

Mr Matt Smith
G. F. Tomlinson & Sons Ltd.
Tomlinson House
Duffield Road
Little Eaton
Derby
DE21 5DR

Dear Matt,

Re: Barwell Medical Centre – Contaminated Soils Validation Sampling

Background

It is understood that during the site enabling works a brick lined suspected attenuation tank was encountered. This was subsequently demolished and removed. The surrounding shallow soils were noted to be impacted with suspected TPH contamination, and these were also removed for off-site disposal as a precaution.

Following removal of the impacted soils, it was recommended that further sampling of the base and sides of the resultant excavation was undertaken in order to demonstrate that all significant contamination had been removed.

The following report details the validation works undertaken to confirm that all TPH impacted soils had been successfully removed.

Site Works

Erda Associates Ltd. (Erda) were asked to attend the subject site on 25th October 2023 to complete the validation works.

At the time of our attendance, all impacted soils had been removed and stockpiled on polythene sheeting ready for off-site disposal. The stockpiles were also covered with polythene sheeting to prevent runoff during periods of rainfall.

The excavation of the former brick chambers had been significantly extended to the north and south in order to facilitate the future installation of a new attenuation feature.

The eastern and western sides along with the base of the excavation were sampled to confirm that all the impacted material had been removed. The samples were screened for TPH with BTEX at a UKAS/MCERTS accredited laboratory. A validation sampling plan is enclosed in **Appendix A**, for reference. Copies of the validation test results are included in **Appendix B**.

Chemical Test Results

Tier 1 Assessment Criteria for human health with regard to contamination within soils have been produced with reference to values published in LQM/CIEH S4UL and DEFRA's C4SLs. The Tier 1 Assessment Criteria are contained in **Appendix C**. The laboratory analysis results were reviewed against the assessment criteria for a commercial/industrial end use (considered to be the most relevant scenario). A SOM of 1% has been adopted for the analysis.

In summary, no elevated concentrations of TPH or BTEX were identified in any of the samples. Therefore, it is considered that all impacted material has been successfully removed, and no further risks remain to end users or controlled waters with regard to TPH or BTEX.

Conclusion and Recommendations

Validation sampling has identified that all of the TPH impacted material has been successfully removed from the sides and base of the former tank excavation. Therefore, the risk to future end users and controlled waters from these is now considered to be very low.

It is noted that previous assessments have identified asbestos to be present in the shallow soils on site. It has been previously recommended that the risk of asbestos within the shallow soils can be suitably reduced by capping of any proposed soft landscaping with 300mm of clean soil with a marker membrane to its base. Capping is not

considered to be required in areas of proposed hardstanding (e.g., roadways and beneath floor slabs). Validation sampling and inspections of the capping to soft landscaping will be required once this has been completed.

Copies of this letter report should be forwarded to the Local Authority for review and approval if required. Should you have any queries, or require any further information, please do not hesitate to contact us.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'P. Devitt'.

Phil Devitt, BSc MSc MRICS
Director

Encl.

