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<b>Customer</b>	<b>Nikita Coulter</b> <b>The Recycling Village Ltd.</b> <b>Unit 21</b> <b>Duleek Business Park</b> <b>Duleek</b> <b>Co. Meath</b>	<b>Lab Report Ref. No.</b>	<b>1438/009/02</b>
<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH1 2.0m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
% Dry Matter	302	Drying @ 104 C	83.35	%	
Acenaphthene (Soil)	200	GCMS	<0.05	mg/Kg	
Acenaphthylene (Soil)	200	GCMS	<0.05	mg/Kg	
Anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Antimony (Leachate)	128	ICPMS	3.765	ug/Kg	
Antimony Solid (OES)	224	ICP-OES	505.168	ug/Kg	
Arsenic (Leachate)	128	ICPMS	33.7	ug/Kg	
Arsenic Solid (OES)	224	ICP-OES	5540.7	ug/Kg	
Barium (Leachate)	128	ICPMS	420.7	ug/Kg	
Barium Solid (OES)	224	ICP-OES	36572.4	ug/Kg	
Benzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Benzo(a)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(a)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(b)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(ghi)perylene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(k)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
BTEX (soil)	198	GC-FID	<0.5	mg/Kg	
Cadmium (Leachate)	128	ICPMS	0.105	ug/Kg	
Cadmium Solid (OES)	224	ICP-OES	<10.00	ug/Kg	
Chloride (Leachate WAC)	190	IC	2137.64	mg/Kg	
Chloride (Solid)	100	Colorimetry	5.91	mg/Kg	
Chromium (Leachate)	128	ICPMS	451.5	ug/Kg	
Chromium Solid (OES)	224	ICP-OES	16940.2	ug/Kg	
Chrysene (Soil)	200	GCMS	<0.05	mg/Kg	

**Signed :**   
**Aoife Harmon - Technical Supervisor**

**Date : 11/04/2014**

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU Drinking water Regulations (SI 278 2007)

All organic results are analysed as received and all results are corrected for dry weight at 104 C

Results shall not be reproduced, except in full, without the approval of Fitz Scientific

Results contained in this report relate only to the samples tested

(P) : Presumptive Results

\*\*The analytical result for this parameter may not be reflective of the concentration present at the time of sampling. The maximum recommended preservation time for this parameter has been exceeded.



2014

# The Recycling Village Ltd

## Soil & Groundwater Baseline Report 2014

April 2014

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WEML  
1 Castle Grove  
Kilgobbin Wood  
Sandyford  
Dublin 18





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## **1.0 INTRODUCTION.**

### **1.1 Background.**

Wood Environmental Management Ltd (WEML) was commissioned by The Recycling Village Ltd to carry out a baseline soil and groundwater site investigation at the existing WEEE recycling facility located at Unit 21 Duleek Business Park Commons, Duleek, Co Meath.

The site investigation was carried out on Tuesday 18<sup>th</sup> March 2014. This report details the work carried out at the site and presents the results, findings and conclusions of the site investigation.

### **1.2 Scope of Site Investigation.**

The aim of the site investigation was to establish the existing soil and shallow groundwater quality/contamination conditions in order to establish the baseline soil and shallow groundwater conditions.

The scope of the site investigation included:

- Coring 3 no. boreholes to a maximum depth of 5 metres at predetermined locations across the site (Figure 1)
- Soil/borehole logs
- Laboratory analysis of soil samples from the top, mid and bottom of each borehole
- Laboratory analysis of shallow (perched) groundwater from each borehole (where encountered)

### **1.3 Site Investigation Methodology.**

The location of each of the 3 boreholes was agreed on site with The Recycling Village Ltd (Figure 1) to reflect the direction of the deep aquifer regional groundwater flow (Figure 2). Borehole 1 was located upstream of the aquifer groundwater flow, boreholes 2 and 3 were located downstream of the aquifer groundwater flow.

Sampling was carried out using a percussion drill rig to obtain core samples at each location up-to a maximum depth of 5 meters below existing ground level where ground conditions allowed. Prior to coring, each location was scanned for underground services or cables.

Soil samples were taken from each of the 3 boreholes at the surface, mid borehole depth and bottom of the borehole and collected into labelled glass containers for analysis by an accredited third party laboratory.

Each soil core was logged and recorded on site by the drilling contractor (Appendix 1).

Upon completion of the borehole, a permanent piezometer was installed to allow for future groundwater sampling and analysis. Where groundwater was encountered, the borehole was bailed out and left to recharge prior to a sample of groundwater being collected into labelled glass containers for analysis by an accredited third party laboratory.

The monitoring boreholes were finished with pea gravel, bentonite seal and capped with a flush, trafficable plate.

## **2.0 SITE DETAILS**

### **2.1 Site Geology & Hydrogeology**

The soil composition in the vicinity of the site is comprised of Limestone till (Carboniferous), lake sediments undifferentiated, shales and sandstones till (Namurian).

The bedrock is classified as marine shelf facies; limestone & calcareous shale from the age bracket Palaeozoic, Carboniferous, Mississippian.

The bedrock aquifer is classified as Regionally Important Aquifer - Karstified (diffuse).

The flow of the aquifer in the area of the site is in a north west to south east direction (Figure 2).

### **2.2 Site Location and History**

The site is a purpose built industrial facility that was constructed in 2005 on a green field site.

The area of the site is approximately 6,313m<sup>2</sup> (1.56 acres). The site is fully covered with concrete and houses one large building measuring approximately 1,700m<sup>2</sup>. The site was originally used as a light industrial, steel fabrication facility over the period 2005-2011.



Based on the known recent development and previous use of the site there are no expected or known soil or groundwater contamination issues below the site as a result of historic site activities.

### **2.3 Existing Site Use**

The site is currently occupied by The Recycling Village Ltd and is operated as a waste electronic and electrical equipment (WEEE) recycling facility.

The recycling process is a dry process. No process effluent is produced at the facility.

The storage yard at the facility is covered with concrete to prevent potential soil and groundwater pollution from potential spillages and leaks.

There are no direct emissions to ground or groundwater from the facility.

The site interceptor sump has been emptied and inspected by a third party and declared intact.

Consequently, the existing concrete yard, interceptor sump, site Environmental management system (EMS), emissions monitoring, emergency & spillage procedures will help to protect the soil and groundwater underneath the site from potential pollution from spills and activities taking place at the facility.

There are no known soil or groundwater contamination issues below the site as a result of current site activities.

## **3.0 SITE INVESTIGATION**

### **3.1 Sampling Locations**

The location of each of the 3 sampling boreholes was agreed on site with The Recycling Village Ltd management (Figure 1). One sampling location was chosen in the car park of the facility upstream of the groundwater flow, the other 2 boreholes were located in the main facility yard down-stream of the groundwater flow.

The description, depth and location of each sampling borehole is shown in the table below.

**Table 1. Location of Sampling Boreholes & Depth.**

Borehole Ref	Location/Area of Site	Depth of Borehole	Samples Taken
1	Car Park (upstream of groundwater flow)	4.0 m	Soil 0m Soil 2.0m Soil 4.0m
2	Mid Site near Interceptor Sump (upstream of groundwater flow)	3.0 m	Soil 0m Soil 1.5m Soil 3.0m Groundwater
3	NE Site Boundary (upstream of groundwater flow)	5.3 m	Soil 0m Soil 2.5m Soil 5.0m Groundwater

### 3.2 Sampling Procedures

Each sampling location was cored by JS Drilling Ltd using a RGS 150 tracked window sampling percussion rig, under the supervision of Andrew Wood, WEML. Each soil core was logged and recorded on site by JS Drilling Ltd. Borehole logs are provided in Appendix 1.

Immediately following core removal, each recovered soil sample was observed for signs or evidence of contamination (eg. visual and olfactory). WEML collected a soil sample from the relevant depth of the core and placed it directly into a sealed, labelled glass containers to prevent potential cross contamination.

WEML collected soil samples from each borehole at the surface, mid depth and bottom of the borehole.

The soil samples were dispatch by The Recycling Village Ltd to Fitz Scientific Laboratory, Drogheda, Co Louth for analysis.

Upon completion of the borehole, a permanent piezometer was installed to allow for future groundwater sampling and analysis. Where shallow groundwater was encountered, the borehole was bailed out and left to recharge prior to a sample of groundwater being collected into labelled glass containers for analysis by an accredited third party laboratory.

The monitoring boreholes were finished with pea gravel, bentonite seal and capped with a flush, trafficable plate.

### 3.3 Laboratory Analysis

A total of 9 soil samples, three each from borehole and 2 groundwater samples (boreholes 2 and 3), were analysed by Fitz Scientific Laboratory.

Groundwater samples were analysed for a range of parameters including;

- Heavy Metals
- Physico parameters
- Inorganic compounds
- Nutrients
- Bacteriological

Soil samples were analysed for a range of parameters including;

- Heavy Metals
- PAH's
- BTEX
- Mineral oil
- PCB's

Leachate tests were also carried out on the soil samples.

Analytical results are summarized below. Full copies of the laboratory results and certificates are presented in Appendix 2.



## 4.0 RESULTS

The following table presents a summary of the soil and groundwater results. Full analytical results are presented in Appendix 2.

