

**ADDITIONAL ENVIRONMENTAL
INVESTIGATION
NO 3888A/18
AT
THE POND HOUSE (PUBLIC HOUSE)
738 OXFORD ROAD, READING
BERKSHIRE
FOR
PROPOSED RESIDENTIAL DEVELOPMENT**

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1 INTRODUCTION

- 1.1 This investigation was commissioned by the developers, RJD London Mayfair, in order to follow on from the preceding investigation carried out by Terramech in 2016.
- 1.2 That investigation revealed that the site was underlain by tarmac below which, lay rubble, remnant buried foundations and floor slabs.
- 1.3 Limited analysis of two samples showed that elevated Lead concentrations were present. The distribution and range of concentrations present could not be determined from the two samples analysed.

2 SITE DETAILS

Site Location

- 2.1 This site is located approximately 2.50km west of Reading town centre and 460m south east of Norcot. The site centre is located at grid reference 468998E 173968N and post code reference RG30 1EH.

Brief Description

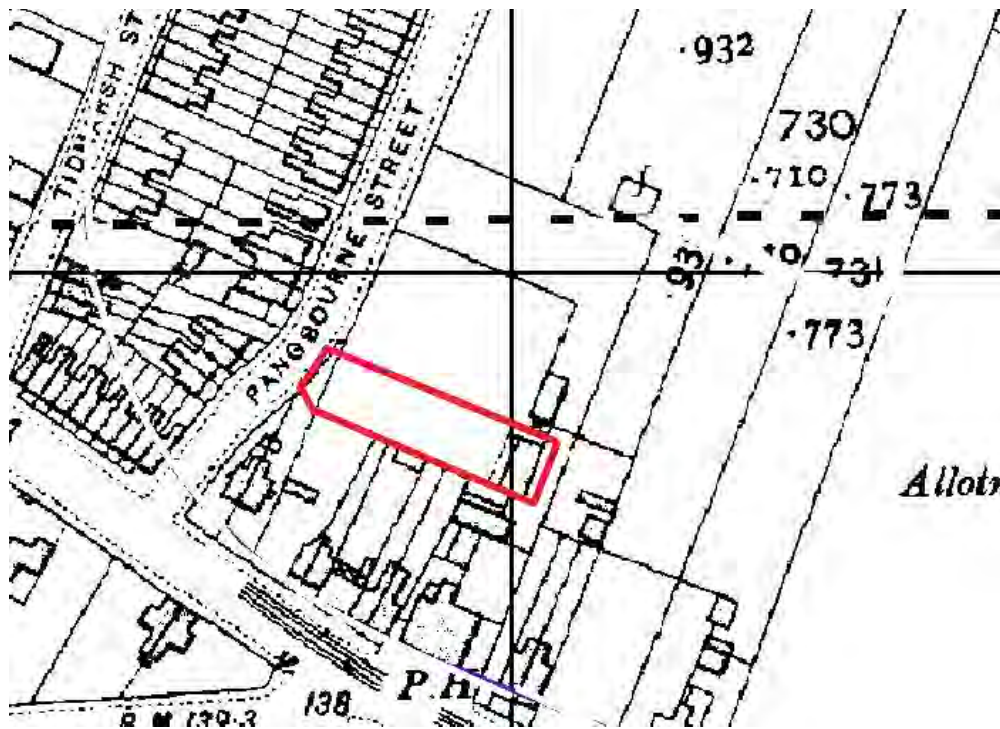
- 2.2 The area under consideration is approximately 0.078ha and is rectangular in shape.
- 2.3 At the time of the investigation the site was used as a car parking area for the Pond House (public house), covered in hardstanding and fenced off. Access was from the driveway adjacent to the Pond House along with a large gated access from Pangbourne Street however this had been boarded off and locked at the time of the investigation.

Published Geology

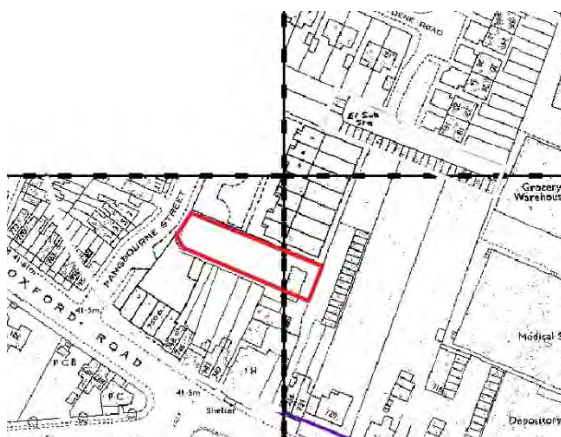
- 2.4 The British Geological Survey Map, data provided by British Geological Survey ©NERC shows the site to be underlain by Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated), a sedimentary bedrock composed of chalk formed approximately 71 to 89 million years ago. These chalk formations are likely to be overlain by Taplow Gravel Formation a superficial deposit composed of sand and gravel formed up to 2 million years ago.

Site History

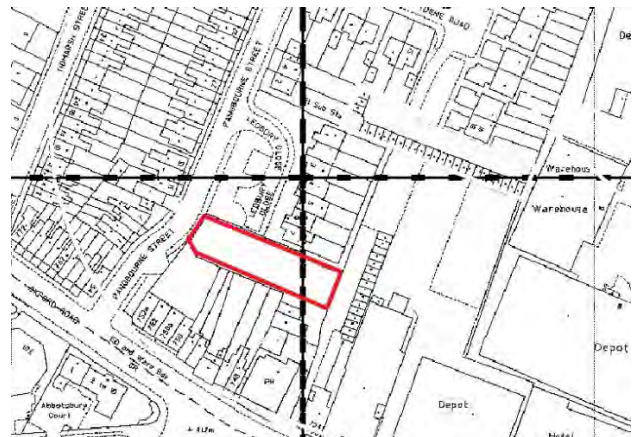
- 2.5 Although a full phase 1 investigation was not carried out, we have reviewed some historic maps of this area from our archive. These show that the area started to become developed with housing on the 1899 map.
- 2.6 The maps also show that the public house was present since at least 1878. The 1899 map shows some out buildings behind the pub, on the eastern side of an open undeveloped square.
- 2.7 These buildings do not follow any sensible residential layout and we assume that the area and the buildings were part of the public house. By 1968 the maps show that half of this area becomes the pub car park, which is the area being considered by this report.



1911



1974



1993

2.8 The out buildings behind the pub become part of the car park by 1974 and by 1993 the maps show that only one of the outbuildings remain and that the site area under consideration is now empty.

3 PRECEDING GROUND INVESTIGATION

- 3.1 The original site work was carried out on 2nd November 2016, with the environmental laboratory tests completed on 15th November 2016.
- 3.2 Small diameter boreholes were drilled using a small rubber tracked 'Window Sampling' rig. The drilling rig percussively drives sampling tubes into the ground which are then withdrawn by the rig. Further depth is achieved by driving another tube down from the base of the hole left by the first. This process is repeated until the desired depth is achieved, or an obstruction is met. The soil samples are retained inside the sampler tubes by a removable thin plastic liner. The rig therefore produces a continuous core from ground level to depth. The name window sample is a historic term referring to long sections, or windows, cut out of the sampler tube to allow recovery of the samples.

Ground Conditions

- 3.3 The exploratory hole location plan along with the logs are presented in the appendix A of this report however, a summary of the strata encountered within the holes is presented below.
- 3.4 Below the tarmac layers our boreholes encountered made ground to depths of no more than 1.0m, comprising a mixture of loose to medium dense brown silty gravelly (fine to coarse flint and brick) fine to coarse sand, with patches of fine to coarse brick and concrete gravel with cobble sized bricks. One of the boreholes also encountered a layer of poor quality concrete.
- 3.5 Below the made ground the boreholes encountered the Taplow Gravel Formation comprising a medium dense brown mottled grey very sandy angular to rounded fine to coarse flint gravel.

- 3.6 Below the Taplow Gravel Formation, at depths of between 2.7m and 4.8m the boreholes encountered the Seaford & Newhaven Chalk Formation which comprised mostly unstructured chalk. It should be noted that borehole WS3 reached a depth of 5m without encountering the chalk.

Groundwater

- 3.7 Groundwater was encountered in all of the exploratory holes from a depth range of 2.90m to 4.00m below ground level. We did not install any borehole wells on the site due to the fact that the boreholes had penetrated the chalk.
- 3.8 The groundwater levels may have been altered by the localised disturbance of the drilling and it should also be noted that there may be significant fluctuation in this observed groundwater level due to seasonal variations, weather induced variations and variations caused by nearby abstractions or discharges could cause rapid and significant changes in the effective groundwater level.

Samples for Contamination Analysis

- 3.9 A sample was taken from the overlying Made Ground and another was taken from the natural ground from two of the four exploratory holes.
- 3.10 The samples were recovered for contamination analysis in accordance with BS10175 (2011). The samples were placed in laboratory supplied containers including amber glass jars with hydrocarbon resistant seals and plastic waterproof pots.
- 3.11 The samples were then placed in plastic cool boxes with frozen ice packs to be transported to a fridge at our laboratory for storage overnight before being couriered to an MCERTS accredited laboratory for analysis.

Analytical Results

- 3.12 The analysis showed that concentrations of a group of tarry hydrocarbons associated with combustion residues and coal tars (Poly-cyclic Aromatic Hydrocarbons or PAH) were at acceptable concentrations.
- 3.13 Petroleum hydrocarbons were generally low with no band between C10 and C40 exceeding 30mg/kg. Monocyclic Aromatic Hydrocarbons, such as Benzene, which are associated with degrading fuels, were below detection limits.
- 3.14 Most of the metals considered in the analysis were at low concentrations that would not be unusual for natural soils. Elevated Barium and Lead concentrations were noted in the sample of the made ground. Whilst the Barium is not expected to pose a risk to human health, the Lead concentration (352mg/kg) exceeded the DEFRA SP1010 (Dec 2014) value of 310mg/kg for soils in gardens where occupants would not be expected to grow vegetables and fruit for their own consumption.

4 ADDITIONAL CONTAMINATION ASSESSMENT

- 4.1 We suspect that the Lead is present in the made ground from old building materials present in these soils, which we suspect to be the remnants of the outbuilding seen on the historic maps. Lead flashing, Lead pipework, Lead window beading or Lead based white paint could be the culprits.
- 4.2 In order to define the variation, if any, of the Lead concentrations over the site, further analysis was required. Due to the cost of laboratory analysis we have brought an X-Ray Fluorescence Analyser or XRF to the site to carry out multiple heavy metal assessments.

Note on X-Ray Fluorescence Analysers

- 4.3 This analyser exposes the soils to X-Rays and then analyses the X-Rays fluoresced by the soils in response. Every element produces a unique response and the analyser can resolve the results into concentrations for a number of elements.
- 4.4 The analyser uses a very narrow primary X-Ray beam (3mm) and quickly highlights tiny variations in the material being assessed, especially where contaminants are present as tiny flecks, mixed into the wider uncontaminated non-homogeneous soil mass. The laboratory results are based on at least 10 grams of the soil being ground down into a powder and dissolved by very strong acids (aqua-regia). This gives an average for that 10 gram sample.
- 4.5 The concentrations determined by the analyser have been seen to slightly over-estimate what is detected by the laboratory, probably as a result of non-homogenous soils however, multiple tests at each test location quickly disclosed the level of non-homogeneity.

Analysis Strategy

- 4.6 The section of the site which is to become the future garden area was marked out on the tarmac and was then stripped off using a JCB type excavator. Since no ground level changes are proposed, we have assumed that if seen to be uncontaminated, the soils present will be dressed with a layer of topsoil.
- 4.7 In order to assess the suitability of these soils, we have then set out a grid over the proposed garden area at approximately 1.2m centres. We have then set up the XRF analyser at each grid node. At some locations we have carried out multiple exposures as described above.

- 4.8 This analysis showed that elevated Lead concentrations were present in one corner of the proposed garden. We have then taken a soil sample at that location for confirmation analysis. A second sample was then taken from the area exhibiting the lowest Lead concentration.
- 4.9 In order to check on the accuracy of the XRF analyser, we have also scanned the soil samples recovered, inside their sample jars. All the results are appended.

5 ASSESSMENT OF RESULTS

Assessment Criteria

- 5.1 At this time Soil Guideline Values (SGVs) have been published by the Environment Agency for Arsenic, Cadmium, Nickel, Mercury, Selenium, Benzene, Toluene, Ethylbenzene, Xylene and Phenol together with Dioxins Furans and Dioxin like PCBs. These were calculated using the CLEA model (v1.04) and Environment Agency guidance documents SR2 (Human Health Toxicological Assessment of Contaminants in Soil) and SR3 (Updated Technical Background to the CLEA Model).
- 5.2 Further numbers of contaminants were assessed on this basis using the same CLEA Model by CIEH/LQM (The Chartered Institute of Environmental Health and Land Quality Management Ltd). Soil guideline values were published in their report on Generic Assessment Criteria for Human Health Assessments (2009). This 2009 guidance was replaced in 2015 by new S4UL values (Suitable '4' Use Levels) which are intended by CIEH/LQM to provide a complete and updated replacement for the values published in their 2009 report (see CIEH/LQM S4UL – 1.1). The S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 - All rights reserved.

- 5.3 Where there is no Environment Agency SGV or S4UL, Terramech Investigations have derived values using the CLEA Model with old TOX reports as well as the SR2 report and the SR3 report, as suggested by the Environment Agency.
- 5.4 The assessments should be based on a hierarchy where the Environment Agency SGVs and S4UL from the Chartered Institute of Environmental Health are most preferred, followed by values derived by Terramech using the CLEA model.

DEFRA SP1010 & C4SL

- 5.5 We have also considered C4SL values derived for 6 contaminants in the Department of the Environment Farming and Rural Affairs (DEFRA) SP1010 report. The report describes how levels of contamination at a site are placed in one of four categories. Category 4 is where the level of risk posed is acceptably low, to Category 1, where the level of risk is clearly unacceptable. The Category 4 values presented in the report were primarily intended for use under the Part 2A of the Environmental Protection Act 1990 to screen out low risk sites.
- 5.6 The Category 4 values are however, determined using a Lower Level of Toxicological Concern (LLTC) assessment methodology which differs from the Health Condition Values (HCVs) discussed in Environment Agency SR2 report, these consider minimal or tolerable levels of risk.
- 5.7 A direction was given by the Department for Communities and Local Government (DCLG) and DEFRA for the C4SL system to be used for assessments for Planning as well as assessments under Part 2A of the Environmental Protection Act (SP1010 Companion Document December 2014).

- 5.8 In order to maintain consistency in our approach to all contaminants (i.e. minimal or tolerable levels of risk), we have continued to use the slightly more conservative Environment Agency SR2 – SR3 based values for the 43 contaminants considered in the Environment Agency SGV reports and partner S4UL publication from CIEH/LQM.
- 5.9 Unfortunately, the Environment Agency and CIEH/LQM documents do not give any guidelines for Lead concentrations. The SP1010 publication (March 2014 - Appendix H - Table 4.1) does give a provisional Category 4 value for Lead determined using the original HCV CLEA methodology. We consider this value is to be consistent with the minimal or tolerable levels of risk methodology used for the other 43 contaminants by the Environment Agency and CIEH/LQM.
- 5.10 On this basis we have adopted the values for Lead calculated to be protective of children as the critical receptors. For a residential garden, where plants are grown for consumption by the residents, the guideline value is 190mg/kg. No guideline concentrations are given by DEFRA in the SP1010 document for adults under that assessment methodology. Values for the other land use scenarios are presented in the appended tables.

Exposure Scenario

- 5.11 The generic exposure scenario for residential land use, where occupants are not expected to grow and consume fruits and vegetables on the site, has been selected for the assessment of soil contamination concentrations.

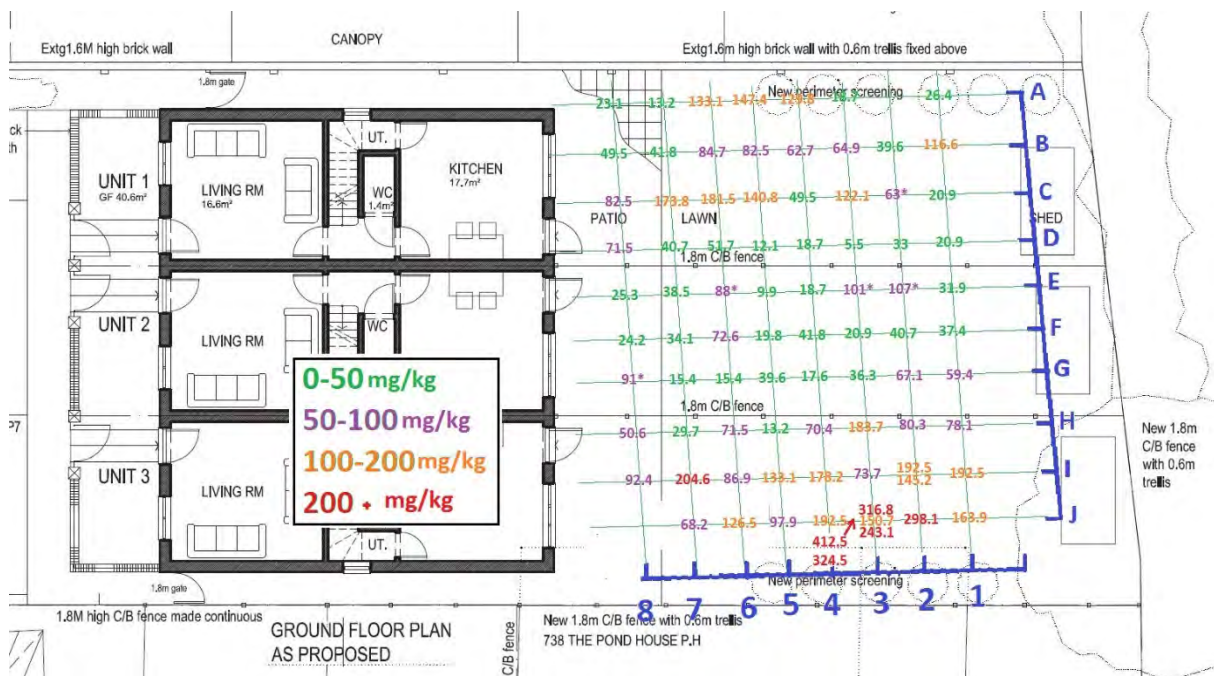
Comparison of Measured Concentrations with Generic Guideline Values

- 5.12 The measured concentrations of contaminants in the samples recovered from this site were compared with the assessment criteria described above as follows. The laboratory result sheets are appended.

Metal Compounds

5.13 Analysis showed that concentrations of metals detected in the samples from the Made Ground were generally seen low with one measured concentration (Lead) exceeding respective guideline values.

5.14 The lead value measured by laboratory analysis within the Made Ground was 352mg/kg. This significantly exceeds the 310mg/kg guideline as discussed. The XRF data has only revealed concentrations exceeding 310mg/kg in one locations along the northern edge of the garden areas, as shown in the plot below.



5.15 Laboratory/XRF comparison tests on a sample from the H8 location (lowest Lead concentrations) indicated Lead concentrations below 5mg/kg (limit of detection). The XRF analyser has shown values of 7mg/kg and 24mg/kg (the same as parts per million or PPM) from this sample. We suspect from these results, that the Lead is present as well oxidised small flakes, fragments, shot or grit given the variation in concentrations in a very small sample of soil.

5.16 The laboratory results for the sample from the 'hotspot area' indicated a concentration of 86mg/kg. XRF scans of the sample gave concentrations of 79mg/kg, 69mg/kg, 17mg/kg and 124mg/kg.

5.17 This comparison shows that the XRF results for the Lead concentrations, as well as Arsenic and Cadmium, were reliable. On this basis we consider that the XRF measured concentrations exceeding 310mg/kg can also be relied upon.

Solubility

5.18 Waste Acceptance Criteria tests carried out as part of the 2016 investigation showed that the Lead detected at 352mg/kg in the sample from borehole WS2 was insoluble with concentration of Lead in the aqueous extract being below detection limits.

5.19 Additional leachate tests were carried out on the samples recovered during the XRF survey, this again showed that the Lead was insoluble with concentration of the metal in the aqueous extract being below detection limits (5µg/litre). We have also noted that this eluate concentration was within limits set out in UK Drinking Water Regulations.

Summary

5.20 The additional investigation work has shown that the Lead contamination found on the site was largely confined to the south eastern edge of the proposed garden area. The concentrations in that area exceed the acceptable concentration in gardens where vegetables and fruit are grown for the occupant's consumption. Leachate tests however, indicate that human and vegetable uptake of the Lead will be minimal.

5.21 With respect to the land use scenario where ***the gardens are communal recreation areas and no vegetables or fruit will be grown***, only 2 of 87 exposures determined concentrations that exceed the guideline value for Lead (310mg/kg).

5.22 Using statistical analysis (CIEH Max/Mean calculator) we can see that the true average does not exceed the critical concentration and therefore we consider that this land use poses only a minimal or tolerable level of risk.

5.23 Waste Acceptance Criteria tests showed that the mixed materials from the main excavation area should be classified as inert waste.

