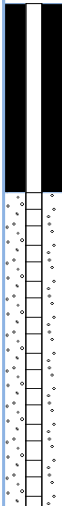
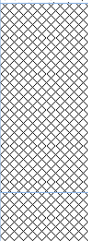
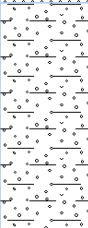
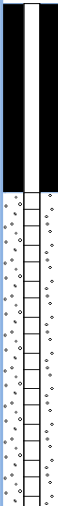
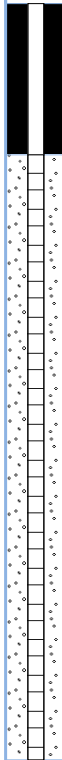
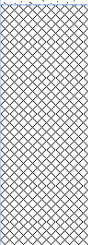
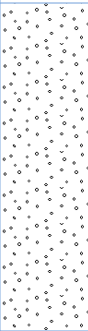
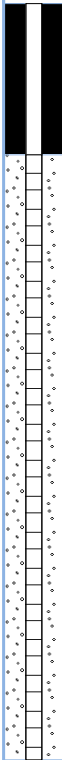
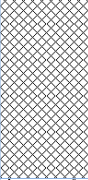
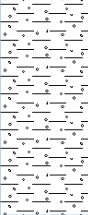
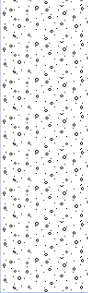


BROWNFIELD SOLUTIONS LTD						Borehole Log		Window Sampler No.		
								WS02		
								Sheet 1 of 1		
PROJECT NO: M4993						CO-ORDS:		Hole Type		
								WS		
PROJECT NAME: GARMAN ROAD, TOTTENHAM						LEVEL:		Scale		
								1:30		
CLIENT: SHURGARD UK						DATES: 21/03/22 - 22/03/22		Logged	Checked	
								SRP	JW	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description		
		Depth (m)	Type	Results						
					0.15			MADE GROUND: CONCRETE.		
		0.30	ES PID	0.0PPM				MADE GROUND: Firm dark brown gravelly clay. Gravel is angular to sub-angular fine to coarse of concrete, brick, chert and siltstone.		
		1.00	ES PID	0.0PPM	0.90			MADE GROUND: Firm brown gravelly clay. Gravel is sub-angular fine to coarse of brick and chert with rare pottery.	1.0	
		1.20	SPT	N=16 (1,1/4,4,4,4)	1.10		Orange and brown clayey GRAVEL. Gravel is sub-angular fine to coarse of chert.			
		1.60	ES PID	0.0PPM						
		2.00	SPT	N≥50 (6,9/50 for 250mm)	2.00			End of Borehole at 2.00m	2.0	
									3.0	
									4.0	
									5.0	
									6.0	
Remarks		1. Location scanned and cleared with CAT and Genny. 2. Hand-dug inspection pit excavated to 1.20m bgl. 3. No groundwater encountered. 4. Borehole installed; GL to 0.75m bgl plain, 0.75m to 2.00m bgl slotted.						ES = Environmental Sample D = Disturbed Sample B = Bulk Sample LB = Large Bulk Sample U = Undisturbed Sample UT = Undisturbed Thin Wall Sample SPT = Standard Penetration Test PID = Photoionization Detector (ppm) PPM = Part Per Million HSV = Hand Shear Vane		

BROWNFIELD SOLUTIONS LTD						Borehole Log		Window Sampler No.		
PROJECT NO: M4993						CO-ORDS:		WS03		
								Sheet 1 of 1		
PROJECT NAME: GARMAN ROAD, TOTTENHAM						LEVEL:		Hole Type		
								WS		
CLIENT: SHURGARD UK						DATES: 21/03/22 - 22/03/22		Scale		
								1:30		
						Logged		Checked		
						SRP		JW		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.20	ES PID	0.0PPM	0.12 0.32			MADE GROUND: CONCRETE.		
								MADE GROUND: Light brown and grey sandy gravel with medium cobble content. Gravel is angular to sub-angular fine to coarse of brick, concrete, pottery and chert. Cobble are angular of brick and concrete.		
								MADE GROUND: Firm dark brown gravelly clay. Gravel is sub-angular fine to coarse of brick and chert.		
		0.80	ES PID	0.0PPM	0.95			Firm brown CLAY.	1.0	
		1.20	SPT	N=4 (0,0/1,1,1,1)						
		1.30	ES PID	0.0PPM						
					1.70			Brown clayey GRAVEL. Gravel is sub-rounded fine to coarse of chert.		
		1.90	ES PID	0.0PPM	2.00					
		2.00	SPT	N≥50 (5,7/50 for 290mm)				End of Borehole at 2.00m	2.0	
									3.0	
									4.0	
									5.0	
									6.0	
Remarks		1. Location scanned and cleared with CAT and Genny. 2. Hand-dug inspection pit excavated to 1.20m bgl. 3. No groundwater encountered. 4. Borehole installed; GL to 0.75m bgl plain, 0.75m to 2.00m bgl slotted.						ES = Environmental Sample D = Disturbed Sample B = Bulk Sample LB = Large Bulk Sample U = Undisturbed Sample UT = Undisturbed Thin Wall Sample SPT = Standard Penetration Test PID = Photoionization Detector (ppm) PPM = Part Per Million HSV = Hand Shear Vane		

 BROWNFIELD SOLUTIONS LTD						Borehole Log			Window Sampler No. WS04 Sheet 1 of 1 Hole Type WS Scale 1:30 Logged Checked SRP JW	
PROJECT NO: M4993						CO-ORDS:				
PROJECT NAME: GARMAN ROAD, TOTTENHAM						LEVEL:				
CLIENT: SHURGARD UK						DATES: 22/03/22				
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description		
		Depth (m)	Type	Results						
					0.14			MADE GROUND: CONCRETE.	1.0	
								MADE GROUND: Firm dark brown gravelly clay. Gravel is sub-angular fine to coarse of brick, pottery and chert.		
		0.60	ES PID	0.0PPM						
		1.20	SPT	N=7 (1,2/2,2,1,2)	1.10			Firm brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is sub-angular fine to medium of chert.		
		1.60	ES PID	0.0PPM	1.70					
		2.00	SPT	N=36 (5,7/8,9,9,10)				Orange and brown GRAVEL. Gravel is sub-rounded fine to coarse of chert.	2.0	
		2.80	ES PID	0.0PPM				Slow seepage of groundwater below 2.60m bgl.		
		3.00	SPT	N≥50 (8,11/50 for 215mm)	3.00			End of Borehole at 3.00m	3.0	
									4.0	
									5.0	
									6.0	
Remarks		1. Location scanned and cleared with CAT and Genny. 2. Hand-dug inspection pit excavated to 1.20m bgl. 3. Groundwater encountered at 2.60m bgl. 4. Borehole installed; GL to 1.00m bgl plain, 1.00m to 3.00m bgl slotted.							ES = Environmental Sample D = Disturbed Sample B = Bulk Sample LB = Large Bulk Sample U = Undisturbed Sample UT = Undisturbed Thin Wall Sample SPT = Standard Penetration Test PID = Photoionization Detector (ppm) PPM = Part Per Million HSV = Hand Shear Vane	

 BROWNFIELD SOLUTIONS LTD						Borehole Log		Window Sampler No.			
								WS05			
								Sheet 1 of 1			
								Hole Type			
PROJECT NO: M4993						CO-ORDS:		WS			
PROJECT NAME: GARMAN ROAD, TOTTENHAM						LEVEL:		Scale			
								1:30			
CLIENT: SHURGARD UK						DATES: 22/03/22		Logged	Checked		
								SRP			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description			
		Depth (m)	Type	Results							
					0.18			MADE GROUND: CONCRETE.			
		0.40	ES PID	0.0PPM				MADE GROUND: Firm dark brown gravelly clay. Gravel is angular fine to coarse of chert, siltstone, brick and concrete with occasional pottery.			
					0.90			Firm brown slightly gravelly CLAY. Gravel is sub-angular fine to coarse of chert.			
		1.20	SPT	N=5 (1,1/1,1,1,2)							
		1.30	ES PID	0.0PPM							
					1.80						
		2.00	SPT	N=25 (7,7/5,5,6,9)				Brown sandy GRAVEL. Sand is medium to coarse. Gravel is sub-rounded fine to medium of chert and siltstone.			
		2.90	ES PID	0.0PPM							
		3.00	SPT	N≥50 (7,8/50 for 280mm)	3.00			End of Borehole at 3.00m			
Remarks		1. Location scanned and cleared with CAT and Genny. 2. Hand-dug inspection pit excavated to 1.20m bgl. 3. No groundwater encountered. 4. Borehole installed; GL to 0.60m bgl plain, 0.60m to 3.00m bgl slotted.						ES = Environmental Sample D = Disturbed Sample B = Bulk Sample LB = Large Bulk Sample U = Undisturbed Sample UT = Undisturbed Thin Wall Sample SPT = Standard Penetration Test PID = Photoionization Detector (ppm) PPM = Part Per Million HSV = Hand Shear Vane			

APPENDIX C

Chemical Testing Results

**S. Piercy**

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WD18 8YS

t: 01923 225404

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e: reception@i2analytical.com

Analytical Report Number : 22-47831

Project / Site name:	Garman Road	Samples received on:	24/03/2022
Your job number:	M4993	Samples instructed on/ Analysis started on:	24/03/2022
Your order number:	M4993-2969-SRP	Analysis completed by:	31/03/2022
Report Issue Number:	1	Report issued on:	31/03/2022
Samples Analysed:	14 soil samples		


Signed:

Joanna Wawrzeczko
Technical Reviewer (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

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

Analytical Report Number: 22-47831
Project / Site name: Garman Road
Your Order No: M4993-2969-SRP

Lab Sample Number				2216768	2216769	2216770	2216771	2216772
Sample Reference				WS01	WS01	WS01	WS01	WS02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	1.00	1.50	3.50	1.00
Date Sampled				21/03/2022	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	-	< 0.1	< 0.1	40	< 0.1
Moisture Content	%	0.01	NONE	-	19	24	7.5	17
Total mass of sample received	kg	0.001	NONE	-	0.8	0.8	0.8	0.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	GFI	GFI			GFI

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	8.7	8.3	8.6	7.6
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	0.16	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	710	-	130	90
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.35	0.4	0.063	0.045
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	353	400	63.1	45.1
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	21	-	-
Total Sulphur	%	0.005	MCERTS	-	-	0.066	-	-
Ammoniacal Nitrogen as NH ₄	mg/kg	0.5	MCERTS	-	-	1	-	-
Ammonium as NH ₄ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	-	-	0.1	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	3.9	-	0.4	1.1
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	-	40	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	-	0.94	-	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	-	1.9	-	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	-	1.9	-	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	1.1	-	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	1.1	-	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	1.1	-	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	0.78	-	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	1	-	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	0.64	-	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.69	-	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	11.2	-	< 0.80	< 0.80
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Analytical Report Number: 22-47831
Project / Site name: Garman Road
Your Order No: M4993-2969-SRP

