

Our Ref: D6587/1

Mr Malcolm Donnelly
PD Logistics
Ashworth Frazer Est.
Station Road,
Hebburn,
Tyne & Wear
NE31 1BDDate: 5th January 2015

Dear Malcolm,

Ground Contamination Assessment – PD Logistics**Introduction**

Dunelm were instructed by PD Logistics to attend the above site and take soil samples of the formation level of the site (both inside and outside of the building) for subsequent chemical analysis.

Dunelm visited the above site on 8th December 2014 and inspected 4no foundation excavations and took samples for testing. The samples were sent to an accredited laboratory and analysed for a range of chemical determinants.

Chemical Testing

Results of the testing from the formation level of each of the plots is summarised in the tables below, the full results are enclosed (ref: 14-230021).

Inorganic Test Results – Topsoil

Contaminant	Units	No. of made ground samples tested	No. of samples exceeding GAC	Generic Assessment Criteria	Max concentration
Arsenic	mg/kg	4	0	640	8.0
Cadmium	mg/kg	4	0	230	0.7
Chromium (VI)	mg/kg	4	0	330	<1.0
Lead	mg/kg	4	0	6490	33
Mercury	mg/kg	4	0	3600	<0.05
Nickel	mg/kg	4	0	1800	41
Selenium	mg/kg	4	0	13000	<0.5
Zinc	mg/kg	4	0	<1000000	82
Copper	mg/kg	4	0	109000	30
Asbestos	presence	4	0	Present	No asbestos detected.

Values from Atkins Atrisk Database for commercial enduse.

None of the samples tested recorded determinands in excess of the generic assessment criteria.

An assessment of selected PAH compounds is shown in the following table together with Generic Assessment Criteria (GAC) from Atkins Atrisk Database for residential enduse with plant uptake.

Summary of Results for Polynuclear Aromatic Hydrocarbons

Contaminant	Generic Assessment Criteria (mg/kg)	No. of samples tested	No. of samples with value greater than GAC	Max concentration mg/kg	Comments
Acenaphthene	109000	4	0	<0.1	-
Anthracene	536000	4	0	<0.1	-
Benzo(a)anthracene	131	4	0	<0.1	-
Benzo(a)pyrene	14.3	4	0	<0.1	-
Benzo(b)fluoranthene	142	4	0	<0.1	-
Benzo(g,h,i)perylene	1440	4	0	<0.1	-
Benzo(k)fluoranthene	1430	4	0	<0.1	-
Chrysene	14000	4	0	<0.1	-
Dibenz(a,h)anthracene	14.3	4	0	<0.1	-
Fluoranthene	72300	4	0	0.4	-
Fluorene	66800	4	0	<0.1	-
Indeno(1,2,3,-cd)pyrene	142	4	0	<0.1	-
Napthalene	8180	4	0	<0.1	-
Pyrene	54200	4	0	0.2	-

Values from Atkins Atrisk Database for commercial site enduse.

None of the samples tested recorded determinands in excess of the generic assessment criteria.

Significant contamination was not identified in the locations tested by Dunelm. Should unforeseen contamination be encountered during the subsequent works Dunelm should be notified immediately.

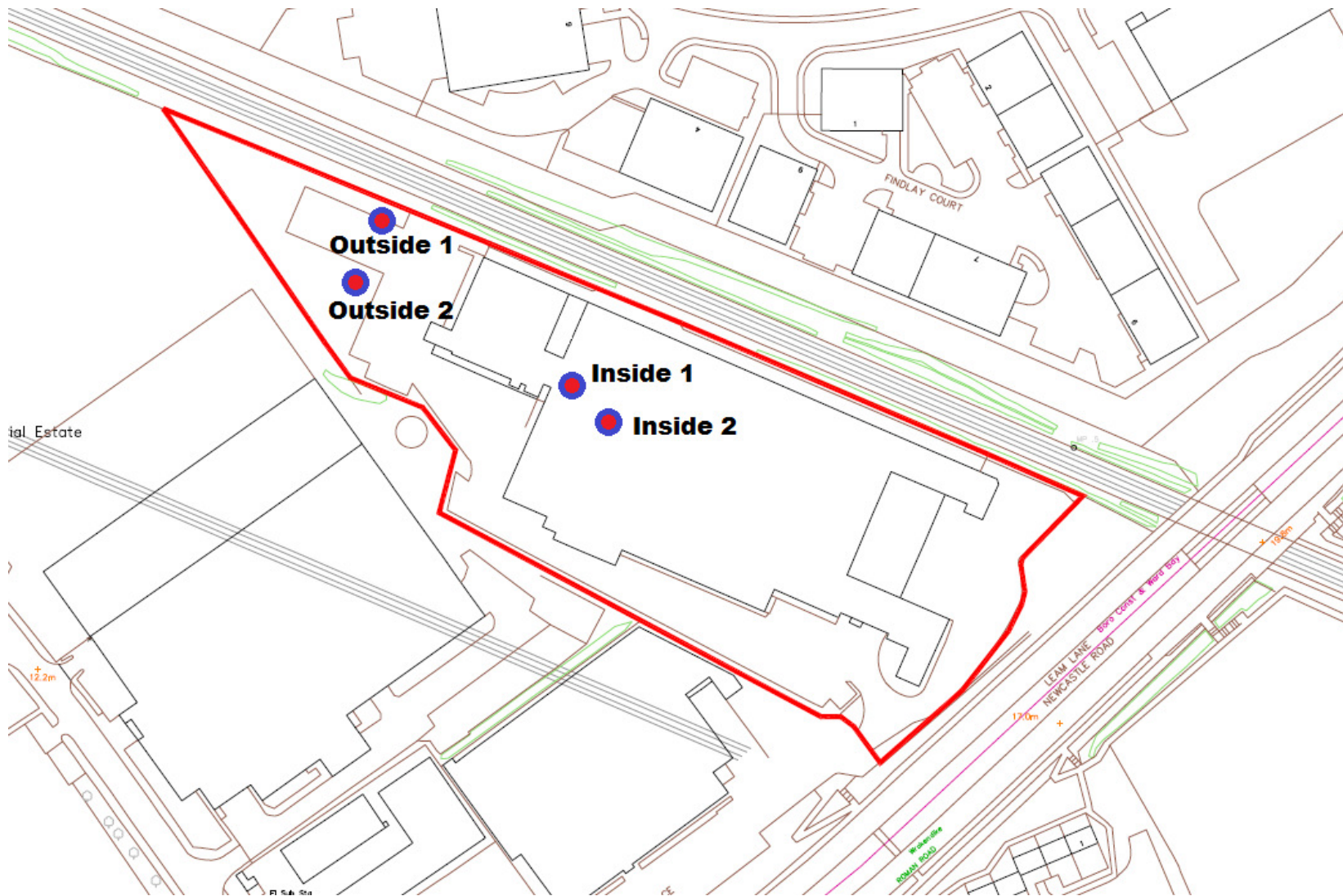
Basic waste characterisation shows that the materials would be classified as non-hazardous waste. Should these materials be considered for offsite disposal then waste acceptance criteria testing should be undertaken on the materials to confirm whether or not the materials can be accepted at an inert waste facility.

