

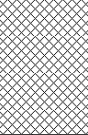



<div><div><div>www.hydrock.com</div></div><div>Windowless Sampler</div><div>Borehole No. WS13 Sheet 1 of 1</div></div>									
Project Name: Former Rayware Site									
Co-ords: 343084E, 384065N									
Hole Type: WLS									
Location: Speke Boulevard, Liverpool				Project No: C151811		Ground Level: 31.71m OD			
Client: TJ Morris				Date(s): 01/12/15		Scale: 1:25			
Hole Diameter: 300mm									
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.45 0.50	31.26 31.21		Dark brown silty very gravelly fine to coarse SAND. Gravel is angular fine to coarse of brick and ash. (MADE GROUND)	
								Grey CONCRETE. (MADE GROUND) End of Borehole at 0.50m	
<div><div></div><div>1.0</div><div></div><div>2.0</div><div></div><div>3.0</div><div></div><div>4.0</div><div></div><div>5.0</div></div>									
Remarks:		1) Concrete cored from ground level. 2) Inspection pit from base of concrete to depth of 0.50m. 3) Terminated due to encountering concrete. 4) Backfilled with arisings.							
Groundwater:		No groundwater encountered							
Logged:		ASH		Checked:		AB			

<div><div>Hydrock</div><div>www.hydrock.com</div></div>							Windowless Sampler		Borehole No. WS13A Sheet 1 of 1		
Project Name: Former Rayware Site							Co-ords: 343079E, 384066N		Hole Type: WLS		
Location: Speke Boulevard, Liverpool					Project No: C151811		Ground Level: 31.65m OD		Scale: 1:25		
Client: TJ Morris							Date(s): 01/12/15		Hole Diameter: 300mm		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description			
		Depth (m)	Type	Results							
					0.45 0.50	31.20 31.15		Dark brown silty very gravelly fine to coarse SAND. Gravel is angular fine to coarse of brick and ash. (MADE GROUND)			
								Grey CONCRETE. (MADE GROUND) End of Borehole at 0.50m			
								1.0			
								2.0			
								3.0			
								4.0			
								5.0			
Remarks:		1) Concrete cored from ground level. 2) Inspection pit from base of concrete to depth of 0.50m. 3) Terminated due to encountering concrete. 4) Backfilled with arisings.						<div>B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample</div>			
Groundwater:		No groundwater encountered						Logged: ASH		Checked: AB	

<div><div>Hydrock</div><div>www.hydrock.com</div></div>							Windowless Sampler		Borehole No. WS14 Sheet 1 of 1		
Project Name: Former Rayware Site							Co-ords: 343043E, 384071N		Hole Type: WLS		
Location: Speke Boulevard, Liverpool					Project No: C151811		Ground Level: 31.53m OD		Scale: 1:25		
Client: TJ Morris							Date(s): 01/12/15		Hole Diameter: 300mm		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description			
		Depth (m)	Type	Results							
					0.45 0.50	31.08 31.03		Black silty very gravelly fine to coarse SAND. Gravel is angular fine to coarse of brick and ash. (MADE GROUND)			
								Grey CONCRETE. (MADE GROUND) End of Borehole at 0.50m			
								1.0			
								2.0			
								3.0			
								4.0			
								5.0			
Remarks:		1) Concrete cored from ground level. 2) Inspection pit from base of concrete to depth of 0.50m. 3) Terminated due to encountering rock. 4) Backfilled with arisings.						<div>B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample</div>			
Groundwater:		No groundwater encountered						Logged: ASH		Checked: AB	

<div><div><div>www.hydrock.com</div></div><div>Windowless Sampler</div><div>Borehole No. WS14A Sheet 1 of 1</div></div>									
Project Name: Former Rayware Site									
Co-ords: 343044E, 384063N									
Hole Type: WLS									
Location: Speke Boulevard, Liverpool				Project No: C151811		Ground Level: 31.48m OD			
Client: TJ Morris				Date(s): 02/12/15		Scale: 1:25			
Hole Diameter: 300mm									
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20 0.25	31.28 31.23		Black sandy angular fine to coarse GRAVEL of black tarmac road chippings. (MADE GROUND)	
								Black ASPHALT. (MADE GROUND)	
End of Borehole at 0.25m									
1.0									
2.0									
3.0									
4.0									
5.0									
Remarks:		1) Concrete cored from ground level. 2) Inspection pit from base of concrete to depth of 0.25m. 3) Terminated due to encountering rock. 4) Backfilled with arisings.							
Groundwater:		No groundwater encountered							
Logged:		ASH		Checked:		AB			

Windowless Sampler

Borehole No.

WS15

Sheet 1 of 1

Project Name: Former Rayware Site

Co-ords: 343118E, 384041N

Hole Type:
WLS

Location: Speke Boulevard, Liverpool

Project No:
C151811

Ground Level: 31.48m OD




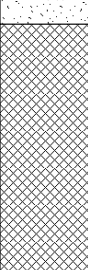

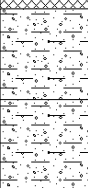
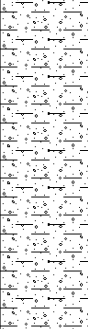
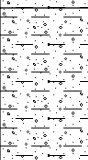
Scale:
1:25


Client: TJ Morris

Date(s): 02/12/15

Hole Diameter:
300mm

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10	31.38		CONCRETE. (MADE GROUND)	
								End of Borehole at 0.10m	

<div>Hydrock</div> <div>www.hydrock.com</div>							Windowless Sampler		Borehole No. WS15A Sheet 1 of 1			
Project Name: Former Rayware Site							Co-ords: 343113E, 384035N		Hole Type: WLS			
Location: Speke Boulevard, Liverpool					Project No: C151811		Ground Level: 31.48m OD		Scale: 1:25			
Client: TJ Morris							Date(s): 02/12/15		Hole Diameter: 300mm			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description				
		Depth (m)	Type	Results								
					0.05	31.43		Red TILES (MADE GROUND)			<div>1.0</div> <div>2.0</div> <div>3.0</div> <div>4.0</div> <div>5.0</div>	
					0.26	31.22		Grey CONCRETE (MADE GROUND)				
		0.50	B					Dark brown slightly clayey very gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of brick and ash. (MADE GROUND)				
		0.50	ES									
					1.10	30.38		Red whole BRICKS (MADE GROUND)				
		1.30	D		1.30	30.18		Soft dark brown slightly gravelly sandy CLAY. Gravel is angular fine to coarse of sandstone and brick. (GLACIAL TILL)				
		1.30	ES	N=0 (0,1/0,0,0,0)								
		1.40	SPT									
		1.60	D		1.60	29.88		Firm to stiff red brown slightly sandy slightly gravelly CLAY. Gravel is angular to rounded fine to coarse of sandstone. (GLACIAL TILL)				
												
		2.00	SPT	N=16 (2,2/2,3,5,6)								
		2.60	D									
		3.00	SPT	N=28 (3,4/5,6,6,11)	3.00	28.48		Very stiff red brown slightly sandy slightly gravelly CLAY with low angular cobble content of sandstone. Gravel is angular to rounded fine to coarse of sandstone. (GLACIAL TILL)				
		3.50	D									
												
		4.00	SPT	N≥50 (6,6/8,10,12,24)								
		4.50	D									
		5.00	SPT	N≥50 (15,14/103 for 225mm)	5.00	26.48		End of Borehole at 5.00m			5.0	
Remarks:		1) Concrete cored from ground level. 2) Inspection pit from base of concrete to depth of 1.20m. 3) Windowless sampled from 1.20m to 5.00m. 4) Backfilled with arisings.							<div>B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample</div>			
Groundwater:		At 3.00m Slight seepage.							Logged: ASH			Checked: AB






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Project Name: Former Rayware Site												
Co-ords: 343196E, 384016N												
Hole Type: WLS												
Location: Speke Boulevard, Liverpool					Project No: C151811							
Ground Level: 31.15m OD					Scale: 1:25							
Client: TJ Morris					Date(s): 02/12/15							
Hole Diameter: 300mm												
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description				
		Depth (m)	Type	Results								
					0.10	31.05		Black sandy angular fine to coarse GRAVEL of black asphalt road chippings. (MADE GROUND)				
					0.30	30.85		Dark grey sandy angular fine to coarse GRAVEL of brick and clinker. (MADE GROUND)				
								CONCRETE. (MADE GROUND)				
					0.75	30.40		End of Borehole at 0.75m				
<div>1.0</div> <div>2.0</div> <div>3.0</div> <div>4.0</div> <div>5.0</div>												
Remarks:		1) Concrete cored from ground level. 2) Inspection pit from base of concrete to depth of 0.75m. 3) Terminated due to encountering concrete. 4) Backfilled with arisings.							<div>B = Bulk Sample</div> <div>D = Disturbed Sample</div> <div>U = Undisturbed Sample</div> <div>UT = Undisturbed Sample (Thin Wall)</div> <div>ES = Environmental Sample</div> <div>W = Water Sample</div> <div>PID = Photoionization Detector (ppm)</div> <div>SPT = Standard Penetration Test</div> <div>AB = Asbestos Bulk Sample</div>			
Groundwater:		No groundwater encountered							Logged:	ASH	Checked:	AB

<div><div>Hydrock</div><div>www.hydrock.com</div></div>						Windowless Sampler		<div>Borehole No.</div> <div>WS16A</div> <div>Sheet 1 of 2</div>									
<div>Project Name: Former Rayware Site</div>						<div>Co-ords: 343193E, 384010N</div>		<div>Hole Type:</div> <div>WLS</div>									
<div>Location: Speke Boulevard, Liverpool</div>				<div>Project No:</div> <div>C151811</div>		<div>Ground Level: 31.21m OD</div>		<div>Scale:</div> <div>1:25</div>									
<div>Client: TJ Morris</div>						<div>Date(s): 02/12/15</div>		<div>Hole Diameter:</div> <div>300mm</div>									
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description									
		Depth (m)	Type	Results													
		0.10-0.20	ES		0.10	31.11		Black sandy angular fine to coarse GRAVEL of black tarmac road chippings. (MADE GROUND) Dark brown sandy angular fine to coarse GRAVEL of concrete. (MADE GROUND)									
		0.20	B														
		0.20	ES														
					0.65	30.56		Firm to stiff red brown slightly sandy slightly gravelly CLAY. Gravel is angular to rounded fine to coarse of sandstone. (GLACIAL TILL)									
		0.80	B														
		0.80	ES														
		1.20	SPT	N=14 (1,2/2,1,4,7)													
		1.40	D														
		1.40	ES														
		1.60	D														
		2.00	SPT	N=23 (3,4/4,5,5,9)													
		2.50	D														
		3.00	SPT	N=23 (4,5/6,6,5,6)													
		3.50	D														
					4.00	27.21											
		4.00	SPT	N=41 (6,6/10,9,9,13)				Very stiff red brown slightly sandy slightly gravelly CLAY. Gravel is angular to rounded fine to coarse of sandstone. (GLACIAL TILL)									
		4.50	D														
		5.00	SPT	N≥50 (8,9/21,17,21,30)													
Continued on Next Sheet																	
Remarks:		1) Concrete cored from ground level. 2) Inspection pit from base of concrete to depth of 1.20m. 3) Windowless sampled from 1.20m to 5.00m. 4) 50mm gas and groundwater stand pipe installed with response zone from 1.00m to 5.00m.						<div>B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample</div>									
Groundwater:		No groundwater encountered						Logged: ASH	Checked: AB								

<div><div>Hydrock</div><div>www.hydrock.com</div></div>							Windowless Sampler		Borehole No. WS16A Sheet 2 of 2		
Project Name: Former Rayware Site							Co-ords: 343193E, 384010N		Hole Type: WLS		
Location: Speke Boulevard, Liverpool					Project No: C151811		Ground Level: 31.21m OD		Scale: 1:25		
Client: TJ Morris							Date(s): 02/12/15		Hole Diameter: 300mm		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description			
		Depth (m)	Type	Results							
					5.14	26.07		Extremely weak red brown fine to medium SANDSTONE. (SHERWOOD SANDSTONE)			
					5.45	25.76		End of Borehole at 5.45m			
									6.0		
									7.0		
									8.0		
									9.0		
									10.0		
Remarks:		1) Concrete cored from ground level. 2) Inspection pit from base of concrete to depth of 1.20m. 3) Windowless sampled from 1.20m to 5.00m. 4) 50mm gas and groundwater stand pipe installed with response zone from 1.00m to 5.00m.						<div>B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample</div>			
Groundwater:		No groundwater encountered						Logged: ASH		Checked: AB	

<div><div>Hydrock</div><div>www.hydrock.com</div></div>							Windowless Sampler		Borehole No. WS17 Sheet 1 of 1		
Project Name: Former Rayware Site							Co-ords: 342866E, 384007N		Hole Type: WLS		
Location: Speke Boulevard, Liverpool					Project No: C151811		Ground Level: 32.20m OD		Scale: 1:25		
Client: TJ Morris							Date(s): 02/12/15		Hole Diameter: 300mm		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description			
		Depth (m)	Type	Results							
<div></div>					0.30	31.90	<div></div>	<div>Dark brown clayey gravelly sandy TOPSOIL. Gravel is angular fine to coarse of sandstone and brick. (MADE GROUND)</div> <div>Dark brown sandy angular fine to coarse GRAVEL of limestone (MADE GROUND)</div> <div>Grey CONCRETE. (MADE GROUND)</div> <div>End of Borehole at 0.45m</div>			
					0.40	31.80	<div></div>				
					0.45	31.75	<div></div>				
Remarks:		1) Inspection pit from base of concrete to depth of 0.45m. 2) Terminated due to concrete. 3) Backfilled with arisings.						<div>B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample</div>			
Groundwater:		No groundwater encountered						Logged:	ASH	Checked:	AB

<div><div>Hydrock</div><div>www.hydrock.com</div></div>							Windowless Sampler		Borehole No. WS18 Sheet 1 of 1		
Project Name: Former Rayware Site							Co-ords: 342868E, 384017N		Hole Type: WLS		
Location: Speke Boulevard, Liverpool					Project No: C151811		Ground Level: 32.20m OD		Scale: 1:25		
Client: TJ Morris							Date(s): 02/12/15		Hole Diameter: 300mm		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		0.20	D		0.40 0.45	31.80 31.75		Dark brown clayey gravelly sandy TOPSOIL. Gravel is angular fine to coarse of sandstone and brick. (MADE GROUND)			
								Grey CONCRETE. (MADE GROUND) End of Borehole at 0.45m			
		2.00	ES								
Remarks:		1) Inspection pit from base of concrete to depth of 0.45m. 2) Terminated due to concrete. 3) Backfilled with arisings.						B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample			
Groundwater:		No groundwater encountered						Logged: ASH		Checked: AB	

<div>Hydrock</div> <div>www.hydrock.com</div>							Windowless Sampler		Borehole No. WS19 Sheet 1 of 2			
Project Name: Former Rayware Site							Co-ords: 343088E, 384067N		Hole Type: WLS			
Location: Speke Boulevard, Liverpool					Project No: C151811		Ground Level: 31.72m OD		Scale: 1:25			
Client: TJ Morris							Date(s): 02/12/15		Hole Diameter: 300mm			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description				
		Depth (m)	Type	Results								
		0.20-0.25	ES		0.17	31.55		Grey CONCRETE with 10mm rebar at 160mm bgl. (MADE GROUND)				1.0
					0.30	31.42		Black silty very gravelly fine to coarse SAND. Gravel is angular fine to coarse of clinker, brick and ash. (MADE GROUND)				
					0.40	31.32		Red BRICK. (MADE GROUND)				
		0.50	D					Soft dark brown slightly sandy slightly gravelly CLAY. Gravel is angular to rounded fine to coarse of sandstone. (MADE GROUND)				
		0.50	ES									
		1.20	SPT	N=6 (1,2/2,1,1,2)	1.40	30.32		Firm red brown slightly sandy slightly gravelly CLAY. Gravel is angular to rounded fine to coarse of sandstone. (GLACIAL TILL)				2.0
		1.80-2.00	D									
		2.00	SPT	N=7 (2,2/2,2,1,2)								
		2.80-3.00	D									
		3.00	SPT	N=29 (5,5/5,7,7,10)	3.00	28.72		Very stiff red brown slightly sandy slightly gravelly CLAY. Gravel is angular to rounded fine to coarse of sandstone. (GLACIAL TILL)				
		3.80-4.00	D		3.80	27.92		Extremely weak red brown fine to medium SANDSTONE recovered as red brown silt sandy angular fine to coarse gravel of sandstone. (SHERWOOD SANDSTONE)				4.0
		4.00	SPT	N=36 (6,6/7,8,9,12)								
		5.00	SPT	N=42 (7,6/8,8,10,16)				Continued on Next Sheet				5.0
Remarks:		1) Concrete cored from ground level. 2) Inspection pit from base of concrete to depth of 1.20m. 3) Windowless sampled from 1.20m to 4.00m. 4) Backfilled with arisings.							B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample			
Groundwater:		At 4.50m Slight seepage.							Logged:	ASH	Checked:	AB

Windowless Sampler

Borehole No.

WS19

Sheet 2 of 2

Project Name: Former Rayware Site

Co-ords: 343088E, 384067N

Hole Type:
WLS

Location: Speke Boulevard, Liverpool

Project No:
C151811

Ground Level: 31.72m OD

Scale:
1:25

Client: TJ Morris



Date(s): 02/12/15












Hole Diameter:
300mm
















[illegible]

<div><div>Hydrock</div><div>www.hydrock.com</div></div>						Windowless Sampler		Borehole No. WS20 Sheet 1 of 2			
Project Name: Former Rayware Site						Co-ords: 343152E, 384014N		Hole Type: WLS			
Location: Speke Boulevard, Liverpool				Project No: C151811		Ground Level: 31.44m OD		Scale: 1:25			
Client: TJ Morris						Date(s): 03/12/15		Hole Diameter: 300mm			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description			
		Depth (m)	Type	Results							
					0.40	31.04		Grey CONCRETE with 10mm rebar at 160mm bgl, and 20mm rebar at 230mm bgl. (MADE GROUND)		1.0	
					0.80	30.64		Black silty very gravelly fine to coarse SAND. Gravel is angular fine to coarse of brick and ash. (MADE GROUND)			
		0.80-1.00 0.80-1.00 0.80-1.00	B D ES					Soft to firm red brown slightly gravelly sandy CLAY. Gravel is angular fine to coarse of sandstone and brick. (MADE GROUND)			
		1.20	SPT	N=11 (1,2/2,2,3,4)	1.40	30.04		Firm to stiff red brown slightly sandy slightly gravelly CLAY. Gravel is angular to rounded fine to coarse of sandstone. (GLACIAL TILL)		2.0	
		1.50-2.00	D					Very stiff red brown slightly sandy slightly gravelly CLAY. Gravel is angular to rounded fine to coarse of sandstone. (GLACIAL TILL)			
		2.00	SPT	N=36 (6,6/8,8,9,11)	2.00	29.44					
		2.80-3.00	D								
		3.00	SPT	N=44 (7,8/9,11,9,15)						3.0	
		3.80-4.00	D								
		4.00	SPT	N=43 (8,8/10,9,10,14)							
		4.80	SPT	N≥50 (15,14/50 for 20mm)	4.80	26.64		Extremely weak red brown fine to medium SANDSTONE recovered as red brown silt sandy angular fine to coarse		5.0	
					5.00	26.44		Continued on Next Sheet			
Remarks:		1) Concrete cored from ground level. 2) Inspection pit from base of concrete to depth of 1.20m. 3) Windowless sampled from 1.20m to 5.00m. 4) 50mm gas and groundwater stand pipe installed with response zone from 1.00m to 5.00m.						<div>B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample</div>			
Groundwater:		At 3.50m Slight seepage.						Logged:	ASH	Checked:	AB

<div><div>Hydrock</div><div><div></div><div></div></div><div>www.hydrock.com</div></div>							Windowless Sampler		Borehole No. WS20 Sheet 2 of 2			
Project Name: Former Rayware Site							Co-ords: 343152E, 384014N		Hole Type: WLS			
Location: Speke Boulevard, Liverpool					Project No: C151811		Ground Level: 31.44m OD		Scale: 1:25			
Client: TJ Morris							Date(s): 03/12/15		Hole Diameter: 300mm			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description				
		Depth (m)	Type	Results								
								gravel of sandstone. (SHERWOOD SANDSTONE)				
								End of Borehole at 5.45m				
										6.0		
										7.0		
										8.0		
										9.0		
										10.0		
Remarks:		1) Concrete cored from ground level. 2) Inspection pit from base of concrete to depth of 1.20m. 3) Windowless sampled from 1.20m to 5.00m. 4) 50mm gas and groundwater stand pipe installed with response zone from 1.00m to 5.00m.							<div>B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample</div>			
Groundwater:		At 3.50m Slight seepage.							Logged:	ASH	Checked:	AB

<div><div>Hydrock</div><div>www.hydrock.com</div></div>							Windowless Sampler		Borehole No. WS21 Sheet 1 of 1	
Project Name: Former Rayware Site							Co-ords: 343027E, 384035N		Hole Type: WLS	
Location: Speke Boulevard, Liverpool					Project No: C151811		Ground Level: 31.44m OD		Scale: 1:25	
Client: TJ Morris							Date(s): 03/12/15		Hole Diameter: 300mm	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.30-0.50	ES		0.27 0.45 0.50	31.17 30.99 30.94		Grey CONCRETE with 10mm rebar at 160mm bgl, and 20mm rebar at 230mm bgl. (MADE GROUND)		
								Red brown sandy angular fine to coarse GRAVEL of sandstone and brick. (MADE GROUND)		
								Grey CONCRETE. (MADE GROUND)		
								End of Borehole at 0.50m		
								1.0		
								2.0		
								3.0		
								4.0		
								5.0		
Remarks:		1) Concrete cored from ground level. 2) Inspection pit from base of concrete to depth of 0.50m. 3) Terminated due to encountering concrete. 4) Backfilled with arisings.						<div>B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample</div>		
Groundwater:		No groundwater encountered						Logged: ASH Checked: AB		

<div>Hydrock</div> <div>www.hydrock.com</div>							Windowless Sampler		Borehole No. WS21A Sheet 1 of 1		
Project Name: Former Rayware Site							Co-ords: 343031E, 384029N		Hole Type: WLS		
Location: Speke Boulevard, Liverpool					Project No: C151811		Ground Level: 31.44m OD		Scale: 1:25		
Client: TJ Morris							Date(s): 03/12/15		Hole Diameter: 300mm		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description			
		Depth (m)	Type	Results							
					0.20	31.24		Grey CONCRETE with 10mm rebar at 160mm bgl, and 20mm rebar at 230mm bgl. (MADE GROUND)			
		0.40-0.60	D		0.40	31.04		Red brown sandy angular fine to coarse GRAVEL of sandstone and brick. (MADE GROUND)			
		0.40-0.60	ES					Firm to stiff red brown sandy CLAY. (GLACIAL TILL)			
		0.60-1.00	D		0.60	30.84		Firm to stiff red brown slightly sandy slightly gravelly CLAY. Gravel is angular to rounded fine to coarse of sandstone. (GLACIAL TILL)			
		1.20	SPT	N=21 (1,2/3,5,6,7)							
		1.80-2.00	D								
		2.00	SPT	N=35 (6,6/8,8,9,10)							
		2.50-3.00	D								
		3.00	SPT	N≥50 (89 for 104mm/50 for 25mm)	3.00	28.44					
					3.10	28.34					
							Extremely weak red brown fine to medium SANDSTONE recovered as red brown silt sandy angular fine to coarse gravel of sandstone. (SHERWOOD SANDSTONE) End of Borehole at 3.10m				
Remarks:		1) Concrete cored from ground level. 2) Inspection pit from base of concrete to depth of 1.20m. 3) Windowless sampled from 1.20m to 3.10m. 4) Backfilled with arisings.						<div>B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample</div>			
Groundwater:		No groundwater encountered						Logged: ASH		Checked: AB	

