

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

Page 7 of 33

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

Page 8 of 33

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

Page 9 of 33



CERTIFICATE OF ANALYSIS

SDG: 110805-27
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

SVOC MS (W) - Aqueous

Results Legend			Customer Sample R	CASUMP 1	CASUMP 2	CASUMP 3	D1AF013	MSMW135	MSMW147
#	ISO17025 accredited.								
M	mCERTS accredited.		Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 04/08/2011 05/08/2011 110805-27 4037731	Water(GW/SW) 04/08/2011 05/08/2011 110805-27 4037732	Water(GW/SW) 04/08/2011 05/08/2011 110805-27 4037733	Water(GW/SW) 03/08/2011 05/08/2011 110805-27 4037739	Water(GW/SW) 04/08/2011 05/08/2011 110805-27 4037735	Water(GW/SW) 03/08/2011 05/08/2011 110805-27 4037736
S	Deviating sample.								
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted test.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
Component	LOD/Units	Method							
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<1	<1	17.3	<1	<1	<1
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2-Chlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<1	<1	2.78	<1	<1	<1
2-Methylphenol (aq)	<1 µg/l	TM176		<1	<1	2.18	<1	<1	<1
2-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
2-Nitrophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
3-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
4-Chloroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
4-Methylphenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
4-Nitrophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
4-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Azobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Acenaphthylene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Acenaphthene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Anthracene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<2	22	277	2.42	12.9	90.5
Benzo(a)anthracene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1

Order Number:	CD0154
Report Number:	145254
Superseded Report:	145099

07:06:10 16/08/2011



CERTIFICATE OF ANALYSIS

SDG: 110805-27
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

SVOC MS (W) - Aqueous

Results Legend			Customer Sample R		MSMW070 D	MSMW07 S2	P1AF008	P1AF014	P1AF017	P1BH004
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.				04/08/2011	04/08/2011	03/08/2011	03/08/2011	03/08/2011	04/08/2011
S	Deviating sample.				05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011
aq	Aqueous / settled sample.				110805-27	110805-27	110805-27	110805-27	110805-27	110805-27
diss.filt	Dissolved / filtered sample.				4037734	4037738	4037744	4037740	4037741	4037742
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted test.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
Component	LOD/Units	Method								
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2,4-Dichlorophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2,4-Dimethylphenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2-Chloronaphthalene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2-Chlorophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2-Methylnaphthalene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2-Methylphenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2-Nitroaniline (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2-Nitrophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
3-Nitroaniline (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
4-Bromophenylphenylether (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
4-Chloroaniline (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
4-Methylphenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
4-Nitrophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
4-Nitroaniline (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
Azobenzene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
Acenaphthylene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
Acenaphthene (aq)	<1 µg/l	TM176			<1	2.1	<1	<1	<1	<1
Anthracene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176			<2	74.9	10.8	3.53	3.1	10.2
Benzo(a)anthracene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
Butylbenzyl phthalate (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1

Order Number:	CD0154
Report Number:	145254
Superseded Report:	145099

Page 13 of 33



CERTIFICATE OF ANALYSIS

SDG: 110805-27
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

SVOC MS (W) - Aqueous

Results Legend			Customer Sample R	P1BH005	P1BH021	WSMW031	WSMW056	WSTP121								
#	ISO17025 accredited.															
M	mCERTS accredited.		Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 04/08/2011 05/08/2011 110805-27 4037743	Water(GW/SW) 04/08/2011 05/08/2011 110805-27 4037745	Water(GW/SW) 03/08/2011 05/08/2011 110805-27 4037746	Water(GW/SW) 03/08/2011 05/08/2011 110805-27 4037747	Water(GW/SW) 03/08/2011 05/08/2011 110805-27 4037748								
S	Deviating sample.															
aq	Aqueous / settled sample.															
diss.filt	Dissolved / filtered sample.															
tot.unfilt	Total / unfiltered sample.															
*	Subcontracted test.															
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery															
(F)	Trigger breach confirmed															
Component										LOD/Units	Method					
1,2,4-Trichlorobenzene (aq)										<1 µg/l	TM176	<1	<1	<1	<1	
1,2-Dichlorobenzene (aq)										<1 µg/l	TM176	<1	<1	<1	<1	
1,3-Dichlorobenzene (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
1,4-Dichlorobenzene (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
2,4,5-Trichlorophenol (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
2,4,6-Trichlorophenol (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
2,4-Dichlorophenol (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
2,4-Dimethylphenol (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
2,4-Dinitrotoluene (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
2,6-Dinitrotoluene (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
2-Chloronaphthalene (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
2-Chlorophenol (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
2-Methylnaphthalene (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
2-Methylphenol (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
2-Nitroaniline (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
2-Nitrophenol (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
3-Nitroaniline (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
4-Bromophenylphenylether (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
4-Chloro-3-methylphenol (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
4-Chloroaniline (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
4-Chlorophenylphenylether (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
4-Methylphenol (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
4-Nitrophenol (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
4-Nitroaniline (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
Azobenzene (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
Acenaphthylene (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
Acenaphthene (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
Anthracene (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
bis(2-Chloroethyl)ether (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
bis(2-Chloroethoxy)methan e (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
bis(2-Ethylhexyl) phthalate (aq)			<2 µg/l	TM176	12.6	49.4	2.61	2.92	<2							
Benzo(a)anthracene (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
Butylbenzyl phthalate (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
Benzo(b)fluoranthene (aq)			<1 µg/l	TM176	<1	<1	<1	<1								
Benzo(k)fluoranthene (aq)			<1 µg/l	TM176	<1	<1	<1	<1								

Order Number:	CD0154
Report Number:	145254
Superseded Report:	145099

07:06:10 16/08/2011



CERTIFICATE OF ANALYSIS

SDG: 110805-27
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

TPH CWG (W)

Results Legend			Customer Sample R	CASUMP 1	CASUMP 2	CASUMP 3	D1AF013	MSMW135	MSMW147
#	ISO17025 accredited.								
M	mCERTS accredited.		Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 04/08/2011 05/08/2011 110805-27 4037731	Water(GW/SW) 04/08/2011 05/08/2011 110805-27 4037732	Water(GW/SW) 04/08/2011 05/08/2011 110805-27 4037733	Water(GW/SW) 03/08/2011 05/08/2011 110805-27 4037739	Water(GW/SW) 04/08/2011 05/08/2011 110805-27 4037735	Water(GW/SW) 03/08/2011 05/08/2011 110805-27 4037736
S	Deviating sample.								
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted test.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
Component	LOD/Units	Method							
GRO Surrogate % recovery**	%	TM245		100	99	88	90	91	105
GRO >C5-C12	<50 µg/l	TM245		<50	<50	10100	<50	528	<50
				#	#	#	#	#	#
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245		<3	<3	<3	<3	<3	<3
				#	#	#	#	#	#
Benzene	<7 µg/l	TM245		<7	<7	443	<7	<7	<7
				#	#	#	#	#	#
Toluene	<4 µg/l	TM245		<4	<4	46	<4	<4	<4
				#	#	#	#	#	#
Ethylbenzene	<5 µg/l	TM245		<5	<5	8	<5	<5	<5
				#	#	#	#	#	#
m,p-Xylene	<8 µg/l	TM245		<8	<8	84	<8	<8	<8
				#	#	#	#	#	#
o-Xylene	<3 µg/l	TM245		<3	<3	23	<3	<3	<3
				#	#	#	#	#	#
Sum of detected Xylenes	<11 µg/l	TM245				107			
	µg/l	TM245		none detected	none detected		none detected	none detected	none detected
Sum of detected BTEX	<28 µg/l	TM245				604			
	µg/l	TM245		none detected	none detected		none detected	none detected	none detected
Aliphatics >C5-C6	<10 µg/l	TM245		<10	<10	430	<10	24	<10
Aliphatics >C6-C8	<10 µg/l	TM245		<10	<10	983	<10	178	<10
Aliphatics >C8-C10	<10 µg/l	TM245		<10	<10	3770	<10	88	<10
Aliphatics >C10-C12	<10 µg/l	TM245		<10	<10	1100	<10	107	<10
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174		<10	<10	460	<10	328	37
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174		<10	<10	684	<10	129	25
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174		<10	<10	702	<10	221	111
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174		<10	<10	1850	<10	678	173
Aromatics >EC5-EC7	<10 µg/l	TM245		<10	<10	443	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/l	TM245		<10	<10	46	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/l	TM245		<10	<10	2630	<10	58	<10
Aromatics >EC10-EC12	<10 µg/l	TM245		<10	<10	735	<10	71	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174		<10	<10	978	<10	57	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174		<10	<10	566	<10	101	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174		<10	<10	589	<10	234	24
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174		<10	<10	2130	<10	392	24
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174		15	<10	14100	34	1600	198



CERTIFICATE OF ANALYSIS

SDG: 110805-27
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

TPH CWG (W)

Results Legend			Customer Sample R		MSMW070 D	MSMW07 S2	P1AF008	P1AF014	P1AF017	P1BH004
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.				04/08/2011	04/08/2011	03/08/2011	03/08/2011	03/08/2011	04/08/2011
S	Deviating sample.				05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011
aq	Aqueous / settled sample.				110805-27	110805-27	110805-27	110805-27	110805-27	110805-27
diss.filt	Dissolved / filtered sample.				4037734	4037738	4037744	4037740	4037741	4037742
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted test.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
Component	LOD/Units	Method								
GRO Surrogate % recovery**	%	TM245			97	89	93	102	90	99
GRO >C5-C12	<50 µg/l	TM245			168	4120	7590	238	<50	1860
					#	#	#	#	#	#
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245			<3	<3	<3	<3	<3	<3
					#	#	#	#	#	#
Benzene	<7 µg/l	TM245			<7	63	<7	<7	<7	<7
					#	#	#	#	#	#
Toluene	<4 µg/l	TM245			<4	6	<4	<4	<4	<4
					#	#	#	#	#	#
Ethylbenzene	<5 µg/l	TM245			<5	<5	<5	<5	<5	<5
					#	#	#	#	#	#
m,p-Xylene	<8 µg/l	TM245			<8	<8	<8	<8	<8	<8
					#	#	#	#	#	#
o-Xylene	<3 µg/l	TM245			<3	<3	<3	<3	<3	<3
					#	#	#	#	#	#
Sum of detected Xylenes	<11 µg/l	TM245				<11				<11
	µg/l	TM245			none detected		none detected	none detected	none detected	
Sum of detected BTEX	<28 µg/l	TM245				69				<28
	µg/l	TM245			none detected		none detected	none detected	none detected	
Aliphatics >C5-C6	<10 µg/l	TM245			<10	56	<10	<10	<10	16
Aliphatics >C6-C8	<10 µg/l	TM245			23	473	75	<10	<10	166
Aliphatics >C8-C10	<10 µg/l	TM245			40	513	721	30	<10	340
Aliphatics >C10-C12	<10 µg/l	TM245			43	1600	3780	106	<10	666
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174			<10	4770	27200	35100	<10	12900
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174			<10	3790	5650	5210	<10	14200
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174			<10	2510	1450	119000	87	21500
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174			<10	11100	34300	159000	87	48500
Aromatics >EC5-EC7	<10 µg/l	TM245			<10	63	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/l	TM245			27	342	481	20	<10	227
Aromatics >EC10-EC12	<10 µg/l	TM245			29	1070	2520	71	<10	444
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174			<10	2550	5750	11000	<10	10800
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174			<10	2040	3510	4510	<10	11300
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174			<10	2120	1770	24100	<10	17000
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174			<10	6710	11000	39600	<10	39200
Total Aliphatics & Aromatics >C5-C35 (aq)	<10 µg/l	TM174			169	21900	53000	199000	90	89600