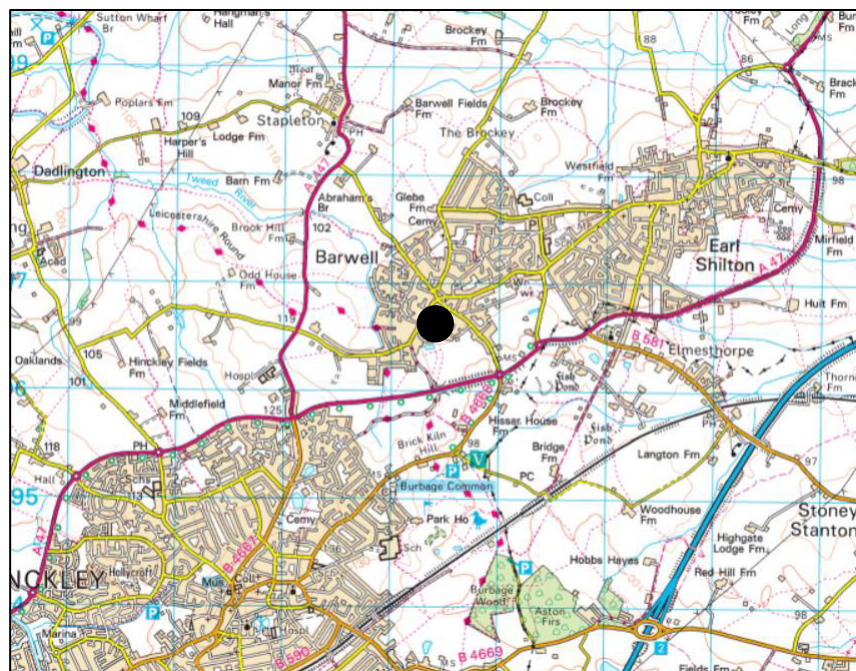
Appendix A – Tank Validation Figures

Appendix B – Chemical Analysis Results

Appendix C – Erda Associates Tier 1 GACs and Methodology

Appendix A

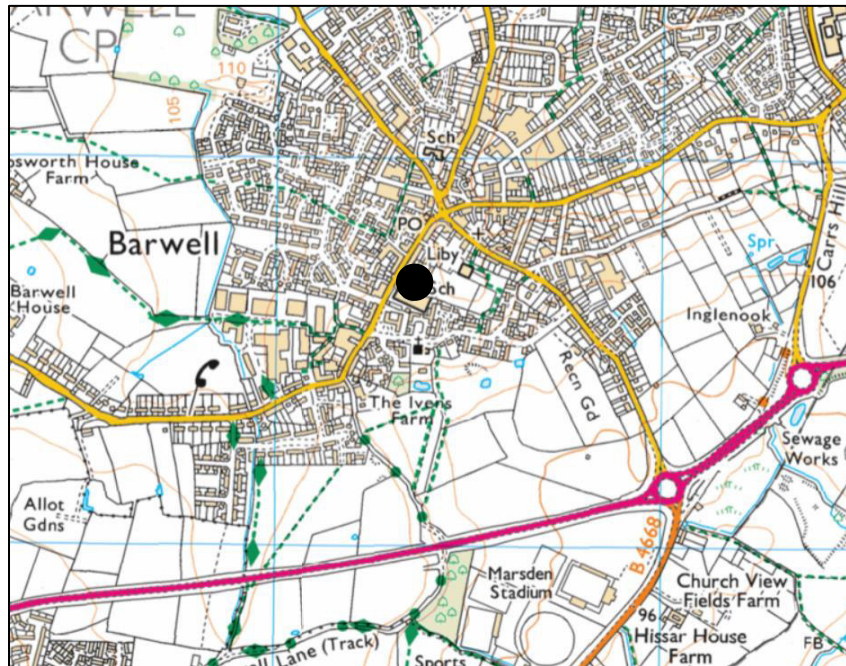




KEY:

● Approximate Site Location

DO NOT SCALE



TITLE:

Site Location Plan

PROJECT:

Barwell Medical Centre

PROJECT No:

EAL.178.23

DATE:

11/2023

SCALE:

NTS

DRAWN:

PD

DWG No:

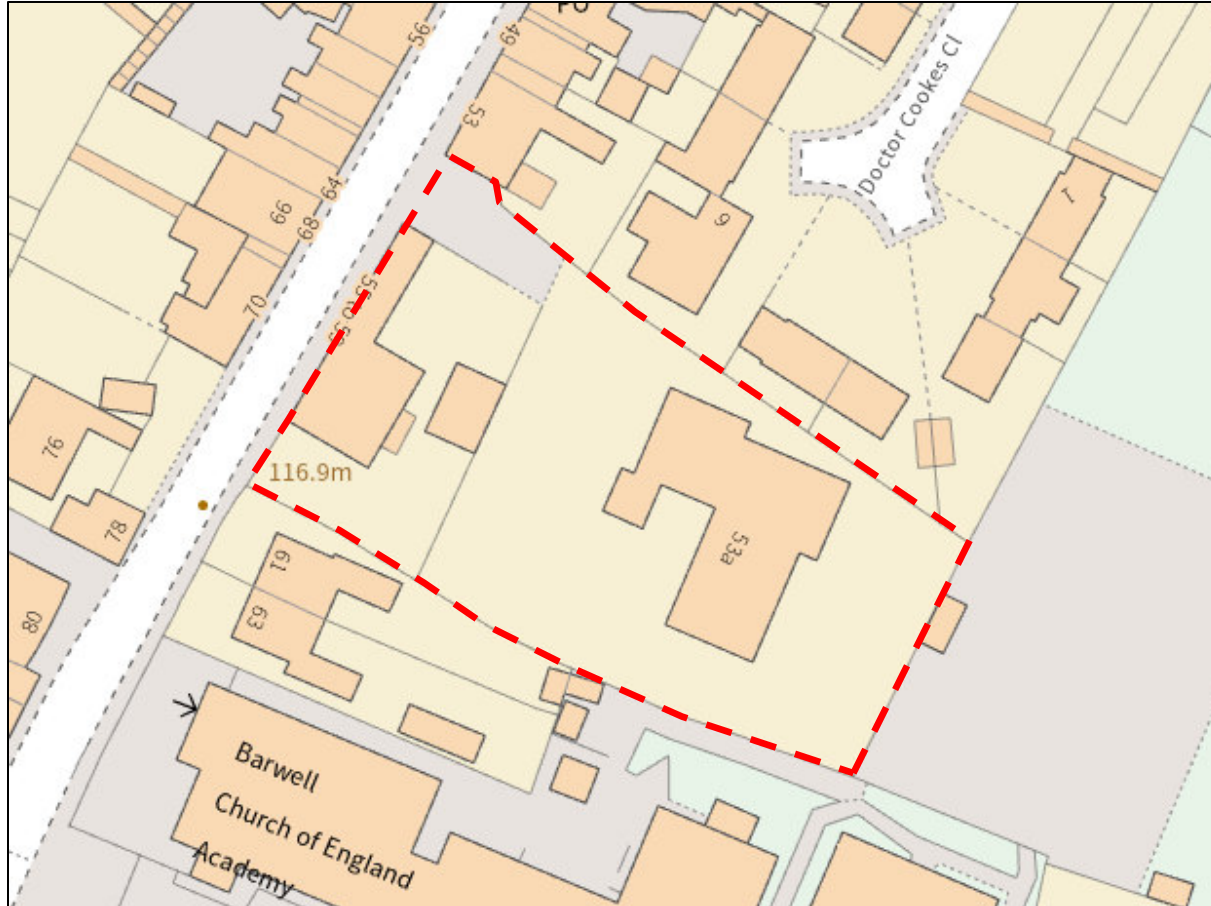
Figure 1



KEY:



Site Boundary



DO NOT SCALE



TITLE:

Site Layout

PROJECT:

Barwell Medical Centre

PROJECT No:

EAL.178.23

DATE:

11/2023

SCALE :

NTS

DRAWN :

PD

DWG No:

Figure 2



KEY:



Approx. extents of excavation

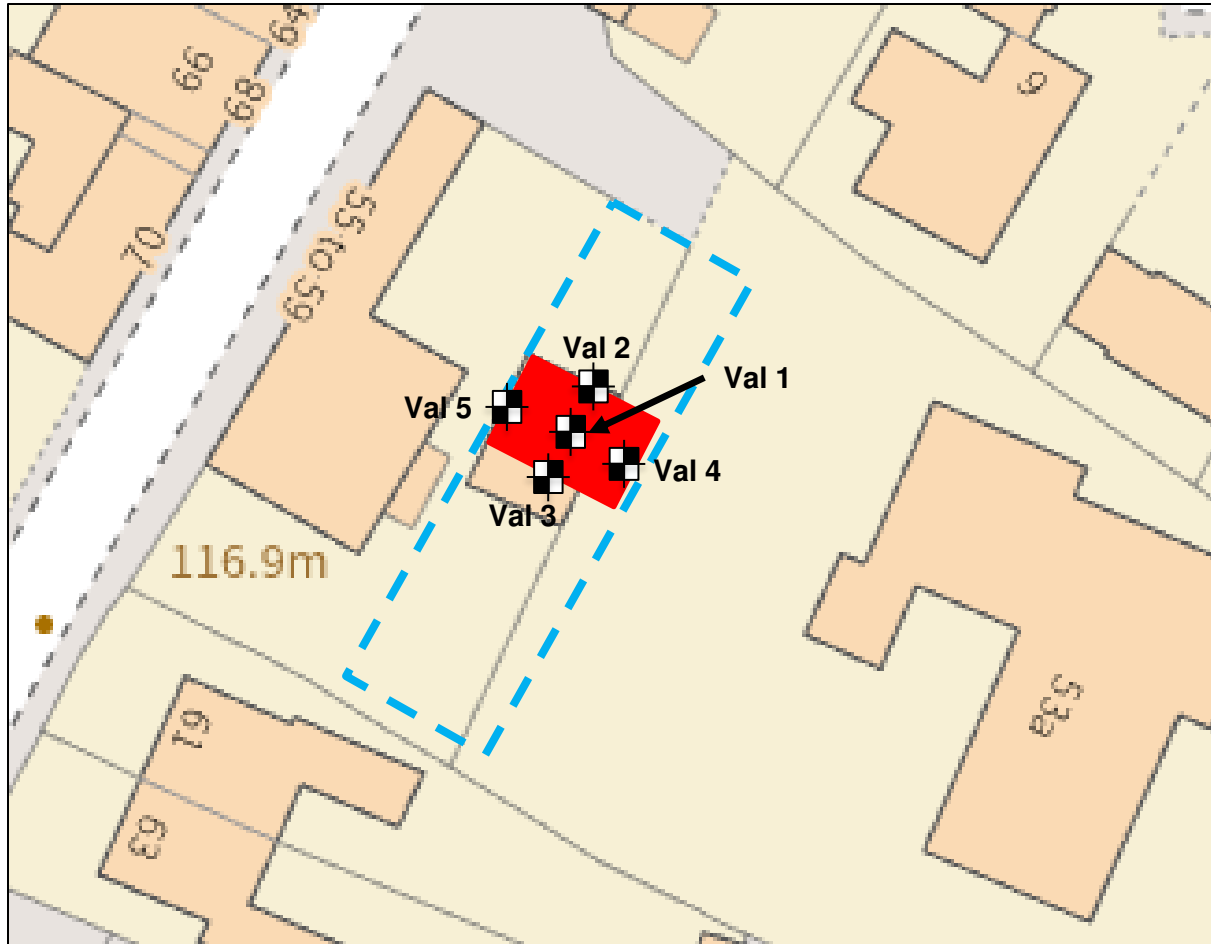


Approx. extents of former tank/impacted material (now removed)



Validation Sample

DO NOT SCALE



TITLE:

Validation Sampling Plan

PROJECT:

Barwell Medical Centre

PROJECT No:

EAL.178.23

DATE:

11/2023

SCALE :

NTS

DRAWN :

PD

DWG No:

Figure 3

Appendix B





Dan Wade
ERDA Associates Ltd
102 Scalpcliffe Road
Burton on Trent
Staffordshire
DE15 9AB

Derwentside Environmental Testing Services Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 23-13337

Site Reference: Barwell Medical Centre

Project / Job Ref: None Supplied

Order No: EAL.178.23

Sample Receipt Date: 27/10/2023

Sample Scheduled Date: 27/10/2023

Report Issue Number: 3

Reporting Date: 03/11/2023

Authorised by:

Steve Knight
Customer Support Manager

Dates of laboratory activities for each tested analyte are available upon request.
This report supersedes 23-13337, issue no.2.

Reason for Re-Issue:

Site name added

Opinions and interpretations are outside the laboratory's scope of ISO 17025 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. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.



DETS Ltd
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Soil Analysis Certificate - TPH LQM Banded

DETS Report No: 23-13337	Date Sampled	25/10/23	25/10/23	25/10/23	25/10/23	25/10/23
ERDA Associates Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Barwell Medical Centre	TP / BH No	Val 1	Val 2	Val 3	Val 4	Val 5
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: EAL.178.23	Depth (m)	2.00	2.20	2.10	1.30	0.70
Reporting Date: 03/11/2023	DETS Sample No	682579	682580	682581	682582	682583