**Table 2. Groundwater Results.**

Parameter	Unit	Standard (s)	BH 1	BH 2	BH 3
Arsenic	ug/l	60* (7.5 <sup>1</sup> )	No Sample taken. BH1 was dry.	1.455	1.434
Barium	ug/l	625*		68.97	61.62
Boron	ug/l	750 <sup>1</sup>		134.2	173.6
Calcium	ug/l	-		63.97	131.3
Cadmium	ug/l	6* (3.75 <sup>1</sup> )		0.18	0.141
Chromium	ug/l	30*		5.803	5.377
Copper	ug/l	75* (1,500 <sup>1</sup> )		23.96	12.58
Cyanide	ug/l	1,500* (37.5 <sup>1</sup> )		<5	<5
Iron	ug/l	-		682.6	765.1
Lead	ug/l	75* (18.75 <sup>1</sup> )		12.52	1.479
Magnesium	ug/l	-		3.145	10.01
Manganese	ug/l	-		44.55	60.1
Mercury	ug/l	0.3* (0.75 <sup>1</sup> )		<0.04	0.045
Nickel	ug/l	75* (15 <sup>1</sup> )		7.195	3.26
Selenium	ug/l	-		1.726	1.792
Silver	ug/l	-		<0.33	<0.33
Zinc	ug/l	800*		29.25	11.29
Phenols	ug/l	2,000*		<0.10	<0.10
pH	Units			8.4	7.8
Conductivity	uscm@20oC	1875 <sup>1</sup>		476	690
Potassium	mg/l			8.422	10.54
Phosphate	mg/l as P			0.028	<0.024
Sodium	mg/l	150 <sup>1</sup>		34.68	19.47
Ammonia	mg/l as N			0.42	<0.01
Nitrite	mg/l as N	375,000 <sup>1</sup>		0.007	<0.002
Nitrite as NO2	mg/l as NO2			<0.050	<0.050
Nitrate	mg/l as N	37.5 <sup>1</sup>		0.990	2.940
Nitrate as NO3	mg/l as NO3		4.384	13.02	
Dissolved O2	mg/l		6.5	9.2	
Alkalinity	mg/l CaCO3		30	211	
TOC	mg/l		5.76	7.04	
Nitrogen	mg/l as N		1.00	2.94	
Chloride	mg/l	187.5 <sup>1</sup>	73.59	24.81	
Flouride	mg/l		0.50	0.29	
Sulphate	mg/l	187.5 <sup>1</sup>	112.82	200.63	
F.Coliforms	Cfu/100 ml		0	0	
Coliforms	Cfu/100 ml		0	17	
Phosphate	mg/l as PO4		0.086	0.067	

\*Dutch Groundwater Intervention Level as per 'Technical evaluation of the Intervention Values for Soil/sediment and Groundwater Human and ecotoxicological risk assessment and derivation of risk limits for soil, aquatic sediment and groundwater, 2001'.

<sup>1</sup>EC Environmental Objectives (Groundwater) Regulations, SI 9 of 2010.

**Table 3. Soil Results – Borehole 1.**

Parameter & Units	Intervention Value*	0m	2.0m	4.0m
PAH (sum) (mg/kg)	40	<0.05	<0.05	<0.05
% Dry Matter (%)	-	77.97	83.35	90.78
TOC (%)	-	2.62	1.534	<1.0
BTEX (mg/kg)	1 (Benzene)	<0.5	<0.5	<0.5
PCB's (mg/kg)	1 (Total)	<0.005	<0.005	<0.005
Mineral Oil (mg/kg)	5,000	<2.5	<2.5	<2.5
Arsenic (ug/kg)	55,000	3741.7	5540.7	5041.86
Barium (ug/kg)	625,000	49203.6	36572.4	47566.6
Cadmium (ug/kg)	12,000	324.66	<10.00	164.665
Chromium (ug/kg)	380,000	8752.76	16940.2	13644.8
Copper (ug/kg)	190,000	17421.1	15916.8	19565.9
Mercury (ug/kg)	10,000	81.59	31.03	32.91
Molybdenum (ug/kg)	200,000	982.517	267.593	563.765
Nickel (ug/kg)	210,000	17372.5	23265.4	21835
Lead (ug/kg)	530,000	14090.4	7859.38	8198.09
Antimony (ug/kg)	-	1130.27	505.168	630.34
Selenium (ug/kg)	-	2054.42	3064.55	2877.3
Zinc (ug/kg)	720,000	42300.3	36912.5	32737.9
Chloride (mg/kg)	-	11.79	5.91	7.77
Flouride (mg/kg)	-	2.10	2.05	2.29
Sulphate (mg/kg as SO4)	-	<1.39	21.06	3.29

**Table 4. Soil Results – Borehole 2.**

Parameter & Units	Intervention Value*	0m	1.0m	2.0m
PAH (sum) (mg/kg)	40	<0.05	<0.05	<0.05
% Dry Matter (%)	-	90.09	86.75	81.5
TOC (%)	-	<1.0	3.724	<1.0
BTEX (mg/kg)	1 (Benzene)	<0.5	<0.5	<0.5
PCB's (mg/kg)	1 (Total)	<0.005	<0.005	<0.005
Mineral Oil (mg/kg)	5,000	3.52	<2.5	<2.5
Arsenic (ug/kg)	55,000	2912.43	5886.82	5160.46
Barium (ug/kg)	625,000	36640.7	266276	96145.3
Cadmium (ug/kg)	12,000	214.277	490.061	293.275
Chromium (ug/kg)	380,000	8696.86	8527.72	16971.3
Copper (ug/kg)	190,000	11871.4	19598.6	19702.4
Mercury (ug/kg)	10,000	9.618	<0.2	<0.2
Molybdenum (ug/kg)	200,000	747.518	478.331	1206.59
Nickel (ug/kg)	210,000	13003.2	23955.7	27264.4
Lead (ug/kg)	530,000	6306.73	7653.02	9024.64
Antimony (ug/kg)	-	<10	474.41	364.859
Selenium (ug/kg)	-	1582.64	3250.53	3605.59
Zinc (ug/kg)	720,000	22248.5	38391.5	47017.5
Chloride (mg/kg)	-	7.85	10.58	22.36
Flouride (mg/kg)	-	1.98	2.07	1.92
Sulphate (mg/kg as SO4)	-	112.32	4.6	15.51



**Table 5. Soil Results – Borehole 3.**

Parameter & Units	Intervention Value*	0m	2.5m	5.0m
PAH (sum) (mg/kg)	40	<0.05	<0.05	<0.05
% Dry Matter (%)	-	80.72	79.88	83.59
TOC (%)	-	<1.0	<1.0	<1.0
BTEX (mg/kg)	1 (Benzene)	<0.5	<0.5	<0.5
PCB's (mg/kg)	1 (Total)	<0.005	<0.005	<0.005
Mineral Oil (mg/kg)	5,000	<2.5	6.46	5.55
Arsenic (ug/kg)	55,000	6738.73	4464.46	6594.04
Barium (ug/kg)	625,000	48674.9	51053.7	9635.96
Cadmium (ug/kg)	12,000	471.803	345.309	<10.00
Chromium (ug/kg)	380,000	13175.2	11570.7	1792.88
Copper (ug/kg)	190,000	22633.8	23632.2	19757.4
Mercury (ug/kg)	10,000	49.1	77.09	47.47
Molybdenum (ug/kg)	200,000	730.77	481.31	345.197
Nickel (ug/kg)	210,000	24590.9	29380.9	32632.9
Lead (ug/kg)	530,000	10316.9	12445.6	13362.1
Antimony (ug/kg)	-	498.208	354.06	412.68
Selenium (ug/kg)	-	3217.35	153.62	1323.5
Zinc (ug/kg)	720,000	38621.4	48259.6	32025.6
Chloride (mg/kg)	-	7.64	8.85	8.69
Flouride (mg/kg)	-	2.51	2.13	2.02
Sulphate (mg/kg as SO4)	-	62.16	<1.39	10.89

\*Dutch Soil Intervention Level as per 'Technical evaluation of the Intervention Values for Soil/sediment and Groundwater Human and ecotoxicological risk assessment and derivation of risk limits for soil, aquatic sediment and groundwater, 2001'.

## 5.0 DISCUSSION OF RESULTS

Based on an assessment of the above soil and groundwater laboratory results and comparison to available published environmental quality standards, none of the parameters tested for are above the published standards.

## 6.0 CONCLUSION

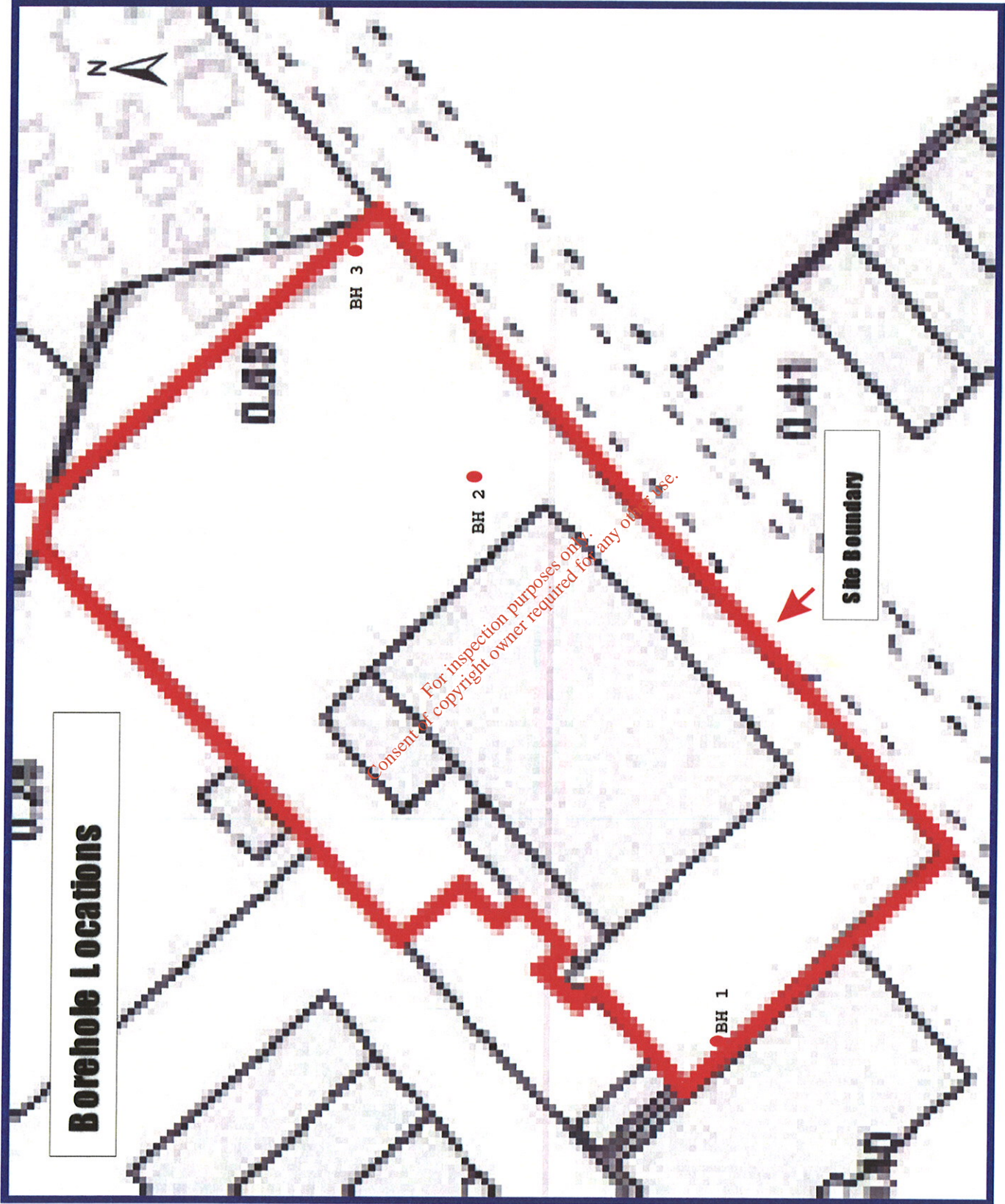
Based on the above site investigation, sampling and analytical results it is concluded that;