6 RECOMMENDATIONS

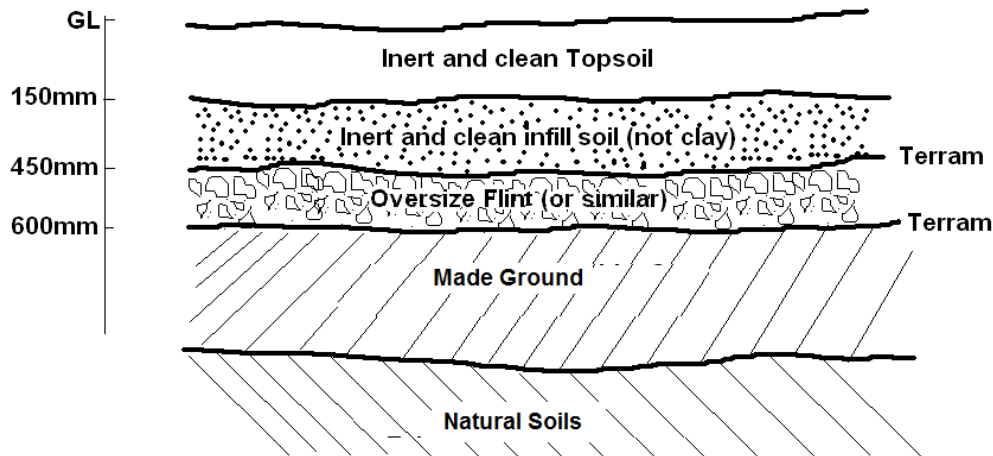
6.1 Given the land use scenario for the proposed development we consider that in general these soils pose a minimal or tolerable level of risk, as discussed. Given that the elevated concentrations were found in such a small area we would suggest that a minimal excavation is carried out to remove this made ground (soil & rubble).

6.2 The ground in this part of the garden area was seen to cover remnant brick foundations and a concrete floor slab, consistent with the old building shown on the historic maps. The Lead contamination was seen to lie in the soil and rubble, which must be from Lead paints and building materials in the former building.

6.3 The natural ground on which the foundations and floor slab were placed would not be expected to contain Lead contaminated rubble and analysis carried during our initial investigation showed that contaminants were not detected in these natural soils. Given the results of the leachate tests, we were not surprised to find very low Lead values in the natural soil.

6.4 In order to create a suitable horizon of soil for these gardens it will be necessary to remove these substructures.

- 6.5 In the south east corner of the site where the most elevated concentrations of Lead were detected, it will be necessary to remove the soil and rubble that is present before the foundation and floor substructures are broken up and removed. This is to prevent the spread of the Lead contamination during the process of grubbing out the old foundations.
- 6.6 This excavation would be limited in size and include analysis locations J1, J2, J3, and J4 as shown on the attached plan. Whole pieces of brick masonry or concrete that are not white painted or containing strips of flashing or penetrated by old Lead pipework would not be expected to be contaminated and can be crushed and removed from site.
- 6.7 We would expect the soil excavation and substructure removal to leave undisturbed natural soil at the base of the excavation. If made ground is still present in the south eastern hotspot area below the old foundations, the excavations should be deepened until natural soil is found, or to a depth of at least 0.6m.
- 6.8 This excavated made ground (soil and rubble) cannot be used for gardens and will need to be removed from site. The Waste Acceptance analysis carried out on the made ground samples indicated that although contaminated, the waste classification is inert. The appended WAC analysis should be supplied to the haulier removing the soil.
- 6.9 If the made ground (soil and rubble) lies deeper than 0.6m, the material should then be left in place and a granular break layer installed to separate the made ground from the clean imported soil that will be placed on top.



6.10 The granular break layer should be sandwiched by a woven geotextile, top and bottom.

The granular material generally comprises oversize flint or a similar non-porous stone however, given the insolubility of the Lead, crushed brick and concrete will also be suitable.

6.11 The granular layer would then be covered by suitable clean inert soils. This layer should not be clay due to potential waterlogging however, the materials should be able to retain some moisture for any plants or shrubs planted in the garden. The last 150mm should be a clean uncontaminated topsoil which also complies with the multipurpose topsoil specification in BS3882.

6.12 The imported soils will need to be validated as being fit for purpose. We would recommend that the imported soil is stockpiled on site and samples recovered for laboratory analysis. The material should only be spread out on site once the laboratory results are received and confirm that the soils are uncontaminated.

7 NOTES

- 7.1 This report does not consider geotechnical properties of the underlying soils with respect to foundation design or any potential ground instability issues.
- 7.2 The investigation report and the opinion expressed therein are based on the ground conditions encountered during the site work and on the results of tests made in the field and laboratory. However, there may be special conditions prevailing at the site which have not been disclosed by the investigations and which have not been taken into account in this report.
- 7.3 Groundwater levels can vary significantly from those observed during this investigation and the range of potential variation has not been defined by ongoing monitoring via installed observation wells.
- 7.4 The conclusions in this report represent our professional opinion, these conclusions have been drawn up with the greatest care to ensure that all apparent issues were addressed properly in accordance with applicable UK guidance and accepted practice.

Written



J.R. Puzyna BEng (Hons) MCIEH

For and on Behalf of

Terramech Investigations Ltd

Checked



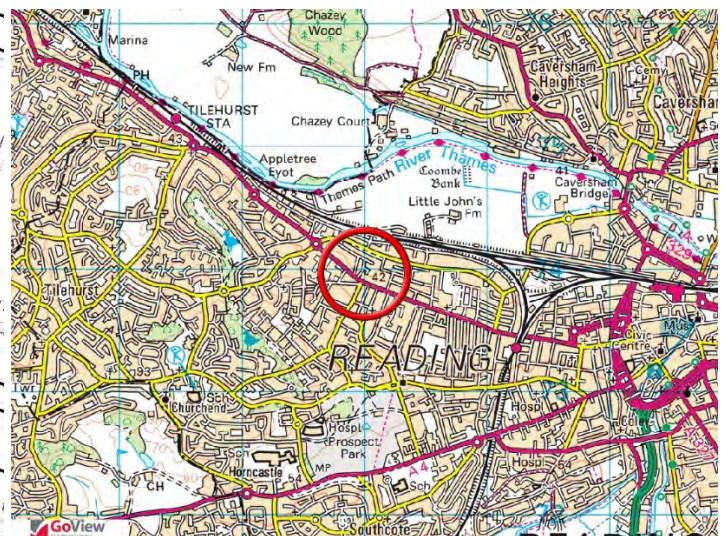
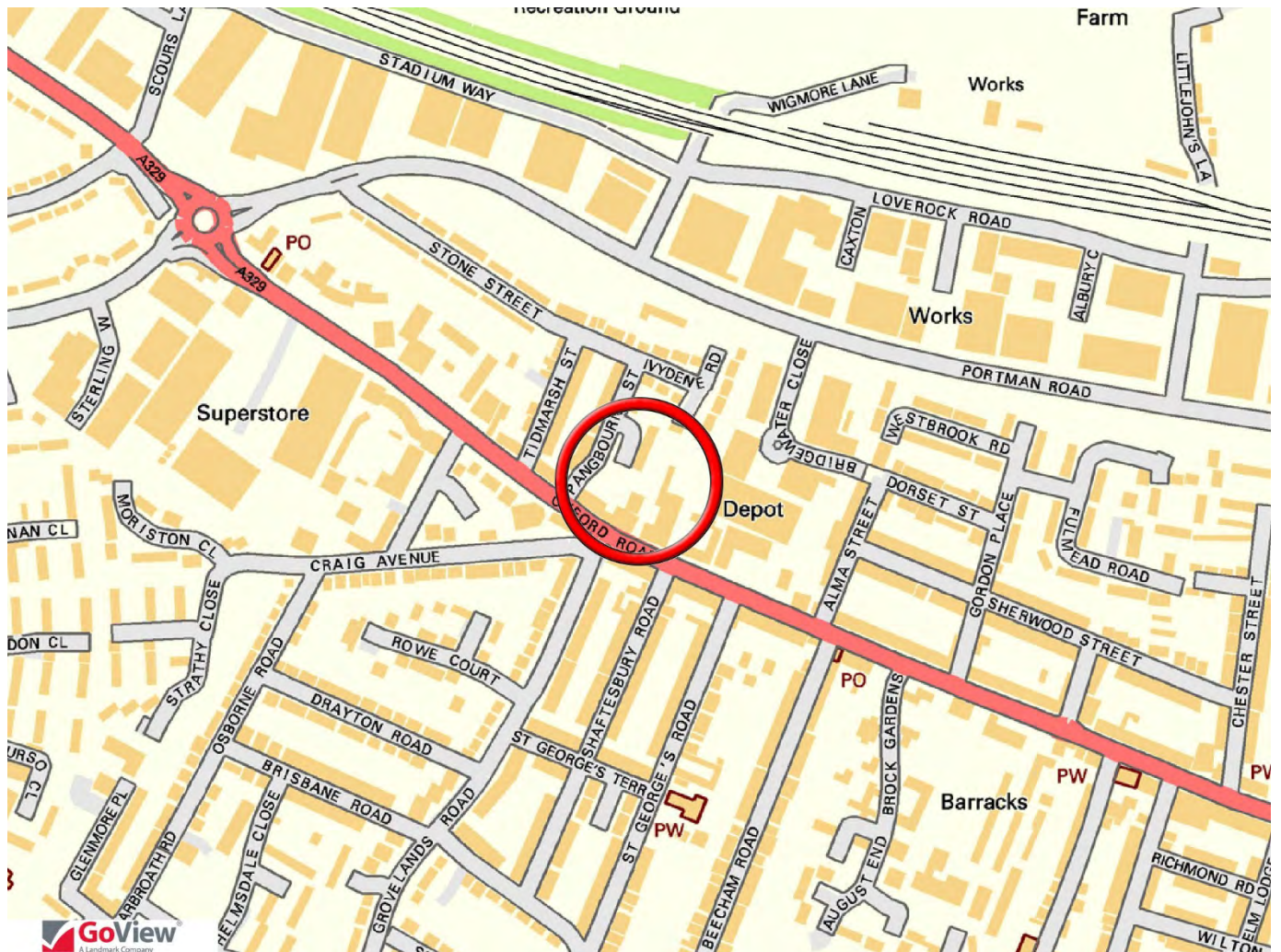
M. R. Green BSc (Hons) FGS

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FIGURES









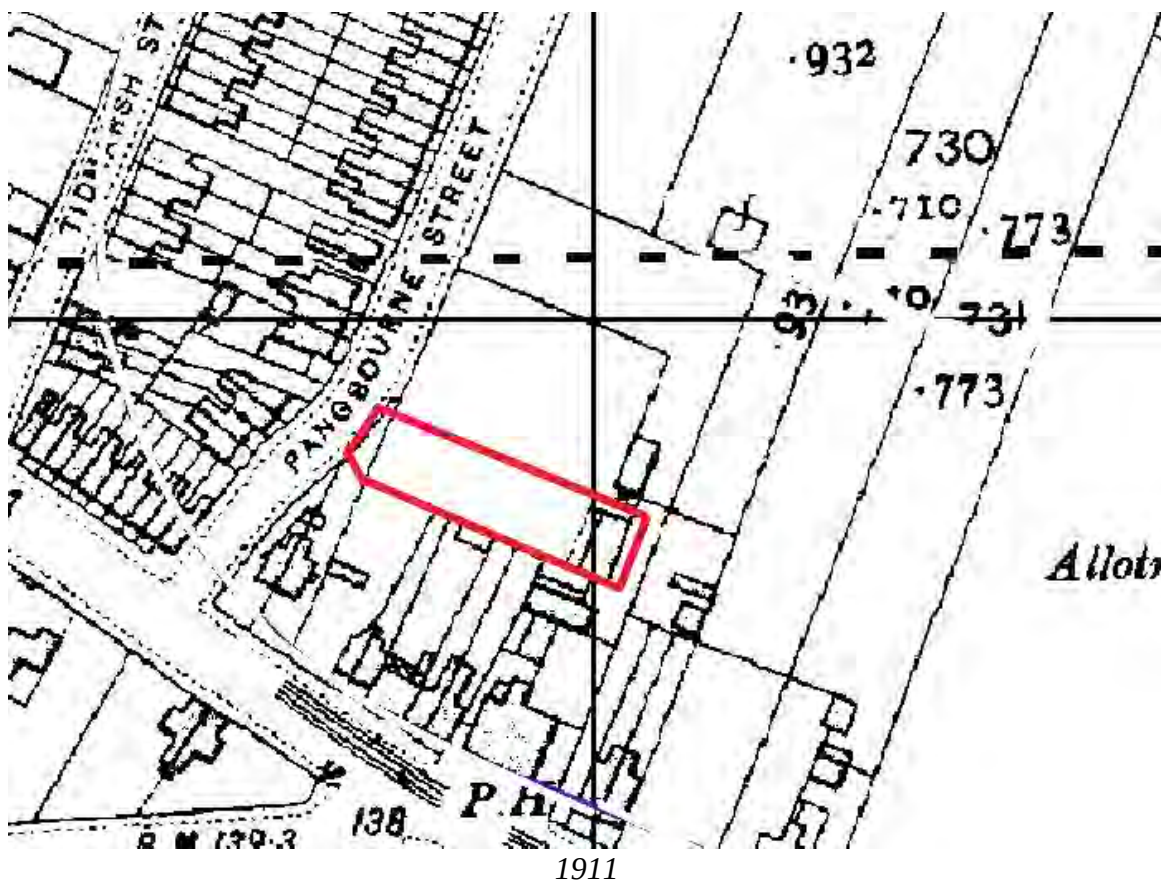
Above, the remnant foundation and floor slab of the former building on the site



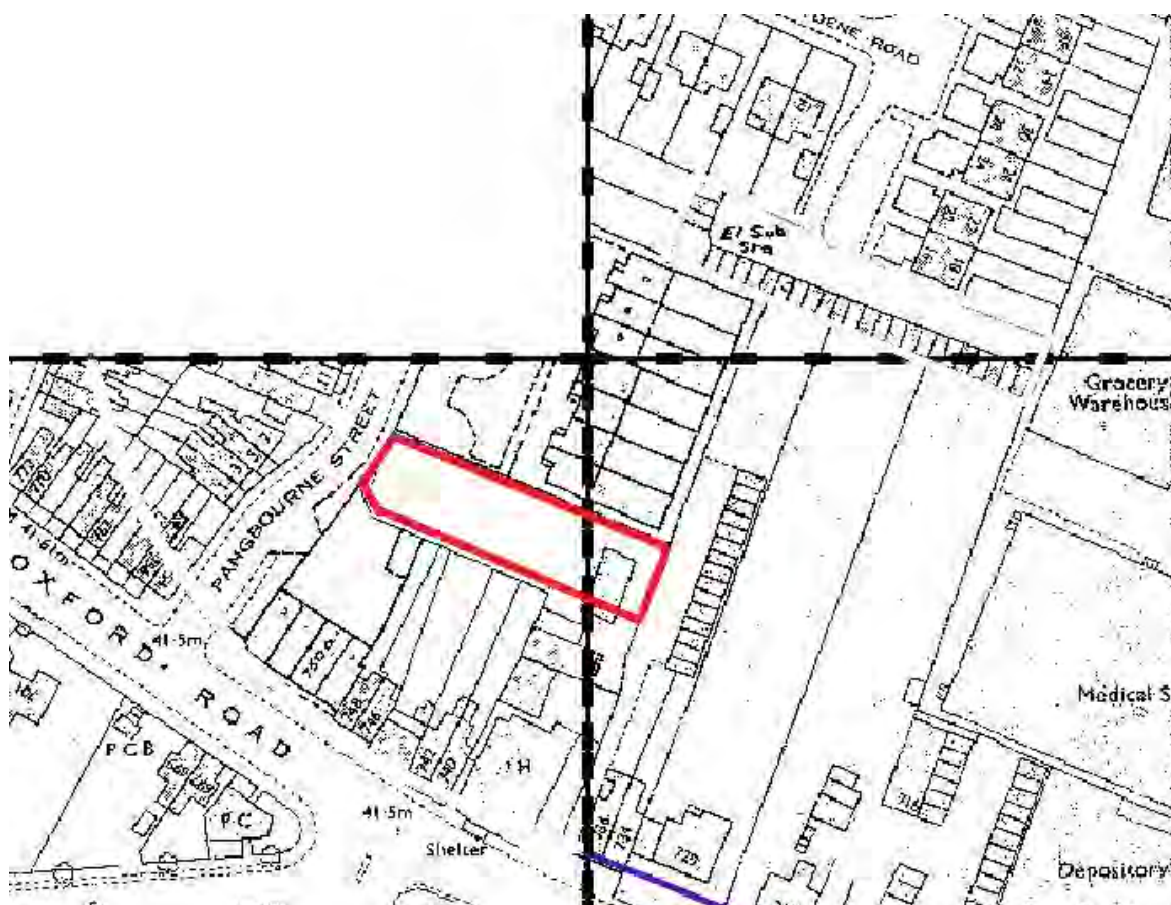
Above, a view of the cleared garden area marked out at 1.2m centres



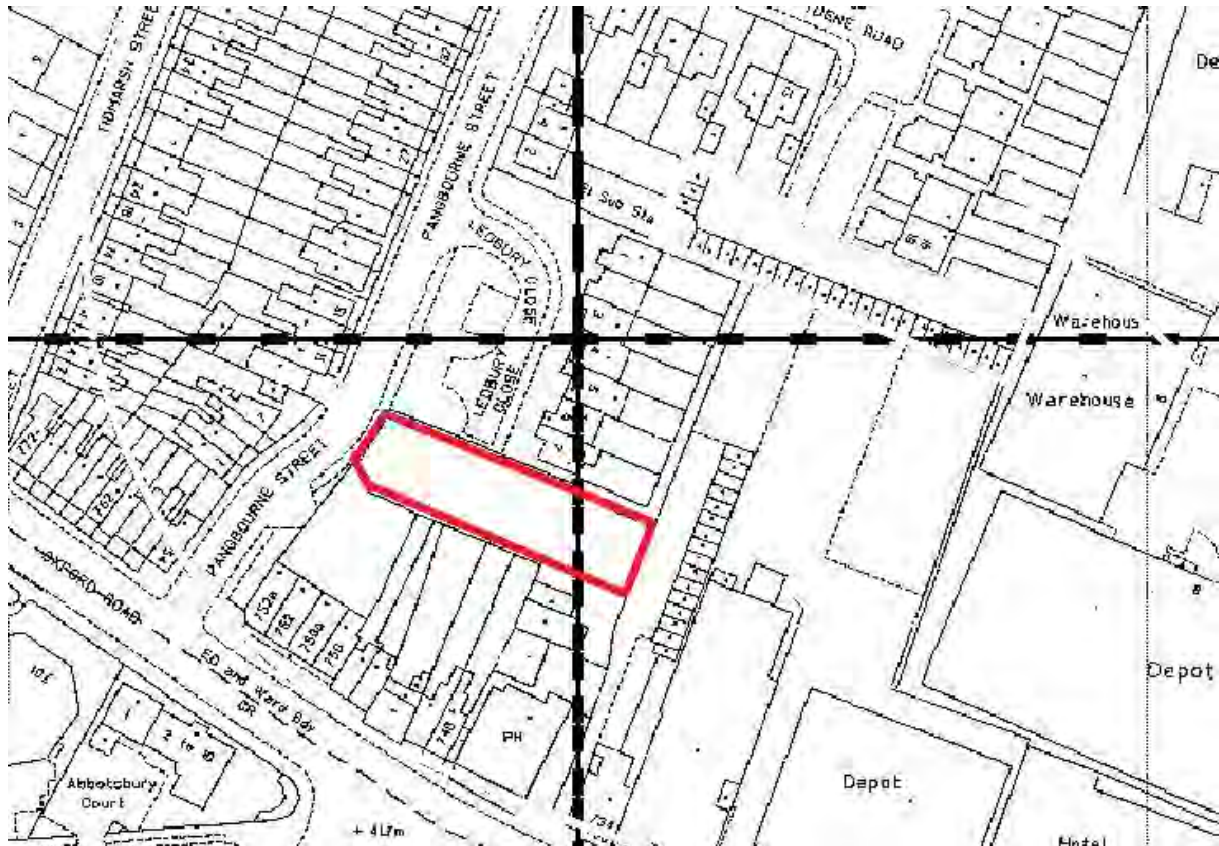
Above, a view of the XRF analyser in use



1911



1974



1993

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APPENDIX A

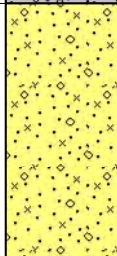
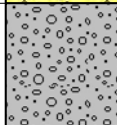
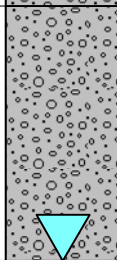
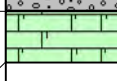
EXPLORATORY HOLE LOCATION PLAN AND LOGS



 TERRAMECH INVESTIGATIONS LIMITED 183 LONG LANE TILEHURST READING	REMARKS: Borehole was drilled using a windowless sampling rig Borehole was backfilled with arisings.		
	U100=100mm dia. UNDISTURBED SAMPLE B=BULK SAMPLE W=WATER SAMPLE	U38=38mm dia. UNDISTURBED SAMPLE SPT=STANDARD PENETRATION TEST	D=SMALL DISTURBED SAMPLE CPT=CONE PENETRATION TEST