Order Number:	CD0154
Report Number:	145254
Superseded Report:	145099

Page 18 of 33



CERTIFICATE OF ANALYSIS

SDG: 110805-27
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

VOC MS (W)

Results Legend			Customer Sample R	CASUMP 1	CASUMP 2	CASUMP 3	D1AF013	MSMW135	MSMW147
#	ISO17025 accredited.								
M	mCERTS accredited.		Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 04/08/2011 05/08/2011 110805-27 4037731	Water(GW/SW) 04/08/2011 05/08/2011 110805-27 4037732	Water(GW/SW) 04/08/2011 05/08/2011 110805-27 4037733	Water(GW/SW) 03/08/2011 05/08/2011 110805-27 4037739	Water(GW/SW) 04/08/2011 05/08/2011 110805-27 4037735	Water(GW/SW) 03/08/2011 05/08/2011 110805-27 4037736
S	Deviating sample.								
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted test.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
Component	LOD/Units	Method							
Dibromofluoromethane**	%	TM208		110	110	101	114	107	111
Toluene-d8**	%	TM208		101	100	97.5	101	104	96.4
4-Bromofluorobenzene**	%	TM208		96.8	96	90.7	99.7	98.5	96.9
Dichlorodifluoromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Vinyl chloride	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromomethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Chloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Carbon disulphide	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Dichloromethane	<3 µg/l	TM208		<3	<3	<3	<3	<3	<3
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Chloroform	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Carbontetrachloride	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Benzene	<1 µg/l	TM208		<1	<1	578	<1	<1	<1
Trichloroethene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Dibromomethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Toluene	<1 µg/l	TM208		<1	<1	55.4	<1	<1	<1
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Tetrachloroethene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Dibromochloromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1



CERTIFICATE OF ANALYSIS

SDG: 110805-27
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

VOC MS (W)

Results Legend			Customer Sample R		CASUMP 1	CASUMP 2	CASUMP 3	D1AF013	MSMW135	MSMW147
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.				04/08/2011	04/08/2011	04/08/2011	03/08/2011	04/08/2011	03/08/2011
S	Deviating sample.				05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011
aq	Aqueous / settled sample.				110805-27	110805-27	110805-27	110805-27	110805-27	110805-27
diss.filt	Dissolved / filtered sample.				4037731	4037732	4037733	4037739	4037735	4037736
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted test.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
Component	LOD/Units	Method								
1,2-Dibromoethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
Chlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
Ethylbenzene	<1 µg/l	TM208			<1	<1	9.25	<1	<1	<1
					#	#	§ #	#	#	#
m,p-Xylene	<1 µg/l	TM208			<1	<1	97.4	<1	<1	<1
					#	#	§ #	#	#	#
o-Xylene	<1 µg/l	TM208			<1	<1	21.4	<1	<1	<1
					#	#	§ #	#	#	#
Styrene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
Bromoform	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
Isopropylbenzene	<1 µg/l	TM208			<1	<1	2.42	<1	3.78	<1
					#	#	§ #	#	#	#
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
							§			
1,2,3-Trichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
Bromobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
Propylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	1.96	<1
					#	#	§ #	#	#	#
2-Chlorotoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
1,3,5-Trimethylbenzene	<1 µg/l	TM208			<1	<1	93	<1	<1	<1
					#	#	§ #	#	#	#
4-Chlorotoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
tert-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
1,2,4-Trimethylbenzene	<1 µg/l	TM208			<1	<1	38.4	<1	<1	<1
					#	#	§ #	#	#	#
sec-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	1.29	<1
					#	#	§ #	#	#	#
4-iso-Propyltoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
1,3-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
1,4-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
n-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
1,2-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
							§			
1,2-Dibromo-3-chloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
							§			
1,2,4-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
Hexachlorobutadiene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
Naphthalene	<1 µg/l	TM208			<1	<1	1.37	<1	<1	<1
					#	#	§ #	#	#	#
1,2,3-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	§ #	#	#	#
1,3,5-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
							§			



CERTIFICATE OF ANALYSIS

SDG: 110805-27
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

VOC MS (W)

Results Legend			Customer Sample R		MSMW070 D	MSMW07 S2	P1AF008	P1AF014	P1AF017	P1BH004
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.				04/08/2011	04/08/2011	03/08/2011	03/08/2011	03/08/2011	04/08/2011
S	Deviating sample.				05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011
aq	Aqueous / settled sample.				110805-27	110805-27	110805-27	110805-27	110805-27	110805-27
diss.filt	Dissolved / filtered sample.				4037734	4037738	4037744	4037740	4037741	4037742
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted test.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
Component	LOD/Units	Method								
Dibromofluoromethane**	%	TM208			110	110	110	111	112	111
Toluene-d8**	%	TM208			99.2	101	99.4	99.8	95.7	101
4-Bromofluorobenzene**	%	TM208			98.4	98.9	98.2	98.6	95.2	96.3
Dichlorodifluoromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Vinyl chloride	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromomethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Carbon disulphide	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Dichloromethane	<3 µg/l	TM208			<3	<3	<3	<3	<3	<3
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloroform	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Carbontetrachloride	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Benzene	<1 µg/l	TM208			<1	114	<1	<1	<1	<1
Trichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Dibromomethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Toluene	<1 µg/l	TM208			<1	9.06	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Tetrachloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Dibromochloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1



CERTIFICATE OF ANALYSIS

SDG: 110805-27
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

VOC MS (W)

Results Legend			Customer Sample R		MSMW070 D	MSMW07 S2	P1AF008	P1AF014	P1AF017	P1BH004
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.				04/08/2011	04/08/2011	03/08/2011	03/08/2011	03/08/2011	04/08/2011
S	Deviating sample.				05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011
aq	Aqueous / settled sample.				110805-27	110805-27	110805-27	110805-27	110805-27	110805-27
diss.filt	Dissolved / filtered sample.				4037734	4037738	4037744	4037740	4037741	4037742
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted test.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
Component	LOD/Units	Method								
1,2-Dibromoethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
Chlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
Ethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
m,p-Xylene	<1 µg/l	TM208			<1	3.02	<1	<1	<1	<1
					#	#	#	#	#	\$ #
o-Xylene	<1 µg/l	TM208			<1	4.79	<1	<1	<1	<1
					#	#	#	#	#	\$ #
Styrene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
Bromoform	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
Isopropylbenzene	<1 µg/l	TM208			<1	59.1	1.01	<1	<1	<1
					#	#	#	#	#	\$ #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
										\$
1,2,3-Trichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
Bromobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
Propylbenzene	<1 µg/l	TM208			<1	56.6	<1	<1	<1	<1
					#	#	#	#	#	\$ #
2-Chlorotoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
1,3,5-Trimethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
4-Chlorotoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
tert-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
1,2,4-Trimethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
sec-Butylbenzene	<1 µg/l	TM208			<1	8.64	<1	<1	<1	<1
					#	#	#	#	#	\$ #
4-iso-Propyltoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
1,3-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
1,4-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
n-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
1,2-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
										\$
1,2-Dibromo-3-chloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
										\$
1,2,4-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
Hexachlorobutadiene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
Naphthalene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
1,2,3-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	\$ #
1,3,5-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
										\$



CERTIFICATE OF ANALYSIS

SDG: 110805-27
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

VOC MS (W)

Results Legend			Customer Sample R	P1BH005	P1BH021	WSMW031	WSMW056	WSTP121	
#	ISO17025 accredited.								
M	mCERTS accredited.		Depth (m)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	
S	Deviating sample.								
aq	Aqueous / settled sample.		Sample Type	04/08/2011	04/08/2011	03/08/2011	03/08/2011	03/08/2011	
diss.filt	Dissolved / filtered sample.		Date Sampled	05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011	
tot.unfilt	Total / unfiltered sample.		Date Received	110805-27	110805-27	110805-27	110805-27	110805-27	
*	Subcontracted test.		SDG Ref	4037743	4037745	4037746	4037747	4037748	
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Lab Sample No.(s)						
(F)	Trigger breach confirmed		AGS Reference						
Component		LOD/Units	Method						
Dibromofluoromethane**		%	TM208	113	113	108	113	115	
Toluene-d8**		%	TM208	99.1	100	101	105	100	
4-Bromofluorobenzene**		%	TM208	97.8	98.1	97.6	96.2	91.9	
Dichlorodifluoromethane		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Chloromethane		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Vinyl chloride		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Bromomethane		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Chloroethane		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Trichlorofluoromethane		<1 µg/l	TM208	<1	<1	<1	<1	<1	
1,1-Dichloroethene		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Carbon disulphide		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Dichloromethane		<3 µg/l	TM208	<3	<3	<3	<3	<3	
Methyl tertiary butyl ether (MTBE)		<1 µg/l	TM208	<1	<1	<1	<1	<1	
trans-1,2-Dichloroethene		<1 µg/l	TM208	<1	<1	<1	<1	<1	
1,1-Dichloroethane		<1 µg/l	TM208	<1	<1	<1	<1	<1	
cis-1,2-Dichloroethene		<1 µg/l	TM208	<1	<1	<1	<1	<1	
2,2-Dichloropropane		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Bromochloromethane		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Chloroform		<1 µg/l	TM208	<1	<1	<1	<1	<1	
1,1,1-Trichloroethane		<1 µg/l	TM208	<1	<1	<1	<1	<1	
1,1-Dichloropropene		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Carbontetrachloride		<1 µg/l	TM208	<1	<1	<1	<1	<1	
1,2-Dichloroethane		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Benzene		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Trichloroethene		<1 µg/l	TM208	<1	<1	<1	<1	<1	
1,2-Dichloropropane		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Dibromomethane		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Bromodichloromethane		<1 µg/l	TM208	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropene		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Toluene		<1 µg/l	TM208	<1	<1	<1	<1	<1	
trans-1,3-Dichloropropene		<1 µg/l	TM208	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane		<1 µg/l	TM208	<1	<1	<1	<1	<1	
1,3-Dichloropropane		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Tetrachloroethene		<1 µg/l	TM208	<1	<1	<1	<1	<1	
Dibromochloromethane		<1 µg/l	TM208	<1	<1	<1	<1	<1	



