

Validation of Soils in Residential Garden

Location: Land beside 2 Kestrel Close, Prestwich M45 6SB (Reference PP-03572909)
Client: Mr M Murphy
Date: August 2014
Version: 1

Introduction

Pearl Environmental was requested by Mr M. Murphy to undertake a simple Phase II investigation on land beside no.2 Kestrel Close, Prestwich. This is required to accompany an application for planning permission (Portal Reference PP-03572909) and is further to a Desk Study/ PRA (July 2014, Pearl Environmental).

Proposed Development

The proposed development is for the construction of a single two-storey dwelling. The development proposes to retain the present turfed areas to the rear and frontage, and the desk study recommended that validation sampling and testing of the soils here be undertaken, in order to confirm that soils here were suitably uncontaminated for this continued use.

Site Investigations

Two trial shallow pits were hand-dug in locations shown below, on 6th August 2014. Two samples of soils from below the turf layer were taken (@0.15m bgl) and collected in 1kg plastic tubs. These were then submitted to Scientific Analysis Laboratories Ltd in Manchester, for a typical analytical suite including organic and inorganic determinands. Both samples were visually similar in nature, being a dark brown, silty loam, with no visual indication of coal or ash content.



Plan 1. Location of sampling points.

Results

Analytical results are included in the appendix. A comparison with common SGV and LQM threshold criteria (GACs) is given below, and shows both samples contain contaminants below their respective GAC.

Tables 1: Tier 1 Screening of Analytical Results (Metals & PAHs)

Contaminant	No. of Samples	Max results mg/kg	Assessment Criteria (mg/kg)	Source	No. exceeded.
Arsenic	2	13	32	SGV	0
Cadmium	2	<1	10	SGV	0
Chromium	2	19	3000	LQM	0
Copper	2	52	2330	LQM	0
Lead	2	100	450	SGV*	0
Mercury	2	<1	170	SGV	0
Nickel	2	15	130	SGV	0
Selenium	2	<3	350	SGV	0
Zinc	2	95	3750	SGV	0
Phenol	2	<1	420	SGV	0
B(a)P	2	0.76	0.94	LQM	0
Napthalene	2	0.07	3.7	LQM	0
D(ah)A	2	0.11	0.86	LQM	0

SGV- CLEA Soil Guidance Value (residential scenario)

LQM – Land Quality Management screening value (residential), 2.5% SOM.

*Former SGV for lead issued under CLEA ver. 1.03.

Sample S1 was also subject to an asbestos screen, due to historic plans showing a previous shed/outhouse in this location. No asbestos fibres were detected.

Recommendations

On site soils are shown to be suitable for their continued use in a residential land use scenario, and as such no remediation is required in this instance.



Keith Lewis
Principal Consultant

Appendix

Soil Analysis



Scientific Analysis Laboratories is a
limited company registered in England and
Wales (No 2514788) whose address is at
Hadfield House, Hadfield Street, Manchester M16 9FE

Scientific Analysis Laboratories Ltd

Certificate of Analysis

Hadfield House
Hadfield Street
Cornbrook
Manchester
M16 9FE
Tel : 0161 874 2400
Fax : 0161 874 2468

Report Number: 414027-1

Date of Report: 13-Aug-2014

Customer: Pearl Environmental UK Ltd
PO Box 307
Manchester.
M12 0AH.

Customer Contact: Mr Keith Lewis

Customer Job Reference:

Customer Site Reference: Kestrel

Date Job Received at SAL: 07-Aug-2014

Date Analysis Started: 08-Aug-2014

Date Analysis Completed: 13-Aug-2014

The results reported relate to samples received in the laboratory
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
Tests covered by this certificate were conducted in accordance with SAL SOPs
All results have been reviewed in accordance with QP22



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Report checked
and authorised by :
Kirsten Wright
Project Manager

Issued by :
Kirsten Wright
Project Manager

SAL Reference: 414027 Project Site: Kestrel Customer Reference: Soil Analysed as Soil Pearl Environmental Suite						
SAL Reference				414027 001	414027 002	
Customer Sample Reference				S1	S2	
Date Sampled				07-AUG-2014	07-AUG-2014	
Determinand	Method	Test Sample	LOD	Units		
Arsenic	T6	AR	1	mg/kg	13	12
Boron (water-soluble)	T6	AR	1	mg/kg	<1	<1
Cadmium	T6	AR	1	mg/kg	<1	<1
Chromium	T6	AR	1	mg/kg	15	19
Copper	T6	AR	1	mg/kg	52	39
Lead	T6	AR	1	mg/kg	96	100
Mercury	T6	AR	1	mg/kg	<1	<1
Nickel	T6	AR	1	mg/kg	15	13
Selenium	T6	AR	3	mg/kg	<3	<3
Zinc	T6	AR	1	mg/kg	95	88
Cyanide(free)	T4	AR	1	mg/kg	<1	<1
pH	T7	AR			6.9	7.1
Phenols(Mono)	T4	AR	1	mg/kg	<1	<1
SO4(2:1)	T6	AR	0.1	g/l	<0.1	<0.1
Sulphide	T4	AR	10	mg/kg	<10	<10

SAL Reference: 414027 Project Site: Kestrel Customer Reference: Soil Analysed as Soil Miscellaneous						
SAL Reference				414027 001		
Customer Sample Reference				S1		
Date Sampled				07-AUG-2014		
Determinand	Method	Test Sample	LOD	Units		
Asbestos ID	T27	AR			N.D.	