PAGE: 3		JOB 3888					BOREHOLE WS2		
DATE:20.10.16		THE POND HOUSE, OXFORD ROAD, READING							
DESCRIPTION	REDUCED	DEPTH	LEGEND	SAMPLE		THICKNESS	SPT	REMARKS	
	LEVEL m			TYPE	DEPTH	m			
		0.00				0.06			
Tarmac		0.06				0.24			
Loose to medium dense grey sandy angular fine to coarse GRAVEL of concrete. (MADE GROUND)		0.30		C	0.30			-- 3888/WS2 / 0.3C	
Soft to firm brown very sandy gravelly CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse of flint and pebbles.				D	0.70	0.70		-- 3888/WS2 / 0.7D	
		1.00		SPT	1.00		15	-	
Medium dense brown slightly clayey very sandy angular fine to coarse GRAVEL of flint. Sand is fine to coarse. (TAPLOW GRAVEL FORMATION)				C	1.50			-- 3888/WS2 / 1.5C	
				D	1.50	1.00		-- 3888/WS2 / 1.5D	
		2.00		SPT	2.00		14	-	
Medium dense brown gravelly fine to coarse SAND. Gravel is angular fine to coarse of flint. (TAPLOW GRAVEL FORMATION)				D	2.20	0.60		-- 3888/WS2 / 2.2D	
		2.60							
Loose to medium dense brown white gravelly fine to coarse SAND with chalk fragments. Gravel is angular fine to coarse of flint. (TAPLOW GRAVEL FORMATION)		2.90w		D	2.80			-- 3888/WS2 / 2.8D	
				SPT	3.00	1.00	6	Water strike	
								-	
		3.60							
Structureless CHALK: white mottled brown very gravelly SILT. Gravel is sub-angular fine to coarse of CHALK. (SEAFORD CHALK FORMATION & NEWHAVEN CHALK FORMATION)				SPT	4.00		7	Poor recovery from 40% from 4.00 to 5.00m	
						1.40		-	
		5.00		SPT	5.00		5	-	

PAGE: 4		JOB 3888					BOREHOLE WS3		
DATE:20.10.16		THE POND HOUSE, OXFORD ROAD, READING							
DESCRIPTION	REDUCED	DEPTH	LEGEND	SAMPLE		THICKNESS	SPT	REMARKS	
	LEVEL m			TYPE	DEPTH	m			
		0.00							
Tarmac		0.10		C	0.10	0.10		-- 3888/WS3 / 0.1C	
Dense orange gravelly fine to coarse SAND. Gravel is angular fine to coarse of brick. (MADE GROUND)		0.20				0.10			
Dense black sandy angular fine to coarse GRAVEL of clinker and slag. Sand is fine to coarse. (MADE GROUND)		0.30		D	0.70	0.70		-- 3888/WS3 / 0.7D	
Medium dense brown silty slightly gravelly fine to coarse SAND. Gravel is sub-angular fine to coarse of flint. (TAPLOW GRAVEL FORMATION)		1.00		SPT	1.00		7	-	
Firm brown very sandy CLAY with occasional gravel. Sand is fine to coarse. Gravel is angular fine to coarse of flint. (TAPLOW GRAVEL FORMATION)		1.00		C	1.00			-- 3888/WS3 / 1.0C	
		1.20		D	1.20	0.55		-- 3888/WS3 / 1.2D	
Medium dense brown gravelly fine to coarse SAND. Gravel is angular fine to coarse of flint. (TAPLOW GRAVEL FORMATION)		1.55							
		1.80		D	1.80			-- 3888/WS3 / 1.8D	
		2.00		SPT	2.00	0.95	22	-	
		2.50							
Medium dense brown very sandy angular to rounded fine to coarse GRAVEL of flint with cobbles of flint. (TAPLOW GRAVEL FORMATION)		2.50		D	2.60			-- 3888/WS3 / 2.6D	
		2.90w						Exploratory hole collapsed back to 2.90m from 4.00m. Water strike	
				SPT	3.00		23	-	
						2.50			
				SPT	4.00		24	-	
		5.00		SPT	5.00		14	-	
 TERRAMECH INVESTIGATIONS LIMITED 183 LONG LANE TILEHURST READING			REMARKS: Borehole was drilled using a windowless sampling rig Borehole was backfilled with arisings.						
U100=100mm dia. UNDISTURBED SAMPLE B=BULK SAMPLE W=WATER SAMPLE			U38=38mm dia. UNDISTURBED SAMPLE SPT=STANDARD PENETRATION TEST			D=SMALL DISTURBED SAMPLE CPT=CONE PENETRATION TEST			

PAGE: 5		JOB 3888					BOREHOLE WS4		
DATE:20.10.16		THE POND HOUSE, OXFORD ROAD, READING							
DESCRIPTION	REDUCED	DEPTH	LEGEND	SAMPLE		THICKNESS	SPT	REMARKS	
	LEVEL m			TYPE	DEPTH	m	N		
		0.00				0.05			
Tarmac		0.05					0.45		
Medium dense brown mottled black and redsandy angular fine to coarse GRAVEL of brick tamac and concrete. (MADE GROUND)		0.50		C	0.60			-- 3888/WS4 / 0.6C	
Medium dense brown silty fine to coarse SAND with occasional gravel. Gravel is sub-angular to rounded of flint. (TAPLOW GRAVEL FORMATION)				D	0.80			-- 3888/WS4 / 0.8D	
				SPT	1.00	1.00	10	-	
				D	1.20			-- 3888/WS4 / 1.2D	
Medium dense brown mottled grey and white slightly sandy very clayey angular fine to coarse GRAVEL of flint. Sand is fine to medium. (TAPLOW GRAVEL FORMATION)		1.50		D	1.80	0.50		-- 3888/WS4 / 1.8D	
Medium dense brown mottled white/grey sandy angular fine to coarse GRAVEL of flint. Sand is fine to coarse.		2.00		SPT	2.00		35	-	
				D	2.50			-- 3888/WS4 / 2.5D	
		3.00w		SPT	3.00		20	- Water strike	
						2.80			
				SPT	4.00		19	-	
				CPT	4.50		20	-	
Structureless CHALK: White gravelly SILT. Gravel is sub-angular fine to coarse of chalk. (Class Dm) (SEAFORD CHALK FORMATION & NEWHAVEN CHALK FORMATION)		4.80		CPT	5.00	0.20	10	-	
		5.00							

**ADDITIONAL ENVIRONMENTAL
INVESTIGATION
NO 3888A/18
AT
THE POND HOUSE (PH)
738 OXFORD ROAD, READING
BERKSHIRE
FOR
PROPOSED RESIDENTIAL DEVELOPMENT**

APPENDIX B

CONTAMINATION ANALYSIS



Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Terramech Investigations Ltd
183 Long Lane
Tilehurst
Reading
Berkshire
RG31 6YW

Tel: +44 (0) 1244 833780

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Attention :	Tom Leigh
Date :	15th November, 2016
Your reference :	3888
Our reference :	Test Report 16/16797 Batch 1
Location :	The Pond House, 738 Oxford Road, Reading
Date samples received :	8th November, 2016
Status :	Final report
Issue :	1

Seven samples were received for analysis on 8th November, 2016 of which two were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: Terramech Investigations Ltd
Reference: 3888
Location: The Pond House, 738 Oxford Road, Reading
Contact: Tom Leigh
JE Job No.: 16/16797

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	7-9	16-18									Please see attached notes for all abbreviations and acronyms		
Sample ID	WS2/ES1	WS3/ES2											
Depth	0.30-1.00	1.00-2.00											
COC No / misc													
Containers	V J T	V J T											
Sample Date	02/11/2016	02/11/2016											
Sample Type	Soil	Soil											
Batch Number	1	1											
Date of Receipt	08/11/2016	08/11/2016									LOD/LOR	Units	Method No.
Arsenic ^{#M}	24.2	18.8									<0.5	mg/kg	TM30/PM15
Barium ^{#M}	458	43									<1	mg/kg	TM30/PM15
Beryllium	1.2	1.0									<0.5	mg/kg	TM30/PM15
Cadmium ^{#M}	<0.1	<0.1									<0.1	mg/kg	TM30/PM15
Chromium ^{#M}	103.4	150.2									<0.5	mg/kg	TM30/PM15
Copper ^{#M}	18	13									<1	mg/kg	TM30/PM15
Lead ^{#M}	352	10									<5	mg/kg	TM30/PM15
Mercury ^{#M}	<0.1	<0.1									<0.1	mg/kg	TM30/PM15
Nickel ^{#M}	30.3	34.4									<0.7	mg/kg	TM30/PM15
Selenium ^{#M}	<1	<1									<1	mg/kg	TM30/PM15
Vanadium	46	53									<1	mg/kg	TM30/PM15
Water Soluble Boron ^{#M}	0.6	0.5									<0.1	mg/kg	TM74/PM32
Zinc ^{#M}	104	48									<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene ^{#M}	<0.04	<0.04									<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.06	<0.03									<0.03	mg/kg	TM4/PM8
Acenaphthene ^{#M}	0.08	<0.05									<0.05	mg/kg	TM4/PM8
Fluorene ^{#M}	0.16	<0.04									<0.04	mg/kg	TM4/PM8
Phenanthrene ^{#M}	1.31	<0.03									<0.03	mg/kg	TM4/PM8
Anthracene [#]	0.36	<0.04									<0.04	mg/kg	TM4/PM8
Fluoranthene ^{#M}	1.91	<0.03									<0.03	mg/kg	TM4/PM8
Pyrene [#]	1.37	<0.03									<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene [#]	0.82	<0.06									<0.06	mg/kg	TM4/PM8
Chrysene ^{#M}	0.82	<0.02									<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene ^{#M}	1.35	<0.07									<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene [#]	0.75	<0.04									<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene ^{#M}	0.55	<0.04									<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene [#]	0.08	<0.04									<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene [#]	0.44	<0.04									<0.04	mg/kg	TM4/PM8
Coronene	0.07	<0.04									<0.04	mg/kg	TM4/PM8
PAH 17 Total	10.13	<0.64									<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.97	<0.05									<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.38	<0.02									<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	95	97									<0	%	TM4/PM8
Mineral Oil (C10-C40)	<30	<30									<30	mg/kg	TM5/PM16
MTBE [#]	<5	<5									<5	ug/kg	TM31/PM12
Benzene [#]	<5	<5									<5	ug/kg	TM31/PM12
Toluene [#]	<5	<5									<5	ug/kg	TM31/PM12
Ethylbenzene [#]	<5	<5									<5	ug/kg	TM31/PM12
m/p-Xylene [#]	<5	<5									<5	ug/kg	TM31/PM12
o-Xylene [#]	<5	<5									<5	ug/kg	TM31/PM12

Please see attached notes for all abbreviations and acronyms

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	10.7
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	90.3
Particle Size <4mm =	>95%		
JEFL Job No	16/16797	Landfill Waste Acceptance Criteria Limits	
Sample No	9		
Client Sample No	WS2/ES1		
Depth/Other	0.30-1.00		
Sample Date	02/11/2016		
Batch No	1		
Solid Waste Analysis		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill
Total Organic Carbon (%)	0.60	3	5
Loss on Ignition (%)	3.2	-	10
Sum of BTEX (mg/kg)	<0.025	6	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-
Mineral Oil (mg/kg)	<30	500	-
PAH Sum of 17(mg/kg)	10.13	100	-
pH (pH Units)	8.83	-	>6
ANC to pH 7 (mol/kg)	0.46	-	to be evaluated
ANC to pH 4 (mol/kg)	0.16	-	to be evaluated
Eluate Analysis	10:1 conc ⁿ leached		Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg
	C ₁₀ mg/l	A ₁₀ mg/kg	
Arsenic	0.0093	0.093	0.5
Barium	<0.003	<0.03	20
Cadmium	<0.0005	<0.005	0.04
Chromium	0.0018	0.018	0.5
Copper	<0.007	<0.07	2
Mercury	<0.001	<0.01	0.01
Molybdenum	0.003	0.03	0.5
Nickel	<0.002	<0.02	0.4
Lead	0.005	<0.05	0.5
Antimony	<0.002	<0.02	0.06
Selenium	<0.003	<0.03	0.1
Zinc	0.006	0.06	4
Chloride	<0.3	<3	800
Fluoride	0.3	<3	10
Sulphate as SO ₄	2.55	25.5	1000
Total Dissolved Solids	61	610	4000
Phenol	<0.01	<0.1	1
Dissolved Organic Carbon	5	50	500

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	16.9					
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	85.6					
Particle Size <4mm =	>95%							
JEFL Job No	16/16797		Landfill Waste Acceptance Criteria Limits					
Sample No	18							
Client Sample No	WS3/ES2							
Depth/Other	1.00-2.00							
Sample Date	02/11/2016							
Batch No	1							
Solid Waste Analysis			Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill			
Total Organic Carbon (%)	0.04					3	5	6
Loss on Ignition (%)	2.0					-	-	10
Sum of BTEX (mg/kg)	<0.025					6	-	-
Sum of 7 PCBs (mg/kg)	<0.035					1	-	-
Mineral Oil (mg/kg)	<30					500	-	-
PAH Sum of 17(mg/kg)	<0.64					100	-	-
pH (pH Units)	8.57					-	>6	-
ANC to pH 7 (mol/kg)	<0.03					-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	0.34					-	to be evaluated	to be evaluated
Eluate Analysis	10:1 conc ⁿ leached			Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg				
	C ₁₀	A ₁₀						
	mg/l	mg/kg						
Arsenic	0.0029	0.029	0.5	2	25			
Barium	<0.003	<0.03	20	100	300			
Cadmium	<0.0005	<0.005	0.04	1	5			
Chromium	<0.0015	<0.015	0.5	10	70			
Copper	<0.007	<0.07	2	50	100			
Mercury	<0.001	<0.01	0.01	0.2	2			
Molybdenum	<0.002	<0.02	0.5	10	30			
Nickel	<0.002	<0.02	0.4	10	40			
Lead	<0.005	<0.05	0.5	10	50			
Antimony	<0.002	<0.02	0.06	0.7	5			
Selenium	<0.003	<0.03	0.1	0.5	7			
Zinc	0.004	0.04	4	50	200			
Chloride	0.4	4	800	15000	25000			
Fluoride	0.4	4	10	150	500			
Sulphate as SO4	<0.05	<0.5	1000	20000	50000			
Total Dissolved Solids	93	930	4000	60000	100000			
Phenol	<0.01	<0.1	1	-	-			
Dissolved Organic Carbon	4	40	500	800	1000			

Client Name: Terramech Investigations Ltd

Reference: 3888

Location: The Pond House, 738 Oxford Road, Reading

Contact: Tom Leigh

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 16/16797

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

Please include all sections of this report if it is reproduced

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 16/16797

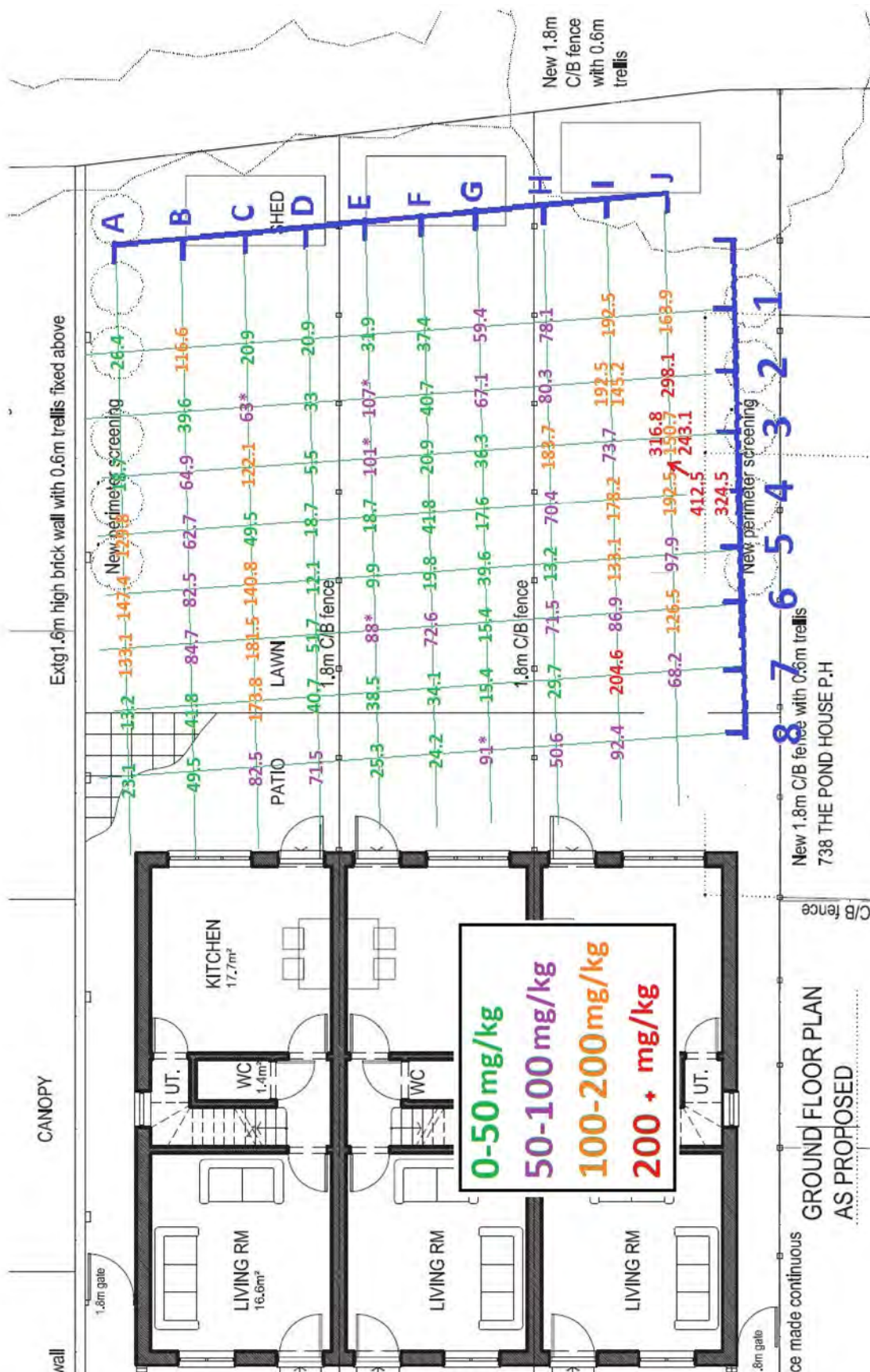
Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM20	Modified BS 1377-3: 1990/USEPA 160.3 Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.			AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes

JE Job No: 16/16797

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM22	Modified USEPA 160.4. Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (450°C)	PM0	No preparation is required.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM27	Modified US EPA method 9056.Determination of water soluble anions using Dionex (Ion-Chromatography).	PM0	No preparation is required.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen and hydrazine. Samples are extracted using an orbital shaker.	Yes		AR	Yes

JE Job No: 16/16797

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO ₂ and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.			AR	Yes
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM77	Modified DDCE/TS method 15364:2006. Determination of Acid Neutralization Capacity by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	No
NONE	No Method Code	NONE	No Method Code			AR	Yes
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	



Results of X-Ray Fluorescence Analysis

Sackedgate Ltd - 07555 106 620

Instrument Type	Olympus Vanta C	Site Ref	3888A
Instrument Serial No.	800722	Location	The Pond House, Oxford Road, Reading
Units	ppm	Client	Terramech

XRF ref	79	80	81	82	83	84	85	86	0	0
Locn	A1	A2	A3	A4	A5	A6	A7	A8		

Lat	51.4603996	51.4604988	51.4603996	51.4604988	51.4604988	51.4604988	51.4604988	51.4604988		
Long	-1.00796	-1.0080301	-1.00804	-1.00805	-1.0080301	-1.008	-1.0081	-1.00805		
date	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018		

m/c (%)	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%		
Assumed/Tested	A	A	A	A	A	A	A	A		

Antimony	95.7	0	0	0	0	0	0	0		
Sb err	17	2585	1226	1909	31	2197	1096	1594		
Arsenic	17.6	33	22	0	0	0	0	33		
As err	2	4	2	61	59	70	15	3		
Cadmium	0	0	0	0	0	0	0	0		
Cd err	460	1260	595	920	864	1023	509	734		
Chromium	0	377.3	315.7	0	0	0	0	0		
Cr err	62	65	30	33	85	99	62	100		
Copper	27.5	0	0	63.8	0	0	0	0		
Cu err	4	65	25	9	36	55	22	30		
Iron	25762	17420.7	22759	6059.9	13842.4	13042.7	2885.3	38892.7		
Fe err	165	600	186	121	180	300	44	343		
Lead	26.4	0	18.7	129.8	147.4	133.1	13.2	23.1		
Pb err	2	151	2	6	6	8	2	3		
Mercury	16.5	0	0	0	0	0	0	0		
Hg err	3	160	59	119	119	158	67	103		
Molybdenum	0	0	0	0	0	0	0	0		
Mo err	64	172	83	119	112	138	70	94		
Nickel	0	0	23.1	0	0	0	0	0		
Ni err	25	58	6	46	38	52	22	40		
Selenium	6.6	0	0	0	0	0	0	0		
Se err	1	4	9	15	11	17	10	9		
Titanium	2731.3	3658.6	0	876.7	2438.7	2700.5	0	1240.8		
Ti err	127	351	472	173	205	256	136	147		
Tin	95.7	0	0	0	0	0	0	0		
Sn err	13	2156	983	1509	1420	1757	843	1229		
Vanadium	130.9	0	135.3	0	0	0	0	0		
V err	17	90	19	65	70	70	33	62		
Zinc	59.4	108.9	58.3	183.7	74.8	126.5	0	17.6		
Zn err	4	11	4	10	6	9	16	4		
Sulphur	188.1	0	0	16658.4	0	871.2	1001	0		
S err	41	1342	359	231	710	104	41	530		
Light El	847922.9	863892.7	887471.2	784687.2	955384.1	869612.7	869202.4	832134.6		
LE err	1479	26106	1649	8083	2027	15286	1277	2351		