CERTIFICATE OF ANALYSIS

SDG: 110805-27
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

VOC MS (W)

Results Legend			Customer Sample R		P1BH005	P1BH021	WSMW031	WSMW056	WSTP121
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.				04/08/2011	04/08/2011	03/08/2011	03/08/2011	03/08/2011
S	Deviating sample.				05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011
aq	Aqueous / settled sample.				110805-27	110805-27	110805-27	110805-27	110805-27
diss.filt	Dissolved / filtered sample.				4037743	4037745	4037746	4037747	4037748
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted test.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
Component	LOD/Units	Method							
1,2-Dibromoethane	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
Chlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
Ethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
m,p-Xylene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
o-Xylene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
Styrene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
Bromoform	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
Isopropylbenzene	<1 µg/l	TM208			1.14	<1	<1	<1	<1
					#	#	#	#	#
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1
1,2,3-Trichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
Bromobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
Propylbenzene	<1 µg/l	TM208			1.29	<1	<1	<1	<1
					#	#	#	#	#
2-Chlorotoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
1,3,5-Trimethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
4-Chlorotoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
tert-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
1,2,4-Trimethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
sec-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
4-iso-Propyltoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
1,3-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
1,4-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
n-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
1,2-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
Hexachlorobutadiene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
Naphthalene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
1,2,3-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1
					#	#	#	#	#
1,3,5-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1



CERTIFICATE OF ANALYSIS

SDG:	110805-27	Location:	Coed Darcy Urban Village	Order Number:	CD0154
Job:	H_ATKINS_LDC-112	Customer:	Atkins Global Ltd	Report Number:	145254
Client Reference:	First 300 Water Samples 2011	Attention:	Alex Mann	Superseded Report:	145099

Notification of Deviating Samples

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,1,1,2-Tetrachloroethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,1,1-Trichloroethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,1,2,2-Tetrachloroethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,1,2-Trichloroethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,1-Dichloroethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,1-Dichloroethene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,1-Dichloropropene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,2,3-Trichlorobenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,2,3-Trichloropropane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,2,4-Trichlorobenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,2,4-Trimethylbenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,2-Dibromo-3-chloropropane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,2-Dibromoethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,2-Dichlorobenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,2-Dichloroethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,2-Dichloropropane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,3,5-Trichlorobenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,3,5-Trimethylbenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,3-Dichlorobenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,3-Dichloropropane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	1,4-Dichlorobenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	2,2-Dichloropropane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	2-Chlorotoluene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	4-Bromofluorobenzene**	Volatile Analysis performed on vessel with headspace due to testing requirement



CERTIFICATE OF ANALYSIS

SDG:	110805-27	Location:	Coed Darcy Urban Village	Order Number:	CD0154
Job:	H_ATKINS_LDC-112	Customer:	Atkins Global Ltd	Report Number:	145254
Client Reference:	First 300 Water Samples 2011	Attention:	Alex Mann	Superseded Report:	145099

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4037819	CASUMP 3		LIQUID	VOC MS (W)	4-Chlorotoluene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	4-iso-Propyltoluene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Benzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Bromobenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Bromochloromethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Bromodichloromethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Bromoform	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Bromomethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Carbon disulphide	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Carbontetrachloride	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Chlorobenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Chloroethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Chloroform	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Chloromethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	cis-1,2-Dichloroethene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	cis-1,3-Dichloropropene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Dibromochloromethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Dibromofluoromethane**	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Dibromomethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Dichlorodifluoromethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Dichloromethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Ethylbenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Hexachlorobutadiene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Isopropylbenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	m,p-Xylene	Volatile Analysis performed on vessel with headspace due to testing requirement



CERTIFICATE OF ANALYSIS

SDG:	110805-27	Location:	Coed Darcy Urban Village	Order Number:	CD0154
Job:	H_ATKINS_LDC-112	Customer:	Atkins Global Ltd	Report Number:	145254
Client Reference:	First 300 Water Samples 2011	Attention:	Alex Mann	Superseded Report:	145099

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4037819	CASUMP 3		LIQUID	VOC MS (W)	Methyl tertiary butyl ether (MTBE)	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Naphthalene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	n-Butylbenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	o-Xylene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Propylbenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	sec-Butylbenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Styrene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	tert-Amyl methyl ether (TAME)	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	tert-Butylbenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Tetrachloroethene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Toluene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Toluene-d8**	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	trans-1,2-Dichloroethene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	trans-1,3-Dichloropropene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Trichloroethene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Trichlorofluoromethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037819	CASUMP 3		LIQUID	VOC MS (W)	Vinyl chloride	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,1,1,2-Tetrachloroethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,1,1-Trichloroethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,1,2,2-Tetrachloroethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,1,2-Trichloroethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,1-Dichloroethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,1-Dichloroethene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,1-Dichloropropene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,2,3-Trichlorobenzene	Volatile Analysis performed on vessel with headspace due to testing requirement



CERTIFICATE OF ANALYSIS

SDG:	110805-27	Location:	Coed Darcy Urban Village	Order Number:	CD0154
Job:	H_ATKINS_LDC-112	Customer:	Atkins Global Ltd	Report Number:	145254
Client Reference:	First 300 Water Samples 2011	Attention:	Alex Mann	Superseded Report:	145099

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4037953	P1BH004		LIQUID	VOC MS (W)	1,2,3-Trichloropropane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,2,4-Trichlorobenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,2,4-Trimethylbenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,2-Dibromo-3-chloropropane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,2-Dibromoethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,2-Dichlorobenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,2-Dichloroethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,2-Dichloropropane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,3,5-Trichlorobenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,3,5-Trimethylbenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,3-Dichlorobenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,3-Dichloropropane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	1,4-Dichlorobenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	2,2-Dichloropropane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	2-Chlorotoluene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	4-Bromofluorobenzene**	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	4-Chlorotoluene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	4-iso-Propyltoluene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Benzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Bromobenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Bromochloromethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Bromodichloromethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Bromoform	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Bromomethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Carbon disulphide	Volatile Analysis performed on vessel with headspace due to testing requirement



CERTIFICATE OF ANALYSIS

SDG: 110805-27
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4037953	P1BH004		LIQUID	VOC MS (W)	Carbontetrachloride	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Chlorobenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Chloroethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Chloroform	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Chloromethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	cis-1,2-Dichloroethene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	cis-1,3-Dichloropropene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Dibromochloromethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Dibromofluoromethane**	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Dibromomethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Dichlorodifluoromethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Dichloromethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Ethylbenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Hexachlorobutadiene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Isopropylbenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	m,p-Xylene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Methyl tertiary butyl ether (MTBE)	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Naphthalene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	n-Butylbenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	o-Xylene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Propylbenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	sec-Butylbenzene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Styrene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	tert-Amyl methyl ether (TAME)	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	tert-Butylbenzene	Volatile Analysis performed on vessel with headspace due to testing requirement



CERTIFICATE OF ANALYSIS

SDG:	110805-27	Location:	Coed Darcy Urban Village	Order Number:	CD0154
Job:	H_ATKINS_LDC-112	Customer:	Atkins Global Ltd	Report Number:	145254
Client Reference:	First 300 Water Samples 2011	Attention:	Alex Mann	Superseded Report:	145099

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
4037953	P1BH004		LIQUID	VOC MS (W)	Tetrachloroethene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Toluene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Toluene-d8**	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	trans-1,2-Dichloroethene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	trans-1,3-Dichloropropene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Trichloroethene	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Trichlorofluoromethane	Volatile Analysis performed on vessel with headspace due to testing requirement
4037953	P1BH004		LIQUID	VOC MS (W)	Vinyl chloride	Volatile Analysis performed on vessel with headspace due to testing requirement

Note : Test results may be compromised



CERTIFICATE OF ANALYSIS

SDG: 110805-27
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

Table of Results - Appendix

REPORT KEY

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03x10⁻⁷

NDP	No Determination Possible	#	ISO 17025 Accredited	*	Subcontracted Test	M	MCERTS Accredited
NFD	No Fibres Detected	PFD	Possible Fibres Detected	»	Result previously reported (Incremental reports only)	EC	Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM191	Standard Methods for the examination of waters and wastewaters 16th Edition, ALPHA, Washington DC, USA. ISBN 0-87553-131-8.	Determination of Unfiltered Metals in Water Matrices by ICP-MS		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
TM226	In-House Method	Determination of Anions in Waters using Ion Chromatography		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



CERTIFICATE OF ANALYSIS

SDG: 110805-27
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	4037731	4037732	4037733	4037739	4037735	4037736	4037734	4037738	4037744	4037740
	CASUMP 1	CASUMP 2	CASUMP 3	D1AF013	MSMW135	MSMW147	MSMW070 D	MSMW07 S2	P1AF008	P1AF014
AGS Ref.										
Depth										
Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Alkalinity as CaCO3	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011
Ammoniacal Nitrogen	12-Aug-2011	12-Aug-2011	12-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	12-Aug-2011	10-Aug-2011	12-Aug-2011	12-Aug-2011
Anions by ion Chromatography			15-Aug-2011							
Anions by Kone (w)	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011
Conductivity (at 20 deg.C)	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011
Dissolved Metals by ICP-MS	10-Aug-2011	10-Aug-2011	11-Aug-2011	09-Aug-2011	10-Aug-2011	09-Aug-2011	10-Aug-2011	10-Aug-2011	09-Aug-2011	08-Aug-2011
EPH CWG (Aliphatic) Aqueous GC (W)	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011
EPH CWG (Aromatic) Aqueous GC (W)	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011
GRO by GC-FID (W)	14-Aug-2011	14-Aug-2011	15-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011	15-Aug-2011	14-Aug-2011	14-Aug-2011
Mercury Dissolved	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011
Mercury Unfiltered	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	08-Aug-2011	09-Aug-2011
pH Value	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	09-Aug-2011	08-Aug-2011	09-Aug-2011
Sulphide	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011
SVOC MS (W) - Aqueous	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011
Total Metals by ICP-MS	10-Aug-2011	10-Aug-2011	11-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	10-Aug-2011	10-Aug-2011	09-Aug-2011	10-Aug-2011
Total Organic and Inorganic Carbon	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	08-Aug-2011
TPH CWG (W)	14-Aug-2011	14-Aug-2011	15-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011	15-Aug-2011	14-Aug-2011	14-Aug-2011
VOC MS (W)	15-Aug-2011	15-Aug-2011	16-Aug-2011	15-Aug-2011	15-Aug-2011	15-Aug-2011	15-Aug-2011	15-Aug-2011	15-Aug-2011	15-Aug-2011

