

Our ref: GCE00644/LR 25-03-Hg

Waddeton Park Ltd
Greendale Court
Clyst St Mary
Exeter
EX5 1AW

Fao: Gerry Keay

25th March 2025

Dear Sirs,

**Re: Land at Southwick, south of Trowbridge
Supplementary Ground Investigation**

Further to our proposal of 25th November 2024 (GCE00644/P4) and your emailed instruction dated 26th November 2024, please find below our report on the supplementary investigation around the area of the isolated elevated Mercury found in the Phase 2a preliminary ground investigation.

Background

The 2017 investigation (report GCE00644/R2v5, August 2020) encountered elevated mercury in one soil sample from TP09 at 0.1m depth where Mercury was recorded at a concentration of 16mg/kg, in excess of both the Normal Background Concentration (NBC) at 0.5mg/kg and the residential S4UL screening value at 1.2mg/kg. In 18 of the other 19 samples tested as part of the preliminary investigation the Mercury was recorded to be below the laboratory limit of detection (<0.1mg/kg) with the remaining sample, TP03 at 0.2m depth, recording a level of 0.12mg/kg. The TP09 result was identified as a statistical outlier and not representative of the typical condition.

Further sampling and analysis was therefore proposed to assess the potential lateral extent of the higher value relative to the location of TP09.

Fieldwork

The fieldwork was carried out on the 13th December 2024. The position of TP09 was re-established using a Topcon GNSS survey station. Hand excavated samples were then taken at depths of 0.1m and 0.3m from locations 1m and 5m to the north, east, south and west of TP09 thus giving a further 16 soil samples from areas proximal to TP09. The soil samples were sent to i2 Analytical and tested for a suite of heavy metals/metalloids comprising the following:

Arsenic, Cadmium, Chromium (total), Chromium (hexavalent), Copper, Lead, Mercury, Nickel, Selenium and Zinc.

Laboratory Test Results

The laboratory results are appended to this letter and summarised in the table below:

	Number of samples	Minimum	Maximum	Max>NBC	Max>S4UL
Arsenic	16	8.7	13	No	No
Cadmium	16	0.2	0.5	No	No
Chromium (hex)	16	<1.8	1.8	No	No
Chromium	16	32	37	NA	No
Copper	16	12	19	No	No
Mercury	16	<0.3	<0.3	No	No
Nickel	16	13	19	No	No
Lead	16	26	50	No	NA
Selenium	16	<1	1.4	NA	No
Zinc	16	73	100	NA	No

None of the samples tested recorded values in excess of the NBC or the S4UL for a residential use with homegrown produce. None of the samples tested for Mercury recorded values in excess of the laboratory detection limit of <0.3mg/kg.

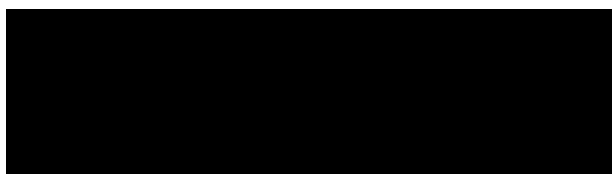
Observations

From a total of 36 samples tested, only one has recorded an unusually elevated level that exceeds the NBC and the screening values appropriate to a residential redevelopment. A majority of the remaining samples recorded levels that were below the limit of detection indicating that the single elevated level is an isolated outlier. Taking account of the shallow depth of the elevated result, it is considered likely that it may represent a fragment of battery dropped in the field by a walker.

On a precautionary basis it is suggested that a 1m square of topsoil 0.2m deep and centred on TP09 is removed if this part of the site is to become a residential garden. The measured level is at the S4UL threshold for Public Open Space residential and well below the S4UL threshold for Public Open Space park meaning that the material could be relocated to an area of less sensitive end use.

I trust that we have correctly interpreted your requirements. Please do not hesitate to call if you have any queries.

Yours faithfully



David Jackson BSc., CEng., MICE., FGS – Director
 for and on behalf of Geo Consulting Engineering Ltd
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Analytical Report Number : 24-059669

Project / Site name: Southwick

Your job number: GCE00644

Your order number:

Report Issue Number: 1

Samples Analysed: 16 soil samples

Samples received on: 17/12/2024

**Samples instructed on/
Analysis started on:** 17/12/2024

Analysis completed by: 21/12/2024

Report issued on: 23/12/2024

Signed:

Dominika Liana
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.



