

Our Ref C4483/25/E/8304  
11<sup>th</sup> August 2025

Arrow Commercial Centre (Huddersfield) Ltd  
Grove Garage  
Guy Edge  
Linthwaite  
Huddersfield  
HD7 5TQ



**For the attention of James Hill,**

Ref: Stockpiles of Soil – Contamination Testing

Dear James,

Further to the Phase 2 investigation, a consultation response has been issued by Kirklees Environmental Health with regards to Condition 4. The consultation states the following:

**Condition 4 - Phase II Intrusive Site Investigation Report**

*We have read and accept the Report on a Phase 2 Geo-environmental Investigation by RGS (February 2025, C4483/24/E/6941). We generally accept the report. However, can the consultant confirm whether testing was undertaken on the stockpiles of suspected demolition material reported in the Phase 1 report (27th September 2024, C4483/24/E/6940)? For these reasons, we recommend the condition remain until further notice.*

In view of the above, RGS visited site on the 24<sup>th</sup> July 2025. Upon arriving at the site, it has become apparent that three distinct stockpiles of soil are present. The three stockpiles and their associated material are shown on the attached photos and are summarised as follows:

- Stockpile 1: MADE GROUND (General brick, concrete and sandstone sandy GRAVEL)
- Stockpile 2: GRAVEL of sandstone.
- Stockpile 3: MADE GROUND (Organic clayey silty gravelly SAND. Gravel is brick, concrete, macadam, sandstone, mudstone).

All stockpiles were placed on hard-standing. No distinct odours or visual evidence of free product was recognised.

A sample of each stockpile was collected and submitted for chemical testing. The following regime was undertaken.

- Metals – Cd, Cr<sup>VI</sup>, Cu, Hg, Ni, Pb, V and Zn.
- Semi and Non-Metals - As, Se, Free CN<sup>-</sup> and Phenols.
- Polycyclic aromatic hydrocarbons (PAHs).
- Petroleum hydrocarbons (TPHs).
- Others – pH, organic content and total/soluble SO<sub>4</sub><sup>2-</sup>.
- Asbestos.



**Rogers Geotechnical Services Ltd**  
Offices 1 & 2 Barncliffe Business Park, Near Bank, Shelley, Huddersfield, HD8 8LU  
☎ 01484 604354 Company No. 5130864

This testing was undertaken by i2 Analytical Ltd and the results of all of the chemical testing are appended.

The results of the chemical testing undertaken on soil samples obtained during this investigation have been compared to the ATRISK soil screening values (SSVs) for a commercial end use, as compiled by WS Atkins plc. With respect to the results it should be appreciated that the soil organic matter (SOM) content for the samples tested was found to be 0.9% for the granular material (Stockpile 1 and 2) and 6.6% for the organic soils (Stockpile 3). On this basis, it is considered that the screening values associated with 1% SOM should be adopted for Stockpiles 1 and 2, but 6% SOM is more appropriate for Stockpile 3. Furthermore, as outlined above, no evidence of free product was observed, thus values for no free products are to be utilised for contamination analyses.

The results of the contaminants found to exceed these screening values are tabulated below:

<b>Location</b>	<b>Depth (m)</b>	<b>Contaminants found to be exceeding SSVs (Commercial)</b>
Stockpile 1	-	None
Stockpile 2	-	None
Stockpile 3	-	None

On the basis of the above, the stockpiles are considered to be suitable for the intended end use and won't have caused contamination of the site. Should soils be imported on to site, then RGS should be consulted for testing and the local authority made aware of such testing.

We trust that this information is of interest and should you have any other requirements do not hesitate to contact us.

For Rogers Geotechnical Services Ltd,

Yours Faithfully



**Rob Palmer** MSc FGS ACIEH  
Engineering Director



View eastwards from the site entrance. Three distinct stockpiles.



Stockpile 1



Stockpile 2



Stockpile 3



**Rogers Geotechnical Services Ltd**

Offices 1 & 2, Barncliffe Business Park,  
Near Bank, Shelley,  
Huddersfield,

**Job No:**

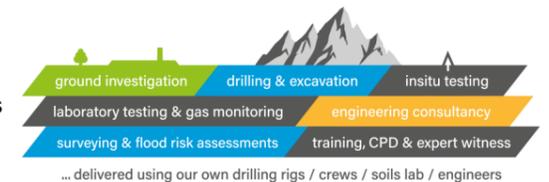
CXXX/20/E/XXX

**Site:**

20 Example Way,  
Example Road,  
Example City  
Antarctica

**Client:**

Antarctica Housing Developments  
Ltd.