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Results of X-Ray Fluorescence Analysis

Sackedgate Ltd - 07555 106 620

Instrument Type	Olympus Vanta C	Site Ref	3888A
Instrument Serial No.	800722	Location	The Pond House, Oxford Road, Reading
Units	ppm	Client	Terramech

XRF ref	71	72	73	74	75	76	77	78		
Locn	B8	B7	B6	B5	B4	B3	B2	B1		

Lat	51.4604988	51.4604988	51.4604988	51.4604988	51.4604988	51.4604988	51.4604988	51.4604988		
Long	-1.008	-1.00809	-1.008	-1.00805	-1.00809	-1.00805	-1.0080301	-1.00792		
date	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018		

m/c (%)	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%		
Assumed/Tested	A	A	A	A	A	A	A	A		

Antimony	0	50.6	63.8	0	0	0	0	0		
Sb err	2381	19	1093	29	1289	2023	2500	2778		
Arsenic	0	0	18.7	28.6	0	0	0	0		
As err	52	25	3	5	33	51	49	73		
Cadmium	93.5	0	0	52.8	0	0	152.9	0		
Cd err	22	546	509	15	607	980	20	1280		
Chromium	0	0	0	0	0	144.1	0	0		
Cr err	133	67	47	122	66	43	159	145		
Copper	37.4	64.9	15.4	0	66	0	0	0		
Cu err	11	6	4	41	6	45	56	63		
Iron	22654.5	20692.1	12014.2	12067	10404.9	16795.9	7256.7	7071.9		
Fe err	359	156	104	220	136	243	148	155		
Lead	49.5	41.8	84.7	82.5	62.7	64.9	39.6	116.6		
Pb err	6	3	3	5	3	6	6	8		
Mercury	40.7	0	0	0	0	0	0	23.1		
Hg err	8	77	60	127	54	135	176	7		
Molybdenum	58.3	0	0	0	0	66	45.1	92.4		
Mo err	5	79	71	113	83	4	5	5		
Nickel	0	0	0	0	0	0	0	0		
Ni err	52	28	28	42	30	40	41	56		
Selenium	0	0	0	0	0	0	7.7	0		
Se err	22	8	9	13	9	14	2	24		
Titanium	4290	2630.1	1477.3	2315.5	974.6	1985.5	1026.3	1139.6		
Ti err	322	145	117	210	127	225	228	251		
Tin	0	50.6	63.8	0	0	0	0	0		
Sn err	1959	15	14	1329	1011	1589	1925	2110		
Vanadium	222.2	0	0	0	0	162.8	268.4	233.2		
V err	44	49	40	71	52	34	43	47		
Zinc	60.5	94.6	103.4	117.7	84.7	139.7	99	118.8		
Zn err	8	5	5	8	5	10	9	10		
Sulphur	0	1156.1	1948.1	3262.6	1130.8	3734.5	8121.3	11724.9		
S err	755	52	48	102	58	141	139	175		
Light El	941741.9	807703.6	905477.1	853041.2	858299.2	956684.3	817154.8	798010.4		
LE err	2823	1722	1258	10924	7097	1715	3050	3202		

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Results of X-Ray Fluorescence Analysis

Sackedgate Ltd - 07555 106 620

Instrument Type	Olympus Vanta C	Site Ref	3888A
Instrument Serial No.	800722	Location	The Pond House, Oxford Road, Reading
Units	ppm	Client	Terramech

XRF ref	63	64	65	66	67	68	69	70		
Locn	C1	C2	C3	C4	C5	C6	C7	C8		

Lat	51.4604988	51.4603996	51.4603996	51.4604988	51.4604988	51.4604988	51.4604988	51.4604988		
Long	-1.00802	-1.00806	-1.00804	-1.0080301	-1.00802	-1.00802	-1.00799	-1.00809		
date	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018		

m/c (%)	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%		
Assumed/Tested	A	A	A	A	A	A	A	A		

Antimony	113.3	102.3	0	0	0	0	0	0		
Sb err	1770	1438	1601	1684	1311	1078	1782	3145		
Arsenic	17.6	11	0	0	0	0	0	68.2		
As err	3	2	48	35	40	42	61	8		
Cadmium	0	0	0	74.8	0	50.6	0	0		
Cd err	829	658	732	14	598	9	819	1513		
Chromium	0	128.7	0	293.7	85.8	79.2	156.2	0		
Cr err	112	27	92	36	26	21	35	186		
Copper	0	22	22	25.3	41.8	35.2	0	0		
Cu err	37	6	6	6	6	4	42	74		
Iron	23366.2	18071.9	8339.1	5371.3	10681	10939.5	9274.1	7685.7		
Fe err	490	172	107	87	135	94	130	190		
Lead	20.9	0	122.1	49.5	140.8	181.5	173.8	82.5		
Pb err	4	63	5	4	5	4	7	8		
Mercury	0	0	0	0	0	0	0	40.7		
Hg err	101	68	96	120	79	78	137	9		
Molybdenum	31.9	0	0	16.5	0	0	0	34.1		
Mo err	4	89	93	3	84	70	109	6		
Nickel	0	0	0	0	0	26.4	0	0		
Ni err	45	32	38	30	23	5	35	82		
Selenium	0	0	0	0	0	0	0	0		
Se err	11	7	11	10	11	8	15	7		
Titanium	770	2236.3	1453.1	546.7	0	820.6	2134	0		
Ti err	171	162	154	144	243	101	192	329		
Tin	113.3	102.3	0	0	0	0	0	0		
Sn err	25	19	1277	1308	989	826	1404	2557		
Vanadium	0	0	181.5	0	0	75.9	0	377.3		
V err	62	51	25	47	48	16	65	60		
Zinc	28.6	0	433.4	0	56.1	84.7	133.1	229.9		
Zn err	6	22	11	24	4	4	7	16		
Sulphur	0	0	0	341	3958.9	3144.9	477.4	2165.9		
S err	806	455	432	82	81	54	82	132		
Light El	837917.3	897248	960704.8	957445.5	816143.9	877924.3	925991	858665.5		
LE err	15035	1824	1169	1290	6242	1331	1554	3251		

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Results of X-Ray Fluorescence Analysis

Sackedgate Ltd - 07555 106 620

Instrument Type	Olympus Vanta C	Site Ref	3888A
Instrument Serial No.	800722	Location	The Pond House, Oxford Road, Reading
Units	ppm	Client	Terramech

XRF ref	55	56	57	58	59	60	61	62		
Locn	D8	D7	D6	D5	D4	D3	D2	D1		

Lat	51.4604988	51.4604988	51.4604988	51.4604988	51.4603996	51.4604988	51.4603996	51.4603996		
Long	-1.0081199	-1.00815	-1.00809	-1.00813	-1.0080301	-1.008	-1.00806	-1.00813		
date	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018		

m/c (%)	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%		
Assumed/Tested	A	A	A	A	A	A	A	A		

Antimony	171.6	0	0	122.1	0	102.3	80.3	0		
Sb err	34	3715	2010	1239	914	19	1148	20		
Arsenic	0	23.1	0	0	8.8	12.1	0	0		
As err	50	6	41	18	2	1	22	22		
Cadmium	0	249.7	0	40.7	60.5	0	48.4	0		
Cd err	897	32	882	11	8	491	10	541		
Chromium	287.1	0	0	0	256.3	352	0	0		
Cr err	44	173	45	64	21	25	68	75		
Copper	0	0	0	0	16.5	17.6	0	0		
Cu err	43	85	46	24	4	4	27	25		
Iron	12705	14118.5	9363.2	18876	30136.7	17765	22717.2	31484.2		
Fe err	185	490	139	157	165	149	168	224		
Lead	71.5	40.7	51.7	12.1	18.7	5.5	33	20.9		
Pb err	5	8	5	2	2	2	3	3		
Mercury	0	0	0	18.7	0	0	0	0		
Hg err	144	220	105	3	45	67	81	71		
Molybdenum	28.6	42.9	0	0	0	0	22	0		
Mo err	4	7	114	78	59	62	2	77		
Nickel	0	0	0	37.4	23.1	0	0	0		
Ni err	55	85	41	7	5	18	22	28		
Selenium	6.6	0	0	0	2.2	0	0	0		
Se err	2	30	16	11	1	7	11	11		
Titanium	1111	7661.5	1148.4	2258.3	3124	1855.7	3053.6	1603.8		
Ti err	188	581	183	145	122	118	152	129		
Tin	171.6	0	0	122.1	0	102.3	80.3	0		
Sn err	26	2957	1529	17	702	14	15	910		
Vanadium	0	330	0	0	125.4	52.8	97.9	0		
V err	72	71	76	49	15	15	19	50		
Zinc	27.5	160.6	122.1	46.2	110	42.9	42.9	71.5		
Zn err	5	17	8	4	4	3	4	4		
Sulphur	0	0	9931.9	0	316.8	0	0	0		
S err	750	614	117	317	37	179	230	239		
Light El	971000.8	691707.5	834278.5	876161	784301.1	799635.1	810060.9	826840.3		
LE err	1458	19956	2128	1708	1484	4129	1789	1808		

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Results of X-Ray Fluorescence Analysis

Sackedgate Ltd - 07555 106 620

Instrument Type	Olympus Vanta C	Site Ref	3888A
Instrument Serial No.	800722	Location	The Pond House, Oxford Road, Reading
Units	ppm	Client	Terramech

XRF ref	47	48	49	50	51	52	53	54		
Locn	E1	E2	E3	E4	E5	E6	E7	E8		

Lat	51.4603996	51.4603996	51.4603996	51.4603996	51.4603996	51.4603996	51.4604988	51.4604988		
Long	-1.0081	-1.0081	-1.00813	-1.0081199	-1.00806	-1.00813	-1.00813	-1.00805		
date	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018		

m/c (%)	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%		
Assumed/Tested	A	A	A	A	A	A	A	A		

Antimony	60.5	0	172.7	0	0	0	0	0		
Sb err	1345	2042	40	1210	1166	1708	34	1281		
Arsenic	0	25.3	29.7	8.8	0	0	0	0		
As err	24	3	3	2	16	23	38	22		
Cadmium	84.7	0	0	0	0	52.8	149.6	0		
Cd err	12	921	1039	540	541	15	17	603		
Chromium	276.1	0	0	133.1	148.5	0	0	0		
Cr err	31	117	118	24	21	79	89	56		
Copper	0	0	79.2	0	0	45.1	0	0		
Cu err	24	41	11	25	25	8	45	28		
Iron	18405.2	9715.2	15992.9	24368.3	5673.8	26744.3	14591.5	4754.2		
Fe err	173	186	245	176	65	435	195	65		
Lead	31.9	0	0	18.7	9.9	0	38.5	25.3		
Pb err	3	107	101	2	2	88	4	2		
Mercury	0	0	0	0	0	0	0	0		
Hg err	81	140	162	83	75	105	147	88		
Molybdenum	0	18.7	0	9.9	0	36.3	31.9	16.5		
Mo err	91	4	140	2	71	3	4	2		
Nickel	0	0	0	0	0	0	49.5	0		
Ni err	22	52	53	25	13	31	11	31		
Selenium	0	8.8	0	0	3.3	0	7.7	5.5		
Se err	12	2	15	11	1	10	2	1		
Titanium	1453.1	1931.6	3465	1447.6	1167.1	3198.8	2245.1	1471.8		
Ti err	144	218	271	121	113	213	217	139		
Tin	60.5	0	172.7	0	0	0	0	0		
Sn err	18	1577	29	931	908	1333	1651	1036		
Vanadium	84.7	0	0	77	0	0	699.6	0		
V err	20	74	74	17	36	75	45	48		
Zinc	29.7	86.9	35.2	27.5	23.1	0	326.7	14.3		
Zn err	4	7	6	3	3	26	13	3		
Sulphur	0	5275.6	0	0	4015	0	7298.5	929.5		
S err	395	119	1840	275	58	510	117	67		
Light El	898826.5	739209.9	984104	853196.3	897504.3	809102.8	886893.7	798943.2		
LE err	1736	9113	1677	1646	1247	10818	1930	1767		

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Results of X-Ray Fluorescence Analysis

Sackedgate Ltd - 07555 106 620

Instrument Type	Olympus Vanta C	Site Ref	3888A
Instrument Serial No.	800722	Location	The Pond House, Oxford Road, Reading
Units	ppm	Client	Terramech

XRF ref	39	40	41	42	43	44	45	46		
Locn	F8	F7	F6	F5	F4	F3	F2	F1		

Lat	51.4603996	51.4603996	51.4603996	51.4604988	51.4603996	51.4603996	51.4604988	51.4604988		
Long	-1.00804	-1.0081	-1.0081	-1.00813	-1.00817	-1.00809	-1.00809	-1.00807		
date	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018		

m/c (%)	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%		
Assumed/Tested	A	A	A	A	A	A	A	A		

Antimony	0	0	0	0	57.2	0	0	0		
Sb err	22	1945	1474	29	1082	981	1156	1297		
Arsenic	11	22	0	30.8	0	37.4	0	22		
As err	2	4	38	3	22	2	23	3		
Cadmium	0	0	0	0	0	58.3	42.9	0		
Cd err	523	930	710	555	499	10	10	587		
Chromium	115.5	242	0	0	0	113.3	0	0		
Cr err	22	41	98	108	68	20	62	73		
Copper	0	103.4	0	29.7	0	18.7	0	29.7		
Cu err	27	11	33	7	20	4	25	5		
Iron	45219.9	10111.2	27395.5	82737.6	27638.6	49553.9	16393.3	21510.5		
Fe err	299	154	263	690	184	279	158	172		
Lead	24.2	34.1	72.6	19.8	41.8	20.9	40.7	37.4		
Pb err	3	4	4	4	3	2	3	3		
Mercury	0	22	14.3	33	0	0	0	0		
Hg err	50	6	4	6	55	60	66	66		
Molybdenum	0	0	14.3	0	0	0	0	16.5		
Mo err	74	130	3	78	67	59	68	2		
Nickel	0	37.4	0	0	0	0	0	49.5		
Ni err	31	10	37	31	27	24	28	7		
Selenium	0	6.6	0	5.5	3.3	0	0	0		
Se err	9	2	13	1	1	8	7	8		
Titanium	2457.4	4054.6	2766.5	1394.8	1049.4	1956.9	2434.3	2132.9		
Ti err	137	265	179	135	107	114	134	141		
Tin	0	0	0	0	57.2	0	0	0		
Sn err	869	1469	1170	941	14	766	868	1000		
Vanadium	75.9	0	0	201.3	118.8	148.5	0	0		
V err	17	53	69	21	16	16	45	45		
Zinc	49.5	130.9	93.5	55	69.3	78.1	60.5	150.7		
Zn err	4	9	6	6	4	4	4	6		
Sulphur	4389	14800.5	2713.7	324.5	776.6	0	0	1504.8		
S err	72	167	90	64	45	182	235	52		
Light El	828328.6	820847.5	918559.4	865056.5	855595.4	804523.5	825766.7	876821		
LE err	1787	2507	1872	2130	1494	1636	5167	1538		

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Results of X-Ray Fluorescence Analysis

Sackedgate Ltd - 07555 106 620

Instrument Type	Olympus Vanta C	Site Ref	3888A
Instrument Serial No.	800722	Location	The Pond House, Oxford Road, Reading
Units	ppm	Client	Terramech

XRF ref	31	32	33	34	35	36	37	38		
Locn	G1	G2	G3	G4	G5	G6	G7	G8		

Lat	51.4603996	51.4603996	51.4603996	51.4603996	51.4603996	51.4603996	51.4603996	51.4604988		
Long	-1.00813	-1.0082	-1.0081199	-1.00807	-1.00805	-1.00819	-1.00822	-1.0081199		
date	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018		

m/c (%)	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%		
Assumed/Tested	A	A	A	A	A	A	A	A		

Antimony	88	0	0	0	53.9	0	0	0		
Sb err	1463	1717	2075	24	1197	1146	1256	31		
Arsenic	16.5	0	0	0	0	0	16.5	24.2		
As err	3	40	40	20	25	19	2	3		
Cadmium	0	0	101.2	64.9	0	0	68.2	130.9		
Cd err	681	767	19	13	566	545	12	16		
Chromium	0	125.4	0	96.8	0	103.4	0	0		
Cr err	107	32	64	25	68	23	70	78		
Copper	0	0	0	0	0	28.6	0	0		
Cu err	28	39	50	28	25	5	26	37		
Iron	26214.1	1559.8	23520.2	27680.4	19050.9	22018.7	25925.9	23696.2		
Fe err	222	47	311	232	163	166	215	254		
Lead	59.4	67.1	36.3	17.6	39.6	15.4	15.4	0		
Pb err	4	4	5	3	3	2	3	91		
Mercury	0	0	0	0	0	0	13.2	0		
Hg err	66	91	142	70	89	94	4	110		
Molybdenum	37.4	0	0	28.6	0	0	0	0		
Mo err	3	105	130	3	81	77	86	105		
Nickel	0	0	50.6	0	31.9	0	38.5	59.4		
Ni err	30	35	12	34	7	31	7	10		
Selenium	0	0	0	0	0	0	0	0		
Se err	9	14	11	11	11	7	3	13		
Titanium	2204.4	1249.6	1986.6	1223.2	1635.7	891	2974.4	1937.1		
Ti err	161	164	215	131	134	113	168	181		
Tin	88	0	0	0	53.9	0	0	0		
Sn err	20	1340	1662	1031	15	894	1027	1351		
Vanadium	321.2	115.5	0	73.7	0	0	0	0		
V err	27	25	85	19	42	43	47	66		
Zinc	0	61.6	25.3	27.5	29.7	46.2	31.9	66		
Zn err	23	5	6	4	4	4	4	6		
Sulphur	0	4335.1	0	0	0	0	0	691.9		
S err	330	67	935	433	302	221	335	92		
Light El	838079	816139.5	962131.5	913808.5	898563.6	858173.8	848085.7	926145		
LE err	2047	1970	2351	1685	1571	1584	1971	2020		

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Results of X-Ray Fluorescence Analysis

Sackedgate Ltd - 07555 106 620

Instrument Type	Olympus Vanta C
Instrument Serial No.	800722
Units	ppm

Site Ref	3888A
Location	The Pond House, Oxford Road, Reading
Client	Terramech

XRF ref	21	22	23	24	25	26	27	28	29	30
Locn	H8 JAR	H8 JAR	H8	H7	H6	H5	H4	H3	H2	H1

Lat	51.4603996	51.4603996	51.4604988	51.4603996	51.4603996	51.4603996	51.4603996	51.4603996	51.4603996	51.4603996
Long	-1.00813	-1.00817	-1.00813	-1.0082	-1.00819	-1.0081199	-1.0081	-1.00806	-1.0081199	-1.00817
date	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018

m/c (%)	5.00%	5.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
Assumed/Tested	T	T	A	A	A	A	A	A	A	A

Antimony	0	0	315.7	0	0	0	0	265.1	0	0
Sb err	1319	2081	2654	1437	2417	1086	1187	2163	26	886
Arsenic	19.95	0	55	0	0	18.7	0	0	0	24.2
As err	2	30	6	29	50	2	28	83	47	2
Cadmium	0	0	0	53.9	83.6	0	0	0	0	0
Cd err	598	983	1191	14	23	521	551	1097	784	407
Chromium	131.25	124.95	0	0	155.1	158.4	0	0	0	124.3
Cr err	26	37	149	97	42	21	61	124	87	18
Copper	0	0	0	0	0	27.5	34.1	59.4	40.7	45.1
Cu err	30	41	65	26	57	4	5	12	7	4
Lead	7.35	24.15	50.6	29.7	71.5	13.2	70.4	183.7	80.3	78.1
Pb err	2	4	6	3	6	2	4	9	5	3
Mercury	0	0	39.6	20.9	0	13.2	0	0	0	0
Hg err	74	117	8	4	129	3	77	169	118	68
Molybdenum	9.45	17.85	36.3	34.1	60.5	0	0	22	16.5	0
Mo err	3	4	5	3	5	66	78	5	3	59
Nickel	0	96.6	0	0	0	0	0	57.2	0	0
Ni err	30	13	78	35	26	19	33	14	49	23
Selenium	0	0	0	7.7	0	4.4	4.4	0	0	0
Se err	9	13	22	1	15	1	1	17	18	7
Titanium	1981.35	0	2864.4	3348.4	2327.6	1755.6	2732.4	1730.3	815.1	1548.8
Ti err	145	1579	280	182	236	118	149	241	153	101
Vanadium	0	86.1	124.3	144.1	287.1	56.1	0	144.1	125.4	0
V err	52	26	37	23	36	15	50	37	26	37
Zinc	18.9	44.1	83.6	81.4	0	69.3	59.4	521.4	126.5	110
Zn err	3	6	10	6	42	4	4	19	7	4
Sulphur	0	0	0	0	0	0	0	0	8306.1	0
S err	448	1395	1093	454	1387	198	348	603	91	174
Light El	866437.95	933420.6	950397.8	934709.6	977523.8	834557.9	895441.8	958620.3	823200.4	846853.7
LE err	1712	2340	2911	1668	1753	1556	1606	1819	1930	1316

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Results of X-Ray Fluorescence Analysis

Sackedgate Ltd - 07555 106 620

Instrument Type	Olympus Vanta C	Site Ref	3888A
Instrument Serial No.	800722	Location	The Pond House, Oxford Road, Reading
Units	ppm	Client	Terramech