Hydrock  www.hydrock.com							Windowless Sampler		Borehole No. WS22 Sheet 1 of 1					
Project Name: Former Rayware Site							Co-ords: 343074E, 384029N		Hole Type: WLS					
Location: Speke Boulevard, Liverpool					Project No: C151811		Ground Level: 31.45m OD		Scale: 1:25					
Client: TJ Morris							Date(s): 03/12/15		Hole Diameter: 300mm					
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description						
		Depth (m)	Type	Results										
					0.28	31.17		Grey CONCRETE with 10mm rebar at 160mm bgl. and 20mm rebar at 230mm bgl. (MADE GROUND)				1.0		
					0.60	30.85		Red brown sandy angular fine to coarse GRAVEL of sandstone and brick. (MADE GROUND)						
		0.60 0.60	B ES					Soft to firm dark brown sandy CLAY. (GLACIAL TILL)						
				1.20	SPT	N=5 (1,0/1,1,2,1)	1.30	30.15		Firm to stiff red brown slightly sandy slightly gravelly CLAY. Gravel is angular to rounded fine to coarse of sandstone. (GLACIAL TILL)				2.0
		1.80-2.00	D					Very stiff red brown slightly sandy slightly gravelly CLAY. Gravel is angular to rounded fine to coarse of sandstone. (GLACIAL TILL)						
		2.00	SPT	N=23 (2,3/5,5,6,7)	2.00	29.45								
				2.80-3.00	D									3.0
		3.00	SPT	N=36 (6,6/8,8,9,11)										
		3.80-4.00	D											
				4.00	SPT	N=43 (8,7/7,9,12,15)	4.30	27.15						4.0
		4.50-4.70	D						Extremely weak red brown fine to medium SANDSTONE recovered as red brown silt sandy angular fine to coarse gravel of sandstone. (SHERWOOD SANDSTONE)					
		4.70	SPT	N≥50 (14,15/50 for 25mm)	4.70	26.75		End of Borehole at 4.70m						
												5.0		
Remarks:		1) Concrete cored from ground level. 2) Inspection pit from base of concrete to depth of 1.20m. 3) Windowless sampled from 1.20m to 4.00m. 4) 50mm gas and groundwater stand pipe installed with response zone from 1.00m to 4.00m.							B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample					
Groundwater:		No groundwater encountered							Logged:	ASH	Checked:	AB		









<div>Hydrock</div> <div>www.hydrock.com</div>							Windowless Sampler		Borehole No. WS23 Sheet 1 of 1			
Project Name: Former Rayware Site							Co-ords: 343152E, 383961N		Hole Type: WLS			
Location: Speke Boulevard, Liverpool					Project No: C151811		Ground Level: 31.44m OD		Scale: 1:25			
Client: TJ Morris							Date(s): 03/12/15		Hole Diameter: 300mm			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description				
		Depth (m)	Type	Results								
		0.25	B		0.20	31.24		Grey CONCRETE with 10mm rebar at 160mm bgl and 20mm rebar at 230mm bgl. (MADE GROUND)				
		0.25	D		0.28	31.16						
		0.25	ES									
		1.20	SPT	N=12 (1,2/5,2,2,3)	1.40	30.04		Dark brown slightly gravelly silty fine to coarse SAND. Gravel is angular fine to coarse of sandstone and brick. (MADE GROUND)				
		1.40	D									
		1.40	ES									
		2.00	SPT	N=15 (1,2/2,3,5,5)	2.40 2.50	29.04 28.94		Soft to firm dark brown slightly sandy slightly gravelly CLAY. Gravel is angular fine to coarse of brick and sandstone. (GLACIAL TILL)				
		2.80	D	N=26 (3,3/5,5,7,9)	3.70	27.74		Orange brown silty fine to coarse SAND. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. Gravel is angular to rounded fine to coarse of sandstone. (GLACIAL TILL)				
		3.00	SPT									
		3.80	D	N=36 (6,6/8,8,9,11)	4.45	26.99		Extremely weak red brown fine to medium SANDSTONE recovered as red brown silty sandy angular fine to coarse gravel of sandstone. (SHERWOOD SANDSTONE)				
		4.00	SPT									
						End of Borehole at 4.45m						
		5.00	SPT	N=35 (7,7/7,9,9,10)								
Remarks:		1) Concrete cored from ground level. 2) Inspection pit from base of concrete to depth of 1.20m. 3) Windowless sampled from 1.20m to 4.45m. 4) Backfilled with arisings.						<div>B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample</div>				
Groundwater:		At 3.00m Slight seepage.						Logged:	ASH	Checked:	AB	



Figure 11: Window sample trial hole.



Figure 12: WS08A core.



Appendix D

Geotechnical Test Results and SPT Depth Plots

Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Postcode: BS32 4DF
Contact: Adam Cheers
Site: C151811 Rayware Site

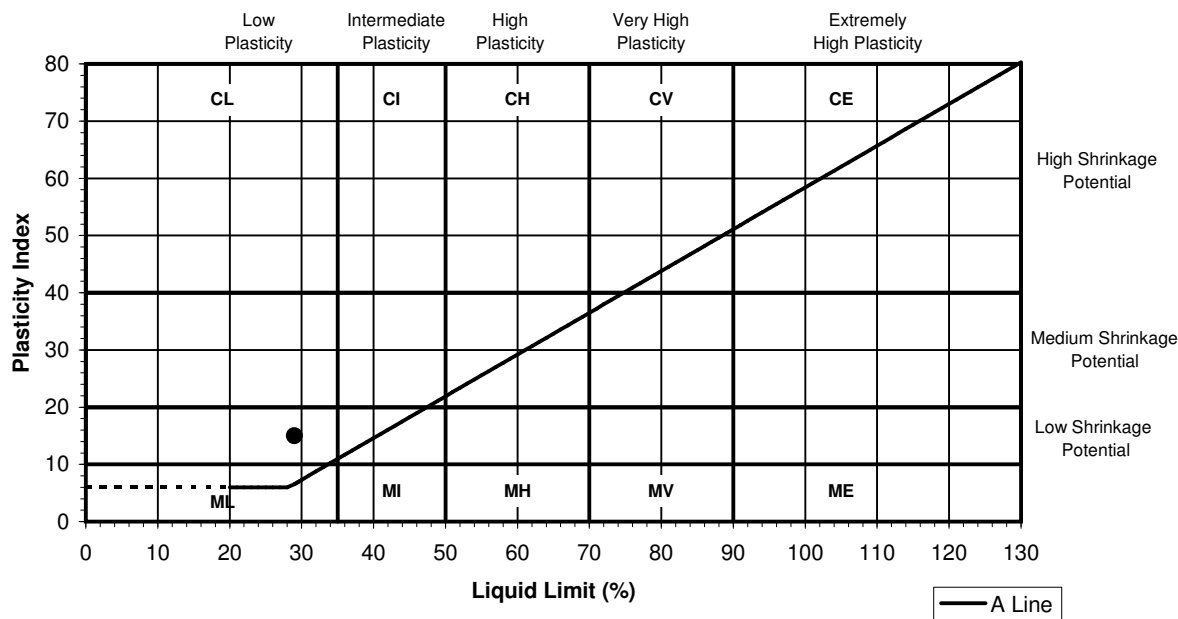
Report No: 51020116/16/01
Batch Number: DAM0057795

Client Reference: Combined Samples
Sampled by: Client
Date Sampled: 30.11.15
Date Received: 11.12.15
Tested From: 16.12.15-21.12.15
Sample Type: Bulk

Test Results:

Description: Brown very clayey SAND with occasional Gravel

Laboratory Reference	Location	Depth (m)	As Received Moisture Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Passing 425µm
45265245	WS09/WS10/WS11/WS20	0.50-0.70/0.25-0.50/0.50-0.70/0.80-1.00	16	29	14	15	88



Sample Preparation: As Received, Coarse particles removed by hand prior to test
Actual % passing 425µm BS Test Sieve from separate grading analysis

Certified that the laboratory testing was carried out in accordance with BS 1377-2: 1990: Method 3.2, 4.4 and 5

Page: 1 of 1
Date: 12.01.16

Signed

M. Carr

[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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ESG
2 Newton Close
Drayton Fields Industrial Estate
Daventry
Northants NN11 8RR
Telephone: +44 (0) 1327 703828
Facsimile: +44 (0) 1327 300154



0001

TEST REPORT

Determination of Particle Size Distribution

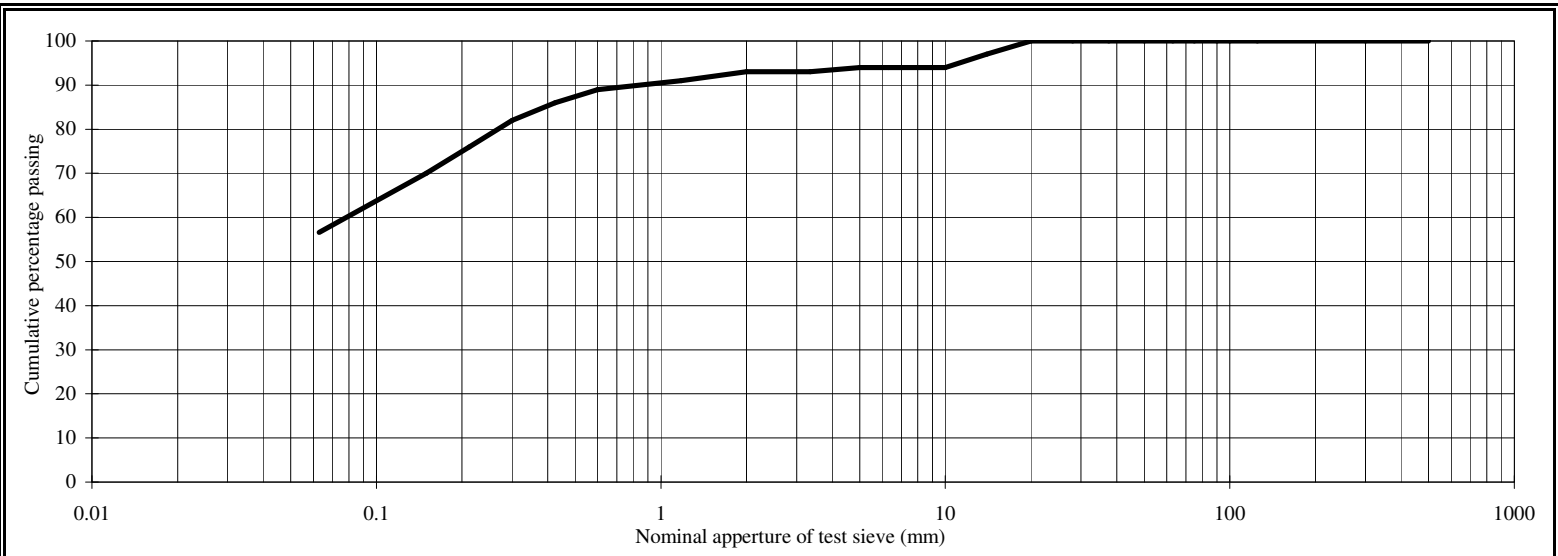
Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Postcode: BS32 4DF
Contact: Adam Cheers
Site: C151811 Rayware Site
Location: WS11/WS1/WS2/WS19/
WS22/WS23
Depth (m): 2.70/0.50/0.25/3.80-
4.00/4.50-4.70/3.80
Date Sampled: 30.11.15
Date Received: 11.12.15
Date Tested: 23.12.15
Sample Type: Bulk
Sample Mass (kg): 2.2
Report No: 51020116/16/23
Batch Number: DAM0057795
Lab Ref: 45265250

Description: Brown sandy CLAY with occasional Gravel

Specification: Not Required

Comments: Moisture Content: 18%

SIEVE ANALYSIS		
BS Sieve (mm)	Passing (%)	Material Specification
500	100	
300	100	
125	100	
100	100	
90	100	
75	100	
63	100	
50	100	
37.5	100	
28	100	
20	100	
14	97	
10	94	
6.3	94	
5	94	
3.35	93	
2	93	
1.18	91	
0.600	89	
0.425	86	
0.300	82	
0.212	76	
0.150	70	
0.063	56.6	



Certified that the Particle Size Distribution was determined in accordance with BS 1377 - 2 : 1990, Method 9.2. Washing & Dry Sieving
Method of Preparation: BS 1377 - 1 & 2 : 1990

Page: 1 of 1
Date: 12.01.16

Signed:
For and on behalf of Environmental Scientifics Group
[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager



0001

Determination of Particle Size Distribution

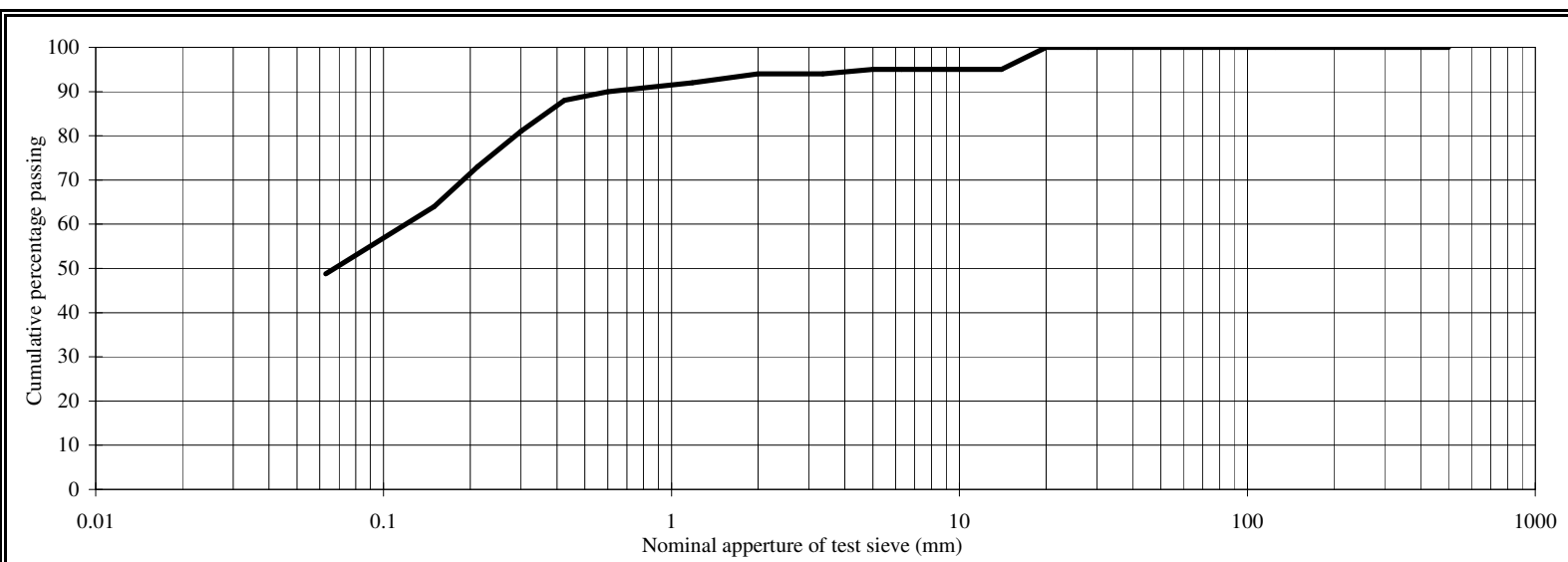
Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Postcode: BS32 4DF
Contact: Adam Cheers
Site: C151811 Rayware Site
Report No: 51020116/16/22
Batch Number: DAM0057795
Lab Ref: 45265249
Location: WS06
Depth (m): 0.25
Date Sampled: 30.11.15
Date Received: 11.12.15
Date Tested: 23.12.15
Sample Type: Bulk
Sample Mass (kg): 3.9
Sampled by: Client
Sampled from: Site
Supplier: Client
Source: Site

Description: Brown very sandy CLAY with occasional Gravel

Specification: Not Required

Comments: Moisture Content: 19%

SIEVE ANALYSIS		
BS Sieve (mm)	Passing (%)	Material Specification
500	100	
300	100	
125	100	
100	100	
90	100	
75	100	
63	100	
50	100	
37.5	100	
28	100	
20	100	
14	95	
10	95	
6.3	95	
5	95	
3.35	94	
2	94	
1.18	92	
0.600	90	
0.425	88	
0.300	81	
0.212	73	
0.150	64	
0.063	48.8	



Certified that the Particle Size Distribution was determined in accordance with BS 1377 - 2 : 1990, Method 9.2. Washing & Dry Sieving
Method of Preparation: BS 1377 - 1 & 2 : 1990

Signed: M. Carr [✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager
For and on behalf of Environmental Scientifics Group

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Determination of Particle Size Distribution

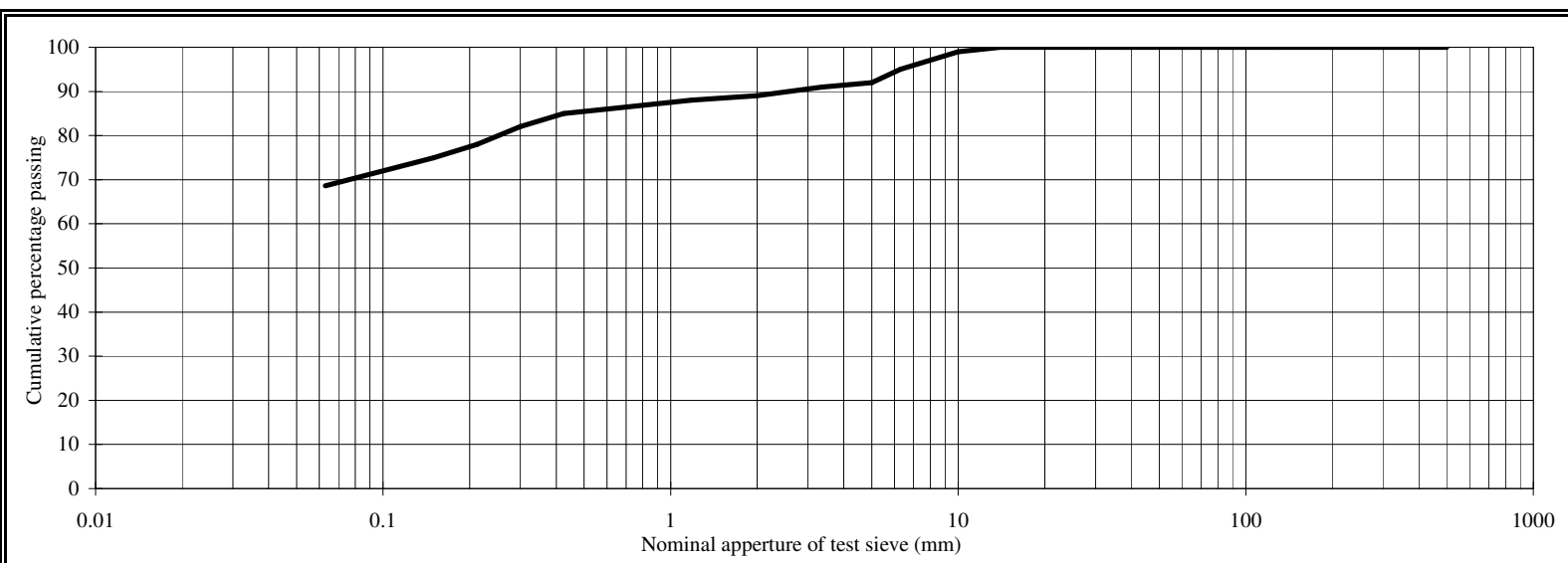
Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Postcode: BS32 4DF
Contact: Adam Cheers
Site: C151811 Rayware Site
Report No: 51020116/16/21
Batch Number: DAM0057795
Lab Ref: 45265248
Client Ref: Combined Samples
Location: WS09/WS10/WS11
Depth (m): 1.20/1.20-1.50/0.70-1.00
Date Sampled: 30.11.15
Date Received: 11.12.15
Date Tested: 23.12.15
Sample Type: Bulk
Sample Mass (kg): 15
Sampled by: Client
Sampled from: Site
Supplier: Client
Source: Site

Description: Brown red sandy CLAY with occasional Gravel

Specification: Not Required

Comments:

SIEVE ANALYSIS		
BS Sieve (mm)	Passing (%)	Material Specification
500	100	
300	100	
125	100	
100	100	
90	100	
75	100	
63	100	
50	100	
37.5	100	
28	100	
20	100	
14	100	
10	99	
6.3	95	
5	92	
3.35	91	
2	89	
1.18	88	
0.600	86	
0.425	85	
0.300	82	
0.212	78	
0.150	75	
0.063	68.6	



Certified that the Particle Size Distribution was determined in accordance with BS 1377 - 2 : 1990, Method 9.2. Washing & Dry Sieving

Method of Preparation: BS 1377 - 1 & 2 : 1990

Signed:

M. Carr

[✓] M. Carr - Section Manager

[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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Determination of Particle Size Distribution

Client: Hydrock Consultants Ltd
 Client Address: Over Courts Barn
 Over Lane
 Almondsbury, Bristol
 Postcode: BS32 4DF
 Contact: Adam Cheers
 Site: C151811 Rayware Site

Report No: 51020116/16/20
 Batch Number: DAM0057795
 Lab Ref: 45265247
 Client Ref: Combined Samples
 Location: WS05/WS16A/WS22
 Depth (m): 0.25-0.80/0.80/0.60
 Date Sampled: 30.11.15
 Date Received: 11.12.15
 Date Tested: 23.12.15
 Sample Type: Bulk
 Sample Mass (kg): 30

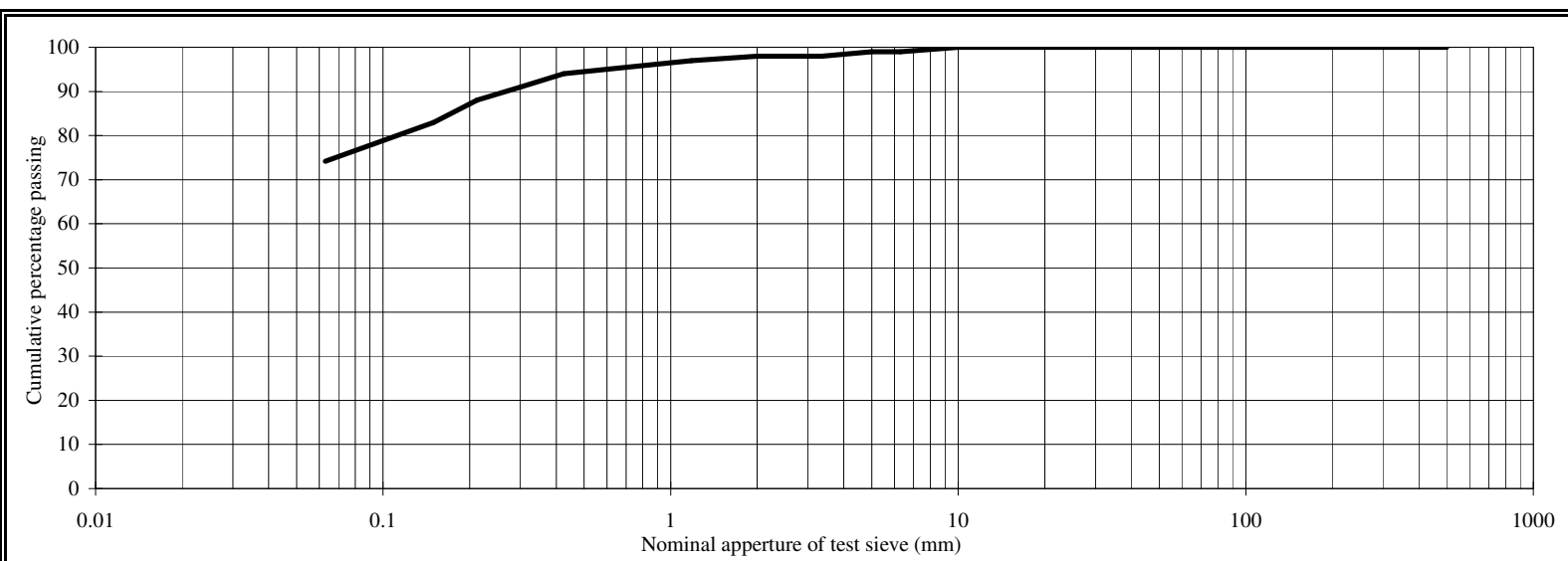
Sampled by: Client
 Sampled from: Site
 Supplier: Client
 Source: Site