Lab Sample No(s) Customer Sample Ref.	4037741	4037742	4037743	4037745	4037746	4037747	4037748
	P1AF017	P1BH004	P1BH005	P1BH021	WSMW031	WSMW056	WSTP121
AGS Ref.							
Depth							
Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Alkalinity as CaCO3	08-Aug-2011	10-Aug-2011	08-Aug-2011	08-Aug-2011	12-Aug-2011	08-Aug-2011	08-Aug-2011
Ammoniacal Nitrogen	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011
Anions by Kone (w)	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011
Conductivity (at 20 deg.C)	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011
Dissolved Metals by ICP-MS	08-Aug-2011	11-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	09-Aug-2011	12-Aug-2011
EPH CWG (Aliphatic) Aqueous GC (W)	12-Aug-2011	12-Aug-2011	12-Aug-2011	15-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011
EPH CWG (Aromatic) Aqueous GC (W)	12-Aug-2011	12-Aug-2011	12-Aug-2011	15-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011
GRO by GC-FID (W)	14-Aug-2011	15-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011
Mercury Dissolved	08-Aug-2011	10-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011
Mercury Unfiltered	09-Aug-2011	10-Aug-2011	09-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011	08-Aug-2011
pH Value	09-Aug-2011	09-Aug-2011	09-Aug-2011	08-Aug-2011	11-Aug-2011	08-Aug-2011	09-Aug-2011
Sulphide	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011	09-Aug-2011
SVOC MS (W) - Aqueous	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011
Total Metals by ICP-MS	10-Aug-2011	12-Aug-2011	10-Aug-2011	11-Aug-2011	10-Aug-2011	11-Aug-2011	10-Aug-2011
Total Organic and Inorganic Carbon	10-Aug-2011	12-Aug-2011	11-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011
TPH CWG (W)	14-Aug-2011	15-Aug-2011	14-Aug-2011	15-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011
VOC MS (W)	15-Aug-2011	15-Aug-2011	15-Aug-2011	15-Aug-2011	15-Aug-2011	15-Aug-2011	15-Aug-2011



SDG: 110805-27
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145254
Superseded Report: 145099

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH₄ by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C₄-C₁₀ range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	DC OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DCM	SOKIHERM	GRAVIMETRIC
CYCLOHEXANEEXT. MATTER	D&C	CYCLOHEXANE	SOKIHERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DCM	SOKIHERM	HPLC
PHENOLS BY GCMS	WET	DCM	SOKIHERM	GCMS
HERBICIDES	D&C	HEXANE/ACETONE	SOKIHERM	GCMS
PESTICIDES	D&C	HEXANE/ACETONE	SOKIHERM	GCMS
EPH (DRO)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH (MIN OIL)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH (CLEANED UP)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH CWGBY GC	D&C	HEXANE/ACETONE	END OVER END	GC-FID
PCBTOT/PCB CON	D&C	HEXANE/ACETONE	END OVER END	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE/ACETONE	MICROWAVE TM218.	GCMS
C8-C40 (C6-C40) EZ FLASH	WET	HEXANE/ACETONE	SHAKER	GC-EZ
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE/ACETONE	SHAKER	GC-EZ
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DOM/ACETONE	SONICATE	GCMS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
SVOC	DOM	LIQUID/LIQUID SHAKE	GCMS
FREE SULPHUR	DOM	SOLID PHASE EXTRACTION	HPLC
PEST COP/OPP	DOM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DOM	LIQUID/LIQUID SHAKE	GCMS
PHENOLS MS	DOM	SOLID PHASE EXTRACTION	GCMS
TPH by INFRARED (R)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GCMS

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Atkins Global Ltd
Project Jonah site office
Llan Coed House
Suite 24
Coed Darcy
Llandarcy
SA10 6HJ

Attention: Alex Mann

CERTIFICATE OF ANALYSIS

Date: 15 August 2011
Customer: H_ATKINS_LDC
Sample Delivery Group (SDG): 110808-80
Your Reference: First 300 Water Samples 2011
Location: Coed Darcy Urban Village
Report No: 145117

We received 8 samples on Monday August 08, 2011 and 8 of these samples were scheduled for analysis which was completed on Monday August 15, 2011. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan

Operations Manager





SDG:	110808-80	Location:	Coed Darcy Urban Village	Order Number:	CD0154
Job:	H_ATKINS_LDC-112	Customer:	Atkins Global Ltd	Report Number:	145117
Client Reference:	First 300 Water Samples 2011	Attention:	Alex Mann	Superseded Report:	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
4053462	PIAF011			05/08/2011
4053452	TA1/1			05/08/2011
4053454	TA1/2			05/08/2011
4053456	WSMW034			05/08/2011
4053447	WSMW051			05/08/2011
4053450	WSMW052			05/08/2011
4053460	WSMW058			05/08/2011
4053458	WSMW149			05/08/2011

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

SDG: 110808-80
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145117
Superseded Report:

LIQUID Results Legend X Test N No Determination Possible	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container	
	4053458		WSMW149						Vial (ALE297)	
	4053460		WSMW058						11 green glass bottle	
	4053450		WSMW052						11 green glass bottle	
	4053447		WSMW051						11 green glass bottle	
Alkalinity as CaCO ₃	All	NDPs: 0 Tests: 8								
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 8								
Anions by Kone (w)	All	NDPs: 0 Tests: 8								
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 8								
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8								
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8								
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8								
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8								
Mercury Dissolved	All	NDPs: 0 Tests: 8								
Mercury Unfiltered	All	NDPs: 0 Tests: 8								
pH Value	All	NDPs: 0 Tests: 8								
Sulphide	All	NDPs: 0 Tests: 8								
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 8								
Total Metals by ICP-MS	All	NDPs: 0 Tests: 8								
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 8								



CERTIFICATE OF ANALYSIS

SDG: 110808-80
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145117
Superseded Report:

LIQUID																					
Results Legend X Test N No Determination Possible	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container																
	4053458	WSMW149			Vial (ALE297)																
	4053460	WSMW058			HNO3 Filtered (ALE221)																
	4053450	WSMW052			1l green glass bottle																
	4053447	WSMW051			Vial (ALE297)																
	4053456	WSMW034			HNO3 Filtered (ALE221)																
4053454	TA1/2			1l green glass bottle																	
4053452	TA1/1			Vial (ALE297)																	
4053462	PIAFO11			HNO3 Filtered (ALE221)																	
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																
					HNO3 Filtered (ALE221)																
					1l green glass bottle																
					Vial (ALE297)																

Order Number: CD0154
Report Number: 145117
Superseded Report:

Page 5 of 19

Order Number: CD0154
Report Number: 145117
Superseded Report:

Page 6 of 19



CERTIFICATE OF ANALYSIS

SDG: 110808-80
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145117
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend			Customer Sample R		PIAF011	TA1/1	TA1/2	WSMW034	WSMW051	WSMW052
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.				05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011
S	Deviating sample.				08/08/2011	08/08/2011	08/08/2011	08/08/2011	08/08/2011	08/08/2011
aq	Aqueous / settled sample.				110808-80	110808-80	110808-80	110808-80	110808-80	110808-80
diss.filt	Dissolved / filtered sample.				4053462	4053452	4053454	4053456	4053447	4053450
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted test.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
Component	LOD/Units	Method								
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2,4-Dichlorophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2,4-Dimethylphenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2-Chloronaphthalene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2-Chlorophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2-Methylnaphthalene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2-Methylphenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2-Nitroaniline (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
2-Nitrophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
3-Nitroaniline (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
4-Bromophenylphenylether (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
4-Chloroaniline (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
4-Methylphenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
4-Nitrophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
4-Nitroaniline (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
Azobenzene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
Acenaphthylene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
Acenaphthene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
Anthracene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176			5.73	<2	<2	<2	<2	91.7
Benzo(a)anthracene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
Butylbenzyl phthalate (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1

Order Number: CD0154
Report Number: 145117
Superseded Report:

Page 8 of 19



CERTIFICATE OF ANALYSIS

SDG: 110808-80
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145117
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend			Customer Sample R		WSMW058	WSMW149			
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.								
S	Deviating sample.								
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted test.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
Component	LOD/Units	Method							
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176			<1	<1			
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176			<1	<1			
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176			<1	<1			
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176			<1	<1			
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176			<1	<1			
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176			<1	<1			
2,4-Dichlorophenol (aq)	<1 µg/l	TM176			<1	<1			
2,4-Dimethylphenol (aq)	<1 µg/l	TM176			<1	2.64			
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176			<1	<1			
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176			<1	<1			
2-Chloronaphthalene (aq)	<1 µg/l	TM176			<1	<1			
2-Chlorophenol (aq)	<1 µg/l	TM176			<1	<1			
2-Methylnaphthalene (aq)	<1 µg/l	TM176			<1	<1			
2-Methylphenol (aq)	<1 µg/l	TM176			<1	<1			
2-Nitroaniline (aq)	<1 µg/l	TM176			<1	<1			
2-Nitrophenol (aq)	<1 µg/l	TM176			<1	<1			
3-Nitroaniline (aq)	<1 µg/l	TM176			<1	<1			
4-Bromophenylphenylether (aq)	<1 µg/l	TM176			<1	<1			
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176			<1	<1			
4-Chloroaniline (aq)	<1 µg/l	TM176			<1	<1			
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176			<1	<1			
4-Methylphenol (aq)	<1 µg/l	TM176			<1	<1			
4-Nitrophenol (aq)	<1 µg/l	TM176			<1	<1			
4-Nitroaniline (aq)	<1 µg/l	TM176			<1	<1			
Azobenzene (aq)	<1 µg/l	TM176			<1	<1			
Acenaphthylene (aq)	<1 µg/l	TM176			<1	<1			
Acenaphthene (aq)	<1 µg/l	TM176			<1	<1			
Anthracene (aq)	<1 µg/l	TM176			<1	<1			
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176			<1	<1			
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176			<1	<1			
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176			<2	<2			
Benzo(a)anthracene (aq)	<1 µg/l	TM176			<1	<1			
Butylbenzyl phthalate (aq)	<1 µg/l	TM176			<1	<1			
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176			<1	<1			
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176			<1	<1			