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## **Analytical Report Number : 25-039666**

<b>Project / Site name:</b>	St Andrews Road, Huddersfield	<b>Samples received on:</b>	25/07/2025
<b>Your job number:</b>	C4483 24 E 8304	<b>Samples instructed on/ Analysis started on:</b>	25/07/2025
<b>Your order number:</b>	PO-3467	<b>Analysis completed by:</b>	01/08/2025
<b>Report Issue Number:</b>	1	<b>Report issued on:</b>	01/08/2025
<b>Samples Analysed:</b>	3 soil samples		

**Signed:** \_\_\_\_\_

Anna Goc  
PL Head of Reporting Team  
**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

Excel copies of reports are only valid when accompanied by this PDF certificate.

Retention period for records and reports is minimum 6 years from the date of issue of the final report.  
Some records may be kept for longer according to other legal/best practice requirements.

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: 25-039666  
 Project / Site name: St Andrews Road, Huddersfield  
 Your Order No: PO-3467

Lab Sample Number	627122	627123	627124			
Sample Reference	Stockpile 1	Stockpile 2	Stockpile 3			
Sample Number	None Supplied	None Supplied	None Supplied			
Water Matrix	N/A	N/A	N/A			
Depth (m)	None Supplied	None Supplied	None Supplied			
Date Sampled	24/07/2025	24/07/2025	24/07/2025			
Time Taken	None Supplied	None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status			

Stone Content	%	0.1	NONE	51.4	57.2	< 0.1
Moisture Content	%	0.01	NONE	5.3	5.7	7.3
Total mass of sample received	kg	0.1	NONE	0.8	0.8	0.8

#### Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MUA	MUA	MUA
Analysis completed	N/A	N/A	N/A	30/07/2025	30/07/2025	30/07/2025

#### General Inorganics

pH (L099)	pH Units	N/A	MCERTS	10.4	9.1	10.3
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Total Sulphate as SO <sub>4</sub>	%	0.005	MCERTS	1.04	0.102	0.115
Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)	mg/kg	2.5	MCERTS	3600	560	260
Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	1790	279	132
Organic Matter (automated)	%	0.1	MCERTS	0.9	0.9	6.6

#### Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
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#### Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.24	< 0.05	0.21
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.52
Acenaphthene	mg/kg	0.05	MCERTS	0.54	< 0.05	0.66
Fluorene	mg/kg	0.05	MCERTS	0.31	< 0.05	0.45
Phenanthrene	mg/kg	0.05	MCERTS	3	0.24	5.4
Anthracene	mg/kg	0.05	MCERTS	0.71	< 0.05	2
Fluoranthene	mg/kg	0.05	MCERTS	3.4	0.54	12
Pyrene	mg/kg	0.05	MCERTS	3.1	0.54	12
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.6	< 0.05	6.2
Chrysene	mg/kg	0.05	MCERTS	1.7	0.28	6.2
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	1.9	0.37	11
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.76	0.12	4
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.6	0.25	9.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.68	0.19	5
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.16	< 0.05	1.2
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.7	0.24	5.5

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	20.4	2.79	81
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Analytical Report Number: 25-039666  
 Project / Site name: St Andrews Road, Huddersfield  
 Your Order No: PO-3467

Lab Sample Number	627122	627123	627124
Sample Reference	Stockpile 1	Stockpile 2	Stockpile 3
Sample Number	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A
Depth (m)	None Supplied	None Supplied	None Supplied
Date Sampled	24/07/2025	24/07/2025	24/07/2025
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status

#### Heavy Metals / Metalloids

Element	Unit	Factor	MCERTS	627122	627123	627124
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.4	4.6	16
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.6
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	17	98
Copper (aqua regia extractable)	mg/kg	1	MCERTS	110	21	47
Lead (aqua regia extractable)	mg/kg	1	MCERTS	25	16	36
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	9.5	20	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	1.5
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	19	20	47
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	55	51	200

