethylphenol	<1	<1	<1	<1	<1	<1	<1	3	<1	TM176	<1 ug/l
2,4,5-Trichlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,4,6-Trichlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Chloro-3-methylphenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Methylphenol	<1	<1	<1	<1	<1	<1	<1	4	<1	TM176	<1 ug/l
4-Nitrophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Pentachlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Phenol	16	6	<1	<1	<1	<1	<1	23	<1	TM176	<1 ug/l

Date 17.12.2008

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ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	RBBH9	RBBH10	SBHD6	SBHH6	SBHJ1	SBHJ3	SBHJ4	SBHJ5	SBHJ6	Method Code	LoD/Units
Depth (m)	-	-	-	-	-	-	-	-	-		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	27.02.08	27.02.08	21.02.08	21.02.08	21.02.08	27.02.08	22.02.08	22.02.08	21.02.08		
Sample Received Date	29.02.08	29.02.08	21.02.08	21.02.08	21.02.08	29.02.08	23.02.08	23.02.08	21.02.08		
Batch	18	18	14	14	14	18	15	15	14		
Sample Number(s)	574-580 (1)	581-587 (1)	395-401 (1)	402-408 (1)	409-414,429 (1)	588-594 (1)	465-471 (1)	472-478 (1)	415-421 (1)		
PAHs											
2-Chloronaphthalene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2-Methylnaphthalene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Acenaphthene	<1	2	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Acenaphthylene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Anthracene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Benzo(a)anthracene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Benzo(a)pyrene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Benzo(b)fluoranthene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Benzo(ghi)perylene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Benzo(k)fluoranthene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Chrysene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Dibenzo(a,h)anthracene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Fluoranthene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Fluorene	<1	1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Indeno(1,2,3-cd)pyrene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Naphthalene	<1	<1	<1	<1	<1	<1	<1	2	<1	TM176	<1 ug/l
Phenanthrene	<1	1	<1	<1	<1	<1	<1	1	<1	TM176	<1 ug/l
Pyrene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Phthalates											
Bis(2-ethylhexyl) phthalate	<2	<2	<2	<2	<2	<2	<2	<2	<2	TM176	<2 ug/l
Butylbenzyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Di-n-butyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Di-n-Octyl phthalate	<5	<5	<5	<5	<5	<5	<5	<5	<5	TM176	<5 ug/l
Diethyl phthalate	<1	<1	<1	1	<1	<1	<1	1	<1	TM176	<1 ug/l
Dimethyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Other Semi-volatiles											
1,2-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
1,2,4-Trichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l

Date 17.12.2008

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ALcontrol Laboratories Analytical Services

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Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	RBBH9	RBBH10	SBHD6	SBHH6	SBHJ1	SBHJ3	SBHJ4	SBHJ5	SBHJ6	Method Code	LoD/Units
Depth (m)	-	-	-	-	-	-	-	-	-		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	27.02.08	27.02.08	21.02.08	21.02.08	21.02.08	27.02.08	22.02.08	22.02.08	21.02.08		
Sample Received Date	29.02.08	29.02.08	21.02.08	21.02.08	21.02.08	29.02.08	23.02.08	23.02.08	21.02.08		
Batch	18	18	14	14	14	18	15	15	14		
Sample Number(s)	574-580 (1)	581-587 (1)	395-401 (1)	402-408 (1)	409-414, 429 (1)	588-594 (1)	465-471 (1)	472-478 (1)	415-421 (1)		
Other Semi-volatiles (cont)											
1,3-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
1,4-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,4-Dinitrotoluene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,6-Dinitrotoluene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
3-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Bromophenylphenylether	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Chloroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Chlorophenylphenylether	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Azobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Bis(2-chloroethoxy)methane	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Bis(2-chloroethyl)ether	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Carbazole	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Dibenzofuran	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Hexachlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Hexachlorobutadiene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Hexachlorocyclopentadiene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Hexachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Isophorane	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
N-nitrosodi-n-propylamine	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Nitrobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l

Date 17.12.2008

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ALcontrol Laboratories Analytical Services

Table Of Results

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* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	RBBH9	RBBH10	SBHD6	SBHH6	SBHJ1	SBHJ3	SBHJ4	SBHJ5	SBHJ6	Method Code	LoD/Units
Depth (m)	-	-	-	-	-	-	-	-	-		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	27.02.08	27.02.08	21.02.08	21.02.08	21.02.08	27.02.08	22.02.08	22.02.08	21.02.08		
Sample Received Date	29.02.08	29.02.08	21.02.08	21.02.08	21.02.08	29.02.08	23.02.08	23.02.08	21.02.08		
Batch	18	18	14	14	14	18	15	15	14		
Sample Number(s)	574-580 (1)	581-587 (1)	395-401 (1)	402-408 (1)	409-414,429 (1)	588-594 (1)	465-471 (1)	472-478 (1)	415-421 (1)		
Volatile Organic Compounds											
Dichlorodifluoromethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Chloromethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Vinyl Chloride	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Bromomethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Chloroethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Trichlorofluoromethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
trans-1-2-Dichloroethene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Dichloromethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Carbon Disulphide	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,1-Dichloroethene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,1-Dichloroethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Methyl Tertiary Butyl Ether	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
cis-1-2-Dichloroethene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Bromochloromethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Chloroform	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
2,2-Dichloropropane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2-Dichloroethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,1,1-Trichloroethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,1-Dichloropropene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Benzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Carbontetrachloride	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Dibromomethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2-Dichloropropane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Bromodichloromethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Trichloroethene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
cis-1-3-Dichloropropene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
trans-1-3-Dichloropropene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,1,2-Trichloroethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Toluene	<1	<1	<1	-	<1	2	7	<1	<1	TM208 [#]	<1 ug/l
1,3-Dichloropropane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l

Date 17.12.2008

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ALcontrol Laboratories Analytical Services

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» Shown on prev. report

Job Number: 08/00393/02/01

Matrix: LIQUID

Client: Norwest Holst Ltd

Location: M4 NEWPORT

Client Ref. No.: F15056

Client Contact: Ian Swain

Sample Identity	RBBH9	RBBH10	SBHD6	SBHH6	SBHJ1	SBHJ3	SBHJ4	SBHJ5	SBHJ6	Method Code	LoD/Units
Depth (m)	-	-									
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	27.02.08	27.02.08	21.02.08	21.02.08	21.02.08	27.02.08	22.02.08	22.02.08	21.02.08		
Sample Received Date	29.02.08	29.02.08	21.02.08	21.02.08	21.02.08	29.02.08	23.02.08	23.02.08	21.02.08		
Batch	18	18	14	14	14	18	15	15	14		
Sample Number(s)	574-580 (1)	581-587 (1)	395-401 (1)	402-408 (1)	409-414, 429 (1)	588-594 (1)	465-471 (1)	472-478 (1)	415-421 (1)		
Volatile Organic Compounds (cont)											
Dibromochloromethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2-Dibromoethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Tetrachloroethene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,1,1,2-Tetrachloroethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Chlorobenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Ethylbenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
p/m-Xylene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Bromoform	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Styrene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,1,2,2-Tetrachloroethane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
o-Xylene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2,3-Trichloropropane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Isopropylbenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Bromobenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
2-Chlorotoluene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Propylbenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
4-Chlorotoluene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2,4-Trimethylbenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
4-Isopropyltoluene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,3,5-Trimethylbenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2-Dichlorobenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,4-Dichlorobenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
sec-Butylbenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
tert-Butylbenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,3-Dichlorobenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
n-Butylbenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2-Dibromo-3-chloropropane	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2,4-Trichlorobenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
Naphthalene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l
1,2,3-Trichlorobenzene	<1	<1	<1	-	<1	<1	<1	<1	<1	TM208 [#]	<1 ug/l

Date 17.12.2008

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* Subcontracted test
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Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Date 17.12.2008

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ALcontrol Laboratories Analytical Services

Table Of Results

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Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	SBHJ7	SBHJ8A	SBHJ9	SBHJ10	SBHK1	SBHK2	SBHK3	SBHK4	SWSJ8	Method Code	LoD/Units
Depth (m)											
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	22.02.08	22.02.08	21.02.08	22.02.08	25.02.08	25.02.08	25.02.08	25.02.08	21.02.08		
Sample Received Date	23.02.08	23.02.08	21.02.08	23.02.08	26.02.08	26.02.08	26.02.08	26.02.08	21.02.08		
Batch	15	15	14	15	16	16	16	16	14		
Sample Number(s)	479-485 (1)	486-492 (1)	422-428 (1)	493-499 (1)	514-520 (1)	521-527 (1)	528-534 (1)	535-540 (1)	430-436 (1)		
Hardness Total	890	1600	1900	1000	990	1100	760	2300	1500	TM152 [#]	<1 mg/l
Arsenic Dissolved (ICP-MS)	7	2	2	12	19	15	4	16	6	TM152 [#]	<1 ug/l
Beryllium Dissolved (ICP-MS)	<1	<1	<1	<1	-	-	-	-	<1	TM152 [#]	<1 ug/l
Calcium Dissolved (ICP-MS)	190000	610000	750000	120000	130000	220000	120000	420000	470000	TM152 [#]	<160 ug/l
Chromium Dissolved (ICP-MS)	<1	<1	2	<1	7	5	4	9	6	TM152 [#]	<1 ug/l
Copper Dissolved (ICP-MS)	2.3	4.2	10	<1.6	8.0	8.1	7.8	12	8.7	TM152 [#]	<1.6 ug/l
Iron Dissolved (ICP-MS)	840	<50	150	150	3000	260	250	<50	370	TM152 [#]	<50 ug/l
Lead Dissolved (ICP-MS)	8.2	5.2	1.2	0.8	1.6	2.7	0.8	4.8	0.9	TM152 [#]	<0.5 ug/l
Magnesium Dissolved (ICP-MS)	130000	<40	100	170000	170000	140000	120000	320000	94000	TM152 [#]	<40 ug/l
Manganese Dissolved (ICP-MS)	2100	2	3	360	1100	720	740	1800	21000	TM152 [#]	<1 ug/l
Nickel Dissolved (ICP-MS)	4.0	9.9	19	7.3	6.4	8.4	3.0	20	20	TM152 [#]	<1.5 ug/l
Selenium Dissolved (ICP-MS)	8	<1	3	24	20	23	6	46	8	TM152 [#]	<1 ug/l
Vanadium Dissolved (ICP-MS)	4	4	3	3	-	-	-	-	2	TM152 [#]	<1 ug/l
Cadmium Total (HNO3 Digest)	<0.4	<0.4	1.3	<0.4	8.8	0.5	<0.4	0.8	6.9	TM152	<0.4 ug/l
Zinc Total (HNO3 Digest)	58	130	490	67	3000	170	89	230	640	TM152	<3 ug/l
Mercury Total (Aqua Regia)	<0.01	0.02	0.03	<0.01	0.02	0.01	<0.01	0.04	0.07	TM183	<0.01 ug/l
Total Alkalinity as CaCO3	1200	1600	1800	1200	1600	590	1000	990	840	TM043 [#]	<2 mg/l
BOD	8	<1	8	5	8	<1	7	<1	<1	TM045 [#]	<1 mg/l
COD	140	100	300	3500	6200	270	160	620	700	TM107 [#]	<5 mg/l
Potassium Dissolved	33	21	23	69	53	38	41	66	1.7	TM083	<0.2 mg/l
Sodium Dissolved	900	48	42	4600	1500	1900	650	3300	240	TM083	<0.2 mg/l
Nitrate as NO3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.4	TM102 [#]	<0.3 mg/l
Sulphate (soluble)	170	6	13	500	110	330	440	550	1200	TM098 [#]	<3 mg/l
Chloride	540	38	30	3700	1900	2900	380	5300	110	TM097 [#]	<1 mg/l
Sulphide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	TM101	<0.5 mg/l
Ammoniacal Nitrogen as N	9.3	4.0	1.5	2.4	14	15	5.3	27	1.4	TM099 [#]	<0.2 mg/l
Total Ammonium as NH4	12	-	1.9	-	18	19	6.8	35	1.8	TM099 [#]	<0.3 mg/l
Hexavalent Chromium	-	-	-	-	-	-	-	-	-	TM151 [#]	<0.03 mg/l
Phenols Monohydric	<0.01	0.06	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	TM062 [#]	<0.01 mg/l
Total Cyanide	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.78	TM153 [#]	<0.05 mg/l
Total Cyanide Low	-	<0.01	-	-	-	-	-	-	-	PENDING	<0.01 mg/l