- There is no evidence of significant soil or groundwater contamination for the parameters analysed for in the areas tested as part of this investigation.
- This soil and groundwater report provides a useful baseline against which to assess future soil and groundwater quality investigations at the site.

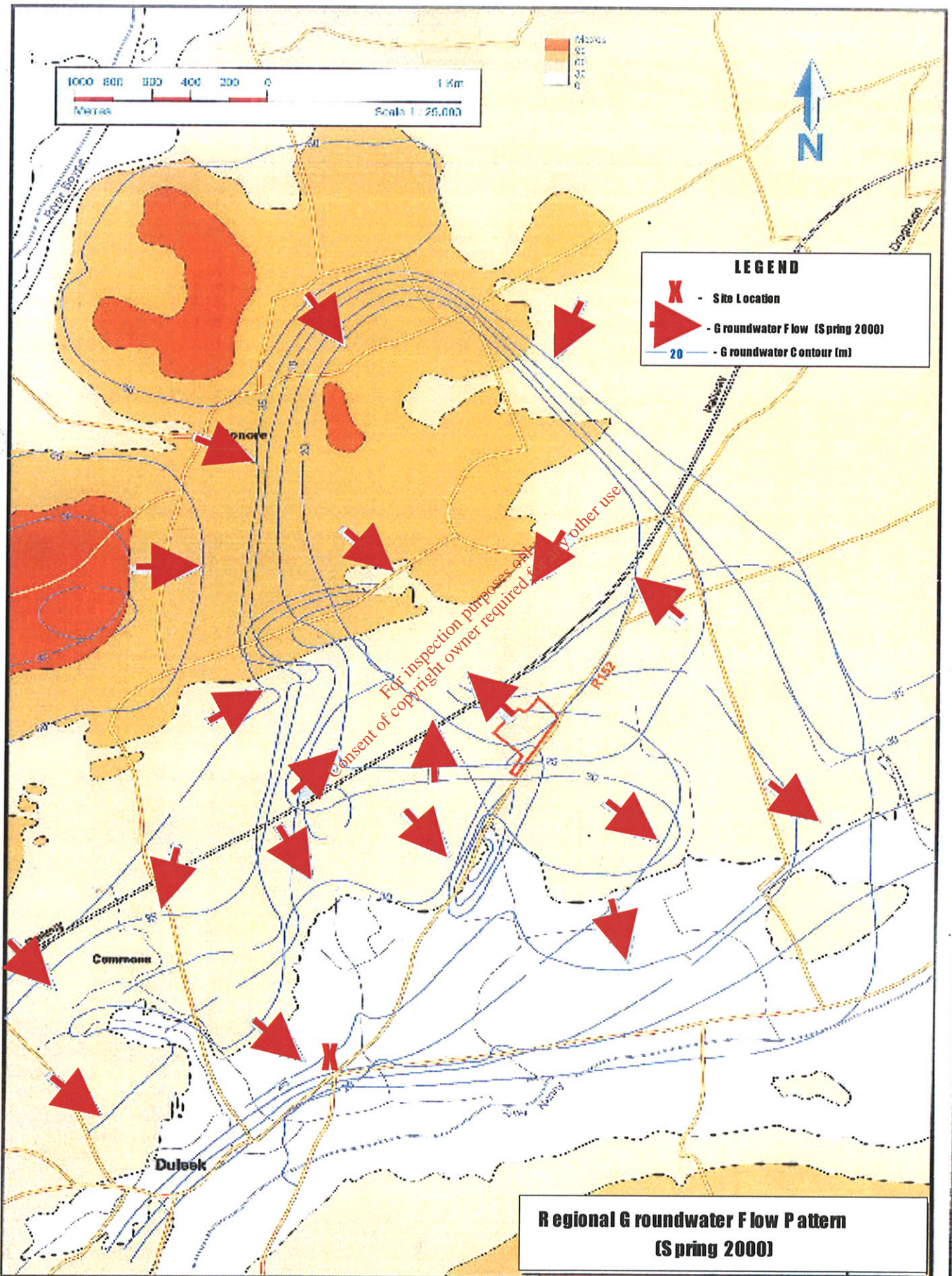
## FIGURES

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## APPENDICES

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	<b>The Recycling Village Ltd.</b>	<b>Date of Receipt</b>	<b>19/03/2014</b>
	<b>Unit 21</b>	<b>Sampled On</b>	<b>18/03/2014</b>
	<b>Duleek Business Park</b>	<b>Date Testing Commenced</b>	<b>19/03/2014</b>
	<b>Duleek</b>	<b>Received or Collected</b>	<b>Delivered by Customer</b>
	<b>Co. Meath</b>	<b>Condition on Receipt</b>	<b>Acceptable</b>
<b>Customer PO</b>		<b>Date of Report</b>	<b>14/04/2014</b>
<b>Customer Ref</b>	<b>BH3 (GW)</b>	<b>Sample Type</b>	<b>Groundwater</b>
<b>Ref 2</b>			

## CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Alkalinity (Ground Water)	102	Colorimetry	211	mg/L CaCO3	UKAS
Ammonia (Ground Water)	114	Colorimetry	<0.01	mg/L as N	UKAS
Arsenic (Ground Water)	177	ICPMS	1.434	ug/L	UKAS
Barium (Ground Water)	177	ICPMS	61.62	ug/L	UKAS
Boron (Ground Water)	177	ICPMS	173.6	ug/L	UKAS
Cadmium (Ground Water)	177	ICPMS	0.141	ug/L	UKAS
Calcium (Ground Water)	184	ICPMS	131.30	mg/L	UKAS
Chloride (Ground Water)	100	Colorimetry	24.81	mg/L	UKAS
Chromium (Ground Water)	177	ICPMS	5.377	ug/L	UKAS
Coliforms (Faecal)	140	Filtration/ Incubation 44C/ 24H	0	cfu/ 100ml	
Coliforms (Total)	140	Filtration/ Incubation 37C/ 24H	17	cfu/ 100ml	
Conductivity (Ground Water at 20C)	112	Electrometry	690	uscm -1@20C	UKAS
Copper (Ground Water)	177	ICPMS	12.58	ug/L	UKAS
Cyanide	138	Colorimetry	<5	ug/L	
Dissolved Oxygen (mg/l)	715	DO Meter	9.2	mg/L	
Fluoride (Ground Water)	115	Colorimetry	0.29	mg/L	UKAS
Iron (Ground Water)	177	ICPMS	765.1	ug/L	UKAS
Lead (Ground Water)	177	ICPMS	1.479	ug/L	UKAS
Magnesium (Ground Water)	184	ICPMS	10.01	mg/L	UKAS
Manganese (Ground Water)	177	ICPMS	60.1	ug/L	UKAS
Mercury (Ground water)	178	ICPMS	0.045	ug/L	UKAS
Nickel (Ground Water)	177	ICPMS	3.26	ug/L	UKAS
Nitrate (Ground Water)	103	Colorimetry	2.940	mg/L as N	UKAS
Nitrate as NO3	103	Calculation	13.02	mg/L as NO3	UKAS

**Signed :**   
**Aoife Harmon - Technical Supervisor**

**Date : 14/04/2014**

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU Drinking water Regulations (SI 278 2007)

All organic results are analysed as received and all results are corrected for dry weight at 104 C

Results shall not be reproduced, except in full, without the approval of Fitz Scientific

Results contained in this report relate only to the samples tested

(P) : Presumptive Results

\*\*The analytical result for this parameter may not be reflective of the concentration present at the time of sampling. The maximum recommended preservation time for this parameter has been exceeded.