Description: Brown sandy CLAY with occasional Gravel

Specification: Not Required

Comments:

SIEVE ANALYSIS		
BS Sieve (mm)	Passing (%)	Material Specification
500	100	
300	100	
125	100	
100	100	
90	100	
75	100	
63	100	
50	100	
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	99	
5	99	
3.35	98	
2	98	
1.18	97	
0.600	95	
0.425	94	
0.300	91	
0.212	88	
0.150	83	
0.063	74.2	



Certified that the Particle Size Distribution was determined in accordance with BS 1377 - 2 : 1990, Method 9.2. Washing & Dry Sieving

Method of Preparation: BS 1377 - 1 & 2 : 1990

Page: 1 of 1
 Date: 12.01.16

Signed:

[✓] M. Carr - Section Manager

[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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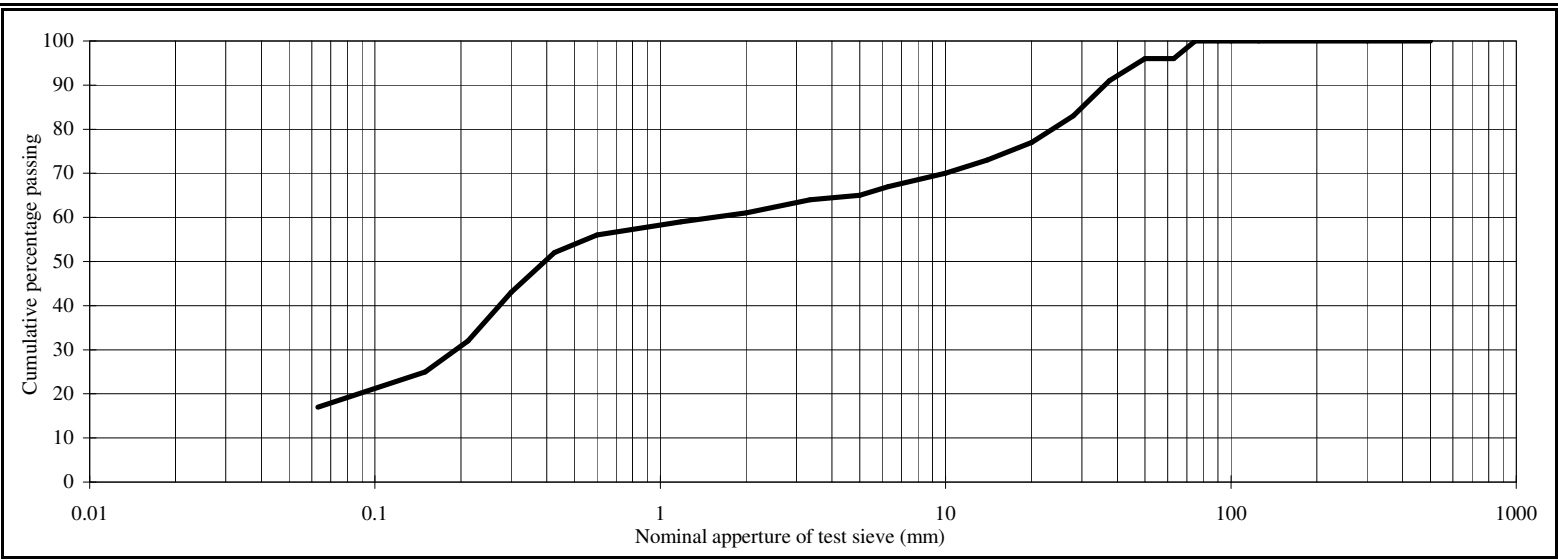


0001

Determination of Particle Size Distribution

Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Postcode: BS32 4DF
Contact: Adam Cheers
Site: C151811 Rayware Site
Depth (m): 0.30-0.50/0.25/0.50/0.25
Date Sampled: 30.11.15
Date Received: 11.12.15
Date Tested: 23.12.15
Sample Type: Bulk
Sample Mass (kg): 30
Description: Brown clayey Crushed Concrete, Brick and Rock
Specification: Not Required
Comments:

SIEVE ANALYSIS		
BS Sieve (mm)	Passing (%)	Material Specification
500	100	
300	100	
125	100	
100	100	
90	100	
75	100	
63	96	
50	96	
37.5	91	
28	83	
20	77	
14	73	
10	70	
6.3	67	
5	65	
3.35	64	
2	61	
1.18	59	
0.600	56	
0.425	52	
0.300	43	
0.212	32	
0.150	25	
0.063	17.0	



Certified that the Particle Size Distribution was determined in accordance with BS 1377 - 2 : 1990, Method 9.2. Washing & Dry Sieving
Method of Preparation: BS 1377 - 1 & 2 : 1990

Page: 1 of 1
Date: 12.01.16
Signed: *M. Carr* [✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager
For and on behalf of Environmental Scientifics Group



0001

Determination of Particle Size Distribution

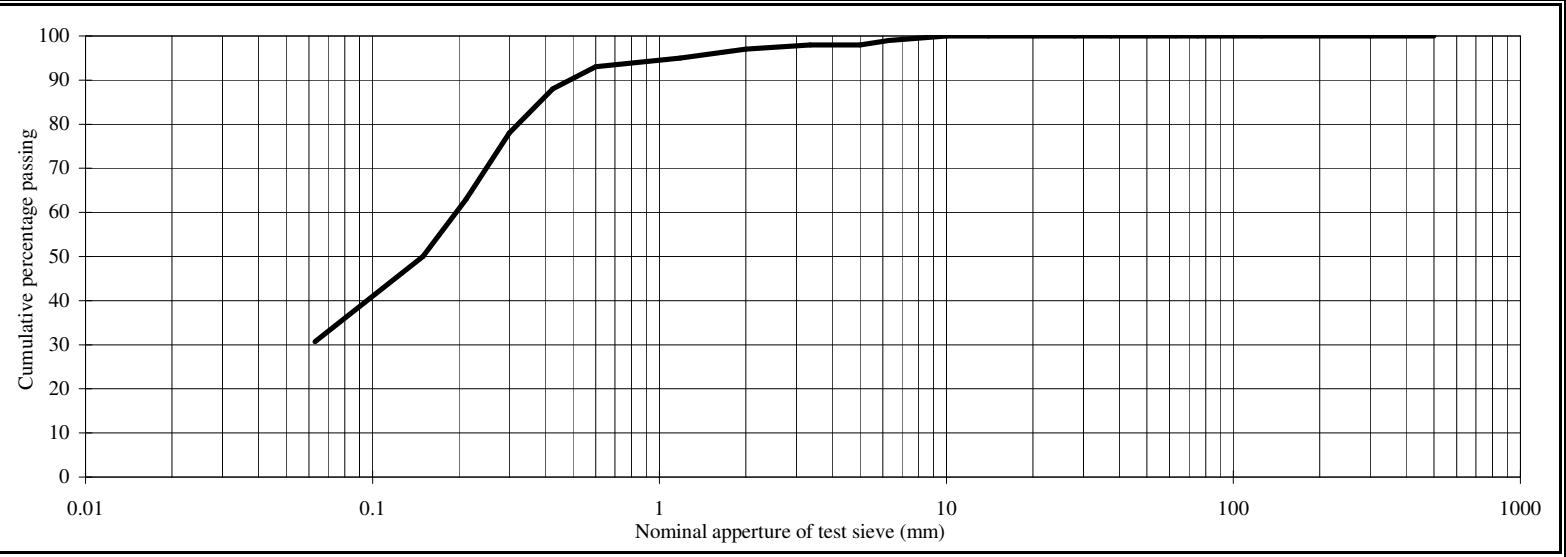
Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Postcode: BS32 4DF
Contact: Adam Cheers
Site: C151811 Rayware Site
Report No: 51020116/16/18
Batch Number: DAM0057795
Lab Ref: 45265245
Client Ref: Combined Samples
Location: WS09/WS10
/WS11/WS2
Depth (m): 0.50-0.70/0.25-0.50/0.50-
0.70/0.80-1.00
Date Sampled: 30.11.15
Date Received: 11.12.15
Date Tested: 23.12.15
Sample Type: Bulk
Sample Mass (kg): 40

Description: Brown very clayey SAND with occasional Gravel

Specification: Not Required

Comments:

SIEVE ANALYSIS		
BS Sieve (mm)	Passing (%)	Material Specification
500	100	
300	100	
125	100	
100	100	
90	100	
75	100	
63	100	
50	100	
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	99	
5	98	
3.35	98	
2	97	
1.18	95	
0.600	93	
0.425	88	
0.300	78	
0.212	63	
0.150	50	
0.063	30.7	



Certified that the Particle Size Distribution was determined in accordance with BS 1377 - 2 : 1990, Method 9.2. Washing & Dry Sieving
Method of Preparation: BS 1377 - 1 & 2 : 1990

Signed: M. Carr [✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager
For and on behalf of Environmental Scientifics Group



0001

Determination of Particle Density

Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Client Postcode: BS32 4DF
Contact: Adam Cheers
Site: C151811 Rayware Site

Report No: 51020116/16/17
Batch Number: DAM0057795
Client Reference: Combined Samples
Sampled by: Client
Date Sampled: 30.11.15
Date Received: 11.12.15
Tested From: 18.12.15
Type of Sample: Bulk

Test Results:

Laboratory Reference	Location	Depth (m)	Description	Particle Density (Mg/m³)
45265245	WS09/WS10/W S11/WS20	0.50-0.70/0.25- 0.50/0.50-0.70/0.80- 1.00	Brown very clayey SAND with occasional Gravel	2.64
45265246	WS03/WS07/W S15A/WS23	0.30- 0.50/0.20/0.50/0.25	Brown clayey Crushed Concrete, Brick and Rock	2.63
45265247	WS05/WS16A/ WS22	0.25-0.80/0.80/0.60	Brown sandy CLAY with occasional Gravel	2.74
45265248	WS09/WS10/W S11	1.20/1.20-1.50/0.70- 1.00	Brown red sandy CLAY with occasional Gravel	2.74

Certified that the laboratory testing was carried out in accordance with BS 1377-2: 1990: Method 8.2

Page: 1 of 1
Date: 12.01.16

Signed

[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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0001

TEST REPORT

Determination of Moisture Content/Dry Density Relationship

Client:	Hydrock Consultants Ltd	Report No:	51020116/16/16
Client Address:	Over Courts Barn Over Lane Almondsbury, Bristol	Batch Number:	DAM0057795
Postcode:	BS32 4DF	Client Reference:	Combined
Contact:	Adam Cheers	Location:	WS09/WS10/WS11
Site:	C151811 Rayware Site	Depth (m):	1.20/1.20-1.50/0.70-1.00
Sample Type:	Bulk	Sampled by:	Client
Specimen Type:	Multiple	Date Sampled:	30.11.15
		Date Received:	11.12.15

Test Results:

Retained on 37.5mm Sieve: 0.0 %

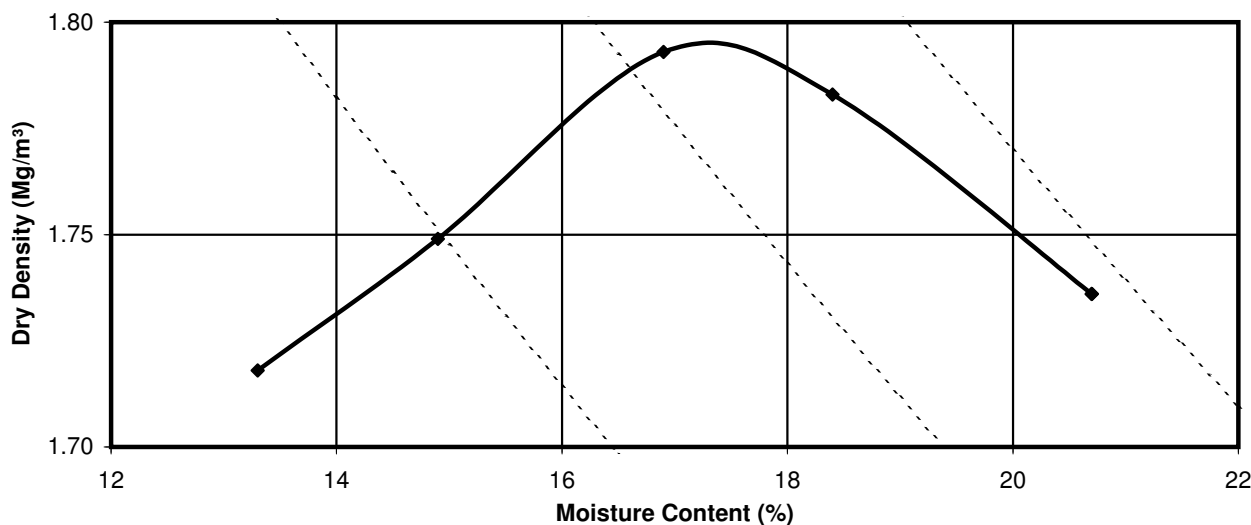
Retained on 20mm Sieve: 0.0 %

Particle Density: 2.74 Mg/m³

Measured or Assumed: Measured

Laboratory Reference	Description	As Received Moisture Content (%)	Optimum Moisture Content (%)	Maximum Dry Density (Mg/m ³)
45265248	Brown red sandy CLAY with occasional Gravel	19	17	1.79

Moisture Content/Dry Density Relationship



----- Particle Density = 2.74Mg/m³, 0% Air Voids ----- 5% Air Voids ----- 10% Air Voids

Point	1	2	3	4	5
Moisture Content (%)	13	15	17	18	21
Dry Density (Mg/m ³)	1.72	1.75	1.79	1.78	1.74
*Hand Vane (kPa)	>234	>234	152	134	119

Certified that the test was carried out in accordance with BS 1377-4: 1990: Method 3.3 (2.5kg Rammer)

Sample Preparation: In accordance with BS 1377-1 & 4:1990

Air Void Lines plotted at 0%, 5% and 10% Values

* Not UKAS Accredited for this Test

Page: 1 of 1
Date: 12.01.16

Signed:

M. Carr

[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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0001

TEST REPORT

Determination of Moisture Content/Dry Density Relationship

Client:	Hydrock Consultants Ltd	Report No:	51020116/16/15
Client Address:	Over Courts Barn Over Lane Almondsbury, Bristol	Batch Number:	DAM0057795
Postcode:	BS32 4DF	Client Reference:	Combined
Contact:	Adam Cheers	Location:	WS05/WS16A/WS22
Site:	C151811 Rayware Site	Depth (m):	0.25-0.80/0.80/0.60
Sample Type:	Bulk	Sampled by:	Client
Specimen Type:	Multiple	Date Sampled:	30.11.15
		Date Received:	11.12.15

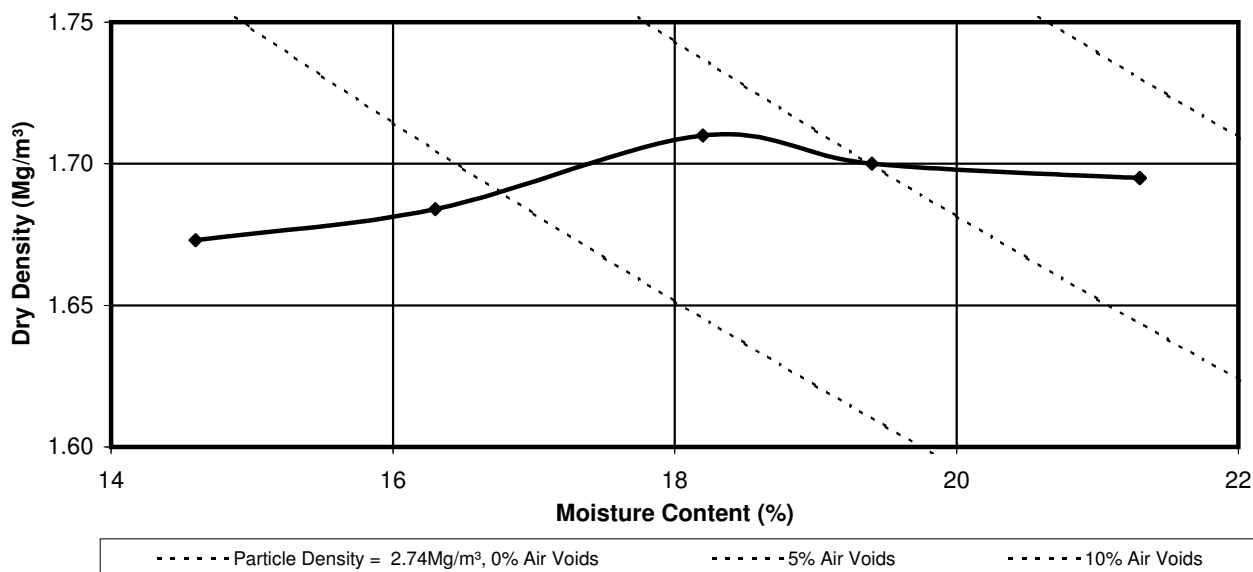
Test Results:

Retained on 37.5mm Sieve: 0.0 %
Retained on 20mm Sieve: 0.0 %

Particle Density: 2.74 Mg/m³
Measured or Assumed: Measured

Laboratory Reference	Description	As Received Moisture Content (%)	Optimum Moisture Content (%)	Maximum Dry Density (Mg/m ³)
45265247	Brown sandy CLAY with occasional Gravel	19	18	1.71

Moisture Content/Dry Density Relationship



Point	1	2	3	4	5
Moisture Content (%)	15	16	18	19	21
Dry Density (Mg/m ³)	1.67	1.68	1.71	1.70	1.70
*Hand Vane (kPa)	>234	>234	225	217	134

Certified that the test was carried out in accordance with BS 1377-4: 1990: Method 3.3 (2.5kg Rammer)

Sample Preparation: In accordance with BS 1377-1 & 4:1990

Air Void Lines plotted at 0%, 5% and 10% Values

* Not UKAS Accredited for this Test

Page: 1 of 1
Date: 12.01.16

Signed:

M. Carr

[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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0001

TEST REPORT

Determination of Moisture Content/Dry Density Relationship

Client:	Hydrock Consultants Ltd	Report No:	51020116/16/14
Client Address:	Over Courts Barn Over Lane Almondsbury, Bristol	Batch Number:	DAM0057795
Postcode:	BS32 4DF	Client Reference:	Combined
Contact:	Adam Cheers	Location:	WS03/WS07/WS15A/WS
Site:	C151811 Rayware Site	Depth (m):	23 0.30-0.50/0.25/0.50/0.25
Sample Type:	Bulk	Sampled by:	Client
Specimen Type:	Multiple	Date Sampled:	30.11.15
		Date Received:	11.12.15

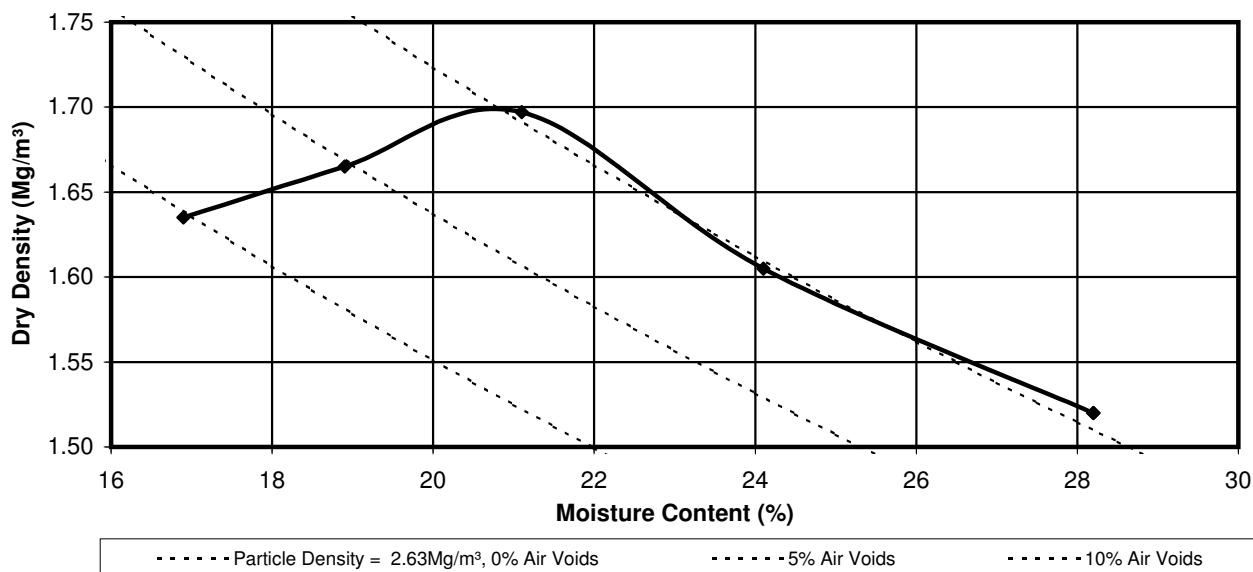
Test Results:

Retained on 37.5mm Sieve: 9.0 %
Retained on 20mm Sieve: 23 %

Particle Density: 2.63 Mg/m³
Measured or Assumed: Measured

Laboratory Reference	Description	As Received Moisture Content (%)	Optimum Moisture Content (%)	Maximum Dry Density (Mg/m ³)
45265246	Brown clayey Crushed Concrete, Brick and Rock	16	21	1.70

Moisture Content/Dry Density Relationship



Point	1	2	3	4	5
Moisture Content (%)	17	19	21	24	28
Dry Density (Mg/m ³)	1.64	1.67	1.70	1.61	1.52
Mexe Probe	>14	>14	>14	3.5	2

Certified that the test was carried out in accordance with BS 1377-4: 1990: Method 3.3 (2.5kg Rammer)

Sample Preparation: In accordance with BS 1377-1 & 4:1990

Air Void Lines plotted at 0%, 5% and 10% Values

* Not UKAS Accredited for this Test

Page: 1 of 1
Date: 12.01.16

Signed:

M. Carr

[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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0001

