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DETS Ltd

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DETS Report No: 18-78602

Site Reference: Eastergate Development Site

Project / Job Ref: None Supplied

Order No: None Supplied

Sample Receipt Date: 12/07/2018

Sample Scheduled Date: 12/07/2018

Report Issue Number: 1

Reporting Date: 18/07/2018

Authorised by:

Kevin Old

Associate Director of Laboratory

Authorised by:

Russell Jarvis Associate Director of Client Services





Soil Analysis Certificate						
DETS Report No: 18-78602	Date Sampled	None Supplied				
Wilson Bailey Geotechnical & Environmental Ltd	Time Sampled	None Supplied				
Site Reference: Eastergate Development Site	TP / BH No	BH1	BH1	BH3	BH4	BH5
Project / Job Ref: None Supplied	Additional Refs	None Supplied				
Order No: None Supplied	Depth (m)	0.25	0.50	0.25	0.50	0.25
Reporting Date: 18/07/2018	QTSE Sample No	346713	346714	346715	346716	346717

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected				
pH	pH Units	N/a	MCERTS	7.2	7.3	6.9	7.2	6.4
Total Organic Carbon (TOC)	%	< 0.1	MCERTS	1.1	0.4	0.7	0.5	1.1
Arsenic (As)	mg/kg	< 2	MCERTS	10	7	9	11	9
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.2	< 0.2	< 0.2	< 0.2	0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	20	21	23	32	19
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	14	11	11	17	13
Lead (Pb)	mg/kg	< 3	MCERTS	36	13	15	26	25
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	14	20	16	21	13
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	57	39	49	57	50
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2





Soil Analysis Certificate						
DETS Report No: 18-78602	Date Sampled	None Supplied				
Wilson Bailey Geotechnical & Environmental Ltd	Time Sampled	None Supplied				
Site Reference: Eastergate Development Site	TP / BH No	BH7	BH7	BH9	BH11	BH11
Project / Job Ref: None Supplied	Additional Refs	None Supplied				
Order No: None Supplied	Depth (m)	0.25	0.50	0.25	0.25	0.50
Reporting Date: 18/07/2018	QTSE Sample No	346718	346719	346720	346721	346722

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected				
pH	pH Units	N/a	MCERTS	6.2	7.0	6.6	6.2	7.1
Total Organic Carbon (TOC)	%	< 0.1	MCERTS	0.9	0.7	1.4	0.9	0.7
Arsenic (As)	mg/kg	< 2	MCERTS	8	12	9	9	10
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	0.3	0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	19	33	20	21	30
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	10	18	13	12	16
Lead (Pb)	mg/kg	< 3	MCERTS	17	15	29	21	15
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	13	29	14	15	20
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	46	55	50	50	54
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2





Soil Analysis Certificate						
DETS Report No: 18-78602	Date Sampled	None Supplied				
Wilson Bailey Geotechnical & Environmental Ltd	Time Sampled	None Supplied				
Site Reference: Eastergate Development Site	TP / BH No	BH12	BH13	BH14	BH15	BH15
Project / Job Ref: None Supplied	Additional Refs	None Supplied				
Order No: None Supplied	Depth (m)	0.50	0.25	0.50	0.50	0.25
Reporting Date: 18/07/2018	QTSE Sample No	346723	346724	346725	346726	346727

Determinand	Unit	RL	Accreditation					
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected				
pH	pH Units	N/a	MCERTS	7.3	6.6	7.1	7.0	6.7
Total Organic Carbon (TOC)	%	< 0.1	MCERTS	0.6	1	0.7	0.5	0.8
Arsenic (As)	mg/kg	< 2	MCERTS	11	9	10	11	8
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	29	19	30	31	17
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	16	14	15	15	10
Lead (Pb)	mg/kg	< 3	MCERTS	14	22	18	15	18
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	23	14	22	31	13
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	51	49	52	55	42
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2