XRF ref	11	12	13	14	15	16	17	18	19	
Locn	I1	I2	I2	I3	I4	I5	I6	I7	I8	

Lat	51.4603996	51.4603996	51.4603996	51.4603996	51.4603996	51.4603996	51.4603996	51.4603996	51.4603996	
Long	-1.0081199	-1.00824	-1.00819	-1.00819	-1.00824	-1.00823	-1.00827	-1.00823	-1.00817	
date	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	

m/c (%)	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	
Assumed/Tested	A	A	A	A	A	A	A	A	A	

Antimony	0	0	0	0	0	282.7	0	0	0	
Sb err	1495	2232	2504	1779	1304	1304	962	1061	16	
Arsenic	0	0	46.2	68.2	0	18.7	0	0	24.2	
As err	56	81	8	5	49	4	27	42	3	
Cadmium	0	0	0	0	0	0	0	0	0	
Cd err	732	1106	1242	838	591	596	443	486	448	
Chromium	0	0	201.3	0	0	152.9	94.6	115.5	0	
Cr err	85	108	53	88	70	29	19	20	51	
Copper	23.1	0	0	53.9	22	0	28.6	38.5	0	
Cu err	6	60	64	8	5	30	4	5	21	
Iron	21837.2	18643.9	21058.4	15126.1	21892.2	30435.9	17144.6	21785.5	12736.9	
Fe err	215	303	357	195	187	254	119	146	96	
Lead	192.5	192.5	145.2	73.7	178.2	133.1	86.9	204.6	92.4	
Pb err	7	10	9	5	5	5	3	5	3	
Mercury	0	0	0	0	0	0	14.3	0	17.6	
Hg err	91	177	177	133	58	89	3	76	3	
Molybdenum	11	0	52.8	0	9.9	0	0	0	0	
Mo err	3	151	5	117	3	83	58	64	61	
Nickel	0	0	0	0	47.3	125.4	0	18.7	0	
Ni err	31	63	84	39	7	10	25	5	25	
Selenium	9.9	0	0	0	5.5	0	0	0	4.4	
Se err	1	20	20	15	1	12	6	9	1	
Titanium	3528.8	1624.7	2435.4	3166.9	2873.2	2882	1184.7	2770.9	1293.6	
Ti err	202	236	278	222	159	164	102	128	103	
Tin	0	0	0	0	0	282.7	0	0	0	
Sn err	1201	1774	1977	1390	1004	19	738	844	758	
Vanadium	0	363	0	0	135.3	218.9	96.8	0	0	
V err	72	44	102	63	21	24	15	45	36	
Zinc	95.7	157.3	69.3	198	206.8	171.6	226.6	69.3	157.3	
Zn err	6	11	9	9	7	7	6	4	5	
Sulphur	1321.1	0	0	0	501.6	209	801.9	0	396	
S err	69	1287	1323	613	53	54	41	197	39	
Light El	842397.6	999545.8	987324.8	952457	908408.6	904119.7	862587	857792.1	879549	
LE err	2098	1511	1773	2019	1560	1654	1337	1426	1261	

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Results of X-Ray Fluorescence Analysis

Sackedgate Ltd - 07555 106 620

Instrument Type	Olympus Vanta C	Site Ref	3888A
Instrument Serial No.	800722	Location	The Pond House, Oxford Road, Reading
Units	ppm	Client	Terramech

XRF ref	1	2	3	4	5	6	7	8	9	10
Locn	JRP1 Blank	J7	J6	J5	J4	J3	J3	J3	J2	J1

Lat	0	51.4603996	51.4603996	51.4603996	51.4604988	51.4603996	51.4603996	51.4603996	51.4603996	51.4603996
Long	0	-1.00814	-1.00816	-1.00819	-1.00809	-1.00814	-1.00814	-1.00817	-1.00813	-1.00809
date	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018

m/c (%)	0.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
Assumed/Tested	A	A	A	A	A	A	A	A	A	A

Antimony	133	118.8	0	113.3	0	0	0	0	181.5	143
Sb err	38	1228	886	1176	1231	1005	1337	1749	1784	2080
Arsenic	1138	22	14.3	18.7	0	0	0	38.5	92.4	59.4
As err	18	3	2	3	45	51	48	7	8	7
Cadmium	162	0	0	0	57.2	59.4	90.2	0	0	0
Cd err	23	585	403	544	11	9	12	836	842	965
Chromium	0	302.5	126.5	0	0	0	0	0	0	262.9
Cr err	135	29	17	55	66	51	83	100	68	47
Copper	60117	18.7	11	67.1	42.9	63.8	0	67.1	100.1	70.4
Cu err	488	5	3	6	5	5	28	8	10	10
Iron	62116	16888.3	10841.6	31287.3	10704.1	17989.4	18170.9	17853	19690	23654.4
Fe err	531	146	74	241	105	129	172	212	236	299
Lead	464	68.2	126.5	97.9	192.5	316.8	150.7	243.1	298.1	163.9
Pb err	16	3	3	4	5	6	5	8	9	8
Mercury	0	0	0	0	0	0	0	0	0	0
Hg err	96	82	52	63	74	70	96	128	84	54
Molybdenum	0	0	0	0	0	0	0	25.3	0	26.4
Mo err	53	82	51	76	73	66	87	3	117	4
Nickel	321	0	0	177.1	0	0	0	0	0	0
Ni err	19	32	19	10	26	26	30	36	46	48
Selenium	0	0	0	3.3	0	0	0	7.7	0	0
Se err	12	9	7	1	10	9	7	2	19	14
Titanium	43516	2846.8	490.6	1361.8	346.5	1705	1989.9	2014.1	580.8	3664.1
Ti err	593	152	76	120	102	112	148	186	156	264
Tin	133	118.8	0	113.3	0	0	0	0	181.5	143
Sn err	31	16	687	16	955	773	1033	1398	25	27
Vanadium	9969	156.2	62.7	100.1	95.7	262.9	0	0	127.6	0
V err	133	21	12	17	16	19	53	69	27	96
Zinc	9520	128.7	229.9	166.1	92.4	300.3	537.9	133.1	77	275
Zn err	93	5	5	6	5	7	12	8	6	12
Sulphur	160226	410.3	1263.9	0	0	951.5	205.7	487.3	0	0
S err	1255	38	27	307	473	32	50	81	678	328
Light El	291965	909865	887753.9	943963.9	990997.7	897332.7	962944.4	964087.3	953676.9	857188.2
LE err	3856	1317	955	1239	1054	1145	1042	1329	1532	2688

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Results of X-Ray Fluorescence Analysis

Sackedgate Ltd - 07555 106 620

Instrument Type	Olympus Vanta C
Instrument Serial No.	800722
Units	ppm

Site Ref	3888A
Location	Pond House Oxford Road, Reading
Client	Terramech

XRF ref	87	88	89	90	91	92	93			
Locn	Bet J3 & J4	Bet J3 & J4	Bet I2 & J2	J3 & J4 inJar	J3 & J4 inJar	J3 & J4 inJar	J3 & J4 inJar			

Lat	51.4603996	51.4603996	51.4603996	51.4603005	51.4604988	51.4603996	51.4603005			
Long	-1.00807	-1.00813	-1.008	-1.00804	-1.0081199	-1.008	-1.00801			
date	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018	18/01/2018			

m/c (%)	10.00%	10.00%	10.00%	11.00%	11.00%	11.00%	11.00%			
Assumed/Tested	A	A	A	T	T	T	T			

Antimony	0	79.2	0	76.59	0	0	0			
Sb err	20	21	1124	1172	1207	1252	22			
Arsenic	0	26.4	0	26.64	0	0	0			
As err	63	6	32	5	48	57	51			
Cadmium	0	0	0	0	0	0	0			
Cd err	520	595	521	548	542	578	608			
Chromium	90.2	0	0	0	163.17	0	0			
Cr err	21	78	65	58	26	67	51			
Copper	38.5	0	0	67.71	15.54	0	84.36			
Cu err	5	26	24	6	5	28	7			
Lead	412.5	324.5	80.3	78.81	68.82	16.65	124.32			
Pb err	8	7	4	4	3	2	6			
Mercury	16.5	18.7	0	0	0	19.98	0			
Hg err	3	3	44	77	70	4	93			
Molybdenum	0	20.9	0	0	21.09	0	13.32			
Mo err	71	2	72	77	2	79	2			
Nickel	0	0	0	52.17	34.41	0	0			
Ni err	27	30	27	6	6	21	30			
Selenium	3.3	0	0	0	0	0	0			
Se err	1	11	9	7	11	12	11			
Titanium	3638.8	2187.9	2589.4	1351.98	2286.6	1094.46	1749.36			
Ti err	155	147	143	122	139	122	143			
Vanadium	0	0	0	113.22	98.79	59.94	0			
V err	52	52	54	19	19	18	47			
Zinc	257.4	99	85.8	182.04	194.25	248.64	140.97			
Zn err	7	5	5	6	6	8	6			
Sulphur	212.3	0	312.4	1475.19	1076.7	1078.92	0			
S err	42	266	51	52	50	53	242			
Light El	875619.8	905847.8	858645.7	867897.9	854570.13	877910.1	858922.44			
LE err	1473	1451	1679	1518	5590	1595	6609			

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**ADDITIONAL ENVIRONMENTAL
INVESTIGATION
NO 3888A/18
AT
THE POND HOUSE (PH)
738 OXFORD ROAD, READING
BERKSHIRE
FOR
PROPOSED RESIDENTIAL DEVELOPMENT**

APPENDIX C

CONTAMINATION ASSESSMENT CRITERIA

Generic Contamination Assessment Criteria



List 1 (Soils Assessment Criteria for Human Health)

- 1A) - Metals
- 1B) - Aliphatic Hydrocarbons
- 1C) - Aromatic Hydrocarbons
- 1D) - BTEX (Monocyclic Aromatic Hydrocarbons)
- 1E) - PAH (Poly-cyclic Aromatic Hydrocarbons)
- 1F) - PCB (Poly Chlorinated Bi-Phenyls)
- 1G) - Chloroalkanes and Alkenes
- 1H) - Explosives
- 1I) - Pesticides
- 1J) - Chlorobenzenes
- 1K) - Phenol and Chlorophenol
- 1L) – Other
- 1M) - Asbestos

This is a tabulated list of generic soil guideline values for the concentrations of contaminants in soils provided by various authorities to protect human health. These are generic values which make the worst case assumption for every exposure and absorption scenario governing the human uptake of the contaminants considered.

At this time Soil Guideline Values (SGVs) have been published by the Environment Agency for Arsenic, Cadmium, Nickel, Mercury, Selenium, Benzene, Toluene, Ethylbenzene, Xylene and Phenol together with Dioxins Furans and Dioxin like PCBs. These were calculated using the CLEA model (v1.04) and Environment Agency guidance documents SR2 (Human Health Toxicological Assessment of Contaminants in Soil) and SR3 (Updated Technical Background to the CLEA Model).

Further numbers of contaminants were assessed on this basis using the same CLEA Model by CIEH/LQM (The Chartered Institute of Environmental Health and Land Quality Management Ltd). Soil guideline values were published in their report on Generic Assessment Criteria for Human Health Assessments (2009). This 2009 guidance was replaced in 2015 by new S4UL values (Suitable '4' Use Levels) which are intended by CIEH/LQM to provide a complete and updated replacement for the values published in their 2009 report (see CIEH/LQM S4UL – 1.1). The S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 - All rights reserved.

Where there is no Environment Agency SGV or S4UL, Terramech Investigations have derived values using the CLEA Model with old TOX reports as well as the SR2 report and the SR3 report, as suggested by the Environment Agency.

The assessments should be based on a hierarchy where the Environment Agency SGVs and S4UL from the Chartered Institute of Environmental Health are most preferred, followed by values derived by Terramech using the CLEA model.

DEFRA SP1010 & C4SL

We have also considered C4SL values derived for 6 contaminants in the Department of the Environment Farming and Rural Affairs (DEFRA) SP1010 report. The report describes how levels of contamination at a site are placed in one of four categories. Category 4 is where the level of risk posed is acceptably low, to Category 1, where the level of risk is clearly unacceptable. The Category 4 values presented in the report were primarily intended for use under the Part 2A of the Environmental Protection Act 1990 to screen out low risk sites.

The Category 4 values are however, determined using a Lower Level of Toxicological Concern (LLTC) assessment methodology which differs from the Health Condition Values (HCVs) discussed in Environment Agency SR2 report, these consider minimal or tolerable levels of risk.

A direction was given by the Department for Communities and Local Government (DCLG) and DEFRA for the C4SL system to be used for assessments for Planning as well as assessments under Part 2A of the Environmental Protection Act (SP1010 Companion Document December 2014).

In order to maintain consistency in our approach to all contaminants (i.e. minimal or tolerable levels of risk), we have continued to use the slightly more conservative Environment Agency SR2 – SR3 based values for the 43 contaminants considered in the Environment Agency SGV reports and partner S4UL publication from CIEH/LQM.

Unfortunately, the Environment Agency and CIEH/LQM documents do not give any guidelines for Lead concentrations. The SP1010 publication (March 2014 - Appendix H - Table 4.1) does give a provisional Category 4 value for Lead determined using the original HCV CLEA methodology. We consider this value is to be consistent with the minimal or tolerable levels of risk methodology used for the other 43 contaminants by the Environment Agency and CIEH/LQM. On this basis we have adopted the values for Lead calculated to be protective of children as the critical receptors. For a residential garden, where plants are grown for consumption by the residents, the guideline value is 190mg/kg. No guideline concentrations are given by DEFRA in the SP1010 document for adults under that assessment methodology. Values for the other land use scenarios are presented in the following tables.

Asbestos

CIRIA C733 (Asbestos In Soil And Made Ground) shows how respirable fibre exposure estimates can be carried out based on measured soil concentrations. We have used this methodology to derive guideline values for a number of exposure scenarios based on the minimal or tolerable levels risk level of 1 in 100,000 used to derive HCVs for other contaminants.

We have used the most conservative values for the exposure estimates wherever possible. It should be noted that these values are not corroborated by any other organisation and they are also subject to the notes and caveats set out in the wider CIRIA C733 document.

List 2 (Assessment Criteria for Buried Water Supply Pipes)

Water pipes laid in contaminated ground can absorb some contaminants and allow them to contaminate the water running in the pipes. Our assessments are based on the *UKWIR Report Ref No 10/WM/03/21* which gives a mandatory list of contaminants and threshold concentrations for those contaminants in relation to different types of water pipe materials.

However, we would note that some water utility companies assess contaminants on the basis of their own guidances and we have not reproduced lists of contaminants and their thresholds for all of these individual guidances.

List 3 (Assessment Criteria For Soil Disposal)

Assessment of soils destined for landfills takes two stages. The first is site characterisation to determine if the source site is contaminated, the second stage is compliance testing to assess the leachability or solubility of any contaminants that are present at elevated concentrations, as well as the potential for the material to decay and create gases.

Characterisation is carried out by comparing the soil results with the SGVs and GACs in List 1 with respect to human health as well as list 4 for groundwater protection. If the soils are seen to contain unacceptable concentrations of contaminants, then leachate tests will be required to fully classify the risk to groundwater and organic matter tests are required to assess the gas generation potential. The leachate results and total concentrations for a variety of petrochemical products are then compared with thresholds for different waste categories as set out in BS EN 12457-2.

List 4 (Groundwater Assessment Criteria)

Assessment of groundwater analysis is carried out using Water Supply (Water Quality) Regulations 2000 (SI 2000/3184 as amended) or the Environmental Quality Standard (EQS) values for fresh or saltwater depending on which is the most applicable background water quality scenario for compliance. Where the groundwater is not abstracted and not supplying water to springs or rivers, the results from upstream groundwater analysis would be used for comparison.

When investigations highlight the presence of soil contaminants at concentrations exceeding what could be expected naturally, the measured contaminant concentrations in soil would be assessed at tier 1 stage with respect to the risk posed to groundwater using the Environment Agency R&D Publication 20 Remedial Targets Worksheet, Release 2.2a.

Generic values for soil properties and chemical partition coefficients for contaminants were taken from the Environment Agency CLEA Model (v1.06) and supporting documents under the SC050021 reference. Exceedance of these values should not be taken as demonstrating a risk to controlled waters. Tier 2 and Tier 3 assessments would need to be carried out if exceedances are noted at Tier 1.

Assessment Criteria for Ground Gases

Ground gases are assessed on the basis of the CIRIA C665 document (Assessing Risks Posed by Hazardous Ground Gases to Buildings) which dictates the monitoring period and the frequency of visits required. Worst case flow rates and gas concentrations are then used to derive a Gas Screening Value (GSV) from which a characteristic situation and then a level of protection is defined.

List 1A (Metals mg/kg)					
Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015	DEFRA SP1010 'Final' C4SL December 2014
Arsenic	Residential with plant uptake	32	32	37	37
	Residential without plant uptake	35	Not Assessed	40	40
	Allotment		43	43	49
	Commercial	635	640	640	640
	Public Open Space (Residential)	Not Assessed	Not Assessed	79	79
	Public Open Space (Park)	Not Assessed	Not Assessed	170	170
Beryllium	Residential with plant uptake	Not Assessed	Not Assessed	1.7	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	1.7	Not Assessed
	Allotment	Not Assessed	Not Assessed	35	Not Assessed
	Commercial	Not Assessed	Not Assessed	12	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	2.2	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	63	Not Assessed
Boron	Residential with plant uptake	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Allotment	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Commercial	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
Cadmium	Residential with plant uptake	Not Assessed	10	11	22
	Residential without plant uptake	Not Assessed	Not Assessed	85	150
	Allotment	Not Assessed	1.8	1.9	3.9
	Commercial	Not Assessed	230	190	410
	Public Open Space (Residential)	Not Assessed	Not Assessed	120	220
	Public Open Space (Park)	Not Assessed	Not Assessed	532	880
Chromium III	Residential with plant uptake	Not Assessed	Not Assessed	910	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	910	Not Assessed
	Allotment	Not Assessed	Not Assessed	18000	Not Assessed
	Commercial	Not Assessed	Not Assessed	8600	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	1500	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	3300	Not Assessed
Chromium VI	Residential with plant uptake	Not Assessed	Not Assessed	6	21
	Residential without plant uptake	Not Assessed	Not Assessed	6	21
	Allotment	Not Assessed	Not Assessed	1.8	170
	Commercial	Not Assessed	Not Assessed	33	49
	Public Open Space (Residential)	Not Assessed	Not Assessed	7.7	23
	Public Open Space (Park)	Not Assessed	Not Assessed	220	250
Copper	Residential with plant uptake	Not Assessed	Not Assessed	2400	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	7100	Not Assessed
	Allotment	Not Assessed	Not Assessed	520	Not Assessed
	Commercial	Not Assessed	Not Assessed	68000	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	12000	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	44000	Not Assessed
Lead	Residential with plant uptake	190 ₍₄₎	450 (old SGV) ₍₅₎	Not Assessed	200
	Residential without plant uptake	310 ₍₄₎	450 (old SGV) ₍₅₎	Not Assessed	310
	Allotment	70 ₍₄₎	Not Assessed	Not Assessed	80
	Commercial	1100 ₍₄₎	750 (old SGV) ₍₅₎	Not Assessed	2300
	Public Open Space (Residential)	Not Assessed	Not Assessed	Not Assessed	630
	Public Open Space (Park)	Not Assessed	Not Assessed	Not Assessed	1300
Inorganic Mercury	Residential with plant uptake	Not Assessed	170	40	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	56	Not Assessed
	Allotment	Not Assessed	80	19	Not Assessed
	Commercial	Not Assessed	3600	1100	Not Assessed
	Public Open Space (Residential)	Not Assessed		120	Not Assessed
	Public Open Space (Park)	Not Assessed		240	Not Assessed
Elemental Mercury	Residential with plant uptake	Not Assessed	1	1.2	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	1.2	Not Assessed
	Allotment	Not Assessed	26	21	Not Assessed
	Commercial	Not Assessed	26	25.8	Not Assessed
	Public Open Space (Residential)	Not Assessed		16	Not Assessed
	Public Open Space (Park)	Not Assessed		25.8	Not Assessed
Methyl Mercury	Residential with plant uptake	Not Assessed	11	11	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	15	Not Assessed
	Allotment	Not Assessed	8	6	Not Assessed
	Commercial	Not Assessed	410	320	Not Assessed
	Public Open Space (Residential)	Not Assessed		40	Not Assessed
	Public Open Space (Park)	Not Assessed		68	Not Assessed
Nickel	Residential with plant uptake	Not Assessed	130	180	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	180	Not Assessed
	Allotment	Not Assessed	230	230	Not Assessed
	Commercial	Not Assessed	1800	980	Not Assessed
	Public Open Space (Residential)	Not Assessed		230	Not Assessed
	Public Open Space (Park)	Not Assessed		3400	Not Assessed