TEST REPORT

Determination of Moisture Content/Dry Density Relationship

Client:	Hydrock Consultants Ltd	Report No:	51020116/16/13
Client Address:	Over Courts Barn Over Lane Almondsbury, Bristol	Batch Number:	DAM0057795
Postcode:	BS32 4DF	Client Reference:	Combined
Contact:	Adam Cheers	Location:	WS09/WS10/WS11/WS2
Site:	C151811 Rayware Site	Depth (m):	0 0.50-0.70/0.25-0.50/0.50-0.70/0.80-1.00
Sample Type:	Bulk	Sampled by:	Client
Specimen Type:	Multiple	Date Sampled:	30.11.15
		Date Received:	11.12.15

Test Results:

Retained on 37.5mm Sieve: 0.0 %

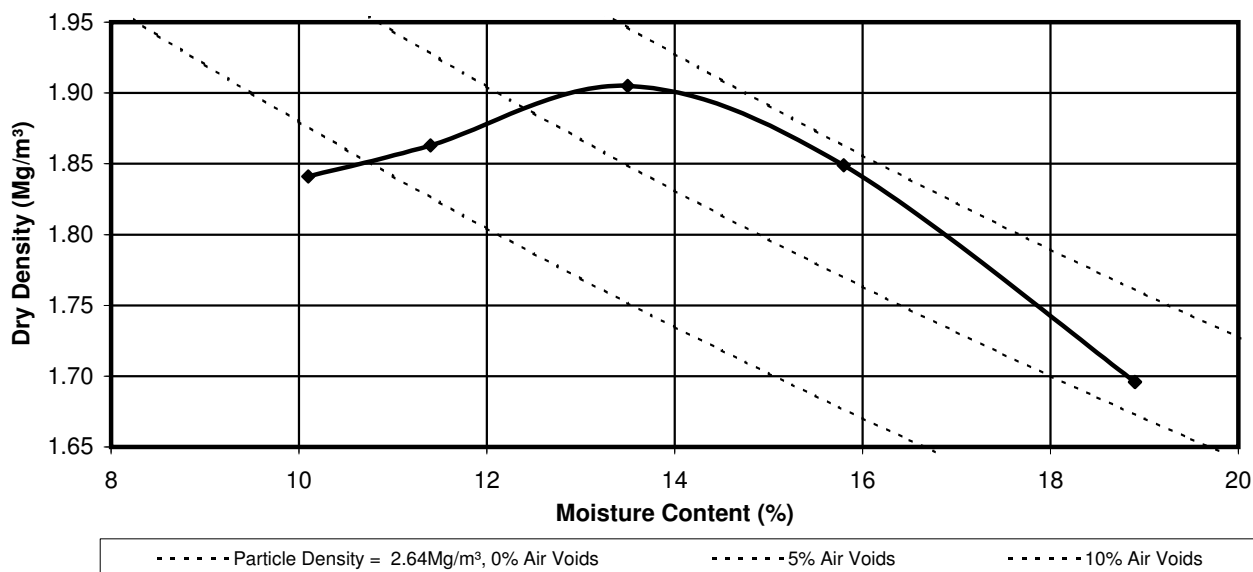
Retained on 20mm Sieve: 0.0 %

Particle Density: 2.64 Mg/m³

Measured or Assumed: Measured

Laboratory Reference	Description	As Received Moisture Content (%)	Optimum Moisture Content (%)	Maximum Dry Density (Mg/m ³)
45265245	Brown very clayey SAND with occasional Gravel	16	14	1.91

Moisture Content/Dry Density Relationship



Point	1	2	3	4	5
Moisture Content (%)	10	11	14	16	19
Dry Density (Mg/m ³)	1.84	1.86	1.91	1.85	1.70
*Hand Vane (kPa)	>234	>234	152	25	1

Certified that the test was carried out in accordance with BS 1377-4: 1990: Method 3.3 (2.5kg Rammer)

Sample Preparation: In accordance with BS 1377-1 & 4:1990

Air Void Lines plotted at 0%, 5% and 10% Values

* Not UKAS Accredited for this Test

Page: 1 of 1
Date: 12.01.16

Signed:

M. Carr

[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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Determination of Moisture Content and Atterberg Limits

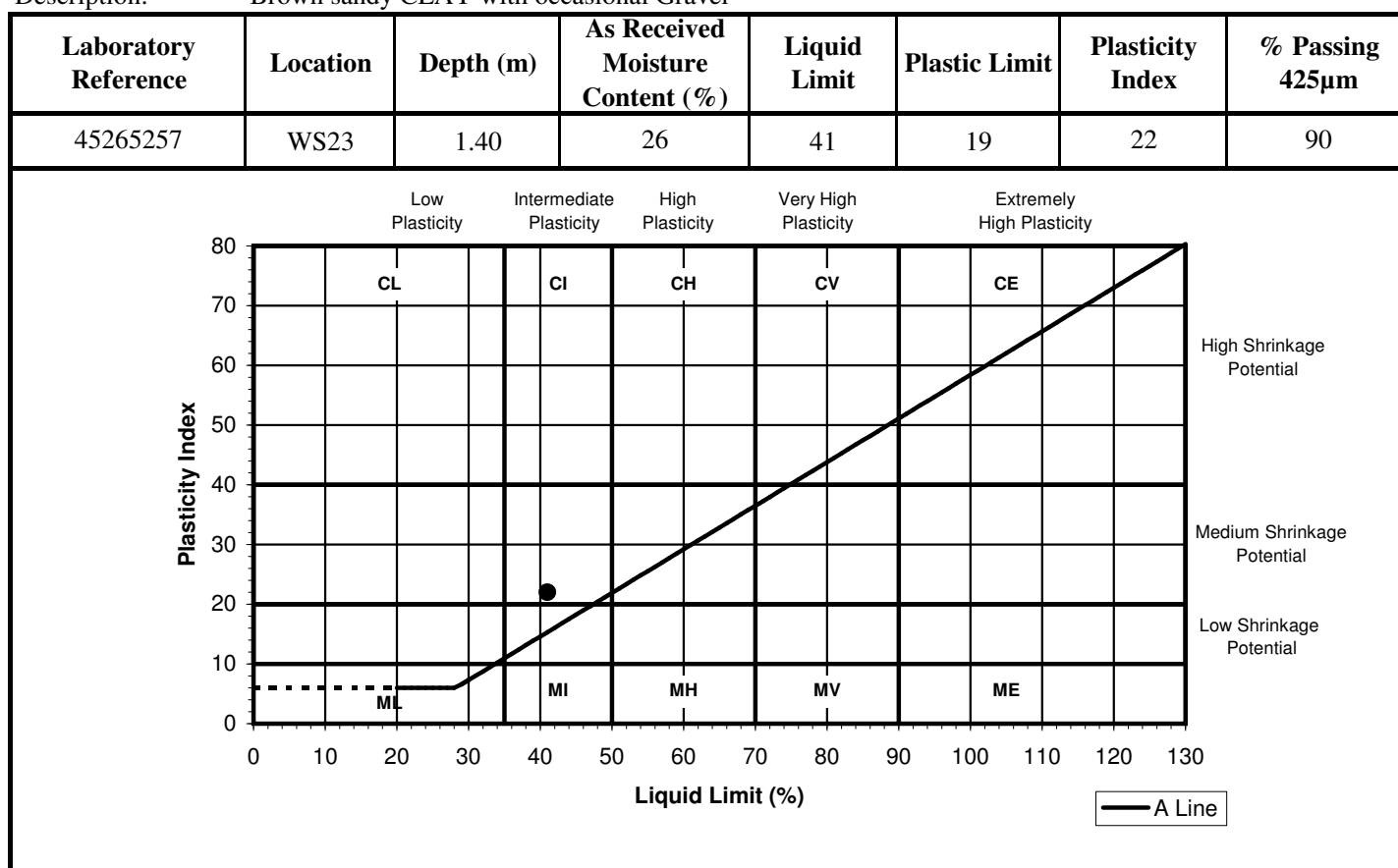
Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Postcode: BS32 4DF
Contact: Adam Cheers

Report No: 51020116/16/11
Batch Number: DAM0057795
Sampled by: Client
Date Sampled: 30.11.15
Date Received: 11.12.15
Tested From: 17.12.15-21.12.15
Sample Type: Bulk

Site: C151811 Rayware Site

Test Results:

Description: Brown sandy CLAY with occasional Gravel



Sample Preparation: As Received, Coarse particles removed by hand prior to test
Estimated % passing 425µm BS Test Sieve

Certified that the laboratory testing was carried out in accordance with BS 1377-2: 1990: Method 3.2, 4.4 and 5

Page: 1 of 1
Date: 12.01.16

Signed

M. Carr

[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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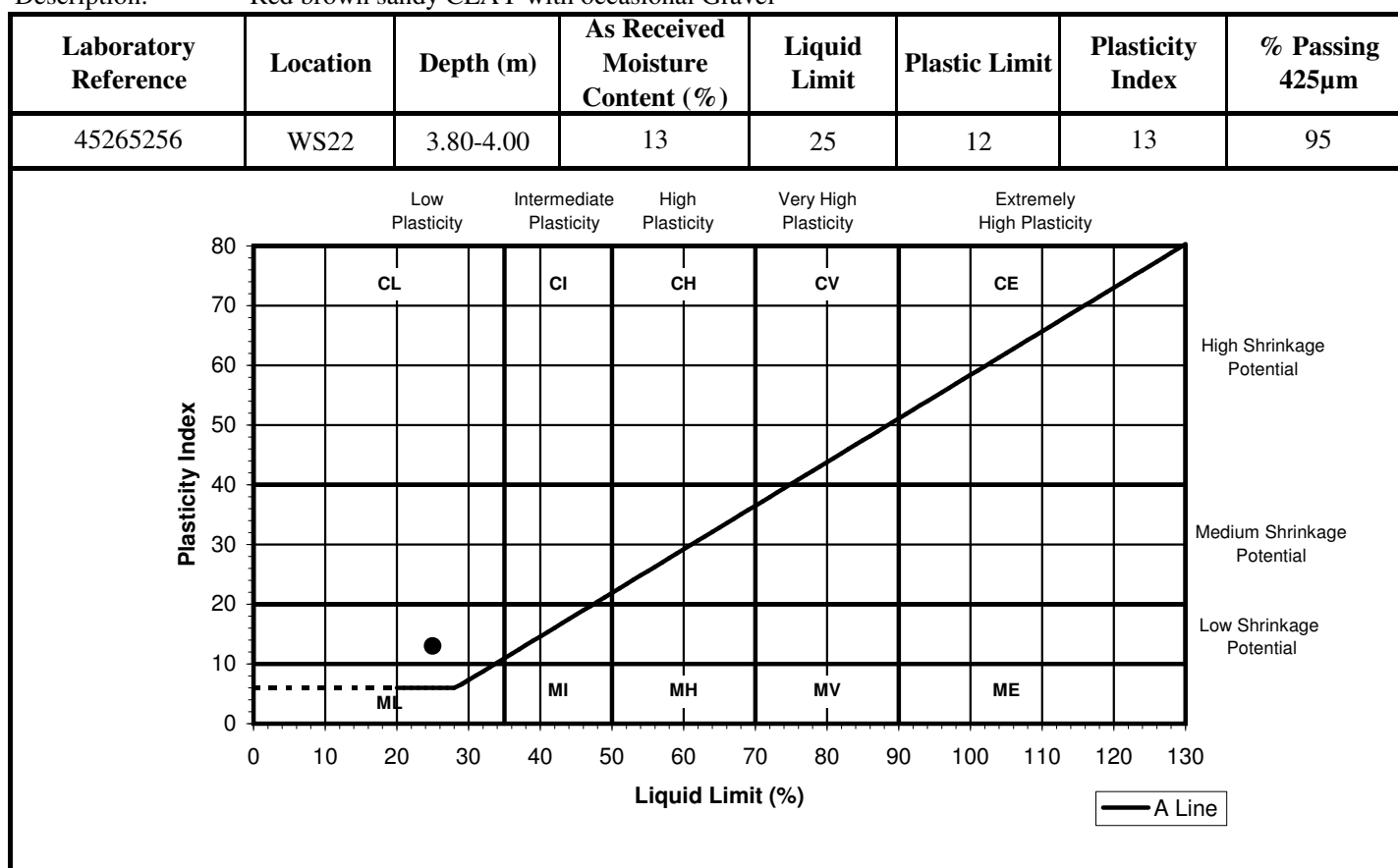
Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Postcode: BS32 4DF
Contact: Adam Cheers
Site: C151811 Rayware Site

Report No: 51020116/16/10
Batch Number: DAM0057795
Sampled by: Client
Date Sampled: 30.11.15
Date Received: 11.12.15
Tested From: 17.12.15-21.12.15
Sample Type: Bulk

Test Results:

Description: Red brown sandy CLAY with occasional Gravel



Sample Preparation: As Received, Coarse particles removed by hand prior to test
Estimated % passing 425µm BS Test Sieve

Certified that the laboratory testing was carried out in accordance with BS 1377-2: 1990: Method 3.2, 4.4 and 5

Page: 1 of 1
Date: 12.01.16

Signed

M. Carr

[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Postcode: BS32 4DF
Contact: Adam Cheers

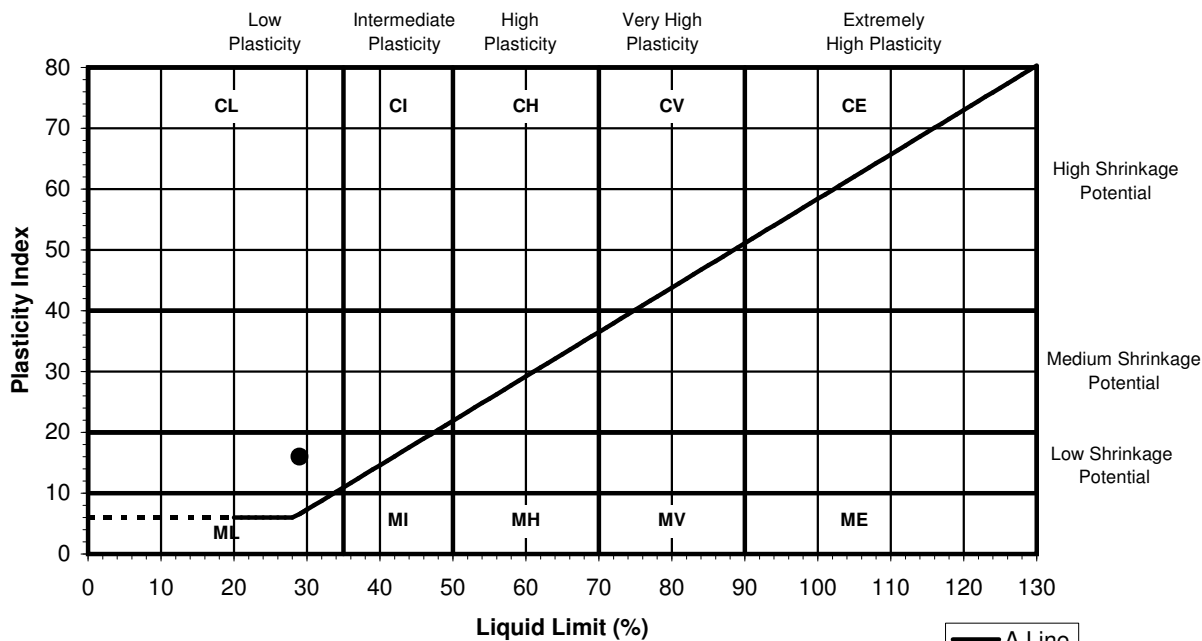
Report No: 51020116/16/09
Batch Number: DAM0057795
Sampled by: Client
Date Sampled: 30.11.15
Date Received: 11.12.15
Tested From: 17.12.15-21.12.15
Sample Type: Bulk

Site: C151811 Rayware Site

Test Results:

Description: Red brown sandy CLAY with occasional Gravel

Laboratory Reference	Location	Depth (m)	As Received Moisture Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Passing 425µm
45265255	WS20	1.50-2.00	18	29	13	16	91



Sample Preparation: As Received, Coarse particles removed by hand prior to test
Estimated % passing 425µm BS Test Sieve

Certified that the laboratory testing was carried out in accordance with BS 1377-2: 1990: Method 3.2, 4.4 and 5

Page: 1 of 1
Date: 12.01.16

Signed

M. Carr

[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

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Determination of Moisture Content and Atterberg Limits

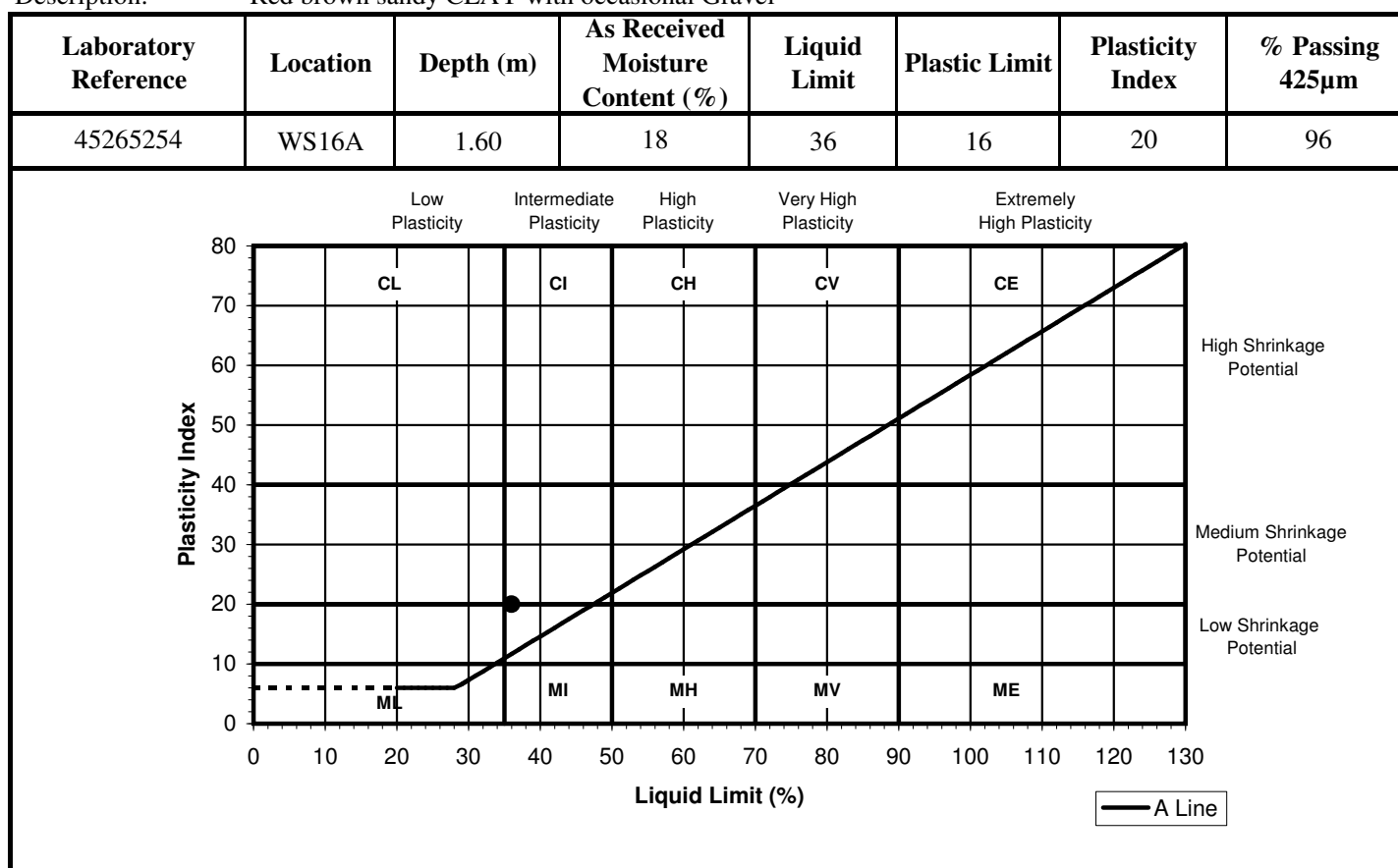
Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Postcode: BS32 4DF
Contact: Adam Cheers

Report No: 51020116/16/08
Batch Number: DAM0057795
Sampled by: Client
Date Sampled: 30.11.15
Date Received: 11.12.15
Tested From: 17.12.15-21.12.15
Sample Type: Bulk

Site: C151811 Rayware Site

Test Results:

Description: Red brown sandy CLAY with occasional Gravel



Sample Preparation: As Received, Coarse particles removed by hand prior to test
Estimated % passing 425µm BS Test Sieve

Certified that the laboratory testing was carried out in accordance with BS 1377-2: 1990: Method 3.2, 4.4 and 5

Page: 1 of 1
Date: 12.01.16

Signed

M. Carr

[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

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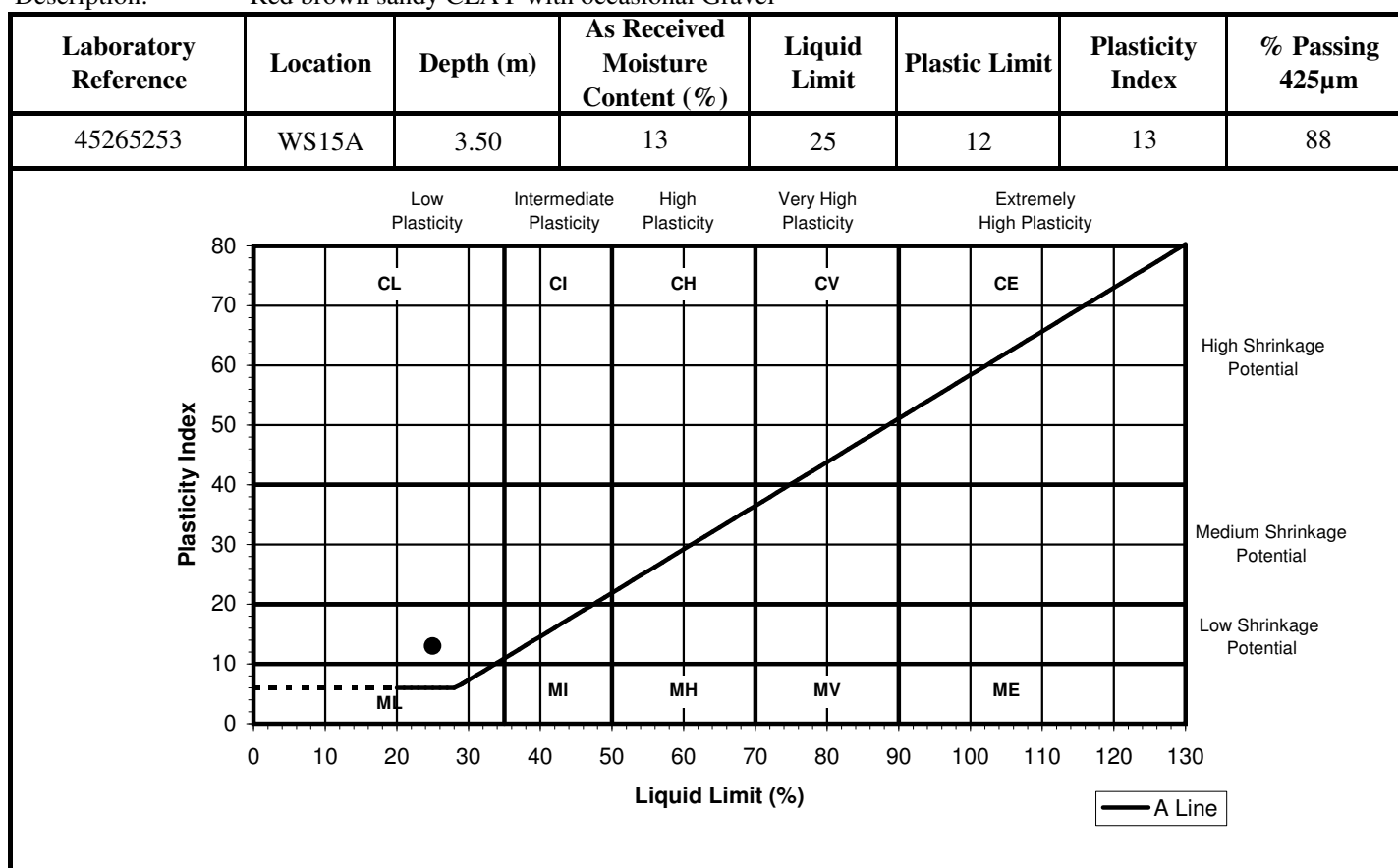
Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Postcode: BS32 4DF
Contact: Adam Cheers
Site: C151811 Rayware Site