Date 17.12.2008

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- # ISO 17025 accredited
- M MCERTS accredited
- * Subcontracted test
- » Shown on prev. report

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Date 17.12.2008

Validated ☒
Preliminary ☐

ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	SBHJ7	SBHJ8A	SBHJ9	SBHJ10	SBHK1	SBHK2	SBHK3	SBHK4	SWSJ8	Method Code	LoD/Units
Depth (m)											
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	22.02.08	22.02.08	21.02.08	22.02.08	25.02.08	25.02.08	25.02.08	25.02.08	21.02.08		
Sample Received Date	23.02.08	23.02.08	21.02.08	23.02.08	26.02.08	26.02.08	26.02.08	26.02.08	21.02.08		
Batch	15	15	14	15	16	16	16	16	14		
Sample Number(s)	479-485 (1)	486-492 (1)	422-428 (1)	493-499 (1)	514-520 (1)	521-527 (1)	528-534 (1)	535-540 (1)	430-436 (1)		
GRO (C4-C12)	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
MTBE	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Benzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Toluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Ethyl benzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
m & p Xylene	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
o Xylene	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Aliphatics C5-C6	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aliphatics >C6-C8	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aliphatics >C8-C10	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aliphatics >C10-C12	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aliphatics >C12-C16 Aqueous	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM174	<10 ug/l
Aliphatics >C16-C21 Aqueous	<10	54	<10	<10	<10	<10	<10	<10	<10	TM174	<10 ug/l
Aliphatics >C21-C35 Aqueous	56	820	39	150	270	<10	<10	<10	<10	TM174	<10 ug/l
Total Aliphatics C5-C35 Aqueous	56	870	39	150	270	<10	<10	<10	<10	TM61/89	<10 ug/l
Aromatics C6-C7	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Aromatics >C7-C8	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089 [#]	<10 ug/l
Aromatics >EC8-EC10	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aromatics >EC10-EC12	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM089	<10 ug/l
Aromatics >EC12-EC16 Aqueous	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM174	<10 ug/l
Aromatics >EC16-EC21 Aqueous	<10	<10	<10	<10	<10	<10	<10	<10	<10	TM174	<10 ug/l
Aromatics >EC21-EC35 Aqueous	<10	150	<10	<10	<10	<10	<10	<10	<10	TM174	<10 ug/l
Total Aromatics C6-C35 Aqueous	<10	150	<10	<10	<10	<10	<10	<10	<10	TM61/89	<10 ug/l
TPH (Aliphatics and Aromatics C5-C35) Aqueous	56	1000	39	150	270	<10	<10	<10	<10	TM61/89	<10 ug/l

Date 17.12.2008

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Preliminary



ALcontrol Laboratories Analytical Services

Table Of Results

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* Subcontracted test

» Shown on prev. report

Job Number: 08/00393/02/01

Matrix: LIQUID

Client: Norwest Holst Ltd

Location: M4 NEWPORT

Client Ref. No.: F15056

Client Contact: Ian Swain

Sample Identity	SBHJ7	SBHJ8A	SBHJ9	SBHJ10	SBHK1	SBHK2	SBHK3	SBHK4	SWSJ8	Method Code	LoD/Units
Depth (m)											
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	22.02.08	22.02.08	21.02.08	22.02.08	25.02.08	25.02.08	25.02.08	25.02.08	21.02.08		
Sample Received Date	23.02.08	23.02.08	21.02.08	23.02.08	26.02.08	26.02.08	26.02.08	26.02.08	21.02.08		
Batch	15	15	14	15	16	16	16	16	14		
Sample Number(s)	479-485 (1)	486-492 (1)	422-428 (1)	493-499 (1)	514-520 (1)	521-527 (1)	528-534 (1)	535-540 (1)	430-436 (1)		
SVOC by GCMS											
Phenols											
2-Chlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2-Methylphenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2-Nitrophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,4-Dichlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,4-Dimethylphenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,4,5-Trichlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,4,6-Trichlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Chloro-3-methylphenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Methylphenol	<1	4	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Nitrophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Pentachlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Phenol	<1	25	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l

Date 17.12.2008

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ALcontrol Laboratories Analytical Services

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» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	SBHJ7	SBHJ8A	SBHJ9	SBHJ10	SBHK1	SBHK2	SBHK3	SBHK4	SWSJ8	Method Code	LoD/Units
Depth (m)											
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	22.02.08	22.02.08	21.02.08	22.02.08	25.02.08	25.02.08	25.02.08	25.02.08	21.02.08		
Sample Received Date	23.02.08	23.02.08	21.02.08	23.02.08	26.02.08	26.02.08	26.02.08	26.02.08	21.02.08		
Batch	15	15	14	15	16	16	16	16	14		
Sample Number(s)	479-485 (1)	486-492 (1)	422-428 (1)	493-499 (1)	514-520 (1)	521-527 (1)	528-534 (1)	535-540 (1)	430-436 (1)		
PAHs											
2-Chloronaphthalene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2-Methylnaphthalene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Acenaphthene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Acenaphthylene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Anthracene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Benzo(a)anthracene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Benzo(a)pyrene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Benzo(b)fluoranthene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Benzo(ghi)perylene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Benzo(k)fluoranthene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Chrysene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Dibenzo(a,h)anthracene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Fluoranthene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Fluorene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Indeno(1,2,3-cd)pyrene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Naphthalene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Phenanthrene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Pyrene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Phthalates											
Bis(2-ethylhexyl) phthalate	<2	<2	<2	<2	<2	<2	<2	<2	<2	TM176	<2 ug/l
Butylbenzyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Di-n-butyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Di-n-Octyl phthalate	<5	<5	<5	<5	<5	<5	<5	<5	<5	TM176	<5 ug/l
Diethyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Dimethyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Other Semi-volatiles											
1,2-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
1,2,4-Trichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l

Date 17.12.2008

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Table Of Results

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M MCERTS accredited

* Subcontracted test

» Shown on prev. report

Job Number: 08/00393/02/01

Client: Norwest Holst Ltd

Client Ref. No.: F15056

Matrix: LIQUID

Location: M4 NEWPORT

Client Contact: Ian Swain

Sample Identity	SBHJ7	SBHJ8A	SBHJ9	SBHJ10	SBHK1	SBHK2	SBHK3	SBHK4	SWSJ8	Method Code	LoD/Units
Depth (m)											
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	22.02.08	22.02.08	21.02.08	22.02.08	25.02.08	25.02.08	25.02.08	25.02.08	21.02.08		
Sample Received Date	23.02.08	23.02.08	21.02.08	23.02.08	26.02.08	26.02.08	26.02.08	26.02.08	21.02.08		
Batch	15	15	14	15	16	16	16	16	14		
Sample Number(s)	479-485 (1)	486-492 (1)	422-428 (1)	493-499 (1)	514-520 (1)	521-527 (1)	528-534 (1)	535-540 (1)	430-436 (1)		
Other Semi-volatiles (cont)											
1,3-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
1,4-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,4-Dinitrotoluene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
2,6-Dinitrotoluene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
3-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Bromophenylphenylether	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Chloroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Chlorophenylphenylether	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
4-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Azobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Bis(2-chloroethoxy)methane	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Bis(2-chloroethyl)ether	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Carbazole	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Dibenzofuran	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Hexachlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Hexachlorobutadiene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Hexachlorocyclopentadiene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Hexachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Isophorone	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
N-nitrosodi-n-propylamine	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l
Nitrobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	TM176	<1 ug/l

Date 17.12.2008

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ALcontrol Laboratories Analytical Services

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* Subcontracted test

» Shown on prev. report

Job Number: 08/00393/02/01

Matrix: LIQUID

Client: Norwest Holst Ltd

Location: M4 NEWPORT

Client Ref. No.: F15056

Client Contact: Ian Swain

Sample Identity	SBHJ7	SBHJ8A	SBHJ9	SBHJ10	SBHK1	SBHK2	SBHK3	SBHK4	SWSJ8	Method Code	LoD/Units
Depth (m)											
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	22.02.08	22.02.08	21.02.08	22.02.08	25.02.08	25.02.08	25.02.08	25.02.08	21.02.08		
Sample Received Date	23.02.08	23.02.08	21.02.08	23.02.08	26.02.08	26.02.08	26.02.08	26.02.08	21.02.08		
Batch	15	15	14	15	16	16	16	16	14		
Sample Number(s)	479-485 (1)	486-492 (1)	422-428 (1)	493-499 (1)	514-520 (1)	521-527 (1)	528-534 (1)	535-540 (1)	430-436 (1)		
Volatile Organic Compounds											
Dichlorodifluoromethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Chloromethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Vinyl Chloride	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Bromomethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Chloroethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Trichlorofluoromethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
trans-1-2-Dichloroethene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Dichloromethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Carbon Disulphide	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,1-Dichloroethene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,1-Dichloroethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Methyl Tertiary Butyl Ether	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
cis-1-2-Dichloroethene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Bromochloromethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Chloroform	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
2,2-Dichloropropane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,2-Dichloroethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,1,1-Trichloroethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,1-Dichloropropene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Benzene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Carbontetrachloride	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Dibromomethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,2-Dichloropropane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Bromodichloromethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Trichloroethene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
cis-1-3-Dichloropropene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
trans-1-3-Dichloropropene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,1,2-Trichloroethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Toluene	<1	<1	<1	6	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,3-Dichloropropane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l

Date 17.12.2008

Validated ☒
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ALcontrol Laboratories Analytical Services