Lab Sample Number	2216768	2216769	2216770	2216771	2216772
Sample Reference	WS01	WS01	WS01	WS01	WS02
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40	1.00	1.50	3.50	1.00
Date Sampled	21/03/2022	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	20	-	7.1	9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
Chromium (III)	mg/kg	1	NONE	-	43	-	13	47
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	43	-	13	47
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	66	-	8.8	24
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	310	-	9.2	55
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	0.9	-	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	31	-	15	34
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	180	-	22	80

Magnesium (water soluble)	mg/kg	5	NONE	-	-	40	-	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	20	-	-

Monoaromatics & Oxygenates

Benzene	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
Toluene	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
Ethylbenzene	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
p & m-xylene	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
o-xylene	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	-	< 2.0	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	< 8.0	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	< 8.0	-	< 8.0	-
TPH-CWG - Aliphatic >EC16 - EC35 EH_CU_1D_AL	mg/kg	10	MCERTS	-	< 10	-	< 10	-
TPH-CWG - Aliphatic > EC35 - EC44 EH_CU_1D_AL	mg/kg	8.4	NONE	-	< 8.4	-	< 8.4	-
TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_1D_AL	mg/kg	10	MCERTS	-	< 10	-	< 10	-
TPH-CWG - Aliphatic (EC5 - EC44) EH_CU+HS_1D_AL	mg/kg	10	NONE	-	< 10	-	< 10	-

TPH-CWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-	< 2.0	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-	12	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-	31	-	< 10	-
TPH-CWG - Aromatic > EC35 - EC44 EH_CU_1D_AR	mg/kg	8.4	NONE	-	< 8.4	-	< 8.4	-
TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_1D_AR	mg/kg	10	MCERTS	-	43	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC44) EH_CU+HS_1D_AR	mg/kg	10	NONE	-	43	-	< 10	-

VOCs

Chloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Chloroethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Bromomethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Vinyl Chloride	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Trichlorofluoromethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,1-Dichloroethene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-

Analytical Report Number: 22-47831
Project / Site name: Garman Road
Your Order No: M4993-2969-SRP

Lab Sample Number				2216768	2216769	2216770	2216771	2216772
Sample Reference				WS01	WS01	WS01	WS01	WS02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	1.00	1.50	3.50	1.00
Date Sampled				21/03/2022	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Trichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Tetrachloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Trichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Dibromomethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Bromodichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Tetrachloroethene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Chlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
p & m-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Styrene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Tri bromomethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
o-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Isopropylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Bromobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-47831
Project / Site name: Garman Road
Your Order No: M4993-2969-SRP

Lab Sample Number				2216773	2216774	2216775	2216776	2216777
Sample Reference				WS02	WS03	WS03	WS03	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.60	0.20	0.80	1.30	0.60
Date Sampled				22/03/2022	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	-	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	6.1	-	22	24	8.4
Total mass of sample received	kg	0.001	NONE	0.8	-	0.8	0.4	0.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	Not-detected	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A		GFI	ASE		ASE

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.5	-	8.2	7.9	8.2
Total Sulphate as SO4	%	0.005	MCERTS	-	-	-	0.037	-
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	20	-	150	-	21
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.01	-	0.075	0.074	0.011
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	10.1	-	75.4	73.9	10.5
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	2.7	-
Total Sulphur	%	0.005	MCERTS	-	-	-	0.016	-
Ammoniacal Nitrogen as NH4	mg/kg	0.5	MCERTS	-	-	-	< 0.5	-
Ammonium as NH4 (10:1 leachate equivalent)	mg/l	0.05	MCERTS	-	-	-	< 0.05	-
Organic Matter (automated)	%	0.1	MCERTS	0.3	-	3.2	-	0.3
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	-	-	2.5	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-	0.43	-	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	0.95	-	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-	0.84	-	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	0.8	-	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	0.55	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	0.66	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	0.5	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	0.73	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	0.37	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	0.42	-	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	-	6.25	-	< 0.80
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Analytical Report Number: 22-47831
Project / Site name: Garman Road
Your Order No: M4993-2969-SRP

Lab Sample Number				2216773	2216774	2216775	2216776	2216777
Sample Reference				WS02	WS03	WS03	WS03	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.60	0.20	0.80	1.30	0.60
Date Sampled				22/03/2022	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Heavy Metals / Metalloids				%	0.1	NONE		
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	-	19	-	5.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	< 0.2
Chromium (III)	mg/kg	1	NONE	18	-	43	-	10
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	-	43	-	10
Copper (aqua regia extractable)	mg/kg	1	MCERTS	11	-	92	-	13
Lead (aqua regia extractable)	mg/kg	1	MCERTS	9	-	240	-	8.3
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	1.2	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17	-	29	-	12
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	28	-	170	-	20

Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	15	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	7.3	-

Monoaromatics & Oxygenates

Benzene	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
Toluene	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
Ethylbenzene	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
p & m-xylene	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
o-xylene	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC16 - EC35 EH_CU_1D_AL	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aliphatic > EC35 - EC44 EH_CU_1D_AL	mg/kg	8.4	NONE	-	-	-	-	< 8.4
TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_1D_AL	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aliphatic (EC5 - EC44) EH_CU+HS_1D_AL	mg/kg	10	NONE	-	-	-	-	< 10

TPH-CWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic > EC35 - EC44 EH_CU_1D_AR	mg/kg	8.4	NONE	-	-	-	-	< 8.4
TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_1D_AR	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic (EC5 - EC44) EH_CU+HS_1D_AR	mg/kg	10	NONE	-	-	-	-	< 10

VOCs

Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Chloroethane	µg/kg	1	NONE	-	-	-	-	< 1.0
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	< 1.0

Analytical Report Number: 22-47831
Project / Site name: Garman Road
Your Order No: M4993-2969-SRP

Lab Sample Number				2216773	2216774	2216775	2216776	2216777
Sample Reference				WS02	WS03	WS03	WS03	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.60	0.20	0.80	1.30	0.60
Date Sampled				22/03/2022	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	0.1	MCERTS	-	-	-	-	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	< 1.0
Benzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Styrene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Tri bromomethane	µg/kg	1	NONE	-	-	-	-	< 1.0
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-47831
Project / Site name: Garman Road
Your Order No: M4993-2969-SRP

Lab Sample Number				2216778	2216779	2216780	2216781
Sample Reference				WS04	WS05	WS05	HP01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.80	0.40	2.90	0.90
Date Sampled				22/03/2022	22/03/2022	22/03/2022	21/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	70	< 0.1
Moisture Content	%	0.01	NONE	16	16	4.4	17
Total mass of sample received	kg	0.001	NONE	0.8	0.4	0.8	0.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	Chrysotile- Loose Fibres
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-	Detected
Asbestos Analyst ID	N/A	N/A	N/A		ASE		ASE

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.4	7.4	8.3	8.1
Total Sulphate as SO ₄	%	0.005	MCERTS	0.176	-	0.022	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	720	-	65
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.3	0.36	0.028	0.032
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	301	358	28.4	32.3
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	15	-	5.1	-
Total Sulphur	%	0.005	MCERTS	0.075	-	0.008	-
Ammoniacal Nitrogen as NH ₄	mg/kg	0.5	MCERTS	< 0.5	-	< 0.5	-
Ammonium as NH ₄ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	< 0.05	-	< 0.05	-
Organic Matter (automated)	%	0.1	MCERTS	-	4.4	-	5.6
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	48	-	3.6	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	-	0.73	-	1.4
Anthracene	mg/kg	0.05	MCERTS	-	0.19	-	0.3
Fluoranthene	mg/kg	0.05	MCERTS	-	1.4	-	2.8
Pyrene	mg/kg	0.05	MCERTS	-	1.3	-	2.8
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	0.91	-	1.6
Chrysene	mg/kg	0.05	MCERTS	-	0.91	-	1.4
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	0.95	-	1.6
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	0.71	-	0.9
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	1	-	1.7
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	0.57	-	0.86
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	0.17
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.72	-	1.2

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	9.4	-	16.7
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Analytical Report Number: 22-47831
Project / Site name: Garman Road
Your Order No: M4993-2969-SRP

Lab Sample Number				2216778	2216779	2216780	2216781
Sample Reference				WS04	WS05	WS05	HP01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.80	0.40	2.90	0.90
Date Sampled				22/03/2022	22/03/2022	22/03/2022	21/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Heavy Metals / Metalloids				%	0.1	NONE	
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	26	-	99
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2
Chromium (III)	mg/kg	1	NONE	-	40	-	45
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	40	-	45
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	70	-	280
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	460	-	270
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	1.6	-	0.5
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	30	-	56
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	210	-	560

Magnesium (water soluble)	mg/kg	5	NONE	63	-	7.1	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	32	-	3.6	-

Monoaromatics & Oxygenates

Benzene	mg/kg	0.001	MCERTS	< 0.001	-	-	-
Toluene	mg/kg	0.001	MCERTS	< 0.001	-	-	-
Ethylbenzene	mg/kg	0.001	MCERTS	< 0.001	-	-	-
p & m-xylene	mg/kg	0.001	MCERTS	< 0.001	-	-	-
o-xylene	mg/kg	0.001	MCERTS	< 0.001	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.001	MCERTS	< 0.001	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 HS_ID_AL	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 HS_ID_AL	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 HS_ID_AL	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_ID_AL	mg/kg	1	MCERTS	< 1.0	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_ID_AL	mg/kg	2	MCERTS	< 2.0	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_ID_AL	mg/kg	8	MCERTS	< 8.0	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_ID_AL	mg/kg	8	MCERTS	< 8.0	-	-	-
TPH-CWG - Aliphatic >EC16 - EC35 EH_CU_ID_AL	mg/kg	10	MCERTS	< 10	-	-	-
TPH-CWG - Aliphatic > EC35 - EC44 EH_CU_ID_AL	mg/kg	8.4	NONE	< 8.4	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_ID_AL	mg/kg	10	MCERTS	< 10	-	-	-
TPH-CWG - Aliphatic (EC5 - EC44) EH_CU+HS_ID_AL	mg/kg	10	NONE	< 10	-	-	-

TPH-CWG - Aromatic >EC5 - EC7 HS_ID_AR	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 HS_ID_AR	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 HS_ID_AR	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 EH_CU_ID_AR	mg/kg	1	MCERTS	< 1.0	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 EH_CU_ID_AR	mg/kg	2	MCERTS	< 2.0	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 EH_CU_ID_AR	mg/kg	10	MCERTS	11	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 EH_CU_ID_AR	mg/kg	10	MCERTS	26	-	-	-
TPH-CWG - Aromatic > EC35 - EC44 EH_CU_ID_AR	mg/kg	8.4	NONE	< 8.4	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_ID_AR	mg/kg	10	MCERTS	37	-	-	-
TPH-CWG - Aromatic (EC5 - EC44) EH_CU+HS_ID_AR	mg/kg	10	NONE	37	-	-	-

VOCs

Chloromethane	µg/kg	1	ISO 17025	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-

Analytical Report Number: 22-47831
Project / Site name: Garman Road
Your Order No: M4993-2969-SRP

Lab Sample Number				2216778	2216779	2216780	2216781
Sample Reference				WS04	WS05	WS05	HP01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.80	0.40	2.90	0.90
Date Sampled				22/03/2022	22/03/2022	22/03/2022	21/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	0.1	MCERTS	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-
Tri bromomethane	µg/kg	1	NONE	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-47831

Project / Site name: Garman Road

* 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 *
2216769	WS01	None Supplied	1	Brown clay and sand with gravel and vegetation.
2216770	WS01	None Supplied	1.5	Light brown clay and sand with gravel.
2216771	WS01	None Supplied	3.5	Light grey sand with gravel and stones.
2216772	WS02	None Supplied	1	Light brown clay and sand with gravel.
2216773	WS02	None Supplied	1.6	Light brown sand with gravel.
2216775	WS03	None Supplied	0.8	Brown clay and loam with gravel.
2216776	WS03	None Supplied	1.3	Light brown clay.
2216777	WS04	None Supplied	0.6	Light brown sand with gravel.
2216778	WS04	None Supplied	2.8	Brown loam and clay with gravel.
2216779	WS05	None Supplied	0.4	Brown loam and clay with gravel and brick.
2216780	WS05	None Supplied	2.9	Light brown sand with stones and gravel
2216781	HP01	None Supplied	0.9	Brown loam and clay with gravel and coal.