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C35 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic >C35 - C44 : EH_CU_1D_AL	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 30	NONE	< 30	< 30	< 30	< 30	< 30
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic >C35 - C44 : EH_CU_1D_AR	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic (>C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 30	NONE	< 30	< 30	< 30	< 30	< 30
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 60	NONE	< 60	< 60	< 60	< 60	< 60



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-13337	Date Sampled	25/10/23	25/10/23	25/10/23	25/10/23	25/10/23
ERDA Associates Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Barwell Medical Centre	TP / BH No	Val 1	Val 2	Val 3	Val 4	Val 5
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: EAL.178.23	Depth (m)	2.00	2.20	2.10	1.30	0.70
Reporting Date: 03/11/2023	DETS Sample No	682579	682580	682581	682582	682583

Determinand	Unit	RL	Accreditation						
Benzene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
Toluene : HS 1D MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
p & m-xylene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
o-xylene : HS 1D MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
MTBE : HS 1D MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5	< 5



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Soil Analysis Certificate - Sample Descriptions

DETS Report No: 23-13337	
ERDA Associates Ltd	
Site Reference: Barwell Medical Centre	
Project / Job Ref: None Supplied	
Order No: EAL.178.23	
Reporting Date: 03/11/2023	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
682579	Val 1	None Supplied	2.00	16.2	Light brown sandy clay
682580	Val 2	None Supplied	2.20	25	Brown sandy clay
682581	Val 3	None Supplied	2.10	20	Light brown clay
682582	Val 4	None Supplied	1.30	11.2	Brown sandy clay with stones
682583	Val 5	None Supplied	0.70	14.7	Light brown sandy clay with stones

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{U/S}

Unsuitable Sample ^{U/S}



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Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 23-13337

ERDA Associates Ltd

Site Reference: Barwell Medical Centre

Project / Job Ref: None Supplied

Order No: EAL.178.23

Reporting Date: 03/11/2023

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphénylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received



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List of HWOL Acronyms and Operators	
DETS Report No:	23-13337
ERDA Associates Ltd	
Site Reference:	Barwell Medical Centre
Project / Job Ref:	None Supplied
Order No:	EAL.178.23
Reporting Date:	03/11/2023

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym
Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH LQM - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH LQM - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH LQM - Aliphatic >C16 - C35 - EH_CU_1D_AL
TPH LQM - Aliphatic >C35 - C44 - EH_CU_1D_AL
TPH LQM - Aliphatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AL
TPH LQM - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH LQM - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH LQM - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH LQM - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH LQM - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH LQM - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH LQM - Aromatic >C35 - C44 - EH_CU_1D_AR
TPH LQM - Aromatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AR
TPH LQM - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH LQM - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH LQM - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH LQM - Total >C5 - C44 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

Appendix C



Tier 1 Assessment Criteria

Determinand	Commercial/Industrial (mg/kg) - 1% SOM			Source
Arsenic	640.00			LQM S4UL
Boron	240000.00			LQM S4UL
Cadmium	410.00			C4SL
Chromium III	8600.00			LQM S4UL
Chromium VI	33.00			LQM S4UL
Lead	2300.00			C4SL
Mercury, elemental	58.00 ^{vap} (25.80)			LQM S4UL
Mercury, inorganic	1100.00			LQM S4UL
Mercury, methyl	320.00			LQM S4UL
Selenium	12000.00			LQM S4UL
Nickel	980.00			LQM S4UL
Copper	68000.00			LQM S4UL
Vanadium	9000.00			LQM S4UL
Zinc	730000.00			LQM S4UL
	Polycyclic Aromatic Hydrocarbons			
	SOM 1%	SOM 2.5%	SOM 6%	
Benzo(a)pyrene	35.00	35.00	36.00	LQM S4UL
Dibenz(ah)anthracene	3.50	3.60	3.60	LQM S4UL
Acenaphthene	84000 (57) ^{sol}	97000 (141) ^{sol}	100000.00	LQM S4UL
Acenaphthylene	83000 (86) ^{sol}	97000 (212) ^{sol}	100000.00	LQM S4UL
Anthracene	520000.00	540000.00	540000.00	LQM S4UL
Benzo(a)anthracene	170.00	170.00	180.00	LQM S4UL
Benzo(b)fluoranthene	44.00	44.00	45.00	LQM S4UL
Benzo(ghi)perylene	3900.00	4000.00	4000.00	LQM S4UL
Benzo(k)fluoranthene	1200.00	1200.00	1200.00	LQM S4UL
Chrysene	350.00	350.00	350.00	LQM S4UL
Fluoranthene	23000.00	23000.00	23000.00	LQM S4UL
Fluorene	63000 (30) ^{sol}	68000.00	71000.00	LQM S4UL
Indeno(123cd)pyrene	500.00	510.00	510.00	LQM S4UL
Phenanthrene	22000.00	22000.00	23000.00	LQM S4UL
Pyrene	54000.00	54000.00	54000.00	LQM S4UL
Naphthalene	190 (76) ^{sol}	460 (183) ^{sol}	1100 (432) ^{sol}	LQM S4UL