Table Of Results

* ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	SBHJ7	SBHJ8A	SBHJ9	SBHJ10	SBHK1	SBHK2	SBHK3	SBHK4	SWSJ8	Method Code	LoD/Units
Depth (m)											
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	22.02.08	22.02.08	21.02.08	22.02.08	25.02.08	25.02.08	25.02.08	25.02.08	21.02.08		
Sample Received Date	23.02.08	23.02.08	21.02.08	23.02.08	26.02.08	26.02.08	26.02.08	26.02.08	21.02.08		
Batch	15	15	14	15	16	16	16	16	14		
Sample Number(s)	479-485 (1)	486-492 (1)	422-428 (1)	493-499 (1)	514-520 (1)	521-527 (1)	528-534 (1)	535-540 (1)	430-436 (1)		
Volatile Organic Compounds (cont)											
Dibromochloromethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,2-Dibromoethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Tetrachloroethene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,1,1,2-Tetrachloroethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Chlorobenzene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Ethylbenzene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
p/m-Xylene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Bromoform	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Styrene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
o-Xylene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,2,3-Trichloropropane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Isopropylbenzene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Bromobenzene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
2-Chlorotoluene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Propylbenzene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
4-Chlorotoluene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,2,4-Trimethylbenzene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
4-Isopropyltoluene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,3,5-Trimethylbenzene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,2-Dichlorobenzene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,4-Dichlorobenzene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
sec-Butylbenzene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
tert-Butylbenzene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,3-Dichlorobenzene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
n-Butylbenzene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,2-Dibromo-3-chloropropane	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,2,4-Trichlorobenzene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
Naphthalene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l
1,2,3-Trichlorobenzene	<1	<1	<1	<1	-	-	-	-	<1	TM208 [#]	<1 ug/l

Date 17.12.2008

☒

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Date 17.12.2008

☒

114

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Date 17.12.2008

☒

11

- # ISO 17025 accredited
- M MCERTS accredited
- * Subcontracted test
- » Shown on prev. report

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Date 17.12.2008

☒

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Date 17.12.2008

☒

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Date 17.12.2008

☒

11

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Date 17.12.2008

☒

- # ISO 17025 accredited
- M MCERTS accredited
- * Subcontracted test
- » Shown on prev. report

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Date 17.12.2008

☒

ISO 17025 accredited
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» Shown on prev. report

Matrix: LIQUID
Location: M4 NEWPORT
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Date 17.12.2008

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ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Date 17.12.2008

ALcontrol Laboratories Analytical Services

Table Of Results - Appendix

Job Number: 08/00393/02/01
 Client: Norwest Holst Ltd
 Client Ref. No.: F15056

Report Key :

NDP	No Determination Possible	*	Subcontracted test
NFD	No Fibres Detected	»	Result previously reported (Incremental reports only)
#	ISO 17025 accredited	M	MCERTS Accredited
PFD	Possible Fibres Detected	EC	Equivalent Carbon (Aromatics C8-C35)

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03x10⁻⁷

Note: Method detection limits are not always achievable due to various circumstances beyond our control.

Summary of Method Codes contained within report :

Method No.	Reference	Description	ISO 17025 Accredited	MCERTS Accredited	Wet/Dry Sample ¹	Surrogate Corrected
PENDING		method details are pending			NA	
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples	✓		NA	
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) by Oxygen Meter	✓		NA	
TM053	MEWAM Methane & Hydrocarbon gases HMSO 1988	Determination of Bulk Gas Composition (Suite 1)			NA	
TM062	MEWAM BOOK 124 1988.HMSO/ Method 17.7, Second Site property, March 2003	Determination of Phenolic compounds by HPLC with electro-chemical detection	✓		NA	
TM083	Method 3111, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 7610	Determination of Sodium and Potassium by Flame Photometer			NA	
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)			NA	
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)	✓		NA	
TM097	Modified: US EPA Method 325.1 & 325.2	Determination of Chloride using the Kone Analyser	✓		NA	
TM098	Method 4500E, AWWA/APHA, 20th Ed., 1999	Determination of Sulphate using the Kone Analyser	✓		NA	
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser	✓		NA	
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser			NA	
TM102	Method 4500H, AWWA/APHA, 20th Ed., 1999	Determination of Total Oxidised Nitrogen using the Kone Analyser	✓		NA	
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit	✓		NA	

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

ALcontrol Laboratories Analytical Services

Table Of Results - Appendix

Job Number: 08/00393/02/01
 Client: Norwest Holst Ltd
 Client Ref. No.: F15056

Report Key :

NDP No Determination Possible * Subcontracted test
 NFD No Fibres Detected » Result previously reported (Incremental reports only)
 # ISO 17025 accredited M MCERTS Accredited
 PFD Possible Fibres Detected EC Equivalent Carbon (Aromatics C8-C35)

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03x10⁻⁷

Note: Method detection limits are not always achievable due to various circumstances beyond our control.

Summary of Method Codes contained within report :

Method No.	Reference	Description	ISO 17025 Accredited	MCERTS Accredited	Wet/Dry Sample ¹	Surrogate Corrected
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter	✓		NA	
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser	✓		NA	
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS			NA	
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS	✓		NA	
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the "Skalar SANS+ System" Segmented Flow Analyser	✓		NA	
TM174		Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID			NA	
TM176		Determination of SVOCs in Water by GCMS			NA	
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			NA	
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters			NA	
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters	✓		NA	
TM161/89		see TM061 and TM089 for details			NA	

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

ALcontrol Laboratories Analytical Services
Table Of Results - Appendix

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Summary of Coolbox temperatures

Batch No.	Coolbox Temperature (°C)
14	9.4
15	9.0
16	7.4
18	5.6

APPENDIX

APPENDIX

1. 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 a fibre 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 soil sample will be screened for the presence of fibres in-house and if no fibres are found will be reported as NFD – no fibres detected. If fibres are detected, they will be removed and analysed by our documented in house method based on HSG 248(2005). If a sample is suspected of containing asbestos, then further preparation and analysis will be suspended on that sample until the asbestos result is known. If asbestos is present, then no further analysis will be undertaken.
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. **Surrogate recoveries** – Most of our organic methods include surrogates, the recovery of which is monitored, but not corrected or reported.
For EPH and PAH on soils the result is not surrogate corrected, but a percentage recovery is quoted.
13. **Product analyses** – Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
14. 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).
15. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).
16. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
17. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.
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 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.

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAH MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GS MS
SVOC	DCM	LIQUID/LIQUID SHAKEN SVOC	GC MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DCM/EA	SOLID PHASE EXTRACTION	GC MS
TRIAZINE HERBS	DCM/EA	SOLID PHASE EXTRACTION	GC MS
PHENOLS MS	DCM	SOLID PHASE EXTRACTION	GC MS
TPH by INFRA RED (IR)	TCE	LIQUID/LIQUID EXTRACTION	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID EXTRACTION	HPLC
SAPONIFIABLE	TCE	LIQUID/LIQUID EXTRACTION	HPLC
UNSAPONIFIABLE	TCE	LIQUID/LIQUID EXTRACTION	HPLC
GLYCOLS	DCM	LIQUID/LIQUID EXTRACTION	EZ FLASH

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
Solvent Extractable Matter	D&C	DCM	SOXTHERM	GRAVIMETRIC
Cyclohexane Ext. Matter	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
Thin Layer Chromatography	D&C	DCM	SOXTHERM	IATROSCAN
Elemental Sulphur	D&C	DCM	SOXTHERM	HPLC
Phenols by GCMS	WET	DCM	SOXTHERM	GC-MS
Herbicides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
Pesticides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Min oil)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Cleaned up)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG by GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB tot / PCB con	D&C	HEXANE:ACETONE	END OVER END	GC-MS
Polyaromatic Hydrocarbons (MS)	D&C	HEXANE:ACETONE	MICROWAVE	GC-MS
Polyaromatic Hydrocarbons (FID)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
C8-C40 (C6-C40)EZ Flash	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Polyaromatic Hydrocarbons Rapid GC	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Semi Volatile Organic compounds	WET	DCM:ACETONE	SONICATE	GC-MS

Validated ☒
Preliminary ☐

ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	LGBH02	LGBH03	LGBH04	LGBH09	LGBH10	LGBH11	LGBH12	RBBH07	RBBH09	Method Code	LoD/Units
Depth (m)	8.88	8.90	10.50	7.00	14.60	11.20	7.05	6.25	7.05		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	17.03.08	17.03.08	18.03.08	17.03.08	18.03.08	18.03.08	17.03.08	19.03.08	19.03.08		
Sample Received Date	18.03.08	18.03.08	19.03.08	18.03.08	19.03.08	19.03.08	18.03.08	20.03.08	20.03.08		
Batch	19	19	20	19	20	20	19	22	22		
Sample Number(s)	609-615 (1)	616-622 (1)	671-677 (1)	623-629 (1)	678-684 (1)	685-691 (1)	630-636 (1)	734-740 (1)	741-747 (1)		
Hardness Total	910	790	1600	710	1100	260	520	1800	2000	TM152 [#]	<1 mg/l
Arsenic Dissolved (ICP-MS)	-	-	-	-	-	-	-	0.0015	0.0013	TM152 [#]	<0.00075 mg/l
Arsenic Dissolved (ICP-MS)	0.001	0.002	0.004	0.008	0.022	0.009	0.005	-	-	TM152 [#]	<0.001 mg/l
Beryllium Dissolved (ICP-MS)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM152 [#]	<0.001 mg/l
Calcium Dissolved (ICP-MS)	410	380	600	130	140	74	94	730	810	TM152 [#]	<0.16 mg/l
Chromium Dissolved (ICP-MS)	0.003	0.009	0.002	0.013	0.004	0.002	0.007	0.001	0.009	TM152 [#]	<0.001 mg/l
Copper Dissolved (ICP-MS)	0.029	0.0060	0.0093	<0.0016	<0.0016	0.0063	<0.0016	0.0049	0.0098	TM152 [#]	<0.0016 mg/l
Iron Dissolved (ICP-MS)	0.06	0.13	0.11	0.09	3.1	0.12	0.09	0.12	0.12	TM152 [#]	<0.05 mg/l
Lead Dissolved (ICP-MS)	-	-	-	-	-	-	-	<0.0004	0.0010	TM152 [#]	<0.0004 mg/l
Lead Dissolved (ICP-MS)	0.039	0.0007	0.0012	<0.0005	<0.0005	0.0010	<0.0005	-	-	TM152 [#]	<0.0005 mg/l
Magnesium Dissolved (ICP-MS)	<0.04	<0.04	0.10	130	170	19	69	<0.04	<0.04	TM152 [#]	<0.04 mg/l
Manganese Dissolved (ICP-MS)	<0.001	0.004	0.004	1.2	1.1	0.77	1.6	0.002	0.001	TM152 [#]	<0.001 mg/l
Nickel Dissolved (ICP-MS)	0.0066	0.0086	0.015	0.0041	0.0037	0.0040	0.0026	0.013	0.016	TM152 [#]	<0.0015 mg/l
Selenium Dissolved (ICP-MS)	0.004	0.005	0.007	0.011	0.011	0.006	0.005	0.015	0.003	TM152 [#]	<0.001 mg/l
Vanadium Dissolved (ICP-MS)	<0.001	0.005	<0.001	0.002	0.008	0.002	0.005	0.002	<0.001	TM152 [#]	<0.001 mg/l
Cadmium Total (HNO3 Digest)	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.0007	<0.0004	<0.0004	TM152	<0.0004 mg/l
Zinc Total (HNO3 Digest)	0.17	0.11	0.12	0.062	0.13	0.14	0.15	0.051	0.029	TM152	<0.003 mg/l
Mercury Total (Aqua Regia)	0.00005	<0.00001	0.00003	<0.00001	<0.00001	<0.00001	0.00003	<0.00001	<0.00001	TM183	<0.00001 mg/l
Total Alkalinity as CaCO3	880	750	1600	1100	1600	240	780	1900	1900	TM043 [#]	<2 mg/l
BOD	7	3	52	4	16	25	6	26	12	TM045 [#]	<1 mg/l
COD	91	43	340	91	540	580	150	72	38	TM107 [#]	<5 mg/l
Potassium Dissolved	99	42	190	38	56	100	19	27	10	TM083	<0.2 mg/l
Sodium Dissolved	32	22	80	680	1100	100	200	57	27	TM083	<0.2 mg/l
Nitrate as NO3	<1.5	<0.3	1.6	<0.3	<0.3	<0.3	<0.3	<0.6	1.8	TM102 [#]	<0.3 mg/l
Sulphate (soluble)	190	89	7	<3	29	240	11	7	5	TM098 [#]	<3 mg/l
Chloride	29	30	110	760	910	62	130	170	36	TM097 [#]	<1 mg/l
Sulphide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	TM101	<0.5 mg/l
Ammoniacal Nitrogen as N	1.9	2.2	4.7	6.1	17	4.9	4.3	6.7	2.6	TM099 [#]	<0.2 mg/l
Hexavalent Chromium	-	<0.03	-	-	-	-	-	-	-	TM151 [#]	<0.03 mg/l
Phenols Monohydric	0.02	0.01	0.08	<0.01	<0.01	0.01	<0.01	0.12	0.05	TM062 [#]	<0.01 mg/l
Thiocyanate	-	-	-	-	-	-	-	-	-	TM153 [#]	<0.05 mg/l