List 1A cont. (Metals mg/kg)					
Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part 2	DEFRA SP1010 'Final' C4SL December 2014
Selenium	Residential with plant uptake	Not Assessed	350	250	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	430	Not Assessed
	Allotment	Not Assessed	120	88	Not Assessed
	Commercial	Not Assessed	13000	12000	Not Assessed
	Public Open Space (Residential)	Not Assessed		1100	Not Assessed
	Public Open Space (Park)	Not Assessed		1800	Not Assessed
Vanadium	Residential with plant uptake	Not Assessed	Not Assessed	410	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	1200	Not Assessed
	Allotment	Not Assessed	Not Assessed	91	Not Assessed
	Commercial	Not Assessed	Not Assessed	9000	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	2000	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	5000	Not Assessed
Zinc	Residential with plant uptake	Not Assessed	Not Assessed	3700	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	40000	Not Assessed
	Allotment	Not Assessed	Not Assessed	620	Not Assessed
	Commercial	Not Assessed	Not Assessed	730000	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	8100	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	17000	Not Assessed
Free Cyanide	Residential with plant uptake	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Allotment	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Commercial	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
Complex Cyanide	Residential with plant uptake	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Allotment	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Commercial	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
Thiocyanate	Residential with plant uptake	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Allotment	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Commercial	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
This table is not a list of potential contaminants at any one site All values are subject to ongoing review CIEH - Chartered Institute for Environmental Health LQM - Land Quality Management (commercial research) (1) xx/yy/zz SOM - Soil Organic Matter dependant at 1%/2.5%/6% (2) xx/yy/zz pH - pH dependant at pH6/pH7/pH8 (3) Internal limits exceeded during calculations (4) under review by Terramech (5) Value Withdrawn S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved		Terramech Investigations Limited 183 Long Lane Tilehurst Reading RG31 6YW Email - info@terramech.co.uk Tel 01189 439 910 Fax 01189 439 920 			

List 1B (Aliphatic Hydrocarbons mg/kg)

Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part 3	DEFRA SP1010 'Final' C4SL December 2014
Aliphatic C5-C6	Residential with plant uptake	Not Assessed	Not Assessed	42/78/160 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	42/76/160 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	730/1700/3900 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	3200(304 ^{sol})/5900(558 ^{sol})/12000(1150 ^{sol}) _(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	570000/590000/60000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	95000(304 ^{sol})/130000(558 ^{sol})/180000(1150 ^{sol}) _(1&3)	Not Assessed
Aliphatic C6-C8	Residential with plant uptake	Not Assessed	Not Assessed	100/230/530 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	100/230/530 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	2300/5600/13000 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	7800(144 ^{sol})/17000(322 ^{sol})/40000(736 ^{sol}) _(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	600000/610000/620000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	150000(144 ^{sol})/220000(322 ^{sol})/320000(736 ^{sol}) _(1&3)	Not Assessed
Aliphatic C8-C10	Residential with plant uptake	Not Assessed	Not Assessed	27/65/150 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	27/65/150 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	320/77/1700 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	2000(78 ^{sol})/4800(190 ^{vap})/11000(451 ^{vap}) _(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	13000/13000/13000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	14000(78 ^{sol})/18000(190 ^{vap})/21000(451 ^{vap}) _(1&3)	Not Assessed
Aliphatic C10-C12	Residential with plant uptake	Not Assessed	Not Assessed	130(48 ^{vap})/330(118 ^{vap})/760(283 ^{vap}) _(1&3)	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	130(48 ^{vap})/330(118 ^{vap})/760(283 ^{vap}) _(1&3)	Not Assessed
	Allotment	Not Assessed	Not Assessed	2200/4400/7300 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	9700(48 ^{sol})/23000(118 ^{vap})/47000(283 ^{vap}) _(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	13000/13000/13000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	21000(48 ^{sol})/230000(118 ^{vap})/24000(283 ^{vap}) _(1&3)	Not Assessed
Aliphatic C12-C16	Residential with plant uptake	Not Assessed	Not Assessed	1100(24 ^{sol})/2400(59 ^{sol})/4300(142 ^{sol}) _(1&3)	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	1100(24 ^{sol})/2400(59 ^{sol})/4300(142 ^{sol}) _(1&3)	Not Assessed
	Allotment	Not Assessed	Not Assessed	11000/13000/13000 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	59000(24 ^{sol})/82000(59 ^{sol})/90000(142 ^{sol}) _(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	13000/13000/13000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	25000(24 ^{sol})/25000(59 ^{sol})/26000(142 ^{sol}) _(1&3)	Not Assessed
Aliphatic C16-C35	Residential with plant uptake	Not Assessed	Not Assessed	65000(8.48 ^{sol})/92000(21 ^{sol})/110000 _(1&3)	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	65000(8.48 ^{sol})/92000(21 ^{sol})/110000 _(1&3)	Not Assessed
	Allotment	Not Assessed	Not Assessed	260000/270000/270000 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	1600000/1700000/1800000 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	3800/3800/3800 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	3800/3800/3800 ₍₁₎	Not Assessed
Aliphatic C35-C44	Residential with plant uptake	Not Assessed	Not Assessed	65000(8.48 ^{sol})/92000(21 ^{sol})/110000 _(1&3)	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	65000(8.48 ^{sol})/92000(21 ^{sol})/110000 _(1&3)	Not Assessed
	Allotment	Not Assessed	Not Assessed	260000/270000/270000 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	1600000/1700000/1800000 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	3800/3800/3800 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	3800/3800/3800 ₍₁₎	Not Assessed
Aliphatic C44-C70	Residential with plant uptake	Not Assessed	Not Assessed	1600/1800/1900	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	1600/1800/1900	Not Assessed
	Allotment	Not Assessed	Not Assessed	1200/2100/3000	Not Assessed
	Commercial	Not Assessed	Not Assessed	28000/28000/28000	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	3800/3800/3800	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	7800/7800/7800	Not Assessed
This table is not a list of potential contaminants at any one site All values are subject to ongoing review CIEH - Chartered Institute for Environmental Health LQM - Land Quality Management (commercial research) (1) xx/yy/zz SOM - Soil Organic Matter dependant at 1%/2.5%/6% (2) xx/yy/zz pH - pH dependant at pH6/pH7/pH8 (3) Internal limits exceeded during calculations. Vapour or solubility saturation limit exceeded (limit presented in brackets) (4) under review by Terramech S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Terramech Investigations Limited 183 Long Lane Tilehurst Reading RG31 6YW Email - info@terramech.co.uk Tel 01189 439 910 Fax 01189 439 920		



List 1C (Aromatic (Mono-cyclic and Poly-cyclic) Hydrocarbons mg/kg)					
Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part 3	DEFRA SP1010 'Final' C4SL December 2014
Aromatic C5-C7	Residential with plant uptake	Not Assessed	Not Assessed	70/140/300 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	370/690/1400 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	13/27/57 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	26000(1220 ^{sol})/46000(2260 ^{sol})/86000(4710 ^{sol}) _(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	56000/56000/56000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	76000(1220 ^{sol})/84000(2260 ^{sol})/92000(4710 ^{sol}) _(1&3)	Not Assessed
Aromatic C7-C8	Residential with plant uptake	Not Assessed	Not Assessed	130/290/660 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	860/1800/3900 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	22/51/120 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	56000(869 ^{vap})/110000(1920 ^{sol})/180000(4360 ^{vap}) _(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	56000/56000/56000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	87000(869 ^{vap})/95000(1920 ^{sol})/100000(4360 ^{vap}) _(1&3)	Not Assessed
Aromatic C8-C10	Residential with plant uptake	Not Assessed	Not Assessed	34/83/190 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	47/110/270 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	8.6/21/51 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	3500(613 ^{vap})/8100(1500 ^{vap})/17000(3580 ^{vap}) _(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	5000/5000/5000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	7200(613 ^{vap})/8500(1500 ^{vap})/9300(3580 ^{vap}) _(1&3)	Not Assessed
Aromatic C10-C12	Residential with plant uptake	Not Assessed	Not Assessed	74/180/380 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	250/590/1200 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	13/31/74 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	16000(364 ^{sol})/28000(899 ^{sol})/34000(2150 ^{sol}) _(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	5000/5000/5000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	9200(364 ^{sol})/9700(899 ^{sol})/10000 _(1&3)	Not Assessed
Aromatic C12-C16	Residential with plant uptake	Not Assessed	Not Assessed	140/330/660 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	1800/2300(419 ^{sol})/2500 _(1&3)	Not Assessed
	Allotment	Not Assessed	Not Assessed	23/57/130 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	36000/(169 ^{sol})/37000/38000 _(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	5100/5100/5000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	10000/10000/10000 ₍₁₎	Not Assessed
Aromatic C16-C21	Residential with plant uptake	Not Assessed	Not Assessed	260/540/930 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	1900/1900/1900 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	46/110/260 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	28000/28000/28000 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	3800/3800/3800 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	7600/7700/7800 ₍₁₎	Not Assessed
Aromatic C21-C35	Residential with plant uptake	Not Assessed	Not Assessed	1100/1500/1700 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	1900/1900/1900 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	370/820/1600 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	28000/28000/28000 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	3800/3800/3800 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	7800/7800/7900 ₍₁₎	Not Assessed
Aromatic C35-C44	Residential with plant uptake	Not Assessed	Not Assessed	1100/1500/1700 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	1900/1900/1900 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	370/820/1600 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	28000/28000/28000 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	3800/3800/3800 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	7800/7800/7900 ₍₁₎	Not Assessed
Aromatic C44-C70	Residential with plant uptake	Not Assessed	Not Assessed	1600/1800/1900 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	1900/1900/1900 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	1200/2100/3000 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	28000/28000/28000 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	3800/3800/3800 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	7800/7800/7900 ₍₁₎	Not Assessed
This table is not a list of potential contaminants at any one site All values are subject to ongoing review CIEH - Chartered Institute for Environmental Health LQM - Land Quality Management (commercial research) (1) xx/yy/zz SOM - Soil Organic Matter dependant at 1%/2.5%/6% (2) xx/yy/zz pH - pH dependant at pH6/pH7/pH8 (3) Internal limits exceeded during calculations. Vapour or solubility saturation limit exceeded (limit presented in brackets) (4) under review by Terramech S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Terramech Investigations Limited 183 Long Lane Tilehurst Reading RG31 6YW Email - info@terramech.co.uk Tel 01189 439 910 Fax 01189 439 920		



List 1D (BTEX Mono-cyclic Aromatic Hydrocarbons mg/kg)					
Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part 3	DEFRA SP1010 'Final' C4SL December 2014
Benzene	Residential with plant uptake	Not Assessed	0.33	0.87/0.17/0.37 ⁽¹⁾	0.87
	Residential without plant uptake	Not Assessed	Not Assessed	0.38/0.70/1.4 ⁽¹⁾	3.3
	Allotment	Not Assessed	0.07	0.017/0.034/0.075 ⁽¹⁾	0.18
	Commercial	Not Assessed	95	27/47/90 ⁽¹⁾	98
	Public Open Space (Residential)	Not Assessed	Not Assessed	72/72/73 ⁽¹⁾	79
	Public Open Space (Park)	Not Assessed	Not Assessed	90/11/110 ⁽¹⁾	170
Toluene	Residential with plant uptake	Not Assessed	610	130/290/660	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	880(869 ^{vap})/1900/3900 ^(1&3)	Not Assessed
	Allotment	Not Assessed	120	22/51/120 ⁽¹⁾	Not Assessed
	Commercial	Not Assessed	4400	56000(869 ^{vap})/56000(1920 ^{vap})/56000(4360 ^{vap}) ^(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	5600/5600/5600 ⁽¹⁾	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	87000(869 ^{vap})/95000(1920 ^{vap})/100000(4360 ^{vap}) ^(1&3)	Not Assessed
Ethylbenzene	Residential with plant uptake	Not Assessed	350	47/110/260 ⁽¹⁾	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	83/190/440 ⁽¹⁾	Not Assessed
	Allotment	Not Assessed	90	16/39/91 ⁽¹⁾	Not Assessed
	Commercial	Not Assessed	2800	5700(518 ^{vap})/13000(1220 ^{vap})/27000(2840 ^{vap}) ^(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	24000/24000/25000 ⁽¹⁾	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	17000(518 ^{vap})/22000(1220 ^{vap})/27000(2840 ^{vap}) ^(1&3)	Not Assessed
o-Xylene	Residential with plant uptake	Not Assessed	250	60/140/330 ⁽¹⁾	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	88/210/480 ⁽¹⁾	Not Assessed
	Allotment	Not Assessed	160	28/67/160 ⁽¹⁾	Not Assessed
	Commercial	Not Assessed	2600	6600(478 ^{sol})/15000(1120 ^{sol})/33000(2620 ^{sol}) ^(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	41000/42000/43000 ⁽¹⁾	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	17000(478 ^{sol})/24000(1120 ^{sol})/33000(2620 ^{sol}) ^(1&3)	Not Assessed
m-Xylene	Residential with plant uptake	Not Assessed	240	59/140/320 ⁽¹⁾	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	52/190/450 ⁽¹⁾	Not Assessed
	Allotment	Not Assessed	180	31/74/170 ⁽¹⁾	Not Assessed
	Commercial	Not Assessed	3500	6200(625 ^{vap})/14000(1470 ^{vap})/31000(3460 ^{vap}) ^(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	41000/42000/43000 ⁽¹⁾	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	17000(625 ^{vap})/24000(1470 ^{vap})/32000(3460 ^{vap}) ^(1&3)	Not Assessed
p-Xylene	Residential with plant uptake	Not Assessed	230	56/130/310 ⁽¹⁾	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	79/180/430 ⁽¹⁾	Not Assessed
	Allotment	Not Assessed	160	29/69/160 ⁽¹⁾	Not Assessed
	Commercial	Not Assessed	3200	59000(576 ^{sol})/14000(1350 ^{sol})/30000(3170 ^{sol}) ^(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	41000/42000/43000 ⁽¹⁾	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	17000(576 ^{sol})/23000(1350 ^{sol})/31000(3170 ^{sol}) ^(1&3)	Not Assessed
This table is not a list of potential contaminants at any one site All values are subject to ongoing review CIEH - Chartered Institute for Environmental Health LQM - Land Quality Management (commercial research) (1) xx/yy/zz SOM - Soil Organic Matter dependant at 1%/2.5%/6% (2) xx/yy/zz pH - pH dependant at pH6/pH7/pH8 (3) Internal limits exceeded during calculations. Vapour or solubility saturation limit exceeded (limit presented in brackets) (4) under review by Terramech S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Terramech Investigations Limited 183 Long Lane Tilehurst Reading RG31 6YW Email - info@terramech.co.uk Tel 01189 439 910 Fax 01189 439 920 		

List 1E (Poly-cyclic Aromatic Hydrocarbons or PAH - mg/kg)					
Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part 4	DEFRA SP1010 'Final' C4SL December 2014
Acenaphthene	Residential with plant uptake	Not Assessed	Not Assessed	210/610/1100 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	3000/(57 ^{sol})/4700(141 ^{sol})/6000(336 ^{sol}) _(1&3)	Not Assessed
	Allotment	Not Assessed	Not Assessed	34/85/200 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	8400(57 ^{sol})/97000(141 ^{sol})/100000 _(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	15000/15000/15000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	29000/30000/30000 ₍₁₎	Not Assessed
Acenaphthylene	Residential with plant uptake	Not Assessed	Not Assessed	170/420/920 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	2900(86.1 ^{sol})/4600(212 ^{sol})/6000(506 ^{sol}) _(1&3)	Not Assessed
	Allotment	Not Assessed	Not Assessed	28/69/160 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	83000(86.1 ^{sol})/97000(212 ^{sol})/100000 _(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	15000/15000/15000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	29000/30000/30000 ₍₁₎	Not Assessed
Anthracene	Residential with plant uptake	Not Assessed	Not Assessed	2400/5400/11000 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	31000(1.17 ^{vap})/35000/37000 _(1&3)	Not Assessed
	Allotment	Not Assessed	Not Assessed	380/950/2200 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	520000/540000/540000 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	74000/74000/74000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	150000/150000/150000 ₍₁₎	Not Assessed
Benzo (a) Anthracene	Residential with plant uptake	Not Assessed	Not Assessed	7.2/11/13 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	11/14/15 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	2.9/6.5/13 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	170/170/180 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	29/29/29 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	49/56/62 ₍₁₎	Not Assessed
Benzo (a) Pyrene	Residential with plant uptake	Not Assessed	Not Assessed	2.2/2.7/3.0 ₍₁₎	5.0
	Residential without plant uptake	Not Assessed	Not Assessed	3.2/3.2/3.2 ₍₁₎	5.3
	Allotment	Not Assessed	Not Assessed	0.97/2.0/3.5 ₍₁₎	5.7
	Commercial	Not Assessed	Not Assessed	35/35/36 ₍₁₎	77
	Public Open Space (Residential)	Not Assessed	Not Assessed	5.7/5.7/5.7 ₍₁₎	10
	Public Open Space (Park)	Not Assessed	Not Assessed	11/12/13 ₍₁₎	21
Benzo (b) Fluoranthene	Residential with plant uptake	Not Assessed	Not Assessed	2.6/3.3/3.7 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	3.9/4.0/4.0 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.99/2.1/3.9 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	44/44/45 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	7.1/7.2/7.2 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	13/15/16 ₍₁₎	Not Assessed
Benzo (ghi) Perylene	Residential with plant uptake	Not Assessed	Not Assessed	320/340/350 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	360/360/360 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	290/470/640 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	3900/4000/4000 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	640/640/640 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	1400/1500/1600 ₍₁₎	Not Assessed
Benzo (k) Fluoranthene	Residential with plant uptake	Not Assessed	Not Assessed	77/93/100 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	110/110/110 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	37/75/130 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	1200/1200/1200 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	190/190/190 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	370/410/440 ₍₁₎	Not Assessed
Chrysene	Residential with plant uptake	Not Assessed	Not Assessed	15/22/27 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	30/31/32 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	4.1/9.4/19 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	350/350/350 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	57/57/57 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	93/110/120 ₍₁₎	Not Assessed
Dibenzo (ah) Anthracene	Residential with plant uptake	Not Assessed	Not Assessed	0.24/0.28/0.3 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	0.31/0.32/0.32 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.14/0.27/0.43 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	3.5/3.6/3.6 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	0.57/0.57/0.58 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	1.1/1.3/1.4 ₍₁₎	Not Assessed
Fluoranthene	Residential with plant uptake	Not Assessed	Not Assessed	280/560/890 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	1500/1600/1600 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	52/130/290 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	23000/23000/23000 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	3100/3100/3100 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	6300/6300/6400 ₍₁₎	Not Assessed
Fluorene	Residential with plant uptake	Not Assessed	Not Assessed	170/400/860 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	2800(30.9 ^{sol})/3800(76.5 ^{sol})/4500(183 ^{sol}) _(1&3)	Not Assessed
	Allotment	Not Assessed	Not Assessed	27/67/160 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	63000(30.9 ^{sol})/68000/71000 _(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	9900/9900/9900 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	20000/20000/20000 ₍₁₎	Not Assessed

