
Geo-Environmental Validation Investigation

At
Nos. 470-478, Oxford Road,
Reading,
Berkshire,
RG30 1EF

Project Reference J124



Sackedgate Ltd
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NOTES TO THE REPORT

The Company

This report has been prepared by Julian Puzyna for and on behalf of Sackedgate Ltd. Company registered No. 09712671 at 26 Reading Road, Burghfield Common, Berkshire, RG7 3QA. (sole director and employee of Sackedgate Ltd). This report was produced for the benefit of the client detailed in the appointment section of the report and subject to the provisions set out in the document below and also within the applicable Sackedgate Ltd estimate and terms of engagement.

Confidentiality

This report is produced in confidence. The report, the associated documents and the investigation records will not be divulged to any other parties without the express permission or instruction from the client detailed in the report text. This applies to any drawings, proposals, previous investigations or correspondence supplied by the client which is applicable for the site under investigation.

Client details are held for communication, document transfer and billing purposes only. This information is not shared with any other parties whatsoever. A full copy of the records kept by Sackedgate Ltd is available on request.

Reliance

This report was commissioned by the client detailed in the appointment section of the report introduction. This client has reliance on the report, as set out in the terms conditions of the estimate for completion of the report. This reliance is not transferrable and cannot be sold/given/passed on to any third parties without that third party first requesting to form an agreement/contract with Sackedgate Ltd.

Limitations

This assessment has been carried out with reasonable skill, diligence and care with reference to the agreed scope of investigations, with limitations on exceptional circumstances, liability and professional indemnity insurance, as set out in the estimate and the terms of engagement.

Contaminated land investigations require forethought regarding the types and nature of any contaminants, as well as the nature of the ground and groundwater. It is not always possible to predict the exact nature of the historic use of any site or the full geological setting from the available records. Nor is it possible to turn over each and every stone during physical investigations within normal financial, logistical and sensible constraints.

It should therefore be understood that there may be issues undisclosed by the investigations documented in this report, that are outside the scope of the report or could not have been sensibly predicted or found.

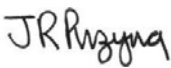
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1.0 Introduction

1.1 Appointment

This report was commissioned by Simran Luthra of Prestige Property Ltd to provide an investigation of an area on site previously found to be contaminated by tarry Poly-cyclic Aromatic Hydrocarbons compounds (PAH) normally associated with combustion residues or fossil fuel impurities.

The work was carried out on the basis of Sackedgate Ltd estimate No E139 and subject to the provisions set out in the terms of engagement included with that estimate.

1.2 Proposed Development

We understand that the proposals are to develop the commercial units and dwellings on the site into a mixture of new dwellings and new commercial units.

1.3 Scope of Investigation

This report follows on from the Phase 2 Environmental investigation carried out by Soil Environment Services dated 23rd May 2019, which itself follows on from a Phase 1 Environmental investigation carried out in October 2018 by Apple Environmental. The Soil Environment Services report and the Apple Environmental report have been reviewed by Sackedgate Ltd. and copies are retained on file. Copies are not reproduced in this report but are available on request.

The work carried out by Sackedgate Ltd to produce this report comprised a physical investigation of the site area where the contamination was found during the Phase 2 investigations and a general look at the wider site.

1.4 Limitations

Information for any type of ground stability issues, slope stability, allowable bearing capacities, the design of rainwater or treated effluent soakaways etc. were not considered in the Sackedgate Ltd. investigations of the site. No geotechnical recommendations are provided by Sackedgate Ltd. and Sackedgate Ltd will not accept any liability for geotechnical, ground stability or drainage issues.

1.5 Applicable Guidance

The investigations and methods used were carried out with reference to the Environment Agency Land Contamination Risk Management (LCRM) system and BS 10175 (Code of Practice for the Investigation of Potentially Contaminated Sites) and BS 5930:2015 (Code of practice for ground investigations).

Other applicable guidances have also been referred to where appropriate, such as the Environment Agency Guidance for the Safe Development of Housing on Land Affected by Contamination (R&D Publication 66-2008), Environment Agency Framework for the Use of Rapid Measurement Techniques (RMT) in the Risk Management of Land Contamination (March 2008) and BS 10175 (Code of Practice for the Investigation of Potentially Contaminated Sites).

2.0 Site Details

2.1 Site Location

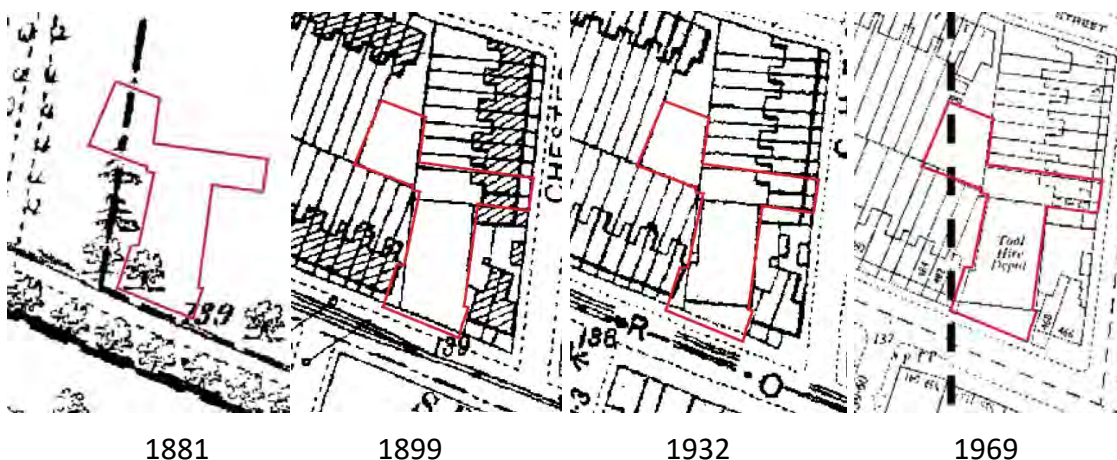
The site lies some 2km north west of central Reading (St Mary's Minster) on the southern side of the Oxford Road, which runs northwest out of Reading towards Oxford.