Date 27.01.2009

Validated ☒
Preliminary ☐

ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	LGBH02	LGBH03	LGBH04	LGBH09	LGBH10	LGBH11	LGBH12	RBBH07	RBBH09	Method Code	LoD/Units
Depth (m)	8.88	8.90	10.50	7.00	14.60	11.20	7.05	6.25	7.05		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	17.03.08	17.03.08	18.03.08	17.03.08	18.03.08	18.03.08	17.03.08	19.03.08	19.03.08		
Sample Received Date	18.03.08	18.03.08	19.03.08	18.03.08	19.03.08	19.03.08	18.03.08	20.03.08	20.03.08		
Batch	19	19	20	19	20	20	19	22	22		
Sample Number(s)	609-615 (1)	616-622 (1)	671-677 (1)	623-629 (1)	678-684 (1)	685-691 (1)	630-636 (1)	734-740 (1)	741-747 (1)		
GRO (C4-C12)	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	TM089 [#]	<0.01 mg/l
MTBE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	TM089 [#]	<0.01 mg/l
Benzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	TM089 [#]	<0.01 mg/l
Toluene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	TM089 [#]	<0.01 mg/l
Ethyl benzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	TM089 [#]	<0.01 mg/l
m & p Xylene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	TM089 [#]	<0.01 mg/l
o Xylene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	TM089 [#]	<0.01 mg/l
Aliphatics C5-C6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	TM089	<0.01 mg/l
Aliphatics >C6-C8	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	TM089	<0.01 mg/l
Aliphatics >C8-C10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	TM089	<0.01 mg/l
Aliphatics >C10-C12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	TM089	<0.01 mg/l
Aliphatics >C12-C16 Aqueous	<0.01	<0.01	<0.01	<0.01	<0.01	0.13	<0.01	<0.01	<0.01	TM174	<0.01 mg/l
Aliphatics >C16-C21 Aqueous	<0.01	<0.01	<0.01	<0.01	<0.01	1.7	<0.01	<0.01	<0.01	TM174	<0.01 mg/l
Aliphatics >C21-C35 Aqueous	<0.01	<0.01	<0.01	<0.01	<0.01	9.4	<0.01	<0.01	<0.01	TM174	<0.01 mg/l
Total Aliphatics C5-C35 Aqueous	<0.01	<0.01	0.01	<0.01	<0.01	11	<0.01	<0.01	<0.01	TM61/89	<0.01 mg/l
Aromatics C6-C7	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	TM089 [#]	<0.01 mg/l
Aromatics >C7-C8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	TM089 [#]	<0.01 mg/l
Aromatics >EC8-EC10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	TM089	<0.01 mg/l
Aromatics >EC10-EC12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	TM089	<0.01 mg/l
Aromatics >EC12-EC16 Aqueous	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	<0.01	<0.01	<0.01	TM174	<0.01 mg/l
Aromatics >EC16-EC21 Aqueous	<0.01	<0.01	<0.01	<0.01	<0.01	0.42	<0.01	<0.01	<0.01	TM174	<0.01 mg/l
Aromatics >EC21-EC35 Aqueous	<0.01	<0.01	<0.01	<0.01	<0.01	2.7	<0.01	<0.01	<0.01	TM174	<0.01 mg/l
Total Aromatics C6-C35 Aqueous	<0.01	<0.01	<0.01	<0.01	<0.01	3.2	<0.01	<0.01	<0.01	TM61/89	<0.01 mg/l
TPH (Aliphatics and Aromatics C5-C35) Aqueous	<0.01	<0.01	0.01	<0.01	<0.01	14	<0.01	<0.01	<0.01	TM61/89	<0.01 mg/l

Date 27.01.2009

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* Subcontracted test

» Shown on prev. report

Matrix: LIQUID

Location: M4 NEWPORT

Client Contact: Ian Swain

SVOC by GCMS

Phenols

[illegible][illegible]

2-Nitrophenol	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	1.9	<0.001	TM176	<0.001 mg/l
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[illegible][illegible][illegible][illegible][illegible]

4-Methylphenol	<0.001	<0.001	0.005	<0.001	<0.001	<0.001	<0.001	1.3	<0.001	TM176	<0.001 mg/l
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4-Nitrophenol	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	3.0	<0.001	TM176	<0.001 mg/l
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[illegible]

Phenol	0.005	0.002	0.026	<0.001	<0.001	<0.001	<0.001	36	0.011	TM176	<0.001 mg/l
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Date 27.01.2009

Validated ☒
Preliminary ☐

ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
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* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	LGBH02	LGBH03	LGBH04	LGBH09	LGBH10	LGBH11	LGBH12	RBBH07	RBBH09	Method Code	LoD/Units
Depth (m)	8.88	8.90	10.50	7.00	14.60	11.20	7.05	6.25	7.05		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	17.03.08	17.03.08	18.03.08	17.03.08	18.03.08	18.03.08	17.03.08	19.03.08	19.03.08		
Sample Received Date	18.03.08	18.03.08	19.03.08	18.03.08	19.03.08	19.03.08	18.03.08	20.03.08	20.03.08		
Batch	19	19	20	19	20	20	19	22	22		
Sample Number(s)	609-615 (1)	616-622 (1)	671-677 (1)	623-629 (1)	678-684 (1)	685-691 (1)	630-636 (1)	734-740 (1)	741-747 (1)		
PAHs											
2-Chloronaphthalene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
2-Methylnaphthalene	<0.001	0.003	0.002	<0.001	<0.001	<0.001	<0.001	2.7	<0.001	TM176	<0.001 mg/l
Acenaphthene	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	3.5	<0.001	TM176	<0.001 mg/l
Acenaphthylene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Anthracene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Benzo(a)anthracene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Benzo(a)pyrene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Benzo(b)fluoranthene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Benzo(ghi)perylene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Benzo(k)fluoranthene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Chrysene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Dibenzo(a,h)anthracene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Fluoranthene	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Fluorene	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Indeno(1,2,3-cd)pyrene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Naphthalene	<0.001	0.002	0.006	<0.001	<0.001	<0.001	<0.001	22	0.001	TM176	<0.001 mg/l
Phenanthrene	<0.001	<0.001	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Pyrene	<0.001	<0.001	0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Phthalates											
Bis(2-ethylhexyl) phthalate	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	4.2	<0.002	TM176	<0.002 mg/l
Butylbenzyl phthalate	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Di-n-butyl phthalate	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Di-n-Octyl phthalate	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	TM176	<0.005 mg/l
Diethyl phthalate	<0.001	<0.001	0.001	<0.001	0.002	0.002	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Dimethyl phthalate	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Other Semi-volatiles											
1,2-Dichlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
1,2,4-Trichlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM176	<0.001 mg/l

Date 27.01.2009

Validated

Preliminary



ALcontrol Laboratories Analytical Services

ISO 17025 accredited

^M MCERTS accredited

* Subcontracted test

» Shown on prev. report

Job Number: 08/00393/02/01

Client: Norwest Holst Ltd

Client Ref. No.: F15056

Matrix: LIQUID

Location: M4 NEWPORT

Client Contact: Ian Swain

[illegible]

Date 27.01.2009

Validated ☒
Preliminary ☐

ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	LGBH02	LGBH03	LGBH04	LGBH09	LGBH10	LGBH11	LGBH12	RBBH07	RBBH09	Method Code	LoD/Units
Depth (m)	8.88	8.90	10.50	7.00	14.60	11.20	7.05	6.25	7.05		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	17.03.08	17.03.08	18.03.08	17.03.08	18.03.08	18.03.08	17.03.08	19.03.08	19.03.08		
Sample Received Date	18.03.08	18.03.08	19.03.08	18.03.08	19.03.08	19.03.08	18.03.08	20.03.08	20.03.08		
Batch	19	19	20	19	20	20	19	22	22		
Sample Number(s)	609-615 (1)	616-622 (1)	671-677 (1)	623-629 (1)	678-684 (1)	685-691 (1)	630-636 (1)	734-740 (1)	741-747 (1)		
Volatile Organic Compounds											
Dichlorodifluoromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
Chloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
Vinyl Chloride	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
Bromomethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
Chloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
Trichlorofluoromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
trans-1-2-Dichloroethene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
Dichloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
Carbon Disulphide	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
1,1-Dichloroethene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
1,1-Dichloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
Methyl Tertiary Butyl Ether	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
cis-1-2-Dichloroethene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
Bromochloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
Chloroform	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
2,2-Dichloropropane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208	<0.001 mg/L
1,2-Dichloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
1,1,1-Trichloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
1,1-Dichloropropene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
Benzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
Carbontetrachloride	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
Dibromomethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
1,2-Dichloropropane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
Bromodichloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
Trichloroethene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
cis-1-3-Dichloropropene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
trans-1-3-Dichloropropene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
1,1,2-Trichloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
Toluene	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L
1,3-Dichloropropane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/L

Date 27.01.2009

Validated ☒
Preliminary ☐

ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	LGBH02	LGBH03	LGBH04	LGBH09	LGBH10	LGBH11	LGBH12	RBBH07	RBBH09	Method Code	LoD/Units
Depth (m)	8.88	8.90	10.50	7.00	14.60	11.20	7.05	6.25	7.05		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	17.03.08	17.03.08	18.03.08	17.03.08	18.03.08	18.03.08	17.03.08	19.03.08	19.03.08		
Sample Received Date	18.03.08	18.03.08	19.03.08	18.03.08	19.03.08	19.03.08	18.03.08	20.03.08	20.03.08		
Batch	19	19	20	19	20	20	19	22	22		
Sample Number(s)	609-615 (1)	616-622 (1)	671-677 (1)	623-629 (1)	678-684 (1)	685-691 (1)	630-636 (1)	734-740 (1)	741-747 (1)		
Volatile Organic Compounds (cont)											
Dibromochloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
1,2-Dibromoethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
Tetrachloroethene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
1,1,1,2-Tetrachloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
Chlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
Ethylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
p/m-Xylene	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
Bromoform	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
Styrene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
1,1,2,2-Tetrachloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
o-Xylene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
1,2,3-Trichloropropane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
Isopropylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
Bromobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
2-Chlorotoluene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
Propylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
4-Chlorotoluene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
1,2,4-Trimethylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.005	<0.001	TM208 [#]	<0.001 mg/l
4-Isopropyltoluene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
1,3,5-Trimethylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
1,2-Dichlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
1,4-Dichlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
sec-Butylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
tert-Butylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
1,3-Dichlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
n-Butylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
1,2-Dibromo-3-chloropropane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
1,2,4-Trichlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l
Naphthalene	<0.001	<0.001	0.007	<0.001	<0.001	<0.001	<0.001	0.035	<0.001	TM208 [#]	<0.001 mg/l
1,2,3-Trichlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	TM208 [#]	<0.001 mg/l