Report No: 51020116/16/07
Batch Number: DAM0057795
Sampled by: Client
Date Sampled: 30.11.15
Date Received: 11.12.15
Tested From: 17.12.15-21.12.15
Sample Type: Bulk

Test Results:

Description: Red brown sandy CLAY with occasional Gravel



Sample Preparation: As Received, Coarse particles removed by hand prior to test
Estimated % passing 425µm BS Test Sieve

Certified that the laboratory testing was carried out in accordance with BS 1377-2: 1990: Method 3.2, 4.4 and 5

Page: 1 of 1
Date: 12.01.16

Signed

M. Carr

[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

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Determination of Moisture Content and Atterberg Limits

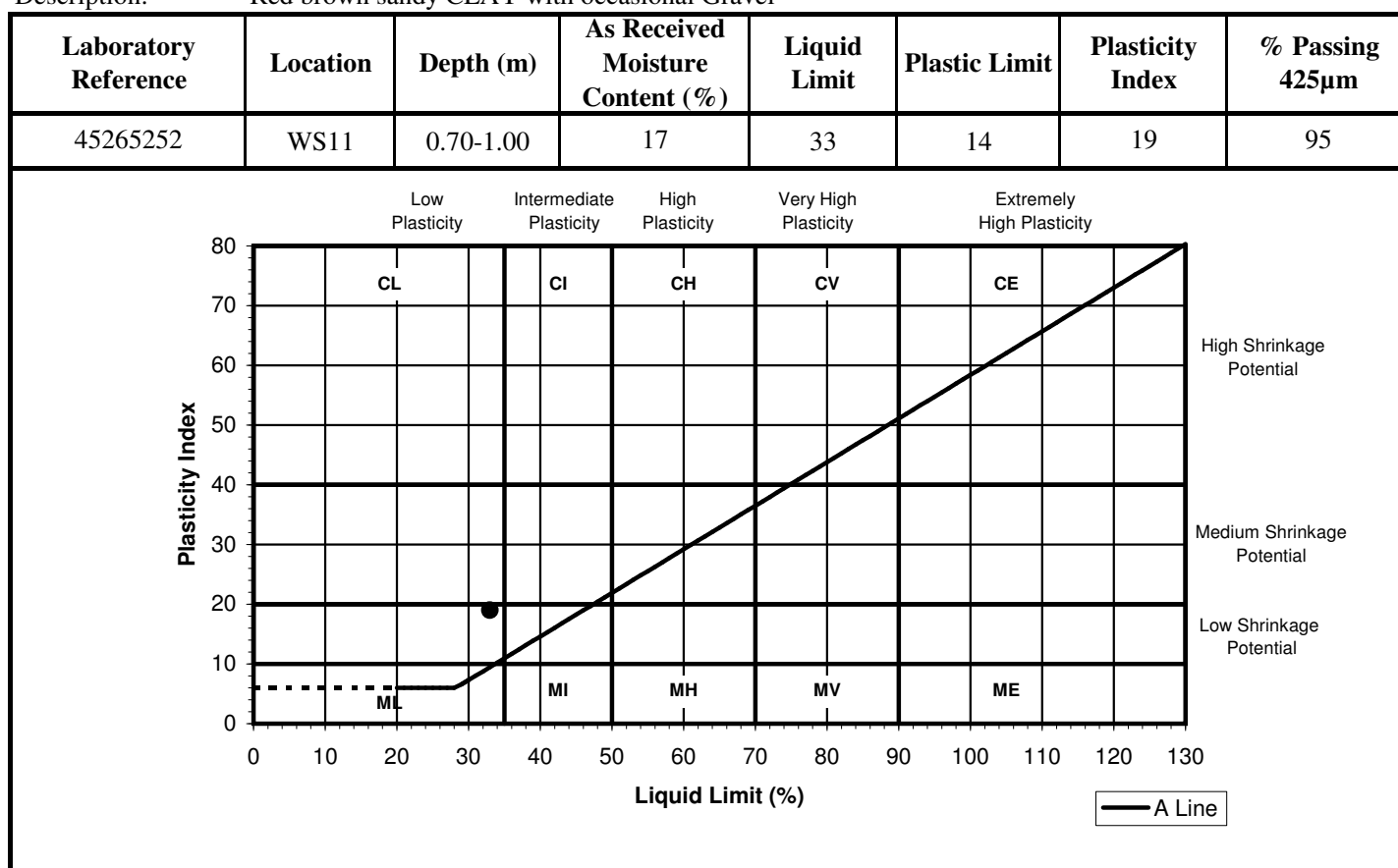
Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Postcode: BS32 4DF
Contact: Adam Cheers

Report No: 51020116/16/06
Batch Number: DAM0057795
Sampled by: Client
Date Sampled: 30.11.15
Date Received: 11.12.15
Tested From: 17.12.15-21.12.15
Sample Type: Bulk

Site: C151811 Rayware Site

Test Results:

Description: Red brown sandy CLAY with occasional Gravel



Sample Preparation: As Received, Coarse particles removed by hand prior to test
Estimated % passing 425µm BS Test Sieve

Certified that the laboratory testing was carried out in accordance with BS 1377-2: 1990: Method 3.2, 4.4 and 5

Page: 1 of 1
Date: 12.01.16

Signed

M. Carr

[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

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Determination of Moisture Content and Atterberg Limits

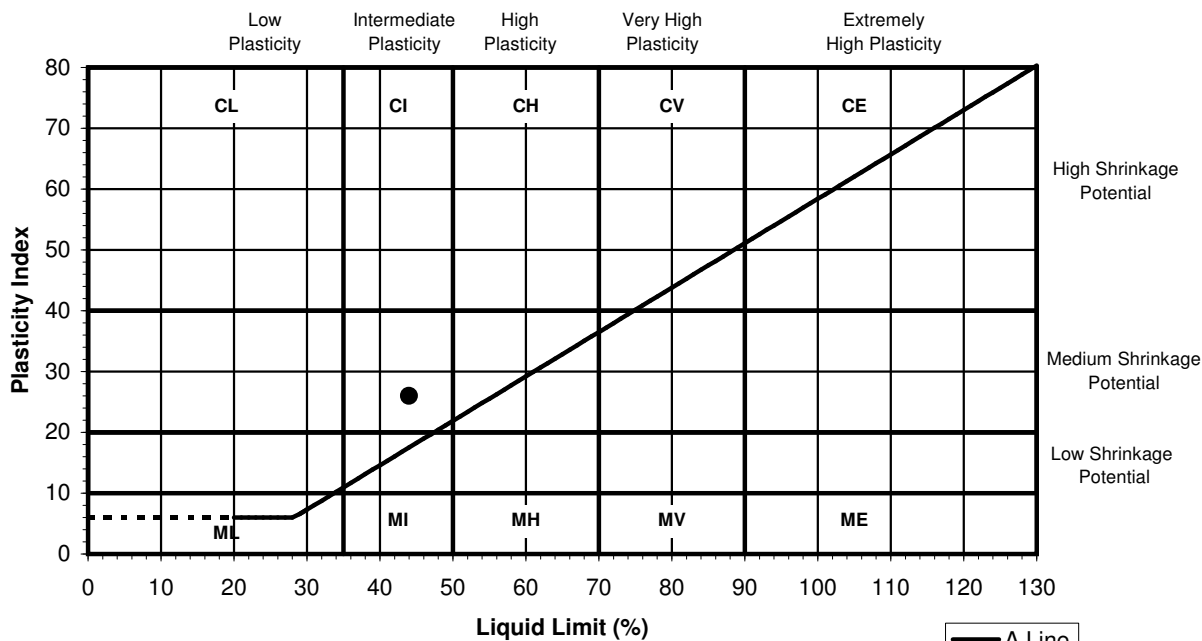
Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Postcode: BS32 4DF
Contact: Adam Cheers
Site: C151811 Rayware Site

Report No: 51020116/16/05
Batch Number: DAM0057795
Sampled by: Client
Date Sampled: 30.11.15
Date Received: 11.12.15
Tested From: 16.12.15-21.12.15
Sample Type: Bulk

Test Results:

Description: Brown sandy CLAY

Laboratory Reference	Location	Depth (m)	As Received Moisture Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Passing 425µm
45265251	WS09	2.00	24	44	18	26	100



Sample Preparation: As Received, Coarse particles removed by hand prior to test
Estimated % passing 425µm BS Test Sieve

Certified that the laboratory testing was carried out in accordance with BS 1377-2: 1990: Method 3.2, 4.4 and 5

Page: 1 of 1
Date: 12.01.16

Signed

M. Carr

[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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

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Environmental Scientifics Group. Registered in England No. 2880501. Registered Office: ESG House, Brethby Business Park, Ashby Road, Burton on Trent DE15 0YZ

Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Postcode: BS32 4DF
Contact: Adam Cheers

Site: C151811 Rayware Site

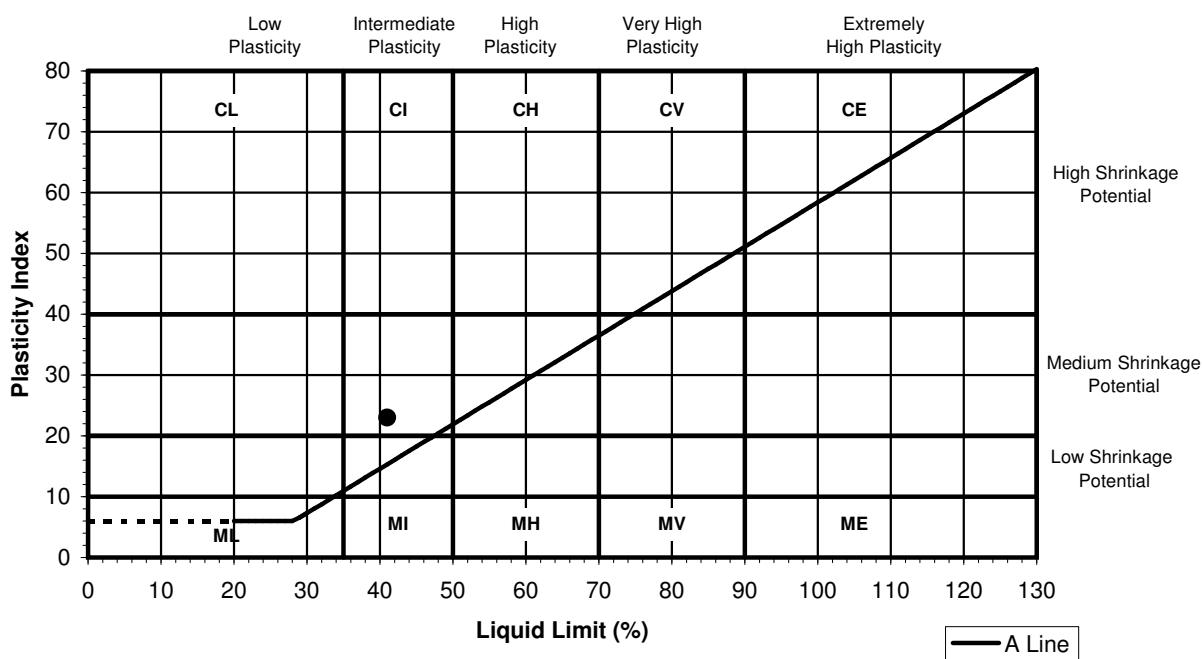
Report No: 51020116/16/04
Batch Number: DAM0057795

Client Reference: Combined Samples
Sampled by: Client
Date Sampled: 30.11.15
Date Received: 11.12.15
Tested From: 16.12.15-21.12.15
Sample Type: Bulk

Test Results:

Description: Brown red sandy CLAY with occasional Gravel

Laboratory Reference	Location	Depth (m)	As Received Moisture Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Passing 425µm
45265248	WS09/WS10/WS11	1.20/1.20-1.50/0.70-1.00	19	41	18	23	85



Sample Preparation: As Received, Coarse particles removed by hand prior to test
Actual % passing 425µm BS Test Sieve from separate grading analysis

Certified that the laboratory testing was carried out in accordance with BS 1377-2: 1990: Method 3.2, 4.4 and 5

Page: 1 of 1
Date: 12.01.16

Signed

M. Carr

[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

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Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Postcode: BS32 4DF
Contact: Adam Cheers

Site: C151811 Rayware Site

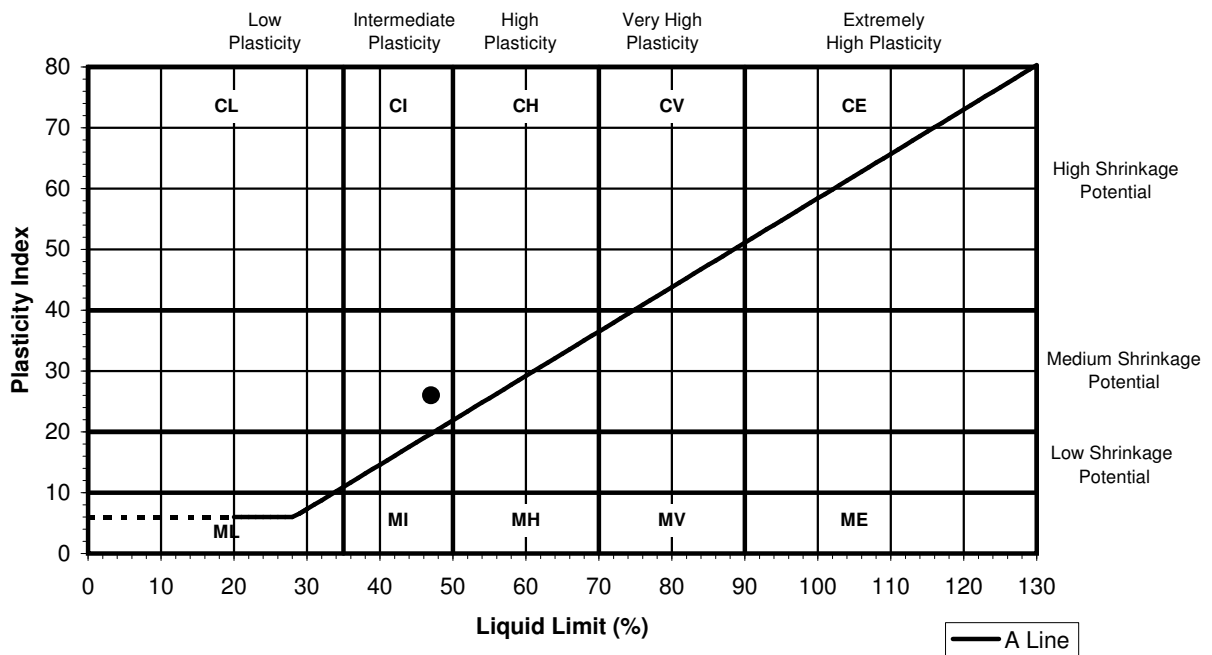
Report No: 51020116/16/03
Batch Number: DAM0057795

Client Reference: Combined Samples
Sampled by: Client
Date Sampled: 30.11.15
Date Received: 11.12.15
Tested From: 16.12.15-21.12.15
Sample Type: Bulk

Test Results:

Description: Brown sandy CLAY with occasional Gravel

Laboratory Reference	Location	Depth (m)	As Received Moisture Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Passing 425µm
45265247	WS05/WS1 6A/WS22	0.25- 0.80/0.80/0.60	19	47	21	26	94



Sample Preparation: As Received, Coarse particles removed by hand prior to test
Actual % passing 425µm BS Test Sieve from separate grading analysis

Certified that the laboratory testing was carried out in accordance with BS 1377-2: 1990: Method 3.2, 4.4 and 5

Page: 1 of 1
Date: 12.01.16

Signed

M. Carr

[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

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Determination of Moisture Content and Atterberg Limits

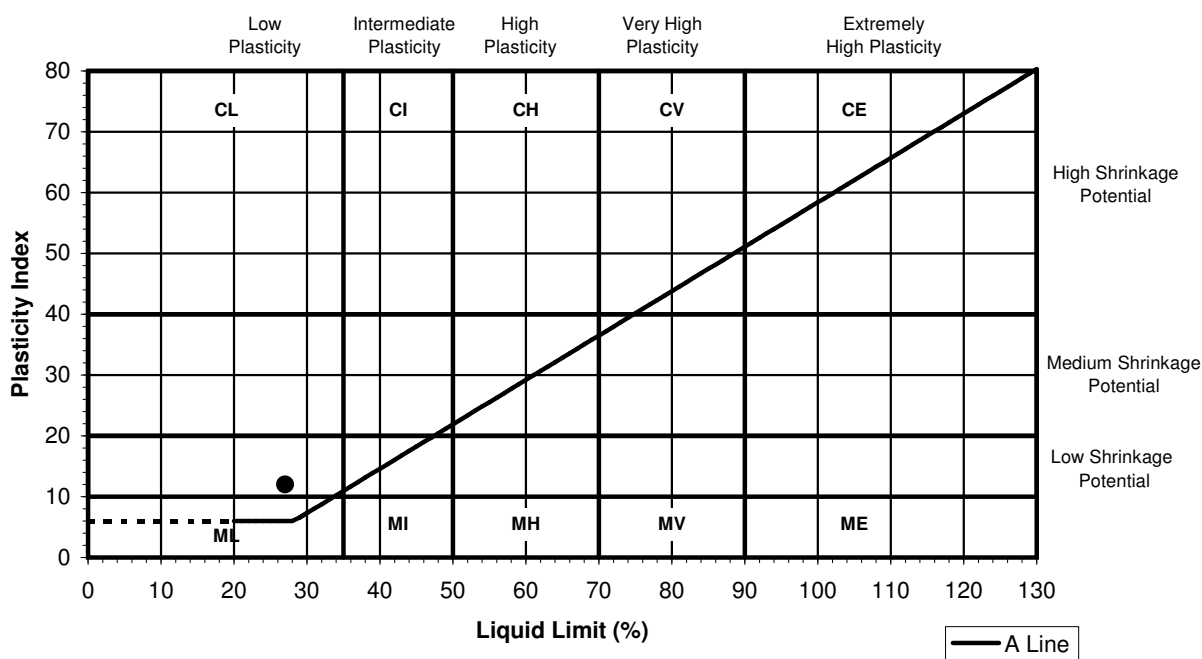
Client: Hydrock Consultants Ltd
Client Address: Over Courts Barn
Over Lane
Almondsbury, Bristol
Postcode: BS32 4DF
Contact: Adam Cheers
Site: C151811 Rayware Site

Report No: 51020116/16/02
Batch Number: DAM0057795
Client Reference: Combined Samples
Sampled by: Client
Date Sampled: 30.11.15
Date Received: 11.12.15
Tested From: 21.12.15-22.12.15
Sample Type: Bulk

Test Results:

Description: Brown clayey Crushed Concrete, Brick and Rock

Laboratory Reference	Location	Depth (m)	As Received Moisture Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Passing 425µm
45265246	WS03/WS07/WS15A/WS23	0.30-0.50/0.25/0.25	15	27	15	12	52



Sample Preparation: Washed over 425µm BS Test Sieve
Actual % passing 425µm BS Test Sieve from separate grading analysis

Certified that the laboratory testing was carried out in accordance with BS 1377-2: 1990: Method 3.2, 4.4 and 5

Page: 1 of 1
Date: 12.01.16

Signed

M. Carr

[✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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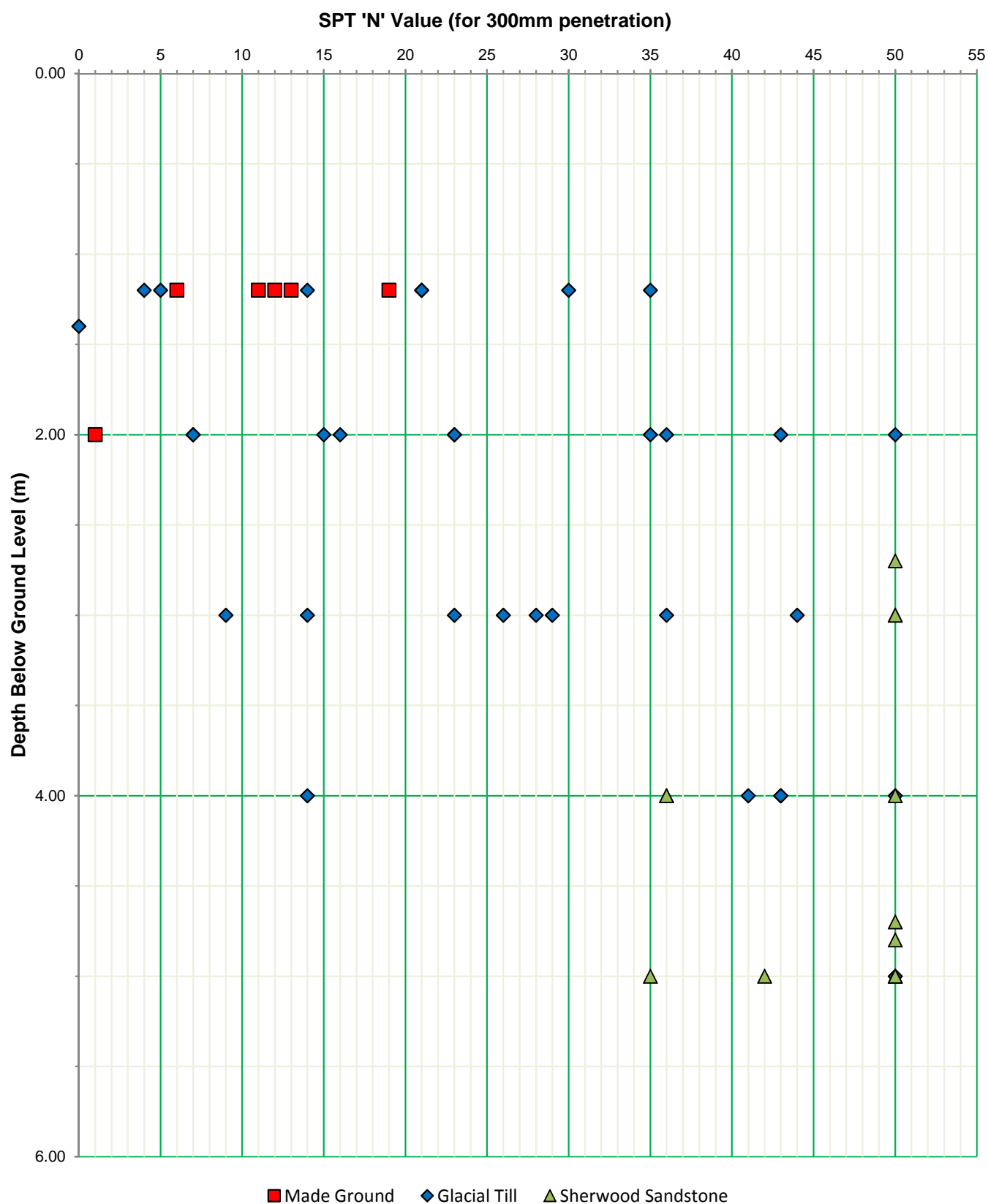
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Environmental Scientifics Group. Registered in England No. 2880501. Registered Office: ESG House, Brethby Business Park, Ashby Road, Burton on Trent DE15 0YZ

Site:
Former Rayware Site, Liverpool

Client:	TJ Morris Limited
----------------	-------------------

Contract No.	C151811
All Data	



Client TJ Morris Limited	Location or material to which this assessment applies All data	
Project Former Rayware Site, Liverpool		
Job number C151811		

Concrete in aggressive ground		After BRE Special Digest 1, 2005
--------------------------------------	--	----------------------------------

Soil data			
	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	8	8	8
No. tests in 20% data set	2	2	2
No. tests with suspected pyrite		0	
Maximum value	415.6	0.1	23
Mean of highest two values	390	0	20
Mean of highest 20%			
Characteristic Value	390	0	20
			Mg not required
	[no pyrite]	[pyrite suspected]	
DS Class	DS-1	DS-1	
If pyrite suspected, DS Class limited to		DS-1	
Is pyrite assumed to be present?	No	Adopted DS Class =	DS-1

Water data		
	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
Characteristic Value (Maximum Level)	0	0
		Mg not required
DS Class		

pH data		
	Soil	Water
Number of tests	8	0
No. tests in 20% data set	2	
Lowest pH	7.6	
Mean of lowest 20%	7.7	
Characteristic value	7.7	
Design value	7.7	
Number of soil pH results less than 5.5	0	

DS Class design value	ACEC Class design value
Based on higher of soil and water data	Brownfield
	Mobile groundwater
DS-1	AC-1



Appendix E

Site Monitoring Data

<div>Site: Former Rayware Site, Liverpool</div> <div>Job number: C151811</div> <div>Client: TJ Morris Limited</div>								Notes on site conditions:																
								11/01/16: Two boreholes not accessible.																
								26.01.2016 Weather conditions = Strong wind with occassional heavy showers																
								04.02.2016 Weather conditions = Strong wind but dry. Many puddles on ground from previous rain																
Gas analyser: GFM435 No. 11874								Notes: LEL = lower explosive limit = 5%v/v. * where the flow is less than the limit of detection of the instrument, the detection limit is reported. GSVs are rounded to 3 places.																
Equipment check OK: Y																								
Service in date: Y																								
Calibration check OK: Y																								
Name of person monitoring: Rod Langley																								
Monitoring round		Borehole details						Pressure and flow					Gas concentrations								GSV		Local conditions	
Date	Time	Borehole	Single or dual gas tap	Response zone depth (m)	Depth to water or depth of hole if dry (m)	D denotes dry hole	Volume of headspace in BH (well pipie & filter pack) (m³)	Atmospheric pressure (hPa)	Atm pressure falling / rising / steady	Relative BH pressure (hPa)	Gas flow* (l/hr)	Gas flow* (absolute value) (l/hr)	VOC (as ppm using PID)	CH ₄ (%v/v)		CH ₄ (%LEL)		CO ₂ (%v/v)		O ₂ (%v/v)		Gas Screening Value (CH ₄) (l/hr)	Gas Screening Value (CO ₂) (l/hr)	Notes on condition of borehole and surrounding ground
														Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady			
11/01/16	pm	WS03	S	1.72	0.69		0.00135	-	-	0	0.1	0.1	-	0.1	0.1	1	1	0.3	0.3	20.5	20.5	0.0001	0.0003	Good condition.
		WS09	S	-	-		-	-	0	0.1	0.1	-	0.1	0.1	1	1	0.8	0.8	20.1	20.1	0.0001	0.0008	Not able to remove gas tap/bung.	
		WS11	S	2.95	2.46		0.00741	-	-	0	0.1	0.1	-	0.1	0.1	1	1	0.4	0.4	20.3	20.3	0.0001	0.0004	Good condition.
		WS12	S	3.93	1.52		0.00390	-	-	0	0.1	0.1	-	0.1	0.1	1	1	0.5	0.5	20.1	20.1	0.0001	0.0005	Good condition.
		WS16A	S	Borehole not accessible.																		Not accessible.		
		WS20	S	Borehole not accessible.																		Not accessible.		
26/01/16	pm	WS03	S	1.74	1.38		0.00338	986	F	0	0.1	0.1	-	0.1	0.1	1	1	0.5	0.5	20.2	20.2	0.0001	0.0005	Bung removed & replaced. OK
		WS09	S	2.90	2.50		0.00756	986	F	0	0.1	0.1	-	0.1	0.1	1	1	0.7	0.7	20.2	20.2	0.0001	0.0007	BH in good condition
		WS11	S	2.93	2.55		0.00775	988	F	0	0.1	0.1	-	0.1	0.1	1	1	0.3	0.3	20.5	20.5	0.0001	0.0003	BH in good condition
		WS12	S	3.92	1.68		0.00450	990	F	0	0.1	0.1	-	0.1	0.1	1	1	0.3	0.3	20.6	20.6	0.0001	0.0003	BH in good condition
		WS16A	S	1.10	1.10		0.00234	991	F	0	0.1	0.1	-	0.1	0.1	1	1	0.1	0.1	17.0	17.0	0.0001	0.0001	BH in good condition
		WS20	S	Unable to locate. Possibly under parked car or in puddle.																		Not accessible.		
04.02.2016	pm	WS03	S	1.74	0.76		0.00149	1014	S	0	0.1	0.1	-	0.1	0.1	1	1	0.2	0.2	20.7	20.7	0.0001	0.0002	Bung removed & replaced. OK
		WS09	S	2.90	2.56		0.00778	1014	S	0	0.1	0.1	-	0.1	0.1	1	1	0.4	0.4	20.6	20.6	0.0001	0.0004	BH in good condition
		WS11	S	2.93	2.63		0.00804	1015	S	0	0.1	0.1	-	0.1	0.1	1	1	0.3	0.3	20.7	20.7	0.0001	0.0003	BH in good condition
		WS12	S	3.92	1.52		0.00390	1015	S	0	0.1	0.1	-	0.1	0.1	1	1	0.4	0.4	20.6	20.6	0.0001	0.0004	BH in good condition
		WS16A	S	1.10	1.10		0.00234	1016	S	0	0.1	0.1	-	0.1	0.1	1	1	0.2	0.2	17.5	17.5	0.0001	0.0002	BH in good condition
		WS20	S	Unable to locate. Possibly under parked car or in puddle.																		Not accessible.		



Appendix F

Hydrock Methodology

Hydrock Report Appendix on Hydrock Methodology, version 27 updated 25-01-16 applies to this report.

This appendix may not be included in the printed report to reduce the document size, but is included in the digital version. Alternatively, it can be supplied on request by quoting the version number and date.



Appendix G

Contamination Test Results and Statistical Analysis

Jennifer Hirst

Hydrock Consultants Ltd
2-4 Hawthorne Park
Holdenby Road
Spratton
Northamptonshire
NN6 8LD

t: 01604842888
f: 01604842666
e: jenniferhirst@hydrock.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 15-84209

Replaces Analytical Report Number : 15-84209, issue no. 1

Project / Site name:	Former Rayware Site, Liverpool	Samples received on:	04/12/2015
Your job number:	C151811	Samples instructed on:	09/12/2015
Your order number:	C151811/N8566	Analysis completed by:	19/01/2016
Report Issue Number:	2	Report issued on:	19/01/2016
Samples Analysed:	24 soil samples		

Signed:



Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:



Dr Irma Doyle
Assistant Quality Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

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

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

Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number	516069	516070	516071	516072	516073
Sample Reference	WS01	WS02	WS03	WS04	WS05
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.30	0.30-0.50	0.25	0.25-0.80
Date Sampled	30/11/2015	30/11/2015	30/11/2015	30/11/2015	30/11/2015
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	%	N/A	NONE	17	14
Total mass of sample received	kg	0.001	NONE	0.39	0.37

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Amosite	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected	-	Not-detected
Asbestos Quantification	%	0.001	ISO 17025	-	-	< 0.001	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	9.1	9.1	8.6	-	8.3
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	-	< 1
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	-	-	140
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	-	0.014
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.056	1.1	1.8	-	0.039
Water Soluble Sulphate (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	56.2	1130	1830	-	39.1
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-	-	-	-	25
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	-	12
Total Sulphur	mg/kg	50	NONE	-	-	-	-	63
Total Sulphur	%	0.005	NONE	-	-	-	-	0.006
Ammonium as NH ₄	mg/kg	0.5	MCERTS	-	-	-	-	< 0.5
Ammonium as NH ₄ (leachate equivalent)	mg/l	0.05	MCERTS	-	-	-	-	< 0.3
Fraction Organic Carbon (FOC)	N/A	0.00001	NONE	< 0.0000	< 0.0000	0.0006	-	< 0.0000
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	-	-	-	-	< 10
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	-	-	-	-	< 10

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
----------------------------	-------	---	--------	-------	-------	-------	---	-------

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	< 1.60	< 1.60	-	< 1.60
-----------------------------	-------	-----	--------	--------	--------	--------	---	--------

Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number	516069	516070	516071	516072	516073
Sample Reference	WS01	WS02	WS03	WS04	WS05
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.30	0.30-0.50	0.25	0.25-0.80
Date Sampled	30/11/2015	30/11/2015	30/11/2015	30/11/2015	30/11/2015
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	< 1.0	4.3	3.0	-	15
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.3	0.5	0.8	-	1.6
Boron (water soluble)	mg/kg	0.2	MCERTS	2500	11	3.9	-	1.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	-	< 1.2
Chromium (III)	mg/kg	1	NONE	6.7	14	22	-	48
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	6.7	14	23	-	48
Copper (aqua regia extractable)	mg/kg	1	MCERTS	23	21	30	-	24
Lead (aqua regia extractable)	mg/kg	1	MCERTS	7.9	19	57	-	8.2
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	8.8	11	22	-	53
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	9.6	16	31	-	50
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	27	120	790	-	79

Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	-	15
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	-	7.5

Monoaromatics

Benzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
Toluene	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	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	-	< 8.0	-
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	NONE	< 10	-	-	< 10	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	-	-	< 8.4	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	-	< 10	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	-	-	< 8.4	-

Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number	516069	516070	516071	516072	516073
Sample Reference	WS01	WS02	WS03	WS04	WS05
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.30	0.30-0.50	0.25	0.25-0.80
Date Sampled	30/11/2015	30/11/2015	30/11/2015	30/11/2015	30/11/2015
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	ISO 17025	-	-	-	< 1.0	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Vinyl Chloride	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Trichlorofluoromethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
1,1-dichloroethene	µg/kg	1	MCERTS	-	-	-	< 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	NONE	-	-	-	< 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	NONE	-	-	-	< 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	NONE	-	-	-	< 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	MCERTS	-	-	-	< 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	NONE	-	-	-	< 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	MCERTS	-	-	-	< 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	NONE	-	-	-	< 1.0	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
N-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
2-Chlorotoluene	µg/kg	1	NONE	-	-	-	< 1.0	-
4-Chlorotoluene	µg/kg	1	NONE	-	-	-	< 1.0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Tert-Butylbenzene	µg/kg	1	NONE	-	-	-	< 1.0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	-
Sec-Butylbenzene	µg/kg	1	NONE	-	-	-	< 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	NONE	-	-	-	< 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	NONE	-	-	-	< 1.0	-
1,2,3-Trichlorobenzene	µg/kg	1	NONE	-	-	-	< 1.0	-

Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number	516069	516070	516071	516072	516073
Sample Reference	WS01	WS02	WS03	WS04	WS05
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.30	0.30-0.50	0.25	0.25-0.80
Date Sampled	30/11/2015	30/11/2015	30/11/2015	30/11/2015	30/11/2015
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number	516074	516075	516076	516077	516078
Sample Reference	WS06	WS07	WS09	WS09	WS10
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.25-0.80	0.25	0.50-0.70	1.20-1.70	0.25-0.50
Date Sampled	30/11/2015	30/11/2015	01/12/2015	01/12/2015	01/12/2015
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	%	N/A	NONE	14	12
Total mass of sample received	kg	0.001	NONE	0.43	0.37

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	-	Not-detected
Asbestos Quantification	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	8.1	9.2	8.3	-	7.9
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	-	< 1
Total Sulphate as SO ₄	mg/kg	50	MCERTS	540	-	450	-	460
Total Sulphate as SO ₄	%	0.005	MCERTS	0.054	-	0.045	-	0.046
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.093	0.065	0.091	-	0.11
Water Soluble Sulphate (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	92.9	64.7	91.0	-	112
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	56	-	36	-	74
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	28	-	18	-	37
Total Sulphur	mg/kg	50	NONE	220	-	190	-	190
Total Sulphur	%	0.005	NONE	0.022	-	0.019	-	0.019
Ammonium as NH ₄	mg/kg	0.5	MCERTS	< 0.5	-	< 0.5	-	< 0.5
Ammonium as NH ₄ (leachate equivalent)	mg/l	0.05	MCERTS	< 0.3	-	< 0.3	-	< 0.3
Fraction Organic Carbon (FOC)	N/A	0.00001	NONE	< 0.0000	< 0.0000	0.0011	-	< 0.0000
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	55	-	780	-	220
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	28	-	390	-	110

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	< 1.60	< 1.60	-	< 1.60
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Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number	516074	516075	516076	516077	516078
Sample Reference	WS06	WS07	WS09	WS09	WS10
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.25-0.80	0.25	0.50-0.70	1.20-1.70	0.25-0.50
Date Sampled	30/11/2015	30/11/2015	01/12/2015	01/12/2015	01/12/2015
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	4.2	7.5	5.5	-	< 1.0
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.6	0.3	0.5	-	0.5
Boron (water soluble)	mg/kg	0.2	MCERTS	2.6	1.0	1.4	-	2.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	-	< 1.2
Chromium (III)	mg/kg	1	NONE	20	8.5	17	-	17
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	8.5	17	-	17
Copper (aqua regia extractable)	mg/kg	1	MCERTS	17	6.3	31	-	32
Lead (aqua regia extractable)	mg/kg	1	MCERTS	31	2.2	15	-	15
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	16	6.3	13	-	13
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	22	10	19	-	19
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	28	15	27	-	26

Magnesium (water soluble)	mg/kg	5	NONE	18	-	33	-	23
Magnesium (leachate equivalent)	mg/l	2.5	NONE	9.0	-	16	-	11

Monoaromatics

Benzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Toluene	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	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	-	< 8.0	-
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	NONE	-	< 10	-	< 10	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	< 8.4	-	< 8.4	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	< 0.1	-	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	-	< 10	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	< 8.4	-	< 8.4	-

Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number				516074	516075	516076	516077	516078
Sample Reference				WS06	WS07	WS09	WS09	WS10
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.25-0.80	0.25	0.50-0.70	1.20-1.70	0.25-0.50
Date Sampled				30/11/2015	30/11/2015	01/12/2015	01/12/2015	01/12/2015
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	ISO 17025	-	< 1.0	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	-
Vinyl Chloride	µg/kg	1	ISO 17025	-	< 1.0	-	-	-
Trichlorofluoromethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	-
1,1-dichloroethene	µg/kg	1	MCERTS	-	< 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	NONE	-	< 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	NONE	-	< 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	NONE	-	< 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	MCERTS	-	< 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	NONE	-	< 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	MCERTS	-	< 1.0	-	-	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	-
Isopropylbenzene	µg/kg	1	NONE	-	< 1.0	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	-
N-Propylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	-
2-Chlorotoluene	µg/kg	1	NONE	-	< 1.0	-	-	-
4-Chlorotoluene	µg/kg	1	NONE	-	< 1.0	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	-
Tert-Butylbenzene	µg/kg	1	NONE	-	< 1.0	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	-
Sec-Butylbenzene	µg/kg	1	NONE	-	< 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	NONE	-	< 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	NONE	-	< 1.0	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	NONE	-	< 1.0	-	-	-

Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number				516074	516075	516076	516077	516078
Sample Reference				WS06	WS07	WS09	WS09	WS10
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.25-0.80	0.25	0.50-0.70	1.20-1.70	0.25-0.50
Date Sampled				30/11/2015	30/11/2015	01/12/2015	01/12/2015	01/12/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-	-	< 0.001	< 0.001	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	< 0.001	< 0.001	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	< 0.001	< 0.001	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	< 0.001	< 0.001	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	< 0.001	< 0.001	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	< 0.001	< 0.001	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	< 0.001	< 0.001	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	< 0.001	< 0.001	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	< 0.001	< 0.001	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	< 0.001	< 0.001	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	< 0.001	< 0.001	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	< 0.001	< 0.001	-
Total PCBs	mg/kg	0.012	NONE	-	-	< 0.012	< 0.012	-

Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number	516079	516080	516081	516082	516083
Sample Reference	WS11	WS11	WS12	WS12	WS13 (Jar)
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50-0.70	0.70-1.00	0.20-0.40	0.50-1.00	0.25
Date Sampled	01/12/2015	01/12/2015	01/12/2015	01/12/2015	01/12/2015
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	%	N/A	NONE	11	14
Total mass of sample received	kg	0.001	NONE	0.39	0.32

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	Not-detected
Asbestos Quantification	%	0.001	ISO 17025	-	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	8.4	8.5	8.3	8.3	8.6
Free Cyanide	mg/kg	1	NONE	< 1	-	< 1	< 1	< 1
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	1200	-	150	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	0.116	-	0.015	-
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.090	0.34	0.51	0.015	0.070
Water Soluble Sulphate (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	90.4	338	505	14.6	70.0
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-	27	-	13	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	14	-	6.4	-
Total Sulphur	mg/kg	50	NONE	-	410	-	93	-
Total Sulphur	%	0.005	NONE	-	0.041	-	0.009	-
Ammonium as NH ₄	mg/kg	0.5	MCERTS	-	< 0.5	-	< 0.5	-
Ammonium as NH ₄ (leachate equivalent)	mg/l	0.05	MCERTS	-	< 0.3	-	< 0.3	-
Fraction Organic Carbon (FOC)	N/A	0.00001	NONE	0.0005	-	0.0032	0.0017	0.062
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	-	< 10	-	< 10	-
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	-	< 10	-	< 10	-

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	1.8
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	-	< 0.10	< 0.10	4.5
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	-	< 0.10	< 0.10	47
Fluorene	mg/kg	0.1	MCERTS	< 0.10	-	< 0.10	< 0.10	33
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	-	1.5	2.3	260
Anthracene	mg/kg	0.1	MCERTS	< 0.10	-	0.40	0.70	100
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	-	3.4	5.5	550
Pyrene	mg/kg	0.1	MCERTS	< 0.10	-	3.2	4.9	470
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	-	1.4	2.2	240
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	1.1	1.9	210
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	-	1.0	2.3	210
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	-	0.84	1.1	170
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	-	0.98	1.9	230
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	-	0.44	0.95	110
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	-	< 0.10	< 0.10	23
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	0.56	1.2	130

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	-	14.9	24.8	2800
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Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number	516079	516080	516081	516082	516083
Sample Reference	WS11	WS11	WS12	WS12	WS13 (Jar)
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50-0.70	0.70-1.00	0.20-0.40	0.50-1.00	0.25
Date Sampled	01/12/2015	01/12/2015	01/12/2015	01/12/2015	01/12/2015
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	< 1.0	-	21	1.6	< 1.0
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.5	-	3.5	0.4	1.5
Boron (water soluble)	mg/kg	0.2	MCERTS	2.1	-	1.7	0.6	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	-	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	24	-	30	16	33
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24	-	30	16	33
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	-	92	15	42
Lead (aqua regia extractable)	mg/kg	1	MCERTS	10	-	31	29	46
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	0.4
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17	-	66	15	53
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	25	-	97	18	68
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	25	-	62	31	140

Magnesium (water soluble)	mg/kg	5	NONE	-	45	-	< 5.0	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	23	-	< 5.0	-

Monoaromatics

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	-	-
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	NONE	< 10	< 10	< 10	-	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	-	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	14	-	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	-	-

Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number				516079	516080	516081	516082	516083
Sample Reference				WS11	WS11	WS12	WS12	WS13 (Jar)
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50-0.70	0.70-1.00	0.20-0.40	0.50-1.00	0.25
Date Sampled				01/12/2015	01/12/2015	01/12/2015	01/12/2015	01/12/2015
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	ISO 17025	< 1.0	-	< 1.0	-	-
Bromomethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-	-
Vinyl Chloride	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-	-
Trichlorofluoromethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-	-
1,1-dichloroethene	µg/kg	1	MCERTS	< 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	NONE	< 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	NONE	< 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	NONE	< 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	MCERTS	< 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	NONE	< 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	MCERTS	< 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	NONE	< 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	NONE	< 1.0	-	< 1.0	-	-
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	-	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-	-
Tert-Butylbenzene	µg/kg	1	NONE	< 1.0	-	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	-	-
Sec-Butylbenzene	µg/kg	1	NONE	< 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	NONE	< 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	NONE	< 1.0	-	< 1.0	-	-
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	-	< 1.0	-	-

Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number				516079	516080	516081	516082	516083
Sample Reference				WS11	WS11	WS12	WS12	WS13 (Jar)
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50-0.70	0.70-1.00	0.20-0.40	0.50-1.00	0.25
Date Sampled				01/12/2015	01/12/2015	01/12/2015	01/12/2015	01/12/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number	516084	516085	516086	516087	516088
Sample Reference	WS15A	WS16A	WS16A	WS19	WS19
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.20	0.50	0.20-0.25	0.50-1.00
Date Sampled	02/12/2015	02/12/2015	02/12/2015	02/12/2015	02/12/2015
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	%	N/A	NONE	6.2	8.4
Total mass of sample received	kg	0.001	NONE	0.38	0.36

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Amosite	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification	%	0.001	ISO 17025	0.001	-	-	-	-

General Inorganics

pH	pH Units	N/A	MCERTS	11.3	11.6	8.0	8.3	7.8
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO ₄	mg/kg	50	MCERTS	-	-	-	-	190
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	-	0.019
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.40	0.041	0.067	0.26	0.035
Water Soluble Sulphate (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	399	41.3	67.2	258	34.6
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-	-	-	-	17
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	-	8.6
Total Sulphur	mg/kg	50	NONE	-	-	-	-	97
Total Sulphur	%	0.005	NONE	-	-	-	-	0.010
Ammonium as NH ₄	mg/kg	0.5	MCERTS	-	-	-	-	0.5
Ammonium as NH ₄ (leachate equivalent)	mg/l	0.05	MCERTS	-	-	-	-	0.3
Fraction Organic Carbon (FOC)	N/A	0.00001	NONE	0.0005	0.0007	0.0063	0.028	< 0.0000
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	-	-	-	-	< 10
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	-	-	-	-	< 10