The centre of the proposed development site lies at grid reference 402815, 91553. The postcode for the site is RG30 1EF.

2.2 Published Geology

Data from the British Geological Survey shows that the site is underlain by the Taplow Gravel Formation and below that lies the Seaford and Newhaven Chalk formations (the mapping does not differentiate between these two Chalk formations).

2.3 Site History



Ordnance Survey maps have shown that in 1881 the site area was part of a field or orchard and then an open section between houses on maps dated 1899 and 1911. The 1932 map shows the first building on the site and the 1969 map then labels the main building fronting the Oxford Road as a tool hire depot. Subsequent trade directory entries show the site to have been used by a fireplace showroom and presumably workshop named Design Fireplaces. The most recent signage on the building was for 'Big Discount Tiles'.

2.4 Preceding Investigations

The Phase 2 Investigation carried out by Soil Environment Services dated May 2019 included a series of small diameter dynamic sampling (window sample) boreholes across the site at particular points of interest. This gave very good coverage of the site and the boreholes all encountered sandy clays overlying more gravel dominated materials consistent with the Taplow Gravels shown on geology maps. A number of boreholes were driven to additional depth and showed the Chalk formations lay at about 3.5m to 4.0m below ground level.

Two samples from each of the eight boreholes were tested for metals, tarry PAH compounds, petroleum hydrocarbons and asbestos. The only exceedance of any of the assessed contaminants were elevated concentrations of PAH compounds, most notably Dibenzo Anthracene, Benzo Fluoranthene and Benzo Pyrene in the samples from borehole BH8. Asbestos was not detected in any of the samples.

The final report concluded that the elevated PAH concentrations were due to asphalt at the surface (the made ground was not noted the borehole logs) and no risk to human health is considered to exist from the PAH compounds due the commercial nature of the development at that location.

The final remedial recommendations were for removal of asphalt hardstanding, requirements for the analysis of any imported soils and waste tickets for exported soils.

2.5 Potential Contamination Sources

The most concerning contaminants associated with tool hire would have been fuel for engine powered equipment like concrete mixers etc. The fireplace firm and tile wholesaler are not expected to be a significant source of any contaminants.

There is a risk of burned waste building materials to be present within a layer of made ground below the building or below floor slabs. In this part of Reading this sort of layer is often seen above natural soils and was placed to create a both level and raised development platform and usually included burned construction waste from construction of buildings on that platform. This made ground could contain either Lead from paints or scraps of Lead flashing etc., tarry products such as roofing felt and tarmac could be present and of course the remains of asbestos products such as corrugated cement roof boards and bituminous asbestos products.

I understand from the developer that in 2017 there was a road traffic accident where a car travelling on the Oxford Road crashed into barriers and the south western corner of the building very close to the borehole BH8 location. The damage to the car caused a complete loss of its engine oil which spilled onto the ground. The fire brigade applied spill kits and sand to the spillage.

Although engine oils are much less harmful before use, after being in the harsh conditions of an engine where the oil bathes the very sides of extremely hot moving pistons, the oil begins to break down and PAH compounds as well as Cyanides start to form. Some modern engines use Cyanide monitors to determine when an oil change is required.

3.0 Physical Investigations

3.1 General Site Inspection

At the time of my site visits demolition and site clearance was complete, foundations had been excavated and concrete poured into all but one plot. Piles of arisings were present close to each of the foundations together with a larger pile of material from general excavations. The material comprised almost wholly orange brown gravelly (flint) very sandy (rounded quartz) clay with some occasional inclusions of brick, tile and concrete fragments. Photographs are appended.

No asbestos products such as corrugated cement roof board fragments could be seen and there were no signs of 'greasy' looking fuel contaminated soils, nor did I see any of the tell-tale black stains and pale emulsions caused by engine oil or the blue/grey staining of the soils by fuels (the hydrocarbons cause a change in the oxidation state of the iron compounds that give the soil its orange brown colour). During the two visits I made to the site I did not note any gasoline, diesel or solvent odours.

The remnants of what could have been a brick well were noted in foundations that were yet to be poured on the norther section of the site. Further investigation revealed that this was some remnant masonry and not a deep open well. No signs of infill could be seen.

During my two visits to the site, I have inspected the exposed ground where the new developments were taking place as described above however, I have not inspected or considered the Shared Amenity Area. Investigation of this area was not listed in the validation objectives in the Soil Environment Services Ltd report or in the contaminated land planning conditions (190998). I have therefore assumed that this area has already been assessed.