#### Petroleum Hydrocarbons

Parameter	Unit	Factor	MCERTS	627122	627123	627124
TPHCWG - Aliphatic >EC5 - EC6 <sub>HS_ID_AL</sub>	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 <sub>HS_ID_AL</sub>	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 <sub>HS_ID_AL</sub>	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 <sub>EH_CU_ID_AL</sub>	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 <sub>EH_CU_ID_AL</sub>	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 <sub>EH_CU_ID_AL</sub>	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 <sub>EH_CU_ID_AL</sub>	mg/kg	8	MCERTS	20	28	180
TPHCWG - Aliphatic >EC5 - EC35 <sub>EH_CU+HS_ID_AL</sub>	mg/kg	10	NONE	20	28	180

Parameter	Unit	Factor	MCERTS	627122	627123	627124
TPHCWG - Aromatic >EC5 - EC7 <sub>HS_ID_AR</sub>	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 <sub>HS_ID_AR</sub>	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 <sub>HS_ID_AR</sub>	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 <sub>EH_CU_ID_AR</sub>	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 <sub>EH_CU_ID_AR</sub>	mg/kg	2	MCERTS	3.4	< 2.0	6.4
TPHCWG - Aromatic >EC16 - EC21 <sub>EH_CU_ID_AR</sub>	mg/kg	10	MCERTS	11	< 10	42
TPHCWG - Aromatic >EC21 - EC35 <sub>EH_CU_ID_AR</sub>	mg/kg	10	MCERTS	19	12	400
TPHCWG - Aromatic >EC5 - EC35 <sub>EH_CU+HS_ID_AR</sub>	mg/kg	10	NONE	33	12	450

#### VOCs

Parameter	Unit	Factor	MCERTS	627122	627123	627124
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0

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

**Analytical Report Number : 25-039666**  
**Project / Site name: St Andrews Road, Huddersfield**

\* 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 *
627122	Stockpile 1	None Supplied	None Supplied	Brown sand with gravel and stones
627123	Stockpile 2	None Supplied	None Supplied	Brown sand with gravel and stones
627124	Stockpile 3	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation

**Analytical Report Number : 25-039666**  
**Project / Site name: St Andrews Road, Huddersfield**

**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
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID with carbon banding aliphatic and aromatic	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
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
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC/MS with carbon banding aliphatic and aromatic	In-house method	L088-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS

Analytical Report Number : 25-039666  
 Project / Site name: St Andrews Road, Huddersfield

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
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

