ALcontrol Laboratories

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Newport City Council
Civic Centre
Newport
NP20 4UR

Attention: Meirion Humphreys

CERTIFICATE OF ANALYSIS

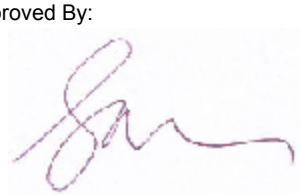
Date:	11 February 2015
Customer:	H_NCC_NPT
Sample Delivery Group (SDG):	150131-24
Your Reference:	
Location:	Docksway Landfill Site
Report No:	301455

We received 9 samples on Saturday January 31, 2015 and 9 of these samples were scheduled for analysis which was completed on Wednesday February 11, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	150131-24	**Location:**	Docksway Landfill Site	**Order Number:**	700072673
Job:	H_NCC_NPT-3	**Customer:**	Newport City Council	**Report Number:**	301455
Client Reference:		**Attention:**	Meirion Humphreys	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
10751615	GW03-02			30/01/2015
10751616	GW03-05			30/01/2015
10751618	GW07-07			30/01/2015
10751609	SW11			30/01/2015
10751610	SW23			30/01/2015
10751611	SW24			30/01/2015
10751613	SW25			30/01/2015
10751614	SW26			30/01/2015
10751607	SW1A			30/01/2015

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

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LIQUID

Results Legend

X Test

N No Determination Possible

Lab Sample No(s)	10751615	10751616	10751618	10751609	10751610	10751611	10751613	10751614	10751607
Customer Sample Reference	GW03-02	GW03-05	GW07-07	SW11	SW23	SW24	SW25	SW26	SW1A
AGS Reference									
Depth (m)									
Container	1plastic (ALE221)	H2SO4 (ALE244)	1plastic (ALE221)	250ml BOD (ALE21)	1plastic (ALE221)	H2SO4 (ALE244)	1plastic (ALE221)	250ml BOD (ALE21)	H2SO4 (ALE244)	1plastic (ALE221)	H2SO4 (ALE244)	1plastic (ALE221)	250ml BOD (ALE21)	H2SO4 (ALE244)	1plastic (ALE221)	250ml BOD (ALE21)	H2SO4 (ALE244)	1plastic (ALE221)	250ml BOD (ALE21)	H2SO4 (ALE244)	1plastic (ALE221)	250ml BOD (ALE21)	H2SO4 (ALE244)	1plastic (ALE221)	250ml BOD (ALE21)	H2SO4 (ALE244)	1plastic (ALE221)	250ml BOD (ALE21)	H2SO4 (ALE244)
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 9		X	X		X		X		X		X		X		X		X		X		X		X		X		X
Anions by Kone (w)	All	NDPs: 0 Tests: 9	X		X		X		X		X		X		X		X		X		X		X		X		X		
BOD True Total	All	NDPs: 0 Tests: 6						X			X		X			X			X			X			X				
COD Unfiltered	All	NDPs: 0 Tests: 9	X			X	X		X		X		X			X			X			X			X				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 9	X		X		X		X		X		X		X		X		X		X		X		X				
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 2													X				X										
pH Value	All	NDPs: 0 Tests: 9	X		X		X		X		X		X		X		X		X		X		X						
Suspended Solids	All	NDPs: 0 Tests: 2													X				X										

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Client Reference:		**Attention:**	Meirion Humphreys	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample R	GW03-02	GW03-05	GW07-07	SW11	SW23	SW24
			Depth (m)	.	.	.	.	.	.
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
			Date Sampled	30/01/2015	30/01/2015	30/01/2015	30/01/2015	30/01/2015	30/01/2015
			Sample Time	.	.	.	.	.	.
			Date Received	31/01/2015	31/01/2015	31/01/2015	31/01/2015	31/01/2015	31/01/2015
			SDG Ref	150131-24	150131-24	150131-24	150131-24	150131-24	150131-24
			Lab Sample No.(s)	10751615	10751616	10751618	10751609	10751610	10751611
			AGS Reference						
BOD, unfiltered	<1 mg/l	TM045					<1 #	3.48 #	2.47 #
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		34.9 #	39.4 #	0.862 #	<0.2 #	12.7 #	0.224 #
COD, unfiltered	<7 mg/l	TM107		37.4 #	32.8 #	17.1 #	33.7 #	76.4 #	21.5 #
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120		1.4 #	1.75 #	0.924 #	0.422 #	1.77 #	0.478 #
Chloride	<2 mg/l	TM184		52.6 #	120 #	49.5 #	11.3 #	273 #	25.2 #
pH	<1 pH Units	TM256		7.55 #	8.06 #	7.84 #	8.07 #	7.8 #	8.12 #