The soil at the location of borehole BH8 had been excavated and the foundation at that location rather over excavated. The arisings from this excavation had been placed on plastic sheeting (as shown below) by the developer given the findings of the preceding report.



This stockpile was seen to comprise mostly orange brown gravelly very sandy clay, but inclusions of a much darker brown gravelly clay were also noted, which contained some brick fragments and ash.

3.2 Borehole BH8 & Oil Spillage Area

The main objective of my site visits was to examine the area of borehole BH8 where the oil spill took place and elevated concentrations of PAH compounds were found. Although a clean up of the engine oil in that area took place after the road traffic accident, the oil would have easily penetrated the brick paver surface in that area and entered the ground.

The rate of percolation of the oil into the ground would depend on the nature of the ground. The sandy clays observed in open foundation trenches and arisings stockpiles appeared to me, to be a material that would readily allow engine oil to percolate downward.

3.2.1 Ground Conditions

The area of borehole BH8 and the oil spillage was at the front of the site (Oxford Road side) or south western corner. This was originally an open yard in front of the former tool hire building that was surfaced with brick pavers. This was the narrowest end of this yard which widened to the east.



Above, a view looking south west at the edge or the widened foundation excavation in the BH8 area (note old bitumen wrapped electrical cable)

Where excavations had halted (and concrete had been poured), I could see the remains of the brick paver surface that had been laid on sand over a layer of concrete. Below that I could see a brown (not orange brown) clay with numerous inclusions of brick and ash but no tarmac or asphalt. This is consistent with the development platform infill described above and the material observed mixed with orange brown sandy clay and stockpiled on plastic sheets for WAC tests and then disposal.

I have closely examined the concrete layer and the sand above as this appears to have been the first impervious layer below the brick pavers. I could see no evidence for the black staining by old engine oil. I saw no evidence for the presence of a tarmac or asphalt layer at this location, as described in the Soil Environment Services Ltd report.



Above, excavation of the borehole BH8 location

The actual location of borehole BH8 was then found and excavated under my supervision to a depth of about 0.8m using a small excavator. This revealed a remnant layer of the brown gravelly clay made ground similar to that found on the other side of the excavation to a depth of about 0.3m. Below the brown clay fill lay natural undisturbed orange brown gravelly very sandy clay.

3.2.2 Sampling

Two samples were recovered from the sides of this trial hole. The first was a sample of the brown clay fill at a depth of 0.2m (ref HD1 at 0.2m) and then a sample of the deeper natural material at a depth of 0.8m (ref HD1 at 0.8m). Both samples were tested for a basic list of toxic metals, the tarry PAH compounds previously found in BH8, petroleum hydrocarbons given that a car crash took place, Cyanides due to the contaminants in used engine oil and asbestos despite the absence of such fibres in the previous soil analysis.

A sample was also taken from the stockpiled material (ref Stock 1) from the over dig in this area for Waste Acceptance Criteria (WAC) tests. The sample was a mixture of the different materials seen in the stockpile and intended to represent the stockpile as a whole.

3.2.3 Sampling Protocols for Water or Soils

The samples recovered at this site were placed in laboratory supplied containers suitable for the proposed analysis.

Where Hydrocarbons especially volatiles are to be assessed, glass jars and vials are used and the samples are placed in a cool box with ice packs and kept at a temperature below 9 degrees C for transport to the laboratory.

Holding times for samples are also applicable since some contaminants can degrade quickly once sampled. This is of great concern with regard to samples of groundwater or surface water.

All laboratory work is carried out by a UKAS accredited MCERTS laboratory firm. The laboratory certificates referenced 21/3448 and 21/4724 are appended.

3.2.4 Scheduled Analysis

The samples from the trial excavation were tested for a broad suite of commonly occurring typical industrial contaminants comprising a basic list of toxic metals, a list of tarry carcinogenic hydrocarbons associated with combustion residues and coal tars (PAH), Petroleum hydrocarbons and lastly asbestos given its likely presence in older made ground or fill material.

The sample of the stockpiled material was sent for Waste Acceptance Criteria (WAC) tests which look at the behaviour of the soils once buried in a landfill. Total concentrations of organic matter are defined to predict gas generation, total concentrations of hydrocarbons of various kinds which could affect groundwater are defined and then finally the solubility of metal compounds and other inorganic compounds is assessed, again to assess the risk posed to groundwater.

4.0 Contamination Analysis

4.1 Assessment Methodology

4.1.1 Generic Assessment Criteria

The measured concentrations were assessed against published guideline values for generic exposure scenarios. Various guidelines are applicable all based on various revisions of the Environment Agency CLEA model.

The Environment Agency produced guideline values or SGVs for a limited number of contaminants, the model was then taken up the Chartered Institute of Environmental Health and Land Quality Management (CIEH/LQM) who produced guideline values for a large list of contaminants presented in their S4UL publication (Copyright Land Quality Management Ltd. reproduced with permission Publication Number S4UL3813, All rights reserved).

The department for the Environment Farming and Rural Affairs (DEFRA) also used a modified version of the CLEA model to provide guideline values for a very limited number of contaminants using a revised version of the model which introduced a new 'lower level of toxicological concern'. The most notable contaminant in the DEFRA publication is Lead which was not considered by the Environment Agency or the Chartered Institute of Environmental Health and Land Quality Management.