Soil Analysis Certificate	Soil Analysis Certificate										
DETS Report No: 18-78602	Date Sampled	None Supplied	None Supplied								
Wilson Bailey Geotechnical & Environmental Ltd	Time Sampled	None Supplied	None Supplied								
Site Reference: Eastergate Development Site	TP / BH No	BH17	BH18								
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied								
Order No: None Supplied	Depth (m)	0.25	0.50								
Reporting Date: 18/07/2018	QTSE Sample No	346728	346729								

Determinand	Unit	RL	Accreditation				
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected		
pH	pH Units	N/a	MCERTS	6.7	7.1		
Total Organic Carbon (TOC)	%	< 0.1	MCERTS	0.6	0.4		
Arsenic (As)	mg/kg	< 2	MCERTS	8	11		
W/S Boron	mg/kg	< 1	NONE	< 1	< 1		
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2		
Chromium (Cr)	mg/kg	< 2	MCERTS	19	29		
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2		
Copper (Cu)	mg/kg	< 4	MCERTS	10	15		
Lead (Pb)	mg/kg	< 3	MCERTS	15	12		
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1		
Nickel (Ni)	mg/kg	< 3	MCERTS	14	24		
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3		
Zinc (Zn)	mg/kg	< 3	MCERTS	45	51	•	
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	•	





Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 18-78602	Date Sampled	None Supplied				
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied				
Site Reference: Eastergate Development Site	TP / BH No	BH1	BH1	BH3	BH4	BH5
Project / Job Ref: None Supplied	Additional Refs	None Supplied				
Order No: None Supplied	Depth (m)	0.25	0.50	0.25	0.50	0.25
Reporting Date: 18/07/2018	QTSE Sample No	346713	346714	346715	346716	346717

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.17
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.63
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.54
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.34
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.39
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.48
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.20
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.37
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.20
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.16
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	3.5





Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 18-78602	Date Sampled	None Supplied				
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied				
Site Reference: Eastergate Development Site	TP / BH No	BH7	BH7	BH9	BH11	BH11
Project / Job Ref: None Supplied	Additional Refs	None Supplied				
Order No: None Supplied	Depth (m)	0.25	0.50	0.25	0.25	0.50
Reporting Date: 18/07/2018	QTSE Sample No	346718	346719	346720	346721	346722

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	0.11	< 0.1	0.23	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	0.37	< 0.1	0.63	0.24	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	0.31	< 0.1	0.51	0.20	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.20	< 0.1	0.30	0.12	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	0.24	< 0.1	0.33	0.13	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.33	< 0.1	0.31	0.16	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.11	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.24	< 0.1	0.21	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.16	< 0.1	0.14	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.13	< 0.1	0.12	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	2.1	< 1.6	2.9	< 1.6	< 1.6





Soil Analysis Certificate - Speciated PAHs	Soil Analysis Certificate - Speciated PAHs										
DETS Report No: 18-78602	Date Sampled	None Supplied									
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied									
Site Reference: Eastergate Development Site	TP / BH No	BH12	BH13	BH14	BH15	BH15					
Project / Job Ref: None Supplied	Additional Refs	None Supplied									
Order No: None Supplied	Depth (m)	0.50	0.25	0.50	0.50	0.25					
Reporting Date: 18/07/2018	QTSE Sample No	346723	346724	346725	346726	346727					

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.20	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.16	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	0.12	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.12	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6





Soil Analysis Certificate - Speciated PAHs											
DETS Report No: 18-78602	Date Sampled	None Supplied	None Supplied								
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied								
Site Reference: Eastergate Development Site	TP / BH No	BH17	BH18								
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied								
Order No: None Supplied	Depth (m)	0.25	0.50								
Reporting Date: 18/07/2018	QTSE Sample No	346728	346729								

Determinand	Unit	RL	Accreditation				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6		





Soil Analysis Certificate - TPH CWG Banded										
DETS Report No: 18-78602	Date Sampled	None Supplied								
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied								
Site Reference: Eastergate Development Site	TP / BH No	BH1	BH1	BH3	BH4	BH5				
Project / Job Ref: None Supplied	Additional Refs	None Supplied								
Order No: None Supplied	Depth (m)	0.25	0.50	0.25	0.50	0.25				
Reporting Date: 18/07/2018	QTSE Sample No	346713	346714	346715	346716	346717				