Analytical Report Number: 24-059669
Project / Site name: Southwick

Lab Sample Number				409339	409340	409341	409342	409343
Sample Reference				HP01	HP01	HP02	HP02	HP03
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.10	0.30	0.10	0.30	0.10
Date Sampled				13/12/2024	13/12/2024	13/12/2024	13/12/2024	13/12/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	32	28	34	31	33
Total mass of sample received	kg	0.1	NONE	0.5	0.5	0.5	0.5	0.5

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.2	9.8	12	13	9.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	0.3	0.4	0.4	0.3
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	33	33	34	35	34
Copper (aqua regia extractable)	mg/kg	1	MCERTS	14	14	14	13	15
Lead (aqua regia extractable)	mg/kg	1	MCERTS	36	30	40	38	36
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	15	15	15	14
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	1.4	1
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	78	76	84	84	83

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



Analytical Report Number: 24-059669
Project / Site name: Southwick

Lab Sample Number				409344	409345	409346	409347	409348
Sample Reference				HP03	HP04	HP04	HP05	HP05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.30	0.10	0.30	0.10	0.30
Date Sampled				13/12/2024	13/12/2024	13/12/2024	13/12/2024	13/12/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	30	33	28	28	26
Total mass of sample received	kg	0.1	NONE	0.5	0.5	0.5	0.4	0.5

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.7	9.2	9.8	9.5	9.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	0.4	0.4	0.4	0.4
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	35	37	35	32	33
Copper (aqua regia extractable)	mg/kg	1	MCERTS	14	19	17	14	17
Lead (aqua regia extractable)	mg/kg	1	MCERTS	36	50	40	34	35
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	15	16	16	15	14
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	83	100	91	74	77

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Analytical Report Number: 24-059669
Project / Site name: Southwick

Lab Sample Number				409349	409350	409351	409352	409353
Sample Reference				HP06	HP06	HP07	HP07	HP08
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.10	0.30	0.10	0.30	0.10
Date Sampled				13/12/2024	13/12/2024	13/12/2024	13/12/2024	13/12/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	25	28	33	26	27
Total mass of sample received	kg	0.1	NONE	0.6	0.6	0.5	0.6	0.6

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	12	11	10	8.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	0.4	0.5	0.3	0.3
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	35	36	37	34	32
Copper (aqua regia extractable)	mg/kg	1	MCERTS	14	14	16	15	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	37	40	38	29	36
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17	19	16	17	14
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.4	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	86	85	93	74	77

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Analytical Report Number: 24-059669
Project / Site name: Southwick

Lab Sample Number				409354
Sample Reference				HP08
Sample Number				None Supplied
Water Matrix				N/A
Depth (m)				0.30
Date Sampled				13/12/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	22
Total mass of sample received	kg	0.1	NONE	0.5

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	10
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	33
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12
Lead (aqua regia extractable)	mg/kg	1	MCERTS	26
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	73

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* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
409339	HP01	None Supplied	0.1	Brown clay and loam with gravel and vegetation
409340	HP01	None Supplied	0.3	Brown clay and loam with gravel and vegetation
409341	HP02	None Supplied	0.1	Brown clay and loam with gravel and vegetation
409342	HP02	None Supplied	0.3	Brown clay and loam with gravel and vegetation
409343	HP03	None Supplied	0.1	Brown clay and loam with gravel and vegetation
409344	HP03	None Supplied	0.3	Brown loam and clay with vegetation
409345	HP04	None Supplied	0.1	Brown loam and clay with vegetation
409346	HP04	None Supplied	0.3	Brown loam and clay with vegetation
409347	HP05	None Supplied	0.1	Brown loam and clay with vegetation
409348	HP05	None Supplied	0.3	Brown loam and clay with vegetation
409349	HP06	None Supplied	0.1	Brown loam and clay with vegetation
409350	HP06	None Supplied	0.3	Brown loam and clay with vegetation
409351	HP07	None Supplied	0.1	Brown loam and clay with vegetation
409352	HP07	None Supplied	0.3	Brown loam and clay with vegetation
409353	HP08	None Supplied	0.1	Brown loam and clay with vegetation
409354	HP08	None Supplied	0.3	Brown loam and clay with vegetation

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Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution