	lyd ect Name	rock :: Forme	r Raywa	WWW	.hyd	rock.	com	Window Co-ords:	/less Sample	Borehole N WS13 Sheet 1 of Hole Type WLS	1
Loca	tion:	Speke	Bouleva	rd, Liverpool			ject No: 151811	Ground Level:	31.71m OD	Scale: 1:25	
Clier	nt:	TJ Mor	ris					Date(s):	01/12/15	Hole Diame	ter:
Well	Water Strikes	Sample Depth (m)	and In S	Situ Testing Results	Depth (m)	Level (m OD)	Legend		Stratum Description	<u> </u>	
					0.45 0.50	31.26 31.21		is angular fine to GROUND)	very gravelly fine to co co coarse of brick and ash common to coarse of brick and ash common to coarse of brick and ash common to coarse of brick and ash coarse of brick and coarse of brick	h. (MADE	1.0 - 2.0 - 4.0 -
	emarks: 1) Concrete cored from ground level. 2) Inspection pit from bas Terminated due to encountering concrete. 4) Backfilled with ari roundwater: No groundwater encountered								1 1 1 5	B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample (Thin Wall) ES = Environmental Sample PID = Photoionization Detector (ppm) SFT = Standard Penetration Test AB = Asbestos Bulk Sample Logged: ASH Checke	ed: Al

	lyd ect Name	rock Forme	r Raywa	WWW re Site	.hydı	rock.	com	Window Co-ords:	/less Sample	Borehole N WS13A Sheet 1 of Hole Type WLS	1
Loca	tion:	Speke	Bouleva	rd, Liverpool			oject No: 151811	Ground Level:	31.65m OD	Scale: 1:25	
Clier	nt:	TJ Mor	ris				131011	Date(s):	01/12/15	Hole Diamet	ter:
Well	Water Strikes	Sample Depth (m)	and In S	Situ Testing Results	Depth (m)	Level (m OD)	Legend		Stratum Description	•	
					0.45 0.50	31.20 31.15		is angular fine t GROUND)	very gravelly fine to co co coarse of brick and asl	h. (MADE	1.0 - 2.0 - 3.0 -
	emarks: 1) Concrete cored from ground level. 2) Inspection pit from bate Terminated due to encountering concrete. 4) Backfilled with a roundwater: No groundwater encountered								1 1 1 5	B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample (Thin Wall) ES = Environmental Sample PilD = Photoionization Detector (ppm) SFT = Standard Penetration Test AB = Asbestos Bulk Sample Logged: ASH Checke	d: Al

	lyd ect Name	rock :: Forme	r Raywa	WWW	.hyd	rock.	com	Window Co-ords:	vless Sample	Borehole N WS14 Sheet 1 of Hole Type WLS	1
Loca	tion:	Speke	Bouleva	rd, Liverpool			ject No: 151811	Ground Level:	31.53m OD	Scale: 1:25	
Clier	nt:	TJ Mor	ris					Date(s):	01/12/15	Hole Diame	ter:
Well	Water Strikes	Sample Depth (m)	and In S	Situ Testing Results	Depth (m)	Level (m OD)	Legend		Stratum Description	•	
					0.45 0.50	31.08 31.03		angular fine to o	gravelly fine to coarse S. coarse of brick and ash. (MADE GROUND) End of Borehole at 0.50m	(MADE GROUND)	1.0 - 2.0 - 3.0 -
	emarks: 1) Concrete cored from ground level. 2) Inspection pit from I Terminated due to encountering rock. 4) Backfilled with arisi roundwater: No groundwater encountered									B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photolonization Detector (ppm) SFT = Standard Penetration Test AB = Asbestos Bulk Sample Logged: ASH Checkee	ed: AE

Hydr	ock		www	.hydı	rock.c	com	Window	less Sample		4
Project Name:		r Raywaı	ra Sita				Co-ords:	343044E, 384063N	Sheet 1 of Hole Type	
Location:			rd, Liverpool			ject No:	Ground Level:	31.48m OD	WLS Scale:	
			Tu, Liverpool		C1	.51811			1:25 Hole Diame	ter:
Client:	TJ Mor						Date(s):	02/12/15	300mm	
Vell Water Strikes	Sample a	Type	itu Testing Results	Depth (m)	Level (m OD)	Legend		Stratum Description	1	
		71-1						ular fine to coarse GRA\ (MADE GROUND)	/EL of black tarmac	
				0.20 0.25	31.28 31.23			(MADE GROUND) End of Borehole at 0.25m		7
								End of Borenole at 0.25m		
										1.
										2.
										3.
										,
										4
										5.
21) Concrete cored from ground level. 2) Inspection pit from between Terminated due to encountering rock. 4) Backfilled with arisi									B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) SS = Environmental Sample W = Water Sample PU = Photolonization Detector (ppm) FFT = Standard Penetration Test	•
undwater:	No ground	water er	ncountered						AB = Asbestos Bulk Sample Logged: ASH Checke	d:

	lyd ect Name	rock : Forme	r Raywa	WWW	.hydı	rock.c	com	Window Co-ords:	rless Sample 343118E, 384041N	Borehole I WS15 Sheet 1 of Hole Type WLS	5 f 1
Loca	tion:	Speke	Bouleva	ard, Liverpool			ject No: .51811	Ground Level:	31.48m OD	Scale: 1:25	
Clien	nt:	TJ Mor	ris				.51011	Date(s):	02/12/15	Hole Diame	
Well	Water			Situ Testing	Depth	Level	Legend		Stratum Description	<u> </u>	
	Strikes	Depth (m)	Туре	Results	(m) _{0.10}	(m OD)		CONCRETE. (MA			
											1.0 - 2.0 - 3.0 -
Rema	rks:	Backfilled v	with aris			Om. 2) Ter	 rminated d	ue to encountering		B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample (Thin Wall) UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample P(D = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample Logged: ASH Checket	ed: AB

Project Name	Hydı	rock		www	.hydi	rock.c	com	Window	less Sample		4
Class				ire Site				Co-ords:	343113E, 384035N	Hole Type	
Strikes Date s	Location:	Speke	Bouleva	ard, Liverpool			-	Ground Level:	31.48m OD	Scale:	
Strikes Depth (m) Type Results 0.55 1.44 0.55 1.44 0.56 1.44 0.56 1.44 0.56 1.44 0.56 1.44 0.56 0.50	Client:	TJ Mor	ris				.51011	Date(s):	02/12/15	Hole Diame	ter:
Remarks: a. 25	// III						Legend		Stratum Description	1	
Dark brown slightly clayey very gravelly fine to coarse of SAND. Gravel is angular to subangular fine to coarse of brick and ash. (MADE GROUND) 1.00	Strikes	Depth (m)	туре	Results							T
SAND. Gravel is angular to subangular fine to coarse of brick and ash. (MADE GROUND) 1.10					0.26	31.22	**********			fine to coarse	
Red whole BRICKS (MADE GROUND) Red whole BRICKS (MADE GROUND) Red whole BRICKS (MADE GROUND) Soft dark brown slightly gravelly sandy CLAY. Gravel is angular fine to coarse of sandstone and brick. (GLACIAL TILL) 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 (2.172.3.5.6) 2.60 D 3.00 SPT N-28 (3.4/5.6.6.11) 3.00 SPT N-28 (3.4/6.6.6.11) 3.00 SPT N-28 (3.4/6.6.6.11) 3.00 SP								SAND. Gravel is	angular to subangular fi		
Red whole BRICKS (MADE GROUND) Red whole BRICKS (MADE GROUND) Soft dark brown slightly gravelly sandy CLAY. Gravel is angular fine to coarse of sandstone and brick. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly sandy slightly gravelly CLAY. (GLACIAL TILL) Firm to stiff red brown slightly gravelly clay. (GLACIAL TILL) Firm to stiff red brown slightly gravely slightly gravely clay. (GLACIAL TILL) Firm to stiff red brown slightly gravely clay. (GLACIAL TILL											1.0
Soft dark brown slightly gravelly sandy CLAY. Gravel is angular fine to coarse of sandstone and brick. (GLACIAL TILL) 2.00 SPT N=16 (2.2/2.3.5.6) 3.00 SPT N=28 (3.4/5.6.6.11) 3.00 SPT N=28 (3.4/5.6.6.11) 3.00 SPT N=28 (3.4/5.6.6.11) 4.00 SPT N=28 (3.4/5.6.6.11) 4.50 D SPT N=28 (3					1.10	30.38		Red whole BRIC	KS (MADE GROUND)		
1.60 D 1.60 23.88 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 (2.472.3.5.6) 3.00 SPT N=28 (3.4/5.6.6.11) 3.00 SPT N=28 (3.4/5.6.6.11) 4.00 SPT N±50 (6.6/8.10.12.24) 4.50 D SPT N±50 (6.6/8.10.12.24) 4.		1.30	ES		1.30	30.18		angular fine to o			
2.60 D 3.00 SPT N-28 (3.4/5.6.6.11) 3.00 SPT N-28 (3.4/5.6.6.11) 4.00 SPT N-250 (6.6/8.10.12.24) 4.50 D N-250 (15.14/103 for 22.5mm) 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) TILL) 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.		1.60	D		1.60	29.88		Firm to stiff red Gravel is angula			
4.00 SPT N≥50 (6.6/8.10.12.24) 4.50 D N≥50 (15.14/103 for 225mm) 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. 8 End of Borehole at 5.00m 8 Backfilled with arisings.		2.00	SPT								2.
4.00 SPT N≥50 (6.6/8.10.12.24) 4.50 D N≥50 (15.14/103 for 225mm) 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. 8 End of Borehole at 5.00m 8 Backfilled with arisings.		2.60	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) 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.		3.00	SPT		3.00	28.48		with low angula angular to round	r cobble content of san	dstone. Gravel is	3.
4.50 D SPT N≥50 (15,14/103 for 225mm) 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. Be Bulk Sample D = Disturbed Sample U = Undisturbed Sample U = U		3.50	D					,			
5.00 SPT N≥50 (15,14/103 for 225mm) 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. B = Bulk Sample D = Disturbed Sample U = Undisturbed U = Undisturbed Sample U = Undisturbed U = Undisturbed U = U		4.00	SPT								4.
emarks: 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. B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample U = Photoionization better (Ppin) SFT = Standard Penetration Test		4.50	D								
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. B = Bulk Sample D = Disturbed Sample UT = Undisturbed Sample UT = Undisturbed Sample UT = Undisturbed Sample PID = Photoionization better (ppm) SPT = Standard Penetration Text		5.00	SPT	(15,14/103 for	5.00	26.48			End of Borehole at 5.00m	1	5.
AB = Asbestos Bulk Sample	Remarks:			from ground le						D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample UD = Photoionization Detector (ppm)	

Column To Morris To Morr		lyd ect Name	rock :: Forme	r Raywa	WWW re Site	ı.hydı	rock.d	com	Window Co-ords:	zless Samplo 343196E, 384016N	Borehole N WS16 Sheet 1 of Hole Type WLS	1
Circums Time Marries Time T	Locat	tion:	Speke	Bouleva	rd, Liverpool				Ground Level:	31.15m OD	Scale:	
Water Strikes Depth (m) Type Results 0.00 1.6 0.00 1	Clien	t:	TJ Mor	ris			01	.51611	Date(s):	02/12/15	Hole Diamet	er:
Solition Depth (m) Type Results (fill (mO)) a.10 a.20 a.20 a.20 a.20 a.20 a.20 a.20 a.2	Well							Legend		Stratum Description	•	
						0.30	30.85		road chippings. Dark grey sandy and clinker. (MA	(MADE GROUND) angular fine to coarse ADE GROUND) ADE GROUND)	GRAVEL of brick	2.0 -
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. B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample U = Undistu	Rema	emarks: 1) Concrete cored from ground level. 2) In Terminated due to encountering concrete									D = Disturbed Sample U = Undisturbed Sample	5.0 -

Н	lyd	rock		www	.hyd	rock.c	com	Window	less Sampl		Α
	ect Name		r Raywa	are Site				Co-ords:	343193E, 384010N	Sheet 1 of	
Loca				ard, Liverpool			ject No:	Ground Level:	31.21m OD	Scale:	
Clien	nt:	TJ Mor				C1	.51811	Date(s):	02/12/15	1:25 Hole Diame	
Well	Water	Sample	and In	Situ Testing	Depth	Level	Legend		Stratum Descriptio	300mm	
	Strikes	Depth (m)	Туре	Results	(m)	(m OD)	Legend	Black sandy ang	ular fine to coarse GRA		
		0.10-0.20 0.20	ES B		0.10	31.11		road chippings.	(MADE GROUND) dy angular fine to coar		1
		0.20	ES					concrete. (MAD		SE GNAVEL OF	
					0.65	30.56		Firm to stiff red	brown slightly sandy s	lightly gravelly CLAY.	
		0.80 0.80	B ES						r to rounded fine to co		
								(GLACIAL TILL)			1.0
		1.20	SPT	N=14							
				(1,2/2,1,4,7)							
		1.40 1.40	D ES								
		1.60	D								
		2.00	SPT	N=23							2.0
		2.00	511	(3,4/4,5,5,9)							2.0
		2.50	D								
		3.00	SPT	N=23 (4,5/6,6,5,6)							3.0
		3.50	D								
		4.00	SPT	N=41 (6,6/10,9,9,13)	4.00	27.21		Very stiff red bro	own slightly sandy sligh	htly gravelly CLAY.	4.0
				,					r to rounded fine to co		
								(OLICIAL HLL)			
		4.50	D								
		5.00	SPT	N≥50					Continued on Next Shee	et	5.0
		4) -		(8,9/21,17,21,30)	<u> </u>						
Rema	rks:	Windowles response z	ss samp one fro		to 5.00r			se of concrete to d groundwater stand	epth of 1.20m. 3) I pipe installed with	B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample U = Undisturbed Sample Find Find Find Find Find Find Find Find	ed: A

	lyd ect Name	rock :: Forme	r Raywa	WWW	ı.hydı	ock.	com	Window Co-ords:	aless Sample	Borehole I WS16 Sheet 2 of Hole Type WLS	A f 2
Loca	ition:	Speke	Bouleva	rd, Liverpool			ject No: 151811	Ground Level:	31.21m OD	Scale: 1:25	
Clie	nt:	TJ Mor	ris					Date(s):	02/12/15	Hole Diame	
Well	Water			Situ Testing	Depth	Level	Legend		Stratum Description	<u> </u>	
	Strikes	Depth (m)	Туре	Results	(m)	(m OD)					
					5.14	26.07		Extremely weak	red brown fine to medi	ium SANDSTONE.	
					5.45	25.76			End of Borehole at 5.45m		
											6.0
											7.0
											8.0
											9.0
											10.0
										2 - Bulk Comple	
ema	1) Concrete cored from ground level. 2) Inspection pit from Windowless sampled from 1.20m to 5.00m. 4) 50mm gas response zone from 1.00m to 5.00m.								I pipe installed with	3- Bulk Sample J = Undisturbed Sample J = Undisturbed Sample J = Undisturbed Sample (Thin Wall) S = Environmental Sample W = Water Sample 10 = Photolonization Detector (ppm) PFT = Standard Penetration Test AB = Asbestos Bulk Sample	
roui	ndwater:	No ground	water e	ncountered						Logged: ASH Checke	ed:

	lyd ect Name	rock :: Forme	r Raywa	WWW	.hyd	rock.	com	Window Co-ords:	/less Sample	Borehole N WS17 Sheet 1 of Hole Type WLS	1
Loca	tion:	Speke	Bouleva	rd, Liverpool			ject No: .51811	Ground Level:	32.20m OD	Scale: 1:25	
Clier	nt:	TJ Mor	ris					Date(s):	02/12/15	Hole Diame	ter:
Well	Water Strikes	Sample Depth (m)	and In S	itu Testing Results	Depth (m)	Level (m OD)	Legend		Stratum Description		
					0.30 0.40 0.45	31.90 31.80 31.75		angular fine to o GROUND) Dark brown san limestone (MAI	rey gravelly sandy TOPSC coarse of sandstone and dy angular fine to coarse DE GROUND) E. (MADE GROUND) End of Borehole at 0.45m	brick. (MADE	2.0 - 3.0 -
Rema	emarks: 1) Inspection pit from base of concrete to depth of 0.45m. 2 Backfilled with arisings. roundwater: No groundwater encountered						0.45m. 2)	Terminated due to	U E W P, Si	.= Bulk Sample 1= Disturbed Sample 1= Undisturbed Sample 1= Undisturbed Sample (Thin Wall) S = Environmental Sample 1D = Photoionization Detector (ppm) PT = Standard Penetration Test B = Asbestos Bulk Sample Logged: ASH Checkee	ed: Al

	lyd ect Name	rock :: Forme	r Raywa	WWW	.hyd	rock.	com	Window Co-ords:	/less Sample	Borehole N Sheet 1 of Hole Type WLS	1
Loca	tion:	Speke	Bouleva	rd, Liverpool			ject No: .51811	Ground Level:	32.20m OD	Scale: 1:25	
Clier	nt:	TJ Mor	ris			1		Date(s):	02/12/15	Hole Diame	ter:
Well	Water Strikes	Sample Depth (m)	and In S	Situ Testing Results	Depth (m)	Level (m OD)	Legend		Stratum Description	1	
		0.20	D		0.40 0.45	31.80 31.75		angular fine to o	vey gravelly sandy TOPSC coarse of sandstone and (MADE GROUND) End of Borehole at 0.45m	l brick. (MADE	
											1.0 -
		2.00	ES								2.0 -
											3.0 -
											4.0
Rema	ırks:				ncrete to	depth of 0	0.45m. 2)	Terminated due to		B = Bulk Sample D = Disturbed Sample	5.0
Groun	Backfilled with arisings. roundwater: No groundwater encountered								1	U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample WE = Water Sample PID = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample Logged: ASH Checkee	ed: A

Hyd	rock		www	, hvd	rock (com	Windowless Sample	Borehole No. WS19	•
				,,,,,				Sheet 1 of 2 Hole Type:	
Project Name	e: Forme	r Raywa	re Site		D	in at Nin.	Co-ords: 343088E, 384067N	WLS	
Location:	Speke	Bouleva	rd, Liverpool			ject No: 151811	Ground Level: 31.72m OD	Scale: 1:25	
Client:	TJ Mor	ris					Date(s): 02/12/15	Hole Diameter 300mm	r:
/ell Water Strikes	Sample Depth (m)	and In S	Situ Testing Results	Depth (m)	Level (m OD)	Legend	Stratum Description		
	Deptii (iii)	Турс	Results	' '	, ,		Grey CONCRETE with 10mm rebar at 160	mm bgl. (MADE	
	0.20-0.25	ES		0.17	31.55		GROUND) Black silty very gravelly fine to coarse SA	ND. Gravel is	
				0.30 0.40	31.42 31.32		angular fine to coarse of clinker, brick an GROUND)		
	0.50	D					Red BRICK. (MADE GROUND)	/	
	0.50	ES					Soft dark brown slightly sandy slightly grais angular to rounded fine to coarse of sa GROUND)	ndstone. (MADE	1.0
	1.20	SPT	N=6 (1,2/2,1,1,2)						
				1.40	30.32	J	Firm red brown slightly sandy slightly gra	velly CLAV Gravel	
							is angular to rounded fine to coarse of sa		
							(GLACIAL TILL)		
	1.80-2.00	D							
	2.00	SPT	N=7 (2,2/2,2,1,2)						2.
	2.80-3.00	D							
	2.00	COT	N. 20	2.00	20.72				2.4
	3.00	SPT	N=29 (5,5/5,7,7,10)	3.00	28.72		Very stiff red brown slightly sandy slightly	y gravelly CLAY.	3.0
							Gravel is angular to rounded fine to coar (GLACIAL TILL)	se of sandstone.	
							(GENERAL TILL)		
	3.80-4.00	D		3.80	27.92		Extremely weak red brown fine to medic	m SANDSTONE	
	4.00	SPT	N=36 (6,6/7,8,9,12)				recovered as red brown silt sandy angula gravel of sandstone. (SHERWOOD SAND		4.0
	5.00	SPT	N=42 (7,6/8,8,10,16)				Continued on Next Sheet		5.0
emarks:	Windowle:		from ground le led from 1.20m				arisings.	Bulk Sample Disturbed Sample Undisturbed Sample = Undisturbed Sample = Undisturbed Sample (Thin Wall) = Environmental Sample = Water Sample = Photoionization Detector (ppm) = Standard Penetration Test = Asbestos Bulk Sample	

	lyd ect Name	rock :: Forme	r Raywa	WWW re Site	.hyd	rock.	com	Window Co-ords:	vless Sample	Borehole N WS19 Sheet 2 of Hole Type WLS) f 2
Loca	tion:	Speke	Bouleva	rd, Liverpool			ject No:	Ground Level:	31.72m OD	Scale:	
Clien	nt:	TJ Mor		<u> </u>		CI	151811	Date(s):	02/12/15	1:25 Hole Diame	
Well	Water	Sample	and In S	itu Testing	Depth	Level	Legend		Stratum Description	300mm	
	Strikes	Depth (m)	Туре	Results	(m)	(m OD)					
					5.45	26.27			End of Borehole at 5.45m		
											6.0 -
											7.0 -
											8.0 -
											9.0 -
											10.0 -
Rema	rks:			from ground le ed from 1.20n				ase of concrete to d arisings.	I I I	B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photolonization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample	

Hyd	rock		www	.hvd	rock.c	com	Window	ıless Sample	Borehole N WS20	_
ilya	OCK			,					Sheet 1 of	
Project Name	: Forme	r Raywa	are Site				Co-ords:	343152E, 384014N	Hole Type WLS	::
Location:	Speke	Boulev	ard, Liverpool			ject No: 151811	Ground Level:	31.44m OD	Scale: 1:25	
Client:	TJ Mor	ris			1		Date(s):	03/12/15	Hole Diame	ter:
Water			Situ Testing	Depth	Level (m OD)	Legend		Stratum Description	n	
Strikes	Depth (m)	Туре	Results	(m)	(m OD)			with 10mm rebar at 16 230mm bgl. (MADE GR		
				0.40	31.04			gravelly fine to coarse S. coarse of brick and ash.		
·	0.80-1.00 0.80-1.00 0.80-1.00	B D ES		0.80	30.64			brown slightly gravelly so coarse of sandstone a		1.0
	1.20	SPT	N=11 (1,2/2,2,3,4)							
	1.50-2.00	D		1.40	30.04			brown slightly sandy sli r to rounded fine to coa		
	2.00	SPT	N=36 (6,6/8,8,9,11)	2.00	29.44			own slightly sandy sligh r to rounded fine to coa		2.0
	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)							4.0
	4.80	SPT	N≥50 (15,14/50 for 20mm)	4.80 5.00	26.64 26.44			red brown fine to med d brown silt sandy angu Continued on Next Sheet	lar fine to coarse	5.0
emarks:	Windowles	ss samp		to 5.00r			ase of concrete to d groundwater stand	lepth of 1.20m. 3) If pipe installed with	B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample UT = Undisturbed Sample (Thin Wall) ES = Environmental Sample W = Water Sample PID = Photoionization Detector (ppm) SFT = Standard Penetration Test	
roundwater:	At 3.50m S	Slight se	eepage.						AB = Asbestos Bulk Sample Logged: ASH Checke	d:

Hydrock www.hydrock.com Project Name: Former Rayware Site								Window Co-ords:	/less Sample	Borehole N WS20 Sheet 2 of Hole Type WLS)
Loca	tion:	Speke	Bouleva	rd, Liverpool			ject No: 151811	Ground Level:	31.44m OD	Scale: 1:25	
Clier	nt:	TJ Mor	ris				.51011	Date(s):	Hole Diame		
Well	Water Strikes			Situ Testing	Depth (m)	Level (m OD)	Legend		Stratum Description	<u> </u>	
	Strikes	Depth (m)	Туре	Results	(111)	(III OD)		gravel of sandst	one. (SHERWOOD SANI	DSTONE)	
									End of Borehole at 5.45m	1	
											6.0 -
											7.0 -
											8.0 -
											9.0
											10.0
Rema	ırks:	Windowles	ss sampl		to 5.00r			ase of concrete to c groundwater stand	d pipe installed with	B = Bulk Sample D = Disturbed Sample U = Undisturbed Sample [UT = Undisturbed Sample [Thin Wall] SE = Environmental Sample W = Water Sample PlD = Photoionization Detector (ppm) SPT = Standard Penetration Test AB = Asbestos Bulk Sample	

Hydı	rock		www	, bydi	rock (com	Window	/less Sampleı	Borehole N WS21	
Hydi	OCK		VVVVV	yuı	OCK.	JOIII		•	Sheet 1 of	
Project Name	: Forme	r Raywa	re Site				Co-ords:	343027E, 384035N	Hole Type WLS	e:
Location:	Speke	Bouleva	rd, Liverpool			ject No: 151811	Ground Level:	31.44m OD	Scale: 1:25	
Client:	TJ Mor	ris					Date(s):	03/12/15	Hole Diame	
/ell Water	Sample	and In S	itu Testing	Depth	Level	Legend		Stratum Description		
Strikes	Depth (m)	Туре	Results	(m)	(m OD)	Legend		E with 10mm rebar at 160i 230mm bgl. (MADE GROU		
	0.30-0.50	ES		0.27	31.17		Red brown sand	dy angular fine to coarse G		
				0.45 0.50	30.99 30.94			brick. (MADE GROUND) E. (MADE GROUND)		
				0.30	30.34		Cicy content	End of Borehole at 0.50m		
										1.0
										2
										3
										4
										5
								·		
marks:			from ground le encountering					D = UT = UT = ES = WE = SPT :	Bulk Sample Disturbed Sample Undisturbed Sample Undisturbed Sample (Thin Wall) Environmental Sample Water Sample = Photoionization Detector (ppm) = Standard Penetration Test Asbestos Bulk Sample	

		F					Windowless Comple	Borehole No	
Hyd	rock		www	.hyd	rock.	com	Windowless Sample	r WS21A Sheet 1 of 1	
Project Name		r Raywa	are Site				Co-ords: 343031E, 384029N	Hole Type:	
Location:	Speke	Bouleva	ard, Liverpool			ject No: 151811	Ground Level: 31.44m OD	Scale: 1:25	
Client:	TJ Mor	ris				.51011	Date(s): 03/12/15	Hole Diamete	r:
/ell Water Strikes	Sample Depth (m)	and In	Situ Testing Results	Depth (m)	Level (m OD)	Legend	Stratum Description		
	Deptil (III)	Турс	Nesuits				Grey CONCRETE with 10mm rebar at 160 20mm rebar at 230mm bgl. (MADE GRC		
				0.20	31.24		Red brown sandy angular fine to coarse sandstone and brick. (MADE GROUND)		
	0.40-0.60 0.40-0.60	D ES		0.40	31.04		Firm to stiff red brown sandy CLAY. (GL/	ACIAL TILL)	
	0.60-1.00	D		0.60	30.84		Firm to stiff red brown slightly sandy slig Gravel is angular to rounded fine to coar (GLACIAL TILL)		1.0
	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)						2.0
	2.50-3.00	D							
	3.00	SPT	N≥50 (89 for 104mm/50 for 25mm)	3.00 3.10	28.44 28.34		Extremely weak red brown fine to media recovered as red brown silt sandy angula gravel of sandstone. (SHERWOOD SAND End of Borehole at 3.10m	ar fine to coarse	3.
									4.
									5.
marks:			from ground le led from 1.20m				arisings.	Bulk Sample - Disturbed Sample - Undisturbed Sample - Undisturbed Sample (Tin Wall) - Environmental Sample - Photoionization Detector (ppm) T - Standard Penetration Test - subsets Sublik Sample	
undwater:	No ground	water e	ncountered					ogged: ASH Checked	:

Hydı	rock		www	.hyd	rock.	com	Windowless Sample	Borehole N WS22 Sheet 1 of	
Project Name	: Forme	r Rayw	are Site				Co-ords: 343074E, 384029N	Hole Type	
Location:	Speke	Boulev	ard, Liverpool			ject No: 151811	Ground Level: 31.45m OD	Scale: 1:25	
Client:	TJ Mor	ris					Date(s): 03/12/15	Hole Diamet	er:
/ell Water Strikes	Sample Depth (m)	and In	Situ Testing Results	Depth (m)	Level (m OD)	Legend	Stratum Description		
	Deptii (iii)	туре	Results	(,	(02)		Grey CONCRETE with 10mm rebar at 16 20mm rebar at 230mm bgl. (MADE GRO		
				0.28	31.17		Red brown sandy angular fine to coarse sandstone and brick. (MADE GROUND)	GRAVEL of	
	0.60 0.60	B ES		0.60	30.85		Soft to firm dark brown sandy CLAY. (GL	ACIAL TILL)	
									1.0
	1.20	SPT	N=5 (1,0/1,1,2,1)	1.30	30.15		Firm to stiff red brown slightly sandy slig		_
							Gravel is angular to rounded fine to coa (GLACIAL TILL)	rse of sandstone.	
	1.80-2.00 2.00	D SPT	N=23	2.00	29.45				2.0
			(2,3/5,5,6,7)				Very stiff red brown slightly sandy slight Gravel is angular to rounded fine to coa (GLACIAL TILL)		
	2.80-3.00	D							
	3.00	SPT	N=36 (6,6/8,8,9,11)						3.0
	3.80-4.00	D							
	4.00	SPT	N=43 (8,7/7,9,12,15)						4.0
	4.50-4.70	D		4.30	27.15		Extremely weak red brown fine to medi recovered as red brown silt sandy angul gravel of sandstone. (SHERWOOD SANE	ar fine to coarse	
	4.70	SPT	N≥50 (14,15/50 for 25mm)	4.70	26.75		End of Borehole at 4.70m		
									5.0
emarks:	Windowle:	ss samp		to 4.00			groundwater stand pipe installed with	= Bulk Sample = Disturbed Sample = Undisturbed Sample T= Undisturbed Sample (Thin Wall) S= Environmental Sample '= Water Sample D= Photolonization Detector (ppm) PT = Standard Penetration Test D= Asbestos Bulk Sample	ı
oundwater:	No ground	lwater (encountered					Logged: ASH Checke	d:

Hydi	rock		www	.hyd	rock.	com	Windowless Sampler WS2 Sheet 1		
Project Name:		r Raywa	re Site				Co-ords: 343152E, 383961N	Hole Type WLS	
Location:	Speke	Bouleva	rd, Liverpool			ject No: 151811	Ground Level: 31.44m OD	Scale: 1:25	
Client:	TJ Mor	ris				01011	Date(s): 03/12/15	Hole Diamet	er:
Vell Water Strikes	Sample Depth (m)	and In S	itu Testing Results	Depth (m)	Level (m OD)	Legend	Stratum Description		
	0.25 0.25 0.25	B D ES	inesuits	0.20 0.28	31.24 31.16		Grey CONCRETE with 10mm rebar at 160 20mm rebar at 230mm bgl. (MADE GRO Red brown sandy angular fine to coarse sandstone and brick. (MADE GROUND) Dark brown slightly gravelly silty fine to Gravel is angular fine to coarse of sandst (MADE GROUND)	GRAVEL of	1.0
	1.20	SPT	N=12 (1,2/5,2,2,3)						
	1.40 1.40	D ES		1.40	30.04		Soft to firm dark brown slightly sandy slightly sandy slightly sandy slightly sandy slightly sandstone. (GLACIAL TILL)		
	2.00	SPT	N=15 (1,2/2,3,5,5)						2.0
	2.80	D	N as	2.40	29.04 28.94		Orange brown silty fine to coarse SAND. Firm to stiff red brown slightly sandy slig Gravel is angular to rounded fine to coar (GLACIAL TILL)	htly gravelly CLAY.	2.00
	3.00	SPT	N=26 (3,3/5,5,7,9)	2.70					3.0
	3.80 4.00	D SPT	N=36 (6,6/8,8,9,11)	3.70	27.74		Extremely weak red brown fine to mediu recovered as red brown silty sandy angu gravel of sandstone. (SHERWOOD SAND	lar fine to coarse	4.0
				4.45	26.99		End of Borehole at 4.45m		_
	5.00	SPT	N=35 (7,7/7,9,9,10)						5.0
emarks:			from ground le led from 1.20m				arisings.	Bulk Sample Disturbed Sample Undisturbed Sample Undisturbed Sample (Thin Wall) Emvironmental Sample Water Sample Photoionization Detector (ppm) T - Standard Penetration Test - Abbestos Bulk Sample	<u> </u>





Figure 11: Window sample trial hole.



Figure 12: WS08A core.



Appendix D

Geotechnical Test Results and SPT Depth Plots

Telephone: +44 (0) 1327 703828 Facsimile: +44 (0) 1327 300154





0001

Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd Report No: 51020116/16/01
Client Address: Over Courts Barn Batch Number: DAM0057795

Over Lane

Almondsbury, Bristol Client Reference: Combined Samples

Postcode: BS32 4DF Sampled by: Client Contact: Adam Cheers Date Sampled: 30.11.15
Date Received: 11.12.15

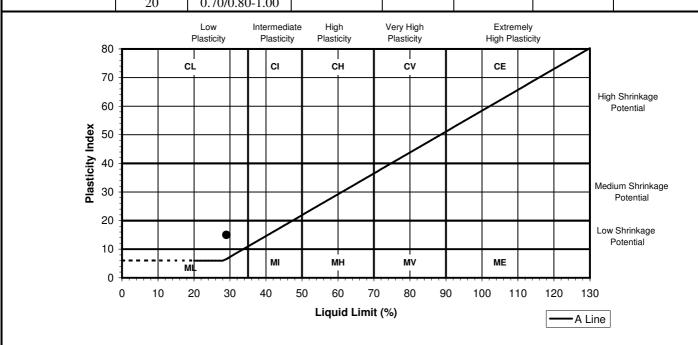
Site: C151811 Rayware Site Tested From: 16.12.15-21.12.15

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/WS1 0/WS11/WS	0.50-0.70/0.25- 0.50/0.50-	16	29	14	15	88
13203213	20	0.70/0.80-1.00	10	2)	17	15	00



Sample Preparation: As Received, Coarse particles removed by hand prior to test

Actual % passing 425 μm 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. Im

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

For and on behalf of Environmental Scientifics Group

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2 Newton Close

Drayton Fields Industrial Estate

Daventry

Site:

Sampled by:

Supplier:

Source:

Sampled from: Site

Northants NN11 8RR

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Determination of Particle Size Distribution

Client: Hydrock Consultants Ltd Report No: 51020116/16/23 Client Address: Over Courts Barn Batch Number: DAM0057795 Over Lane Lab Ref: 45265250 Almondsbury, Bristol **BS32 4DF** Postcode: Contact: Adam Cheers 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

Client Site Sample Mass (kg): 2.2

Description: Brown sandy CLAY with occasional Gravel

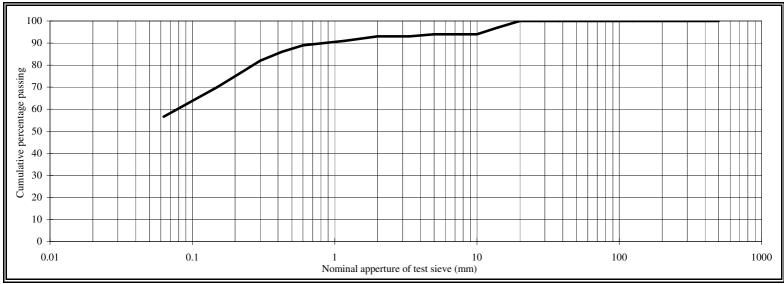
C151811 Rayware Site

Client

Specification: Not Required

Moisture Content: 18% Comments:

S	SIEVE ANA	ALYSIS
BS Sieve	Passing	Material
(mm)	(%)	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

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

Page: 1 of 1 M. Im [✓] M. Carr - Section Manager Signed: Date: 12.01.16 D. Berrill - Laboratory Manager

Sampled by:

Supplier:

Source:

Northants NN11 8RR

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0001

Determination of Particle Size Distribution

Client: Hydrock Consultants Ltd Report No: 51020116/16/22 Client Address: Over Courts Barn DAM0057795 Batch Number: Over Lane Lab Ref: 45265249

Almondsbury, Bristol

Postcode: **BS32 4DF** Contact:

Adam Cheers Location: **WS06**

Site: C151811 Rayware Site

Depth (m): 0.25

Client Sampled from: Site Client

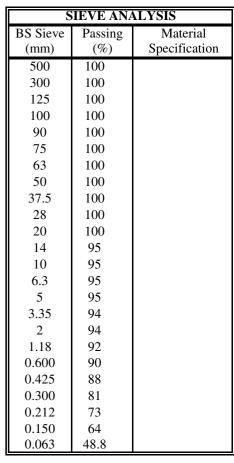
Site

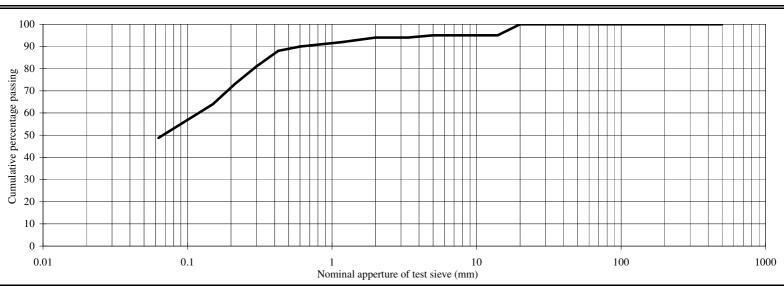
Date Sampled: 30.11.15 Date Received: 11.12.15 Date Tested: 23.12.15 Sample Type: Bulk Sample Mass (kg): 3.9

Description: Brown very sandy CLAY with occasional Gravel

Specification: Not Required

19% Moisture Content: Comments:





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 Signed: Date: 12.01.16

[✓] 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 Report No: 51020116/16/21 Client Address: Over Courts Barn DAM0057795 Batch Number: Over Lane Lab Ref: 45265248 Almondsbury, Bristol Postcode: **BS32 4DF** Client Ref: **Combined Samples** WS09/WS10/WS11 Contact: Adam Cheers Location: Site: C151811 Rayware Site 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

Description: Brown red sandy CLAY with occasional Gravel

Specification: Not Required

Client

Client

Site

Site

Comments:

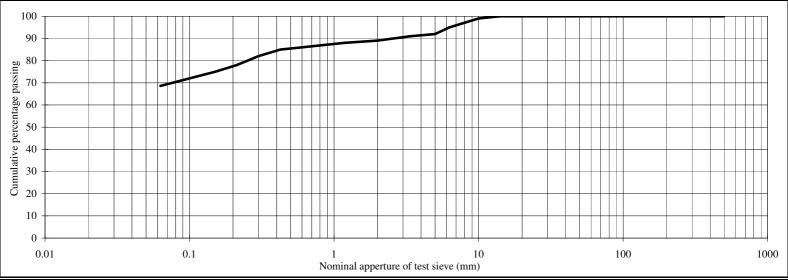
Sampled by:

Supplier:

Source:

Sampled from:

S	SIEVE ANA	ALYSIS
BS Sieve	Passing	Material
(mm)	(%)	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

Page: 1 of 1
Date: 12.01.16

Signed:

M. Lw [/] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

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0001

Determination of Particle Size Distribution

Client: Hydrock Consultants Ltd Report No: 51020116/16/20 Client Address: Over Courts Barn DAM0057795 Batch Number: Over Lane Lab Ref: 45265247

Almondsbury, Bristol

Postcode: **BS32 4DF** Contact: Adam Cheers

Site: C151811 Rayware Site

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

WS05/WS16A/WS22 Location: Depth (m): 0.25-0.80/0.80/0.60 Date Sampled: 30.11.15

Combined Samples

Client Ref:

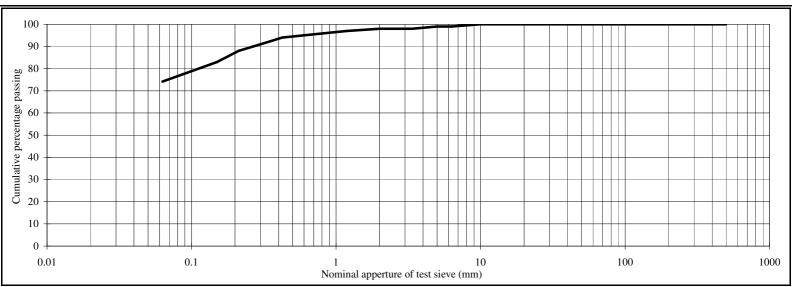
Date Received: 11.12.15 Date Tested: 23.12.15 Sample Type: Bulk Sample Mass (kg): 30

Description: Brown sandy CLAY with occasional Gravel

Specification: Not Required

Comments:

SIEVE ANALYSIS								
BS Sieve	Passing	Material						
(mm)	(%)	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 Signed: Date: 12.01.16

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

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Determination of Particle Size Distribution

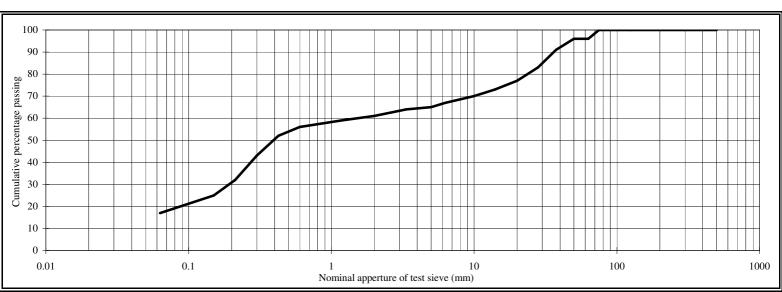
Client:	Hydrock Consultants Ltd	Report No:	51020116/16/19
Client Address:	Over Courts Barn	Batch Number:	DAM0057795
	Over Lane	Lab Ref:	45265246
	Almondsbury, Bristol		
Postcode:	BS32 4DF	Client Ref:	Combined Samples
Contact:	Adam Cheers	Location:	WS03/WS07/WS15A/W
			S23
Site:	C151811 Rayware Site	Depth (m):	0.30-0.50/0.25/0.50/0.25
		D . G . 1.1	20.11.15
		Date Sampled:	30.11.15
Sampled by:	Client	Date Received:	11.12.15
Sampled from:	Site	Date Tested:	23.12.15
Supplier:	Client	Sample Type:	Bulk
Source:	Site	Sample Mass (kg):	30

5	SIEVE ANA	ALYSIS
BS Sieve	Passing	Material
(mm)	(%)	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	

Description: Brown clayey Crushed Concrete, Brick and Rock

Specification: Not Required

Comments:



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

M. lu Signed:

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

Daventry

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0001

Determination of Particle Size Distribution

Client: Hydrock Consultants Ltd Report No: 51020116/16/18 Client Address: Over Courts Barn Batch Number: DAM0057795 Lab Ref: Over Lane 45265245 Almondsbury, Bristol Client Ref: Postcode: **BS32 4DF** Combined Samples Contact: Adam Cheers Location: WS09/WS10 /WS11/WS2 0.50-0.70/0.25-0.50/0.50-Site: C151811 Rayware Site Depth (m): 0.70/0.80-1.00

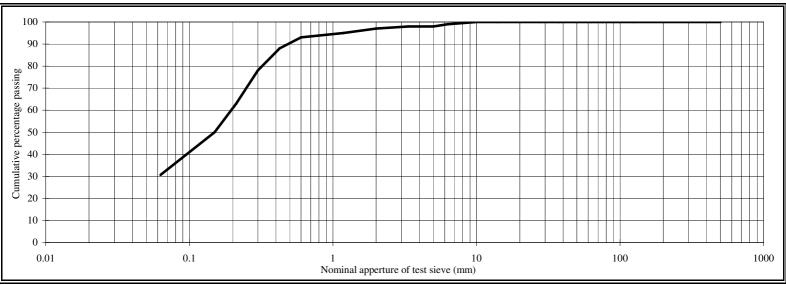
Date Sampled: 30.11.15 Sampled by: Client Date Received: 11.12.15 Sampled from: Site Date Tested: 23.12.15 Supplier: Client Sample Type: Bulk Source: Site Sample Mass (kg): 40

Description: Brown very clayey SAND with occasional Gravel

Specification: Not Required

Comments:

S	SIEVE ANA	ALYSIS
BS Sieve	Passing	Material
(mm)	(%)	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

Page: 1 of 1
Date: 12.01.16

Signed: M. Luw

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

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0001

Determination of Particle Density

Hydrock Consultants Ltd Report No: 51020116/16/17 Client: Client Address: Over Courts Barn Batch Number: DAM0057795

Over Lane

Almondsbury, Bristol Client Reference: Combined Samples

Client Postcode: BS32 4DF Sampled by: Client Contact:

Adam Cheers Date Sampled: 30.11.15 Date Received: 11.12.15

Site: C151811 Rayware Site **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 [✓] M. Carr - Section Manager M. Im Date: 12.01.16 Signed [] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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1.20/1.20-1.50/0.70-1.00

TEST REPORT

Determination of Moisture Content/Dry Density Relationship

Client: Hydrock Consultants Ltd Report No: 51020116/16/16
Client Address: Over Courts Barn Batch Number: DAM0057795

Over Lane

Almondsbury, Bristol Client Reference: Combined

Depth (m):

Postcode: BS32 4DF Location: WS09/WS10/WS11

Contact: Adam Cheers

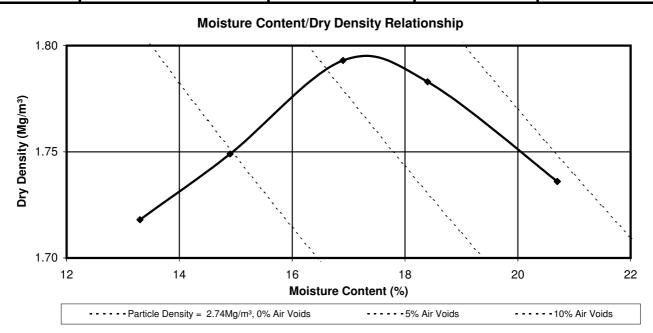
Site: C151811 Rayware Site

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 % Particle Density: 2.74 Mg/m³
Retained on 20mm Sieve: 0.0 % Measured or Assumed: Measured

Laboratory Reference	Description	As Received Moisture Content (%)	Optimum Moisture Content (%)	Maximum Dry Density (Mg/m³)
45265248	Brown red sandy CLAY with occasional Gravel	19	17	1.79



Point	1	2	3	4	5
Moisture Content (%)	13	15	17	18	21
Dry Density (Mg/m3)	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· Lw [✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

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Combined

0.25-0.80/0.80/0.60

TEST REPORT

Determination of Moisture Content/Dry Density Relationship

Client: Hydrock Consultants Ltd Report No: 51020116/16/15
Client Address: Over Courts Barn Batch Number: DAM0057795

Over Lane

Almondsbury, Bristol Client Reference:

Postcode: BS32 4DF Location: WS05/WS16A/WS22

Depth (m):

Contact: Adam Cheers

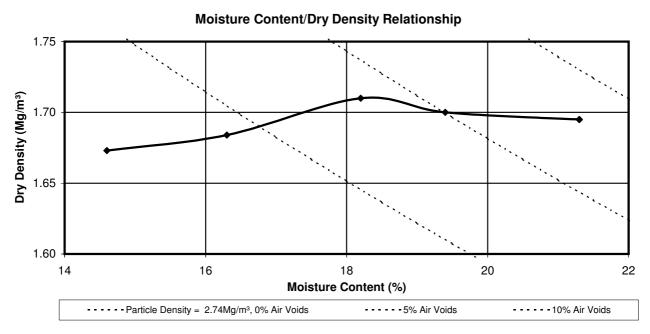
Site: C151811 Rayware Site

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 % Particle Density: 2.74 Mg/m³
Retained on 20mm Sieve: 0.0 % Measured or Assumed: Measured

Laboratory Reference	Description	As Received Moisture Content (%)	Optimum Moisture Content (%)	Maximum Dry Density (Mg/m³)
45265247	Brown sandy CLAY with occasional Gravel	19	18	1.71



Point	1	2	3	4	5
Moisture Content (%)	15	16	18	19	21
Dry Density (Mg/m3)	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

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

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0.30-0.50/0.25/0.50/0.25

TEST REPOR

Determination of Moisture Content/Dry Density Relationship

Client: Hydrock Consultants Ltd Report No: 51020116/16/14
Client Address: Over Courts Barn Batch Number: DAM0057795

Over Lane

Almondsbury, Bristol Client Reference: Combined

Depth (m):

Postcode: BS32 4DF Location: WS03/WS07/WS15A/WS

Contact: Adam Cheers 2

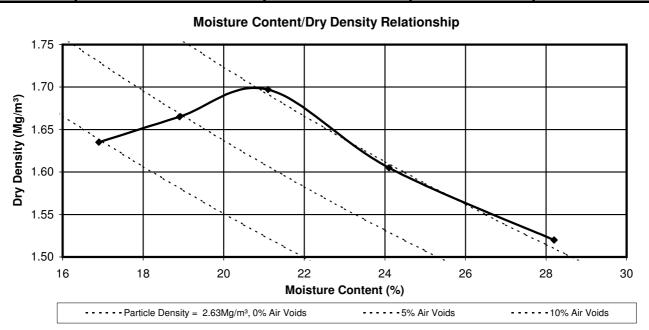
Site: C151811 Rayware Site

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 % Particle Density: 2.63 Mg/m³
Retained on 20mm Sieve: 23 % Measured or Assumed: Measured

Laboratory	Description	As Received Moisture	Optimum Moisture	Maximum Dry Density
Reference		Content (%)	Content (%)	(Mg/m³)
45265246	Brown clayey Crushed Concrete, Brick and Rock	16	21	1.70



Point	1	2	3	4	5
Moisture Content (%)	17	19	21	24	28
Dry Density (Mg/m3)	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· Lw [✓] M. Carr - Section Manager
[] D. Berrill - Laboratory Manager

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Determination of Moisture Content/Dry Density Relationship

Client: Hydrock Consultants Ltd Report No: 51020116/16/13 Client Address: Over Courts Barn Batch Number: DAM0057795

Over Lane

Almondsbury, Bristol Client Reference: Combined

BS32 4DF Location: WS09/WS10/WS11/WS2

Contact: Adam Cheers

0.50-0.70/0.25-0.50/0.50-Depth (m): Site: C151811 Rayware Site

0.70/0.80-1.00

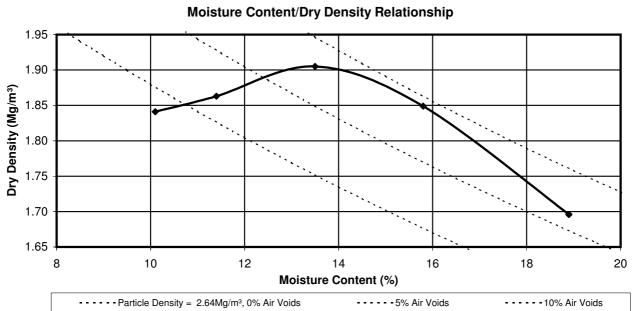
Sample Type: Sampled by: Client Bulk Specimen Type: Multiple Date Sampled: 30.11.15 Date Received: 11.12.15

Test Results:

Postcode:

Retained on 37.5mm Sieve: 0.0 % Particle Density: 2.64 Mg/m³ Retained on 20mm Sieve: 0.0 % Measured or Assumed: Measured

Laboratory Reference	Description	As Received Moisture Content (%)	Optimum Moisture Content (%)	Maximum Dry Density (Mg/m³)
45265245	Brown very clayey SAND with occasional Gravel	16	14	1.91



Point	1	2	3	4	5
Moisture Content (%)	10	11	14	16	19
Dry Density (Mg/m3)	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

[✓] M. Carr - Section Manager Page: 1 of 1 M. Im Date: 12.01.16 Signed: [] D. Berrill - Laboratory Manager

Daventry

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0001

Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd Report No: 51020116/16/11
Client Address: Over Courts Barn Batch Number: DAM0057795

Over Lane

Almondsbury, Bristol

Postcode: BS32 4DF Sampled by: Client Contact: Adam Cheers Date Sampled: 30.11.15
Date Received: 11.12.15

C151811 Rayware Site Tested From: 17.12.15-21.12.15

Sample Type: Bulk

Test Results:

Site:

Laboratory Reference	Location	Deptl	Depth (m)		As Received Moisture Content (%)		Plast	Plastic Limit		city ex	% Passing 425μm
45265257	WS23	1.4	40	2	26	41		19	22		90
80		Low Plasticity		nediate sticity F	High Plasticity	Very High Plasticity		Extreme High Plasti			
		CL	c	;i	CH	cv		CE		1	
70											gh Shrinkage
60 ×											Potential
Plasticity Index							1				
40 ticity			+	\dashv			1			\dashv	
Pas 30			+	+						Med	dium Shrinkage Potential
20	} 	+		\prec			+			Lov	v Shrinkage
10	 	+	44								Potential
0		М	M	II	MH 	MV		ME			
	0 10	20 30	40	50 L	60 7	'0 80 it (%)	90 1	00 110		130 A Line	1

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. lu

[✓] M. Carr - Section Manager

[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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0001

Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd Report No: 51020116/16/10
Client Address: Over Courts Barn Batch Number: DAM0057795

Over Lane

Almondsbury, Bristol

Postcode: BS32 4DF Sampled by: Client Contact: Adam Cheers Date Sampled: 30.11.15
Date Received: 11.12.15

C151811 Rayware Site Tested From: 17.12.15-21.12.15

Sample Type: Bulk

Test Results:

Site:

Description: Red brown sandy CLAY with occasional Gravel

Location	Depth (m)		As Received Moisture Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Passing 425µm
WS22	3.80-	4.00	13	25	12	13	95
	Low Plasticity			Very High Plasticity			
c	L	С	I CH	CV	CE		
						Hi	gh Shrinkage
							Potential
						Me	dium Shrinkage
							Potential
	•					Lo	w Shrinkage Potential
M		М	I MH	MV I	ME		
0 10 2	20 30	40			90 100 110	120 130	
	C	WS22 3.80-4 Low Plasticity CL	WS22 3.80-4.00 Low Interm Plasticity Plasticity CL C	WS22 3.80-4.00 13 Low Plasticity Intermediate Plasticity Plasticity CH CH CH CH CH CH CH C	WS22 3.80-4.00 13 25 Low Plasticity Plasticity Plasticity Plasticity CL CI CH CV	Content (%) Climit	Content (%) Limit Index

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. lu

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

For and on behalf of Environmental Scientifics Group

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0001

Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd Report No: 51020116/16/09 Client Address: Over Courts Barn Batch Number: DAM0057795

Over Lane

Almondsbury, Bristol

Postcode: **BS32 4DF** Sampled by: Client Date Sampled: Contact: Adam Cheers 30.11.15 Date Received: 11.12.15

> C151811 Rayware Site Tested From: 17.12.15-21.12.15

> > Sample Type: Bulk

Test Results:

Site:

Laboratory Reference	Location	Dept	Depth (m)		As Received Moisture Content (%)		Plast	ic Limit	Plasticit _y Index	y % Passing 425μm	
45265255	WS20	1.50-						13	16	91	
80				mediate High sticity Plasticity		Very High Plasticity		Extremel High Plasti			
70		CL	C	ci 📗	CH .	cv		CE			
60										High Shrinkage	
										Potential	
3 Inde							1				
Plasticity Index										Medium Shrinkage	
										Potential	
20		•								Low Shrinkage Potential	
10		MIL I	N	"	MH M	MV		ME			
0	0 10	20 30	40	50	- 60 7	70 80	90 1	00 110	120 13	l 30	
					uid Limi				—— A L		

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 - Section Manager

[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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Drayton Fields Industrial Estate

Daventry

Northants NN11 8RR

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0001

Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd Report No: 51020116/16/08 Client Address: Over Courts Barn Batch Number: DAM0057795

Over Lane

Almondsbury, Bristol

C151811 Rayware Site

Postcode: **BS32 4DF** Sampled by: Client Contact: Adam Cheers Date Sampled: 30.11.15 Date Received: 11.12.15

Tested From: 17.12.15-21.12.15

> Sample Type: Bulk

Test Results:

Site:

Laboratory Reference	Locati	ion De	epth (m)	As Rec Moist Conten	ture	Liquid Limit	Plasti	c Limit	Plastic Inde	-	% Passing 425µm
45265254	WS16	δA	1.60	18	3	36		16	20		96
80		Low Plastic			High asticity	Very High Plasticity		Extreme High Plast			
70	1	CL		CI CH		CV		CE			
	1									Hiç	gh Shrinkage
60 *	1										Potential
épul /	1										
Plasticity Index	1									Med	dium Shrinkage
_	1										Potential
20	1										w Shrinkage Potential
	}	м.		11	MH	MV		ME			
0	0 10	20	30 40	50 Liq	60 7	70 80 i it (%)	90 10	00 110		130 Line	

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 - Section Manager

[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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0001

Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd Report No: 51020116/16/07
Client Address: Over Courts Barn Batch Number: DAM0057795

Over Lane

Almondsbury, Bristol

C151811 Rayware Site

Postcode: BS32 4DF Sampled by: Client Contact: Adam Cheers Date Sampled: 30.11.15
Date Received: 11.12.15

Tested From: 17.12.15-21.12.15

Sample Type: Bulk

Test Results:

Site:

Description: Red brown sandy CLAY with occasional Gravel

Laboratory Reference	Location	Depth	(m)	As Rec Moist Conten	ture	Liquid Limit	Plastic L	imit	Plasticity Index	ex 425μm	
45265253	WS15A	3.5	0	13	3	25	12		13	88	
80		Low Plasticity	Interm Plasi		High asticity	Very High Plasticity		xtremely n Plastic	,		
70] ;L	CI	ı	СН	cv	С	E			
60										High Shrinkage	
										Potential	
Sepul 5 0											
Plasticity Index										Medium Shrinkage	е
_										Potential	
20		•								Low Shrinkage Potential	
10	N		MI	·	MH	MV	м	E			
0	0 10	20 30	40	50 Lic	60 7	70 80 it (%)	90 100	110	120 13		

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. lu

[✓] M. Carr - Section Manager

[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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2 Newton Close

Drayton Fields Industrial Estate

Daventry

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0001

Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd Report No: 51020116/16/06
Client Address: Over Courts Barn Batch Number: DAM0057795

Over Lane

Almondsbury, Bristol

Postcode: BS32 4DF Sampled by: Client Contact: Adam Cheers Date Sampled: 30.11.15
Date Received: 11.12.15

C151811 Rayware Site Tested From: 17.12.15-21.12.15

Sample Type: Bulk

Test Results:

Site:

Laboratory Reference	Location	Depth	(m)	Moi	eceived sture ent (%)	Liquid Limit	Plastic	: Limit	Plastic Inde	-	% Passing 425μm
45265252	WS11	0.70-	1.00	1	17	33	1	4	19		95
80		Low Plasticity		nediate sticity F	High Plasticity	Very High Plasticity		Extremel High Plasti			
		CL	C	al .	CH	cv		CE		1	
70											ıh Shrinkage
60 ×											Potential
Plasticity Index							1				
40 ticity				+						1	
<u>Pa</u> 30	1			+						Med	dium Shrinkage Potential
20	1	+ +	┥┼	+						Lov	v Shrinkage
10	1	+	4				+				Potential
0		ML	M		MH 	MV	<u> </u>	ME			
	0 10	20 30	40	50 L	60 7		90 10	0 110		130 Line	1

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. lu

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

For and on behalf of Environmental Scientifics Group

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0001

Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd Report No: 51020116/16/05 Client Address: Over Courts Barn Batch Number: DAM0057795

Over Lane

Almondsbury, Bristol

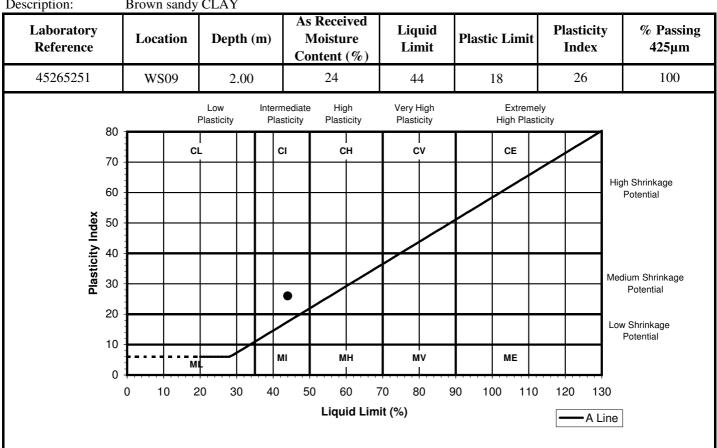
Postcode: **BS32 4DF** Sampled by: Client Contact: Adam Cheers Date Sampled: 30.11.15 Date Received: 11.12.15

Site: C151811 Rayware Site Tested From: 16.12.15-21.12.15

> Sample Type: Bulk

Test Results:

Description: Brown sandy CLAY



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. lu

[] M. Carr - Section Manager

D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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0001

Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd Report No: 51020116/16/04
Client Address: Over Courts Barn Batch Number: DAM0057795

Over Lane

Almondsbury, Bristol Client Reference: Combined Samples

Postcode: BS32 4DF Sampled by: Client Contact: Adam Cheers Date Sampled: 30.11.15
Date Received: 11.12.15

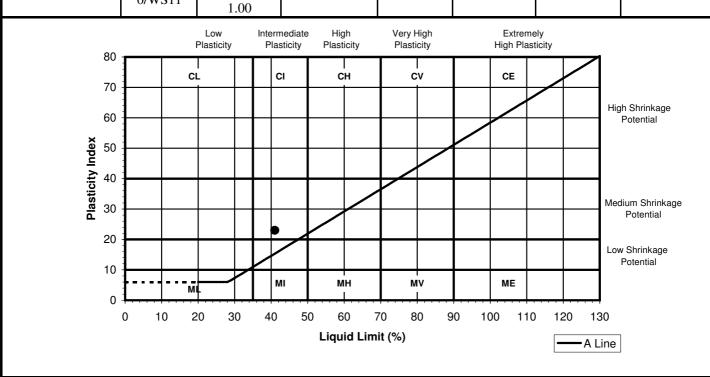
Site: C151811 Rayware Site Tested From: 16.12.15-21.12.15

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/WS1 0/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. lu

[✓] M. Carr - Section Manager

[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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0001

Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd Report No: 51020116/16/03
Client Address: Over Courts Barn Batch Number: DAM0057795

Over Lane

Almondsbury, Bristol Client Reference: Combined Samples

Postcode: BS32 4DF Sampled by: Client Contact: Adam Cheers Date Sampled: 30.11.15
Date Received: 11.12.15

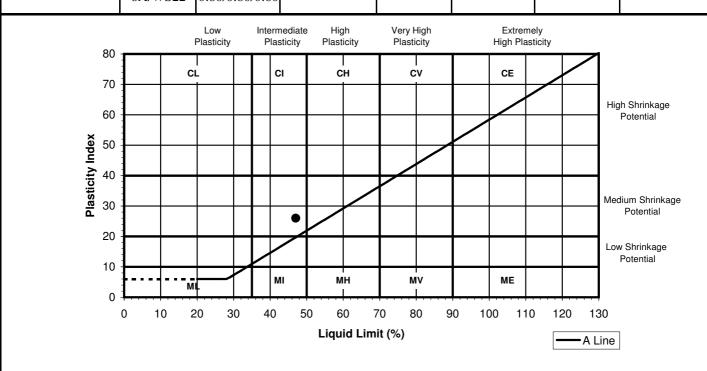
Site: C151811 Rayware Site Tested From: 16.12.15-21.12.15

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. lu

[✓] M. Carr - Section Manager

[] D. Berrill - Laboratory Manager

For and on behalf of Environmental Scientifics Group

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0001

Determination of Moisture Content and Atterberg Limits

Client: Hydrock Consultants Ltd Report No: 51020116/16/02
Client Address: Over Courts Barn Batch Number: DAM0057795

Over Lane

Almondsbury, Bristol Client Reference: Combined Samples

Postcode: BS32 4DF Sampled by: Client Contact: Adam Cheers Date Sampled: 30.11.15
Date Received: 11.12.15

C151811 Rayware Site Tested From: 21.12.15-22.12.15

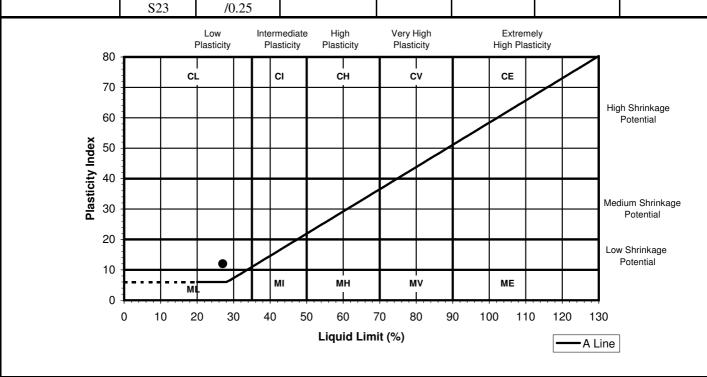
Sample Type: Bulk

Test Results:

Site:

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/WS0 7/WS15A/W S23	0.30- 0.50/0.25/0.50 /0.25	15	27	15	12	52



Sample Preparation: Washed

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

.16 Signed

M. lu

[✓] 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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Hydro	CK ultants					SP	T 'N' V	ALUE	ES vs	DEPTH
e:						Client:			Contrac	
mer Rayware S	Site, Liverpoo	l				_	TJ Morris Limit	ed		All Data
_	_					Omm pene				
0.00	5	10	15	20	25	30	35	40	45	50 55
	♦♦ ■		•	•		♦	*			
♦										
2.00			*		*					-
5		♦	♦		♦	*	*		♦	A
4.00			♦					*		
										A
								Δ		
6.00										

■ Made Ground ◆ Glacial Till ▲ Sherwood Sandstone



Client **TJ Morris Limited** Location or material to which this assessment applies Project All data Former Rayware Site, Liverpool Job number C151811 Concrete in aggressive ground After BRE Special Digest 1, 2005 Soil data Water (Adjusted) water Total potential soluble soluble sulfate sulfate magnesium (mg/l) (%) (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 [pyrite suspected] [no pyrite] DS Class DS-1 DS-1 If pyrite suspected, DS Class limited to No Adopted DS Class = Is pyrite assumed to be present? DS-1 Water data (Adjusted) soluble Soluble sulfate magnesium (mg/l) (mg/l) **Characteristic Value** 0 (Maximum Level) Mg not required **DS Class** pH data Water Soil Number of tests 8 O No. tests in 20% data set 2 Lowest pH 7.6 Mean of lowest 20% 7.7 Characteristic value 7.7 7.7 Design value Number of soil pH results less than 5.5 **DS Class design value** ACEC Class design value **Brownfield** DS-1 Based on higher of soil and water data Mobile groundwater



Appendix E

Site Monitoring Data



Not accessible.

																								Hydrock
	Site:	Former Ra	avwar	e Site. Liv	erpool			Notes o	n site	condition	ons:													
Job n		C151811	•	,						o boreh		accessib	le.											
		TJ Morris	Limite	ed						Weathe				d with o	ccassion	nal heav	/ showe	rs						
	Ga	s analyser:	GFM	435 No. 1	1874			4		Weathe									m previ	ous rain				
Equ	uipment	check OK:	Υ																					
	Servi	ce in date:	Υ																					
Cal	libration	check OK:	Υ																					
Name of p	erson n	nonitoring:	Rod	Langley				1																
								Notes: I	LEL = I	lower ex	olosive li	mit = 5%	ν/ν. * w	here the	e flow is	less tha	n the lir	nit of de	tection	of the in	strume	nt, the d	etection	limit is reported. GSVs are rounded to 3 places.
Monitoring	g round			Boreh	ole deta	ils		Pı	ressui	re and flo	ow					Gas c	oncentr	ations				G	SV	Local conditions
					D		<		Atm															
				æ	Depth		Volume of headspace in BH (well pipie & filter pack) (m³)	₽	호	₂		Gas f		_		_			_			Gas	Gas (
			Sing	Respo	6	D	me of	mos	essu	lati		flow*	ò	1	H₄ v/v)	1	H₄ LEL)		O₂ v/v)) ₂ //v)	Screening	Scre	
		B	gle o	nse	water dr	denc	of he	pher	re fa	ve B	Gas	* (at	(as	(//	•/•/	(/*	LLL	(/*)	., .,	(70)	,, •,	enin	enin	
Date	Time	Borehole	ם	zon	 ~ 0	otes	eadsp filter	j.	Streening Value (CO ₂) (I/hr) Steady O Steady O Steady CO Steady Initial Steady CO Steady CO Steady Initial Steady CO Steady Initial Initial Steady										g Va	Notes on condition of borehole and surrounding ground				
'n	ē	ıole	or dual gas	e de	or depth (m)	dry	расе	ressi	% T	essu	€	te v	usi.									lue	lue	
			as ta	zone depth (m)	Š	notes dry hole	pace in BH · pack) (m [§]	ure	ising	l re (ਤੋਂ	alue	l g P	=	St	=	Sto	5	Sto	5	St	_ (단	(Co	
			٦	3	of hole		ян (v n³)	hPa	st / st	hPa)		🛎	▣	Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady	(CH ₄) (I/hr)	(CO ₂) (I/hr)	
					eif		vell	~	ead			ਤੋਂ			`		`		`		`	<u>₹</u>	E	
		WS03	S	1.72	0.69		0.00135	-	<u> </u>	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.
44/04/40		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.
11/01/16	pm	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									Boreh	ole not acc	cessible.							•			Not accessible.
		WS20	S									Boreh	ole not acc	cessible.										Not accessible.
		WS03	s	1.74	1.38		0.00338	986	F	0	0.1	0.1	Ī -	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	+	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		BH in good condition
26/01/16	pm	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		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		BH in good condition
		WS20	S		•					ι	Jnable to lo	cate. Pos	sibly under	parked ca	r or in puo	ddle.	•		•			•		Not accessible.
		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		BH in good condition
04.00.0040		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	-	BH in good condition
04.02.2016	pm	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		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
									_															

Unable to locate. Possibly under parked car or in puddle.

WS20



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

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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.

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

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

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

Signed:

Dr Irma Doyle Assistant Quality Manager

For & on behalf of i2 Analytical Ltd.

soils - 4 weeks from reporting

leachates - 2 weeks from reporting waters - 2 weeks from reporting

asbestos - 6 months from reporting





Project / Site name: Former Rayware Site, Liverpool

Lab Sample Number				516069	516070	516071	516072	516073
Sample Reference				WS01	WS02	WS03	WS04	WS05
Sample Number				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				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	17	14	16	13	20
Total mass of sample received	kg	0.001	NONE	0.39	0.39	0.37	0.37	0.34
	9							
Asbestos in Soil Screen / Identification Name	Туре	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								
рН	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 SO₄	%	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
	9/19			- 110	- 110	- 110		. 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	_	< 0.05
Acenaphthylene	mg/kg	0.03	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		0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
	mg/kg	0.05	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Chrysene Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.10	< 0.10	< 0.05	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	< 0.10
Benzo(a)pyrene	mg/kg			< 0.10			-	
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS		< 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		l	I	1.60	1.50	1.60		1.00
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	< 1.60	< 1.60	-	< 1.60





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				
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				
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	-	ı	< 0.1	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	ı	< 0.1	1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	ı	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	ı	< 2.0	1
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	ı	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	ı	< 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	-	1	< 8.4	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	ı	< 0.1	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	ı	< 0.1	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	ı	< 0.1	1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	ı	< 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	-	1	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	-	< 10	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	-	1	< 8.4	-





Project / Site name: Former Rayware Site, Liverpool

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) 1,1-dichloroethane	μg/kg μg/kg	1	MCERTS MCERTS	-	-	-	< 1.0 < 1.0	-
2,2-Dichloropropane	μg/kg μg/kg	1	NONE	<u> </u>	_	<u>-</u>	< 1.0	_
Trichloromethane	μg/kg 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 ISO 17025	-	-	-	< 1.0	-
Cis-1,3-dichloropropene Trans-1,3-dichloropropene	μg/kg μg/kg	1	ISO 17025		-	-	< 1.0 < 1.0	-
Toluene	µg/kg	1	MCERTS	<u> </u>	-	-	< 1.0	
1,1,2-Trichloroethane	μg/kg 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 Tribromomethane	μg/kg	1	MCERTS MCERTS	-	-	-	< 1.0 < 1.0	-
o-xylene	μg/kg μg/kg	1	MCERTS			<u>-</u>	< 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 1,3-dichlorobenzene	μg/kg	1	NONE TCO 1702F	-	<u>-</u>	-	< 1.0	-
1,3-dichiorobenzene P-Isopropyltoluene	μg/kg μα/kg	1	ISO 17025 ISO 17025	-	-	-	< 1.0 < 1.0	-
1,2-dichlorobenzene	μg/kg μg/kg	1	MCERTS	-	-	-	< 1.0	-
1,4-dichlorobenzene	μg/kg μg/kg	1	MCERTS	-	-	-	< 1.0	-
Butylbenzene	μg/kg 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	-





Lab Sample Number				516069	516070	516071	516072	516073
Sample Reference				WS01	WS02	WS03	WS04	WS05
Sample Number				None Supplied				
Depth (m) Date Sampled				0.50	0.30	0.30-0.50	0.25	0.25-0.80
				30/11/2015	30/11/2015	30/11/2015	30/11/2015	30/11/2015
Time Taken				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	-	-	-	-	-





Project / Site name: Former Rayware Site, Liverpool

Lab Sample Number			516074	516075	516076	516077	516078				
Sample Reference				WS06	WS07	WS09	WS09	WS10			
Sample Number				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							
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status								
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	14	1.2	11	17	12			
Total mass of sample received	kg	0.001	NONE	0.43	0.45	0.40	0.41	0.37			
Asbestos in Soil Screen / Identification Name	Туре	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 Śulphate 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)	q/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			
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			
		_									





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				
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				
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	ı	< 0.1	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	< 0.1	ı	< 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	ı	< 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	ı	< 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	1	< 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	ı	< 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	1	< 10	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	< 8.4	-	< 8.4	-





Project / Site name: Former Rayware Site, Liverpool

Sample Reference	Lab Sample Number				516074	516075	516076	516077	516078
None Suppled None									
Depth (m)									
None Supplied None Supplie	Depth (m)								
Analytical Parameter Soil Analysis Soil	Date Sampled				30/11/2015	30/11/2015	01/12/2015	01/12/2015	01/12/2015
Discrementane	Time Taken				None Supplied				
Discrementane			0	Ac					
Discrementane	Analytical Parameter	Ç	let e	Sta					
Discrementane	(Soil Analysis)	ıits	Ctic o	lita:					
Discrementane			3 4	, e					
Differentation	VOCs	-							
Different Part 1 150 17035		ug/kg	1	ISO 17025	_	< 1.0		_	_
Varion Chiende μμ/η 1					_		_	_	_
	Bromomethane			ISO 17025	-		-	-	-
dichloroschene	Vinyl Chloride	μg/kg	1	ISO 17025	-	< 1.0	-	-	-
					-		-	-	-
18-12_decisioncethene									
MTBE (Meth) Tertiany Buty (Ether)									
12,201chtorpropane	1,1-dichloroethane								
1,1,1-Trichrocethane	2,2-Dichloropropane				-		-	-	-
1,2-dichloropropene	Trichloromethane								
	1,1,1-Trichloroethane	μg/kg			-		-	-	-
Figure 19/19 1 NONE	1,2-dichloroethane				-		-	-	-
Internations								-	-
									-
Find the property Find									
Jibromethane	Trichloroethene				-		-	-	-
15s1_3-dichloropropene	Dibromomethane		1	MCERTS	-		-	-	-
Imans_1_3-dichloropropene	Bromodichloromethane	μg/kg			-		-	-	-
Folume	Cis-1,3-dichloropropene								
1,1,2-Trichloroethane	, , , , , , , , , , , , , , , , , , , ,								
J3-Dichloropropane									
Dibromochloromethane pg/kg 1 ISO 17025 - - - - -									-
Fetrachloroethene	· ' '				_			_	_
Chlorobenzene	Tetrachloroethene				-		-	-	-
1,1,1,2-Tetrachloroethane	1,2-Dibromoethane	μg/kg	1	ISO 17025	-	< 1.0	-	-	-
1 MCERTS - - - - - - - - -	Chlorobenzene				-			-	-
0 & m-xylene μg/kg 1 MCERTS - < 1.0 - </td <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td>-</td> <td>-</td>					-			-	-
Styrene	,								
Fribromomethane									
μg/kg 1 MCERTS -	,								
Sopropylbenzene μg/kg 1 NONE - < 1.0 - - - - - - - - -	o-xylene				-		-	-	-
Fromobenzene μg/kg 1 MCERTS - < 1.0 - - - -	1,1,2,2-Tetrachloroethane		1	MCERTS	-	< 1.0	-	-	-
N-Propylbenzene μg/kg 1 ISO 17025 - < 1.0	Isopropylbenzene		1		-		-	-	-
P-Chlorotoluene	Bromobenzene								
Head					-		-	-	
1 1 1 1 1 1 1 1 1 1					_			-	
Fert-Butylbenzene									
L,2,4-Trimethylbenzene µg/kg 1 ISO 17025 - < 1.0	Tert-Butylbenzene								
1,3-dichlorobenzene µg/kg 1 ISO 17025 - < 1.0	1,2,4-Trimethylbenzene		1		-		-	-	-
P-Isopropyltoluene μg/kg 1 ISO 17025 - < 1.0	Sec-Butylbenzene								
1,2-dichlorobenzene	1,3-dichlorobenzene								
д/4-dichlorobenzene µg/kg 1 MCERTS - < 1.0	,								
Butylbenzene μg/kg 1 NONE - < 1.0 - <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
1,2-Dibromo-3-chloropropane									
1,2,4-Trichlorobenzene µg/kg 1 MCERTS - < 1.0									
texachlorobutadiene µg/kg 1 NONE - < 1.0 - - -	1,2,4-Trichlorobenzene								
	Hexachlorobutadiene				-	< 1.0	-		-
	1,2,3-Trichlorobenzene	μg/kg	1	NONE	-	< 1.0	-	-	-





Lab Sample Number				516074	516075	516076	516077	516078
Sample Reference				WS06	WS07	WS09	WS09	WS10
Sample Number				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	-





Project / Site name: Former Rayware Site, Liverpool

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	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	11	14	12	13	7.7
Total mass of sample received	kg	0.001	NONE	0.39	0.32	0.37	0.35	0.44
Asbestos in Soil Screen / Identification Name	Туре	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	-	-	-	-	-
					u l			
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)	q/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 NH₄	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	- 10.5	0.0032	0.0017	0.062
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	0.0005	< 10	0.0032	< 10	0.062
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent	mg/l	5	NONE	-	< 10	-	< 10	_
Total Phenois	1119/1	3	NONE		110		110	
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	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	. Ji · · · ·				-		· -	
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60		14.9	24.8	2800
openated rotal Erri To Friild	mg/kg	1.0	LICERTS	1100		11.7	21.0	2000





Project / Site name: Former Rayware Site, Liverpool

Your Order No: C151811/N8566

				546070	546000	F16001	F16000	E1 6000
Lab Sample Number				516079	516080	516081	516082	516083
Sample Reference				WS11	WS11	WS12	WS12	WS13 (Jar)
Sample Number				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				
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	-	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	-	1
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	-	-





Project / Site name: Former Rayware Site, Liverpool

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
		_	Ac					
Analytical Parameter	_	Limit of detection	Accreditation Status					
(Soil Analysis)	Units	nit ect	creditat Status					
(Joh Analysis)	v,	호 오	s					
			3					
VOCs					•			
Chloromethane	μg/kg	1	ISO 17025	< 1.0	-	< 1.0	-	-
Chloroethane Bromomethane	μg/kg μg/kg	1	ISO 17025 ISO 17025	< 1.0 < 1.0	-	< 1.0 < 1.0	-	-
Vinyl Chloride	μg/kg 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 1,2-dichloroethane	μg/kg μg/kg	1	MCERTS MCERTS	< 1.0 < 1.0	-	< 1.0 < 1.0	-	-
1,1-Dichloropropene	μg/kg 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 Toluene	μg/kg	1	ISO 17025 MCERTS	< 1.0 < 1.0	-	< 1.0 < 1.0	-	-
1,1,2-Trichloroethane	μg/kg 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 Tribromomethane	μg/kg μg/kg	1	MCERTS MCERTS	< 1.0 < 1.0	-	< 1.0 < 1.0	<u>-</u> -	-
o-xylene	μg/kg 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 1,2,4-Trimethylbenzene	μg/kg	1	NONE ISO 17025	< 1.0 < 1.0	-	< 1.0 < 1.0	<u>-</u>	-
Sec-Butylbenzene	μg/kg μg/kg	1	NONE	< 1.0	<u>-</u>	< 1.0	-	-
1.3-dichlorobenzene	μg/kg 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	-	-





						•		
Lab Sample Number				516079	516080	516081	516082	516083
Sample Reference				WS11	WS11	WS12	WS12	WS13 (Jar)
Sample Number				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				
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	-	-	-	-	-





Lab Sample Number		516084	516085	516086	516087	516088					
Sample Reference				WS15A	WS16A	WS16A	WS19	WS19			
				None Supplied							
Sample Number				- ''	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							
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status								
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	6.2	8.4	15	23	15			
Total mass of sample received	kg	0.001	NONE	0.38	0.36	0.37	0.34	0.43			
Total mass of sample received	кg	0.001	HOHE	0.50	0.50	0.57	0.5 1	0.15			
Asbestos in Soil Screen / Identification Name	Туре	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			
· · · · · · · · · · · · · · · · · · ·					0.044	2 2 2 2	0.26				
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 Phenois											
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0			
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	0.03	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	0.64	< 0.10			
		0.1	MCERTS	< 0.10	0.34	< 0.10	0.91	< 0.10			
Indeno(1,2,3-cd)pyrene	mg/kg				< 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	0.42	< 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			





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				
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				
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

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	-





Project / Site name: Former Rayware Site, Liverpool

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	Units	Limit of detection	Accreditation Status					
(Soil Analysis)	ίν.	ig of	ation					
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 1,1-dichloroethene	μg/kg μg/kg	1	ISO 17025 MCERTS	< 1.0 < 1.0	<u>-</u>	-	< 1.0 < 1.0	<u>-</u> -
1,1,2-Trichloro 1,2,2-Trifluoroethane	μg/kg 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 1,1-Dichloropropene	μg/kg	1	MCERTS NONE	< 1.0 < 1.0	-	-	< 1.0	-
Trans-1,2-dichloroethene	μg/kg μg/kg	1	NONE	< 1.0	-	-	< 1.0 < 1.0	-
Benzene	μg/kg	1	MCERTS	< 1.0		<u> </u>	< 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 Toluene	μg/kg	1	ISO 17025 MCERTS	< 1.0 < 1.0	-	-	< 1.0 < 1.0	-
1,1,2-Trichloroethane	μg/kg 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 p & m-xylene	μg/kg μg/kg	1	MCERTS MCERTS	< 1.0 < 1.0	-	-	< 1.0 < 1.0	-
Styrene	μg/kg μg/kg	1	MCERTS	< 1.0	_		< 1.0	
Tribromomethane	μg/kg 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 4-Chlorotoluene	μg/kg	1	NONE NONE	< 1.0 < 1.0	-	-	< 1.0 < 1.0	-
1,3,5-Trimethylbenzene	μg/kg 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 1,2-Dibromo-3-chloropropane	μg/kg μg/kg	1	NONE ISO 17025	< 1.0 < 1.0	-	-	< 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	-





I - b CI- Nob				F16004	F1600F	F16006	F16007	F16000
Lab Sample Number				516084 WS15A	516085 WS16A	516086 WS16A	516087	516088
Sample Reference							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	-	-	-	-	-





Project / Site name: Former Rayware Site, Liverpool

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	< 0.1	< 0.1	
Moisture Content	%	N/A	NONE	13	15	13	16	
Total mass of sample received	kg	0.001	NONE	0.38	0.32	0.34	0.39	
Asbestos in Soil Screen / Identification Name	Туре	N/A	ISO 17025	-	-	-	-	
Asbestos in Soil	Time	N/A	TCO 1702F	Not detected	Not detected	Not detected	Not detected	
Asbestos III Soil Asbestos Quantification	Type %	0.001	ISO 17025 ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	
Maneacoa Quantinication	%	0.001	150 1/025	-	-	-	- 1	
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)	q/I	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 NO₃	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		0.05		0.05	0.05	0.20	0.05	
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.20	< 0.05 < 0.10	
Acenaphthone	mg/kg	0.1	MCERTS	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	
Acenaphthene Fluorene	mg/kg mg/kg	0.1	MCERTS 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	0.69	< 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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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					
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	-	-	-	





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	1			None Supplied	None Supplied	None Supplied	None Supplied	
		۰_	Accreditation Status					
Analytical Parameter	Units	Limit of detection	creditat Status					
(Soil Analysis)	its	Cti o	ita					
		5 7	ion					
VOCs								
Chloromethane	μg/kg	1	ISO 17025	-	_	-	-	1
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 MTBE (Methyl Tertiary Butyl Ether)	μg/kg μg/kg	1	MCERTS MCERTS	-	<u>-</u>	-	-	
1,1-dichloroethane	μg/kg μg/kg	1	MCERTS	-	-	-	-	
2,2-Dichloropropane	μg/kg 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 Tatus el la comoche a co	μg/kg	1	MCERTS MCERTS	-	-	-	-	
Tetrachloromethane 1,2-dichloropropane	μg/kg μg/kg	1	MCERTS	-	<u>-</u>	-	-	
Trichloroethene	μg/kg 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 Dibromochloromethane	μg/kg μg/kg	1	ISO 17025 ISO 17025	-	-	-	-	
Tetrachloroethene	μg/kg 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 o-xylene	μg/kg	1	MCERTS MCERTS	-	- -	-	-	
1,1,2,2-Tetrachloroethane	μg/kg μg/kg	1	MCERTS	-	-	-	-	
Isopropylbenzene	μg/kg 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 1,2,4-Trimethylbenzene	μg/kg	1	NONE	-	<u>-</u>	-	-	
1,2,4-1 rimethylbenzene Sec-Butylbenzene	μg/kg μg/kg	1	ISO 17025 NONE	<u>-</u>	-	-	-	
1,3-dichlorobenzene	μg/kg μg/kg	1	ISO 17025	-	-	-	-	
P-Isopropyltoluene	μg/kg 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 1,2,3-Trichlorobenzene	μg/kg	1	NONE	-	-	-	-	
T ₁ Z ₁ J ⁻ THUIIUIUDEIIZEHE	μg/kg	1	NONE	-	<u> </u>		<u> </u>	





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	-	-	-	-	





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





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 NH4 in soil	Determination of Ammonium/Ammonia/Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
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 inhouse 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 diphenylcarbazide 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 Wastewatern & 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 SO4 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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t: 01923 225404 **f:** 01923 237404

e: reception@i2analytical.com

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.

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

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

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

Signed:

soils

Dr Irma Doyle Assistant Quality Manager

For & on behalf of i2 Analytical Ltd.

- 4 weeks from reporting

leachates - 2 weeks from reporting

raters - 2 weeks from reporting

asbestos - 6 months from reporting





Analytical Report Number: 16-85749 Project / Site name: C151811

Nitrite as NO2 μg/l 5 ISO 17025 100 890 Hardness - Total mgCaCO3/l 1 ISO 17025 405 257 Bromate (Subcontracted) μg/l 2 NONE < 2.0 < 2.0 Total Phenols Total Phenols Speciated PAHs Naphthalene μg/l 0.01 ISO 17025 < 0.01 < 0.01 <								
None Supplied None Supplie	Lab Sample Number				524562	524563		
Depth (m) None Supplied None Supplied Depth (m) 1/10/12/016 1/10/12/01/01/01/01/01/01/01/01/01/01/01/01/01/	Sample Reference				WS03	WS12		
Date Sampled	Sample Number				None Supplied	None Supplied		
11/01/2016 11/	Depth (m)				None Supplied	None Supplied		
None Supplied None Supplied Supplied Supplied None Supplied Supplied Supplied None Supplied Supplied Supplied Supplied Supplied Supplied None Supplied Su					11/01/2016	11/01/2016		
Analytical Parameter (Water Analysis) Set					None Supplied	None Supplied		
PH PH Units N/A ISO 17025 7.8 7.3		Units	Limit of detection	Accreditation Status				
Electrical Conductivity	General Inorganics							
Total Cyanide		pH Units		ISO 17025				
Free Cyanide		μS/cm	10	NONE	860	550		
Sulphate as SO ₄	Total Cyanide	μg/l	10	ISO 17025		< 10		
Chloride		μg/l						
Fluoride	Sulphate as SO₄	μg/l	45		214000	56800		
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 10.5 2.09 Nitrite as NO ₂ μg/l 1 ISO 17025 31 270 Nitrite as NO ₂ μg/l 5 ISO 17025 100 890 Hardness - Total mgCaCO3/l 1 ISO 17025 405 257 Bromate (Subcontracted) μg/l 2 NONE < 2.0	Chloride	mg/l	0.15	ISO 17025	30	16		
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 Nitrate as NO ₃ mg/l 1 ISO 17025 46.3 9.24 Nitrite as N mg/l 5 ISO 17025 100 890 Nitrate as NO ₂ µg/l 5 ISO 17025 100 890 Nitrate as NO ₂ µg/l 5 ISO 17025 100 890 Nitrate as NO ₂ µg/l 5 ISO 17025 100 890 Nitrate as NO ₂ µg/l 2 NONE < 2.0 < 2.0 September 2.0		μg/l		ISO 17025				
Nitrate as NO₃	Ammonium as NH₄	μg/l	15	ISO 17025				
Nitrite as N μg/l 1 ISO 17025 31 270		mg/l						
Nitrite as NO ₂	Nitrate as NO ₃	mg/l	0.05	ISO 17025		9.24		
Hardness - Total mgCaCO3/ 1 ISO 17025 405 257	Nitrite as N	μg/l						
Bromate (Subcontracted) μg/l 2 NONE < 2.0 < 2.0	-	μg/l	5	ISO 17025				
Total Phenols Total Phenols μg/l 0.5 NONE < 0.50		mgCaCO3/I	1	ISO 17025	405	257		
Total Phenols	Bromate (Subcontracted)	μg/l	2	NONE	< 2.0	< 2.0		
Total Phenols	Total Phenois							
Speciated PAHs Supplication Speciated PAHs Supplication Speciated PAHs Supplication Speciated PAHs		ua/l	0.5	NONE	< 0.50	< 0.50		
Anthracene μg/l 0.01 ISO 17025 < 0.01 < 0.01 So 0.01		P.9/·	0.5	HONE		1 0.50	•	
Fluoranthene μg/l 0.01 ISO 17025 < 0.01		μg/l						
Benzo(b)fluoranthene μg/l 0.01 ISO 17025 < 0.01	Anthracene	μg/l						
Benzo(k)fluoranthene μg/l 0.01 ISO 17025 < 0.01								
Benzo(a)pyrene μg/l 0.01 ISO 17025 < 0.01								
Indeno(1,2,3-cd)pyrene μg/l 0.001 NONE < 0.001	Benzo(k)fluoranthene	μg/l						
Benzo(ghi)perylene μg/l 0.001 NONE < 0.001 < 0.001		μg/l						
PAH Sums Sum of Benzo(b)fluoranthene &		μg/l						
Sum of Benzo(b)fluoranthene &	Benzo(ghi)perylene	μg/l	0.001	NONE	< 0.001	< 0.001		
		1		1				
	Benzo(k)fluoranthene	μg/l	0.02	NONE	< 0.02	< 0.02		
Sum of Benzo(ghi)ffluoranthene & Indeno(1,2,3-	Sum of Benzo(ghi)fluoranthene & Indeno(1,2,3-	μ9/1	0.02	IVOIVE	₹ 0.02	₹ 0.02		
cd)pyrene μg/l 0.002 NONE < 0.002 < 0.002	cd)pyrene	μg/l	0.002	NONE	< 0.002	< 0.002		
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene,	Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)fluoranthene & Indeno(1,2,3-cd)pyrene		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) Date Sampled				None Supplied 11/01/2016	None Supplied 11/01/2016			
Time Taken				None Supplied	None Supplied			
Time Tuken			>	топс эарриса	тчопе заррнеа			
Analytical Parameter	_	Limit of detection	Accreditation Status					
(Water Analysis)	Units	ect nit	dita					
(Tracer Amarysis)	0,	을 숙	atio					
Harris Matela / Matella I d			5					
Heavy Metals / Metalloids Aluminium (dissolved)	/I	0.001	TCO 1702F	0.217	0.0752	ı	Į.	
Antimony (dissolved)	mg/l μg/l	0.001	ISO 17025 ISO 17025	0.317 13	0.0753 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) Chromium (dissolved)	μg/l μg/l	0.2	NONE ISO 17025	2.5 2.5	< 1.0 0.3		 	
Cobalt (dissolved)	μg/I μg/I	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 100 17025	< 0.01 4.2	< 0.01 4.3			
Molybdenum (dissolved) Nickel (dissolved)	μg/l μg/l	0.03	ISO 17025 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		I	
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			
0-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 > C10 C12	μg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C10 - C12 TPH-CWG - Aliphatic >C12 - C16	μg/l μg/l	10 10	NONE NONE	< 10 < 10	< 10 < 10		 	
TPH-CWG - Aliphatic >C12 - C16 TPH-CWG - Aliphatic >C16 - C21	μg/I μg/I	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			
TRU CMC Arematics CF C7	#	10	Nove	. 10	. 10		1	
TPH-CWG - Aromatic >C5 - C7 TPH-CWG - Aromatic >C7 - C8	μg/l	10 10	NONE NONE	< 10 < 10	< 10 < 10			
TPH-CWG - Aromatic >C7 - C8 TPH-CWG - Aromatic >C8 - C10	μg/l μg/l	10	NONE	< 10 < 10	< 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			

 $\label{eq:U/S} \mbox{U/S} = \mbox{Unsuitable Sample} \hspace{0.5cm} \mbox{I/S} = \mbox{Insufficient Sample}$





Analytical Report Number: 16-85749

Project / Site name: C151811

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

	1	<u> </u>			1
Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonium as NH4 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 Wastewatern & 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 Wastewatern & 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)

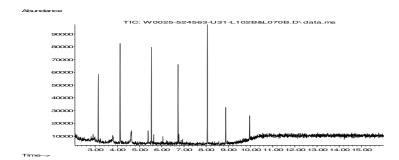
Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Phenols, speciated, in water, by GCMS	Determination of speciated phenols in water by extraction in hexane followed by GC-MS.	In-house method based on USEPA 8270	L070-UK	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 30oC.

Abundance TIC: W0024-524562-U31-L102B&L070B.D\data.ms 110000 90000 90000 70000 60000 50000 40000 30000 20000 10000 10000 3.00 4.00 5.00 6.00 7.00 8.00 9.0010.0ct11.0ct12.0ct3.0ct14.0ct5.00





								Soil Type																		
	All values i	n mg/kg unle	ss otherwise	stated				Location & Depth	WS01	WS02	WS03	WS05	WS06	WS07	WS09	WS10	WS11	WS12	WS12	WS13 (Jar)	WS15A	WS16A	WS16A	WS19	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	0.30	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
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	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	0.64	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	Υ	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	8.6	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

								Soil Type	e				
	All values	in mg/kg unle	ss otherwise	stated				Location & Depti		WS22	HDP01		
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US ₉₅	Result of Significance Test	0.30-0.50	0.60	0.50		
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	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



								Soil Type																		
	All values i	n mg/kg unle	ss otherwise	e stated				Location & Depth	WS01	WS02	WS03	WS05	WS06	WS07	WS09	WS10	WS11	WS12	WS12	WS13 (Jar)	WS15A	WS16A	WS16A	WS19	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	0.30	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
Arsenic	1	21	1	21	0	250	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
Boron	0.2	21	0.6	2500	3	3	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
Chromium (III)	1	21	6.7	48	0	400	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	25	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	135	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
Nickel	1	21	6.3	66	0	75	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
Zinc	1	21	15	790	1	300	244.301	POTENTIALLY SUITABLE FOR USE	27	120	790	79	28	15	27	26	25	62	31	140	51	51	83	81	46	23
	Mean																									
pH (su)	8.5								9.1	9.1	8.6	8.3	8.1	9.2	8.3	7.9	8.4	8.3	8.3	8.6	11.3	11.6	8	8.3	7.8	7.6

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 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

								Soil Type					
	All values i	in mg/kg unle	ss otherwise	e stated				Location & Depth	WS21	WS22	HDP01		
Chemical of Potential Concern	Lab. RL	No. Samples	Min. Value	Max. Value	No. Samples > or = GAC	GAC	US ₉₅	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:

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Assessment of Chemicals of Potential Concern to Human Health



								Soil Type										
		All values in r	ng/kg unles	s otherwise	estated			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
					ADDITIVIT	TY CHECK	(HAZARD C	UOTIENTS	FOR EACH	H FRACTIO	N					
								Aliphatics EC5-EC6	0.002	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
								Aliphatics >EC8-EC10	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
			Consider	red additive)			Aliphatics >EC10-EC12	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
		•						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	0.015	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
		,						Aromatics >EC7-EC8	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
			Consider	red 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
								Aromatics >EC16-EC21	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.062	0.038
			Consider	red additive)			Aromatics >EC21-EC35	0.009	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)

Data set:

Client: TJ Morris

Site: Rayware, Liverpool

Job no.: C151811

Lab. report no(s).: 15-84209

Hazard Index table - HI or HQ greater than 1 highlighted with yellow shading.

Legend: Main table values in blue are at or below the laboratory reporting limit (where a single value is in considered as being at the detection limit for the purposes of statistical analysis, as a conservat Main table alues in red are equal to, or greater than, the generic assessment criterion (GAC).

MG denotes Made Ground 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/E	C Annex II:	[P]= priority	substance	e, [PH] = prior	rity hazardo	us substances.
Chemicals of Potential Concern		Summa	ary of Sample	Data		Value Being Compared to Target =		er Quality Ta	Text)		ples Exceed Quality Targe	et	Notes
(concentrations in µg/l)	No. of Samples	Limit of Detection	Minimum Value	Maximum Value	95-%ile Value	Maximum Value	DWS	HAZ-MRV in GW	Inland Waters EQS	DWS	HAZ-MRV in GW	Inland Waters EQS	EQS compared to dissolved metals as an initial screen, with no adjustment for bioavailability or ABC.
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 1	5	5	5	n/a	n/a	3.4	0	0	0	
Cr (III) (dissolved)		1		2.5	2.425	2.5	n/a 50	n/a	4.7	0	0	0	
Cr (total) (dissolved)	2	0.2 0.5	0.3 1.7	2.5 6.5	2.39 6.26	2.5 6.5	2000	n/a n/a	n/a 1	0	0	2	EQS based on bioavailable fraction.
Cu (dissolved) Fe (dissolved)	0	5	0	0.5	0.20	0.5	2000	n/a	1000	0	0	0	E 40 54555 61 Dicavallable Haction.
Hq (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	4.200	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 (CI-)	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



Water body receptor(s):									UKTAG (N						<u> </u>
Secondary receptor(s): Human health (abstraction) and aquatic ecosystem									<1 Grey text and "<" sign if value <= LoD						
	/ Leachate / Per		/ Surface water	er (as appropri	atel			999 Red text if value >DW							
Client: Xxxx										Red fill if va					
Site: Xxxx Job no: Cxxxxx									Underlined if >HAZ MRV in DW						
									Hardness as mg/l CaCO3		405				
50B 110.	CAAAAA			Date sampled:		01/01/16	01/01/16	01/01/16			01/01/16		01/01/16	01/01/16	01/01/1
Chemical of Potential	No. of	Limit of		Date sampled.	HAZ-MRV in	01/01/10	01/01/10	01/01/10	01/01/10	01/01/10	01/01/10	01/01/10	01/01/10	01/01/10	01/01/1
Concern (µg/l)	samples	Detection	DWS	EQS		WS03	WS12	ВН3	BH4	BH5	ВН6	ВН7	ВН8	ВН9	BH1
Ag (dissolved)		0.05	n/a		n/a	< 0.05	<0.05	ьпэ	БП4	БПЭ	БПО	ВП/	БПО	ьпэ	ВПІ
Al (dissolved)	2	0.03	200			<0.05 317	75.3								-
As (dissolved)	2	0.15				5.4									-
	0		1000		n/a	5.4	0.77								
B (dissolved)		0.06			n/a		==								
Ba (dissolved)	2		700		n/a	67	53								
Cd (dissolved) [PH]	2	0.02	5		0.1	0.05	< 0.02								
Co (dissolved)	2	0.2	n/a		n/a	1.1	1.6								
Cr (VI) (dissolved)	2	5	n/a		n/a	<5	<5								
Cr (III) (dissolved)	2	1	n/a		n/a	2.5	<1								
Cr (total) (dissolved)	2	0.2	50				0.3								——
Cu (dissolved)	2	0.5	2000		n/a	6.5	1.7								
Fe (dissolved)	0	5	200		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								
Cyanide (total)	2	10	50	n/a	n/a	<10	<10								
Ammonium (NH4+)	2	15	500		n/a	100	550								
Bromate (BrO3)	2	2	10		n/a	<2	<2								
Chloride (CI-)	2	150	250000		n/a	30000	16000								
Fluoride (F-)	2	50	1500		n/a	690	460								
Nitrate (NO3-)	2	50	50000	n/a	n/a	46300	9240								
Nitrite (NO2-)	2	5	500		n/a	100	890								
Sulfate (SO42-)	2	45	250000	400000	n/a	214000	56800								
pH (min.) (su)	2	0	6.5		n/a	7.8	7.3								
pH (max.) (su)	2	0	9.5		n/a	7.8	7.3								
pri (max.) (su)		0	9.5	9	11/a	7.0	1.5								
Electrical conductivity (µS/cm)	2	10	2500	n/a	n/a	860	550								1
Anthracene [PH]	2	0.01	2500 n/a		n/a	< 0.01	<0.01								
Benzo(a)pyrene [PH]	2	0.01	0.01	0.00017	n/a		<0.01								-
Fluoranthene [P]	2	0.01	0.01 n/a		n/a	<0.01	<0.01								
Naphthalene [P]	2	0.01				<0.01									
PAHs = sum of	2	0.01	n/a	2	n/a	U.1	<0.01								
															1
benzo(b)fluoranthene,															1
benzo(k)fluoranthene,															1
benzo(ghi)perylene,	_														1
indeno(1,2,3-cd)pyrene [PH]	2	0.22	0.1	n/a		< 0.02	< 0.02								
Phenol	2	0.5	n/a	7.7	n/a	< 0.5	< 0.5		1						1