Analytical Report Number : 22-47831

Project / Site name: Garman Road

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
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.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	NONE
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES.	In-house method based on TRL 447	L038-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	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
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.	L019-UK/PL	D	NONE
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L0738-PL	W	MCERTS
Ammonium as NH4 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS

Analytical Report Number : 22-47831

Project / Site name: Garman Road

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L0738-PL	W	MCERTS
Water Soluble Nitrate (2:1) as N in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction.	L078-PL	W	NONE
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' 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.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 22-47831

Replaces Analytical Report Number: 22-47831, issue no. 1
Additional analysis undertaken.

Project / Site name:	Garman Road	Samples received on:	24/03/2022
Your job number:	M4993	Samples instructed on/ Analysis started on:	24/03/2022
Your order number:	M4993-2969-SRP	Analysis completed by:	07/04/2022
Report Issue Number:	2	Report issued on:	08/04/2022
Samples Analysed:	14 soil samples		


Signed:

Joanna Wawrzeczko
Technical Reviewer (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

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

Analytical Report Number: 22-47831
Project / Site name: Garman Road
Your Order No: M4993-2969-SRP

Lab Sample Number	2216768	2216769	2216770	2216771	2216772
Sample Reference	WS01	WS01	WS01	WS01	WS02
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40	1.00	1.50	3.50	1.00
Date Sampled	21/03/2022	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	-	< 0.1
Moisture Content	%	0.01	NONE	-	19
Total mass of sample received	kg	0.001	NONE	-	0.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	-	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	GFI	GFI	N/A	N/A	GFI

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	8.7	8.3	8.6	7.6
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	0.16	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	710	-	130	90
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.35	0.4	0.063	0.045
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	353	400	63.1	45.1
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	21	-	-
Total Sulphur	%	0.005	MCERTS	-	-	0.066	-	-
Ammoniacal Nitrogen as NH ₄	mg/kg	0.5	MCERTS	-	-	1	-	-
Ammonium as NH ₄ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	-	-	0.1	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	3.9	-	0.4	1.1
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	-	40	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	-	0.94	-	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	-	1.9	-	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	-	1.9	-	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	1.1	-	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	1.1	-	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	1.1	-	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	0.78	-	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	1	-	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	0.64	-	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.69	-	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	11.2	-	< 0.80	< 0.80
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Analytical Report Number: 22-47831
Project / Site name: Garman Road
Your Order No: M4993-2969-SRP

Lab Sample Number	2216768	2216769	2216770	2216771	2216772
Sample Reference	WS01	WS01	WS01	WS01	WS02
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40	1.00	1.50	3.50	1.00
Date Sampled	21/03/2022	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	20	-	7.1	9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	NONE	-	< 1.2	-	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	-	43	-	13	47
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	43	-	13	47
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	66	-	8.8	24
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	310	-	9.2	55
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	0.9	-	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	31	-	15	34
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	180	-	22	80

Magnesium (water soluble)	mg/kg	5	NONE	-	-	40	-	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	20	-	-

Monoaromatics & Oxygenates

Benzene	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
Toluene	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
Ethylbenzene	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
p & m-xylene	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
o-xylene	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	-	< 2.0	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	< 8.0	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	< 8.0	-	< 8.0	-
TPH-CWG - Aliphatic >EC16 - EC35 EH_CU_1D_AL	mg/kg	10	MCERTS	-	< 10	-	< 10	-
TPH-CWG - Aliphatic > EC35 - EC44 EH_CU_1D_AL	mg/kg	8.4	NONE	-	< 8.4	-	< 8.4	-
TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_1D_AL	mg/kg	10	MCERTS	-	< 10	-	< 10	-
TPH-CWG - Aliphatic (EC5 - EC44) EH_CU+HS_1D_AL	mg/kg	10	NONE	-	< 10	-	< 10	-

TPH-CWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-	< 2.0	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-	12	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-	31	-	< 10	-
TPH-CWG - Aromatic > EC35 - EC44 EH_CU_1D_AR	mg/kg	8.4	NONE	-	< 8.4	-	< 8.4	-
TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_1D_AR	mg/kg	10	MCERTS	-	43	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC44) EH_CU+HS_1D_AR	mg/kg	10	NONE	-	43	-	< 10	-

Analytical Report Number: 22-47831
Project / Site name: Garman Road
Your Order No: M4993-2969-SRP

Lab Sample Number	2216768	2216769	2216770	2216771	2216772
Sample Reference	WS01	WS01	WS01	WS01	WS02
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40	1.00	1.50	3.50	1.00
Date Sampled	21/03/2022	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

VOCs

Chloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Chloroethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Bromomethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Vinyl Chloride	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Trichlorofluoromethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,1-Dichloroethene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Trichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Tetrachloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Trichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Dibromomethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Bromodichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Tetrachloroethene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Chlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
p & m-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Styrene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Tribromomethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
o-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Isopropylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Bromobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-

Analytical Report Number: 22-47831
 Project / Site name: Garman Road
 Your Order No: M4993-2969-SRP

Lab Sample Number				2216768	2216769	2216770	2216771	2216772
Sample Reference				WS01	WS01	WS01	WS01	WS02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	1.00	1.50	3.50	1.00
Date Sampled				21/03/2022	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-47831
 Project / Site name: Garman Road
 Your Order No: M4993-2969-SRP

Lab Sample Number				2216773	2216774	2216775	2216776	2216777
Sample Reference				WS02	WS03	WS03	WS03	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.60	0.20	0.80	1.30	0.60
Date Sampled				22/03/2022	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Stone Content				%	0.1	NONE	< 0.1	< 0.1
Moisture Content				%	0.01	NONE	6.1	22
Total mass of sample received				kg	0.001	NONE	0.8	0.4

Asbestos in Soil Screen / Identification Name				Type	N/A	ISO 17025	-	-	-	-
Asbestos in Soil				Type	N/A	ISO 17025	-	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)				%	0.001	ISO 17025	-	-	-	-
Asbestos Quantification Total				%	0.001	ISO 17025	-	-	-	-
Asbestos Analyst ID				N/A	N/A	N/A	N/A	GFI	ASE	ASE

General Inorganics

pH - Automated				pH Units	N/A	MCERTS	6.5	-	8.2	7.9	8.2
Total Sulphate as SO4				%	0.005	MCERTS	-	-	-	0.037	-
Water Soluble Sulphate as SO4 16hr extraction (2:1)				mg/kg	2.5	MCERTS	20	-	150	-	21
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)				g/l	0.00125	MCERTS	0.01	-	0.075	0.074	0.011
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)				mg/l	1.25	MCERTS	10.1	-	75.4	73.9	10.5
Water Soluble Chloride (2:1) (leachate equivalent)				mg/l	0.5	MCERTS	-	-	-	2.7	-
Total Sulphur				%	0.005	MCERTS	-	-	-	0.016	-
Ammoniacal Nitrogen as NH4				mg/kg	0.5	MCERTS	-	-	-	< 0.5	-
Ammonium as NH4 (10:1 leachate equivalent)				mg/l	0.05	MCERTS	-	-	-	< 0.05	-
Organic Matter (automated)				%	0.1	MCERTS	0.3	-	3.2	-	0.3
Water Soluble Nitrate (2:1) as N (leachate equivalent)				mg/l	2	NONE	-	-	-	2.5	-

Speciated PAHs

Naphthalene				mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Acenaphthylene				mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Acenaphthene				mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Fluorene				mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Phenanthrene				mg/kg	0.05	MCERTS	< 0.05	-	0.43	-	< 0.05
Anthracene				mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Fluoranthene				mg/kg	0.05	MCERTS	< 0.05	-	0.95	-	< 0.05
Pyrene				mg/kg	0.05	MCERTS	< 0.05	-	0.84	-	< 0.05
Benzo(a)anthracene				mg/kg	0.05	MCERTS	< 0.05	-	0.8	-	< 0.05
Chrysene				mg/kg	0.05	MCERTS	< 0.05	-	0.55	-	< 0.05
Benzo(b)fluoranthene				mg/kg	0.05	MCERTS	< 0.05	-	0.66	-	< 0.05
Benzo(k)fluoranthene				mg/kg	0.05	MCERTS	< 0.05	-	0.5	-	< 0.05
Benzo(a)pyrene				mg/kg	0.05	MCERTS	< 0.05	-	0.73	-	< 0.05
Indeno(1,2,3-cd)pyrene				mg/kg	0.05	MCERTS	< 0.05	-	0.37	-	< 0.05
Dibenz(a,h)anthracene				mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Benzo(ghi)perylene				mg/kg	0.05	MCERTS	< 0.05	-	0.42	-	< 0.05

Total PAH

Speciated Total EPA-16 PAHs				mg/kg	0.8	MCERTS	< 0.80	-	6.25	-	< 0.80
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Analytical Report Number: 22-47831
Project / Site name: Garman Road
Your Order No: M4993-2969-SRP

Lab Sample Number				2216773	2216774	2216775	2216776	2216777
Sample Reference				WS02	WS03	WS03	WS03	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.60	0.20	0.80	1.30	0.60
Date Sampled				22/03/2022	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	-	19	-	5.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	< 0.2
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2	-	< 1.2	-	< 1.2
Chromium (III)	mg/kg	1	NONE	18	-	43	-	10
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	-	43	-	10
Copper (aqua regia extractable)	mg/kg	1	MCERTS	11	-	92	-	13
Lead (aqua regia extractable)	mg/kg	1	MCERTS	9	-	240	-	8.3
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	1.2	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17	-	29	-	12
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	28	-	170	-	20

Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	15	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	7.3	-

Monoaromatics & Oxygenates

Benzene	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
Toluene	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
Ethylbenzene	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
p & m-xylene	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
o-xylene	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC16 - EC35 EH_CU_1D_AL	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aliphatic > EC35 - EC44 EH_CU_1D_AL	mg/kg	8.4	NONE	-	-	-	-	< 8.4
TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_1D_AL	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aliphatic (EC5 - EC44) EH_CU+HS_1D_AL	mg/kg	10	NONE	-	-	-	-	< 10

TPH-CWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic > EC35 - EC44 EH_CU_1D_AR	mg/kg	8.4	NONE	-	-	-	-	< 8.4
TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_1D_AR	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic (EC5 - EC44) EH_CU+HS_1D_AR	mg/kg	10	NONE	-	-	-	-	< 10

Analytical Report Number: 22-47831
Project / Site name: Garman Road
Your Order No: M4993-2969-SRP