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	<b>Unit 21</b>	<b>Sampled On</b>	<b>18/03/2014</b>
	<b>Duleek Business Park</b>	<b>Date Testing Commenced</b>	<b>19/03/2014</b>
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## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
**Nitrite (Ground Water)	118	Colorimetry	<0.002	mg/L as N	
Nitrite as NO2	118	Calculation	<0.050	mg/L as NO2	UKAS
Nitrogen (Total Oxidised) (Ground W	151	Colorimetry	2.94	mg/L as N	UKAS
pH (Ground Water)	110	Electrometry	7.8	pH Units	UKAS
Phenols (Total)	223	GCMS	<0.10	ug/L	
Phosphate (Total as PO4)	166	Calculation	0.067	mg/L as PO4	UKAS
Phosphate (Total) Ground Water	166	Colorimetry	<0.024	mg/L as P	UKAS
Potassium (Ground Water)	184	ICPMS	10.54	mg/L	UKAS
Selenium (Ground Water)	177	ICPMS	1.792	ug/L	UKAS
Silver	177	ICPMS	<0.33	ug/L	
Sodium (Ground water)	184	ICPMS	19.47	mg/L	UKAS
Sulphate (Ground Water)	119	Colorimetry	200.63	mg/L	UKAS
Total Organic Carbon	316	TOC analyser (NPOC)	7.04	mg/L	
Zinc (Ground Water)	177	ICPMS	11.29	ug/L	UKAS

**Signed :**   
**Aoife Harmon - Technical Supervisor**

**Date : 14/04/2014**

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU Drinking water Regulations (SI 278 2007)

All organic results are analysed as received and all results are corrected for dry weight at 104 C

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(P) : Presumptive Results

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<b>Customer</b>	<b>Nikita Coulter</b>	<b>Lab Report Ref. No.</b>	<b>1438/009/09</b>
	<b>The Recycling Village Ltd.</b>	<b>Date of Receipt</b>	<b>19/03/2014</b>
	<b>Unit 21</b>	<b>Sampled On</b>	<b>18/03/2014</b>
	<b>Duleek Business Park</b>	<b>Date Testing Commenced</b>	<b>19/03/2014</b>
	<b>Duleek</b>	<b>Received or Collected</b>	<b>Delivered by Customer</b>
	<b>Co. Meath</b>	<b>Condition on Receipt</b>	<b>Acceptable</b>
<b>Customer PO</b>		<b>Date of Report</b>	<b>11/04/2014</b>
<b>Customer Ref</b>	<b>BH3 5m</b>	<b>Sample Type</b>	<b>Soil</b>
<b>Ref 2</b>			

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
% Dry Matter	302	Drying @ 104 C	83.59	%	
Acenaphthene (Soil)	200	GCMS	<0.05	mg/Kg	
Acenaphthylene (Soil)	200	GCMS	<0.05	mg/Kg	
Anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Antimony (Leachate)	128	ICPMS	15.19	ug/Kg	
Antimony Solid (OES)	224	ICP-OES	412.68	ug/Kg	
Arsenic (Leachate)	128	ICPMS	47.13	ug/Kg	
Arsenic Solid (OES)	224	ICP-OES	6594.04	ug/Kg	
Barium (Leachate)	128	ICPMS	883.7	ug/Kg	
Barium Solid (OES)	224	ICP-OES	9635.96	ug/Kg	
Benzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Benzo(a)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(a)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(b)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(ghi)perylene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(k)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
BTEX (soil)	198	GC-FID	<0.5	mg/Kg	
Cadmium (Leachate)	128	ICPMS	<0.09	ug/Kg	
Cadmium Solid (OES)	224	ICP-OES	<10.00	ug/Kg	
Chloride (Leachate WAC)	190	IC	9.32	mg/Kg	
Chloride (Solid)	100	Colorimetry	8.69	mg/Kg	
Chromium (Leachate)	128	ICPMS	234.8	ug/Kg	
Chromium Solid (OES)	224	ICP-OES	1792.88	ug/Kg	
Chrysene (Soil)	200	GCMS	<0.05	mg/Kg	

**Signed :**   
**Aoife Harmon - Technical Supervisor**

**Date : 11/04/2014**

Acc. : Accredited Parameters by ISO 17025:2005

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	<b>The Recycling Village Ltd.</b>	<b>Date of Receipt</b>	<b>19/03/2014</b>
	<b>Unit 21</b>	<b>Sampled On</b>	<b>18/03/2014</b>
	<b>Duleek Business Park</b>	<b>Date Testing Commenced</b>	<b>19/03/2014</b>
	<b>Duleek</b>	<b>Received or Collected</b>	<b>Delivered by Customer</b>
	<b>Co. Meath</b>	<b>Condition on Receipt</b>	<b>Acceptable</b>
<b>Customer PO</b>		<b>Date of Report</b>	<b>11/04/2014</b>
<b>Customer Ref</b>	<b>BH3 5m</b>	<b>Sample Type</b>	<b>Soil</b>
<b>Ref 2</b>			

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Copper (Leachate)	128	ICPMS	105.5	ug/Kg	
Copper Solid (OES)	224	ICP-OES	19757.4	ug/Kg	
Coronene (Soil)	200	GCMS	<0.05	mg/Kg	
Dibenzo(ah)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Dissolved Organic Carbon (Leachate)	316	TOC Analyser	139.6	mg/Kg	
Ethylbenzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluorene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluoride (Leachate WAC)	190	IC	2.40	mg/Kg	
Fluoride (Solid)	115	Colorimetry	2.02	mg/Kg	
Indeno(1,2,3-cd)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Lead (Leachate)	128	ICPMS	22.42	ug/Kg	
Lead Solid (OES)	224	ICP-OES	13362.1	ug/Kg	
m- & p-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Mercury (Leachate)	128	ICPMS	<0.2	ug/Kg	
Mercury (Solid)	178	ICPMS	47.47	ug/Kg	
Mineral Oil (soil)	327	GC-FID	5.55	mg/Kg	
Molybdenum (Leachate)	128	ICPMS	10.66	ug/Kg	
Molybdenum Solid (OES)	228	ICP-OES	345.197	ug/Kg	
Naphthalene (Soil)	200	GCMS	<0.05	mg/Kg	
Nickel (Leachate)	128	ICPMS	94.1	ug/Kg	
Nickel Solid (OES)	177	ICP-OES	32632.9	ug/Kg	
o-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
PAH soil (Sum of 17)	200	GCMS	<0.05	mg/Kg	

**Signed :**   
**Aoife Harmon - Technical Supervisor**

**Date : 11/04/2014**

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<b>Customer</b>	<b>Nikita Coulter</b> <b>The Recycling Village Ltd.</b> <b>Unit 21</b> <b>Duleek Business Park</b> <b>Duleek</b> <b>Co. Meath</b>	<b>Lab Report Ref. No.</b>	<b>1438/009/09</b>
<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH3 5m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
PCB Total of 7 Congeners	167	GCMS	<0.005	mg/Kg	
Phenanthrene (Soil)	200	GCMS	<0.05	mg/Kg	
Phenol Index (Leachate)	128	Colorimetry	0.02	mg/Kg	
Pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Selenium (Leachate)	128	ICPMS	72.44	ug/Kg	
Selenium Solid (OES)	224	ICP-OES	1323.5	ug/Kg	
Sulphate (Leachate WAC)	190	IC	21.94	mg/Kg	
Sulphate (Solid)	119	Colorimetry	10.89	mg/Kg as SO4	
TOC (Soil)	315	TOC Analyser	<1.0	%	
Total Dissolved Solids (Leachate)	128	Evaporation/ Gravimetry	1610	mg/Kg	
Total Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Zinc (Leachate)	128	ICPMS	167.6	ug/Kg	
Zinc Solid (OES)	224	ICP-OES	32025.6	ug/Kg	

**Signed :**   
**Aoife Harmon - Technical Supervisor**

**Date : 11/04/2014**

Acc. : Accredited Parameters by ISO 17025:2005

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<b>Customer</b>	<b>Nikita Coulter</b>	<b>Lab Report Ref. No.</b>	<b>1438/009/08</b>
	<b>The Recycling Village Ltd.</b>	<b>Date of Receipt</b>	<b>19/03/2014</b>
	<b>Unit 21</b>	<b>Sampled On</b>	<b>18/03/2014</b>
	<b>Duleek Business Park</b>	<b>Date Testing Commenced</b>	<b>19/03/2014</b>
	<b>Duleek</b>	<b>Received or Collected</b>	<b>Delivered by Customer</b>
	<b>Co. Meath</b>	<b>Condition on Receipt</b>	<b>Acceptable</b>
<b>Customer PO</b>		<b>Date of Report</b>	<b>11/04/2014</b>
<b>Customer Ref</b>	<b>BH3 2.5m</b>	<b>Sample Type</b>	<b>Soil</b>
<b>Ref 2</b>			

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
% Dry Matter	302	Drying @ 104 C	79.88	%	
Acenaphthene (Soil)	200	GCMS	<0.05	mg/Kg	
Acenaphthylene (Soil)	200	GCMS	<0.05	mg/Kg	
Anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Antimony (Leachate)	128	ICPMS	25.97	ug/Kg	
Antimony Solid (OES)	224	ICP-OES	354.06	ug/Kg	
Arsenic (Leachate)	128	ICPMS	135.7	ug/Kg	
Arsenic Solid (OES)	224	ICP-OES	4464.46	ug/Kg	
Barium (Leachate)	128	ICPMS	1326	ug/Kg	
Barium Solid (OES)	224	ICP-OES	51053.7	ug/Kg	
Benzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Benzo(a)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(a)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(b)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(ghi)perylene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(k)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
BTEX (soil)	198	GC-FID	<0.5	mg/Kg	
Cadmium (Leachate)	128	ICPMS	9.344	ug/Kg	
Cadmium Solid (OES)	224	ICP-OES	345.309	ug/Kg	
Chloride (Leachate WAC)	190	IC	9.50	mg/Kg	
Chloride (Solid)	100	Colorimetry	8.85	mg/Kg	
Chromium (Leachate)	128	ICPMS	705.3	ug/Kg	
Chromium Solid (OES)	224	ICP-OES	11570.7	ug/Kg	
Chrysene (Soil)	200	GCMS	<0.05	mg/Kg	

**Signed :**   
**Aoife Harmon - Technical Supervisor**

**Date : 11/04/2014**

Acc. : Accredited Parameters by ISO 17025:2005

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<b>Customer</b>	<b>Nikita Coulter</b>	<b>Lab Report Ref. No.</b>	<b>1438/009/08</b>
	<b>The Recycling Village Ltd.</b>	<b>Date of Receipt</b>	<b>19/03/2014</b>
	<b>Unit 21</b>	<b>Sampled On</b>	<b>18/03/2014</b>
	<b>Duleek Business Park</b>	<b>Date Testing Commenced</b>	<b>19/03/2014</b>
	<b>Duleek</b>	<b>Received or Collected</b>	<b>Delivered by Customer</b>
	<b>Co. Meath</b>	<b>Condition on Receipt</b>	<b>Acceptable</b>
<b>Customer PO</b>		<b>Date of Report</b>	<b>11/04/2014</b>
<b>Customer Ref</b>	<b>BH3 2.5m</b>	<b>Sample Type</b>	<b>Soil</b>
<b>Ref 2</b>			