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



# Rogers Geotechnical Services: Soil Screening Values Comparison Sheet



Rogers Geotechnical Services Ltd: Soil Screening Value (SSV) Comparison Sheet														
Job Number	C4483/24/E			A = WS Atkins PLC, Atrisk Soil Screening Values. A+ = Values updated June 2017. B = health criterion values, which are available from toxicological reviews published in the C4SL project methodology report. C = Category 4 Screening Levels (C4SLs) based on 6% soil organic matter. D = Value provided is based on Methyl Mercury. Should elemental mercury be observed or a source be known then a limit of 102 should be used.										
Job Name	St Andrews Rd			<b>KEY</b> Exceeds SSV Exceeds 2017, Below 2015 Below limit of detection (LOD)										
Date	07.08.25			Sample Location	Stockpile 1	Stockpile 2	Stockpile 3							
Client	Arrow Commercial			Depth Top										
				Depth Base										
Determinand	Units	Ref	LOD	Commercial 6%										
				Atrisk 2015 (No Free Product)	Atrisk 2017									
Cadmium	mg/kg	C	0.2		410	< 0.2	< 0.2	0.6						
Chromium (Hexavalent)	mg/kg	B/C	1.8	49.1	19.7	< 1.8	< 1.8	< 1.8						
Copper	mg/kg	A+	1.0		106000	110	21	47						
Mercury	mg/kg	A/D	0.3		405	< 0.3	< 0.3	< 0.3						
Nickel	mg/kg	A+	1.0		1770	9.5	20	17						
Lead	mg/kg	C	1.0		2310	25	16	36						
Zinc	mg/kg	A+	1.0		1100000	55	51	200						
Vanadium	mg/kg	A+	1.0		7490	19	20	47						
Arsenic	mg/kg	C	1.0		635	6.4	4.6	16						
Selenium	mg/kg	A	1.0		13000	< 1.0	< 1.0	1.5						
Cyanide (Free)	mg/kg	A	1.0		373	< 1.0	< 1.0	< 1.0						
Total Phenols	mg/kg	A	1.0		3170	< 1.0	< 1.0	< 1.0						
Naphthalene	mg/kg	A+	0.05	1050	432	0.24	< 0.05	0.21						
Acenaphthylene	mg/kg		0.05			< 0.05	< 0.05	0.52						
Acenaphthene	mg/kg	A+	0.05		106000	0.54	< 0.05	0.66						
Fluorene	mg/kg	A+	0.05		72000	0.31	< 0.05	0.45						
Phenanthrene	mg/kg		0.05			3	0.24	5.4						
Anthracene	mg/kg	A+	0.05		544000	0.71	< 0.05	2						
Fluoranthene	mg/kg	A+	0.05		72600	3.4	0.54	12						
Pyrene	mg/kg	A+	0.05		54400	3.1	0.54	12						
Benzo[a]anthracene	mg/kg	A	0.05	142	10.3	1.6	< 0.05	6.2						
Chrysene	mg/kg	A	0.05	14300	2.64	1.7	0.28	6.2						
Benzo[b]fluoranthene	mg/kg	A	0.05	144	7.29	1.9	0.37	11						
Benzo[k]fluoranthene	mg/kg	A	0.05	1440	4.12	0.76	0.12	4						
Benzo[a]pyrene	mg/kg	B/C	0.05	76.3	26.2	1.6	0.25	9.2						
Indeno(1,2,3-c,d)Pyrene	mg/kg	A*	0.05	144	0.368	0.68	0.19	5						
Dibenz(a,h)Anthracene	mg/kg	A	0.05	14.4	0.0236	0.16	< 0.05	1.2						
Benzo[g,h,i]perylene	mg/kg	A	0.05	1450	0.112	0.7	0.24	5.5						
Total Of 16 PAH's	mg/kg		0.8											
Aliphatic TPH >C5-C6	mg/kg	A+	0.01	29400	1100	< 0.010	< 0.010	< 0.010						
Aliphatic TPH >C6-C8	mg/kg	A+	0.01	98200	769	< 0.010	< 0.010	< 0.010						
Aliphatic TPH >C8-C10	mg/kg	A+	0.01	14800	476	< 0.010	< 0.010	< 0.010						
Aliphatic TPH >C10-C12	mg/kg	A+	1.0	69500	297	< 1.0	< 1.0	< 1.0						
Aliphatic TPH >C12-C16	mg/kg	A+	2.0	139000	126	< 2.0	< 2.0	< 2.0						
Aliphatic TPH >C16-C21	mg/kg	A+	8.0		3620000	< 8.0	< 8.0	< 8.0						
Aliphatic TPH >C21-C35	mg/kg	A+	8.0		3620000	20	28	180						
Aliphatic TPH >C35-C44	mg/kg		10.0											
Total Aliphatic Hydrocarbons	mg/kg		10.0											