Date 27.01.2009

Validated ☒
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ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	RBBH10	SBHD06	SBHH06	SBHH06	SBHJ01	SBHJ03	SBHJ04	SBHJ04	SBHJ05	Method Code	LoD/Units
Depth (m)	6.85	15.00	12.30	12.30	7.50	5.20	13.10	13.10	11.50		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	19.03.08	19.03.08	17.03.08	17.04.08	19.03.08	19.03.08	17.03.08	17.04.08	18.03.08		
Sample Received Date	20.03.08	20.03.08	18.03.08	19.04.08	20.03.08	20.03.08	18.03.08	19.04.08	19.03.08		
Batch	22	21	19	23	22	21	19	23	20		
Sample Number(s)	748-754 (1)	720-726 (1)	638-643 (1)	811 (1)	755-761 (1)	727-733 (1)	644-650 (1)	812 (1)	692-698 (1)		
Hardness Total	570	340	1300	-	1100	550	1300	-	160	TM152 [#]	<1 mg/l
Arsenic Dissolved (ICP-MS)	0.0027	<0.00075	-	-	0.016	0.0079	-	-	-	TM152 [#]	<0.00075 mg/l
Arsenic Dissolved (ICP-MS)	-	-	0.025	-	-	-	0.020	-	0.004	TM152 [#]	<0.001 mg/l
Beryllium Dissolved (ICP-MS)	<0.001	-	-	-	<0.001	<0.001	<0.001	-	<0.001	TM152 [#]	<0.001 mg/l
Calcium Dissolved (ICP-MS)	240	65	140	-	96	77	150	-	66	TM152 [#]	<0.16 mg/l
Chromium Dissolved (ICP-MS)	<0.001	<0.001	0.017	-	0.023	0.005	0.018	-	0.002	TM152 [#]	<0.001 mg/l
Copper Dissolved (ICP-MS)	0.0040	0.0017	<0.0016	-	0.0026	0.0026	<0.0016	-	0.0060	TM152 [#]	<0.0016 mg/l
Iron Dissolved (ICP-MS)	0.06	<0.05	0.22	-	0.47	4.9	3.5	-	<0.05	TM152 [#]	<0.05 mg/l
Lead Dissolved (ICP-MS)	<0.0004	<0.0004	-	-	0.0012	<0.0004	-	-	-	TM152 [#]	<0.0004 mg/l
Lead Dissolved (ICP-MS)	-	-	0.0006	-	-	-	<0.0005	-	0.0008	TM152 [#]	<0.0005 mg/l
Magnesium Dissolved (ICP-MS)	<0.04	42	260	-	240	88	270	-	<0.04	TM152 [#]	<0.04 mg/l
Manganese Dissolved (ICP-MS)	<0.001	0.92	0.51	-	1.3	0.85	1.8	-	0.001	TM152 [#]	<0.001 mg/l
Nickel Dissolved (ICP-MS)	0.0045	<0.0015	0.010	-	0.0052	0.0032	0.0059	-	0.0081	TM152 [#]	<0.0015 mg/l
Selenium Dissolved (ICP-MS)	0.008	<0.001	0.036	-	0.025	0.006	0.033	-	0.006	TM152 [#]	<0.001 mg/l
Vanadium Dissolved (ICP-MS)	0.036	-	-	-	0.012	0.003	0.005	-	0.064	TM152 [#]	<0.001 mg/l
Cadmium Total (HNO3 Digest)	<0.0004	<0.0004	0.0060	-	0.040	0.0016	0.023	-	<0.0004	TM152	<0.0004 mg/l
Zinc Total (HNO3 Digest)	0.098	0.067	2.4	-	4.4	0.16	8.1	-	0.13	TM152	<0.003 mg/l
Mercury Total (Aqua Regia)	0.00001	0.00001	0.00001	-	<0.00001	<0.00001	<0.00001	-	0.00002	TM183	<0.00001 mg/l
Total Alkalinity as CaCO3	510	340	2900	-	2900	1300	6900	-	360	TM043 [#]	<2 mg/l
BOD	14	2	6	-	5	56	41	-	18	TM045 [#]	<1 mg/l
COD	150	25	1800	-	1700	110	2900	-	400	TM107 [#]	<5 mg/l
Potassium Dissolved	10	7.8	96	-	80	36	80	-	170	TM083	<0.2 mg/l
Sodium Dissolved	27	110	3500	-	2700	15	2700	-	120	TM083	<0.2 mg/l
Nitrate as NO3	<0.3	0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	TM102 [#]	<0.3 mg/l
Sulphate (soluble)	31	27	510	-	180	130	59	-	38	TM098 [#]	<3 mg/l
Chloride	53	83	3900	-	2700	670	3400	-	100	TM097 [#]	<1 mg/l
Sulphide	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	TM101	<0.5 mg/l
Ammoniacal Nitrogen as N	3.6	4.1	26	-	16	16	35	-	6.2	TM099 [#]	<0.2 mg/l
Hexavalent Chromium	-	-	<0.03	-	<0.03	-	-	-	-	TM151 [#]	<0.03 mg/l
Phenols Monohydric	0.02	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	0.13	TM062 [#]	<0.01 mg/l
Thiocyanate	-	-	-	-	-	-	-	-	-	TM153 [#]	<0.05 mg/l

Date 27.01.2009

Validated ☒
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ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	RBBH10	SBHD06	SBHH06	SBHH06	SBHJ01	SBHJ03	SBHJ04	SBHJ04	SBHJ05	Method Code	LoD/Units
Depth (m)	6.85	15.00	12.30	12.30	7.50	5.20	13.10	13.10	11.50		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	19.03.08	19.03.08	17.03.08	17.04.08	19.03.08	19.03.08	17.03.08	17.04.08	18.03.08		
Sample Received Date	20.03.08	20.03.08	18.03.08	19.04.08	20.03.08	20.03.08	18.03.08	19.04.08	19.03.08		
Batch	22	21	19	23	22	21	19	23	20		
Sample Number(s)	748-754 (1)	720-726 (1)	638-643 (1)	811 (1)	755-761 (1)	727-733 (1)	644-650 (1)	812 (1)	692-698 (1)		
GRO (C4-C12)	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	TM089 [#]	<0.01 mg/l
MTBE	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	TM089 [#]	<0.01 mg/l
Benzene	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	TM089 [#]	<0.01 mg/l
Toluene	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	TM089 [#]	<0.01 mg/l
Ethyl benzene	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	TM089 [#]	<0.01 mg/l
m & p Xylene	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	TM089 [#]	<0.01 mg/l
o Xylene	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	TM089 [#]	<0.01 mg/l
Aliphatics C5-C6	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	TM089	<0.01 mg/l
Aliphatics >C6-C8	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	TM089	<0.01 mg/l
Aliphatics >C8-C10	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	TM089	<0.01 mg/l
Aliphatics >C10-C12	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	TM089	<0.01 mg/l
Aliphatics >C12-C16 Aqueous	<0.01	<0.01	<0.01	-	<0.01	0.35	<0.01	-	<0.01	TM174	<0.01 mg/l
Aliphatics >C16-C21 Aqueous	<0.01	<0.01	<0.01	-	<0.01	0.14	<0.01	-	<0.01	TM174	<0.01 mg/l
Aliphatics >C21-C35 Aqueous	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	TM174	<0.01 mg/l
Total Aliphatics C5-C35 Aqueous	<0.01	<0.01	<0.01	-	<0.01	0.50	<0.01	-	<0.01	TM61/89	<0.01 mg/l
Aromatics C6-C7	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	TM089 [#]	<0.01 mg/l
Aromatics >C7-C8	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	TM089 [#]	<0.01 mg/l
Aromatics >EC8-EC10	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	TM089	<0.01 mg/l
Aromatics >EC10-EC12	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	TM089	<0.01 mg/l
Aromatics >EC12-EC16 Aqueous	<0.01	<0.01	<0.01	-	<0.01	0.59	<0.01	-	<0.01	TM174	<0.01 mg/l
Aromatics >EC16-EC21 Aqueous	<0.01	<0.01	<0.01	-	<0.01	0.61	<0.01	-	<0.01	TM174	<0.01 mg/l
Aromatics >EC21-EC35 Aqueous	<0.01	<0.01	<0.01	-	<0.01	0.51	<0.01	-	<0.01	TM174	<0.01 mg/l
Total Aromatics C6-C35 Aqueous	<0.01	<0.01	<0.01	-	<0.01	1.7	<0.01	-	<0.01	TM61/89	<0.01 mg/l
TPH (Aliphatics and Aromatics C5-C35) Aqueous	<0.01	<0.01	<0.01	-	<0.01	2.2	<0.01	-	<0.01	TM61/89	<0.01 mg/l

Date 27.01.2009

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* Subcontracted test

» Shown on prev. report

Matrix: LIQUID

Location: M4 NEWPORT

Client Contact: Ian Swain

SVOC by GCMS

Phenols

2-Chlorophenol	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
2-Methylphenol	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	0.001	TM176	<0.001 mg/l
2-Nitrophenol	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
2,4-Dichlorophenol	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
2,4-Dimethylphenol	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	0.003	TM176	<0.001 mg/l
2,4,5-Trichlorophenol	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
2,4,6-Trichlorophenol	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
4-Chloro-3-methylphenol	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
4-Methylphenol	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	0.004	TM176	<0.001 mg/l
4-Nitrophenol	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Pentachlorophenol	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Phenol	0.007	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	0.020	TM176	<0.001 mg/l

Date 27.01.2009

Validated ☒
Preliminary ☐

ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
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Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	RBBH10	SBHD06	SBHH06	SBHH06	SBHJ01	SBHJ03	SBHJ04	SBHJ04	SBHJ05	Method Code	LoD/Units
Depth (m)	6.85	15.00	12.30	12.30	7.50	5.20	13.10	13.10	11.50		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	19.03.08	19.03.08	17.03.08	17.04.08	19.03.08	19.03.08	17.03.08	17.04.08	18.03.08		
Sample Received Date	20.03.08	20.03.08	18.03.08	19.04.08	20.03.08	20.03.08	18.03.08	19.04.08	19.03.08		
Batch	22	21	19	23	22	21	19	23	20		
Sample Number(s)	748-754 (1)	720-726 (1)	638-643 (1)	811 (1)	755-761 (1)	727-733 (1)	644-650 (1)	812 (1)	692-698 (1)		
PAHs											
2-Chloronaphthalene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
2-Methylnaphthalene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Acenaphthene	0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Acenaphthylene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Anthracene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Benzo(a)anthracene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Benzo(a)pyrene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Benzo(b)fluoranthene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Benzo(ghi)perylene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Benzo(k)fluoranthene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Chrysene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Dibenzo(a,h)anthracene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Fluoranthene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	0.002	TM176	<0.001 mg/l
Fluorene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Indeno(1,2,3-cd)pyrene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Naphthalene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Phenanthrene	0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	0.002	TM176	<0.001 mg/l
Pyrene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	0.001	TM176	<0.001 mg/l
Phthalates											
Bis(2-ethylhexyl) phthalate	<0.002	<0.002	NDP	0.006	<0.002	<0.002	NDP	<0.002	<0.002	TM176	<0.002 mg/l
Butylbenzyl phthalate	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Di-n-butyl phthalate	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Di-n-Octyl phthalate	<0.005	<0.005	NDP	<0.005	<0.005	<0.005	NDP	<0.005	<0.005	TM176	<0.005 mg/l
Diethyl phthalate	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Dimethyl phthalate	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
Other Semi-volatiles											
1,2-Dichlorobenzene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l
1,2,4-Trichlorobenzene	<0.001	<0.001	NDP	<0.001	<0.001	<0.001	NDP	<0.001	<0.001	TM176	<0.001 mg/l

Date 27.01.2009

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ISO 17025 accredited

^M MCERTS accredited

* Subcontracted test

» Shown on prev. report

Matrix: LIQUID

Location: M4 NEWPORT

Client Contact: Ian Swain

[illegible]

Date 27.01.2009

Validated ☒
Preliminary ☐

ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
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Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	RBBH10	SBHD06	SBHH06	SBHH06	SBHJ01	SBHJ03	SBHJ04	SBHJ04	SBHJ05	Method Code	LoD/Units
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Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	19.03.08	19.03.08	17.03.08	17.04.08	19.03.08	19.03.08	17.03.08	17.04.08	18.03.08		
Sample Received Date	20.03.08	20.03.08	18.03.08	19.04.08	20.03.08	20.03.08	18.03.08	19.04.08	19.03.08		
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Sample Number(s)	748-754 (1)	720-726 (1)	638-643 (1)	811 (1)	755-761 (1)	727-733 (1)	644-650 (1)	812 (1)	692-698 (1)		
Volatile Organic Compounds											
Dichlorodifluoromethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Chloromethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Vinyl Chloride	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Bromomethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Chloroethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Trichlorofluoromethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
trans-1-2-Dichloroethene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Dichloromethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Carbon Disulphide	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,1-Dichloroethene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,1-Dichloroethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Methyl Tertiary Butyl Ether	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
cis-1-2-Dichloroethene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Bromochloromethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Chloroform	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
2,2-Dichloropropane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208	<0.001 mg/l
1,2-Dichloroethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,1,1-Trichloroethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,1-Dichloropropene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Benzene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Carbontetrachloride	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Dibromomethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,2-Dichloropropane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Bromodichloromethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Trichloroethene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
cis-1-3-Dichloropropene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
trans-1-3-Dichloropropene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,1,2-Trichloroethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Toluene	<0.001	<0.001	-	-	0.005	<0.001	0.005	-	0.002	TM208 [#]	<0.001 mg/l
1,3-Dichloropropane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l

Date 27.01.2009

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ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
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* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	RBBH10	SBHD06	SBHH06	SBHH06	SBHJ01	SBHJ03	SBHJ04	SBHJ04	SBHJ05	Method Code	LoD/Units
Depth (m)	6.85	15.00	12.30	12.30	7.50	5.20	13.10	13.10	11.50		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	19.03.08	19.03.08	17.03.08	17.04.08	19.03.08	19.03.08	17.03.08	17.04.08	18.03.08		
Sample Received Date	20.03.08	20.03.08	18.03.08	19.04.08	20.03.08	20.03.08	18.03.08	19.04.08	19.03.08		
Batch	22	21	19	23	22	21	19	23	20		
Sample Number(s)	748-754 (1)	720-726 (1)	638-643 (1)	811 (1)	755-761 (1)	727-733 (1)	644-650 (1)	812 (1)	692-698 (1)		
Volatile Organic Compounds (cont)											
Dibromochloromethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,2-Dibromoethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Tetrachloroethene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,1,1,2-Tetrachloroethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Chlorobenzene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Ethylbenzene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
p/m-Xylene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Bromoform	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Styrene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,1,2,2-Tetrachloroethane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
o-Xylene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,2,3-Trichloropropane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Isopropylbenzene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Bromobenzene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
2-Chlorotoluene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Propylbenzene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
4-Chlorotoluene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,2,4-Trimethylbenzene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
4-Isopropyltoluene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,3,5-Trimethylbenzene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,2-Dichlorobenzene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,4-Dichlorobenzene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
sec-Butylbenzene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
tert-Butylbenzene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,3-Dichlorobenzene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
n-Butylbenzene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,2-Dibromo-3-chloropropane	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,2,4-Trichlorobenzene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
Naphthalene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l
1,2,3-Trichlorobenzene	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001	TM208 [#]	<0.001 mg/l

Date 27.01.2009

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- # ISO 17025 accredited
- M MCERTS accredited
- * Subcontracted test
- » Shown on prev. report

Matrix: LIQUID

Location: M4 NEWPORT

Client Contact: Ian Swain

[illegible]

Date 27.01.2009

Validated ☒
Preliminary ☐

ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
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* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	SBHJ06	SBHJ07	SBHJ07	SBHJ08	SBHJ09	SBHJ10	SBHJ10	SBHK01	SBHK02	Method Code	LoD/Units
Depth (m)	4.10	10.40	10.40	7.40	2.20	10.00	10.00	6.80	11.20		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	17.03.08	17.03.08	17.04.08	18.03.08	18.03.08	17.03.08	17.04.08	19.03.08	19.03.08		
Sample Received Date	18.03.08	18.03.08	19.04.08	19.03.08	19.03.08	18.03.08	19.04.08	20.03.08	20.03.08		
Batch	19	19	23	20	20	19	23	22	22		
Sample Number(s)	651-656,670 (1)	637,657-662 (1)	813 (1)	699-705 (1)	706-712 (1)	663-669 (1)	814 (1)	764-770 (1)	771-777 (1)		
Hardness Total	1100	810	-	1100	2100	1100	-	870	1200	TM152 [#]	<1 mg/l
Arsenic Dissolved (ICP-MS)	-	-	-	-	-	-	-	0.014	0.017	TM152 [#]	<0.00075 mg/l
Arsenic Dissolved (ICP-MS)	0.005	0.018	-	0.006	0.001	0.021	-	-	-	TM152 [#]	<0.001 mg/l
Beryllium Dissolved (ICP-MS)	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-	-	TM152 [#]	<0.001 mg/l
Calcium Dissolved (ICP-MS)	210	120	-	430	800	140	-	110	240	TM152 [#]	<0.16 mg/l
Chromium Dissolved (ICP-MS)	0.012	0.026	-	0.001	0.002	0.012	-	0.014	0.010	TM152 [#]	<0.001 mg/l
Copper Dissolved (ICP-MS)	<0.0016	0.0025	-	0.0058	0.0045	<0.0016	-	0.0057	0.0090	TM152 [#]	<0.0016 mg/l
Iron Dissolved (ICP-MS)	0.17	0.57	-	<0.05	0.08	5.3	-	0.89	<0.05	TM152 [#]	<0.05 mg/l
Lead Dissolved (ICP-MS)	-	-	-	-	-	-	-	0.0005	0.0004	TM152 [#]	<0.0004 mg/l
Lead Dissolved (ICP-MS)	<0.0005	<0.0005	-	0.0007	0.0015	<0.0005	-	-	-	TM152 [#]	<0.0005 mg/l
Magnesium Dissolved (ICP-MS)	180	160	-	<0.04	<0.04	200	-	150	190	TM152 [#]	<0.04 mg/l
Manganese Dissolved (ICP-MS)	1.9	0.63	-	0.002	<0.001	0.52	-	0.94	0.64	TM152 [#]	<0.001 mg/l
Nickel Dissolved (ICP-MS)	0.0055	0.0055	-	0.012	0.011	0.0069	-	0.0086	0.014	TM152 [#]	<0.0015 mg/l
Selenium Dissolved (ICP-MS)	0.012	0.009	-	0.002	<0.001	0.031	-	0.009	0.025	TM152 [#]	<0.001 mg/l
Vanadium Dissolved (ICP-MS)	0.004	0.010	-	0.008	0.002	<0.001	-	-	-	TM152 [#]	<0.001 mg/l
Cadmium Total (HNO3 Digest)	0.0023	0.018	-	<0.0004	<0.0004	0.0038	-	0.012	0.0008	TM152	<0.0004 mg/l
Zinc Total (HNO3 Digest)	0.23	6.5	-	0.16	0.25	8.0	-	4.8	0.37	TM152	<0.003 mg/l
Mercury Total (Aqua Regia)	<0.00001	0.00001	-	0.00002	<0.00001	0.00007	-	0.00005	<0.00001	TM183	<0.00001 mg/l
Total Alkalinity as CaCO3	1400	810	-	950	2000	4400	-	3300	880	TM043 [#]	<2 mg/l
BOD	<1	30	-	55	9	33	-	12	<1	TM045 [#]	<1 mg/l
COD	1200	3200	-	2600	310	7400	-	4900	550	TM107 [#]	<5 mg/l
Potassium Dissolved	53	63	-	23	26	68	-	51	48	TM083	<0.2 mg/l
Sodium Dissolved	1200	1400	-	72	22	3500	-	1200	2500	TM083	<0.2 mg/l
Nitrate as NO3	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	TM102 [#]	<0.3 mg/l
Sulphate (soluble)	7	110	-	19	17	550	-	71	160	TM098 [#]	<3 mg/l
Chloride	1700	1300	-	60	20	4300	-	1400	3300	TM097 [#]	<1 mg/l
Sulphide	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	TM101	<0.5 mg/l
Ammoniacal Nitrogen as N	9.4	16	-	5.6	1.6	36	-	14	18	TM099 [#]	<0.2 mg/l
Hexavalent Chromium	<0.03	-	-	-	-	-	-	-	-	TM151 [#]	<0.03 mg/l
Phenols Monohydric	<0.01	<0.01	-	0.28	0.02	<0.01	-	<0.01	<0.01	TM062 [#]	<0.01 mg/l
Thiocyanate	-	-	-	<0.05	-	-	-	-	-	TM153 [#]	<0.05 mg/l

Date 27.01.2009

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ALcontrol Laboratories Analytical Services