4.1.2 Exposure Scenario

For assessment of measured soil concentrations, the generic exposure scenario for residential gardens where home grown produce would be grown and consumed by the new site residents, has been selected.

4.2 Comparison of Measurements with Guideline Values

The measured values from the samples collected on the site have been compared with the guideline values for the generic exposure scenario set out above. The laboratory certificates referenced 21/3448 and 21/4724 are appended.

4.2.1 Metals

The laboratory analysis showed that in both samples, all of the metals considered in the analysis were within acceptable limits for residential gardens where homegrown produce will be consumed by new residents.

4.2.2 Poly-cyclic Aromatic Hydrocarbons or PAH

The analysis of the samples included an assessment of these tarry hydrocarbons given their likely presence due to the engine oil spillage as well as potentially being present in the ash flakes seen in the made ground material. PAH compounds are common contaminants in the UK and a group of 16 agreed to be the most toxic or the most prolific have been selected for analysis.

Traces of these compounds were found in the upper sample from the trial excavation at 0.2m depth. The measured concentrations were below the respective guideline values for these compounds in residential gardens where home produce is to be grown and consumed by the residents.

Slightly higher values were detected in the mixed sample of the stockpiled material that was scheduled for Waste Acceptance Criteria (WAC) tests. Given that this stockpile was a mixture of engine oil contaminated made ground with a considerable proportion of uncontaminated natural soils, the measured PAH concentrations could be factored up significantly with respect to considering solely the contaminated layers.

4.2.3 Petroleum Hydrocarbons

In the first instance the analysis has included a basic hydrocarbons test where the total value is divided into weight bands. This analysis does not split the band totals into their aliphatic (open ended chain molecules) or aromatic groups (clustered ringed molecules). The guideline concentrations however, do split the band totals into their aliphatic or aromatic groups.

The aromatics have the lowest acceptability limits and if the unsplit band totals are lower than the limits for the Aromatic or Aliphatic bands, the split values would not exceed the limits either. If the measured concentrations in any one band exceed the limits for that aromatic band, then more detailed analysis will be required that does split the hydrocarbon band totals into the aliphatic or aromatic groups.

The analysis of the samples recovered from this site has not revealed any concentration in any one band that exceeds limits for aliphatic or aromatic hydrocarbons in the respective bands for residential gardens. Further analysis that differentiates between Aromatic and Aliphatic groups (TPH CWG) was not scheduled.

The measured values were all in the relatively heavy C21 to C40 band. Diesel fuel, the most persistent of the vehicle fuels, would be expected to show high values in the bands across the C10 to C21 range.

I suspect that the elevated values are most likely associated with decay products in the made ground from decayed organic matter called humic and fluvic acids. These decay products give soils dark colour and in this form, they pose very little risk to human health.

4.2.4 Waste Acceptance Criteria

This analysis has shown that the arisings in the stockpile from the excavation of the borehole BH8 area contained elevated concentrations of tarry PAH compounds however, the concentrations were within human health guideline values for residential gardens and could therefore be considered to be uncontaminated.

The criteria for waste acceptance show that the stockpiled material could be considered acceptable at an inert waste landfill. On this basis I consider that it would be acceptable to mix this soil with the other arisings for disposal as inert soils.

4.2.5 Asbestos

Although evidence of brick and tile fragments and concrete fragments was found in the made ground, there was no apparent evidence of any asbestos containing materials anywhere on the site. The analysis of the sample of shallow soil from the borehole BH8 location however, disclosed Chrysotile fibre bundles in a bituminous product. No fibres were found in the deeper sample.

This may have been a trace of a mastic type product used to seal roofs and gutters or an asbestos and bitumen roofing felt.



On seeing the laboratory results I have returned to site and closely examined the soils exposed by BH8 and my additional excavations as well as the wider area. Large undisturbed chunks of the made ground were carefully broken open and the soils closely examined. Black flecks seen previously were assumed to be ash rather than bitumen. After thorough examination however, I could not find any bituminous, tarmac or asphalt flecks in these soils.

Two more samples of the shallow soils were then recovered for additional asbestos checks (appended - lab ref HD2 & HD3 21/4724). No fibres were detected.

I have noted a large electrical supply cable protruding from the southern face of the over excavated area of borehole BH8 (picture presented earlier). The cable appeared to be wrapped in a bituminous material that was probably the source of the errant fibres detected by the laboratory.

4.3 Summary of Assessment

The PAH contamination, in the sole area identified by the previous investigations to be contaminated, can no longer be found. Significantly elevated concentrations of the PAH compounds were not detected and no evidence could be found of any engine oil blackened soil or any traces of emulsified oil.

Although the excavations to remove the contaminated soil in the borehole BH8 area were not supervised by myself, they appear to have been successful and the arisings were sensibly placed on plastic sheeting to keep the material segregated.

On this basis I consider that the soils in the area of the oil spillage do not pose any unacceptable risks to human health, particularly since this part of the proposed development at ground floor level will be a retail unit with no exposed soil.

With respect to the wider site, I saw soils consistent with those seen in the Soil Environmental Services boreholes and I saw no evidence for any residual contamination or any areas that would benefit from further investigation.