Note:

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* Values calculated using CLEA v1.071

^{vap} - S4UL presented exceed the vapour saturation limit, which is presented in brackets.

^{sol} - S4UL presented exceeds the solubility saturation limit, which is presented in brackets.

Tier 1 Assessment Criteria

Determinand	Commercial/Industrial (mg/kg)			Source
	1% SOM	2.5% SOM	6% SOM	
Benzene	27.00	47.00	90.00	LQM S4UL
Ethylbenzene	5700 ^{vap} (518)	13000 ^{vap} (1220)	27000 ^{vap} (2840)	LQM S4UL
Phenol	760.00	1500.00	3200.00	LQM S4UL
Toulene	56000 ^{vap} (869)	110000 ^{vap} (1920)	180000 ^{vap} (4360)	LQM S4UL
Xylene, o-	6600 ^{sol} (478)	15000 ^{sol} (1120)	33000 ^{sol} (2620)	LQM S4UL
Xylene, m-	6200 ^{vap} (625)	14000 ^{vap} (1470)	31000 ^{vap} (3460)	LQM S4UL
Xylene, p-	5900 ^{sol} (576)	14000 ^{sol} (1350)	30000 ^{sol} (3170)	LQM S4UL
Aliphatic C5-C6	3200 (304) ^{sol}	5900 (558) ^{sol}	12000 (1150) ^{sol}	LQM S4UL
Aliphatic C6-C8	7800 (144) ^{sol}	17000 (322) ^{sol}	40000 (736) ^{sol}	LQM S4UL
Aliphatic C8-C10	2000 (78) ^{sol}	4800 (190) ^{vap}	11000 (451) ^{vap}	LQM S4UL
Aliphatic C10-C12	9700 (48) ^{sol}	23000 (118) ^{vap}	47000 (283) ^{vap}	LQM S4UL
Aliphatic C12-C16	59000 (24) ^{sol}	82000 (59) ^{sol}	90000 (142) ^{sol}	LQM S4UL
Aliphatic C16-C35	1600000	1700000	1800000	LQM S4UL
Aliphatic C35-C44	1600000	1700000	1800000	LQM S4UL
Aromatic C5-C7	26000 (1200) ^{sol}	46000 (2260) ^{sol}	86000 (4710) ^{sol}	LQM S4UL
Aromatic C7-C8	56000 (869) ^{vap}	110000 (1920) ^{sol}	180000 (4360) ^{vap}	LQM S4UL
Aromatic C8-C10	3500 (613) ^{vap}	8100 (1500) ^{vap}	17000 (3580) ^{vap}	LQM S4UL
Aromatic C10-C12	16000 (364) ^{sol}	28000 (899) ^{sol}	34000 (2150) ^{sol}	LQM S4UL
Aromatic C12-C16	36000 (169) ^{sol}	37000	38000	LQM S4UL
Aromatic C16-C21	28000	28000	28000	LQM S4UL
Aromatic C21-C35	28000	28000	28000	LQM S4UL
Aromatic C35-C44	28000	28000	28000	LQM S4UL
Combined Aliphatic and Aromatic C44-C70	28000	28000	28000	LQM S4UL

Note:

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^{vap} - S4UL presented exceed the vapour saturation limit, which is presented in brackets.

^{sol} - S4UL presented exceeds the solubility saturation limit, which is presented in brackets.