Further advice should be sought from Dunelm if unexpected ground conditions are encountered during redevelopment.

We trust that the above is sufficient for your present needs however, please do not hesitate to get in touch should you require any further information.

Yours Sincerely,

James Nairn
On behalf of Dunelm Geotechnical and Environmental Ltd



Contract:
PD Logistics

Drawing Title:
Approximate Sample Location Plan

Drawing No:
D6587/01

Date:
January 2015

Scale:
NTS

Drawn by:
JN



Certificate of Analysis

Certificate Number 14-23021

18-Dec-14

Client Dunelm Geotechnical & Environmental Ltd
Foundation House
St. John's Road
Meadowfield
Durham
DH7 8TZ

Our Reference 14-23021

Client Reference D6587

Contract Title PD Logistics

Description 4 Soil samples.

Date Received 12-Dec-14

Date Started 12-Dec-14

Date Completed 18-Dec-14

Test Procedures Identified by prefix DETSn (details on request), Asbestos Analysis DETSC 1101.

Notes Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "Rob Brown".

Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

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 Client Ref D6587
 Contract Title PD Logistics

Lab No	745704	745705	745706	745707
Sample ID	Inside 1	Inside 2	Outside 1	Outside 2
Depth				
Other ID				
Sample Type	J	J	J	J
Sampling Date	n/s	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	8.0	7.2	2.8	4.1
Cadmium	DETSC 2301#	0.1	mg/kg	0.7	0.7	0.2	0.4
Chromium	DETSC 2301#	0.15	mg/kg	45	49	5.2	19
Hexavalent Chromium	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	30	26	4.2	11
Lead	DETSC 2301#	0.3	mg/kg	31	30	14	33
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	41	41	5.3	14
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	82	75	25	59
Inorganics							
pH	DETSC 2008#			8.9	8.3	11.0	8.9
Organic matter	DETSC 2002#	0.1	%	2.1	2.5	0.5	1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	74	110	150	34
Petroleum Hydrocarbons							
C5-C10 Gasoline Range Organics (GRO)	DETSC 3321*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
C10-C24 Diesel Range Organics (DRO)	DETSC 3311#	10	mg/kg	< 10	89	< 10	< 10
C24-C40 Lube Oil Range Organics (LORO)	DETSC 3311#	10	mg/kg	< 10	100	< 10	< 10
PAHs							
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	0.4	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.4	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
PAH	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6

Summary of Asbestos Analysis

Soil Samples

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Client Ref D6587

Contract Title PD Logistics

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
745704	Inside 1	SOIL	NAD	none	Andrew Little
745705	Inside 2	SOIL	NAD	none	Andrew Little
745706	Outside 1	SOIL	NAD	none	Andrew Little
745707	Outside 2	SOIL	NAD	none	Andrew Little

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

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Contract PD Logistics

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
745704	Inside 1 SOIL		GJ 1L	Sample date not supplied	BTEX
745705	Inside 2 SOIL		GJ 1L	Sample date not supplied	BTEX
745706	Outside 1 SOIL		GJ 1L	Sample date not supplied	BTEX
745707	Outside 2 SOIL		GJ 1L	Sample date not supplied	BTEX

Key: G-Glass J-Jar

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months