Lab Sample Number				2216773	2216774	2216775	2216776	2216777
Sample Reference				WS02	WS03	WS03	WS03	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.60	0.20	0.80	1.30	0.60
Date Sampled				22/03/2022	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Chloroethane	µg/kg	1	NONE	-	-	-	-	< 1.0
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	< 1.0
Benzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Styrene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Tribromomethane	µg/kg	1	NONE	-	-	-	-	< 1.0
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	< 1.0

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Lab Sample Number				2216773	2216774	2216775	2216776	2216777
Sample Reference				WS02	WS03	WS03	WS03	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.60	0.20	0.80	1.30	0.60
Date Sampled				22/03/2022	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	< 1.0

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-47831
 Project / Site name: Garman Road
 Your Order No: M4993-2969-SRP

Lab Sample Number				2216778	2216779	2216780	2216781
Sample Reference				WS04	WS05	WS05	HP01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.80	0.40	2.90	0.90
Date Sampled				22/03/2022	22/03/2022	22/03/2022	21/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	70	< 0.1
Moisture Content	%	0.01	NONE	16	16	4.4	17
Total mass of sample received	kg	0.001	NONE	0.8	0.4	0.8	0.8

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	Chrysotile
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	< 0.001
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	< 0.001
Asbestos Analyst ID	N/A	N/A	N/A	N/A	ASE	N/A	EC

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.4	7.4	8.3	8.1
Total Sulphate as SO ₄	%	0.005	MCERTS	0.176	-	0.022	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	720	-	65
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.3	0.36	0.028	0.032
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	301	358	28.4	32.3
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	15	-	5.1	-
Total Sulphur	%	0.005	MCERTS	0.075	-	0.008	-
Ammoniacal Nitrogen as NH ₄	mg/kg	0.5	MCERTS	< 0.5	-	< 0.5	-
Ammonium as NH ₄ (10:1 leachate equivalent)	mg/l	0.05	MCERTS	< 0.05	-	< 0.05	-
Organic Matter (automated)	%	0.1	MCERTS	-	4.4	-	5.6
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	48	-	3.6	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	-	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	-	0.73	-	1.4
Anthracene	mg/kg	0.05	MCERTS	-	0.19	-	0.3
Fluoranthene	mg/kg	0.05	MCERTS	-	1.4	-	2.8
Pyrene	mg/kg	0.05	MCERTS	-	1.3	-	2.8
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	0.91	-	1.6
Chrysene	mg/kg	0.05	MCERTS	-	0.91	-	1.4
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	0.95	-	1.6
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	0.71	-	0.9
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	1	-	1.7
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	0.57	-	0.86
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	0.17
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.72	-	1.2

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	9.4	-	16.7
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Analytical Report Number: 22-47831
Project / Site name: Garman Road
Your Order No: M4993-2969-SRP

Lab Sample Number				2216778	2216779	2216780	2216781
Sample Reference				WS04	WS05	WS05	HP01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.80	0.40	2.90	0.90
Date Sampled				22/03/2022	22/03/2022	22/03/2022	21/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	26	-	99
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2
Chromium (hexavalent)	mg/kg	1.2	NONE	-	< 1.2	-	< 1.2
Chromium (III)	mg/kg	1	NONE	-	40	-	45
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	40	-	45
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	70	-	280
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	460	-	270
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	1.6	-	0.5
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	30	-	56
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	210	-	560

Magnesium (water soluble)	mg/kg	5	NONE	63	-	7.1	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	32	-	3.6	-

Monoaromatics & Oxygenates

Benzene	mg/kg	0.001	MCERTS	< 0.001	-	-	-
Toluene	mg/kg	0.001	MCERTS	< 0.001	-	-	-
Ethylbenzene	mg/kg	0.001	MCERTS	< 0.001	-	-	-
p & m-xylene	mg/kg	0.001	MCERTS	< 0.001	-	-	-
o-xylene	mg/kg	0.001	MCERTS	< 0.001	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	0.001	MCERTS	< 0.001	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 HS_ID_AL	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 HS_ID_AL	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 HS_ID_AL	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_ID_AL	mg/kg	1	MCERTS	< 1.0	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_ID_AL	mg/kg	2	MCERTS	< 2.0	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_ID_AL	mg/kg	8	MCERTS	< 8.0	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_ID_AL	mg/kg	8	MCERTS	< 8.0	-	-	-
TPH-CWG - Aliphatic >EC16 - EC35 EH_CU_ID_AL	mg/kg	10	MCERTS	< 10	-	-	-
TPH-CWG - Aliphatic > EC35 - EC44 EH_CU_ID_AL	mg/kg	8.4	NONE	< 8.4	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_ID_AL	mg/kg	10	MCERTS	< 10	-	-	-
TPH-CWG - Aliphatic (EC5 - EC44) EH_CU+HS_ID_AL	mg/kg	10	NONE	< 10	-	-	-

TPH-CWG - Aromatic >EC5 - EC7 HS_ID_AR	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 HS_ID_AR	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 HS_ID_AR	mg/kg	0.001	MCERTS	< 0.001	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 EH_CU_ID_AR	mg/kg	1	MCERTS	< 1.0	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 EH_CU_ID_AR	mg/kg	2	MCERTS	< 2.0	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 EH_CU_ID_AR	mg/kg	10	MCERTS	11	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 EH_CU_ID_AR	mg/kg	10	MCERTS	26	-	-	-
TPH-CWG - Aromatic > EC35 - EC44 EH_CU_ID_AR	mg/kg	8.4	NONE	< 8.4	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_ID_AR	mg/kg	10	MCERTS	37	-	-	-
TPH-CWG - Aromatic (EC5 - EC44) EH_CU+HS_ID_AR	mg/kg	10	NONE	37	-	-	-

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Project / Site name: Garman Road
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Lab Sample Number				2216778	2216779	2216780	2216781
Sample Reference				WS04	WS05	WS05	HP01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.80	0.40	2.90	0.90
Date Sampled				22/03/2022	22/03/2022	22/03/2022	21/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
VOCs							
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-

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 Your Order No: M4993-2969-SRP

Lab Sample Number				2216778	2216779	2216780	2216781
Sample Reference				WS04	WS05	WS05	HP01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.80	0.40	2.90	0.90
Date Sampled				22/03/2022	22/03/2022	22/03/2022	21/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 22-47831
Project / Site name: Garman Road
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
2216781	HP01	0.90	159	Loose Fibres	Chrysotile	< 0.001	< 0.001

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Analytical Report Number : 22-47831
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* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2216769	WS01	None Supplied	1	Brown clay and sand with gravel and vegetation.
2216770	WS01	None Supplied	1.5	Light brown clay and sand with gravel.
2216771	WS01	None Supplied	3.5	Light grey sand with gravel and stones.
2216772	WS02	None Supplied	1	Light brown clay and sand with gravel.
2216773	WS02	None Supplied	1.6	Light brown sand with gravel.
2216775	WS03	None Supplied	0.8	Brown clay and loam with gravel.
2216776	WS03	None Supplied	1.3	Light brown clay.
2216777	WS04	None Supplied	0.6	Light brown sand with gravel.
2216778	WS04	None Supplied	2.8	Brown loam and clay with gravel.
2216779	WS05	None Supplied	0.4	Brown loam and clay with gravel and brick.
2216780	WS05	None Supplied	2.9	Light brown sand with stones and gravel
2216781	HP01	None Supplied	0.9	Brown loam and clay with gravel and coal.

Analytical Report Number : 22-47831
Project / Site name: Garman Road

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
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.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES.	In-house method based on TRL 447	L038-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	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
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.	L019-UK/PL	D	NONE
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Ammonium as NH4 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	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.	In house method.	L009-PL	D	MCERTS
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS

Analytical Report Number : 22-47831
Project / Site name: Garman Road

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L0738-PL	W	MCERTS
Water Soluble Nitrate (2:1) as N in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction.	L078-PL	W	NONE
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' 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.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

APPENDIX D

Geotechnical Testing Results

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Brownfield Solutions Ltd
Client Address: William Smith House, 173 - 183 Witton Street,
Northwich, Cheshire,
CW9 5LP
Contact: S. Piercy
Site Address: Garman Road

Client Reference: M4993
Job Number: 22-47846
Date Sampled: 21/03/2022
Date Received: 24/03/2022
Date Tested: 06/04/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

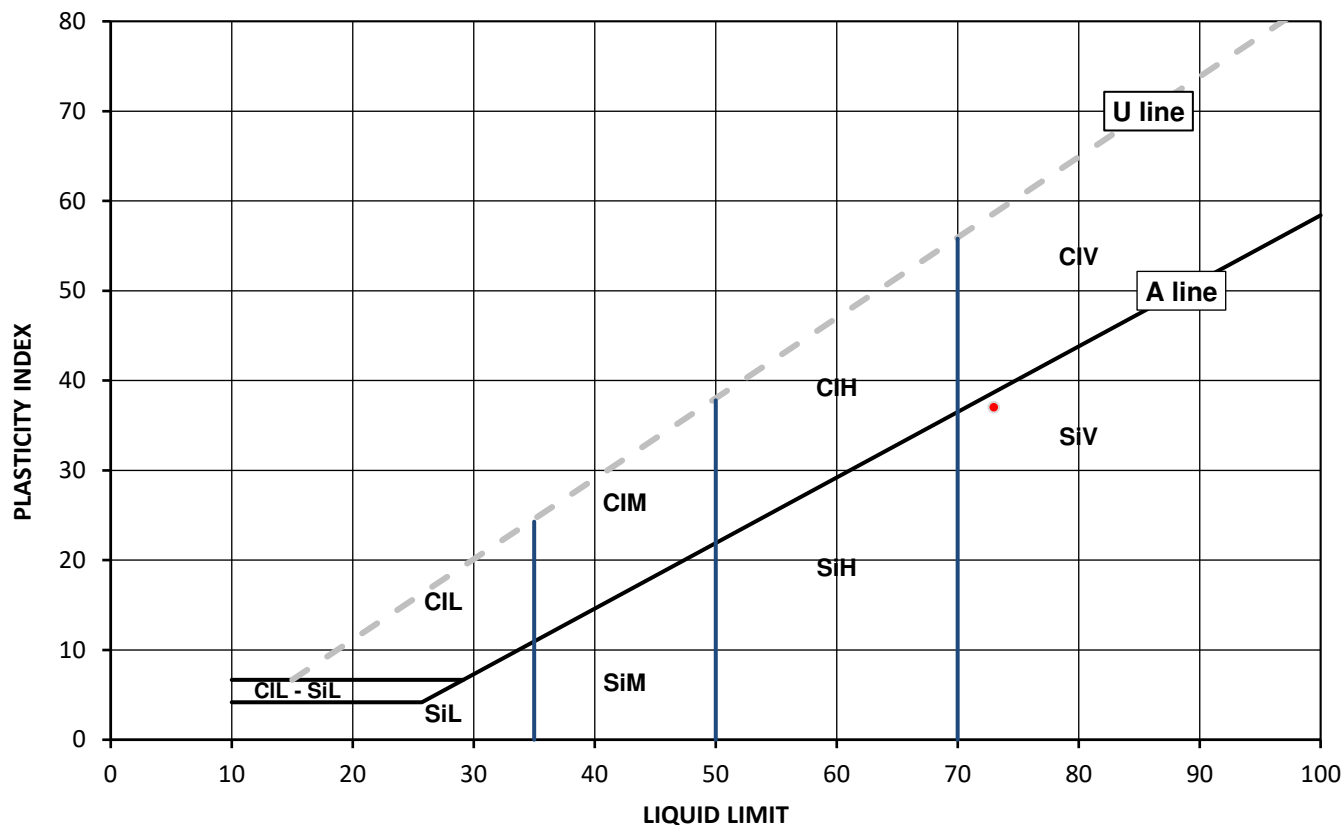
Test Results:

Laboratory Reference: 2216878
Hole No.: WS01
Sample Reference: Not Given
Sample Description: Brownish grey slightly gravelly CLAY

Depth Top [m]: 1.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
44.6	73	36	37	98



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L Low	50 to 70
	M Medium	exceeding 70
	H High	append to classification for organic material (eg CIHO)
	V Very high	
	O Organic	

Note: Water Content by BS EN 17892-1: 2014

Remarks:

Signed:

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Brownfield Solutions Ltd
Client Address: William Smith House, 173 - 183 Witton Street,
Northwich, Cheshire,
CW9 5LP
Contact: S. Piercy
Site Address: Garman Road

Client Reference: M4993
Job Number: 22-47846
Date Sampled: 22/03/2022
Date Received: 24/03/2022
Date Tested: 06/04/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

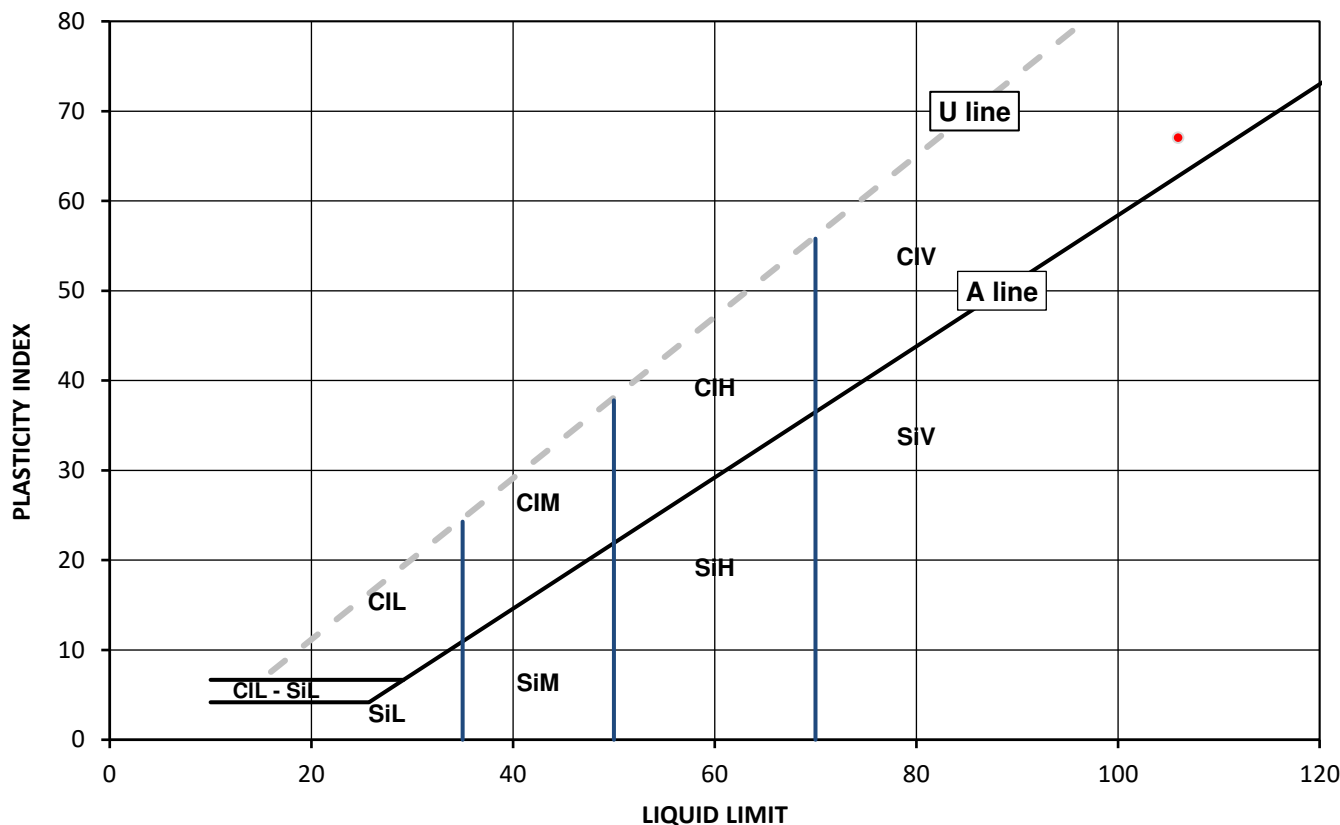
Test Results:

Laboratory Reference: 2216879
Hole No.: WS03
Sample Reference: Not Given
Sample Description: Brownish grey CLAY

Depth Top [m]: 1.30
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
45.4	106	39	67	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

Cl	Clay	Plasticity	Liquid Limit
Si	Silt	L Low	below 35
		M Medium	35 to 50
		H High	50 to 70
		V Very high	exceeding 70
		O Organic	append to classification for organic material (eg CIHO)

Note: Water Content by BS EN 17892-1: 2014

Remarks:

Signed:

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Brownfield Solutions Ltd
Client Address: William Smith House, 173 - 183 Witton Street,
Northwich, Cheshire,
CW9 5LP
Contact: S. Piercy
Site Address: Garman Road

Client Reference: M4993
Job Number: 22-47846
Date Sampled: 22/03/2022
Date Received: 24/03/2022
Date Tested: 06/04/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

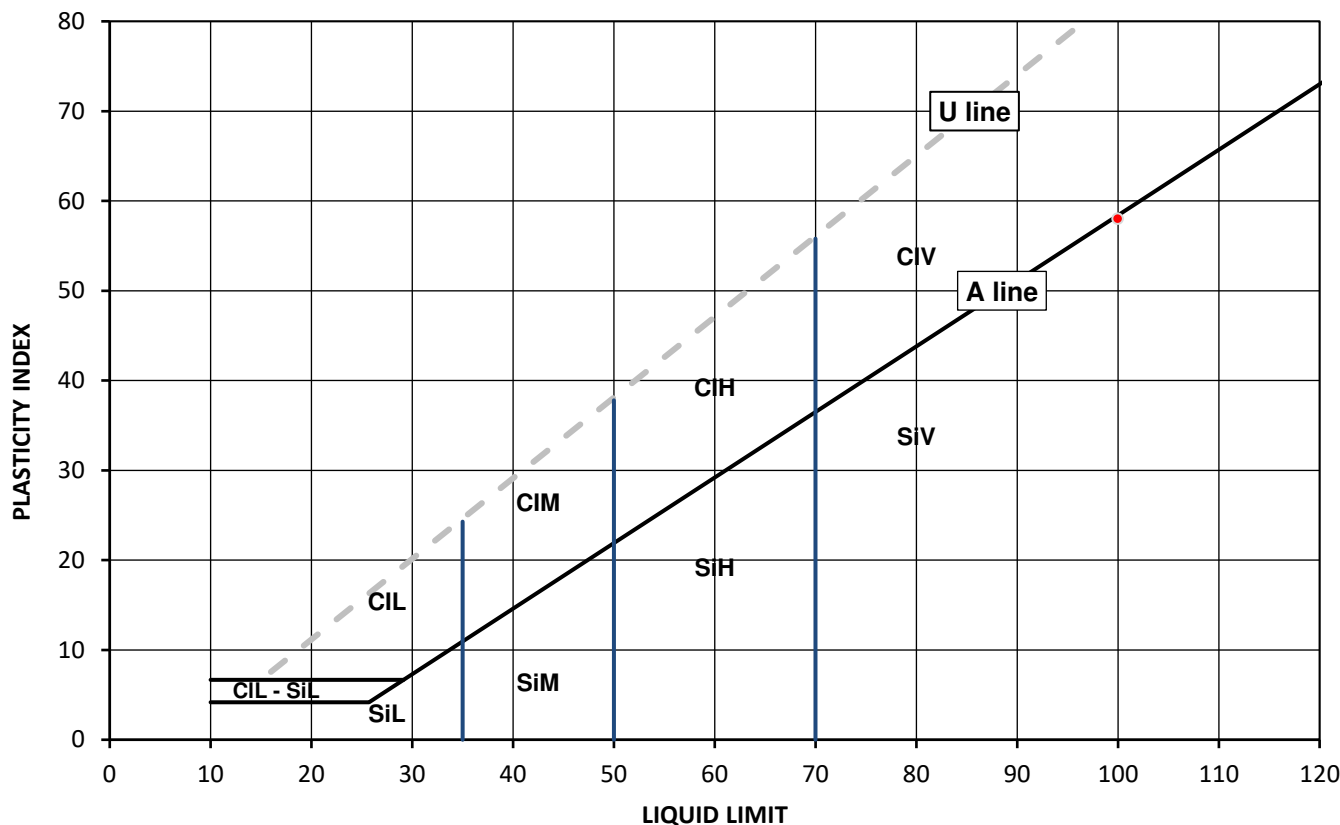
Test Results:

Laboratory Reference: 2216880
Hole No.: WS04
Sample Reference: Not Given
Sample Description: Brownish grey CLAY

Depth Top [m]: 1.60
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
46.2	100	42	58	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

Cl	Clay	Plasticity	Liquid Limit
Si	Silt	L Low	below 35
		M Medium	35 to 50
		H High	50 to 70
		V Very high	exceeding 70
		O Organic	append to classification for organic material (eg CIHO)

Note: Water Content by BS EN 17892-1: 2014

Remarks:

Signed:

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Client: Brownfield Solutions Ltd
Client Address: William Smith House, 173 - 183 Witton Street,
Northwich, Cheshire,
CW9 5LP
Contact: S. Piercy
Site Address: Garman Road

Client Reference: M4993
Job Number: 22-47846
Date Sampled: 22/03/2022
Date Received: 24/03/2022
Date Tested: 06/04/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