## Rogers Geotechnical Services: Soil Screening Values Comparison Sheet



Rogers Geotechnical Services Ltd: Soil Screening Value (SSV) Comparison Sheet													
Job Number	C4483/24/E			A = WS Atkins PLC, Atrisk Soil Screening Values. A+ = Values updated June 2017. B = health criterion values, which are available from toxicological reviews published in the C4SL project methodology report. C = Category 4 Screening Levels (C4SLs) based on 6% soil organic matter. D = Value provided is based on Methyl Mercury. Should elemental mercury be observed or a source be known then a limit of 102 should be used.					<b>KEY</b>  <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="width: 20px; height: 20px; background-color: #f4cccc; border: 1px solid black; margin-right: 5px;"></div> Exceeds SSV  <div style="width: 20px; height: 20px; background-color: #fff2cc; border: 1px solid black; margin-right: 5px; margin-top: 5px;"></div> Exceeds 2017, Below 2015  <div style="width: 20px; height: 20px; background-color: #d9ead3; border: 1px solid black; margin-right: 5px; margin-top: 5px;"></div> Below limit of detection (LOD) </div>				
Job Name	St Andrews Rd												
Date	07.08.25			<b>Sample Location</b>	Stockpile 1	Stockpile 2	Stockpile 3						
Client	Arrow Commercial			Depth Top									
				Depth Base									
Determinand	Units	Ref	LOD	Commercial 6%									
Aromatic TPH >C5-C7	mg/kg	A+	0.01		98	< 0.010	< 0.010	< 0.010					
Aromatic TPH >C7-C8	mg/kg	A+	0.01	183000	4360	< 0.010	< 0.010	< 0.010					
Aromatic TPH >C8-C10	mg/kg	A+	0.02	20800	3600	< 0.020	< 0.020	< 0.020					
Aromatic TPH >C10-C12	mg/kg	A+	1.0	53800	2190	< 1.0	< 1.0	< 1.0					
Aromatic TPH >C12-C16	mg/kg	A+	2.0	65400	65400	3.4	< 2.0	6.4					
Aromatic TPH >C16-C21	mg/kg	A+	10.0		28400	11	< 10	42					
Aromatic TPH >C21-C35	mg/kg	A+	10.0		28400	19	12	400					
Aromatic TPH >C35-C44	mg/kg		10.0										
Total Aromatic Hydrocarbons	mg/kg		10.0										
Total Petroleum Hydrocarbons	mg/kg		10.0										
pH			N/A			<b>10.4</b>	<b>9.1</b>	10.3					
Sulphate (2:1 Water Soluble) as SO4	mg/l		1.25			<b>3600</b>	560	<b>260</b>					
ACM Type			N/A										
Asbestos Identification	%					Not-detected	Not-detected	Not-detected					
ACM Detection Stage			N/A										
Moisture	%		0.01			5.3	5.7	7.3					
Soil Colour			N/A										
Other Material			N/A										
Soil Texture			N/A										
Sulphate (Total)	%		0.005			1.04	0.102	0.115					
Organic Matter	%		0.1			<b>0.9</b>	<b>0.9</b>	<b>6.6</b>					



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Job Name	St Andrews Rd			<b>KEY</b> Exceeds SSV Exceeds 2017, Below 2015 Below limit of detection (LOD)										
Date	07.08.25			Sample Location	Stockpile 1	Stockpile 2	Stockpile 3							
Client	Arrow Commercial			Depth Top										
				Depth Base										
Determinand	Units	Ref	LOD	Commercial 1%										
				Atrisk 2015 (No Free Product)	Atrisk 2017									
Cadmium	mg/kg	C	0.2		410	< 0.2	< 0.2	0.6						
Chromium (Hexavalent)	mg/kg	B/C	1.8	49.1	19.7	< 1.8	< 1.8	< 1.8						
Copper	mg/kg	A+	1.0		106000	110	21	47						
Mercury	mg/kg	A/D	0.3		350	< 0.3	< 0.3	< 0.3						
Nickel	mg/kg	A+	1.0		1770	9.5	20	17						
Lead	mg/kg	C	1.0		2310	25	16	36						
Zinc	mg/kg	A+	1.0		1100000	55	51	200						
Vanadium	mg/kg	A+	1.0		7490	19	20	47						
Arsenic	mg/kg	C	1.0		635	6.4	4.6	16						
Selenium	mg/kg	A	1.0		13000	< 1.0	< 1.0	1.5						
Cyanide (Free)	mg/kg	A	1.0		373	< 1.0	< 1.0	< 1.0						
Total Phenols	mg/kg	A	1.0		685	< 1.0	< 1.0	< 1.0						
Naphthalene	mg/kg	A+	0.05	90.1	75	0.24	< 0.05	0.21						
Acenaphthylene	mg/kg		0.05			< 0.05	< 0.05	0.52						
Acenaphthene	mg/kg	A+	0.05	83600	156.8	0.54	< 0.05	0.66						
Fluorene	mg/kg	A+	0.05		66500	0.31	< 0.05	0.45						
Phenanthrene	mg/kg		0.05			3	0.24	5.4						
Anthracene	mg/kg	A+	0.05		535000	0.71	< 0.05	2						
Fluoranthene	mg/kg	A+	0.05		72200	3.4	0.54	12						
Pyrene	mg/kg	A+	0.05		54100	3.1	0.54	12						
Benzo[a]anthracene	mg/kg	A	0.05	131	1.71	1.6	< 0.05	6.2						
Chrysene	mg/kg	A	0.05	14000	0.44	1.7	0.28	6.2						
Benzo[b]fluoranthene	mg/kg	A	0.05	142	1.22	1.9	0.37	11						
Benzo[k]fluoranthene	mg/kg	A	0.05	1430	0.686	0.76	0.12	4						
Benzo[a]pyrene	mg/kg	B/C	0.05	76.3	26.1	1.6	0.25	9.2						
Indeno(1,2,3-c,d)Pyrene	mg/kg	A*	0.05	142	0.0614	0.68	0.19	5						
Dibenz(a,h)Anthracene	mg/kg	A	0.05	14.3	0.00393	0.16	< 0.05	1.2						
Benzo[g,h,i]perylene	mg/kg	A	0.05	1440	0.0187	0.7	0.24	5.5						
Total Of 16 PAH's	mg/kg		0.8											
Aliphatic TPH >C5-C6	mg/kg	A+	0.01	4490	327	< 0.010	< 0.010	< 0.010						
Aliphatic TPH >C6-C8	mg/kg	A+	0.01	10400	157	< 0.010	< 0.010	< 0.010						
Aliphatic TPH >C8-C10	mg/kg	A+	0.01	1370	82.4	< 0.010	< 0.010	< 0.010						
Aliphatic TPH >C10-C12	mg/kg	A+	1.0	7900	49.9	< 1.0	< 1.0	< 1.0						
Aliphatic TPH >C12-C16	mg/kg	A+	2.0	34000	20.9	< 2.0	< 2.0	< 2.0						
Aliphatic TPH >C16-C21	mg/kg	A+	8.0		3620000	< 8.0	< 8.0	< 8.0						
Aliphatic TPH >C21-C35	mg/kg	A+	8.0		3620000	20	28	180						
Aliphatic TPH >C35-C44	mg/kg		10.0											
Total Aliphatic Hydrocarbons	mg/kg		10.0											