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42





Soil Analysis Certificate - TPH CWG Banded	Soil Analysis Certificate - TPH CWG Banded											
DETS Report No: 18-78602	Date Sampled	None Supplied										
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied										
Site Reference: Eastergate Development Site	TP / BH No	BH7	BH7	BH9	BH11	BH11						
Project / Job Ref: None Supplied	Additional Refs	None Supplied										
Order No: None Supplied	Depth (m)	0.25	0.50	0.25	0.25	0.50						
Reporting Date: 18/07/2018	QTSE Sample No	346718	346719	346720	346721	346722						

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42





Soil Analysis Certificate - TPH CWG Banded										
DETS Report No: 18-78602	Date Sampled	None Supplied								
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied								
Site Reference: Eastergate Development Site	TP / BH No	BH12	BH13	BH14	BH15	BH15				
Project / Job Ref: None Supplied	Additional Refs	None Supplied								
Order No: None Supplied	Depth (m)	0.50	0.25	0.50	0.50	0.25				
Reporting Date: 18/07/2018	QTSE Sample No	346723	346724	346725	346726	346727				

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42





Soil Analysis Certificate - TPH CWG Banded											
DETS Report No: 18-78602	Date Sampled	None Supplied	None Supplied								
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied								
Site Reference: Eastergate Development Site	TP / BH No	BH17	BH18								
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied								
Order No: None Supplied	Depth (m)	0.25	0.50								
Reporting Date: 18/07/2018	QTSE Sample No	346728	346729								

Determinand	Unit	RL	Accreditation			
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	





Soil Analysis Certificate - BTEX / MTBE										
DETS Report No: 18-78602	Date Sampled	None Supplied								
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied								
Site Reference: Eastergate Development Site	TP / BH No	BH1	BH1	BH3	BH4	BH5				
Project / Job Ref: None Supplied	Additional Refs	None Supplied								
Order No: None Supplied	Depth (m)	0.25	0.50	0.25	0.50	0.25				
Reporting Date: 18/07/2018	QTSE Sample No	346713	346714	346715	346716	346717				

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	3
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5





Soil Analysis Certificate - BTEX / MTBE									
DETS Report No: 18-78602	Date Sampled	None Supplied							
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied							
Site Reference: Eastergate Development Site	TP / BH No	BH7	BH7	BH9	BH11	BH11			
Project / Job Ref: None Supplied	Additional Refs	None Supplied							
Order No: None Supplied	Depth (m)	0.25	0.50	0.25	0.25	0.50			
Reporting Date: 18/07/2018	QTSE Sample No	346718	346719	346720	346721	346722			

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene	ug/kg	< 2	MCERTS	7	< 2	10	3	< 2
o-xylene	ug/kg	< 2	MCERTS	4	< 2	5	2	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5





Soil Analysis Certificate - BTEX / MTBE										
DETS Report No: 18-78602	Date Sampled	None Supplied								
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied								
Site Reference: Eastergate Development Site	TP / BH No	BH12	BH13	BH14	BH15	BH15				
Project / Job Ref: None Supplied	Additional Refs	None Supplied								
Order No: None Supplied	Depth (m)	0.50	0.25	0.50	0.50	0.25				
Reporting Date: 18/07/2018	QTSE Sample No	346723	346724	346725	346726	346727				

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene	ug/kg	< 2	MCERTS	< 2	3	< 2	< 2	3
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
				0-				





Soil Analysis Certificate - BTEX / MTBE									
DETS Report No: 18-78602	Date Sampled	None Supplied	None Supplied						
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied						
Site Reference: Eastergate Development Site	TP / BH No	BH17	BH18						
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied						
Order No: None Supplied	Depth (m)	0.25	0.50						
Reporting Date: 18/07/2018	QTSE Sample No	346728	346729						

Determinand	Unit	RL	Accreditation				
Benzene	ug/kg	< 2	MCERTS	< 2	< 2		
Toluene	ug/kg	< 5	MCERTS	< 5	< 5		
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2		
p & m-xylene	ug/kg	< 2	MCERTS	4	< 2		
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2		
MTBE	ug/kg	< 5	MCERTS	< 5	< 5		





Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 18-78602	
Wilson Bailey Geotechnical & Environmental Ltd	
Site Reference: Eastergate Development Site	
Project / Job Ref: None Supplied	
Order No: None Supplied	
Reporting Date: 18/07/2018	

QTSE Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
^ 346713	BH1	None Supplied	0.25	7.9	Brown sandy clay
^ 346714	BH1	None Supplied	0.50	10.5	Brown sandy clay with stones
^ 346715	BH3	None Supplied	0.25	8.9	Brown sandy clay
^ 346716	BH4	None Supplied	0.50	12.6	Brown sandy clay
^ 346717	BH5	None Supplied	0.25	8.1	Brown sandy clay
^ 346718	BH7	None Supplied	0.25	7.7	Brown sandy clay with vegetation
^ 346719	BH7	None Supplied	0.50	13.8	Brown sandy clay with stones
^ 346720	BH9	None Supplied	0.25	6	Brown sandy clay with vegetation
^ 346721	BH11	None Supplied	0.25	7.8	Brown sandy clay with vegetation
^ 346722	BH11	None Supplied	0.50	12.8	Brown sandy clay
^ 346723	BH12	None Supplied	0.50	14.3	Brown sandy clay with stones
^ 346724	BH13	None Supplied	0.25	8.5	Brown sandy clay with stones
^ 346725	BH14	None Supplied	0.50	13.9	Brown sandy clay
^ 346726	BH15	None Supplied	0.50	14	Brown sandy clay with stones
^ 346727	BH15	None Supplied	0.25	8.3	Brown sandy clay with vegetation
^ 346728	BH17	None Supplied	0.25	8.5	Brown sandy clay
^ 346729	BH18	None Supplied	0.50	13.3	Brown sandy clay

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

Insufficient Sample $^{\mathrm{I/S}}$ Unsuitable Sample $^{\mathrm{U/S}}$





Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 18-78602

Wilson Bailey Geotechnical & Environmental Ltd Site Reference: Eastergate Development Site
Project / Job Ref: None Supplied
Order No: None Supplied
Reporting Date: 18/07/2018

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		Determination of BTEX by headspace GC-MS	E001
Soil	D		Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D		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	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		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		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	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	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 @ 450oC	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		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)	use of surrogate and internal standards	E005
Soil	AR		Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D		Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR		Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR		Determination of phenols by distillation followed by colorimetry	E021
Soil	D		Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D		Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D		Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D AR		Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014 E018
Soil Soil	D AR		Determination of sulphide by distillation followed by colorimetry Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E018
Soil	AR	SVOC	Determination of comi valatile organic compounds by ovtraction in acctone and beyong followed by	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 oxidizing with notacsium dichromate followed by titration with	E010
Soil	AR		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	aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)		E004
Soil	AR		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**





Dominic Brightman
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DETS Ltd

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russell.jarvis@qtsenvironmental.com

DETS Report No: 18-78603

Site Reference: Eastergate Development Site

Project / Job Ref: None Supplied

Order No: None Supplied

Sample Receipt Date: 12/07/2018

Sample Scheduled Date: 12/07/2018

Report Issue Number: 1

Reporting Date: 18/07/2018

Authorised by:

Kevin Old

Associate Director of Laboratory

co co

Authorised by:

Russell Jarvis

Associate Director of Client Services





Soil Analysis Certificate					
DETS Report No: 18-78603	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Eastergate Development Site	TP / BH No	BH R2	BH R4	BH R6	BH R8
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50	0.50	0.50	0.50
Reporting Date: 18/07/2018	QTSE Sample No	346730	346731	346732	346733

Determinand	Unit	RL	Accreditation				
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected
рН	pH Units	N/a	MCERTS	7.0	7.0	7.0	7.0
Total Organic Carbon (TOC)	%	< 0.1	MCERTS	1	0.7	0.6	0.5
Arsenic (As)	mg/kg	< 2	MCERTS	8	7	7	7
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	17	16	20	17
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	12	12	12	12
Lead (Pb)	mg/kg	< 3	MCERTS	23	13	12	13
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	12	12	14	13
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	89	48	44	49
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2





Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 18-78603	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	No
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	No
Site Reference: Eastergate Development Site	TP / BH No	BH R2	BH R4	BH R6	BH R8	
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	No
Order No: None Supplied	Depth (m)	0.50	0.50	0.50	0.50	
Reporting Date: 18/07/2018	QTSE Sample No	346730	346731	346732	346733	

Determinand	Unit	RL	Accreditation				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6





Soil Analysis Certificate - TPH CWG Banded DETS Report No: 18-78603 None Supplied **Date Sampled** None Supplied None Supplied None Supplied None Supplied No Wilson Bailey Geotechnical & Environmental L **Time Sampled** None Supplied None Supplied None Supplied Site Reference: Eastergate Development Site BH R2 BH R4 BH R8 TP / BH No BH R6

Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: None Supplied	Depth (m)	0.50	0.50	0.50	0.50	
Reporting Date: 18/07/2018	QTSE Sample No	346730	346731	346732	346733	

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	





Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 18-78603	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	No
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	No
Site Reference: Eastergate Development Site	TP / BH No	BH R2	BH R4	BH R6	BH R8	
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	No
Order No: None Supplied	Depth (m)	0.50	0.50	0.50	0.50	
Reporting Date: 18/07/2018	QTSE Sample No	346730	346731	346732	346733	
						_

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





Soil Analysis Certificate - Sample Descriptions

DETS Report No: 18-78603
Wilson Bailey Geotechnical & Environmental Ltd
Site Reference: Eastergate Development Site
Project / Job Ref: None Supplied

Order No: None Supplied
Reporting Date: 18/07/2018

QTSE Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
^ 346730	BH R2	None Supplied	0.50	6.3	Brown sandy clay with stones
^ 346731	BH R4	None Supplied	0.50	5.9	Brown sandy clay
^ 346732	BH R6	None Supplied	0.50	9.7	Brown sandy clay with stones
^ 346733	BH R8	None Supplied	0.50	8.1	Brown sandy clay with stones
^ 346734	BH R10	None Supplied	0.50	6	Brown sandy clay

Moisture content is part of procedure E003 & is not an accredited test Insufficient Sample $^{\rm I/S}$

Unsuitable Sample U/S

[^] no sampling date provided; unable to confirm if samples are within acceptable holding times





Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 18-78603

Soil

AR

Wilson Bailey Geotechnical & Environmental Ltd Site Reference: Eastergate Development Site

Project / Job Ref: None Supplied
Order No: None Supplied

Matrix	Analysed On	Determinand	Brief Method Description
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES
Soil	AR		Determination of BTEX by headspace GC-MS
Soil	D		Determination of cations in soil by aqua-regia digestion followed by ICP-OES
Soil	D		Determination of chloride by extraction with water & analysed by ion chromatography
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addi
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry
Soil	AR		Determination of free cyanide by distillation followed by colorimetry
Soil	AR		Determination of total cyanide by distillation followed by colorimetry
Soil	D		Gravimetrically determined through extraction with cyclohexane
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement
Soil	AR	·	Determination of electrical conductivity by addition of water followed by electrometric measure
Soil	D		Determination of elemental sulphur by solvent extraction followed by GC-MS
Soil	AR		Determination of acetone/hexane extractable hydrocarbons by GC-FID
Soil	AR		Determination of acetone/hexane extractable hydrocarbons by GC-FID
Soil	AR	C12-C16, C16-C21, C21-C40)	
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography
Soil	D	FOC (Fraction Organic Carbon)	titration with iron (11) suipnate
Soil	D	Loss on Ignition @ 450oC	rurnace
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES
Soil	AR	· ,	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE ca
Soil	AR		Moisture content; determined gravimetrically
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography
Soil	D	Organic Matter	(11) sulphate
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with use of surrogate and internal standards
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS
Soil	D	, ,	Gravimetrically determined through extraction with petroleum ether
Soil	AR		Determination of pH by addition of water followed by electrometric measurement
Soil	AR		Determination of phenols by distillation followed by colorimetry
Soil	D		Determination of phosphate by extraction with water & analysed by ion chromatography
Soil	D		Determination of total sulphate by extraction with 10% HCl followed by ICP-OES
Soil	D		Determination of sulphate by extraction with water & analysed by ion chromatography
Soil	D AD	, , , , , , , , , , , , , , , , , , , ,	Determination of water soluble sulphate by extraction with water followed by ICP-OES
Soil	AR D		Determination of sulphide by distillation followed by colorimetry
Soil Soil	AR	Suipnur - Totai SVOC	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES Determination of semi-volatile organic compounds by extraction in acetone and hexane followe MS
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration w (II) sulphate
		TPH CWG (ali: C5- C6, C6-C8, C8-C10,	