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Copper (Leachate)	128	ICPMS	348.4	ug/Kg	
Copper Solid (OES)	224	ICP-OES	23632.2	ug/Kg	
Coronene (Soil)	200	GCMS	<0.05	mg/Kg	
Dibenzo(ah)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Dissolved Organic Carbon (Leachate)	316	TOC Analyser	162.2	mg/Kg	
Ethylbenzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluorene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluoride (Leachate WAC)	190	IC	2.68	mg/Kg	
Fluoride (Solid)	115	Colorimetry	2.13	mg/Kg	
Indeno(1,2,3-cd)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Lead (Leachate)	128	ICPMS	72.7	ug/Kg	
Lead Solid (OES)	224	ICP-OES	12445.6	ug/Kg	
m- & p-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Mercury (Leachate)	128	ICPMS	2.9	ug/Kg	
Mercury (Solid)	178	ICPMS	77.09	ug/Kg	
Mineral Oil (soil)	327	GC-FID	6.46	mg/Kg	
Molybdenum (Leachate)	128	ICPMS	10.78	ug/Kg	
Molybdenum Solid (OES)	228	ICP-OES	481.31	ug/Kg	
Naphthalene (Soil)	200	GCMS	<0.05	mg/Kg	
Nickel (Leachate)	128	ICPMS	499.6	ug/Kg	
Nickel Solid (OES)	177	ICP-OES	29380.9	ug/Kg	
o-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
PAH soil (Sum of 17)	200	GCMS	<0.05	mg/Kg	

**Signed :**   
**Aoife Harmon - Technical Supervisor**

**Date : 11/04/2014**

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<b>Customer</b>	<b>Nikita Coulter</b> <b>The Recycling Village Ltd.</b> <b>Unit 21</b> <b>Duleek Business Park</b> <b>Duleek</b> <b>Co. Meath</b>	<b>Lab Report Ref. No.</b>	<b>1438/009/08</b>
<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH3 2.5m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
PCB Total of 7 Congeners	167	GCMS	<0.005	mg/Kg	
Phenanthrene (Soil)	200	GCMS	<0.05	mg/Kg	
Phenol Index (Leachate)	128	Colorimetry	0.04	mg/Kg	
Pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Selenium (Leachate)	128	ICPMS	21.67	ug/Kg	
Selenium Solid (OES)	224	ICP-OES	3153.62	ug/Kg	
Sulphate (Leachate WAC)	190	IC	16.96	mg/Kg	
Sulphate (Solid)	119	Colorimetry	<1.39	mg/Kg as SO4	
TOC (Soil)	315	TOC Analyser	<1.0	%	
Total Dissolved Solids (Leachate)	128	Evaporation/ Gravimetry	1950	mg/Kg	
Total Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Zinc (Leachate)	128	ICPMS	851.7	ug/Kg	
Zinc Solid (OES)	224	ICP-OES	48259.6	ug/Kg	

**Signed :**   
**Aoife Harmon - Technical Supervisor**

**Date : 11/04/2014**

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<b>Customer</b>	<b>Nikita Coulter</b> <b>The Recycling Village Ltd.</b> <b>Unit 21</b> <b>Duleek Business Park</b> <b>Duleek</b> <b>Co. Meath</b>	<b>Lab Report Ref. No.</b>	<b>1438/009/07</b>
<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH3 0m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
% Dry Matter	302	Drying @ 104 C	80.72	%	
Acenaphthene (Soil)	200	GCMS	<0.05	mg/Kg	
Acenaphthylene (Soil)	200	GCMS	<0.05	mg/Kg	
Anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Antimony (Leachate)	128	ICPMS	36.02	ug/Kg	
Antimony Solid (OES)	224	ICP-OES	498.208	ug/Kg	
Arsenic (Leachate)	128	ICPMS	76.61	ug/Kg	
Arsenic Solid (OES)	224	ICP-OES	6738.73	ug/Kg	
Barium (Leachate)	128	ICPMS	998.6	ug/Kg	
Barium Solid (OES)	224	ICP-OES	48674.9	ug/Kg	
Benzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Benzo(a)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(a)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(b)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(ghi)perylene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(k)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
BTEX (soil)	198	GC-FID	<0.5	mg/Kg	
Cadmium (Leachate)	128	ICPMS	4.448	ug/Kg	
Cadmium Solid (OES)	224	ICP-OES	471.803	ug/Kg	
Chloride (Leachate WAC)	190	IC	15.82	mg/Kg	
Chloride (Solid)	100	Colorimetry	7.64	mg/Kg	
Chromium (Leachate)	128	ICPMS	413.4	ug/Kg	
Chromium Solid (OES)	224	ICP-OES	13175.2	ug/Kg	
Chrysene (Soil)	200	GCMS	<0.05	mg/Kg	

**Signed :**   
**Aoife Harmon - Technical Supervisor**

**Date : 11/04/2014**

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<b>Customer</b>	<b>Nikita Coulter</b> <b>The Recycling Village Ltd.</b> <b>Unit 21</b> <b>Duleek Business Park</b> <b>Duleek</b> <b>Co. Meath</b>	<b>Lab Report Ref. No.</b>	<b>1438/009/07</b>
<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH3 0m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Copper (Leachate)	128	ICPMS	284.7	ug/Kg	
Copper Solid (OES)	224	ICP-OES	22633.8	ug/Kg	
Coronene (Soil)	200	GCMS	<0.05	mg/Kg	
Dibenzo(ah)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Dissolved Organic Carbon (Leachate)	316	TOC Analyser	176.3	mg/Kg	
Ethylbenzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluorene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluoride (Leachate WAC)	190	IC	6.60	mg/Kg	
Fluoride (Solid)	115	Colorimetry	2.51	mg/Kg	
Indeno(1,2,3-cd)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Lead (Leachate)	128	ICPMS	62.48	ug/Kg	
Lead Solid (OES)	224	ICP-OES	10316.9	ug/Kg	
m- & p-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Mercury (Leachate)	128	ICPMS	0.539	ug/Kg	
Mercury (Solid)	178	ICPMS	49.1	ug/Kg	
Mineral Oil (soil)	327	GC-FID	<2.5	mg/Kg	
Molybdenum (Leachate)	128	ICPMS	9.957	ug/Kg	
Molybdenum Solid (OES)	228	ICP-OES	730.77	ug/Kg	
Naphthalene (Soil)	200	GCMS	<0.05	mg/Kg	
Nickel (Leachate)	128	ICPMS	288.2	ug/Kg	
Nickel Solid (OES)	177	ICP-OES	24590.9	ug/Kg	
o-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
PAH soil (Sum of 17)	200	GCMS	<0.05	mg/Kg	

**Signed :**   
**Aoife Harmon - Technical Supervisor**

**Date : 11/04/2014**

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU Drinking water Regulations (SI 278 2007)

All organic results are analysed as received and all results are corrected for dry weight at 104 C

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<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH3 0m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
PCB Total of 7 Congeners	167	GCMS	<0.005	mg/Kg	
Phenanthrene (Soil)	200	GCMS	<0.05	mg/Kg	
Phenol Index (Leachate)	128	Colorimetry	0.02	mg/Kg	
Pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Selenium (Leachate)	128	ICPMS	61.07	ug/Kg	
Selenium Solid (OES)	224	ICP-OES	3217.35	ug/Kg	
Sulphate (Leachate WAC)	190	IC	117.26	mg/Kg	
Sulphate (Solid)	119	Colorimetry	62.16	mg/Kg as SO4	
TOC (Soil)	315	TOC Analyser	<1.0	%	
Total Dissolved Solids (Leachate)	128	Evaporation/ Gravimetry	2910	mg/Kg	
Total Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Zinc (Leachate)	128	ICPMS	485.2	ug/Kg	
Zinc Solid (OES)	224	ICP-OES	38621.4	ug/Kg	

**Signed :**   
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**Date : 11/04/2014**

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<b>Customer</b>	<b>Nikita Coulter</b>	<b>Lab Report Ref. No.</b>	<b>1438/009/10</b>
	<b>The Recycling Village Ltd.</b>	<b>Date of Receipt</b>	<b>19/03/2014</b>
	<b>Unit 21</b>	<b>Sampled On</b>	<b>18/03/2014</b>
	<b>Duleek Business Park</b>	<b>Date Testing Commenced</b>	<b>19/03/2014</b>
	<b>Duleek</b>	<b>Received or Collected</b>	<b>Delivered by Customer</b>
	<b>Co. Meath</b>	<b>Condition on Receipt</b>	<b>Acceptable</b>
<b>Customer PO</b>		<b>Date of Report</b>	<b>07/04/2014</b>
<b>Customer Ref</b>	<b>BH2 (GW)</b>	<b>Sample Type</b>	<b>Groundwater</b>
<b>Ref 2</b>			

## CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Alkalinity (Ground Water)	102	Colorimetry	30	mg/L CaCO3	UKAS
Ammonia (Ground Water)	114	Colorimetry	0.42	mg/L as N	UKAS
Arsenic (Ground Water)	177	ICPMS	1.455	ug/L	UKAS
Barium (Ground Water)	177	ICPMS	68.97	ug/L	UKAS
Boron (Ground Water)	177	ICPMS	134.2	ug/L	UKAS
Cadmium (Ground Water)	177	ICPMS	0.18	ug/L	UKAS
Calcium (Ground Water)	184	ICPMS	63.97	mg/L	UKAS
Chloride (Ground Water)	100	Colorimetry	73.59	mg/L	UKAS
Chromium (Ground Water)	177	ICPMS	5.803	ug/L	UKAS
Coliforms (Faecal)	140	Filtration/ Incubation 44C/ 24H	0	cfu/ 100ml	
Coliforms (Total)	140	Filtration/ Incubation 37C/ 24H	0	cfu/ 100ml	
Conductivity (Ground Water at 20C)	112	Electrometry	476	uscm -1@20C	UKAS
Copper (Ground Water)	177	ICPMS	23.96	ug/L	UKAS
Cyanide	138	Colorimetry	<5	ug/L	
Dissolved Oxygen (mg/l)	715	DO Meter	6.5	mg/L	
Fluoride (Ground Water)	115	Colorimetry	0.50	mg/L	UKAS
Iron (Ground Water)	177	ICPMS	682.6	ug/L	UKAS
Lead (Ground Water)	177	ICPMS	12.52	ug/L	UKAS
Magnesium (Ground Water)	184	ICPMS	3.145	mg/L	UKAS
Manganese (Ground Water)	177	ICPMS	44.55	ug/L	UKAS
Mercury (Ground water)	178	ICPMS	<0.04	ug/L	UKAS
Nickel (Ground Water)	177	ICPMS	7.195	ug/L	UKAS
Nitrate (Ground Water)	103	Colorimetry	0.990	mg/L as N	UKAS
Nitrate as NO3	103	Calculation	4.384	mg/L as NO3	UKAS

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**Date : 07/04/2014**

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<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH2 (GW)</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>07/04/2014</b>
		<b>Sample Type</b>	<b>Groundwater</b>

## CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
**Nitrite (Ground Water)	118	Colorimetry	0.007	mg/L as N	
Nitrite as NO2	118	Calculation	<0.050	mg/L as NO2	UKAS
Nitrogen (Total Oxidised) (Ground W	151	Colorimetry	1.00	mg/L as N	UKAS
pH (Ground Water)	110	Electrometry	8.4	pH Units	UKAS
Phenols (Total)	223	GCMS	<0.10	ug/L	
Phosphate (Total as PO4)	166	Calculation	0.086	mg/L as PO4	UKAS
Phosphate (Total) Ground Water	166	Colorimetry	0.028	mg/L as P	UKAS
Potassium (Ground Water)	184	ICPMS	8.422	mg/L	UKAS
Selenium (Ground Water)	177	ICPMS	1.726	ug/L	UKAS
Silver	177	ICPMS	<0.33	ug/L	
Sodium (Ground water)	184	ICPMS	34.68	mg/L	UKAS
Sulphate (Ground Water)	119	Colorimetry	112.82	mg/L	UKAS
Total Organic Carbon	316	TOC analyser (NPOC)	5.76	mg/L	
Zinc (Ground Water)	177	ICPMS	29.25	ug/L	UKAS

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**Date : 07/04/2014**

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<b>Customer</b>	<b>Nikita Coulter</b> <b>The Recycling Village Ltd.</b> <b>Unit 21</b> <b>Duleek Business Park</b> <b>Duleek</b> <b>Co. Meath</b>	<b>Lab Report Ref. No.</b>	<b>1438/009/06</b>
<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH2 2m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
% Dry Matter	302	Drying @ 104 C	81.5	%	
Acenaphthene (Soil)	200	GCMS	<0.05	mg/Kg	
Acenaphthylene (Soil)	200	GCMS	<0.05	mg/Kg	
Anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Antimony (Leachate)	128	ICPMS	12.35	ug/Kg	
Antimony Solid (OES)	224	ICP-OES	364.859	ug/Kg	
Arsenic (Leachate)	128	ICPMS	23.71	ug/Kg	
Arsenic Solid (OES)	224	ICP-OES	5160.46	ug/Kg	
Barium (Leachate)	128	ICPMS	702.1	ug/Kg	
Barium Solid (OES)	224	ICP-OES	96145.3	ug/Kg	
Benzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Benzo(a)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(a)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(b)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(ghi)perylene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(k)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
BTEX (soil)	198	GC-FID	<0.5	mg/Kg	
Cadmium (Leachate)	128	ICPMS	<0.09	ug/Kg	
Cadmium Solid (OES)	224	ICP-OES	293.275	ug/Kg	
Chloride (Leachate WAC)	190	IC	40.44	mg/Kg	
Chloride (Solid)	100	Colorimetry	22.36	mg/Kg	
Chromium (Leachate)	128	ICPMS	219.3	ug/Kg	
Chromium Solid (OES)	224	ICP-OES	16971.3	ug/Kg	
Chrysene (Soil)	200	GCMS	<0.05	mg/Kg	

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**Date : 11/04/2014**

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<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH2 2m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Copper (Leachate)	128	ICPMS	59.4	ug/Kg	
Copper Solid (OES)	224	ICP-OES	19702.4	ug/Kg	
Coronene (Soil)	200	GCMS	<0.05	mg/Kg	
Dibenzo(ah)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Dissolved Organic Carbon (Leachate)	316	TOC Analyser	142.2	mg/Kg	
Ethylbenzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluorene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluoride (Leachate WAC)	190	IC	4.72	mg/Kg	
Fluoride (Solid)	115	Colorimetry	1.92	mg/Kg	
Indeno(1,2,3-cd)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Lead (Leachate)	128	ICPMS	1.311	ug/Kg	
Lead Solid (OES)	224	ICP-OES	9024.64	ug/Kg	
m- & p-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Mercury (Leachate)	128	ICPMS	0.342	ug/Kg	
Mercury (Solid)	178	ICPMS	<0.2	ug/Kg	
Mineral Oil (soil)	327	GC-FID	<2.5	mg/Kg	
Molybdenum (Leachate)	128	ICPMS	21.11	ug/Kg	
Molybdenum Solid (OES)	228	ICP-OES	1206.59	ug/Kg	
Naphthalene (Soil)	200	GCMS	<0.05	mg/Kg	
Nickel (Leachate)	128	ICPMS	40.78	ug/Kg	
Nickel Solid (OES)	177	ICP-OES	27264.4	ug/Kg	
o-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
PAH soil (Sum of 17)	200	GCMS	<0.05	mg/Kg	

**Signed :**   
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<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH2 2m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
PCB Total of 7 Congeners	167	GCMS	<0.005	mg/Kg	
Phenanthrene (Soil)	200	GCMS	<0.05	mg/Kg	
Phenol Index (Leachate)	128	Colorimetry	0.04	mg/Kg	
Pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Selenium (Leachate)	128	ICPMS	327.1	ug/Kg	
Selenium Solid (OES)	224	ICP-OES	3605.59	ug/Kg	
Sulphate (Leachate WAC)	190	IC	103.22	mg/Kg	
Sulphate (Solid)	119	Colorimetry	15.51	mg/Kg as SO4	
TOC (Soil)	315	TOC Analyser	<1.0	%	
Total Dissolved Solids (Leachate)	128	Evaporation/ Gravimetry	2860	mg/Kg	
Total Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Zinc (Leachate)	128	ICPMS	83.97	ug/Kg	
Zinc Solid (OES)	224	ICP-OES	47017.5	ug/Kg	

**Signed :**   
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<b>Customer</b>	<b>Nikita Coulter</b> <b>The Recycling Village Ltd.</b> <b>Unit 21</b> <b>Duleek Business Park</b> <b>Duleek</b> <b>Co. Meath</b>	<b>Lab Report Ref. No.</b>	<b>1438/009/05</b>
<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH2 1m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
% Dry Matter	302	Drying @ 104 C	86.75	%	
Acenaphthene (Soil)	200	GCMS	<0.05	mg/Kg	
Acenaphthylene (Soil)	200	GCMS	<0.05	mg/Kg	
Anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Antimony (Leachate)	128	ICPMS	15.51	ug/Kg	
Antimony Solid (OES)	224	ICP-OES	474.41	ug/Kg	
Arsenic (Leachate)	128	ICPMS	27.36	ug/Kg	
Arsenic Solid (OES)	224	ICP-OES	5886.82	ug/Kg	
Barium (Leachate)	128	ICPMS	52.08	ug/Kg	
Barium Solid (OES)	224	ICP-OES	266276	ug/Kg	
Benzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Benzo(a)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(a)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(b)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(ghi)perylene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(k)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
BTEX (soil)	198	GC-FID	<0.5	mg/Kg	
Cadmium (Leachate)	128	ICPMS	<0.09	ug/Kg	
Cadmium Solid (OES)	224	ICP-OES	490.061	ug/Kg	
Chloride (Leachate WAC)	190	IC	7.86	mg/Kg	
Chloride (Solid)	100	Colorimetry	10.58	mg/Kg	
Chromium (Leachate)	128	ICPMS	360	ug/Kg	
Chromium Solid (OES)	224	ICP-OES	8527.72	ug/Kg	
Chrysene (Soil)	200	GCMS	<0.05	mg/Kg	

**Signed :**   
**Aoife Harmon - Technical Supervisor**

**Date : 11/04/2014**

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU Drinking water Regulations (SI 278 2007)

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<b>Customer</b>	<b>Nikita Coulter</b> <b>The Recycling Village Ltd.</b> <b>Unit 21</b> <b>Duleek Business Park</b> <b>Duleek</b> <b>Co. Meath</b>	<b>Lab Report Ref. No.</b>	<b>1438/009/05</b>
<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH2 1m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Copper (Leachate)	128	ICPMS	7174	ug/Kg	
Copper Solid (OES)	224	ICP-OES	19598.6	ug/Kg	
Coronene (Soil)	200	GCMS	<0.05	mg/Kg	
Dibenzo(ah)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Dissolved Organic Carbon (Leachate)	316	TOC Analyser	57.1	mg/Kg	
Ethylbenzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluorene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluoride (Leachate WAC)	190	IC	2.96	mg/Kg	
Fluoride (Solid)	115	Colorimetry	2.07	mg/Kg	
Indeno(1,2,3-cd)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Lead (Leachate)	128	ICPMS	<0.38	ug/Kg	
Lead Solid (OES)	224	ICP-OES	7653.02	ug/Kg	
m- & p-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Mercury (Leachate)	128	ICPMS	1.129	ug/Kg	
Mercury (Solid)	178	ICPMS	<0.2	ug/Kg	
Mineral Oil (soil)	327	GC-FID	<2.5	mg/Kg	
Molybdenum (Leachate)	128	ICPMS	13.94	ug/Kg	
Molybdenum Solid (OES)	228	ICP-OES	478.331	ug/Kg	
Naphthalene (Soil)	200	GCMS	<0.05	mg/Kg	
Nickel (Leachate)	128	ICPMS	8.152	ug/Kg	
Nickel Solid (OES)	177	ICP-OES	23955.7	ug/Kg	
o-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
PAH soil (Sum of 17)	200	GCMS	<0.05	mg/Kg	