Table Of Results

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» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	SBHJ06	SBHJ07	SBHJ07	SBHJ08	SBHJ09	SBHJ10	SBHJ10	SBHK01	SBHK02	Method Code	LoD/Units
Depth (m)	4.10	10.40	10.40	7.40	2.20	10.00	10.00	6.80	11.20		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	17.03.08	17.03.08	17.04.08	18.03.08	18.03.08	17.03.08	17.04.08	19.03.08	19.03.08		
Sample Received Date	18.03.08	18.03.08	19.04.08	19.03.08	19.03.08	18.03.08	19.04.08	20.03.08	20.03.08		
Batch	19	19	23	20	20	19	23	22	22		
Sample Number(s)	651-656,670 (1)	637,657-662 (1)	813 (1)	699-705 (1)	706-712 (1)	663-669 (1)	814 (1)	764-770 (1)	771-777 (1)		
GRO (C4-C12)	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM089 [#]	<0.01 mg/l
MTBE	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM089 [#]	<0.01 mg/l
Benzene	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM089 [#]	<0.01 mg/l
Toluene	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM089 [#]	<0.01 mg/l
Ethyl benzene	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM089 [#]	<0.01 mg/l
m & p Xylene	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM089 [#]	<0.01 mg/l
o Xylene	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM089 [#]	<0.01 mg/l
Aliphatics C5-C6	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM089	<0.01 mg/l
Aliphatics >C6-C8	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM089	<0.01 mg/l
Aliphatics >C8-C10	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM089	<0.01 mg/l
Aliphatics >C10-C12	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM089	<0.01 mg/l
Aliphatics >C12-C16 Aqueous	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM174	<0.01 mg/l
Aliphatics >C16-C21 Aqueous	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM174	<0.01 mg/l
Aliphatics >C21-C35 Aqueous	<0.01	<0.01	-	0.69	<0.01	<0.01	-	<0.01	<0.01	TM174	<0.01 mg/l
Total Aliphatics C5-C35 Aqueous	<0.01	<0.01	-	0.69	<0.01	<0.01	-	<0.01	<0.01	TM61/89	<0.01 mg/l
Aromatics C6-C7	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM089 [#]	<0.01 mg/l
Aromatics >C7-C8	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM089 [#]	<0.01 mg/l
Aromatics >EC8-EC10	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM089	<0.01 mg/l
Aromatics >EC10-EC12	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM089	<0.01 mg/l
Aromatics >EC12-EC16 Aqueous	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM174	<0.01 mg/l
Aromatics >EC16-EC21 Aqueous	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM174	<0.01 mg/l
Aromatics >EC21-EC35 Aqueous	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM174	<0.01 mg/l
Total Aromatics C6-C35 Aqueous	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	TM61/89	<0.01 mg/l
TPH (Aliphatics and Aromatics C5-C35) Aqueous	<0.01	<0.01	-	0.69	<0.01	<0.01	-	<0.01	<0.01	TM61/89	<0.01 mg/l

Date 27.01.2009

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ISO 17025 accredited

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* Subcontracted test

» Shown on prev. report

Matrix: LIQUID

Location: M4 NEWPORT

Client Contact: Ian Swain

SVOC by GCMS

Phenols

2-Chlorophenol	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
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2-Methylphenol	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
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2-Nitrophenol	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
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2,4-Dichlorophenol	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
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2,4-Dimethylphenol	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
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2,4,5-Trichlorophenol	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
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2,4,6-Trichlorophenol	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
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4-Chloro-3-methylphenol	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
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4-Methylphenol	<0.001	NDP	<0.001	0.011	0.002	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
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4-Nitrophenol	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
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Pentachlorophenol	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
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Phenol	<0.001	NDP	<0.001	0.089	0.008	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
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Date 27.01.2009

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ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
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* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	SBHJ06	SBHJ07	SBHJ07	SBHJ08	SBHJ09	SBHJ10	SBHJ10	SBHK01	SBHK02	Method Code	LoD/Units
Depth (m)	4.10	10.40	10.40	7.40	2.20	10.00	10.00	6.80	11.20		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	17.03.08	17.03.08	17.04.08	18.03.08	18.03.08	17.03.08	17.04.08	19.03.08	19.03.08		
Sample Received Date	18.03.08	18.03.08	19.04.08	19.03.08	19.03.08	18.03.08	19.04.08	20.03.08	20.03.08		
Batch	19	19	23	20	20	19	23	22	22		
Sample Number(s)	651-656,670 (1)	637,657-662 (1)	813 (1)	699-705 (1)	706-712 (1)	663-669 (1)	814 (1)	764-770 (1)	771-777 (1)		
PAHs											
2-Chloronaphthalene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
2-Methylnaphthalene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Acenaphthene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Acenaphthylene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Anthracene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Benzo(a)anthracene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Benzo(a)pyrene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Benzo(b)fluoranthene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Benzo(ghi)perylene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Benzo(k)fluoranthene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Chrysene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Dibenzo(a,h)anthracene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Fluoranthene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Fluorene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Indeno(1,2,3-cd)pyrene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Naphthalene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Phenanthrene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Pyrene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Phthalates											
Bis(2-ethylhexyl) phthalate	<0.002	NDP	<0.002	<0.004	<0.002	NDP	<0.002	<0.002	<0.002	TM176	<0.002 mg/l
Butylbenzyl phthalate	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Di-n-butyl phthalate	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Di-n-Octyl phthalate	<0.005	NDP	<0.005	<0.01	<0.005	NDP	<0.005	<0.005	<0.005	TM176	<0.005 mg/l
Diethyl phthalate	<0.001	NDP	<0.001	<0.002	0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Dimethyl phthalate	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
Other Semi-volatiles											
1,2-Dichlorobenzene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l
1,2,4-Trichlorobenzene	<0.001	NDP	<0.001	<0.002	<0.001	NDP	<0.001	<0.001	<0.001	TM176	<0.001 mg/l

Date 27.01.2009

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* Subcontracted test

» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

[illegible]

Date 27.01.2009

Validated ☒
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ALcontrol Laboratories Analytical Services

Table Of Results

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* Subcontracted test
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Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	SBHJ06	SBHJ07	SBHJ07	SBHJ08	SBHJ09	SBHJ10	SBHJ10	SBHK01	SBHK02	Method Code	LoD/Units
Depth (m)	4.10	10.40	10.40	7.40	2.20	10.00	10.00	6.80	11.20		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	17.03.08	17.03.08	17.04.08	18.03.08	18.03.08	17.03.08	17.04.08	19.03.08	19.03.08		
Sample Received Date	18.03.08	18.03.08	19.04.08	19.03.08	19.03.08	18.03.08	19.04.08	20.03.08	20.03.08		
Batch	19	19	23	20	20	19	23	22	22		
Sample Number(s)	651-656,670 (1)	637,657-662 (1)	813 (1)	699-705 (1)	706-712 (1)	663-669 (1)	814 (1)	764-770 (1)	771-777 (1)		
Volatile Organic Compounds											
Dichlorodifluoromethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Chloromethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Vinyl Chloride	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Bromomethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Chloroethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Trichlorofluoromethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
trans-1-2-Dichloroethene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Dichloromethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Carbon Disulphide	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,1-Dichloroethene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,1-Dichloroethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Methyl Tertiary Butyl Ether	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
cis-1-2-Dichloroethene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Bromochloromethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Chloroform	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
2,2-Dichloropropane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208	<0.001 mg/l
1,2-Dichloroethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,1,1-Trichloroethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,1-Dichloropropene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Benzene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Carbontetrachloride	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Dibromomethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,2-Dichloropropane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Bromodichloromethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Trichloroethene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
cis-1-3-Dichloropropene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
trans-1-3-Dichloropropene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,1,2-Trichloroethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Toluene	<0.001	NDP	-	0.003	<0.001	0.006	-	-	-	TM208 [#]	<0.001 mg/l
1,3-Dichloropropane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l

Date 27.01.2009

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ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
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* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	SBHJ06	SBHJ07	SBHJ07	SBHJ08	SBHJ09	SBHJ10	SBHJ10	SBHK01	SBHK02	Method Code	LoD/Units
Depth (m)	4.10	10.40	10.40	7.40	2.20	10.00	10.00	6.80	11.20		
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID		
Sampled Date	17.03.08	17.03.08	17.04.08	18.03.08	18.03.08	17.03.08	17.04.08	19.03.08	19.03.08		
Sample Received Date	18.03.08	18.03.08	19.04.08	19.03.08	19.03.08	18.03.08	19.04.08	20.03.08	20.03.08		
Batch	19	19	23	20	20	19	23	22	22		
Sample Number(s)	651-656,670 (1)	637,657-662 (1)	813 (1)	699-705 (1)	706-712 (1)	663-669 (1)	814 (1)	764-770 (1)	771-777 (1)		
Volatile Organic Compounds (cont)											
Dibromochloromethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,2-Dibromoethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Tetrachloroethene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,1,1,2-Tetrachloroethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Chlorobenzene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Ethylbenzene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
p/m-Xylene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Bromoform	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Styrene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,1,2,2-Tetrachloroethane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
o-Xylene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,2,3-Trichloropropane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Isopropylbenzene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Bromobenzene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
2-Chlorotoluene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Propylbenzene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
4-Chlorotoluene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,2,4-Trimethylbenzene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
4-Isopropyltoluene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,3,5-Trimethylbenzene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,2-Dichlorobenzene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,4-Dichlorobenzene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
sec-Butylbenzene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
tert-Butylbenzene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,3-Dichlorobenzene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
n-Butylbenzene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,2-Dibromo-3-chloropropane	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,2,4-Trichlorobenzene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
Naphthalene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l
1,2,3-Trichlorobenzene	<0.001	NDP	-	<0.001	<0.001	<0.001	-	-	-	TM208 [#]	<0.001 mg/l

Date 27.01.2009

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ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	SBHK03	SBHK04	SWSJ08A	SWSJ21	SWSJ34	SWSJ37				Method Code	LoD/Units
Depth (m)	5.90	12.20	3.30	6.00	6.00	5.60					
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID					
Sampled Date	19.03.08	19.03.08	19.03.08	18.03.08	19.03.08	19.03.08					
Sample Received Date	20.03.08	20.03.08	20.03.08	19.03.08	20.03.08	20.03.08					
Batch	22	22	22	20	22	22					
Sample Number(s)	763,778-783 (1)	784-790 (1)	791-797 (1)	713-719 (1)	762,798-804 (1)	805-810 (1)					
Hardness Total	2100	690	1500	1800	570	850				TM152 [#]	<1 mg/l
Arsenic Dissolved (ICP-MS)	0.023	0.0021	0.0057	-	0.0062	0.0037				TM152 [#]	<0.00075 mg/l
Arsenic Dissolved (ICP-MS)	-	-	-	0.005	-	-				TM152 [#]	<0.001 mg/l
Beryllium Dissolved (ICP-MS)	-	-	<0.001	<0.001	<0.001	<0.001				TM152 [#]	<0.001 mg/l
Calcium Dissolved (ICP-MS)	360	120	440	690	270	110				TM152 [#]	<0.16 mg/l
Chromium Dissolved (ICP-MS)	0.015	0.009	0.005	0.002	<0.001	0.015				TM152 [#]	<0.001 mg/l
Copper Dissolved (ICP-MS)	0.0057	0.0028	0.0041	0.0041	0.0072	0.0042				TM152 [#]	<0.0016 mg/l
Iron Dissolved (ICP-MS)	0.08	0.09	0.86	0.07	<0.05	0.43				TM152 [#]	<0.05 mg/l
Lead Dissolved (ICP-MS)	0.0009	<0.0004	0.0010	1.5	0.053	<0.0004				TM152 [#]	<0.0004 mg/l
Lead Dissolved (ICP-MS)	-	-	-	-	-	-				TM152 [#]	<0.0005 mg/l
Magnesium Dissolved (ICP-MS)	340	120	88	<0.04	<0.04	150				TM152 [#]	<0.04 mg/l
Manganese Dissolved (ICP-MS)	0.86	0.56	18	0.002	0.006	0.85				TM152 [#]	<0.001 mg/l
Nickel Dissolved (ICP-MS)	0.017	0.0039	0.022	0.010	0.0049	0.0069				TM152 [#]	<0.0015 mg/l
Selenium Dissolved (ICP-MS)	0.039	0.002	0.006	0.003	<0.001	0.009				TM152 [#]	<0.001 mg/l
Vanadium Dissolved (ICP-MS)	-	-	0.003	<0.001	0.001	0.007				TM152 [#]	<0.001 mg/l
Cadmium Total (HNO3 Digest)	0.0034	<0.0004	0.0097	0.0005	0.045	<0.0004				TM152	<0.0004 mg/l
Zinc Total (HNO3 Digest)	0.54	0.089	0.95	3.2	82	1.6				TM152	<0.003 mg/l
Mercury Total (Aqua Regia)	0.00004	<0.00001	0.00010	<0.00001	0.00005	<0.00001				TM183	<0.00001 mg/l
Total Alkalinity as CaCO3	1100	1000	630	1600	1600	1500				TM043 [#]	<2 mg/l
BOD	<1	3	<1	<1	15	2				TM045 [#]	<1 mg/l
COD	1300	78	480	2000	280	530				TM107 [#]	<5 mg/l
Potassium Dissolved	75	42	2.6	150	340	38				TM083	<0.2 mg/l
Sodium Dissolved	3500	590	240	59	200	980				TM083	<0.2 mg/l
Nitrate as NO3	<0.3	<0.3	0.7	<0.3	<0.3	<0.3				TM102 [#]	<0.3 mg/l
Sulphate (soluble)	280	500	1200	9	8	<3				TM098 [#]	<3 mg/l
Chloride	5200	350	110	110	45	950				TM097 [#]	<1 mg/l
Sulphide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				TM101	<0.5 mg/l
Ammoniacal Nitrogen as N	35	5.6	1.1	2.1	1.2	18				TM099 [#]	<0.2 mg/l
Hexavalent Chromium	-	-	-	-	-	-				TM151 [#]	<0.03 mg/l
Phenols Monohydric	<0.01	<0.01	<0.01	0.06	<0.01	-				TM062 [#]	<0.01 mg/l
Thiocyanate	-	-	-	-	-	-				TM153 [#]	<0.05 mg/l