5.0 Recommendations

5.1 Brick Paver Area

When this area is finally dismantled to form the new building frontage, the ground below the pavers should be examined for any evidence of blackened engine oil staining. Photographs should be taken during the stripping of that area and if any stained or odorous patches are found and removed, the excavated soils and concrete should be segregated as before and tested before being disposed. It would also be prudent to examine the underlying soils below any newly removed oily patches to ensure that deeper penetration of the oil has not occurred.

5.2 Old Electrical Supply Cable

The electrical cable seen in the south western corner of the site is suspected to be wrapped in a bituminous woven asbestos material. This cable appears to be redundant and should be removed carefully to prevent shedding any of the bituminous wrapping.

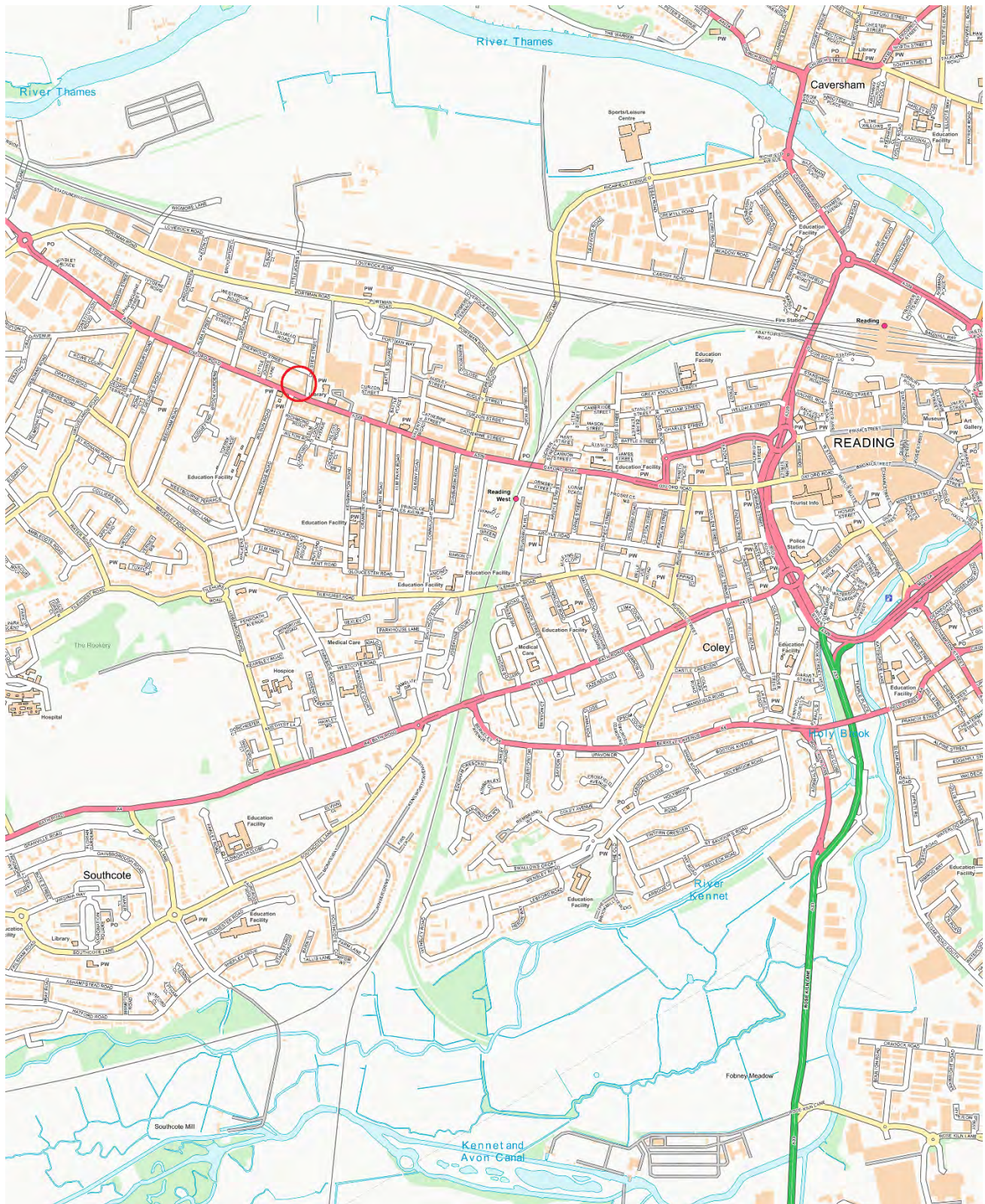
Tests for PCB oils which are used to fill such cables for cooling and insulation, are part of the Waste Acceptance Criteria test suite and none were detected in the sample of the stockpiled excavation soils. However, the cable may still contain these waxy oils and should not be handled with bare hands. Special disposal considerations may be applicable.

5.3 Unexpected Areas of Contamination

The coverage of this site was fairly good, with respect to the number of boreholes drilled over the site and given the findings of my two inspections. If however, any unexpected areas of contamination are disclosed during development such as an old ash or asbestos waste pit, work should be halted while the situation is assessed and measures devised if necessary, to deal with the unexpected findings.