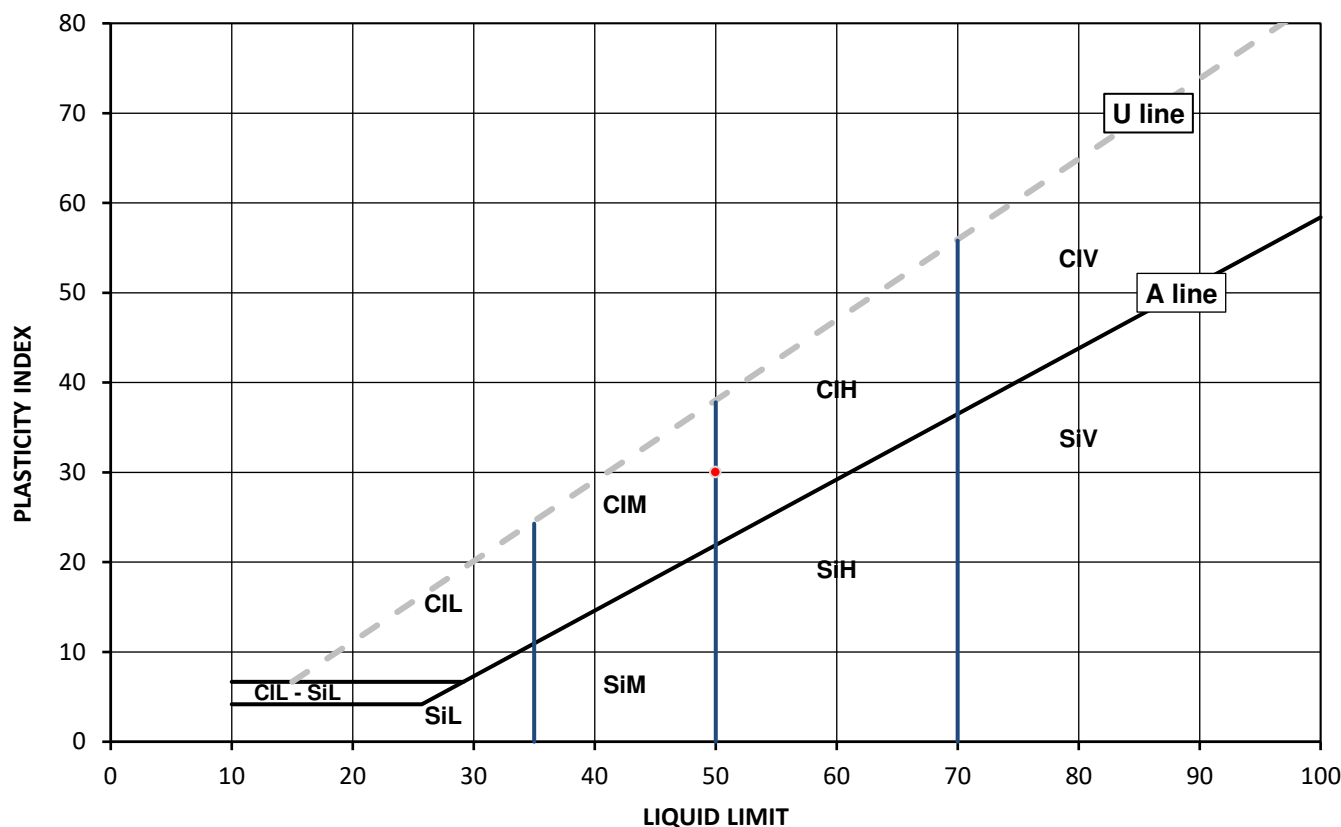
Test Results:

Laboratory Reference: 2216881
Hole No.: WS05
Sample Reference: Not Given
Sample Description: Brownish grey slightly sandy CLAY

Depth Top [m]: 1.30
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
23.5	50	20	30	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl Clay	L Low	below 35
Si Silt	M Medium	35 to 50
	H High	50 to 70
	V Very high	exceeding 70
	O Organic	append to classification for organic material (eg CIHO)

Note: Water Content by BS EN 17892-1: 2014

Remarks:

Signed:

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Reporting Specialist
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SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



4041

Client: Brownfield Solutions Ltd
Client Address: William Smith House, 173 - 183 Witton Street,
Northwich, Cheshire,
CW9 5LP
Contact: S. Piercy
Site Address: Garman Road

Water Content by BS EN ISO 17892-1:2014; Atterberg by BS 1377-2: 1990:
Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2:
1990: Clause 8.2

Client Reference: M4993
Job Number: 22-47846
Date Sampled: 21/03 - 22/03/2022
Date Received: 24/03/2022
Date Tested: 06/04/2022
Sampled By: Not Given

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Water Content BS 1377-2 [W] %	Water Content BS EN ISO 17892-1 [W] %	Atterberg				Density			Total Porosity# %		
		Reference	Depth Top m	Depth Base m	Type					% Passing 425um	WL %	Wp %	Ip %	bulk Mg/m3	dry Mg/m3	PD Mg/m3			
2216878	WS01	Not Given	1.50	Not Given	D	Brownish grey slightly gravelly CLAY	Atterberg 1 Point		44.6	98	73	36	37						
2216879	WS03	Not Given	1.30	Not Given	D	Brownish grey CLAY	Atterberg 1 Point		45.4	100	106	39	67						
2216880	WS04	Not Given	1.60	Not Given	D	Brownish grey CLAY	Atterberg 1 Point		46.2	100	100	42	58						
2216881	WS05	Not Given	1.30	Not Given	D	Brownish grey slightly sandy CLAY	Atterberg 1 Point		23.5	100	50	20	30						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:



Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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APPENDIX E

Monitoring Results

Ground Gas Monitoring Results



CLIENT:	Date	Operator	Analysar	Weather Observations			Temp (°C)	Pressure Trend	Min Barometric Pressure (mb)	Notes
SHURGARD UK	07/04/2022	PG	GFM	Intermittent cloud	Windy	Cool	11	Falling	981	
JOB NO.	21/04/2022	PG	GFM	Sunny	No wind	Warm	14	Falling	1009	
M4993										
SITE:										
GARMAN ROAD TOTTENHAM										

Notes: mb = milibars; CH₄ = methane; LEL = lower explosive limit = 5%v/v; CO₂ = carbon dioxide; O₂ = oxygen; CO=carbon monoxide; H₂S = hydrogen sulphide; TVOC= Total volatile organic compounds; PPM = parts per million. Where the flow is less than the limit of detection of the instrument, the detection limit is reported (Highlighted in green). Gas Screening Values (GSVs) are rounded to 3 decimal places. Calibration Records for analysers used available on request.

Date	Time	Location	Response zone (m)	Pressures (mb)		Gas flows (l/hr)		CH ₄ (%v/v)		CH ₄ (%LEL)		CO ₂ (%v/v)		O ₂ (%v/v)		Other Gases (PPM)			Depth to Water (m)	Well Base (m)	Gas Screening Value (CH ₄) (l/hr)	Gas Screening Value (CO ₂) (l/hr)	Notes	
				Atmospheric Pressure	Relative Well Pressure	Initial	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	CO	H ₂ S	TVOC (PID)						
				Summary Statistics																				
Max. values:				1009	0.0	2.1	0.1	0.1	0.1	2.0	2.0	5.8	5.8	19.7	19.7	0.0	0.0	0.0	2.3	2.7	0.000	0.006		
Min. values:				982	0.0	0.1	0.1	0.1	0.1	2.0	2.0	0.1	0.1	9.7	9.7	0.0	0.0	0.0	1.9	2.0	0.000	0.000		
				Worst-case GSVs based on maximum recorded steady flow and maximum individual peak concentrations:																		0.000	0.006	
07/04/2022	AM	Ambient	X.00 - X.00	982				0.1		2.0		0.1		19.7		0.0	0.0	0.0						
		WS03	0.75-2.00	982.00	0.0	0.1	0.1	0.1	0.1	2.0	2.0	0.2	0.1	19.4	19.7	0.0	0.0	0.0	1.91	2.03	0.000	0.000		
		WS02	0.75-2.00	982.00	0.0	0.1	0.1	0.1	0.1	2.0	2.0	4.6	4.6	13.9	13.2	0.0	0.0	0.0	1.97	2.05	0.000	0.005		
		WS01	1.00-3.00	982.00	0.0	0.1	0.1	0.1	0.1	2.0	2.0	1.0	1.1	18.2	18.5	0.0	0.0	0.0	2.09	2.61	0.000	0.001		
		WS04	0.60-3.00	982.00	0.0	2.1	0.1	0.1	0.1	2.0	2.0	3.1	3.3	16.9	17.0	0.0	0.0	0.0	2.10	2.57	0.000	0.003		
		WS05	0.60-3.00	982.00	0.0	0.1	0.1	0.1	0.1	2.0	2.0	2.0	0.2	17.9	19.4	0.0	0.0	0.0	2.21	2.71	0.000	0.002		
07/04/2022	AM	Ambient	X.00 - X.00	981				0.1		2.0		0.1		19.7		0.0	0.0	0.0						
21/04/2022	AM	Ambient	X.00 - X.00	1009		0.1		0.1		2.0		0.1		19.4		0.0	0.0	0.0						
		WS03	0.75-2.00		0.0	0.1	0.1	0.1	0.1	2.0	2.0	0.5	0.2	19.3	19.4	0.0	0.0	0.0	NGW	2.08	0.000	0.001		
		WS02	0.75-2.00		0.0	0.1	0.1	0.1	0.1	2.0	2.0	5.8	5.8	9.7	9.7	0.0	0.0	0.0	NGW	2.05	0.000	0.006		
		WS01	1.00-3.00		0.0	0.1	0.1	0.1	0.1	2.0	2.0	2.0	0.9	17.8	18.9	0.0	0.0	0.0	2.25	2.53	0.000	0.002		
		WS04	0.60-3.00		0.0	0.1	0.1	0.1	0.1	2.0	2.0	2.2	1.8	18.0	18.4	0.0	0.0	0.0	2.26	2.60	0.000	0.002		
		WS05	0.60-3.00		0.0	0.1	0.1	0.1	0.1	2.0	2.0	1.9	1.9	18.6	18.7	0.0	0.0	0.0	2.34	2.65	0.000	0.002		
21/04/2022				1009		0.1		0.1		2.0		0.1		19.4		0.0	0.0	0.0						