C10-C12, C12-C16, C16-C21, C21-C34, Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE ca

aro: C5-C7, C7-C8, C8-C10, C10-C12, for C8 to C35. C5 to C8 by headspace GC-MS

C12-C16, C16-C21, C21-C35)





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russell.jarvis@qtsenvironmental.com

DETS Report No: 18-78604

Site Reference: Eastergate Development Site

Project / Job Ref: None Supplied

Order No: None Supplied

Sample Receipt Date: 12/07/2018

Sample Scheduled Date: 12/07/2018

Report Issue Number: 1

Reporting Date: 18/07/2018

Authorised by:

Kevin Old

Associate Director of Laboratory

co co

Authorised by:

Russell Jarvis

Associate Director of Client Services





Tel: 01622 850410

DETS Report No: 18-78604		Date Sampled	None Supplied			Landfill Wast	te Acceptance C	Criteria Limit
Wilson Bailey Geotechnical & Environmental Ltd		Time Sampled	None Supplied					
Site Reference: Eastergate Development Site		TP / BH No	Clay WAC				Stable Non-	
Project / Job Ref: None Supplied Additional Refs		Additional Refs	None Supplied			Inert Waste Landfill	reactive HAZARDOUS waste in non-	Hazardous Waste
Order No: None Supplied		Depth (m)	None Supplied				hazardous Landfill	Landfill
Reporting Date: 18/07/2018		QTSE Sample No	346735					
Determinand	Unit	MDL						
TOC ^{MU}	%		0.4			3%	5%	6%
Loss on Ignition BTEX ^{MU}	% mg/kg	< 0.01	2.70					10%
Sum of PCBs	mg/kg mg/kg	< 0.05 < 0.1	< 0.05 < 0.1			<u>6</u>		
Mineral Oil ^{MU}	mg/kg		< 10			500		
Total PAH ^{MU}	mg/kg		< 1.7			100		
oH ^{MU}	pH Units		7.0				>6	
Acid Neutralisation Capacity	mol/kg (+/-)		< 1			<u></u>	To be evaluated	To be evaluated
Eluate Analysis			2:1	8:1	Cumulative 10:1		for compliance N 12457-3 at l	leaching tes
			mg/l	mg/l	mg/kg		(mg/kg)	,, ,
Arsenic ^U			< 0.01	< 0.01	< 0.2	0.5	2	25
Barium ^u			< 0.02	< 0.02	< 0.1	20	100	300
Cadmium ^U			< 0.0005	< 0.0005	< 0.02	0.04	1	5
<u>Chromium^U</u>	_		< 0.005	< 0.005	< 0.20	0.5	10	70
Copper ^U	4		< 0.01	< 0.01	< 0.5	2	50	100
Mercury ^U			< 0.005	< 0.005	< 0.01	0.01	0.2	2
Molybdenum ^u Nickel ^u	\dashv		< 0.001 < 0.007	< 0.001 < 0.007	< 0.1 < 0.2	0.5 0.4	10 10	30 40
Lead ^U	-		< 0.007	< 0.007	< 0.2	0.5	10	50
Antimony ^U			< 0.005	< 0.005	< 0.06	0.06	0.7	5
Selenium ^U	1		< 0.005	< 0.005	< 0.1	0.1	0.5	<u></u>
Zinc ^U			< 0.005	< 0.005	< 0.2	4	50	200
Chloride ^U	7	ľ	2	1	14	800	15000	25000
Fluoride ^U		ļ	< 0.5	< 0.5	< 1	10	150	500
Sulphate ^U			1	< 1	< 20	1000	20000	50000
TDS	_		58	43	447	4000	60000	100000
Phenol Index	4		< 0.01	< 0.01	< 0.5	1	-	-
DOC			3.3	9.2	85.5	500	800	1000
Leach Test Information								
	1							
Sample Mass (kg)			0.20			I		
Ory Matter (%)			85.4			I		
Moisture (%)			17			ł		
Stage 1 Volume Eluate L2 (litres)			0.32			ł		
Filtered Eluate L2 (litres)			0.32			ł		
elitered Elliate ve i dirrect								