Order Number: CD0154
Report Number: 145117
Superseded Report:

Page 10 of 19

Order Number: CD0154
Report Number: 145117
Superseded Report:

Page 11 of 19

Order Number: CD0154
Report Number: 145117
Superseded Report:

Page 12 of 19



CERTIFICATE OF ANALYSIS

SDG: 110808-80
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145117
Superseded Report:

VOC MS (W)

Results Legend			Customer Sample R		PIAF011	TA1/1	TA1/2	WSMW034	WSMW051	WSMW052
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.				05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011
S	Deviating sample.				08/08/2011	08/08/2011	08/08/2011	08/08/2011	08/08/2011	08/08/2011
aq	Aqueous / settled sample.				110808-80	110808-80	110808-80	110808-80	110808-80	110808-80
diss.filt	Dissolved / filtered sample.				4053462	4053452	4053454	4053456	4053447	4053450
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted test.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
Component	LOD/Units	Method								
Dibromofluoromethane**	%	TM208			112	109	109	109	111	110
Toluene-d8**	%	TM208			92.3	98	99.1	99.4	103	92.4
4-Bromofluorobenzene**	%	TM208			96.2	101	98.6	102	96.4	96.8
Dichlorodifluoromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Vinyl chloride	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromomethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Carbon disulphide	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Dichloromethane	<3 µg/l	TM208			<3	<3	<3	<3	<3	<3
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloroform	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Carbontetrachloride	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Benzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Trichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Dibromomethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Toluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Tetrachloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Dibromochloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1



CERTIFICATE OF ANALYSIS

SDG: 110808-80
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145117
Superseded Report:

VOC MS (W)

Results Legend			Customer Sample R		PIAF011	TA1/1	TA1/2	WSMW034	WSMW051	WSMW052
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
M	mCERTS accredited.				05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011	05/08/2011
S	Deviating sample.				08/08/2011	08/08/2011	08/08/2011	08/08/2011	08/08/2011	08/08/2011
aq	Aqueous / settled sample.				110808-80	110808-80	110808-80	110808-80	110808-80	110808-80
diss.filt	Dissolved / filtered sample.				4053462	4053452	4053454	4053456	4053447	4053450
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted test.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
Component	LOD/Units	Method								
1,2-Dibromoethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Chlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Ethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
m,p-Xylene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
o-Xylene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Styrene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Bromoform	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Isopropylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Bromobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Propylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
2-Chlorotoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,3,5-Trimethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
4-Chlorotoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
tert-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,2,4-Trimethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
sec-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
4-iso-Propyltoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,3-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,4-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
n-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,2-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Hexachlorobutadiene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Naphthalene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,2,3-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,3,5-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1



CERTIFICATE OF ANALYSIS

SDG: 110808-80
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145117
Superseded Report:

VOC MS (W)

Results Legend		Customer Sample R	WSMW058	WSMW149			
#	ISO17025 accredited.						
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 05/08/2011 08/08/2011 110808-80 4053460	Water(GW/SW) 05/08/2011 08/08/2011 110808-80 4053458			
S	Deviating sample.						
aq	Aqueous / settled sample.						
diss.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted test.						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM208	109	108			
Toluene-d8**	%	TM208	94.8	96.4			
4-Bromofluorobenzene**	%	TM208	92.1	97			
Dichlorodifluoromethane	<1 µg/l	TM208	<1	<1			
Chloromethane	<1 µg/l	TM208	<1	<1			
Vinyl chloride	<1 µg/l	TM208	<1	<1			
Bromomethane	<1 µg/l	TM208	<1	<1			
Chloroethane	<1 µg/l	TM208	7.22	<1			
Trichlorofluoromethane	<1 µg/l	TM208	<1	<1			
1,1-Dichloroethene	<1 µg/l	TM208	<1	<1			
Carbon disulphide	<1 µg/l	TM208	<1	<1			
Dichloromethane	<3 µg/l	TM208	<3	<3			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1			
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1			
1,1-Dichloroethane	<1 µg/l	TM208	<1	<1			
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1			
2,2-Dichloropropane	<1 µg/l	TM208	<1	<1			
Bromochloromethane	<1 µg/l	TM208	<1	<1			
Chloroform	<1 µg/l	TM208	<1	<1			
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	<1			
1,1-Dichloropropene	<1 µg/l	TM208	<1	<1			
Carbontetrachloride	<1 µg/l	TM208	<1	<1			
1,2-Dichloroethane	<1 µg/l	TM208	<1	<1			
Benzene	<1 µg/l	TM208	<1	40.9			
Trichloroethene	<1 µg/l	TM208	<1	<1			
1,2-Dichloropropane	<1 µg/l	TM208	<1	<1			
Dibromomethane	<1 µg/l	TM208	<1	<1			
Bromodichloromethane	<1 µg/l	TM208	<1	<1			
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1			
Toluene	<1 µg/l	TM208	<1	12.4			
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1			
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	<1			
1,3-Dichloropropane	<1 µg/l	TM208	<1	<1			
Tetrachloroethene	<1 µg/l	TM208	<1	<1			
Dibromochloromethane	<1 µg/l	TM208	<1	<1			



CERTIFICATE OF ANALYSIS

SDG: 110808-80
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145117
Superseded Report:

VOC MS (W)

Results Legend			Customer Sample R	WSMW058	WSMW149			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.							
S	Deviating sample.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
Component	LOD/Units	Method						
1,2-Dibromoethane	<1 µg/l	TM208	<1	<1				
			#	#				
Chlorobenzene	<1 µg/l	TM208	<1	<1				
			#	#				
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1				
			#	#				
Ethylbenzene	<1 µg/l	TM208	<1	1.33				
			#	#				
m,p-Xylene	<1 µg/l	TM208	<1	23.1				
			#	#				
o-Xylene	<1 µg/l	TM208	<1	7.97				
			#	#				
Styrene	<1 µg/l	TM208	<1	<1				
			#	#				
Bromoform	<1 µg/l	TM208	<1	<1				
			#	#				
Isopropylbenzene	<1 µg/l	TM208	1.62	6.32				
			#	#				
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1				
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	<1				
			#	#				
Bromobenzene	<1 µg/l	TM208	<1	<1				
			#	#				
Propylbenzene	<1 µg/l	TM208	<1	4.88				
			#	#				
2-Chlorotoluene	<1 µg/l	TM208	<1	<1				
			#	#				
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	1.48				
			#	#				
4-Chlorotoluene	<1 µg/l	TM208	<1	<1				
			#	#				
tert-Butylbenzene	<1 µg/l	TM208	<1	<1				
			#	#				
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	2.49				
			#	#				
sec-Butylbenzene	<1 µg/l	TM208	<1	5.08				
			#	#				
4-iso-Propyltoluene	<1 µg/l	TM208	<1	<1				
			#	#				
1,3-Dichlorobenzene	<1 µg/l	TM208	<1	<1				
			#	#				
1,4-Dichlorobenzene	<1 µg/l	TM208	<1	<1				
			#	#				
n-Butylbenzene	<1 µg/l	TM208	<1	<1				
			#	#				
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	<1				
1,2-Dibromo-3-chloropropa ne	<1 µg/l	TM208	<1	<1				
			#	#				
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	<1				
			#	#				
Hexachlorobutadiene	<1 µg/l	TM208	<1	<1				
			#	#				
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	<1				
			#	#				
Naphthalene	<1 µg/l	TM208	<1	<1				
			#	#				
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1	<1				
			#	#				
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1	<1				



CERTIFICATE OF ANALYSIS

SDG: 110808-80
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145117
Superseded Report:

Table of Results - Appendix

REPORT KEY

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03x10⁻⁷

NDP	No Determination Possible	#	ISO 17025 Accredited	*	Subcontracted Test	M	MCERTS Accredited
NFD	No Fibres Detected	PFD	Possible Fibres Detected	»	Result previously reported (Incremental reports only)	EC	Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM191	Standard Methods for the examination of waters and wastewaters 16th Edition, ALPHA, Washington DC, USA. ISBN 0-87553-131-8.	Determination of Unfiltered Metals in Water Matrices by ICP-MS		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



CERTIFICATE OF ANALYSIS

SDG: 110808-80
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145117
Superseded Report:

Test Completion Dates

Lab Sample No(s)	4053462	4053452	4053454	4053456	4053447	4053450	4053460	4053458
Customer Sample Ref.	PIAF011	TA1/1	TA1/2	WSMW034	WSMW051	WSMW052	WSMW058	WSMW149
AGS Ref.								
Depth								
Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Alkalinity as CaCO3	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011
Ammoniacal Nitrogen	10-Aug-2011	12-Aug-2011	12-Aug-2011	10-Aug-2011	12-Aug-2011	12-Aug-2011	10-Aug-2011	10-Aug-2011
Anions by Kone (w)	12-Aug-2011	12-Aug-2011	12-Aug-2011	10-Aug-2011	12-Aug-2011	12-Aug-2011	10-Aug-2011	10-Aug-2011
Conductivity (at 20 deg.C)	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011
Dissolved Metals by ICP-MS	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011
EPH CWG (Aliphatic) Aqueous GC (W)	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011
EPH CWG (Aromatic) Aqueous GC (W)	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011
GRO by GC-FID (W)	14-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011
Mercury Dissolved	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011
Mercury Unfiltered	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011
pH Value	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011
Sulphide	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011	10-Aug-2011
SVOC MS (W) - Aqueous	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011
Total Metals by ICP-MS	11-Aug-2011	12-Aug-2011	12-Aug-2011	11-Aug-2011	12-Aug-2011	12-Aug-2011	11-Aug-2011	11-Aug-2011
Total Organic and Inorganic Carbon	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011	12-Aug-2011
TPH CWG (W)	14-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011	14-Aug-2011
VOC MS (W)	15-Aug-2011	15-Aug-2011	15-Aug-2011	15-Aug-2011	15-Aug-2011	15-Aug-2011	15-Aug-2011	15-Aug-2011



SDG: 110808-80
Job: H_ATKINS_LDC-112
Client Reference: First 300 Water Samples 2011

Location: Coed Darcy Urban Village
Customer: Atkins Global Ltd
Attention: Alex Mann

Order Number: CD0154
Report Number: 145117
Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH₄ by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C₄-C₁₀ range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	DC OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENTEXTRACTABLE MATTER	D&C	DCM	SOXIHERM	GRAVIMETRIC
CYCLOHEXANEEXT. MATTER	D&C	CYCLOHEXANE	SOXIHERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DCM	SOXIHERM	HPLC
PHENOLS BY GCMS	WET	DCM	SOXIHERM	GCMS
HERBICIDES	D&C	HEXANE/ACETONE	SOXIHERM	GCMS
PESTICIDES	D&C	HEXANE/ACETONE	SOXIHERM	GCMS
EPH (DRO)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH (MIN OIL)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH (CLEANED UP)	D&C	HEXANE/ACETONE	END OVER END	GC-FID
EPH CWGBY GC	D&C	HEXANE/ACETONE	END OVER END	GC-FID
PCBTOT/PCB CON	D&C	HEXANE/ACETONE	END OVER END	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANE/ACETONE	MICROWAVE TM218.	GCMS
C8-C40 (C6-C40) EZ FLASH	WET	HEXANE/ACETONE	SHAKER	GC-EZ
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANE/ACETONE	SHAKER	GC-EZ
SEMI VOLATILE ORGANIC COMPOUNDS	WET	DOM/ACETONE	SONICATE	GCMS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GCMS
SVOC	DOM	LIQUID/LIQUID SHAKE	GCMS
FREE SULPHUR	DOM	SOLID PHASE EXTRACTION	HPLC
PEST COP/OPP	DOM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DOM	LIQUID/LIQUID SHAKE	GCMS
PHENOLS MS	DOM	SOLID PHASE EXTRACTION	GCMS
TPH by INFRARED (R)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERAL OIL by R	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GCMS

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Scientific Analysis Laboratories is a
limited company registered in England and
Wales (No 2514788) whose address is at
Hadfield House, Hadfield Street, Manchester M16 9FE

Scientific Analysis Laboratories

Certificate of Analysis

Hadfield House
Hadfield Street
Cornbrook
Manchester
M16 9FE
Tel : 0161 874 2400
Fax : 0161 874 2468

Report Number: 157461-1

Date of Report: 05-Mar-2009

Customer: Atkins
Atkins Limited
Cornerstone House
Stafford Park 13
Telford
Shropshire
TF3 3AZ

Customer Contact: Mrs Michelle Lee

Customer Job Reference: 514216

Customer Site Reference: Coed Darcy Trial Area 1

Date Job Recieved at SAL: 18-Feb-2009

Date Analysis Started: 27-Feb-2009

Date Analysis Completed: 05-Mar-2009

The results reported relate to samples received in the laboratory
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
Tests covered by this certificate were conducted in accordance with SAL SOPs



Report checked
and authorised by :
Miss Carrie Hughes
Senior Project Manager

Issued by :

Index to symbols used in this report

Value	Description
M105	Analysis conducted on an "as received" aliquot. Results are reported on a dry weight basis where moisture content was determined by assisted drying of sample at 105C
AR	As Received
M40	Analysis conducted on sample assisted dried at no more than 40C. Results are reported on a dry weight basis.
2	LOD Raised Due to Matrix Interference
9	LOD raised due to dilution of sample
19	Due to high levels the analysis was conducted on a diluted sample
13	Results have been blank corrected.
U	Analysis is UKAS accredited
M	Analysis is MCERTS accredited
N	Analysis is not accredited

Notes

No obvious asbestos containing materials detected. Customers should be clear that this test does not confirm the absence of asbestos from the sample.

Methods

Value	Description
T7	Probe
T161	Visual
T209	GC/MS(Head Space)(MCERTS)
T277	Grav (1 Dec) (40 C)
T6	ICP/OES
T207	GC/MS(MCERTS)
T206	GC/FID (MCERTS)
T162	Grav (1 Dec) (105 C)
T8	GC/FID

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Asbestos(Screen Only)	T161	AR			N	004,006-007,017,019,021,023,025,027,029,031,034-035,039,042-043,045
pH	T7	AR			M	003-008,010,012,014,016-045
Total Petroleum Hydrocarbons	T8	M105	1.0	mg/kg	M	004-005,008,025-026,036-037
Arsenic	T6	M40	2.0	mg/kg	M	003-008,010,012,014,016-045
Cadmium	T6	M40	1.0	mg/kg	M	003-008,010,012,014,016-045
Chromium	T6	M40	1.0	mg/kg	M	003-008,010,012,014,016-045
Copper	T6	M40	1.0	mg/kg	M	003-008,010,012,014,016-045
Vanadium	T6	M40	1.0	mg/kg	M	003-008,010,012,014,016-045
Lead	T6	M40	1.0	mg/kg	M	003-008,010,012,014,016-045
Mercury	T6	M40	1.0	mg/kg	M	003-008,010,012,014,016-045
Nickel	T6	M40	1.0	mg/kg	M	003-008,010,012,014,016-045
Selenium	T6	M40	3.0	mg/kg	M	003-008,010,012,014,016-045
Zinc	T6	M40	1.0	mg/kg	M	003-008,010,012,014,016-045
Moisture	T277	AR	0.1	%	N	003-008,010,012,014,016-045
Moisture @ 105 C	T162	AR	0.1	%	N	003-008,010,012,014,016-045
Naphthalene	T207	M105	0.1	mg/kg	M	003-008,010,012,014,016-045
Acenaphthylene	T207	M105	0.1	mg/kg	U	003-008,010,012,014,016-045
Acenaphthene	T207	M105	0.1	mg/kg	M	003-008,010,012,014,016-045
Fluorene	T207	M105	0.1	mg/kg	M	003-008,010,012,014,016-045
Phenanthrene	T207	M105	0.1	mg/kg	M	003-008,010,012,014,016-045
Anthracene	T207	M105	0.1	mg/kg	U	003-008,010,012,014,016-045
Fluoranthene	T207	M105	0.1	mg/kg	M	003-008,010,012,014,016-045
Pyrene	T207	M105	0.1	mg/kg	M	003-008,010,012,014,016-045
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	M	003-008,010,012,014,016-045
Chrysene	T207	M105	0.1	mg/kg	M	003-008,010,012,014,016-045
Benzo(b/k)Fluoranthene	T207	M105	0.1	mg/kg	M	003-008,010,012,014,016-045
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	M	003-008,010,012,014,016-045
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	M	003-008,010,012,014,016-045
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	M	003-008,010,012,014,016-045
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	M	003-008,010,012,014,016-045
PAH(total)	T207	M105	0.1	mg/kg	U	003-008,010,012,014,016-045
Benzene	T209	M105	10.0	µg/kg	M	003,007,012,014,016-024,027-028,031-032,034,038

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
EthylBenzene	T209	M105	10.0	µg/kg	M	003,007,012,014,016-024,027-028,031-032,034,038
M/P Xylene	T209	M105	10.0	µg/kg	M	003,007,012,014,016-024,027-028,031-032,034,038
Methyl-tert-Butyl Ether	T209	M105	10.0	µg/kg	M	003,007,012,014,016-024,027-028,031-032,034,038-045
O Xylene	T209	M105	10.0	µg/kg	M	003,007,012,014,016-024,027-028,031-032,034,038
Toluene	T209	M105	10.0	µg/kg	M	003,007,012,014,016-024,027-028,031-032,034,038
TPH (C5-C6 aliphatic)	T209	M105	0.1	mg/kg	N	003,007,012,014,016-024,027-028,031-032,034,038-045
TPH (C6-C8 aliphatic)	T209	M105	0.1	mg/kg	N	003,007,012,014,016-024,027-028,031-032,034,038-045
TPH (C8-C10 aliphatic)	T209	M105	0.1	mg/kg	N	003,007,012,014,016-024,027-028,031-032,034,038-045
TPH (C10-C12 aliphatic)	T206	M105	1.0	mg/kg	M	003,007,012,014,016-024,027-028,031-032,034,038-045
TPH (C12-C16 aliphatic)	T206	M105	2.0	mg/kg	M	003,007,012,014,016-024,027-028,031-032,034,038-045
TPH (C16-C21 aliphatic)	T206	M105	1.0	mg/kg	M	003,007,012,014,016-024,027-028,031-032,034,038-045
TPH (C21-C35 aliphatic)	T206	M105	4.0	mg/kg	M	003,007,012,014,016-024,027-028,031-032,034,038-045
TPH (C6-C7 aromatic)	T209	M105	0.1	mg/kg	N	003,007,012,014,016-024,027-028,031-032,034,038-045
TPH (C7-C8 aromatic)	T209	M105	0.1	mg/kg	N	003,007,012,014,016-024,027-028,031-032,034,038-045
TPH (C8-C10 aromatic)	T209	M105	0.1	mg/kg	N	003,007,012,014,016-024,027-028,031-032,034,038-045
TPH (C10-C12 aromatic)	T206	M105	1.0	mg/kg	M	003,007,012,014,016-024,027-028,031-032,034,038-045
TPH (C12-C16 aromatic)	T206	M105	1.0	mg/kg	M	003,007,012,014,016-024,027-028,031-032,034,038-045
TPH (C16-C21 aromatic)	T206	M105	1.0	mg/kg	M	003,007,012,014,016-024,027-028,031-032,034,038-045
TPH (C21-C35 aromatic)	T206	M105	1.0	mg/kg	M	003,007,012,014,016-024,027-028,031-032,034,038-045
1,1,1,2-Tetrachloroethane	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
1,1,1-Trichloroethane	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
1,1,2,2-Tetrachloroethane	T209	M105	50.0	µg/kg	U	012,018,020,032,034,038-041,043-045
1,1,2-Trichloroethane	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
1,1-Dichloroethane	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
1,1-Dichloroethylene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
1,1-Dichloropropene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
1,2,3-Trichloropropane	T209	M105	50.0	µg/kg	U	012,018,020,032,034,038-041,043-045
1,2,4-Trimethylbenzene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
1,2-dibromoethane	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
1,2-Dichlorobenzene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
1,2-Dichloroethane	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
1,2-Dichloropropane	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
1,3,5-Trimethylbenzene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
1,3-Dichlorobenzene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
1,3-Dichloropropane	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
1,4-Dichlorobenzene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
2,2-Dichloropropane	T209	M105	50.0	µg/kg	U	012,018,020,032,034,038-041,043-045
2-Chlorotoluene	T209	M105	50.0	µg/kg	U	012,018,020,032,034,038-041,043-045
4-Chlorotoluene	T209	M105	50.0	µg/kg	U	012,018,020,032,034,038-041,043-045
Bromobenzene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Bromochloromethane	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Bromodichloromethane	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Bromoform	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Bromomethane	T209	M105	50.0	µg/kg	U	012,018,020,032,034,038-041,043-045
Carbon tetrachloride	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Chlorobenzene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Chlorodibromomethane	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Chloroethane	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Chloroform	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Chloromethane	T209	M105	50.0	µg/kg	U	012,018,020,032,034,038-041,043-045
Cis-1,2-Dichloroethylene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Cis-1,3-Dichloropropene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Dibromomethane	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Dichlorodifluoromethane	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Dichloromethane	T209	M105	50.0	µg/kg	U	012,018,020,032,034,038-041,043-045
Isopropyl benzene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
n-Propylbenzene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
p-Isopropyltoluene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
S-Butylbenzene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Styrene	T209	M105	50.0	µg/kg	U	012,018,020,032,034,038-041,043-045
T-Butylbenzene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Tetrachloroethylene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Trans-1,2-Dichloroethene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Trans-1,3-Dichloropropene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Trichloroethylene	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Trichlorofluoromethane	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045
Vinyl chloride	T209	M105	50.0	µg/kg	M	012,018,020,032,034,038-041,043-045