List 1E cont (Poly-cyclic Aromatic Hydrocarbons or PAH - mg/kg)					
Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part 4	DEFRA SP1010 'Final' C4SL December 2014
Indeno (cd) Pyrene	Residential with plant uptake	Not Assessed	Not Assessed	27/36/41 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	45/46/46 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	9.5/21/39 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	500/510/510 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	82/82/82 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	150/170/180 ₍₁₎	Not Assessed
Naphthalene	Residential with plant uptake	Not Assessed	Not Assessed	2.3/5.6/13 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	2.3/5.6/13 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	4.1/10/24 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	190(76.4 ^{sol})/460(183 ^{sol})/1100(432 ^{sol}) _(1&3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	4900/4900/4900 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	1200(76.4 ^{sol})/1900(183 ^{sol})/3000 _(1&3)	Not Assessed
Phenanthrene	Residential with plant uptake	Not Assessed	Not Assessed	95/220/440 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	1300(36 ^{sol})/1500/1500 _(1&3)	Not Assessed
	Allotment	Not Assessed	Not Assessed	15/38/90 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	22000/22000/23000 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	3100/3100/3100 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	6200/6200/6300 ₍₁₎	Not Assessed
Pyrene	Residential with plant uptake	Not Assessed	Not Assessed	620/1200/2000 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	3700/3800/3800 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	110/270/620 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	54000/54000/54000 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	7400/7400/7400 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	15000/15000/15000 ₍₁₎	Not Assessed
Coal Tar (Benzo (a) Pyrene as surrogate)	Residential with plant uptake	Not Assessed	Not Assessed	0.79/0.98/1.1 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	1.2/1.2/1.2 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.32/0.67/1.2 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	15/15/15 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	2.2/2.2/2.2 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	4.4/4.7/4.8 ₍₁₎	Not Assessed
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List 1F (PCBs µg/kg)					
Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency New SGV (CLEA v1.04)	CIEH/LQM 2nd Ed 2009 or CIEH/LQM S4UL 2015	DEFRA SP1010 'Final' C4SL December 2014
Sum of PCDDs, PCDFs and dioxin-like PCBs	Residential with plant uptake	Not Assessed	8	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	8	Not Assessed	Not Assessed
	Allotment	Not Assessed		Not Assessed	Not Assessed
	Commercial	Not Assessed	240	Not Assessed	Not Assessed
PCB-77	Residential with plant uptake	Not Assessed	0.0774	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	0.0783	Not Assessed	Not Assessed
	Allotment	Not Assessed	0.233	Not Assessed	Not Assessed
	Commercial	Not Assessed	2.33	Not Assessed	Not Assessed
PCB-81	Residential with plant uptake	Not Assessed	0.0774	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	0.0783	Not Assessed	Not Assessed
	Allotment	Not Assessed	0.233	Not Assessed	Not Assessed
	Commercial	Not Assessed	2.33	Not Assessed	Not Assessed
PCB-126	Residential with plant uptake	Not Assessed	0.0777	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	0.0783	Not Assessed	Not Assessed
	Allotment	Not Assessed	0.247	Not Assessed	Not Assessed
	Commercial	Not Assessed	2.33	Not Assessed	Not Assessed
PCB-169	Residential with plant uptake	Not Assessed	0.0777	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	0.0783	Not Assessed	Not Assessed
	Allotment	Not Assessed	0.251	Not Assessed	Not Assessed
	Commercial	Not Assessed	2.33	Not Assessed	Not Assessed
PCB-105	Residential with plant uptake	Not Assessed	0.0777	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	0.0783	Not Assessed	Not Assessed
	Allotment	Not Assessed	0.247	Not Assessed	Not Assessed
	Commercial	Not Assessed	2.33	Not Assessed	Not Assessed
PCB-114	Residential with plant uptake	Not Assessed	0.0777	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	0.0783	Not Assessed	Not Assessed
	Allotment	Not Assessed	0.247	Not Assessed	Not Assessed
	Commercial	Not Assessed	2.33	Not Assessed	Not Assessed
PCB-118	Residential with plant uptake	Not Assessed	0.0777	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	0.0783	Not Assessed	Not Assessed
	Allotment	Not Assessed	0.247	Not Assessed	Not Assessed
	Commercial	Not Assessed	2.33	Not Assessed	Not Assessed
PCB-123	Residential with plant uptake	Not Assessed	0.0777	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	0.0783	Not Assessed	Not Assessed
	Allotment	Not Assessed	0.247	Not Assessed	Not Assessed
	Commercial	Not Assessed	2.33	Not Assessed	Not Assessed
PCB-156	Residential with plant uptake	Not Assessed	0.0777	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	0.0783	Not Assessed	Not Assessed
	Allotment	Not Assessed	0.251	Not Assessed	Not Assessed
	Commercial	Not Assessed	2.33	Not Assessed	Not Assessed
PCB-157	Residential with plant uptake	Not Assessed	0.0777	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	0.0783	Not Assessed	Not Assessed
	Allotment	Not Assessed	0.251	Not Assessed	Not Assessed
	Commercial	Not Assessed	2.33	Not Assessed	Not Assessed
PCB-156	Residential with plant uptake	Not Assessed	0.0777	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	0.0783	Not Assessed	Not Assessed
	Allotment	Not Assessed	0.251	Not Assessed	Not Assessed
	Commercial	Not Assessed	2.33	Not Assessed	Not Assessed
PCB-157	Residential with plant uptake	Not Assessed	0.0777	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	0.0783	Not Assessed	Not Assessed
	Allotment	Not Assessed	0.251	Not Assessed	Not Assessed
	Commercial	Not Assessed	2.33	Not Assessed	Not Assessed
PCB-167	Residential with plant uptake	Not Assessed	0.0777	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	0.0783	Not Assessed	Not Assessed
	Allotment	Not Assessed	0.251	Not Assessed	Not Assessed
	Commercial	Not Assessed		Not Assessed	Not Assessed
PCB-189	Residential with plant uptake	Not Assessed	0.0778	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	0.0783	Not Assessed	Not Assessed
	Allotment	Not Assessed	0.252	Not Assessed	Not Assessed
	Commercial	Not Assessed	2.33	Not Assessed	Not Assessed
This table is not a list of potential contaminants at any one site. All values are subject to ongoing review CIEH - Chartered Institute for Environmental Health LQM - Land Quality Management (commercial research) (1) xx/yy/zz SOM - Soil Organic Matter dependant at 1%/2.5%/5% (2) xx/yy/zz pH - pH dependant at pH6/pH7/pH8 (3) Internal limits exceeded during calculations (4) under review by Terramech		Terramech Investigations Limited 183 Long Lane Tilehurst Reading RG31 6YW Email - info@terramech.co.uk Tel 01189 439 910 Fax 01189 439 920			



List 1G (ChloroAlkanes & Alkenes mg/kg)					
Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part5	DEFRA SP1010 'Final' C4SL December 2014
1,2 Dichloroethane (1,2 -DCA)	Residential with plant uptake	Not Assessed	Not Assessed	0.0071/0.011/0.019	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	0.0092/0.013/0.023	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.0046/0.0083/0.016	Not Assessed
	Commercial	Not Assessed	Not Assessed	0.67/0.97/1.7	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	29/29/29	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	21/24/28	Not Assessed
1,1,1 Trichloroethane	Residential with plant uptake	Not Assessed	Not Assessed	8.8/18/39	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	9.0/18/40	Not Assessed
	Allotment	Not Assessed	Not Assessed	48/110/240	Not Assessed
	Commercial	Not Assessed	Not Assessed	660/1300/3000	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	14000/14000/14000	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	57000(1425 ^{vap})/76000(2915 ^{vap})/100000(6392 ^{vap})	Not Assessed
1,1,2,2 Tetrachloroethanes	Residential with plant uptake	Not Assessed	Not Assessed	1.6/3.4/7.5	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	3.9/8.0/17	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.41/0.89/2.0	Not Assessed
	Commercial	Not Assessed	Not Assessed	270/550/1100	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	1400/1400/1400	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	1800/2100/2300	Not Assessed
1,1,1,2 Tetrachloroethanes	Residential with plant uptake	Not Assessed	Not Assessed	1.2/2.8/6.4	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	1.5/3.5/8.2	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.79/1.9/4.4	Not Assessed
	Commercial	Not Assessed	Not Assessed	110/250/560	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	1400/1400/1400	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	1500/1800/2100	Not Assessed
Tetrachloroethene	Residential with plant uptake	Not Assessed	Not Assessed	0.18/0.39/0.9	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	0.18/0.4/0.92	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.65/1.5/3.6	Not Assessed
	Commercial	Not Assessed	Not Assessed	19/42/95	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	1400/1400/1400	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	820(424 ^{soil})/1100(951 ^{soil})/1500	Not Assessed
Tetrachloromethane Aka Carbon Terachloride	Residential with plant uptake	Not Assessed	Not Assessed	0.026/0.058/0.13	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	0.026/0.058/0.13	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.45/1.0/2.4	Not Assessed
	Commercial	Not Assessed	Not Assessed	2.9/6.3/14	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	890/920/950	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	190/270/400	Not Assessed
Trichloroethene	Residential with plant uptake	Not Assessed	Not Assessed	0.016/0.034/0.075	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	0.017/0.036/0.08	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.041/0.091/0.21	Not Assessed
	Commercial	Not Assessed	Not Assessed	1.2/2.6/6.7	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	120/120/120	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	70/91/120	Not Assessed
Trichloromethane Aka Chloroform	Residential with plant uptake	Not Assessed	Not Assessed	0.91/1.7/3.4	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	1.2/2.1/4.2	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.42/0.83/1.7	Not Assessed
	Commercial	Not Assessed	Not Assessed	99/170/350	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	2500/2500/2500	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	2600/2800/3100	Not Assessed
Chloroethene Aka Vinyl Chloride	Residential with plant uptake	Not Assessed	Not Assessed	0.00064/0.00087/0.0014	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	0.00077/0.0010/0.0015	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.000550.0010/0.0018	Not Assessed
	Commercial	Not Assessed	Not Assessed	0.059/0.077/0.12	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	3.5/3.5/3.5	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	4.8/5.0/5.4	Not Assessed
This table is not a list of potential contaminants at any one site All values are subject to ongoing review CIEH - Chartered Institute for Environmental Health LQM - Land Quality Management (commercial research) (1) xx/yy/zz SOM - Soil Organic Matter dependant at 1%/2.5%/6% (2) xx/yy/zz pH - pH dependant at pH6/pH7/pH8 (3) Internal limits exceeded during calculations. Vapour or solubility saturation limit exceeded (limit presented in brackets) (4) under review by Terramech S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Terramech Investigations Limited 183 Long Lane Tilehurst Reading RG31 6YW Email - info@terramech.co.uk Tel 01189 439 910 Fax 01189 439 920		



List 1H (Explosives mg/kg)

Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part 6	DEFRA SP1010 'Final' C4SL December 2014
2,4,6 Trinitrotoluene Aka TNT	Residential with plant uptake	Not Assessed	Not Assessed	1.6/3.7/8.1	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	65/66/66	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.24/0.58/1.4	Not Assessed
	Commercial	Not Assessed	Not Assessed	1000/1000/1000	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	130/130/130	Not Assessed
RDX	Public Open Space (Park)	Not Assessed	Not Assessed	260/270/270	Not Assessed
	Residential with plant uptake	Not Assessed	Not Assessed	120/250/540	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	13000/13000/13000	Not Assessed
	Allotment	Not Assessed	Not Assessed	17/38/85	Not Assessed
	Commercial	Not Assessed	Not Assessed	21000/21000/21000	Not Assessed
HMX	Public Open Space (Residential)	Not Assessed	Not Assessed	26000/26000/27000	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	49000(18.7sol)/51000/53000	Not Assessed
	Residential with plant uptake	Not Assessed	Not Assessed	5.7/13/26	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	6700/6700/6700	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.86/1.9/3.9	Not Assessed
	Commercial	Not Assessed	Not Assessed	11000/11000/11000	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	13000/13000/13000	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	23000(0.36 ^{vap})/23000(0.39 ^{vap})/24000(0.48 ^{vap})	Not Assessed
This table is not a list of potential contaminants at any one site All values are subject to ongoing review CIEH - Chartered Institute for Environmental Health LQM - Land Quality Management (commercial research) (1) xx/yy/zz SOM - Soil Organic Matter dependant at 1%/2.5%/6% (2) xx/yy/zz pH - pH dependant at pH6/pH7/pH8 (3) Internal limits exceeded during calculations. Vapour or solubility saturation limit exceeded (limit presented in brackets) (4) under review by Terramech S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Terramech Investigations Limited 183 Long Lane Tilehurst Reading RG31 6YW Email - info@terramech.co.uk Tel 01189 439 910 Fax 01189 439 920		



List 11 (Pesticides mg/kg)

Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part 7	DEFRA SP1010 'Final' C4SL December 2014
Aldrin	Residential with plant uptake	Not Assessed	Not Assessed	5.7/6.6/7.1 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	7.3/7.4/7.5 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	3.2/6.1/9.6 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	170/170/170 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	18/18/18 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	30/30/31 ₍₁₎	Not Assessed
Dieldrin	Residential with plant uptake	Not Assessed	Not Assessed	0.97/2/3.5 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	7/7.3/7.4 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.17/0.41/0.96 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	170/170/170 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	18/18/18 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	30/30/30 ₍₁₎	Not Assessed
Atrazine	Residential with plant uptake	Not Assessed	Not Assessed	3.3/7.6/17.4 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	610/620/620 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.5/1.2/2.7 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	9300/9300/9400 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	1200/1200/1200 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	2300/2400/2400 ₍₁₎	Not Assessed
Dichlorvos	Residential with plant uptake	Not Assessed	Not Assessed	0.032/0.066/0.14 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	6.4/6.5/6.6 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.0049/0.010/0.022 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	140/140/140 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	16/16/16 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	26/26/27 ₍₁₎	Not Assessed
Alpha Endosulfan	Residential with plant uptake	Not Assessed	Not Assessed	7.4/18/41 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	160(0.003 ^{vap})/280(0.007 ^{vap})/410(0.016 ^{vap}) _(1 & 3)	Not Assessed
	Allotment	Not Assessed	Not Assessed	1.2/2.9/6.6 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	5600(0.016 ^{vap})/7400(0.016 ^{vap})/8400(0.016 ^{vap}) _(1 & 3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	1200/1200/1200 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	2400/2400/2500 ₍₁₎	Not Assessed
Beta Endosulfan	Residential with plant uptake	Not Assessed	Not Assessed	7.0/17/39 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	150(0.00007 ^{vap})/320(0.0002 ^{vap})/440(0.0004 ^{vap}) _(1 & 3)	Not Assessed
	Allotment	Not Assessed	Not Assessed	1.1/2.7/6.4 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	6300(0.00007 ^{vap})/7800(0.0002 ^{vap})/8700(0.0004 ^{vap}) _(1 & 3)	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	1200/1200/1200 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	2400/2400/2500 ₍₁₎	Not Assessed
Alpha BHC (Hexachlorocyclohexane) Inc Lindane	Residential with plant uptake	Not Assessed	Not Assessed	0.23/0.66/1.2 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	6.9/9.2/11 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.035/0.087/0.21 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	170/180/180 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	24/24/24 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	47/48/48 ₍₁₎	Not Assessed
Beta BHC (Hexachlorocyclohexane) Inc Lindane	Residential with plant uptake	Not Assessed	Not Assessed	0.085/0.2/0.46 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	3.7/3.8/3.8 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.013/0.032/0.077 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	65/65/65 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	8.1/8.1/8.1 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	15/15/16 ₍₁₎	Not Assessed
Gamma BHC (Hexachlorocyclohexane) Inc Lindane	Residential with plant uptake	Not Assessed	Not Assessed	0.06/0.14/0.33 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	2.9/3.3/3.5 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.0092/0.023/0.054 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	67/69/70 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	8.2/8.2/8.2 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	14/15/15 ₍₁₎	Not Assessed
DDT _{TOT} (Sum of DDD, DDE,TDE and DDT)	Residential with plant uptake	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Allotment	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Commercial	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	Not Assessed	Not Assessed
This table is not a list of potential contaminants at any one site All values are subject to ongoing review CIEH - Chartered Institute for Environmental Health LQM - Land Quality Management (commercial research) (1) xx/yy/zz SOM - Soil Organic Matter dependant at 1%/2.5%/6% (2) xx/yy/zz pH - pH dependant at pH6/pH7/pH8 (3) Internal limits exceeded during calculations. Vapour or solubility saturation limit exceeded (limit presented in brackets) (4) under review by Terramech S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Terramech Investigations Limited 183 Long Lane Tilehurst Reading RG31 6YW Email - info@terramech.co.uk Tel 01189 439 910 Fax 01189 439 920		



List 1J (Chlorobenzenes mg/kg)					
Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part8	DEFRA SP1010 'Final' C4SL December 2014
Chlorobenzene	Residential with plant uptake	Not Assessed	Not Assessed	0.46/1.0/2.4 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	0.46/1.0/2.4 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	5.9/14/32 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	56/130/290 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	11000/13000/14000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	1300(675 ^{sol})/2000(1520 ^{sol})/2900 ₍₁₎	Not Assessed
1,2 Dichlorobenzene	Residential with plant uptake	Not Assessed	Not Assessed	23/56/130 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	24/57/130 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	94/230/540 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	2000(571 ^{sol})/4800(1370 ^{sol})/11000(3240 ^{sol}) ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	90000/95000/98000	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	24000(571 ^{sol})/36000(1370 ^{sol})/51000(3240 ^{sol}) ₍₁₎	Not Assessed
1,3 Dichlorobenzene	Residential with plant uptake	Not Assessed	Not Assessed	0.4/0.1/2.3 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	0.44/1.1/2.5 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.25/0.6/1.5 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	30/73/170 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	300/300/300 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	390/440/470 ₍₁₎	Not Assessed
1,4 Dichlorobenzene	Residential with plant uptake	Not Assessed	Not Assessed	61/150/350 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	61/150/350 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	19/37/88 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	4400(224 ^{vap})/10000(540 ^{vap})/25000(1280 ^{vap}) ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	17000/17000/17000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	36000(224 ^{vap})/36000(540 ^{vap})/36000(1280 ^{vap}) ₍₁₎	Not Assessed
1,2,3 Trichlorobenzene	Residential with plant uptake	Not Assessed	Not Assessed	1.5/3.6/8.6 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	1.5/3.7/8.8 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	4.7/12/28 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	102/250/590 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	1800/1800/1800 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	770(134 ^{vap})/1100(330 ^{vap})/1600(789 ^{vap}) ₍₁₎	Not Assessed
1,2,4 Trichlorobenzene	Residential with plant uptake	Not Assessed	Not Assessed	2.6/6.4/15 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	2.6/6.4/15 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	55/140/320 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	220/530/1300 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	15000/17000/19000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	1700(318 ^{vap})/2600(786 ^{vap})/4000(1880 ^{vap}) ₍₁₎	Not Assessed
1,3,5 Trichlorobenzene	Residential with plant uptake	Not Assessed	Not Assessed	0.33/0.81/1.9 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	0.33/0.81/1.9 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	4.7/12/28 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	23/55/130 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	1700/1700/1800 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	380(36.7 ^{vap})/580(90.8 ^{vap})/860(217 ^{vap}) ₍₁₎	Not Assessed
1,2,3,4 Tetrachlorobenzenes	Residential with plant uptake	Not Assessed	Not Assessed	15/36/78 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	24/56/120 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	4.4/11/26 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	1700(122 ^{vap})/3080(304 ^{vap})/4400(728 ^{vap}) ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	830/830/830 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	1500(122 ^{vap})/1600/1600 ₍₁₎	Not Assessed
1,2,3,5 Tetrachlorobenzenes	Residential with plant uptake	Not Assessed	Not Assessed	0.66/1.6/3.7 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	0.75/1.9/4.3 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.38/0.9/2.2 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	49(39.4 ^{vap})/120(98.1 ^{vap})/240235 ^{vap}) ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	78/79/79 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	110(39 ^{vap})/120/130 ₍₁₎	Not Assessed
1,2,4,5 Tetrachlorobenzenes	Residential with plant uptake	Not Assessed	Not Assessed	0.33/0.77/1.6 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	0.73/1.7/3.5 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.06/0.16/0.37 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	42(19.7 ^{sol})/72(49.1 ^{sol})/96 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	13/13/13 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	25/26/26 ₍₁₎	Not Assessed
Pentachlorobenzene	Residential with plant uptake	Not Assessed	Not Assessed	5.8/12/22 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	19/30/38 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	1.2/3.1/7.0 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	640(43.0 ^{sol})/770(107 ^{sol})/830 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	100/100/100 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	190/190/190 ₍₁₎	Not Assessed

List 1J (Chlorobenzenes mg/kg) cont

Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part8	DEFRA SP1010 'Final' C4SL December 2014
Hexachlorobenzene	Residential with plant uptake	Not Assessed	Not Assessed	1.3(0.2 ^{vap})/3.3(0.5 ^{vap})/4.9 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	4.1(0.2 ^{vap})/5.7(0.5 ^{vap})/6.7(1.2 ^{vap}) ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.47/1.1/2.5 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	110(0.2 ^{vap})/120/120 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	16/16/16 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	30/30/30 ₍₁₎	Not Assessed
This table is not a list of potential contaminants at any one site All values are subject to ongoing review CIEH - Chartered Institute for Environmental Health LQM - Land Quality Management (commercial research) (1) xx/yy/zz SOM - Soil Organic Matter dependant at 1%/2.5%/6% (2) xx/yy/zz pH - pH dependant at pH6/pH7/pH8 (3) Internal limits exceeded during calculations. Vapour or solubility saturation limit exceeded (limit presented in brackets) (4) under review by Terramech S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Terramech Investigations Limited 183 Long Lane Tilehurst Reading RG31 6YW Email - info@terramech.co.uk Tel 01189 439 910 Fax 01189 439 920 		

List 1K (Phenols & Chlorophenols mg/kg)

Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part9	DEFRA SP1010 'Final' C4SL December 2014
Phenol	Residential with plant uptake	Not Assessed	Not Assessed	280/550/1100 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	750/1300/2300 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	66/140/280 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	760/1500/3200 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	760/1500/3200 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	760/1500/3200 ₍₁₎	Not Assessed
Chlorophenol	Residential with plant uptake	Not Assessed	Not Assessed	0.87/2.0/4.5 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	94/150/210 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.13/0.30/0.7 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	3500/4000/4300 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	620/620/620 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	1100/1100/1100 ₍₁₎	Not Assessed
Pentachlorophenol	Residential with plant uptake	Not Assessed	Not Assessed	0.22/0.52/1.2 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	27(16.4 ^{vap})/29/31 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.03/0.08/0.19 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	400/400/400 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	60/60/60 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	110/120/120 ₍₁₎	Not Assessed
This table is not a list of potential contaminants at any one site All values are subject to ongoing review CIEH - Chartered Institute for Environmental Health LQM - Land Quality Management (commercial research) (1) xx/yy/zz SOM - Soil Organic Matter dependant at 1%/2.5%/6% (2) xx/yy/zz pH - pH dependant at pH6/pH7/pH8 (3) Internal limits exceeded during calculations. Vapour or solubility saturation limit exceeded (limit presented in brackets) (4) under review by Terramech S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Terramech Investigations Limited 183 Long Lane Tilehurst Reading RG31 6YW Email - info@terramech.co.uk Tel 01189 439 910 Fax 01189 439 920 		

List 1L (Other mg/kg)

Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part 10	DEFRA SP1010
Carbon Disulphide	Residential with plant uptake	Not Assessed	Not Assessed	0.14/0.29/0.62 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	0.14/0.29/0.62 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	4.8/10/23 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	11/22/47 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	11000/11000/12000 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	1300/1900/2700 ₍₁₎	Not Assessed
Hexachlorobutadiene	Residential with plant uptake	Not Assessed	Not Assessed	0.29/0.7/1.6 ₍₁₎	Not Assessed
	Residential without plant uptake	Not Assessed	Not Assessed	0.32/0.78/1.8 ₍₁₎	Not Assessed
	Allotment	Not Assessed	Not Assessed	0.25/0.61/1.4 ₍₁₎	Not Assessed
	Commercial	Not Assessed	Not Assessed	31/66/120 ₍₁₎	Not Assessed
	Public Open Space (Residential)	Not Assessed	Not Assessed	25/25/25 ₍₁₎	Not Assessed
	Public Open Space (Park)	Not Assessed	Not Assessed	48/50/51 ₍₁₎	Not Assessed
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List 1M (Natural Mineral Fibres quantified % weight in soil)