07/04/2022 AM Ambient X.00 - X.00 981

North West

**William Smith House
173 – 183 Witton Street
Northwich
Cheshire
CW9 5LP**

Tel: 01606 334 844

Midlands

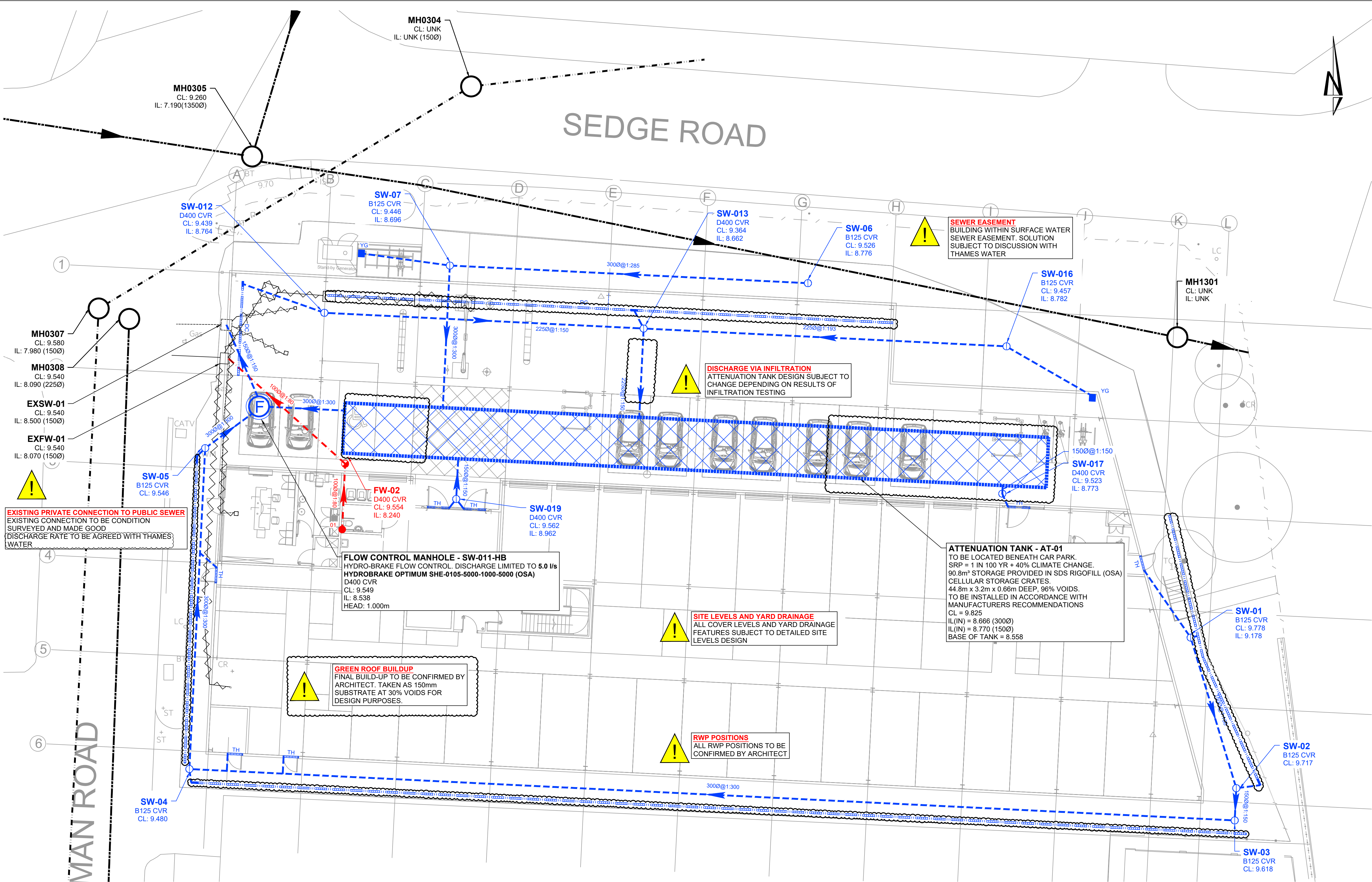
**Unit 5, Alfred Court
Saxon Business Park
Stoke Prior
Bromsgrove
Worcestershire
B60 4AD**

Tel: 01215 729 014

www.brownfield-solutions.com

Appendix H

Proposed Drainage Strategy



PROPOSED DRAINAGE - FOUL

- FOUL WATER DRAIN
- FOUL WATER MANHOLE
- FOUL WATER INSPECTION CHAMBER

FOUL OUTLET / STACK POSITION
(Refer to Service Engineer / Architect for Details)
(Shown indicative)

PROPOSED DRAINAGE - STORM

- STORM WATER DRAIN
- STORM WATER MANHOLE
- STORM WATER INSPECTION CHAMBER

- YARD GULLY
- RAIN WATER DOWNPIPE
- DRAINAGE CHANNEL
- THRESHOLD DRAINAGE CHANNEL
(Refer to architect for details / specification)

NOTE: DRAINAGE HAS ONLY BEEN SHOWN INDICATIVELY
TO DEMONSTRATE THE PRINCIPLES OF THE DRAINAGE
STRATEGY AND SHOULD NOT BE USED FOR PRICING

PUBLIC AND PRIVATE EXISTING/PROPOSED DRAINAGE

- EXISTING PUBLIC FOUL SEWER
- EXISTING PUBLIC STORM SEWER
- EXISTING PRIVATE FOUL DRAIN
- EXISTING PRIVATE STORM DRAIN
- DRAIN TO BE ABANDONED

THIS DRAWING IS SUBJECT TO
ADDITIONAL DETAILED DESIGN AND
COORDINATION

KEY PLAN

NOTES

- All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
- The DWG file is issued for the purposes of coordination only and do not represent formal drawing issue and are not to be reprinted in any form. Formal issue of drawings is via DWF, Adobe PDF files and/or hard copies and their associated information issue sheets.
- Note that all care has been taken with the export of DWG files and their content, but we recommend that you make due dimensional checks before using any DWG file information. Any errors found are to be reported to Hydrock immediately.
- Levels shown in metres above Ordnance Datum (mAOD).
- All dimensions shown in millimetres unless otherwise stated.
- All private drainage to comply with current Building Regulations, BS EN-752 Drain and Sewer systems outside Buildings and other relevant British Standards and Codes of Practices.
- All external drainage within trafficked areas with less than 1.2m cover to have type Z concrete bed and surround. All external drainage within landscaped areas with cover less than 0.6m to have type Z concrete bed and surround. All drainage with greater cover than the minimum required to have type S bed and surround.
- All drainage to be laid soffit to soffit unless otherwise shown.
- The Contractor is to verify the line, level and diameter of existing sewers before commencing drainage works.
- All foul drainage to be minimum 100mm diameter, all surface water drainage to be minimum 150mm diameter unless otherwise shown.
- Cover levels shown on this drawing refer to approximate surface levels. It is the contractors responsibility to ensure that access covers and frames are set at the final surface levels.
- Where possible the contractor is to orientate manhole biscuits and covers to locate them parallel to kerbs and paving.
- The Contractor should comply with h(s)g 47 "Avoiding Danger from Underground Services" when excavating around existing services.
- It is the contractors responsibility to determine the location and depth of all existing services, mains and cables prior to construction.
- Contractor to provide temporary screens in each of the down stream manholes during the construction period of the development in accordance with Design Construction Guidance Cl. B5.2.23 and the local sewerage undertakers requirements.
- All in-situ concrete and precast concrete components to be manufactured using Sulphate Resisting Portland Cement, (SRPC) to BS 4027, if required, subject to soil conditions. Manhole components to be to BS EN 1917:2002.
- All ironwork to be kite marked by BSI or certified by equal inspection authority.
- All redundant connections to be capped off and grouted from the down stream manhole.
- All new drainage pipes to be jetted, CCTV surveyed with DVD recording and any defects highlighted to the supervising officer. Following the rectification of any defects, the drain is to be re-surveyed with CCTV and the recordings made available to the project manager/engineer.
- Prior to commencing the works the contractor is to confirm details of the existing drainage system as noted on the drawing.
- Prior to commencing the works the contractor is to undertake the drainage investigation work as noted on the drawing.
- All existing drainage other than demarcation chambers and connections to Thames Water public sewers to be abandoned unless otherwise noted.
- Rainwater Downpipe positions to be confirmed by the architect.
- Public sewer information taking from Utility Mapping Survey, PAS 128 QL-B M2 Rev 1, dated 14 March 2022, by Utility Mapping.
- Site Plan and red line boundary from Site Plan As Proposed, 2207GA-D-002, dated May 2022, by Three Sixty Architecture.

PO2	UPDATED DRAINAGE CHANNEL POSITION, REVISED ATTENUATION TANK SIZE, ADDED CHANNEL DRAINAGE TO PERIMETER PATH	J.NEAL-LONG	27/01/23	O.CHARD	27/01/23	T.KING	27/01/23
PO1	PRELIMINARY ISSUE	O.CHARD	13/06/22	J.MAGEE	13/06/22	T.KING	13/06/22

REV	REVISION NOTES/COMMENTS	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

Hydrock Merchants' House North
Wapping Road
Bristol
BS1 4RW
t: +44 (0)117 945 9225
e: bristolcentral@hydrock.com

CLIENT **SHURGARD**
SELF-STORAGE

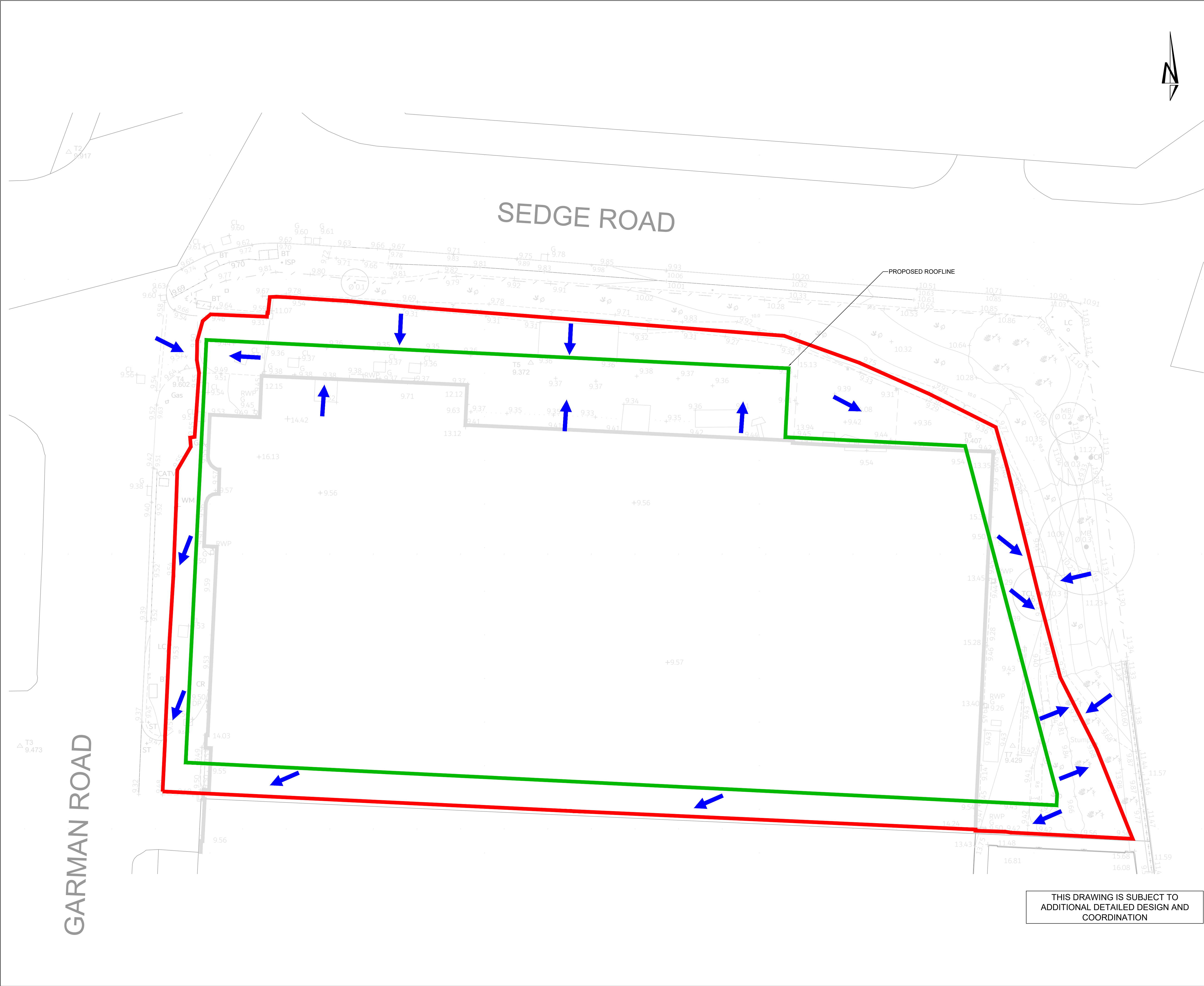
PROJECT
SHURGARD TOTTENHAM

TITLE
DRAINAGE LAYOUT

HYDROCK PROJECT NO.
C-24318-C

SCALE @ A1
1:125

STATUS DESCRIPTION	STATUS
ISSUED FOR INFORMATION	S2
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
24318-HYD-XX-XX-DR-C-7010	PO2



- KEY PLAN
- NOTES
1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
 2. The DWG file is issued for the purposes of coordination only and do not represent formal drawing issue and are not to be reprinted in any form. Formal issue of drawings is via DWF, Adobe PDF files and/or hard copies and their associated information issue sheets.
 3. Note that all care has been taken with the export of DWG files and their content, but we recommend that you make due dimensional checks before using any DWG file information. Any errors found are to be reported to Hydrock immediately.
 4. Levels shown in metres above Ordnance Datum (mAOD).
 5. Site Plan and red line boundary from Site Plan As Proposed, 2207GA-D-002, dated May 2022, by Three Sixty Architecture.