SAL Reference: 157461 Project Site: Coed Darcy Trial Area 1 Customer Reference: 514216																	
Soil		Analysed as Soil															
MCERTS Preparation																	
SAL Reference					157461 003	157461 004	157461 005	157461 006	157461 007	157461 008	157461 010	157461 012	157461 014	157461 016	157461 017	157461 018	157461 019
Customer Sample Reference					TA1 02	TA1 04	TA1 05	TA1 07	TA1 08	TA1 08	TA1 10	TA1 11	TA1 12	TA1 13	TA1 14	TA1 14	TA1 15
Bottom Depth					0.9	0.6	0.3	0.3	0.6	1.4	0.5	0.7	1.1	1.7	0.4	1.4	0.8
Date Sampled					18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009
Top Depth					0.7	0.4	0.1	0.2	0.4	1.2	0.3	0.5	0.9	1.5	0.2	1.2	0.6
Type					Sand	Sand	Sand	Sand	Sand	Sand	Sand	Clay	Clay	Clay	Sand	Sand	Sand
Determinand	Method	Test Sample	LOD	Units													
Moisture	T277	AR	0.1	%	16	13	13	12	10	14	11	15	9.2	10	15	10	12
Moisture @ 105 C	T162	AR	0.1	%	11	13	14	9.4	9.9	10	10	13	8.0	6.1	11	8.7	10

SAL Reference: 157461																	
Project Site: Coed Darcy Trial Area 1																	
Customer Reference: 514216																	
Soil Analysed as Soil																	
MCERTS Preparation																	
SAL Reference				157461020	157461021	157461022	157461023	157461024	157461025	157461026	157461027	157461028	157461029	157461030	157461031	157461032	
Customer Sample Reference				TA1 15	TA1 16	TA1 17	TA1 19	TA1 21	TA1 22	TA1 23	TA1 24	TA1 25	TA1 26	TA1 27	TA1 28	TA1 29	
Bottom Depth				1.8	0.9	0.9	0.5	0.4	0.7	0.6	0.9	0.8	0.5	0.3	0.8	1.1	
Date Sampled				18-FEB-2009	18-FEB-2009	18-FEB-2009	19-FEB-2009	19-FEB-2009	19-FEB-2009	19-FEB-2009	19-FEB-2009	19-FEB-2009	19-FEB-2009	19-FEB-2009	19-FEB-2009	19-FEB-2009	
Top Depth				1.6	0.7	0.7	0.3	0.2	0.5	0.4	0.7	0.6	0.3	0.1	0.6	0.9	
Type				Topsoil	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Sand	Sand	Sand	Clay	
Determinand	Method	Test Sample	LOD	Units													
Moisture	T277	AR	0.1	%	9.9	13	11	10	11	13	13	10	15	11	12	12	12
Moisture @ 105 C	T162	AR	0.1	%	8.4	13	8.0	8.6	8.9	12	28	14	14	9.7	11	10	11

SAL Reference: 157461																	
Project Site: Coed Darcy Trial Area 1																	
Customer Reference: 514216																	
Soil Analysed as Soil																	
MCERTS Preparation																	
SAL Reference					157461 033	157461 034	157461 035	157461 036	157461 037	157461 038	157461 039	157461 040	157461 041	157461 042	157461 043	157461 044	157461 045
Customer Sample Reference					TA1 30	TA1 31	TA1 32	TA1 32	TA1 33	TA1 34	TA1 36	TA1 38	TA1 39	TA1 40	TA1 41	TA1 41	TA1 42
Bottom Depth					0.5	0.8	0.7	1.6	0.4	0.9	0.5	0.7	0.6	0.6	0.5	1.3	0.3
Date Sampled					19-FEB- 2009	19-FEB- 2009	19-FEB- 2009	19-FEB- 2009	19-FEB- 2009	19-FEB- 2009	19-FEB- 2009	19-FEB- 2009	20-FEB- 2009	20-FEB- 2009	20-FEB- 2009	20-FEB- 2009	20-FEB- 2009
Top Depth					0.3	0.6	0.5	1.3	0.2	0.7	0.3	0.5	0.4	0.4	0.3	1.1	0.1
Type					Sand	Sand	Sand	Clay	Sand	Sand	Sand	Clay	Sand	Clay	Sand	Clay	Clay
Determinand	Method	Test Sample	LOD	Units													
Moisture	T277	AR	0.1	%	13	9.7	12	11	2.6	15	10	9.7	8.8	12	7.0	9.0	11
Moisture @ 105 C	T162	AR	0.1	%	12	8.6	12	12	9.8	13	9.0	7.7	8.7	12	7.8	7.6	11

SAL Reference: 157461 Project Site: Coed Darcy Trial Area 1 Customer Reference: 514216 Soil Metals				
	Analysed as Soil			

Determinand	Method	Test Sample	LOD	Units													
Arsenic	T6	M40	2	mg/kg	590	620	350	160	70	190	920	230	22	39	880	130	920
Cadmium	T6	M40	1	mg/kg	10	14	8	7	2	5	16	6	<1	2	14	3	15
Chromium	T6	M40	1	mg/kg	20	23	18	21	7	13	26	19	10	18	22	17	29
Vanadium	T6	M40	1	mg/kg	38	36	77	23	28	35	43	48	12	22	39	20	45
Copper	T6	M40	1	mg/kg	2000	2400	1000	830	190	350	3800	1300	65	110	2400	310	4100
Lead	T6	M40	1	mg/kg	5300	5200	5000	2000	670	2000	8000	2600	190	270	6900	1400	4600
Mercury	T6	M40	1	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	T6	M40	1	mg/kg	67	67	59	53	43	57	80	46	21	45	65	46	83
Selenium	T6	M40	3	mg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Zinc	T6	M40	1	mg/kg	9800	12000	7800	4100	1600	4600	12000	3600	300	600	13000	2600	7600

Soil Metals	SAL Reference: 157461
	Project Site: Coed Darcy Trial Area 1
	Customer Reference: 514216
	Analysed as Soil

Determinand	Method	Test Sample	LOD	Units													
Arsenic	T6	M40	2	mg/kg	41	77	23	130	18	39	130	78	140	450	160	270	22
Cadmium	T6	M40	1	mg/kg	2	2	1	3	1	2	3	2	4	8	4	4	2
Chromium	T6	M40	1	mg/kg	17	23	12	20	15	17	15	15	16	16	30	23	16
Vanadium	T6	M40	1	mg/kg	19	31	16	29	16	20	18	18	22	23	60	32	17
Copper	T6	M40	1	mg/kg	220	320	110	410	100	140	480	230	380	1700	760	1300	140
Lead	T6	M40	1	mg/kg	190	800	190	920	190	260	1500	1000	1500	9100	3000	3500	390
Mercury	T6	M40	1	mg/kg	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	T6	M40	1	mg/kg	35	32	30	31	25	25	23	25	27	58	52	49	28
Selenium	T6	M40	3	mg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Zinc	T6	M40	1	mg/kg	310	3200	500	6300	370	690	6500	1900	2900	12000	4000	3600	750

SAL Reference: 157461																	
Project Site: Coed Darcy Trial Area 1																	
Customer Reference: 514216																	
Soil		Analysed as Soil															
Metals																	
SAL Reference		157461 033	157461 034	157461 035	157461 036	157461 037	157461 038	157461 039	157461 040	157461 041	157461 042	157461 043	157461 044	157461 045			
Customer Sample Reference		TA1 30	TA1 31	TA1 32	TA1 32	TA1 33	TA1 34	TA1 36	TA1 38	TA1 39	TA1 40	TA1 41	TA1 41	TA1 42			
Bottom Depth		0.5	0.8	0.7	1.6	0.4	0.9	0.5	0.7	0.6	0.6	0.5	1.3	0.3			
Date Sampled		19-FEB-2009	19-FEB-2009	19-FEB-2009	19-FEB-2009	19-FEB-2009	19-FEB-2009	19-FEB-2009	19-FEB-2009	20-FEB-2009	20-FEB-2009	20-FEB-2009	20-FEB-2009	20-FEB-2009			
Top Depth		0.3	0.6	0.5	1.3	0.2	0.7	0.3	0.5	0.4	0.4	0.3	1.1	0.1			
Type		Sand	Sand	Sand	Clay	Sand	Sand	Sand	Clay	Sand	Clay	Sand	Clay	Clay			
Determinand	Method	Test Sample	LOD	Units													
Arsenic	T6	M40	2	mg/kg	380	100	320	22	310	14	75	20	8	8	14	10	11
Cadmium	T6	M40	1	mg/kg	6	2	5	1	6	1	2	<1	<1	<1	1	<1	1
Chromium	T6	M40	1	mg/kg	22	18	26	11	44	15	45	15	11	12	16	11	21
Vanadium	T6	M40	1	mg/kg	27	17	32	12	47	17	87	15	12	14	15	12	15
Copper	T6	M40	1	mg/kg	1600	370	1500	100	470	45	210	44	16	20	35	20	44
Lead	T6	M40	1	mg/kg	3100	910	2200	120	7200	180	1800	200	21	36	47	17	280
Mercury	T6	M40	1	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	T6	M40	1	mg/kg	48	27	55	25	59	48	61	23	20	19	40	22	33
Selenium	T6	M40	3	mg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Zinc	T6	M40	1	mg/kg	7400	1900	4700	340	10000	320	2500	440	63	67	110	64	290