Contaminant	Generic Exposure Scenario	Terramech (CIRIA C733 methodology)	Environment Agency	CIEH/LQM	DEFRA
Chrysotile Asbestos	Residential with active gardening Sandy Soil	0.01%	Not assessed	Not assessed	Not assessed
	Residential with active gardening Int Soil	0.05%	Not assessed	Not assessed	Not assessed
	Residential with active gardening Clay Soil	0.1%	Not assessed	Not assessed	Not assessed
	Allotment Sandy Soil	0.002%	Not assessed	Not assessed	Not assessed
	Allotment Intermediate Soil	0.005%	Not assessed	Not assessed	Not assessed
	Allotment Clay Soil	0.01%	Not assessed	Not assessed	Not assessed
	Commercial Sandy Soil	0.05%	Not assessed	Not assessed	Not assessed
	Commercial Intermediate Soil	0.2%	Not assessed	Not assessed	Not assessed
	Commercial Clay Soil	0.25%	Not assessed	Not assessed	Not assessed
	Public Open Space Sandy Soil (Residential)	0.0015%	Not assessed	Not assessed	Not assessed
	Public Open Space Int Soil (Residential)	0.0025%	Not assessed	Not assessed	Not assessed
	Public Open Space Clay Soil (Residential)	0.001% (clay overtakes sand)	Not assessed	Not assessed	Not assessed
Amosite Asbestos	Residential with active gardening Sandy Soil	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Residential with active gardening Int Soil	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Residential with active gardening Clay Soil	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Allotment Sandy Soil	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Allotment Intermediate Soil	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Allotment Clay Soil	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Commercial Sandy Soil	0.001%	Not assessed	Not assessed	Not assessed
	Commercial Intermediate Soil	0.001%	Not assessed	Not assessed	Not assessed
	Commercial Clay Soil	0.009%	Not assessed	Not assessed	Not assessed
	Public Open Space Sandy Soil (Residential)	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Public Open Space Int Soil (Residential)	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Public Open Space Clay Soil (Residential)	Any detectable concentration	Not assessed	Not assessed	Not assessed
Crocidolite Asbestos	Residential with active gardening Sandy Soil	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Residential with active gardening Int Soil	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Residential with active gardening Clay Soil	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Allotment Sandy Soil	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Allotment Intermediate Soil	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Allotment Clay Soil	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Commercial Sandy Soil	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Commercial Intermediate Soil	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Commercial Clay Soil	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Public Open Space Sandy Soil (Residential)	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Public Open Space Int Soil (Residential)	Any detectable concentration	Not assessed	Not assessed	Not assessed
	Public Open Space Clay Soil (Residential)	Any detectable concentration	Not assessed	Not assessed	Not assessed
This table is not a list of potential contaminants at any one site All values are subject to ongoing review CIEH - Chartered Institute for Environmental Health LQM - Land Quality Management (commercial research) C733 – CIRIA - Construction Industry Research & Information Association – Asbestos in Made Ground Sect 13 Respirable fibre exposure estimation using published air-to-air relationships after Addison <i>et al</i> (1988). <i>Details</i> Dilution of airborne fibre concentrations from the point of origin has not been considered. Residential assume 90 hours per year gardening activities that result in dust being raised. (Addison et al 1988) Allotment assume 260 hours per year (2.5 hrs per day every weekend) of activities that result in dust being raised. Commercial assume 24 hours per year when service trenches could be excavated that results in dust being raised. Public Open space assume not more than four 8hr maintenance days per year (32hrs/yr) that result in dust being raised as well as game playing in summer hols when soil surface is dry and veg layer is compromised (6wks 8hrs/day + maintenance = 368hrs/yr) Limit of detection usually 0.001%			Terramech Investigations Limited 183 Long Lane Tilehurst Reading RG31 6YW Email - info@terramech.co.uk Tel 01189 439 910 Fax 01189 439 920		



List 2 (Waste Acceptance Criteria (WAC) Analysis)			
	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Solid Waste Analysis - Limit values for compliance			
Total Organic Carbon (%)	3	5	6
Loss on Ignition (%)	-	-	10
Sum of BTEX (mg/kg)	6	-	-
Sum of 7 PCBs (mg/kg)	1	-	-
Mineral Oil (mg/kg)	500	-	-
PAH Sum of 17 (mg/kg)	100	-	-
pH (pH Units)	-	>6	-
Eluate Analysis - Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)			
Arsenic	0.5	2	25
Barium	20	100	300
Cadmium	0.04	1	5
Chromium	0.5	10	70
Copper	2	50	100
Mercury	0.01	0.2	2
Molybdenum	0.5	10	30
Nickel	0.4	10	40
Lead	0.5	10	50
Antimony	0.06	0.7	5
Selenium	0.1	0.5	7
Zinc	4	50	200
Chloride	800	15000	25000
Fluoride	10	150	500
Sulphate as SO ₄	1000	20000	50000
Total Dissolved Solids	4000	60000	100000
Phenol Index	1	-	-
Dissolved Organic Carbon	500	800	1000
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List 3 (Generic Soil Screening Values for the Selection of Appropriate Water Supply Pipe Materials)							
		Pipe Material					
		All threshold concentrations in mg/kg					
	Parameter Group	PE	PVC	Barrier pipe (PE-Al-PE)	Wrapped Steel	Wrapped Ductile Iron	Copper
1	Extended VOC suite by purge and trap or headspace and GCMS with TICs	0.5	0.125	Pass	Pass	Pass	Pass
1A	+BTEX +MTBE	0.1	0.03	Pass	Pass	Pass	Pass
2	SVOCs by purge and trap or headspace and GCMS with TICs(aliphatic and aromatic C5 – C10	2	1.4	Pass	Pass	Pass	Pass
2E	+Phenols	2	0.4	Pass	Pass	Pass	Pass
2F	+Cresols and chlorinated phenols	2	0.04	Pass	Pass	Pass	Pass
3	Mineral Oil C11 – C20	10	Pass	Pass	Pass	Pass	Pass
4	Mineral Oil C21 – C40	500	Pass	Pass	Pass	Pass	Pass
5	Corrosive (Conductivity, Redox and pH)	Pass	Pass	Pass	Corrosive if pH <7 and conductivity >400µS/cm	Corrosive if pH <5 Eh not neutral and conductivity > 400mS/cm	Corrosive if pH <5 or >8 and Eh positive
Specific suites identified as relevant following site investigation							
2A	Ethers	0.5	1	Pass	Pass	Pass	Pass
2B	Nitrobenzene	0.5	0.4	Pass	Pass	Pass	Pass
2C	Ketones	0.5	0.02	Pass	Pass	Pass	Pass
2D	Aldehydes	0.5	0.02	Pass	Pass	Pass	Pass
6	Amines	Fail	Pass	Pass	Pass	Pass	Pass
This table is not a list of potential contaminants at any one site All values are subject to ongoing review. Table reproduced from <i>UKWIR Report Ref No 10/WM/03/21 (Table 3.1)</i> VOC = Volatile Organic Compounds (solvents) SVOC = Semi Volatile Organic Compounds GCMS = Gas Chromatography Mass Spectrometer TIC = Tentatively Identifiable compound BTEX = Benzene, Toluene, Ethyl Benzene & Xylene (VOCs) MTBE = Methyl tertiary butyl ether (petrol additive)				Terramech Investigations Limited 183 Long Lane Tilehurst Reading RG31 6YW Email - info@terramech.co.uk Tel 01189 439 910 Fax 01189 439 920			



List 3 (Generic Soil Screening Values for the Selection of Appropriate Water Supply Pipe Materials - Thames Water Utilities Ltd)	
Aliphatic C5 - C12	0.5 mg/kg
Aromatic C5 - C12	0.5 mg/kg
Aliphatic C12 - C21 (not chlorinated)	10 mg/kg
Aromatic C12 - C21 (not BTEX)	10 mg/kg
Aliphatic C21 - C35	500 mg/kg
Aromatic C21 - C35	500 mg/kg
Chlorinated short chain aliphatic hydrocarbons	0.5 mg/kg
Chlorinated short chain aromatic hydrocarbons	2 mg/kg
BTEX compounds	0.1 mg/kg
MTBE compounds	0.1 mg/kg
Naphthalene	5 mg/kg
Phenols (unless present with BTEX)	5 mg/kg
Phenols (in conjunction with BTEX)	2 mg/kg
Phenols (chlorinated)	2 mg/kg
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List 4 (Tier 1 Generic Soil Target Concentrations for Groundwater Protection - EA R&D 20 method)

Contaminant	Remedial Target (Mg/kg)
Arsenic	5.0 (Natural soils 0 to 35) ⁽³⁾
Cadmium	1.13
Chromium VI	10
Copper	255
Lead	590
Mercury (inorganic)	0.5
Nickel	10 (Average rural soils 21.1mg/kg) ⁽²⁾
Selenium	0.5
Zinc	105
Poly Cyclic Aromatics (Total Aromatics C ₅ to C ₄₄)	4.5 x 10 ⁻⁵ ⁽¹⁾
Total Petroleum Hydrocarbons (Aliphatic and Aromatic C ₅ to C ₄₄)	5.8 x 10 ⁻³ ⁽¹⁾
⁽¹⁾ organic carbon content sensitive, actual values should be used if possible	
⁽²⁾ Nickel in Rural soils 1.16 to 216mg/kg average 21.1 mg/kg (ref - EA SC050021 / Nickel SGV)	
⁽³⁾ Arsenic in Natural Soils 0 to 35mg/kg (ref - BGS Soils Beneath Our Feet website)	
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**List 4 (Selected Generic Groundwater Screening Values mg/litre)**

Contaminant Mg/litre	EQS Freshwater	EQS Saltwater	WHO (health)	WHO (ATO)	EU Drinking water	UK Drinking water
Antimony	-	-	0.005	-	0.005	0.005
Arsenic	0.05	0.025	0.01	-	0.01	0.01
Boron	0.002	0.007	0.0003	-	0.001	0.001
Cadmium	0.005	0.0025	0.003	-	0.005	0.005
Chromium	0.005-0.025	0.015	0.05	-	0.05	0.05
Copper	0.001-0.028	0.005	2	1	2	2
Lead	0.004-0.025	0.025	0.01	-	0.01	0.01
Mercury	0.001	0.0003	0.001	-	0.001	0.001
Molybdenum	-	-	0.07	-	-	-
Nickel	0.05-0.2	0.03	0.02	-	0.02	0.02
Selenium	-	-	0.01	-	0.01	0.01
Vanadium	0.02-0.06	0.1	-	-	-	-
Zinc	0.008-0.5	-	-	3	-	5
Hydrocarbons (dissolved/emulsion)	-	-	-	-	-	0.01
Poly-cyclic Aromatic Hydrocarbons	-	-	-	-	0.0001	0.0001
Benzene	0.3	0.3	0.01	-	0.001	0.001
Toluene	0.5	0.5	0.7	24-170	-	-
Ethylbenzene	-	-	0.3	-	-	-
Xylene	0.03	0.03	0.5	20-1800	-	-
Benzo (a) Pyrene	-	-	0.0007	-	0.00001	0.00001
Phenol	0.03	0.03	-	-	0.0005	0.0005
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List 4 Drinking Water Regulations

Contaminant	units	EQS freshwater (1)	EQS saltwater (1)	WHO Health (2)	WHO ATO (2)	EU Drinking Water Standards (3)	UK Drinking Water Standards (4)
Acrylamide	ug/l			0.5		0.1	0.1
Alachlor	ug/l			20		0.1	0.1
Aldicarb	ug/l			10		0.1	0.1
Aldrin	ug/l	0.01	0.01	0.03		0.03	0.03
Aluminium	ug/l				200	200	200
Ammonia (NH ₃ as N)	mg/l	0.015	0.021		1.5		
Ammonium (as NH ₄ ⁺)	mg/l					0.5	0.5
Antimony	ug/l			5		5	5
Arsenic	ug/l	50	25	10		10	10
Atrazine	ug/l	2	2	2		0.1	0.1
Azinphos-methyl	ng/l	10 (40)	10 (40)			100	100
Barium	mg/l			0.7			1
Bentazone	mg/l	0.5	0.5	0.03		0.1	0.1
Benzene	ug/l	30 (300)	30 (300)	10		1	1
Benzo [a] pyrene	ug/l			0.7		0.01	0.01
Biphenyl	ug/l	25	25				
Boron	mg/l	2	7	0.3		1	1
Bromate	ug/l					10	10
Bromoxynil	ug/l	100 (1000)	100 (1000)			0.1	0.1
Cadmium	ug/l	5	2.5	3		5	5
Calcium	mg/l						250
Carbofuran	ug/l			5		0.1	0.1
Chlordane (all isomers)	ug/l			0.2		0.1	0.1
Chlorfenvinphos	ug/l	0.01 (0.1)	0.01 (0.1)			0.1	0.1
Chloride	mg/l	250			250	250	250
Chlorine	ug/l	2	10				
Chloroform	ug/l	12	12	200			
Chloroform extractable substances	ug/l						1000
Chlorphenylid	ug/l	0.05	0.05			0.1	0.1
Chloronitrotoluenes	ug/l	10	10				
Chlorothalonil	ug/l	0.1	0.1			0.1	0.1
Chlorpropham	ug/l	10	10			0.1	0.1
Chlorotoluron	ug/l	2	2	30		0.1	0.1
Chromium	ug/l	5 - 250	15	50		50	50
Copper	ug/l	1 - 28	5	2000	1000	2000	2000
Coumaphos	ug/l	0.01 (0.1)	0.04 (0.4)			0.1	0.1
Cyanide	ug/l			70		50	50
Cyfluthrin	ug/l	0.001	0.001			0.1	0.1

Contaminant	units	EQS freshwater (1)	EQS saltwater (1)	WHO Health (2)	WHO ATO (2)	EU Drinking Water Standards (3)	UK Drinking Water Standards (4)
2,4-dichlorophenoxyacetic acid (2,4-D), (ester form)	ug/l	1	1	30		0.1	0.1
Demetons	ug/l	0.5	0.5			0.1	0.1
Diazinon	ug/l	0.01 (0.1)	0.015 (0.15)			0.1	0.1
Dichlorodiphenyltrichloroethane (all isomers)	ug/l	0.025	0.025				
Para, para-DDT	ug/l	0.01	0.01	2		0.1	0.1
1,2-Dichloroethane (1,2-DCA)	ug/l	10	10	30		3	3
1,1-Dichloroethene (1,1-DCE)	ug/l			30			
1,2-Dichloroethene (1,2-DCE)	ug/l			50			
1,2-dibromo-3-chloropropane	ug/l			1		0.1	0.1
1,2-Dichlorobenzene	ug/l			1000	1 to 10		
1,2-Dichloropropane	ug/l			20		0.1	0.1
1,3-Dichloropropene	ug/l			20		0.1	0.1
1,4-Dichlorobenzene	ug/l			300	0.3 to 30		
Di(2-ethylhexyl)adipate	ug/l			80			
Di(2-ethylhexyl)phthalate	ug/l			8			
Dichloromethane	ug/l			20			
Dichlorprop (DCPP)	ug/l			100		0.1	0.1
Dichlorvos	ng/l	1	40			100	100
Dieldrin	ug/l	0.01	0.01	0.03		0.03	0.03
Dimethoate	ug/l	1	1			0.1	0.1
Drins (total)	ug/l	0.03	0.03			0.1	0.1
Edetic Acid (EDTA)	ug/l			200			
Endosulfan	ng/l	3	3			100	100
Endrin	ug/l	0.005	0.005			0.1	0.1
Epichlorohydrin	ug/l			0.4		0.1	0.1
Ethylbenzene	ug/l			300	2 to 200		
Fenchlorphos	ug/l	0.01 (0.1)	0.01 (0.1)			0.1	0.1
Fenoprop	ug/l			9		0.1	0.1
Fenitrothion	ng/l	10 (250)	10 (250)			100	100
Flucofuron	ug/l	1				0.1	0.1
Fluoride	ug/l			1500		1500	1500
Formaldehyde	ug/l	5 (50)	n/a	900		0.1	0.1
Heptachlor	ug/l			0.03		0.03	0.03
Hexachlorobenzene	ug/l	0.03	0.03	1		0.1	0.1
Hexachlorobutadiene	ug/l	0.1	0.1	0.6			
Hexachlorocyclohexane (lindane)	ug/l	0.1	0.02	2		0.1	0.1
Hydrocarbons (dissolved/emulsions)	ug/l						10
Hydrogen sulphide (H2S as S)	ug/l	0.25 to 1.0	10				

Contaminant	units	EQS freshwater (1)	EQS saltwater (1)	WHO Health (2)	WHO ATO (2)	EU Drinking Water Standards (3)	UK Drinking Water Standards (4)
Isoxynil	ug/l	10 (100)	10 (100)			0.1	0.1
Iron	mg/l	1	1		0.3	0.2	0.2
Isodrin	ug/l	0.005	0.005			0.1	0.1
Isoproturon	ug/l	2 to 20		9		0.1	0.1
Lead (inorganic - dissolved)	ug/l	4 - 250	25	10		10	25 (reducing to 10)
Linuron	ug/l	2	2			0.1	0.1
Magnesium	mg/l						50
Malachite green	ug/l	0.5 (100)					
Malathion	ng/l	10 (500)	20 (500)			100	100
Manganese	ug/l			500	100	50	50
MCPA	ug/l	2	2	2		0.1	0.1
Mecoprop (MCP)	ug/l	20 (200)	20 (200)	10		0.1	0.1
Mercury	ug/l	1	0.3	1		1	1
Methylbenzene	ug/l	50 (500)	40				
Methoxychlor	ug/l			20		0.1	0.1
Metolachlor	ug/l			10		0.1	0.1
Molinate	ug/l			6		0.1	0.1
Molybdenum	ug/l			70			
Monochlorobenzene	ug/l			300	10 to 120		
Naphthalene	ug/l	10 (100)	5 (80)				
Nickel	ug/l	50 - 200	30	20		20	20
Nitrate (as NO3)	mg/l			50		50	50
Nitrite (as NO2)	ug/l			3		500	100
Nitriloacetic acid	ug/l			200			
Oils/hydrocarbons (by Pet Ether extract)	ug/l						10
Omethoate	ug/l	0.01				0.1	0.1
Polycyclic Aromatic (PAH) Hydrocarbons	ug/l					0.1	0.1
Pendimethalin	ug/l			20		0.1	0.1
Pentachlorophenol	ug/l	2	2	9		0.1	0.1
Permethrin	ug/l	0.01		20		0.1	0.1
Pesticides (individual species, unless specified)	ug/l					0.1	0.1
Pesticides (total)	ug/l					0.5	0.5
Phenol	ug/l	30 (300)	30 (300)			0.5	0.5
Pirimicarb	ug/l	1	1			0.1	0.1
Phosphorous	ug/l					400 (5000)	2200
Potassium	mg/l					10 (12)	12

Contaminant	units	EQS freshwater (1)	EQS saltwater (1)	WHO Health (2)	WHO ATO (2)	EU Drinking Water Standards (3)	UK Drinking Water Standards (4)
Propanil	ug/l			20		0.1	0.1
Propetamphos	ug/l	0.01 (0.1)	0.01 (0.1)			0.1	0.1
Pryridate	ug/l			100		0.1	0.1
Selenium	ug/l			10		10	10
Silver	ug/l	0.05 (0.1)	0.5 (1)				10
Simazine	ug/l	2 (10)	2 (10)	2		0.1	0.1
Sodium	mg/l	170			200	200	200
Styrene	ug/l	50 (500)	50 (500)	20	4 to 2600		
Sulcofuron	ug/l	25	25			0.1	0.1
Sulphate	mg/l	400	250		250	250	250
Sulphide	ug/l	0.25	n/a				
Surfactants	ug/l						200
2,4,5-trichlorophenoxyacetic acid (2,4,5-T)	ug/l			9		0.1	0.1
Tecnazene	ug/l	1 (10)	1				
Tetrachloroethene (PCE)	ug/l	10	10	40		10 (with TCE)	10 (with TCE)
Tetrachloromethane (PCM, carbon tetrachloride)	ug/l	12	12	2			3
Thiabendazole	ug/l	5	5			0.1	0.1
Tin (inorganic)	ug/l	25	10				
Toluene	ug/l	50 (500)	40 (400)	700	24 to 170		
Triazophos	ng/l	5 (50)	5 (50)			100	100
Tributyltin (oxide)	ug/l	0.02	0.02	0.02			
1,1,1-Trichloroethane (1,1,1-TCA)	ug/l	100 (1000)	100 (1000)				
1,1,2-Trichloroethane (1,1,2-TCA)	ug/l	400 (4000)	300 (3000)				
Trichloroethene (TCE)	ug/l	10	10	70		10 (with PCE)	10 (with PCE)
Trichlorobenzenes (total)	ug/l	0.4	0.4	20	5 to 50		
2,4,6-Trichlorophenol	ug/l			200		2-300	
Trihalomethanes (total)	ug/l					150 reducing to 100 by 2008	100
Trifluralin	ug/l	0.1 (1)	0.1 (1)	20		0.1	0.1
Triphenyltin	ug/l	0.02	0.008				
Vanadium	ug/l	20 - 60	100				
Vinyl chloride (chloroethene)	ug/l			5		0.5	0.5
Xylene	ug/l	30	30	500	20 to 1800		
Zinc	ug/l	8 - 500			3000		5000