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				Depth Base									
Determinand	Units	Ref	LOD	Commercial 1%									
Aromatic TPH >C5-C7	mg/kg	A+	0.01		12.5	<b>&lt; 0.010</b>	<b>&lt; 0.010</b>	<b>&lt; 0.010</b>					
Aromatic TPH >C7-C8	mg/kg	A+	0.01	27900	834	<b>&lt; 0.010</b>	<b>&lt; 0.010</b>	<b>&lt; 0.010</b>					
Aromatic TPH >C8-C10	mg/kg	A+	0.02	2210	613	<b>&lt; 0.020</b>	<b>&lt; 0.020</b>	<b>&lt; 0.020</b>					
Aromatic TPH >C10-C12	mg/kg	A+	1.0	12300	369	<b>&lt; 1.0</b>	<b>&lt; 1.0</b>	<b>&lt; 1.0</b>					
Aromatic TPH >C12-C16	mg/kg	A+	2.0	41300	155	<b>3.4</b>	<b>&lt; 2.0</b>	<b>6.4</b>					
Aromatic TPH >C16-C21	mg/kg	A+	10.0		28400	<b>11</b>	<b>&lt; 10</b>	<b>42</b>					
Aromatic TPH >C21-C35	mg/kg	A+	10.0		28400	<b>19</b>	<b>12</b>	<b>400</b>					
Aromatic TPH >C35-C44	mg/kg		10.0										
Total Aromatic Hydrocarbons	mg/kg		10.0										
Total Petroleum Hydrocarbons	mg/kg		10.0										
pH			N/A			<b>10.4</b>	<b>9.1</b>	<b>10.3</b>					
Sulphate (2:1 Water Soluble) as SO4	mg/l		1.25			<b>3600</b>	<b>560</b>	<b>260</b>					
ACM Type			N/A										
Asbestos Identification	%					<b>Not-detected</b>	<b>Not-detected</b>	<b>Not-detected</b>					
ACM Detection Stage			N/A										
Moisture	%		0.01			<b>5.3</b>	<b>5.7</b>	<b>7.3</b>					
Soil Colour			N/A										
Other Material			N/A										
Soil Texture			N/A										
Sulphate (Total)	%		0.005			<b>1.04</b>	<b>0.102</b>	<b>0.115</b>					
Organic Matter	%		0.1			<b>0.9</b>	<b>0.9</b>	<b>6.6</b>					