1) SITE LOCATION

J124 – Nos 470-478, Oxford Road, Reading





Appendix A

Site Photographs

470-478 Oxford Road,
Reading,
Berkshire,
RG30 1EF

Project Reference J124



Above, a view looking north along the main section of the site



Above, the over excavated foundation in the borehole BH8 area



Above, the over excavated foundation in the borehole BH8 area



Above, the southern excavation face of the over excavated foundation in the borehole BH8 area (note wrapped cable)



Above, re-excavation of the BH8 location (HD1)



Above, re-excavation of the BH8 location (HD1)



The remains of the overlying soils in the borehole BH8 and oil spillage location



The stockpiled soil from the over excavated oil spillage area



The stockpiled soil from the over excavated oil spillage area



Above and below, re-examination and sampling of the remains of the overlying soils in the borehole BH8 and oil spillage location





Above and below, the remains of the overlying soils in the borehole BH8 and oil spillage location



Appendix B

Laboratory Results

470-478 Oxford Road,
Reading,
Berkshire,
RG30 1EF

Project Reference J124

Sackedgate Limited
26 Reading Road
Burghfield Common
Reading
RG7 3QA



Attention :	Julian Puzyna
Date :	18th March, 2021
Your reference :	J124
Our reference :	Test Report 21/3448 Batch 1
Location :	470-478 Oford Road / Chester Street
Date samples received :	10th March, 2021
Status :	Final report
Issue :	1

Three samples were received for analysis on 10th March, 2021 of which three 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.

Authorised By:



Phil Sommerton BSc

Senior Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Sackedgate Limited
Reference: J124
Location: 470-478 Oford Road / Chester Street
Contact: Julian Puzyna
EMT Job No: 21/3448

Report : Solid

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

EMT Sample No.	1-3	4	5								Please see attached notes for all abbreviations and acronyms		
Sample ID	STOCK 1	HD1	HD1										
Depth		0.20	0.80										
COC No / misc													
Containers	V J T	J	J										
Sample Date	08/03/2021	08/03/2021	08/03/2021										
Sample Type	Soil	Soil	Soil										
Batch Number	1	1	1										
Date of Receipt	10/03/2021	10/03/2021	10/03/2021								LOD/LOR	Units	Method No.
Arsenic #	-	NDP	14.7								<0.5	mg/kg	TM30/PM15
Cadmium #	-	NDP	<0.1								<0.1	mg/kg	TM30/PM15
Chromium #	-	NDP	125.4								<0.5	mg/kg	TM30/PM15
Copper #	-	NDP	9								<1	mg/kg	TM30/PM15
Lead #	-	NDP	13								<5	mg/kg	TM30/PM15
Mercury #	-	NDP	<0.1								<0.1	mg/kg	TM30/PM15
Nickel #	-	NDP	17.1								<0.7	mg/kg	TM30/PM15
Vanadium	-	NDP	40								<1	mg/kg	TM30/PM15
Zinc #	-	NDP	33								<5	mg/kg	TM30/PM15
Arsenic	-	29.4	-								<0.5	mg/kg	TM30/PM62
Cadmium	-	0.3	-								<0.1	mg/kg	TM30/PM62
Chromium	-	36.9	-								<0.5	mg/kg	TM30/PM62
Copper	-	21	-								<1	mg/kg	TM30/PM62
Lead	-	66	-								<5	mg/kg	TM30/PM62
Mercury	-	0.2	-								<0.1	mg/kg	TM30/PM62
Nickel	-	57.2	-								<0.7	mg/kg	TM30/PM62
Vanadium	-	90	-								<1	mg/kg	TM30/PM62
Zinc	-	118	-								<5	mg/kg	TM30/PM62
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04								<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	0.05	<0.03								<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05								<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04								<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.43	0.14	<0.03								<0.03	mg/kg	TM4/PM8
Anthracene #	0.18	0.06	<0.04								<0.04	mg/kg	TM4/PM8
Fluoranthene #	1.56	0.37	<0.03								<0.03	mg/kg	TM4/PM8
Pyrene #	1.33	0.34	<0.03								<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.66	0.19	<0.06								<0.06	mg/kg	TM4/PM8
Chrysene #	0.60	0.20	<0.02								<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	1.05	0.37	<0.07								<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.59	0.20	<0.04								<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.33	0.15	<0.04								<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.06	<0.04	<0.04								<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.31	0.16	<0.04								<0.04	mg/kg	TM4/PM8
Coronene	<0.04	-	-								<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	2.2	<0.6								<0.6	mg/kg	TM4/PM8
PAH 17 Total	7.10	-	-								<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.76	0.27	<0.05								<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.29	0.10	<0.02								<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	88	96	95								<0	%	TM4/PM8
EPH >C8-C10 #	-	10	<5								<5	mg/kg	TM5/PM8
EPH >C10-C12 #	-	14	<10								<10	mg/kg	TM5/PM8

Element Materials Technology

Client Name: Sackedgate Limited
Reference: J124
Location: 470-478 Oford Road / Chester Street
Contact: Julian Puzyna
EMT Job No: 21/3448

Report : Solid

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

[illegible]