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.43	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	0.27	0.40	< 0.10	0.97	< 0.10
Anthracene	mg/kg	0.1	MCERTS	0.11	0.13	< 0.10	0.26	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	0.45	0.80	< 0.10	1.6	< 0.10
Pyrene	mg/kg	0.1	MCERTS	0.43	0.76	< 0.10	1.6	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.28	0.48	< 0.10	0.81	< 0.10
Chrysene	mg/kg	0.05	MCERTS	0.18	0.41	< 0.05	0.90	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	0.68	< 0.10	0.99	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	0.32	< 0.10	0.64	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.25	0.57	< 0.10	0.91	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	0.34	< 0.10	0.65	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.42	< 0.05	1.1	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	1.97	5.31	< 1.60	10.9	< 1.60
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Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number	516084	516085	516086	516087	516088
Sample Reference	WS15A	WS16A	WS16A	WS19	WS19
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.20	0.50	0.20-0.25	0.50-1.00
Date Sampled	02/12/2015	02/12/2015	02/12/2015	02/12/2015	02/12/2015
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	8.0	5.4	18	12	1.3
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.4	0.5	0.8	2.8	0.8
Boron (water soluble)	mg/kg	0.2	MCERTS	1.8	2.9	1.8	1.3	1.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (III)	mg/kg	1	NONE	16	19	19	22	34
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	19	19	22	34
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	18	43	63	21
Lead (aqua regia extractable)	mg/kg	1	MCERTS	44	30	75	49	15
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	0.8	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	15	19	34	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	17	22	25	68	35
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	51	51	83	81	46

Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	-	9.9
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	-	< 5.0

Monoaromatics

Benzene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
Toluene	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	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	28	-	-	930	-
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	NONE	28	-	-	930	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	-	-	950	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	< 0.1	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	-	16	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	-	1200	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	-	-	1700	-

Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number				516084	516085	516086	516087	516088
Sample Reference				WS15A	WS16A	WS16A	WS19	WS19
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.20	0.50	0.20-0.25	0.50-1.00
Date Sampled				02/12/2015	02/12/2015	02/12/2015	02/12/2015	02/12/2015
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	ISO 17025	< 1.0	-	-	< 1.0	-
Bromomethane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	-
Vinyl Chloride	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	-
Trichlorofluoromethane	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	-
1,1-dichloroethene	µg/kg	1	MCERTS	< 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	NONE	< 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	NONE	< 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	-	-	12	-
Dibromomethane	µg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
Bromodichloromethane	µg/kg	1	NONE	< 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	MCERTS	< 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	NONE	< 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	MCERTS	< 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	NONE	< 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	NONE	< 1.0	-	-	< 1.0	-
4-Chlorotoluene	µg/kg	1	NONE	< 1.0	-	-	< 1.0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	-
Tert-Butylbenzene	µg/kg	1	NONE	< 1.0	-	-	< 1.0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	< 1.0	-
Sec-Butylbenzene	µg/kg	1	NONE	< 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	NONE	< 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	NONE	< 1.0	-	-	< 1.0	-
1,2,3-Trichlorobenzene	µg/kg	1	NONE	< 1.0	-	-	< 1.0	-

Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number				516084	516085	516086	516087	516088
Sample Reference				WS15A	WS16A	WS16A	WS19	WS19
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.20	0.50	0.20-0.25	0.50-1.00
Date Sampled				02/12/2015	02/12/2015	02/12/2015	02/12/2015	02/12/2015
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	-

Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number	516089	516090	516091	516092	
Sample Reference	WS20	WS21	WS22	HDP01	
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)	0.80-1.00	0.30-0.50	0.60	0.50	
Date Sampled	03/12/2015	03/12/2015	03/12/2015	02/12/2015	
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
Moisture Content	%	N/A	NONE	13	15
Total mass of sample received	kg	0.001	NONE	0.38	0.32
				0.34	0.39

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	Not-detected	
Asbestos Quantification	%	0.001	ISO 17025	-	-	-	-	

General Inorganics

pH	pH Units	N/A	MCERTS	7.6	8.1	7.1	7.4	
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	
Total Sulphate as SO ₄	mg/kg	50	MCERTS	170	-	-	-	
Total Sulphate as SO ₄	%	0.005	MCERTS	0.017	-	-	-	
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.031	0.076	0.040	0.017	
Water Soluble Sulphate (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	31.1	75.8	40.0	16.5	
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	40	-	-	-	
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	20	-	-	-	
Total Sulphur	mg/kg	50	NONE	190	-	-	-	
Total Sulphur	%	0.005	NONE	0.019	-	-	-	
Ammonium as NH ₄	mg/kg	0.5	MCERTS	18	-	-	-	
Ammonium as NH ₄ (leachate equivalent)	mg/l	0.05	MCERTS	9.1	-	-	-	
Fraction Organic Carbon (FOC)	N/A	0.00001	NONE	< 0.0000	< 0.0000	0.0062	0.0027	
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	< 10	-	-	-	
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	< 10	-	-	-	

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.20	< 0.05	
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.69	0.24	
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.13	< 0.10	
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	1.3	1.1	
Pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	1.2	1.2	
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.61	0.82	
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.55	0.71	
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.63	1.2	
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.39	0.82	
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.53	1.1	
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.29	0.66	
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.35	0.72	

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	< 1.60	6.88	8.46	
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Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number	516089	516090	516091	516092	
Sample Reference	WS20	WS21	WS22	HDP01	
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)	0.80-1.00	0.30-0.50	0.60	0.50	
Date Sampled	03/12/2015	03/12/2015	03/12/2015	02/12/2015	
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	

Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
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Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	5.2	12	
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.5	1.1	0.6	0.5	
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	1.8	1.4	0.6	
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	
Chromium (III)	mg/kg	1	NONE	27	42	23	16	
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	27	42	23	17	
Copper (aqua regia extractable)	mg/kg	1	MCERTS	8.9	18	22	19	
Lead (aqua regia extractable)	mg/kg	1	MCERTS	6.1	5.5	33	19	
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	1.1	< 0.3	
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	16	41	15	14	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	29	44	26	21	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	23	52	41	55	

Magnesium (water soluble)	mg/kg	5	NONE	5.9	-	-	-	
Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 5.0	-	-	-	

Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-	
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	-	-	
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	-	
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	-	
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	-	-	
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	-	-	
TPH-CWG - Aliphatic >EC16 - EC35	mg/kg	10	NONE	< 10	-	-	-	
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	-	-	-	

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	-	-	
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	-	
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	-	
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	-	-	
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	-	-	
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	-	-	-	

Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number				516089	516090	516091	516092	
Sample Reference				WS20	WS21	WS22	HDP01	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				0.80-1.00	0.30-0.50	0.60	0.50	
Date Sampled				03/12/2015	03/12/2015	03/12/2015	02/12/2015	
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	ISO 17025	-	-	-	-	
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	
Vinyl Chloride	µg/kg	1	ISO 17025	-	-	-	-	
Trichlorofluoromethane	µg/kg	1	ISO 17025	-	-	-	-	
1,1-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	
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	NONE	-	-	-	-	
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	NONE	-	-	-	-	
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	NONE	-	-	-	-	
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	MCERTS	-	-	-	-	
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	-	-	-	-	
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	
Styrene	µg/kg	1	MCERTS	-	-	-	-	
Tribromomethane	µg/kg	1	MCERTS	-	-	-	-	
o-xylene	µg/kg	1	MCERTS	-	-	-	-	
1,1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	
Isopropylbenzene	µg/kg	1	NONE	-	-	-	-	
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	
N-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	
2-Chlorotoluene	µg/kg	1	NONE	-	-	-	-	
4-Chlorotoluene	µg/kg	1	NONE	-	-	-	-	
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	
Tert-Butylbenzene	µg/kg	1	NONE	-	-	-	-	
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	
Sec-Butylbenzene	µg/kg	1	NONE	-	-	-	-	
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	NONE	-	-	-	-	
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	
Hexachlorobutadiene	µg/kg	1	NONE	-	-	-	-	
1,2,3-Trichlorobenzene	µg/kg	1	NONE	-	-	-	-	

Analytical Report Number: 15-84209

Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

Lab Sample Number				516089	516090	516091	516092	
Sample Reference				WS20	WS21	WS22	HDP01	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				0.80-1.00	0.30-0.50	0.60	0.50	
Date Sampled				03/12/2015	03/12/2015	03/12/2015	02/12/2015	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
PCBs								
PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	



Analytical Report Number: 15-84209
Project / Site name: Former Rayware Site, Liverpool
Your Order No: C151811/N8566

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 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
516071	WS03	0.30-0.50	102	Loose Fibres	Amosite	< 0.001	< 0.001
516084	WS15A	0.50	104	Loose Fibres & Insulation Lagging	Amosite	0.001	0.001

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

Analytical Report Number : 15-84209

Project / Site name: Former Rayware Site, Liverpool

* 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 topsoil/loam 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 *
516069	WS01	None Supplied	0.50	Brown clay and loam with gravel.
516070	WS02	None Supplied	0.30	Brown clay and loam with gravel.
516071	WS03	None Supplied	0.30-0.50	Brown clay and loam with gravel.
516072	WS04	None Supplied	0.25	Brown clay and loam with gravel.
516073	WS05	None Supplied	0.25-0.80	Brown clay and loam with gravel.
516074	WS06	None Supplied	0.25-0.80	Brown clay and loam with gravel.
516075	WS07	None Supplied	0.25	Light brown sandy loam with gravel.
516076	WS09	None Supplied	0.50-0.70	Brown loam and clay with gravel.
516077	WS09	None Supplied	1.20-1.70	Brown loam and clay with gravel.
516078	WS10	None Supplied	0.25-0.50	Brown clay and loam with gravel.
516079	WS11	None Supplied	0.50-0.70	Brown clay and loam with gravel.
516080	WS11	None Supplied	0.70-1.00	Brown clay and loam with gravel.
516081	WS12	None Supplied	0.20-0.40	Brown loam and sand with gravel and rubble.
516082	WS12	None Supplied	0.50-1.00	Brown loam and sand with gravel.
516083	WS13 (Jar)	None Supplied	0.25	Brown gravelly loam.
516084	WS15A	None Supplied	0.50	Brown loam and sand with gravel and rubble.
516085	WS16A	None Supplied	0.20	Brown loam and sand with gravel and rubble.
516086	WS16A	None Supplied	0.50	Brown loam and sand with gravel and brick.
516087	WS19	None Supplied	0.20-0.25	Brown gravelly loam with brick.
516088	WS19	None Supplied	0.50-1.00	Brown clay and loam with gravel.
516089	WS20	None Supplied	0.80-1.00	Brown clay and loam with gravel.
516090	WS21	None Supplied	0.30-0.50	Brown clay and loam with gravel.
516091	WS22	None Supplied	0.60	Brown loam and sand with gravel and rubble.
516092	HDP01	None Supplied	0.50	Brown clay and loam with gravel.

Analytical Report Number : 15-84209

Project / Site name: Former Rayware Site, Liverpool

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonium as NH ₄ 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
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
Asbestos Quantification	The analysis was carried out using documented in-house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests. 2:1 extraction.	L082-PL	D	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
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	NONE
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	MCERTS
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
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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Nitrate, water soluble, 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	D	NONE
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS

Analytical Report Number : 15-84209

Project / Site name: Former Rayware Site, Liverpool

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
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
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-PL	D	NONE
TPH Chromatogram	TPH Chromatogram.	In-house method	L064-PL	D	NONE
TPH in (Soil)	Determination of TPH bands by GC-MS/GC-FID	In-house method, TPH with carbon banding.	L064/076PL	D	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS
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

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.

**Adam Cheers**

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Analytical Report Number : 16-85749

Project / Site name:	C151811	Samples received on:	13/01/2016
Your job number:	C151811	Samples instructed on:	14/01/2016
Your order number:		Analysis completed by:	20/01/2016
Report Issue Number:	1	Report issued on:	20/01/2016
Samples Analysed:	2 water samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Dr Irma Doyle
Assistant Quality Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

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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Analytical Report Number: 16-85749

Project / Site name: C151811

Lab Sample Number				524562	524563			
Sample Reference				WS03	WS12			
Sample Number				None Supplied	None Supplied			
Depth (m)				None Supplied	None Supplied			
Date Sampled				11/01/2016	11/01/2016			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH Units	N/A	ISO 17025	7.8	7.3			
Electrical Conductivity	µS/cm	10	NONE	860	550			
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10			
Sulphate as SO ₄	µg/l	45	ISO 17025	214000	56800			
Chloride	mg/l	0.15	ISO 17025	30	16			
Fluoride	µg/l	50	ISO 17025	690	460			
Ammonium as NH ₄	µg/l	15	ISO 17025	100	550			
Nitrate as N	mg/l	0.01	ISO 17025	10.5	2.09			
Nitrate as NO ₃	mg/l	0.05	ISO 17025	46.3	9.24			
Nitrite as N	µg/l	1	ISO 17025	31	270			
Nitrite as NO ₂	µg/l	5	ISO 17025	100	890			
Hardness - Total	mgCaCO ₃ /l	1	ISO 17025	405	257			
Bromate (Subcontracted)	µg/l	2	NONE	< 2.0	< 2.0			

Total Phenols

Total Phenols	µg/l	0.5	NONE	< 0.50	< 0.50			
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Indeno(1,2,3-cd)pyrene	µg/l	0.001	NONE	< 0.001	< 0.001			
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001	< 0.001			

PAH Sums

Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.02	< 0.02			
Sum of Benzo(ghi)fluoranthene & Indeno(1,2,3-cd)pyrene	µg/l	0.002	NONE	< 0.002	< 0.002			
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)fluoranthene & Indeno(1,2,3-cd)pyrene	µg/l	0.022	NONE	< 0.02	< 0.02			



Analytical Report Number: 16-85749

Project / Site name: C151811

Lab Sample Number				524562	524563			
Sample Reference				WS03	WS12			
Sample Number				None Supplied	None Supplied			
Depth (m)				None Supplied	None Supplied			
Date Sampled				11/01/2016	11/01/2016			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Aluminium (dissolved)	mg/l	0.001	ISO 17025	0.317	0.0753			
Antimony (dissolved)	µg/l	0.4	ISO 17025	13	1.1			
Arsenic (dissolved)	µg/l	0.15	ISO 17025	5.40	0.77			
Barium (dissolved)	µg/l	0.06	ISO 17025	67	53			
Boron (dissolved)	µg/l	10	ISO 17025	86	76			
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.05	< 0.02			
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0			
Chromium (III)	µg/l	1	NONE	2.5	< 1.0			
Chromium (dissolved)	µg/l	0.2	ISO 17025	2.5	0.3			
Cobalt (dissolved)	µg/l	0.2	ISO 17025	1.1	1.6			
Copper (dissolved)	µg/l	0.5	ISO 17025	6.5	1.7			
Iron (dissolved)	mg/l	0.004	ISO 17025	0.51	0.34			
Lead (dissolved)	µg/l	0.2	ISO 17025	4.8	0.3			
Manganese (dissolved)	µg/l	0.05	ISO 17025	5.0	1600			
Mercury (dissolved)	µg/L	0.01	NONE	< 0.01	< 0.01			
Molybdenum (dissolved)	µg/l	0.05	ISO 17025	4.2	4.3			
Nickel (dissolved)	µg/l	0.5	ISO 17025	4.9	4.4			
Silver (dissolved)	µg/l	0.05	NONE	< 0.05	< 0.05			
Selenium (dissolved)	µg/l	0.6	ISO 17025	5.7	2.8			
Tin (dissolved)	µg/l	0.2	ISO 17025	< 0.20	< 0.20			
Vanadium (dissolved)	µg/l	0.2	ISO 17025	6.8	1.3			
Zinc (dissolved)	µg/l	0.5	ISO 17025	55	4.4			

Calcium (dissolved)	mg/l	0.012	ISO 17025	140	91			
Magnesium (dissolved)	mg/l	0.005	ISO 17025	15	7.5			
Sodium (dissolved)	mg/l	0.01	ISO 17025	30	18			
Zinc (total)	µg/l	0.5	ISO 17025	8600	99			

Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0			
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0			

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C16 - C35	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C35 - C44	µg/l	10	NONE	< 10	< 10			

TPH-CWG - Aromatic >C5 - C7	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C7 - C8	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C8 - C10	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C35 - C44	µg/l	10	NONE	< 10	< 10			

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

Analytical Report Number : 16-85749

Project / Site name: C151811

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonium as NH ₄ in water	Determination of Ammonium/Ammonia/Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Boron in water	Determination of boron by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Bromate in Water	Determination of Bromate by colorimetry	In house method based on Standard Methods for the examination of water and waste water,		W	NONE
BTEX and MTBE in water	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Chloride in water	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082 B	W	ISO 17025
Cr (III) in water	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Electrical conductivity of water	Determination of electrical conductivity in water by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	NONE
Fluoride in water	Determination of fluoride in water by 1:1 ratio with a buffer solution followed by Ion Selective Electrode. Accredited matrices: SW, PW, GW.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033-PL	W	ISO 17025
Free cyanide in water	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Mercury Low Level (Dissolved) in Water	Determination of mercury in water by CV-AFS.	In-house method based on USEPA method 1631	L085-PL	W	NONE
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	NONE
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L077-PL	W	ISO 17025
pH in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025



Analytical Report Number : 16-85749

Project / Site name: C151811

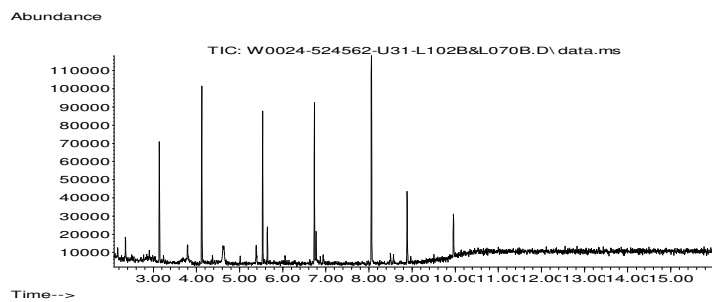
Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

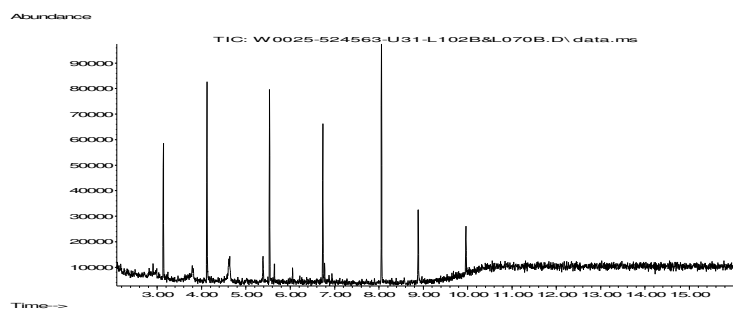
Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Phenols, speciated, in water, by GCMS	Determination of speciated phenols in water by extraction in hexane followed by GC-MS.	In-house method based on USEPA 8270	L070-UK	W	NONE
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L0102B-PL	W	ISO 17025
Speciated EPA-16 PAHs in water (LOW LEVEL Dets)	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L070-UK	W	NONE
Specific PAH sums in water	Determination of PAH compounds in water by extraction in hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-UK	W	NONE
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
TPH Chromatogram	TPH Chromatogram.	In-house method	L070-PL	W	NONE
TPH in (Water)	Determination of TPH bands by GC-MS/GC-FID	In-house method, TPH with carbon banding.	L070-UK	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-UK	W	NONE

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 30°C.





Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated								Soil Type																			
								Location & Depth	WS01	WS02	WS03	WS05	WS06	WS07	WS09	WS10	WS11	WS12	WS12	WS13 (Jar)	WS15A	WS16A	WS16A	WS19	WS19	WS20	
									0.50	0.30	0.30-0.50	0.25-0.80	0.25-0.80	0.25	0.50-0.70	0.25-0.50	0.50-0.70	0.20-0.40	0.50-1.00	0.25	0.50	0.20	0.50	0.20-0.25	0.50-1.00	0.80-1.00	
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US ₉₅	Result of Significance Test																			
Arsenic	1	21	1	21	0	37	11.95946	POTENTIALLY SUITABLE FOR USE	1	4.3	3	15	4.2	7.5	5.5	1	1	21	1.6	1	8	5.4	18	12	1.3	1	
Beryllium	0.06	21	0.3	3.5	0	73	1.695352	POTENTIALLY SUITABLE FOR USE	0.3	0.5	0.8	1.6	0.6	0.3	0.5	0.5	0.5	3.5	0.4	1.5	0.4	0.5	0.8	2.8	0.8	0.5	
Boron	0.2	21	0.6	2500	1	300	639.6746	FURTHER ASSESSMENT REQUIRED	2500	11	3.9	1.5	2.6	1	1.4	2.1	2.1	1.7	0.6	0.6	1.8	2.9	1.8	1.3	1.6	0.6	
Cadmium	0.2	21	0.2	0.2	0	14	0.2	POTENTIALLY SUITABLE FOR USE	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Chromium (III)	1	21	6.7	48	0	890	32.3029	POTENTIALLY SUITABLE FOR USE	6.7	14	22	48	20	8.5	17	17	24	30	16	33	16	19	19	22	34	27	
Chromium (VI)	1.2	21	1.2	1.2	0	6.1	1.2	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	
Copper	1	21	6.3	92	0	2500	46.13489	POTENTIALLY SUITABLE FOR USE	23	21	30	24	17	6.3	31	32	12	92	15	42	19	18	43	63	21	8.9	
Lead	1	21	2.2	75	0	200	44.49392	POTENTIALLY SUITABLE FOR USE	7.9	19	57	8.2	31	2.2	15	15	10	31	29	46	44	30	75	49	15	6.1	
Mercury, inorganic	0.3	21	0.3	1.1	0	170	0.557744	POTENTIALLY SUITABLE FOR USE	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.8	0.3	0.3	
Nickel	1	21	6.3	66	0	130	38.70124	POTENTIALLY SUITABLE FOR USE	8.8	11	22	53	16	6.3	13	13	17	66	15	53	13	15	19	34	22	16	
Selenium	1	21	1	1	0	360	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Vanadium	21	21	9.6	97	0	410	52.99846	POTENTIALLY SUITABLE FOR USE	9.6	16	31	50	22	10	19	19	25	97	18	68	17	22	25	68	35	29	
Zinc	1	21	15	790	0	3900	244.301	POTENTIALLY SUITABLE FOR USE	27	120	790	79	28	15	27	26	25	62	31	140	51	51	83	81	46	23	
Cyanide (free)	1	21	1	1	0	790	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Phenol (total)	1	21	1	1	0	290	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Acenaphthene	0.1	21	0.1	47	0	220	12.07067	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	47	0.1	0.1	0.1	0.1	0.1	0.1	
Acenaphthylene	0.1	21	0.1	4.5	0	180	1.223048	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	4.5	0.1	0.1	0.1	0.1	0.1	0.1	
Anthracene	0.1	21	0.1	100	0	2400	25.64082	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.7	100	0.11	0.13	0.1	0.26	0.1	0.1	
Benz(a)anthracene	0.1	21	0.1	240	1	4.2	61.55397	FURTHER ASSESSMENT REQUIRED	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.4	2.2	240	0.28	0.48	0.1	0.81	0.1	0.1	
Benzo(a)pyrene	0.1	21	0.1	230	2	1.5	58.9877	FURTHER ASSESSMENT REQUIRED	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.98	1.9	230	0.25	0.57	0.1	0.91	0.1	0.1	
Benzo(b)fluoranthene	0.1	21	0.1	210	1	7.6	53.90865	FURTHER ASSESSMENT REQUIRED	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	2.3	210	0.1	0.68	0.1	0.99	0.1	0.1	
Benzo(ghi)perylene	0.05	21	0.05	130	1	64	33.37114	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.56	1.2	130	0.05	0.42	0.05	1.1	0.05	0.05	
Benzo(k)fluoranthene	0.1	21	0.1	170	1	12	43.59686	FURTHER ASSESSMENT REQUIRED	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.84	1.1	170	0.1	0.32	0.1	0.84	0.1	0.1	
Chrysene	0.05	21	0.05	210	1	7.7	53.84073	FURTHER ASSESSMENT REQUIRED	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1.1	1.9	210	0.18	0.41	0.05	0.9	0.05	0.05	
Dibenz(a,h)anthracene	0.1	21	0.1	23	1	1.1	5.944952	FURTHER ASSESSMENT REQUIRED	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	23	0.1	0.1	0.1	0.1	0.1	0.1	
Fluoranthene	0.1	21	0.1	550	1	290	140.9635	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	3.4	5.5	550	0.45	0.8	0.1	1.6	0.1	0.1	
Fluorene	0.1	21	0.1	33	0	170	8.497333	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	33	0.1	0.1	0.1	0.1	0.1	0.1	
Indeno(1,2,3,cd)pyrene	0.1	21	0.1	110	1	4.3	28.25349	FURTHER ASSESSMENT REQUIRED	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.44	0.95	110	0.1	0.34	0.1	0.65	0.1	0.1	
Naphthalene	0.05	21	0.05	1.8	0	2.2	0.525943	POTENTIALLY SUITABLE FOR USE	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1.8	0.05	0.05	0.05	0.43	0.05	0.05	
Phenanthrene	0.1	21	0.1	260	1	97	66.65022	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.5	2.3	260	0.27	0.4	0.1	0.97	0.1	0.1	
Pyrene	0.1	21	0.1	470	0	620	120.5122	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	3.2	4.9	470	0.43	0.76	0.1	1.6	0.1	0.1	
Asbestos identified	Y/N								N	N	Y	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	
FOC (dimensionless)	0.005405	(mean)										0.0006				0.0011		0.0005	0.0032	0.0017	0.062	0.0005	0.0007	0.0063	0.028		
SOM (calculated)	0.93%	(mean)										0.10%				0.19%		0.09%	0.55%	0.29%	10.69%	0.09%	0.12%	1.09%	4.83%		
pH (su)	8.5	(mean)							9.1	9.1	8.6	8.3	8.1	9.2	8.3	7.9	8.4	8.3	8.3	8.3	8.6	11.3	11.6	8	8.3	7.8	7.6