**Signed :**   
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**Date : 11/04/2014**

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<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH2 1m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
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		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
PCB Total of 7 Congeners	167	GCMS	<0.005	mg/Kg	
Phenanthrene (Soil)	200	GCMS	<0.05	mg/Kg	
Phenol Index (Leachate)	128	Colorimetry	0.02	mg/Kg	
Pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Selenium (Leachate)	128	ICPMS	41.67	ug/Kg	
Selenium Solid (OES)	224	ICP-OES	3250.53	ug/Kg	
Sulphate (Leachate WAC)	190	IC	99.88	mg/Kg	
Sulphate (Solid)	119	Colorimetry	4.6	mg/Kg as SO4	
TOC (Soil)	315	TOC Analyser	3.724	%	
Total Dissolved Solids (Leachate)	128	Evaporation/ Gravimetry	2060	mg/Kg	
Total Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Zinc (Leachate)	128	ICPMS	6.963	ug/Kg	
Zinc Solid (OES)	224	ICP-OES	38391.5	ug/Kg	

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<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH2 0m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
% Dry Matter	302	Drying @ 104 C	90.09	%	
Acenaphthene (Soil)	200	GCMS	<0.05	mg/Kg	
Acenaphthylene (Soil)	200	GCMS	<0.05	mg/Kg	
Anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Antimony (Leachate)	128	ICPMS	5.24	ug/Kg	
Antimony Solid (OES)	224	ICP-OES	<10	ug/Kg	
Arsenic (Leachate)	128	ICPMS	18.61	ug/Kg	
Arsenic Solid (OES)	224	ICP-OES	2912.43	ug/Kg	
Barium (Leachate)	128	ICPMS	340.1	ug/Kg	
Barium Solid (OES)	224	ICP-OES	36640.7	ug/Kg	
Benzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Benzo(a)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(a)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(b)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(ghi)perylene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(k)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
BTEX (soil)	198	GC-FID	<0.5	mg/Kg	
Cadmium (Leachate)	128	ICPMS	0.452	ug/Kg	
Cadmium Solid (OES)	224	ICP-OES	214.277	ug/Kg	
Chloride (Leachate WAC)	190	IC	17.18	mg/Kg	
Chloride (Solid)	100	Colorimetry	7.85	mg/Kg	
Chromium (Leachate)	128	ICPMS	203.1	ug/Kg	
Chromium Solid (OES)	224	ICP-OES	8696.86	ug/Kg	
Chrysene (Soil)	200	GCMS	<0.05	mg/Kg	

**Signed :**   
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**Date : 11/04/2014**

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<b>Customer</b>	<b>Nikita Coulter</b>	<b>Lab Report Ref. No.</b>	<b>1438/009/04</b>
	<b>The Recycling Village Ltd.</b>	<b>Date of Receipt</b>	<b>19/03/2014</b>
	<b>Unit 21</b>	<b>Sampled On</b>	<b>18/03/2014</b>
	<b>Duleek Business Park</b>	<b>Date Testing Commenced</b>	<b>19/03/2014</b>
	<b>Duleek</b>	<b>Received or Collected</b>	<b>Delivered by Customer</b>
	<b>Co. Meath</b>	<b>Condition on Receipt</b>	<b>Acceptable</b>
<b>Customer PO</b>		<b>Date of Report</b>	<b>11/04/2014</b>
<b>Customer Ref</b>	<b>BH2 0m</b>	<b>Sample Type</b>	<b>Soil</b>
<b>Ref 2</b>			

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Copper (Leachate)	128	ICPMS	49.67	ug/Kg	
Copper Solid (OES)	224	ICP-OES	11871.4	ug/Kg	
Coronene (Soil)	200	GCMS	<0.05	mg/Kg	
Dibenzo(ah)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Dissolved Organic Carbon (Leachate)	316	TOC Analyser	65.9	mg/Kg	
Ethylbenzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluorene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluoride (Leachate WAC)	190	IC	3.86	mg/Kg	
Fluoride (Solid)	115	Colorimetry	1.98	mg/Kg	
Indeno(1,2,3-cd)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Lead (Leachate)	128	ICPMS	1.787	ug/Kg	
Lead Solid (OES)	224	ICP-OES	6306.73	ug/Kg	
m- & p-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Mercury (Leachate)	128	ICPMS	1.654	ug/Kg	
Mercury (Solid)	178	ICPMS	9.618	ug/Kg	
Mineral Oil (soil)	327	GC-FID	3.52	mg/Kg	
Molybdenum (Leachate)	128	ICPMS	19.97	ug/Kg	
Molybdenum Solid (OES)	228	ICP-OES	747.518	ug/Kg	
Naphthalene (Soil)	200	GCMS	<0.05	mg/Kg	
Nickel (Leachate)	128	ICPMS	60.27	ug/Kg	
Nickel Solid (OES)	177	ICP-OES	13003.2	ug/Kg	
o-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
PAH soil (Sum of 17)	200	GCMS	<0.05	mg/Kg	

**Signed :**   
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<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH2 0m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
PCB Total of 7 Congeners	167	GCMS	<0.005	mg/Kg	
Phenanthrene (Soil)	200	GCMS	<0.05	mg/Kg	
Phenol Index (Leachate)	128	Colorimetry	0.04	mg/Kg	
Pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Selenium (Leachate)	128	ICPMS	8.943	ug/Kg	
Selenium Solid (OES)	224	ICP-OES	1582.64	ug/Kg	
Sulphate (Leachate WAC)	190	IC	49.98	mg/Kg	
Sulphate (Solid)	119	Colorimetry	112.32	mg/Kg as SO4	
TOC (Soil)	315	TOC Analyser	<1.0	%	
Total Dissolved Solids (Leachate)	128	Evaporation/ Gravimetry	1590	mg/Kg	
Total Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Zinc (Leachate)	128	ICPMS	133	ug/Kg	
Zinc Solid (OES)	224	ICP-OES	22248.5	ug/Kg	

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<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH1 4.0m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
% Dry Matter	302	Drying @ 104 C	90.78	%	
Acenaphthene (Soil)	200	GCMS	<0.05	mg/Kg	
Acenaphthylene (Soil)	200	GCMS	<0.05	mg/Kg	
Anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Antimony (Leachate)	128	ICPMS	7.241	ug/Kg	
Antimony Solid (OES)	224	ICP-OES	630.34	ug/Kg	
Arsenic (Leachate)	128	ICPMS	62.17	ug/Kg	
Arsenic Solid (OES)	224	ICP-OES	5041.86	ug/Kg	
Barium (Leachate)	128	ICPMS	913.8	ug/Kg	
Barium Solid (OES)	224	ICP-OES	47566.6	ug/Kg	
Benzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Benzo(a)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(a)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(b)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(ghi)perylene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(k)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
BTEX (soil)	198	GC-FID	<0.5	mg/Kg	
Cadmium (Leachate)	128	ICPMS	0.236	ug/Kg	
Cadmium Solid (OES)	224	ICP-OES	164.665	ug/Kg	
Chloride (Leachate WAC)	190	IC	10.52	mg/Kg	
Chloride (Solid)	100	Colorimetry	7.77	mg/Kg	
Chromium (Leachate)	128	ICPMS	329.4	ug/Kg	
Chromium Solid (OES)	224	ICP-OES	13644.8	ug/Kg	
Chrysene (Soil)	200	GCMS	<0.05	mg/Kg	

**Signed :**   
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	<b>The Recycling Village Ltd.</b>	<b>Date of Receipt</b>	<b>19/03/2014</b>
	<b>Unit 21</b>	<b>Sampled On</b>	<b>18/03/2014</b>
	<b>Duleek Business Park</b>	<b>Date Testing Commenced</b>	<b>19/03/2014</b>
	<b>Duleek</b>	<b>Received or Collected</b>	<b>Delivered by Customer</b>
	<b>Co. Meath</b>	<b>Condition on Receipt</b>	<b>Acceptable</b>
<b>Customer PO</b>		<b>Date of Report</b>	<b>11/04/2014</b>
<b>Customer Ref</b>	<b>BH1 4.0m</b>	<b>Sample Type</b>	<b>Soil</b>
<b>Ref 2</b>			

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Copper (Leachate)	128	ICPMS	122.5	ug/Kg	
Copper Solid (OES)	224	ICP-OES	19565.9	ug/Kg	
Coronene (Soil)	200	GCMS	<0.05	mg/Kg	
Dibenzo(ah)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Dissolved Organic Carbon (Leachate)	316	TOC Analyser	80.9	mg/Kg	
Ethylbenzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluorene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluoride (Leachate WAC)	190	IC	4.60	mg/Kg	
Fluoride (Solid)	115	Colorimetry	2.29	mg/Kg	
Indeno(1,2,3-cd)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Lead (Leachate)	128	ICPMS	33.34	ug/Kg	
Lead Solid (OES)	224	ICP-OES	8198.09	ug/Kg	
m- & p-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Mercury (Leachate)	128	ICPMS	<0.2	ug/Kg	
Mercury (Solid)	178	ICPMS	32.91	ug/Kg	
Mineral Oil (soil)	327	GC-FID	<2.5	mg/Kg	
Molybdenum (Leachate)	128	ICPMS	12.11	ug/Kg	
Molybdenum Solid (OES)	228	ICP-OES	563.765	ug/Kg	
Naphthalene (Soil)	200	GCMS	<0.05	mg/Kg	
Nickel (Leachate)	128	ICPMS	164.4	ug/Kg	
Nickel Solid (OES)	177	ICP-OES	21835	ug/Kg	
o-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
PAH soil (Sum of 17)	200	GCMS	<0.05	mg/Kg	