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	15.7
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	86.4
Particle Size <4mm =	>95%		
EMT Job No	21/3448	Landfill Waste Acceptance Criteria Limits	
Sample No	3		
Client Sample No	STOCK 1		
Depth/Other			
Sample Date	08/03/2021		
Batch No	1		
Solid Waste Analysis		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill
Total Organic Carbon (%)	0.26	3	5
Loss on Ignition (%)	2.3	-	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)	7.10	100	-
pH (pH Units)	8.63	-	>6
ANC to pH 7 (mol/kg)	<0.03	-	to be evaluated
ANC to pH 4 (mol/kg)	0.09	-	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	0.0033	0.033	0.5
Barium	0.006	0.06	20
Cadmium	<0.0005	<0.005	0.04
Chromium	0.0023	0.023	0.5
Copper	<0.007	<0.07	2
Mercury	<0.001	<0.01	0.01
Molybdenum	0.004	0.04	0.5
Nickel	<0.002	<0.02	0.4
Lead	<0.005	<0.05	0.5
Antimony	0.003	0.03	0.06
Selenium	<0.003	<0.03	0.1
Zinc	0.009	0.09	4
Chloride	1.1	11	800
Fluoride	0.3	3	10
Sulphate as SO ₄	10.4	104	1000
Total Dissolved Solids	120	1200	4000
Phenol	<0.01	<0.1	1
Dissolved Organic Carbon	8	80	500

Client Name: Sackedgate Limited
Reference: J124
Location: 470-478 Oford Road / Chester Street
Contact: Julian Puzyna

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level less than 0.1%, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

[illegible]

Matrix : Solid

[illegible]

Client Name: Sackedgate Limited

Reference: J124

Location: 470-478 Oford Road / Chester Street

Contact: Julian Puzyna

[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

EMT Job No.: 21/3448

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. Limits of detection for analyses carried out on as received samples are not moisture content corrected. 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.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

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.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

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

ISO17025 accreditation applies to surface water and groundwater and usually 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

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

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.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

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.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
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.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology 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

EMT Job No: 21/3448

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	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 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of 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 8270D v5:2014 method for the solvent extraction and determination of 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
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM17	Modified US EPA method 8270D v5:2014. 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 160.1/3 (TDS/TS: 1971) Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.			AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO ₂ generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	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
TM22	Modified BS1377-3:1990 Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (35C-440C). On request modified ASTM D2974-00 LOI (105C-440C)	PM0	No preparation is required.	Yes		AD	Yes

EMT Job No: 21/3448

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP	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 Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP	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		AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP	PM17	Modified method BS EN12457-2:2002 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
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GC/FID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GC/FID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013l	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013l	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.			AR	Yes

EMT Job No: 21/3448

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM65	Asbestos Bulk Identification method based on HSG 248 First edition (2006)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. 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		AR	No
TM77	Modified DDCE/TS method 15364:2006. Determination of Acid Neutralization Capacity by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	No
TM89	Modified USEPA method OIA-1667 (1999). Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide, Sulphide and Thiocyanate analysis.	Yes		AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 9214 - 340.2 (EPA 1998)	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AD	Yes
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 11465:1993(E) and BS1377-2:1990.			AR	

Sackedgate Limited
26 Reading Road
Burghfield Common
Reading
RG7 3QA



Attention :	Julian Puzyna
Date :	1st April, 2021
Your reference :	J124
Our reference :	Test Report 21/4724 Batch 1
Location :	470-478 Oxford Road / Chester Street
Date samples received :	31st March, 2021
Status :	Final report
Issue :	1

Two samples were received for analysis on 31st March, 2021 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.

Authorised By:



Phil Sommerton BSc

Senior Project Manager

Please include all sections of this report if it is reproduced

Client Name: Sackedgate Limited
Reference: J124
Location: 470-478 Oxford Road / Chester Street
Contact: Julian Puzyna

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level less than 0.1%, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

[illegible]

Client Name: Sackedgate Limited

Reference: J124

Location: 470-478 Oxford Road / Chester Street

Contact: Julian Puzyna

[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

EMT Job No.: 21/4724

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. Limits of detection for analyses carried out on as received samples are not moisture content corrected. 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.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

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.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

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

ISO17025 accreditation applies to surface water and groundwater and usually 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

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

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.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

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.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
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.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology 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

EMT Job No: 21/4724

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM65	Asbestos Bulk Identification method based on HSG 248 First edition (2006)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	

Appendix C

Soil & Water Contamination Assessment Criteria

470-478 Oxford Road,
Reading,
Berkshire,
RG30 1EF

Project Reference J124

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 or the environment. These are generic values which make the worst case assumption for every exposure and absorption scenario governing the human uptake or effect on controlled waters for example, of the contaminants considered.

At this time Soil Guideline Values (SGVs) have been published by the Environment Agency for Arsenic, Cadmium, Nickel, 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 publication is the Copyright of Land Quality Management Ltd. and is reproduced by Sackedgate Ltd with permission (Publication Number S4UL3813) All rights reserved.

Where there is no Environment Agency SGV or S4UL, values have been derived 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 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.