SAL Reference: 414027 Project Site: Kestrel Customer Reference: Soil Analysed as Soil Total and Speciated USEPA16 PAH						
SAL Reference				414027 001	414027 002	
Customer Sample Reference				S1	S2	
Date Sampled				07-AUG-2014	07-AUG-2014	
Determinand	Method	Test Sample	LOD	Units		
Naphthalene	T149	AR	0.01	mg/kg	0.07	0.05
Acenaphthylene	T149	AR	0.01	mg/kg	0.02	0.01
Acenaphthene	T149	AR	0.01	mg/kg	0.06	0.06
Fluorene	T149	AR	0.01	mg/kg	0.05	0.04
Phenanthrene	T149	AR	0.01	mg/kg	0.53	0.45
Anthracene	T149	AR	0.01	mg/kg	0.15	0.11
Fluoranthene	T149	AR	0.01	mg/kg	1.2	0.73
Pyrene	T149	AR	0.01	mg/kg	1.1	0.68
Benzo(a)Anthracene	T149	AR	0.01	mg/kg	0.60	0.43
Chrysene	T149	AR	0.01	mg/kg	0.72	0.47
Benzo(b/k)Fluoranthene	T149	AR	0.01	mg/kg	1.2	0.83
Benzo(a)Pyrene	T149	AR	0.01	mg/kg	0.76	0.48
Indeno(123-cd)Pyrene	T149	AR	0.01	mg/kg	0.42	0.24
Dibenzo(ah)Anthracene	T149	AR	0.01	mg/kg	0.11	0.10
Benzo(ghi)Perylene	T149	AR	0.01	mg/kg	0.49	0.24
PAH(total)	T149	AR	0.01	mg/kg	7.5	4.9

Index to symbols used in 414027-1

Value	Description
AR	As Received
N.D.	Not Detected
S	Analysis was subcontracted
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Notes

Asbestos was subcontracted to REC Asbestos

Method Index

Value	Description
T149	GC/MS (SIR)
T27	PLM
T4	Colorimetry
T7	Probe
T6	ICP/OES

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Asbestos ID	T27	AR			SU	001
Arsenic	T6	AR	1	mg/kg	U	001-002
Boron (water-soluble)	T6	AR	1	mg/kg	N	001-002
Cadmium	T6	AR	1	mg/kg	U	001-002
Chromium	T6	AR	1	mg/kg	U	001-002
Copper	T6	AR	1	mg/kg	U	001-002
Lead	T6	AR	1	mg/kg	U	001-002
Mercury	T6	AR	1	mg/kg	U	001-002
Nickel	T6	AR	1	mg/kg	U	001-002
Selenium	T6	AR	3	mg/kg	U	001-002
Zinc	T6	AR	1	mg/kg	U	001-002
Cyanide(free)	T4	AR	1	mg/kg	U	001-002
pH	T7	AR			U	001-002
Phenols(Mono)	T4	AR	1	mg/kg	U	001-002
SO4(2:1)	T6	AR	0.1	g/l	N	001-002
Sulphide	T4	AR	10	mg/kg	N	001-002
Naphthalene	T149	AR	0.01	mg/kg	U	001-002
Acenaphthylene	T149	AR	0.01	mg/kg	U	001-002
Acenaphthene	T149	AR	0.01	mg/kg	U	001-002
Fluorene	T149	AR	0.01	mg/kg	U	001-002
Phenanthrene	T149	AR	0.01	mg/kg	U	001-002
Anthracene	T149	AR	0.01	mg/kg	U	001-002
Fluoranthene	T149	AR	0.01	mg/kg	U	001-002
Pyrene	T149	AR	0.01	mg/kg	U	001-002
Benzo(a)Anthracene	T149	AR	0.01	mg/kg	U	001-002
Chrysene	T149	AR	0.01	mg/kg	U	001-002
Benzo(b/k)Fluoranthene	T149	AR	0.01	mg/kg	U	001-002
Benzo(a)Pyrene	T149	AR	0.01	mg/kg	U	001-002
Indeno(123-cd)Pyrene	T149	AR	0.01	mg/kg	U	001-002
Dibenzo(ah)Anthracene	T149	AR	0.01	mg/kg	U	001-002
Benzo(ghi)Perylene	T149	AR	0.01	mg/kg	U	001-002
PAH(total)	T149	AR	0.01	mg/kg	U	001-002