PRELIMINARY ISSUE					
PO1	O.CHARD	27/01/23	C.MACHUGH	27/01/23	T.KING
REVISION NOTES/COMMENTS					
REV	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY
Hydrock Merchants' House North Wapping Road Bristol BS1 4RW t: +44 (0)117 945 9225 e: bristolcentral@hydrock.com CLIENT SHURGARD SELF-STORAGE					
PROJECT					
SHURGARD TOTTENHAM					
TITLE					
SURFACE WATER OVERLAND FLOW PATHS					
HYDROCK PROJECT NO. C-24318-C				SCALE @ A1 1:125	
STATUS DESCRIPTION ISSUED FOR INFORMATION					STATUS S2
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 24318-HYD-XX-XX-DR-C-7011					REVISION PO1

Appendix I

Supporting Calculations

Project Title:
Project Number:

Shurgard Tottenham	
24318	Date: 10/06/2022

Designer:
Checked:

OC
JM

Revision:

P01



Frequency Factor
System Type

0.7	(From Table 3)
3	(From 4.2)

INPUT NUMBER OF APPLIANCES FOR EACH PIPE/NETWORK																					
Pipe/Network number																					
Appliance	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	total
Drawnet Number	1.000																				
Wash basin, bidet	1																				1
Shower without plug																					0
Shower with plug																					0
Single urinal with cistern																					0
Urinal with flushing valve																					0
Slab urinal																					0
Bath																					0
Kitchen Sink	2																				2
Dishwasher (household)																					0
Washing machine up to 6kg																					0
Washing machine up to 12kg																					0
WC with 4,0 l cistern																					0
WC with 6,0 l cistern	1																				1
WC with 7,5 l cistern																					0
WC with 9,0 l cistern																					0
Floor gully DN 50																					0
Floor gully DN 70																					0
Floor gully DN 100																					0
Total Discharge Units (DU)	4.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.60
Total Flow Rate (l/s)	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50

l/s

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Date	25/01/2023 12:18
File	24318-PR-Drainage-R02.MDX

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Network 2020.1.3

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
SW-4.000	23.106	0.093	248.5	0.000	5.00	0.0	0.600	o	300	Pipe/Conduit	
SW-3.001	5.653	0.019	300.0	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
SW-3.002	18.720	0.037	506.0	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
SW-5.000	0.519	0.003	150.0	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit	
SW-5.001	42.096	0.212	198.6	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
SW-2.003	5.287	0.020	261.7	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
SW-1.005	5.660	0.038	150.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
SW-4.000	50.00	5.39	8.707	0.000	0.0	0.0	0.0	0.99	70.2	0.0
SW-3.001	50.00	5.49	8.614	0.000	0.0	0.0	0.0	0.90	63.8	0.0
SW-3.002	50.00	5.94	8.595	0.000	0.0	0.0	0.0	0.69	48.9	0.0
SW-5.000	50.00	5.01	8.773	0.000	0.0	0.0	0.0	0.82	14.5	0.0
SW-5.001	50.00	6.00	8.770	0.000	0.0	0.0	0.0	0.71	12.5	0.0
SW-2.003	50.00	6.09	8.558	0.087	0.0	0.0	0.0	0.97	68.4	14.8
SW-1.005	50.00	6.83	8.538	0.176	0.0	0.0	0.0	0.82	14.5	30.1

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
SW-1.005	o	150	SW-011-HB	9.549	8.538	0.861	Open Manhole		1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	I*W
SW-1.005	5.660	150.0	SW-0	9.547	8.500	0.897	Open Manhole		450

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
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SW-1.005	SW-0	9.547	8.500	0.000	450	0
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Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs	0	Number of Storage Structures	1
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	30
FEH Rainfall Version	2013
Site Location	GB 535085 191299 TQ 35085 91299
Data Type	Point
Summer Storms	Yes
Winter Storms	No
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	30

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Innovyze	Network 2020.1.3	
Online Controls for Storm		
Hydro-Brake® Optimum Manhole: SW-011-HB, DS/PN: SW-1.005, Volume (m³): 1.9		
Unit Reference MD-SHE-0105-5000-1000-5000 Design Head (m)1.000 Design Flow (l/s)5.0 Flush-Flo™Calculated ObjectiveMinimise upstream storage ApplicationSurface Sump AvailableYes Diameter (mm)105 Invert Level (m)8.538 Minimum Outlet Pipe Diameter (mm)150 Suggested Manhole Diameter (mm)1200		
Control Points Head (m)Flow (l/s) Design Point (Calculated)1.0005.0 Flush-Flo™0.2965.0 Kick-Flo®0.6374.1 Mean Flow over Head Range-4.3		
The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated		
Depth (m)Flow (l/s) Depth (m)Flow (l/s) Depth (m)Flow (l/s) Depth (m)Flow (l/s) 0.1003.61.2005.43.0008.47.00012.5 0.2004.81.4005.83.5009.07.50012.9 0.3005.01.6006.24.0009.68.00013.3 0.4004.91.8006.64.50010.18.50013.7 0.5004.72.0006.95.00010.69.00014.1 0.6004.32.2007.25.50011.19.50014.5 0.8004.52.4007.56.00011.6 1.0005.02.6007.86.50012.1		
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Date 25/01/2023 12:18	Designed by oliverchard																			
File 24318-PR-Drainage-R02.MDX	Checked by																			
Innovyze	Network 2020.1.3																			
<u>Storage Structures for Storm</u> <u>Cellular Storage Manhole: SW-09-TANK, DS/PN: SW-2.003</u> Invert Level (m) 8.558 Safety Factor 2.0 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.96 Infiltration Coefficient Side (m/hr) 0.00000 <table><tr><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th></tr><tr><td>0.000</td><td>143.3</td><td>143.3</td><td>0.661</td><td>0.0</td><td>174.9</td></tr><tr><td>0.660</td><td>143.3</td><td>174.9</td><td></td><td></td><td></td></tr></table>			Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	0.000	143.3	143.3	0.661	0.0	174.9	0.660	143.3	174.9			
Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)															
0.000	143.3	143.3	0.661	0.0	174.9															
0.660	143.3	174.9																		
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for Storm

PN	US/MH Name	Water	Surcharged	Flooded			Half Drain	Pipe	Status
		Level	Depth	Volume	Flow /	Overflow	Time	Flow	
		(m)	(m)	(m³)	Cap.	(l/s)	(mins)	(l/s)	
SW-1.000	SW-01	9.176	-0.123	0.000	0.07			1.0	OK
SW-1.001	SW-02	9.112	-0.120	0.000	0.09			1.0	OK
SW-1.002	SW-03	8.915	-0.303	0.000	0.08			8.5	OK
SW-1.003	SW-04	8.730	-0.266	0.000	0.13			12.9	OK
SW-1.004	SW-05	8.698	-0.230	0.000	0.16			12.4	OK
SW-2.000	SW-06	8.853	-0.223	0.000	0.12			7.1	OK
SW-2.001	SW-07	8.810	-0.186	0.000	0.31			15.1	OK
SW-2.002	SW-08	8.776	-0.220	0.000	0.16			15.0	OK*
SW-3.000	SW-012	8.689	-0.300	0.000	0.00			0.0	OK
SW-4.000	SW-016	8.707	-0.300	0.000	0.00			0.0	OK
SW-3.001	SW-013	8.678	-0.236	0.000	0.00			0.1	OK
SW-3.002	SW-015	8.678	-0.217	0.000	0.00			0.1	OK*
SW-5.000	SW-017	8.773	-0.150	0.000	0.00			0.0	OK
SW-5.001	SW-018	8.770	-0.150	0.000	0.00			0.0	OK*

PN	US/MH Name	Level Exceeded
SW-1.000	SW-01	
SW-1.001	SW-02	
SW-1.002	SW-03	
SW-1.003	SW-04	
SW-1.004	SW-05	
SW-2.000	SW-06	
SW-2.001	SW-07	
SW-2.002	SW-08	
SW-3.000	SW-012	
SW-4.000	SW-016	
SW-3.001	SW-013	
SW-3.002	SW-015	
SW-5.000	SW-017	
SW-5.001	SW-018	



Micro
Drainage

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PN	US/MH Name	Level Exceeded
SW-2.003	SW-09-TANK	
SW-1.005	SW-011-HB	

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PN	US/MH Name	Water	Surcharged	Flooded	Flow / Cap.	Overflow (l/s)	Half Drain	Pipe	Status
		Level (m)	Depth (m)	Volume (m³)			Time (mins)	Flow (l/s)	
SW-1.000	SW-01	9.351	0.052	0.000	0.07			0.8	SURCHARGED
SW-1.001	SW-02	9.351	0.119	0.000	0.08			0.8	SURCHARGED
SW-1.002	SW-03	9.351	0.133	0.000	0.08			9.1	FLOOD RISK
SW-1.003	SW-04	9.349	0.353	0.000	0.15			14.1	FLOOD RISK
SW-1.004	SW-05	9.348	0.420	0.000	0.18			14.0	FLOOD RISK
SW-2.000	SW-06	9.351	0.275	0.000	0.11			6.2	FLOOD RISK
SW-2.001	SW-07	9.350	0.354	0.000	0.28			13.8	FLOOD RISK
SW-2.002	SW-08	8.996	0.000	0.000	0.09			8.7	SURCHARGED*
SW-3.000	SW-012	9.348	0.359	0.000	0.00			0.0	FLOOD RISK
SW-4.000	SW-016	9.348	0.341	0.000	0.00			0.0	FLOOD RISK
SW-3.001	SW-013	9.348	0.434	0.000	0.01			0.3	FLOOD RISK
SW-3.002	SW-015	8.895	0.000	0.000	0.01			0.4	SURCHARGED*
SW-5.000	SW-017	9.348	0.425	0.000	0.00			0.0	FLOOD RISK
SW-5.001	SW-018	8.920	0.000	0.000	0.00			0.0	SURCHARGED*

PN	US/MH Name	Level Exceeded
SW-1.000	SW-01	
SW-1.001	SW-02	
SW-1.002	SW-03	
SW-1.003	SW-04	
SW-1.004	SW-05	
SW-2.000	SW-06	
SW-2.001	SW-07	
SW-2.002	SW-08	
SW-3.000	SW-012	
SW-4.000	SW-016	
SW-3.001	SW-013	
SW-3.002	SW-015	
SW-5.000	SW-017	
SW-5.001	SW-018	