Risk parameter: Human health - residential with plant uptake (1%SOM)

Data set:

Client: TJ Morris

Site: Former Rayware Site, Liverpool

Job no.: C151811

Lab. report no(s): 15-84209

Legend: Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate. Values in red are equal to, or greater than, the generic assessment criterion (GAC).
MG denotes Made Ground
NAT denotes natural ground

Assessment of Chemicals of Potential Concern to Human Health

All values in mg/kg unless otherwise stated								Soil Type						
								Location & Depth	WS21	WS22	HDP01			
								0.30-0.50	0.60	0.50				
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US ₉₅	Result of Significance Test						
Arsenic	1	21	1	21	0	37	11.95946	POTENTIALLY SUITABLE FOR USE	1	5.2	12			
Beryllium	0.06	21	0.3	3.5	0	73	1.695352	POTENTIALLY SUITABLE FOR USE	1.1	0.6	0.5			
Boron	0.2	21	0.6	2500	1	300	639.6746	FURTHER ASSESSMENT REQUIRED	1.8	1.4	0.6			
Cadmium	0.2	21	0.2	0.2	0	14	0.2	POTENTIALLY SUITABLE FOR USE	0.2	0.2	0.2			
Chromium (III)	1	21	6.7	48	0	890	32.3029	POTENTIALLY SUITABLE FOR USE	42	23	16			
Chromium (VI)	1.2	21	1.2	1.2	0	6.1	1.2	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2			
Copper	1	21	6.3	92	0	2500	46.13489	POTENTIALLY SUITABLE FOR USE	18	22	19			
Lead	1	21	2.2	75	0	200	44.49392	POTENTIALLY SUITABLE FOR USE	5.5	33	19			
Mercury, inorganic	0.3	21	0.3	1.1	0	170	0.557744	POTENTIALLY SUITABLE FOR USE	0.3	1.1	0.3			
Nickel	1	21	6.3	66	0	130	38.70124	POTENTIALLY SUITABLE FOR USE	41	15	14			
Selenium	1	21	1	1	0	360	1	POTENTIALLY SUITABLE FOR USE	1	1	1			
Vanadium	21	21	9.6	97	0	410	52.99846	POTENTIALLY SUITABLE FOR USE	44	26	21			
Zinc	1	21	15	790	0	3900	244.301	POTENTIALLY SUITABLE FOR USE	52	41	55			
Cyanide (free)	1	21	1	1	0	790	1	POTENTIALLY SUITABLE FOR USE	1	1	1			
Phenol (total)	1	21	1	1	0	290	1	POTENTIALLY SUITABLE FOR USE	1	1	1			
Acenaphthene	0.1	21	0.1	47	0	220	12.07067	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1			
Acenaphthylene	0.1	21	0.1	4.5	0	180	1.223048	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1			
Anthracene	0.1	21	0.1	100	0	2400	25.64082	POTENTIALLY SUITABLE FOR USE	0.1	0.13	0.1			
Benz(a)anthracene	0.1	21	0.1	240	1	4.2	61.55397	FURTHER ASSESSMENT REQUIRED	0.1	0.61	0.82			
Benzo(a)pyrene	0.1	21	0.1	230	2	1.5	58.9877	FURTHER ASSESSMENT REQUIRED	0.1	0.53	1.1			
Benzo(b)fluoranthene	0.1	21	0.1	210	1	7.6	53.90865	FURTHER ASSESSMENT REQUIRED	0.1	0.63	1.2			
Benzo(ghi)perylene	0.05	21	0.05	130	1	64	33.37114	POTENTIALLY SUITABLE FOR USE	0.05	0.35	0.72			
Benzo(k)fluoranthene	0.1	21	0.1	170	1	12	43.59686	FURTHER ASSESSMENT REQUIRED	0.1	0.39	0.82			
Chrysene	0.05	21	0.05	210	1	7.7	53.84073	FURTHER ASSESSMENT REQUIRED	0.05	0.55	0.71			
Dibenz(a,h)anthracene	0.1	21	0.1	23	1	1.1	5.944952	FURTHER ASSESSMENT REQUIRED	0.1	0.1	0.1			
Fluoranthene	0.1	21	0.1	550	1	290	140.9635	POTENTIALLY SUITABLE FOR USE	0.1	1.3	1.1			
Fluorene	0.1	21	0.1	33	0	170	8.497333	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1			
Indeno(1,2,3-cd)pyrene	0.1	21	0.1	110	1	4.3	28.25349	FURTHER ASSESSMENT REQUIRED	0.1	0.29	0.66			
Naphthalene	0.05	21	0.05	1.8	0	2.2	0.525943	POTENTIALLY SUITABLE FOR USE	0.05	0.2	0.05			
Phenanthrene	0.1	21	0.1	260	1	97	66.65022	POTENTIALLY SUITABLE FOR USE	0.1	0.69	0.24			
Pyrene	0.1	21	0.1	470	0	620	120.5122	POTENTIALLY SUITABLE FOR USE	0.1	1.2	1.2			
Asbestos identified	Y/N							N	N	N				
FOC (dimensionless)	0.005405	(mean)							0.0062	0.0027				
SOM (calculated)	0.93%	(mean)							1.07%	0.47%				
pH (su)	8.5	(mean)						8.1	7.1	7.4				
Risk parameter: Human health - residential with plant uptake (1%SOM) Data set: Client: TJ Morris Site: Former Rayware Site, Liverpool Job no.: C151811 Lab. report no(s): 15-84209														

Assessment of Chemicals of Potential Concern to Human Health

All values in mg/kg unless otherwise stated								Soil Type																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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Assessment of Chemicals of Potential Concern to Human Health

All values in mg/kg unless otherwise stated								Soil Type							
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US ₉₅	Location & Depth	WS21	WS22	HDP01				
								Result of Significance Test	0.30-0.50	0.60	0.50				
Arsenic	1	21	1	21	0	250	11.95946	POTENTIALLY SUITABLE FOR USE	1	5.2	12				
Boron	0.2	21	0.6	2500	3	3	639.6746	FURTHER ASSESSMENT REQUIRED	1.8	1.4	0.6				
Chromium (III)	1	21	6.7	48	0	400	32.3029	POTENTIALLY SUITABLE FOR USE	42	23	16				
Chromium (VI)	1.2	21	1.2	1.2	0	25	1.2	POTENTIALLY SUITABLE FOR USE	1.2	1.2	1.2				
Copper	1	21	6.3	92	0	135	46.13489	POTENTIALLY SUITABLE FOR USE	18	22	19				
Nickel	1	21	6.3	66	0	75	38.70124	POTENTIALLY SUITABLE FOR USE	41	15	14				
Zinc	1	21	15	790	1	300	244.301	POTENTIALLY SUITABLE FOR USE	52	41	55				
	Mean														
pH (su)	8.5								8.1	7.1	7.4				
Risk parameter: Plant life pH 7 Data set: Client: TJ Morris Site: Former Rayware Site, Liverpool Job no.: C151811 Lab. report no(s): 15-84209															

Assessment of Chemicals of Potential Concern to Human Health



All values in mg/kg unless otherwise stated								Soil Type														
								Location & Depth		WS01	WS04	WS07	WS09	WS11	WS11	WS12	WS15A	WS19	WS20			
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US ₉₅	Result of Significance Test	0.50	0.25	0.25	1.20-1.70	0.50-0.70	0.70-1.00	0.20-0.40	0.50	0.20-0.25	0.80-1.00				
Aliphatics EC5-EC6	0.1	10	0.1	0.1	0	42	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1				
Aliphatics >EC6-EC8	0.1	10	0.1	0.1	0	100	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1				
Aliphatics >EC8-EC10	0.1	10	0.1	0.1	0	27	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1				
Aliphatics >EC10-EC12	1	10	1	1	0	48	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1				
Aliphatics >EC12-EC16	2	10	2	2	0	24	2	POTENTIALLY SUITABLE FOR USE	2	2	2	2	2	2	2	2	2	2				
Aliphatics >EC16-EC35	10	10	10	930	0	65000	504.124	POTENTIALLY SUITABLE FOR USE	10	10	10	10	10	10	10	28	930	10				
Aliphatics >EC35-EC44	8.4	10	8.4	950	0	65000	513.0976	POTENTIALLY SUITABLE FOR USE	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	950	8.4				
Aromatics EC5-EC7	0.1	10	0.1	0.1	0	73	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1				
Aromatics >EC7-EC8	0.1	10	0.1	0.1	0	130	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1				
Aromatics >EC8-EC10	0.1	10	0.1	0.1	0	35	0.1	POTENTIALLY SUITABLE FOR USE	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1				
Aromatics >EC10-EC12	1	10	1	1	0	75	1	POTENTIALLY SUITABLE FOR USE	1	1	1	1	1	1	1	1	1	1				
Aromatics >EC12-EC16	2	10	2	2	0	150	2	POTENTIALLY SUITABLE FOR USE	2	2	2	2	2	2	2	2	2	2				
Aromatics >EC16-EC21	10	10	10	16	0	260	13.216	POTENTIALLY SUITABLE FOR USE	10	10	10	10	10	10	10	10	16	10				
Aromatics >EC21-EC35	10	10	10	1200	1	1100	648.0491	POTENTIALLY SUITABLE FOR USE	10	10	10	10	10	10	14	10	1200	10				
Aromatics >EC35-EC44	8.4	10	8.4	1700	1	1100	915.0976	POTENTIALLY SUITABLE FOR USE	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	1700	8.4				
ADDITIVITY CHECK									HAZARD QUOTIENTS FOR EACH FRACTION													
Considered additive									Aliphatics EC5-EC6	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002				
									Aliphatics >EC6-EC8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
									Aliphatics >EC8-EC10	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
									Aliphatics >EC10-EC12	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021
									Aliphatics >EC12-EC16	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
Considered additive									Aliphatics >EC16-EC35	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.014	0.000			
									Aliphatics >EC35-EC44	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.000
									Aromatics EC5-EC7	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
									Aromatics >EC7-EC8	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
									Aromatics >EC8-EC10	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Considered additive									Aromatics >EC10-EC12	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013			
									Aromatics >EC12-EC16	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	
									Aromatics >EC16-EC21	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.062	0.038
									Aromatics >EC21-EC35	0.009	0.009	0.009	0.009	0.009	0.013	0.009	1.091	0.009				
									Aromatics >EC35-EC44	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	1.545	0.008			
									Hazard Index for ali>C8-C16	0.108	0.108	0.108	0.108	0.108	0.108	0.108	0.108	0.108	0.108			
									Hazard Index for aro>C8-C16	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030			
									Hazard Index for aro>C16-C35	0.048	0.048	0.048	0.048	0.048	0.048	0.051	0.048	1.152	0.048			
Risk parameter: Human health - residential with plant uptake (1%SOM)									Hazard Index table - HI or HQ greater than 1 highlighted with yellow shading.													
Data set:									Legend: Main table values in blue are at or below the laboratory reporting limit (where a single value is in													
Client: TJ Morris									considered as being at the detection limit for the purposes of statistical analysis, as a conservat													
Site: Rayware, Liverpool									Main table alues in red are equal to, or greater than, the generic assessment criterion (GAC).													
Job no.: C151811									MG denotes Made Ground													
Lab. report no(s).: 15-84209									NAT denotes natural ground													

Scenario D - Summary of Remedial Targets Methodology

RTM Level 1 - Soil Zone Assessment - leachate samples Water body receptor(s): Groundwater and surface water Secondary receptor(s): Human health (abstraction) and aquatic ecosystem Data set: Groundwater / Leachate / Perched water / Surface water [as Client: Xxxx Site: Xxxx Job no: Cxxxxx													
2008/105/EC Annex II: [P]= priority substance, [PH] = priority hazardous substances.													
Chemicals of Potential Concern (concentrations in µg/l)	Summary of Sample Data					Value Being Compared to Target = Maximum Value	Water Quality Target (Exceeded if Red Text)			No. Samples Exceeding Water Quality Target			Notes
	No. of Samples	Limit of Detection	Minimum Value	Maximum Value	95-%ile Value		DWS	HAZ-MRV in GW	Inland Waters EQS	DWS	HAZ-MRV in GW	Inland Waters EQS	
Hardness as mg/l CaCO3	-	-	405	-	-	-			-				Used with some EQS.
Ag (dissolved)	2	0.05	0.05	0.05	0.05	0.05	n/a	n/a	0.05	0	0	0	
Al (dissolved)	2	1	75.3	317	304.915	317	200	n/a	n/a	1	0	0	
As (dissolved)	2	0.15	0.77	5.4	5.1685	5.4	10	n/a	50	0	0	0	
B (dissolved)	0	10	0	0		0	1000	n/a	2000	0	0	0	
Ba (dissolved)	2	0.06	53	67	66.3	67	700	n/a	n/a	0	0	0	
Cd (dissolved) [PH]	2	0.02	0.02	0.05	0.0485	0.05	5	0.1	0.25	0	0	0	
Co (dissolved)	2	0.2	1.1	1.6	1.575	1.6	n/a	n/a	3	0	0	0	
Cr (VI) (dissolved)	2	5	5	5	5	5	n/a	n/a	3.4	0	0	2	
Cr (III) (dissolved)	2	1	1	2.5	2.425	2.5	n/a	n/a	4.7	0	0	0	
Cr (total) (dissolved)	2	0.2	0.3	2.5	2.39	2.5	50	n/a	n/a	0	0	0	
Cu (dissolved)	2	0.5	1.7	6.5	6.26	6.5	2000	n/a	1	0	0	2	EQS based on bioavailable fraction.
Fe (dissolved)	0	5	0	0		0	200	n/a	1000	0	0	0	
Hg (dissolved) [PH]	2	0.01	0.01	0.01	0.01	0.01	1	0.01	0.07	0	0	0	
Mn (dissolved)	2	0.05	5	1600	1520.25	1600	50	n/a	123	1	0	1	EQS based on bioavailable fraction.
Mo (dissolved)	2	0.05	4.2	4.3	4.295	4.3	n/a	n/a	n/a	0	0	0	
Na (dissolved)	0	1	0	0		0	200000	n/a	n/a	0	0	0	
Ni (dissolved) [P]	2	0.5	4.4	4.9	4.875	4.9	20	n/a	4	0	0	2	EQS based on bioavailable fraction.
Pb (dissolved) [P]	2	0.2	0.3	4.8	4.575	4.8	10	n/a	1.2	0	0	1	EQS based on bioavailable fraction.
Sb (dissolved)	2	0.4	1.1	13	12.405	13	5	n/a	n/a	1	0	0	
Se (dissolved)	2	0.6	2.8	5.7	5.555	5.7	10	n/a	n/a	0	0	0	
Sn (dissolved)	2	0.2	0.2	0.2	0.2	0.2	n/a	n/a	25	0	0	0	
V (dissolved)	2	0.2	1.3	6.8	6.525	6.8	n/a	n/a	60	0	0	0	
Zn (dissolved)	2	0.5	4.4	55	52.47	55	n/a	n/a	10.9	0	0	1	EQS based on bioavailable fraction and is added to ambient background conc..
Zn (total)	2	0.5	99	8600	8174.95	8600	n/a	n/a	n/a	0	0	0	
Cyanide (free)	2	10	10	10	10	10	n/a	n/a	1	0	0	2	
Cyanide (total)	2	10	10	10	10	10	50	n/a	n/a	0	0	0	
Ammonium (NH4+)	2	15	100	550	527.5	550	500	n/a	n/a	1	0	0	
Bromate (BrO3)	2	2	2	2	2	2	10	n/a	n/a	0	0	0	
Chloride (Cl-)	2	150	16000	30000	29300	30000	250000	n/a	250000	0	0	0	
Fluoride (F-)	2	50	460	690	678.5	690	1500	n/a	5000	0	0	0	
Nitrate (NO3-)	2	50	9240	46300	44447	46300	50000	n/a	n/a	0	0	0	
Nitrite (NO2-)	2	5	100	890	850.5	890	500	n/a	n/a	1	0	0	
Sulfate (SO42-)	2	45	56800	214000	206140	214000	250000	n/a	400000	0	0	0	
pH (min.) (su)	2	0	7.8	7.3	7.775	7.3	6.5	n/a	6.0	0	0	0	Max & Min interchanged to compare min. value.
pH (max.) (su)	2	0	7.3	7.8	7.775	7.8	9.5	n/a	9.0	0	0	0	
Electrical conductivity (µS/cm)	2	10	550	860	844.5	860	2500	n/a	n/a	0	0	0	
Anthracene [PH]	2	0.01	0.01	0.01	0.01	0.01	n/a	n/a	0.1	0	0	0	
Benzo(a)pyrene [PH]	2	0.01	0.01	0.01	0.01	0.01	0.01	n/a	0.00017	0	0	2	
Fluoranthene [P]	2	0.01	0.01	0.01	0.01	0.01	n/a	n/a	0.0063	0	0	2	
Naphthalene [P]	2	0.01	0.01	0.1	0.0955	0.1	n/a	n/a	2	0	0	0	
PAHs = sum of benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, indeno(1,2,3-cd)pyrene [PH]	2	0.22	0.02	0.02	0.02	0.02	0.1	n/a	n/a	0	0	0	
Phenol	2	0.5	0.5	0.5	0.5	0.5	n/a	n/a	7.7	0	0	0	

Scenario D - Summary of Remedial Targets Methodology

RTM Level 1 - Soil Zone Assessment - leachate samples										2008/105/EC Annex II: [P]= priority substance, [PH] = priority hazardous subst									
Water body receptor(s): Groundwater and surface water										UKTAG (Nov 2013): [H] = hazardous substances.									
Secondary receptor(s): Human health (abstraction) and aquatic ecosystem										<1 Grey text and "<" sign if value <= LoD									
Data set: Groundwater / Leachate / Perched water / Surface water [as appropriate]										999 Red text if value >DWS									
Client: Xxxx										Red fill if value >EQS									
Site: Xxxx										Underlined if >HAZ MRV in DW									
Job no: Cxxxx										Hardness as mg/l CaCO3 405									
Date sampled:										01/01/16	01/01/16	01/01/16	01/01/16	01/01/16	01/01/16	01/01/16	01/01/16	01/01/16	01/01/16
Chemical of Potential Concern (µg/l)	No. of samples	Limit of Detection	DWS	EQS	HAZ-MRV in GW	WS03	WS12	BH3	BH4	BH5	BH6	BH7	BH8	BH9	BH10				
Ag (dissolved)	2	0.05	n/a	0.05	n/a	<0.05	<0.05												
Al (dissolved)	2	1	200	n/a	n/a	317	75.3												
As (dissolved)	2	0.15	10	50	n/a	5.4	0.77												
B (dissolved)	0	10	1000	2000	n/a														
Ba (dissolved)	2	0.06	700	n/a	n/a	67	53												
Cd (dissolved) [PH]	2	0.02	5	0.25	0.1	0.05	<0.02												
Co (dissolved)	2	0.2	n/a	3	n/a	1.1	1.6												
Cr (VI) (dissolved)	2	5	n/a	3.4	n/a	<5	<5												
Cr (III) (dissolved)	2	1	n/a	4.7	n/a	2.5	<1												
Cr (total) (dissolved)	2	0.2	50	n/a	n/a	2.5	0.3												
Cu (dissolved)	2	0.5	2000	1	n/a	6.5	1.7												
Fe (dissolved)	0	5	200	1000	n/a														
Hg (dissolved) [PH]	2	0.01	1	0.07	0.01	<0.01	<0.01												
Mn (dissolved)	2	0.05	50	123	n/a	5	1600												
Mo (dissolved)	2	0.05	n/a	n/a	n/a	4.2	4.3												
Na (dissolved)	0	1	200000	n/a	n/a														
Ni (dissolved) [P]	2	0.5	20	4	n/a	4.9	4.4												
Pb (dissolved) [P]	2	0.2	10	1.2	n/a	4.8	0.3												
Sb (dissolved)	2	0.4	5	n/a	n/a	13	1.1												
Se (dissolved)	2	0.6	10	n/a	n/a	5.7	2.8												
Sn (dissolved)	2	0.2	n/a	25	n/a	<0.2	<0.2												
V (dissolved)	2	0.2	n/a	60	n/a	6.8	1.3												
Zn (dissolved)	2	0.5	n/a	10.9	n/a	55	4.4												
Cyanide (free)	2	10	n/a	1	n/a	<10	<10												
Cyanide (total)	2	10	50	n/a	n/a	<10	<10												
Ammonium (NH4+)	2	15	500	n/a	n/a	100	550												
Bromate (BrO3)	2	2	10	n/a	n/a	<2	<2												
Chloride (Cl-)	2	150	250000	250000	n/a	30000	16000												
Fluoride (F-)	2	50	1500	5000	n/a	690	460												
Nitrate (NO3-)	2	50	50000	n/a	n/a	46300	9240												
Nitrite (NO2-)	2	5	500	n/a	n/a	100	890												
Sulfate (SO42-)	2	45	250000	400000	n/a	214000	56800												
pH (min.) (su)	2	0	6.5	6	n/a	7.8	7.3												
pH (max.) (su)	2	0	9.5	9	n/a	7.8	7.3												
Electrical conductivity (µS/cm)	2	10	2500	n/a	n/a	860	550												
Anthracene [PH]	2	0.01	n/a	0.1	n/a	<0.01	<0.01												
Benzo(a)pyrene [PH]	2	0.01	0.01	0.00017	n/a	<0.01	<0.01												
Fluoranthene [P]	2	0.01	n/a	0.0063	n/a	<0.01	<0.01												
Naphthalene [P]	2	0.01	n/a	2	n/a	0.1	<0.01												
PAHs = sum of benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, indeno(1,2,3-cd)pyrene [PH]	2	0.22	0.1	n/a	n/a	<0.02	<0.02												
Phenol	2	0.5	n/a	7.7	n/a	<0.5	<0.5												