**Signed :**   
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<b>Customer</b>	<b>Nikita Coulter</b> <b>The Recycling Village Ltd.</b> <b>Unit 21</b> <b>Duleek Business Park</b> <b>Duleek</b> <b>Co. Meath</b>	<b>Lab Report Ref. No.</b>	<b>1438/009/03</b>
<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH1 4.0m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
PCB Total of 7 Congeners	167	GCMS	<0.005	mg/Kg	
Phenanthrene (Soil)	200	GCMS	<0.05	mg/Kg	
Phenol Index (Leachate)	128	Colorimetry	0.02	mg/Kg	
Pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Selenium (Leachate)	128	ICPMS	52.7	ug/Kg	
Selenium Solid (OES)	224	ICP-OES	2877.3	ug/Kg	
Sulphate (Leachate WAC)	190	IC	39.08	mg/Kg	
Sulphate (Solid)	119	Colorimetry	3.29	mg/Kg as SO4	
TOC (Soil)	315	TOC Analyser	<1.0	%	
Total Dissolved Solids (Leachate)	128	Evaporation/ Gravimetry	2960	mg/Kg	
Total Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Zinc (Leachate)	128	ICPMS	258.6	ug/Kg	
Zinc Solid (OES)	224	ICP-OES	32737.9	ug/Kg	

**Signed :**   
**Aoife Harmon - Technical Supervisor**

**Date : 11/04/2014**

Acc. : Accredited Parameters by ISO 17025:2005

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<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH1 0m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
% Dry Matter	302	Drying @ 104 C	77.97	%	
Acenaphthene (Soil)	200	GCMS	<0.05	mg/Kg	
Acenaphthylene (Soil)	200	GCMS	<0.05	mg/Kg	
Anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Antimony (Leachate)	128	ICPMS	26.17	ug/Kg	
Antimony Solid (OES)	224	ICP-OES	1130.27	ug/Kg	
Arsenic (Leachate)	128	ICPMS	37.06	ug/Kg	
Arsenic Solid (OES)	224	ICP-OES	3741.7	ug/Kg	
Barium (Leachate)	128	ICPMS	119.8	ug/Kg	
Barium Solid (OES)	224	ICP-OES	49203.6	ug/Kg	
Benzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Benzo(a)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(a)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(b)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(ghi)perylene (Soil)	200	GCMS	<0.05	mg/Kg	
Benzo(k)fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
BTEX (soil)	198	GC-FID	<0.5	mg/Kg	
Cadmium (Leachate)	128	ICPMS	0.915	ug/Kg	
Cadmium Solid (OES)	224	ICP-OES	324.66	ug/Kg	
Chloride (Leachate WAC)	190	IC	20.82	mg/Kg	
Chloride (Solid)	100	Colorimetry	11.79	mg/Kg	
Chromium (Leachate)	128	ICPMS	19.72	ug/Kg	
Chromium Solid (OES)	224	ICP-OES	8752.76	ug/Kg	
Chrysene (Soil)	200	GCMS	<0.05	mg/Kg	

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	<b>The Recycling Village Ltd.</b>	<b>Date of Receipt</b>	<b>19/03/2014</b>
	<b>Unit 21</b>	<b>Sampled On</b>	<b>18/03/2014</b>
	<b>Duleek Business Park</b>	<b>Date Testing Commenced</b>	<b>19/03/2014</b>
	<b>Duleek</b>	<b>Received or Collected</b>	<b>Delivered by Customer</b>
	<b>Co. Meath</b>	<b>Condition on Receipt</b>	<b>Acceptable</b>
<b>Customer PO</b>		<b>Date of Report</b>	<b>11/04/2014</b>
<b>Customer Ref</b>	<b>BH1 0m</b>	<b>Sample Type</b>	<b>Soil</b>
<b>Ref 2</b>			

## CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Copper (Leachate)	128	ICPMS	365.2	ug/Kg	
Copper Solid (OES)	224	ICP-OES	17421.1	ug/Kg	
Coronene (Soil)	200	GCMS	<0.05	mg/Kg	
Dibenzo(ah)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Dissolved Organic Carbon (Leachate)	316	TOC Analyser	767.7	mg/Kg	
Ethylbenzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluorene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluoride (Leachate WAC)	190	IC	4.16	mg/Kg	
Fluoride (Solid)	115	Colorimetry	2.10	mg/Kg	
Indeno(1,2,3-cd)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Lead (Leachate)	128	ICPMS	<0.38	ug/Kg	
Lead Solid (OES)	224	ICP-OES	14090.4	ug/Kg	
m- & p-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Mercury (Leachate)	128	ICPMS	1.273	ug/Kg	
Mercury (Solid)	178	ICPMS	81.59	ug/Kg	
Mineral Oil (soil)	327	GC-FID	<2.5	mg/Kg	
Molybdenum (Leachate)	128	ICPMS	15.67	ug/Kg	
Molybdenum Solid (OES)	228	ICP-OES	982.517	ug/Kg	
Naphthalene (Soil)	200	GCMS	<0.05	mg/Kg	
Nickel (Leachate)	128	ICPMS	78.34	ug/Kg	
Nickel Solid (OES)	177	ICP-OES	17372.5	ug/Kg	
o-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
PAH soil (Sum of 17)	200	GCMS	<0.05	mg/Kg	

**Signed :**   
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**Date : 11/04/2014**

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<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH1 0m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
PCB Total of 7 Congeners	167	GCMS	<0.005	mg/Kg	
Phenanthrene (Soil)	200	GCMS	<0.05	mg/Kg	
Phenol Index (Leachate)	128	Colorimetry	0.19	mg/Kg	
Pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Selenium (Leachate)	128	ICPMS	71.97	ug/Kg	
Selenium Solid (OES)	224	ICP-OES	2054.42	ug/Kg	
Sulphate (Leachate WAC)	190	IC	82.48	mg/Kg	
Sulphate (Solid)	119	Colorimetry	<1.39	mg/Kg as SO4	
TOC (Soil)	315	TOC Analyser	2.62	%	
Total Dissolved Solids (Leachate)	128	Evaporation/ Gravimetry	2970	mg/Kg	
Total Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Zinc (Leachate)	128	ICPMS	40.3	ug/Kg	
Zinc Solid (OES)	224	ICP-OES	42300.3	ug/Kg	

**Signed :**   
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<b>Customer PO</b>		<b>Date of Receipt</b>	<b>19/03/2014</b>
<b>Customer Ref</b>	<b>BH1 2.0m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
<b>Ref 2</b>		<b>Date Testing Commenced</b>	<b>19/03/2014</b>
		<b>Received or Collected</b>	<b>Delivered by Customer</b>
		<b>Condition on Receipt</b>	<b>Acceptable</b>
		<b>Date of Report</b>	<b>11/04/2014</b>
		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Copper (Leachate)	128	ICPMS	75.31	ug/Kg	
Copper Solid (OES)	224	ICP-OES	15916.8	ug/Kg	
Coronene (Soil)	200	GCMS	<0.05	mg/Kg	
Dibenzo(ah)anthracene (Soil)	200	GCMS	<0.05	mg/Kg	
Dissolved Organic Carbon (Leachate)	316	TOC Analyser	113.4	mg/Kg	
Ethylbenzene (Soil)	198	GC-FID	<0.5	mg/Kg	
Fluoranthene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluorene (Soil)	200	GCMS	<0.05	mg/Kg	
Fluoride (Leachate WAC)	190	IC	4.90	mg/Kg	
Fluoride (Solid)	115	Colorimetry	2.05	mg/Kg	
Indeno(1,2,3-cd)pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Lead (Leachate)	128	ICPMS	23.54	ug/Kg	
Lead Solid (OES)	224	ICP-OES	7859.38	ug/Kg	
m- & p-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Mercury (Leachate)	128	ICPMS	0.498	ug/Kg	
Mercury (Solid)	178	ICPMS	31.03	ug/Kg	
Mineral Oil (soil)	327	GC-FID	<2.5	mg/Kg	
Molybdenum (Leachate)	128	ICPMS	9.666	ug/Kg	
Molybdenum Solid (OES)	228	ICP-OES	267.593	ug/Kg	
Naphthalene (Soil)	200	GCMS	<0.05	mg/Kg	
Nickel (Leachate)	128	ICPMS	118.2	ug/Kg	
Nickel Solid (OES)	177	ICP-OES	23265.4	ug/Kg	
o-Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
PAH soil (Sum of 17)	200	GCMS	<0.05	mg/Kg	

**Signed :**   
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<b>Customer Ref</b>	<b>BH1 2.0m</b>	<b>Sampled On</b>	<b>18/03/2014</b>
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		<b>Sample Type</b>	<b>Soil</b>

## **CERTIFICATE OF ANALYSIS**

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
PCB Total of 7 Congeners	167	GCMS	<0.005	mg/Kg	
Phenanthrene (Soil)	200	GCMS	<0.05	mg/Kg	
Phenol Index (Leachate)	128	Colorimetry	0.02	mg/Kg	
Pyrene (Soil)	200	GCMS	<0.05	mg/Kg	
Selenium (Leachate)	128	ICPMS	83.53	ug/Kg	
Selenium Solid (OES)	224	ICP-OES	3064.55	ug/Kg	
Sulphate (Leachate WAC)	190	IC	52.44	mg/Kg	
Sulphate (Solid)	119	Colorimetry	21.06	mg/Kg as SO4	
TOC (Soil)	315	TOC Analyser	1.534	%	
Total Dissolved Solids (Leachate)	128	Evaporation/ Gravimetry	3070	mg/Kg	
Total Xylene (Soil)	198	GC-FID	<0.5	mg/Kg	
Zinc (Leachate)	128	ICPMS	195.1	ug/Kg	
Zinc Solid (OES)	224	ICP-OES	36912.5	ug/Kg	

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