The most conservative values have been used 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	(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	withdrawn	40	Not Assessed
	Residential without plant uptake	Not Assessed	withdrawn	56	Not Assessed
	Allotment	Not Assessed	withdrawn	19	Not Assessed
	Commercial	Not Assessed	withdrawn	1100	Not Assessed
	Public Open Space (Residential)	Not Assessed	withdrawn	120	Not Assessed
	Public Open Space (Park)	Not Assessed	withdrawn	240	Not Assessed
Elemental Mercury	Residential with plant uptake	Not Assessed	withdrawn	1.2	Not Assessed
	Residential without plant uptake	Not Assessed	withdrawn	1.2	Not Assessed
	Allotment	Not Assessed	withdrawn	21	Not Assessed
	Commercial	Not Assessed	withdrawn	25.8	Not Assessed
	Public Open Space (Residential)	Not Assessed	withdrawn	16	Not Assessed
	Public Open Space (Park)	Not Assessed	withdrawn	25.8	Not Assessed
Methyl Mercury	Residential with plant uptake	Not Assessed	withdrawn	11	Not Assessed
	Residential without plant uptake	Not Assessed	withdrawn	15	Not Assessed
	Allotment	Not Assessed	withdrawn	6	Not Assessed
	Commercial	Not Assessed	withdrawn	320	Not Assessed
	Public Open Space (Residential)	Not Assessed	withdrawn	40	Not Assessed
	Public Open Space (Park)	Not Assessed	withdrawn	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	(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 (5) Value Withdrawn S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved		Sackedgate Ltd 26 Reading Road, Burghfield Common, Reading, Berkshire RG7 3QA 07854 816921 01189 832570 			

List 1B (Aliphatic Hydrocarbons mg/kg)					
Contaminant	Generic Exposure Scenario	(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 S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Sackedgate Ltd 26 Reading Road, Burghfield Common, Reading, Berkshire RG7 3QA 07854 816921 01189 832570 		

List 1C (Aromatic (Mono-cyclic and Poly-cyclic) Hydrocarbons mg/kg)					
Contaminant	Generic Exposure Scenario	(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 S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Sackedgate Ltd 26 Reading Road, Burghfield Common, Reading, Berkshire RG7 3QA 07854 816921 01189 832570		

List 1D (BTEX Mono-cyclic Aromatic Hydrocarbons mg/kg)					
Contaminant	Generic Exposure Scenario	(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 S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Sackedgate Ltd 26 Reading Road, Burghfield Common, Reading, Berkshire RG7 3QA 07854 816921 01189 832570 		

List 1E (Poly-cyclic Aromatic Hydrocarbons or PAH - mg/kg)					
Contaminant	Generic Exposure Scenario	(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	(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	(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		Sackedgate Ltd 26 Reading Road, Burghfield Common, Reading, Berkshire RG7 3QA 07854 816921 01189 832570			

List 1G (ChloroAlkanes & Alkenes mg/kg)					
Contaminant	Generic Exposure Scenario	(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
1,1,1 Trichloroethane	Public Open Space (Park)	Not Assessed	Not Assessed	21/24/28	Not Assessed
	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
1,1,2,2 Tetrachloroethanes	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
	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
1,1,1,2 Tetrachloroethanes	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
	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
Tetrachloroethene	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
	Residential with plant uptake	Not Assessed	Not Assessed	0.18/0.39/0.9	Not Assessed
Tetrachloromethane Aka Carbon Terachloride	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
Trichloroethene	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
Trichloromethane Aka Chloroform	Public Open Space (Park)	Not Assessed	Not Assessed	190/270/400	Not Assessed
	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
Chloroethene Aka Vinyl Chloride	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
	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
	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 S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Sackedgate Ltd 26 Reading Road, Burghfield Common, Reading, Berkshire RG7 3QA 07854 816921 01189 832570 		

List 1H (Explosives mg/kg)					
Contaminant	Generic Exposure Scenario	(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
	Public Open Space (Park)	Not Assessed	Not Assessed	260/270/270	Not Assessed
RDX	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
	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
HMX	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 S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Sackedgate Ltd 26 Reading Road, Burghfield Common, Reading, Berkshire RG7 3QA 07854 816921 01189 832570 		

List 11 (Pesticides mg/kg)					
Contaminant	Generic Exposure Scenario	(CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	ClEH/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 ClEH - 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 S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Sackedgate Ltd 26 Reading Road, Burghfield Common, Reading, Berkshire RG7 3QA 07854 816921 01189 832570		

List 1J (Chlorobenzenes mg/kg)					
Contaminant	Generic Exposure Scenario	(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	(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 S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Sackedgate Ltd 26 Reading Road, Burghfield Common, Reading, Berkshire RG7 3QA 07854 816921 01189 832570 		

List 1K (Phenols & Chlorophenols mg/kg)					
Contaminant	Generic Exposure Scenario	(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 S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Sackedgate Ltd 26 Reading Road, Burghfield Common, Reading, Berkshire RG7 3QA 07854 816921 01189 832570 		

List 1L (Other mg/kg)					
Contaminant	Generic Exposure Scenario	(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
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% (4) under review S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 All rights reserved			Sackedgate Ltd 26 Reading Road, Burghfield Common, Reading, Berkshire RG7 3QA 07854 816921 01189 832570 		

List 1M (Natural Mineral Fibres quantified % weight in soil)					
Contaminant	Generic Exposure Scenario	(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 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%			Sackedgate Ltd 26 Reading Road, Burghfield Common, Reading, Berkshire RG7 3QA 07854 816921 01189 832570 		

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)				Sackedgate Ltd 26 Reading Road, Burghfield Common, Reading, Berkshire RG7 3QA 07854 816921 01189 832570			



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
Flucifuron	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
Pryidate	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