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Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-5&+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample R	SW25	SW26	SW1A			
			Depth (m)	.	.	.			
			Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)			
			Date Sampled	30/01/2015	30/01/2015	30/01/2015			
			Sample Time	.	.	.			
			Date Received	31/01/2015	31/01/2015	31/01/2015			
			SDG Ref	150131-24	150131-24	150131-24			
			Lab Sample No.(s)	10751613	10751614	10751607			
			AGS Reference						
Suspended solids, Total	<2 mg/l	TM022		22.5 #	66 #				
BOD, unfiltered	<1 mg/l	TM045		3 #	<1 #	<1 #			
Oxygen, dissolved	<0.3 mg/l	TM046		9.61 #	6.74 #				
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		4.83 #	217 #	0.246 #			
COD, unfiltered	<7 mg/l	TM107		55.3 #	291 #	9.91 #			
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120		1.09 #	3.99 #	0.542 #			
Chloride	<2 mg/l	TM184		52.6 #	364 #	91.5 #			
pH	<1 pH Units	TM256		7.97 #	8.08 #	8.03 #			

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Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters		
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids		
TM046	Method 4500G, AWWA/APHA, 20th Ed., 1999	Measurement of Dissolved Oxygen by Oxygen Meter		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		

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

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Test Completion Dates

Lab Sample No(s)	10751615	10751616	10751618	10751609	10751610	10751611	10751613	10751614	10751607
Customer Sample Ref.	GW03-02	GW03-05	GW07-07	SW11	SW23	SW24	SW25	SW26	SW1A
AGS Ref.									
Depth									
Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Ammoniacal Nitrogen	10-Feb-2015	10-Feb-2015	10-Feb-2015	10-Feb-2015	10-Feb-2015	10-Feb-2015	10-Feb-2015	10-Feb-2015	10-Feb-2015
Anions by Kone (w)	11-Feb-2015	11-Feb-2015	11-Feb-2015	11-Feb-2015	11-Feb-2015	11-Feb-2015	11-Feb-2015	11-Feb-2015	11-Feb-2015
BOD True Total				05-Feb-2015	05-Feb-2015	05-Feb-2015	05-Feb-2015	05-Feb-2015	05-Feb-2015
COD Unfiltered	06-Feb-2015	09-Feb-2015	07-Feb-2015	09-Feb-2015	09-Feb-2015	09-Feb-2015	09-Feb-2015	09-Feb-2015	09-Feb-2015
Conductivity (at 20 deg.C)	06-Feb-2015	06-Feb-2015	06-Feb-2015	06-Feb-2015	06-Feb-2015	06-Feb-2015	06-Feb-2015	06-Feb-2015	09-Feb-2015
Dissolved Oxygen by Probe							04-Feb-2015	04-Feb-2015	
pH Value	11-Feb-2015	11-Feb-2015	11-Feb-2015	11-Feb-2015	11-Feb-2015	11-Feb-2015	11-Feb-2015	11-Feb-2015	09-Feb-2015
Suspended Solids							11-Feb-2015	11-Feb-2015	

SDG:	150131-24	**Location:**	Docksway Landfill Site	**Order Number:**	700072673
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Appendix

General

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

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

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

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

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

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

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

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

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

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

11. Results relate only to the items tested.

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

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

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

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

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

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

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

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

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

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

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

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

Sample Deviations

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

Asbestos

Identification of Asbestos in Bulk Materials & Soils

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

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

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

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

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

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