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and QTS Environmental cannot be held responsible for any discrepencies with current legislation
M Denotes MCERTS accredited test

U Denotes ISO17025 accredited test





Soil Analysis Certificate - Sample Descriptions
DETS Report No: 18-78604

Wilson Bailey Geotechnical & Environmental Ltd
Site Reference: Eastergate Development Site

Project / Job Ref: None Supplied

Order No: None Supplied

Reporting Date: 18/07/2018

QTSE Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
^ 346735	Clay WAC	None Supplied	None Supplied	14.5	Brown sandy clay with stones

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

Insufficient Sample I/S

Unsuitable Sample $^{\mathrm{U/S}}$

[^] no sampling date provided; unable to confirm if samples are within acceptable holding times





Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 18-78604

Soil

AR

Wilson Bailey Geotechnical & Environmental Ltd Site Reference: Eastergate Development Site

Project / Job Ref: None Supplied
Order No: None Supplied
Reporting Date: 18/07/2018

Matrix	Analysed On	Determinand	Brief Method Description
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES
Soil	AR		Determination of BTEX by headspace GC-MS
Soil	D		Determination of cations in soil by aqua-regia digestion followed by ICP-OES
Soil	D		Determination of chloride by extraction with water & analysed by ion chromatography
Cail	AD		Determination of hexavalent chromium in soil by extraction in water then by acidification, additi
Soil	AR	Chromium - Hexavalent	1,5 diphenylcarbazide followed by colorimetry
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry
Soil	AR		Determination of total cyanide by distillation followed by colorimetry
Soil	D		Gravimetrically determined through extraction with cyclohexane
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID
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Soil	AR		Determination of acetone/hexane extractable hydrocarbons by GC-FID
Soil	AR		Determination of acetone/hexane extractable hydrocarbons by GC-FID
Soil	AR	C12-C16, C16-C21, C21-C40)	
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a mu furnace
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE ca
Soil	AR	Moisture Content	Moisture content; determined gravimetrically
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration wi (II) sulphate
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with
			use of surrogate and internal standards
Soil	AR		Determination of PCB by extraction with acetone and hexane followed by GC-MS
Soil	D		Gravimetrically determined through extraction with petroleum ether
Soil	AR		Determination of pH by addition of water followed by electrometric measurement
Soil	AR		Determination of phenols by distillation followed by colorimetry
Soil	D		Determination of phosphate by extraction with water & analysed by ion chromatography
Soil	D D		Determination of total sulphate by extraction with 10% HCl followed by ICP-OES
Soil Soil	D D		Determination of sulphate by extraction with water & analysed by ion chromatography Determination of water soluble sulphate by extraction with water followed by ICP-OFS
Soil	AR	, , , , , , , , , , , , , , , , , , , ,	Determination of water soluble sulphate by extraction with water followed by ICP-OES Determination of sulphide by distillation followed by colorimetry
Soil	D AR		Determination of sulphide by distillation followed by Colormetry Determination of total sulphur by extraction with aqua-regia followed by ICP-OES
Soil	AR	SVOC	Determination of comi-valatile organic compounds by extraction in acctone and beyong followers
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration wi
		TPH CWG (ali: C5- C6, C6-C8, C8-C10,	

C10-C12, C12-C16, C16-C21, C21-C34, Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE ca

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C12-C16, C16-C21, C21-C35)