Date 27.01.2009

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- # ISO 17025 accredited
- M MCERTS accredited
- * Subcontracted test
- » Shown on prev. report

Client Contact: Ian Swain

[illegible]

Date 27.01.2009

Validated

Preliminary



ALcontrol Laboratories Analytical Services

ISO 17025 accredited

^M MCERTS accredited

* Subcontracted test

» Shown on prev. report

Job Number: 08/00393/02/01

Client: Norwest Holst Ltd

Client Ref. No.: F15056

Matrix: LIQUID

Location: M4 NEWPORT

Client Contact: Ian Swain

[illegible]

Date 27.01.2009

Validated ☒
Preliminary ☐

ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	SBHK03	SBHK04	SWSJ08A	SWSJ21	SWSJ34	SWSJ37				Method Code	LoD/Units
Depth (m)	5.90	12.20	3.30	6.00	6.00	5.60					
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID					
Sampled Date	19.03.08	19.03.08	19.03.08	18.03.08	19.03.08	19.03.08					
Sample Received Date	20.03.08	20.03.08	20.03.08	19.03.08	20.03.08	20.03.08					
Batch	22	22	22	20	22	22					
Sample Number(s)	763,778-783 (1)	784-790 (1)	791-797 (1)	713-719 (1)	762,798-804 (1)	805-810 (1)					
PAHs											
2-Chloronaphthalene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
2-Methylnaphthalene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Acenaphthene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Acenaphthylene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Anthracene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Benzo(a)anthracene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Benzo(a)pyrene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Benzo(b)fluoranthene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Benzo(ghi)perylene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Benzo(k)fluoranthene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Chrysene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Dibenzo(a,h)anthracene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Fluoranthene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Fluorene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Indeno(1,2,3-cd)pyrene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Naphthalene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Phenanthrene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Pyrene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Phthalates											
Bis(2-ethylhexyl) phthalate	<0.002	<0.002	0.020	<0.002	<0.002	0.004				TM176	<0.002 mg/l
Butylbenzyl phthalate	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Di-n-butyl phthalate	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Di-n-Octyl phthalate	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				TM176	<0.005 mg/l
Diethyl phthalate	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Dimethyl phthalate	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
Other Semi-volatiles											
1,2-Dichlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l
1,2,4-Trichlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				TM176	<0.001 mg/l

Date 27.01.2009

Validated ☒
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ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	SBHK03	SBHK04	SWSJ08A	SWSJ21	SWSJ34	SWSJ37				Method Code	LoD/Units
Depth (m)	5.90	12.20	3.30	6.00	6.00	5.60					
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID					
Sampled Date	19.03.08	19.03.08	19.03.08	18.03.08	19.03.08	19.03.08					
Sample Received Date	20.03.08	20.03.08	20.03.08	19.03.08	20.03.08	20.03.08					
Batch	22	22	22	20	22	22					
Sample Number(s)	763,778-783 (1)	784-790 (1)	791-797 (1)	713-719 (1)	762,798-804 (1)	805-810 (1)					
Volatile Organic Compounds											
Dichlorodifluoromethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Chloromethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Vinyl Chloride	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Bromomethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Chloroethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Trichlorofluoromethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
trans-1-2-Dichloroethene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Dichloromethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Carbon Disulphide	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,1-Dichloroethene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,1-Dichloroethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Methyl Tertiary Butyl Ether	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
cis-1-2-Dichloroethene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Bromochloromethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Chloroform	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
2,2-Dichloropropane	-	-	<0.001	<0.001	<0.001	<0.001				TM208	<0.001 mg/l
1,2-Dichloroethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,1,1-Trichloroethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,1-Dichloropropene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Benzene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Carbontetrachloride	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Dibromomethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,2-Dichloropropane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Bromodichloromethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Trichloroethene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
cis-1-3-Dichloropropene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
trans-1-3-Dichloropropene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,1,1,2-Trichloroethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Toluene	-	-	<0.001	0.001	0.005	<0.001				TM208 [#]	<0.001 mg/l
1,3-Dichloropropane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l

Date 27.01.2009

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ALcontrol Laboratories Analytical Services

Table Of Results

ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Matrix: LIQUID
Location: M4 NEWPORT
Client Contact: Ian Swain

Sample Identity	SBHK03	SBHK04	SWSJ08A	SWSJ21	SWSJ34	SWSJ37				Method Code	LoD/Units
Depth (m)	5.90	12.20	3.30	6.00	6.00	5.60					
Sample Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID					
Sampled Date	19.03.08	19.03.08	19.03.08	18.03.08	19.03.08	19.03.08					
Sample Received Date	20.03.08	20.03.08	20.03.08	19.03.08	20.03.08	20.03.08					
Batch	22	22	22	20	22	22					
Sample Number(s)	763,778-783 (1)	784-790 (1)	791-797 (1)	713-719 (1)	762,798-804 (1)	805-810 (1)					
Volatile Organic Compounds (cont)											
Dibromochloromethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,2-Dibromoethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Tetrachloroethene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,1,1,2-Tetrachloroethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Chlorobenzene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Ethylbenzene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
p/m-Xylene	-	-	0.010	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Bromoform	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Styrene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,1,2,2-Tetrachloroethane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
o-Xylene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,2,3-Trichloropropane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Isopropylbenzene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Bromobenzene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
2-Chlorotoluene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Propylbenzene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
4-Chlorotoluene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,2,4-Trimethylbenzene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
4-Isopropyltoluene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,3,5-Trimethylbenzene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,2-Dichlorobenzene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,4-Dichlorobenzene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
sec-Butylbenzene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
tert-Butylbenzene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,3-Dichlorobenzene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
n-Butylbenzene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,2-Dibromo-3-chloropropane	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,2,4-Trichlorobenzene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
Naphthalene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l
1,2,3-Trichlorobenzene	-	-	<0.001	<0.001	<0.001	<0.001				TM208 [#]	<0.001 mg/l

Date 27.01.2009

ALcontrol Laboratories Analytical Services

Table Of Results - Appendix

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Report Key :

NDP No Determination Possible
 ACM Asbestos Containing Materia
 # ISO 17025 accredited

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03x10⁻⁷
 * Subcontracted test
 » Result previously reported (Incremental reports only)
 M MCERTS Accredited
 EC Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control.

Summary of Method Codes contained within report :

Method No.	Reference	Description	ISO 17025 Accredited	MCERTS Accredited	Wet/Dry Sample ¹	Surrogate Corrected
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples	✓		NA	
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) by Oxygen Meter	✓		NA	
TM062	MEWAM BOOK 124 1988.HMSO/ Method 17.7, Second Site property, March 2003	Determination of Phenolic compounds by HPLC with electro-chemical detection	✓		NA	
TM083	Method 3111, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 7610	Determination of Sodium and Potassium by Flame Photometer			NA	
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)			NA	
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)	✓		NA	
TM097	Modified: US EPA Method 325.1 & 325.2	Determination of Chloride using the Kone Analyser	✓		NA	
TM098	Method 4500E, AWWA/APHA, 20th Ed., 1999	Determination of Sulphate using the Kone Analyser	✓		NA	
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser	✓		NA	
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser			NA	
TM102	Method 4500H, AWWA/APHA, 20th Ed., 1999	Determination of Total Oxidised Nitrogen using the Kone Analyser	✓		NA	
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit	✓		NA	
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter	✓		NA	
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser	✓		NA	

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

ALcontrol Laboratories Analytical Services

Table Of Results - Appendix

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Report Key :

NDP No Determination Possible
 ACM Asbestos Containing Material
 # ISO 17025 accredited

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03x10⁻⁷
 * Subcontracted test
 » Result previously reported (Incremental reports only)
 M MCERTS Accredited
 EC Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control.

Summary of Method Codes contained within report :

Method No.	Reference	Description	ISO 17025 Accredited	MCERTS Accredited	Wet/Dry Sample ¹	Surrogate Corrected
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS			NA	
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS	✓		NA	
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the "Skalar SANS+ System" Segmented Flow Analyser			NA	
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the "Skalar SANS+ System" Segmented Flow Analyser	✓		NA	
TM174		Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID			NA	
TM176		Determination of SVOCs in Water by GCMS			NA	
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			NA	
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters			NA	
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters	✓		NA	
TM61/89		see TM061 and TM089 for details			NA	

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

ALcontrol Laboratories Analytical Services Table Of Results - Appendix

Job Number: 08/00393/02/01
Client: Norwest Holst Ltd
Client Ref. No.: F15056

Summary of Coolbox temperatures

[illegible]

1. Head Office & Geotechnical Laboratory Parkside Lane, Dewsbury Road, Leeds LS11 5SX Tel: 0113 271 1111 Fax: 0113 276 0472	2. Scottish Office & Geotechnical Laboratory Unit 4, 28 Firth Road, Houston Industrial Est, Livingston, West Lothian EH54 5DJ Tel: 01506 434300 Fax: 01506 442593	3. Southern Office Astral House, Imperial Way, Watford, Hertfordshire WD24 4WW Tel: 01923 204040 Fax: 01923 204069	4. South West & Wales Region C1 Vantage Park, Old Gloucester Road, Hambrook, Bristol BS16 1GW Tel: 01454 252 252 Fax: 01454 776 453	Additional Offices Widnes and Dublin
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