SAL Reference: 157461													
Project Site: Coed Darcy Trial Area 1													
Customer Reference: 514216													
Soil		Analysed as Soil											
Miscellaneous													
SAL Reference		157461 003	157461 004	157461 005	157461 006	157461 007	157461 008	157461 010	157461 012	157461 014			
Customer Sample Reference		TA1 02	TA1 04	TA1 05	TA1 07	TA1 08	TA1 08	TA1 10	TA1 11	TA1 12			
Bottom Depth		0.9	0.6	0.3	0.3	0.6	1.4	0.5	0.7	1.1			
Date Sampled		18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009			
Top Depth		0.7	0.4	0.1	0.2	0.4	1.2	0.3	0.5	0.9			
Type		Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Clay	Clay		
Determinand	Method	Test Sample	LOD	Units									
Asbestos(Screen Only)	T161	AR			-	No visible Asbestos detected	-	-	No visible Asbestos detected	-	-	-	-
pH	T7	AR			8.0	9.4	8.9	7.4	7.8	7.8	7.7	9.0	7.8
Total Petroleum Hydrocarbons	T8	M105	1	mg/kg	-	310	290	-	-	180	-	-	-

SAL Reference: 157461														
Project Site: Coed Darcy Trial Area 1														
Customer Reference: 514216														
Soil														
Analysed as Soil														
Miscellaneous														
SAL Reference					157461 016	157461 017	157461 018	157461 019	157461 020	157461 021	157461 022	157461 023	157461 024	
Customer Sample Reference					TA1 13	TA1 14	TA1 14	TA1 15	TA1 15	TA1 16	TA1 17	TA1 19	TA1 21	
Bottom Depth					1.7	0.4	1.4	0.8	1.8	0.9	0.9	0.5	0.4	
Date Sampled					18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	18-FEB-2009	19-FEB-2009	19-FEB-2009	
Top Depth					1.5	0.2	1.2	0.6	1.6	0.7	0.7	0.3	0.2	
Type					Clay	Sand	Sand	Sand	Topsoil	Clay	Clay	Clay	Clay	
Determinand		Method	Test Sample	LOD	Units									
Asbestos(Screen Only)		T161	AR			-	No visible Asbestos detected	-	-	No visible Asbestos detected	-	-	No visible Asbestos detected	-
pH		T7	AR			7.2	7.6	7.6	8.2	7.9	10.4	7.4	9.5	7.4

Customer Reference: 514216

Total and Speciated USEPA16 PAH

Determinand	Method	Test Sample	LOD	Units													
Naphthalene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.1	<0.1	<0.1
Acenaphthylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	0.1	<0.1	<0.1
Fluorene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	0.2	<0.1	<0.1
Phenanthrene	T207	M105	0.1	mg/kg	<0.1	0.1	<0.1	0.3	<0.1	<0.1	0.1	0.1	0.3	0.1	0.3	0.2	<0.1
Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
Fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	0.5	0.2	0.1	0.4	0.3	<0.1	<0.1	0.5	0.1	0.3
Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	0.4	0.2	0.1	0.4	0.3	0.1	0.1	0.9	0.2	0.2
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	0.3	0.1	<0.1	0.2	0.2	<0.1	<0.1	0.3	0.1	0.1
Chrysene	T207	M105	0.1	mg/kg	0.1	0.1	0.1	0.4	0.2	0.1	0.4	0.3	<0.1	0.1	0.7	0.4	0.2
Benzo(b/k)Fluoranthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	0.4	0.1	0.1	0.4	0.3	<0.1	<0.1	0.4	0.1	0.1
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	0.2	0.2	<0.1	0.2	0.2	<0.1	<0.1	0.3	<0.1	<0.1
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1
PAH(total)	T207	M105	0.1	mg/kg	0.1	0.2	0.1	2.5	1.1	0.4	2.3	1.7	1.1	0.3	4.3	1.1	0.9

Customer Reference: 514216

Total and Speciated USEPA16 PAH

Determinand	Method	Test Sample	LOD	Units														
Naphthalene	T207	M105	0.1	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1	0.6	0.1	<0.1	<0.1	<0.1	0.5	<0.1	<0.1	0.1
Acenaphthylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1
Acenaphthene	T207	M105	0.1	mg/kg	0.2	<0.1	0.1	<0.1	0.3	0.1	<0.1	0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1
Fluorene	T207	M105	0.1	mg/kg	0.3	0.1	0.4	0.2	0.7	0.2	<0.1	<0.1	<0.1	0.8	<0.1	<0.1	<0.1	0.2
Phenanthrene	T207	M105	0.1	mg/kg	2.1	0.4	1.2	0.8	1.6	0.5	<0.1	0.2	0.2	0.8	<0.1	<0.1	<0.1	0.5
Anthracene	T207	M105	0.1	mg/kg	0.2	<0.1	<0.1	0.2	0.2	0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	T207	M105	0.1	mg/kg	1.0	0.6	0.1	0.6	0.3	0.6	<0.1	0.3	0.3	0.4	0.1	<0.1	<0.1	0.1
Pyrene	T207	M105	0.1	mg/kg	1.2	0.5	0.2	0.7	0.5	0.6	<0.1	0.3	0.3	0.4	0.1	<0.1	<0.1	0.1
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	0.7	0.4	0.3	0.5	0.3	0.4	<0.1	0.2	0.2	0.2	<0.1	<0.1	<0.1	0.1
Chrysene	T207	M105	0.1	mg/kg	1.4	0.5	0.4	0.9	0.6	0.5	<0.1	0.2	0.3	0.3	0.1	<0.1	<0.1	0.2
Benzo(b/k)Fluoranthene	T207	M105	0.1	mg/kg	0.9	0.5	<0.1	0.7	0.5	0.5	<0.1	0.3	0.3	0.2	0.1	<0.1	<0.1	<0.1
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	0.5	0.3	<0.1	0.4	0.2	0.3	<0.1	0.2	0.2	0.3	<0.1	<0.1	<0.1	<0.1
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	0.2	0.1	<0.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	0.3	0.1	<0.1	0.1	0.1	0.1	<0.1	<0.1	0.1	0.2	<0.1	<0.1	<0.1	<0.1
PAH(total)	T207	M105	0.1	mg/kg	9.4	3.5	2.7	5.2	5.9	4.1	<0.1	1.8	1.9	5.1	0.4	<0.1	<0.1	1.3

Customer Reference: 514216

Total and Speciated USEPA16 PAH

Determinand	Method	Test Sample	LOD	Units													
Naphthalene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	T207	M105	0.1	mg/kg	0.2	<0.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	0.1
Anthracene	T207	M105	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	T207	M105	0.1	mg/kg	0.5	<0.1	0.2	<0.1	0.2	<0.1	0.1	<0.1	<0.1	<0.1	0.4	<0.1	0.2
Pyrene	T207	M105	0.1	mg/kg	0.6	0.1	0.2	<0.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.3	<0.1	0.3
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	0.3	<0.1	0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.3	<0.1	0.2
Chrysene	T207	M105	0.1	mg/kg	0.4	0.1	0.2	<0.1	0.1	<0.1	0.2	<0.1	0.1	<0.1	0.4	<0.1	0.3
Benzo(b/k)Fluoranthene	T207	M105	0.1	mg/kg	0.2	<0.1	0.1	<0.1	0.1	<0.1	0.4	<0.1	<0.1	<0.1	0.5	<0.1	0.6
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	0.2	<0.1	0.2	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.3	<0.1	0.3
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.1	<0.1	0.2
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.1	<0.1	0.2
PAH(total)	T207	M105	0.1	mg/kg	2.7	0.2	1.6	<0.1	0.6	<0.1	1.6	<0.1	0.1	<0.1	2.7	<0.1	2.6

Customer Reference: 514216

Total Petroleum Hydrocarbons CWG

Determinand	Method	Test Sample	LOD	Units										
Benzene	T209	M105	10	µg/kg	(2) <20	<10	<10	<10	<10	(2) <20	<10	<10	<10	<10
EthylBenzene	T209	M105	10	µg/kg	(2) <20	<10	<10	<10	<10	(2) <20	<10	<10	<10	63
M/P Xylene	T209	M105	10	µg/kg	(2) <20	<10	<10	<10	14	(2) <20	<10	<10	<10	210
Methyl-tert-Butyl Ether	T209	M105	10	µg/kg	(2) <20	<10	<10	<10	<10	(2) <20	<10	<10	<10	<10
O Xylene	T209	M105	10	µg/kg	(2) <20	<10	<10	<10	<10	(2) <20	<10	<10	<10	150
Toluene	T209	M105	10	µg/kg	(13.2) <20	(13) <10	(13) <10	(13) <10	(13) <10	(13.2) <20	(13) <10	(13) <10	(13) <10	(13) 14
TPH (C5-C6 aliphatic)	T209	M105	0.100	mg/kg	(2) <0.200	<0.100	<0.100	<0.100	<0.100	(2) <0.200	<0.100	<0.100	<0.100	<0.100
TPH (C6-C8 aliphatic)	T209	M105	0.100	mg/kg	0.351	0.137	<0.100	0.732	1.25	0.772	0.153	<0.100	<0.100	0.288
TPH (C8-C10 aliphatic)	T209	M105	0.100	mg/kg	9.31	3.70	0.178	10.1	4.53	13.8	1.65	0.177	0.241	1.09
TPH (C10-C12 aliphatic)	T206	M105	1	mg/kg	(9) <10	13	(9) <10	230	9	150	59	2	41	4
TPH (C12-C16 aliphatic)	T206	M105	2	mg/kg	230	180	38	770	100	1000	330	30	250	90
TPH (C16-C21 aliphatic)	T206	M105	1	mg/kg	200	170	38	320	48	1100	340	52	170	190
TPH (C21-C35 aliphatic)	T206	M105	4	mg/kg	76	180	65	41	28	1400	450	79	220	190
TPH (C6-C7 aromatic)	T209	M105	0.100	mg/kg	(2) <0.200	<0.100	<0.100	<0.100	<0.100	(2) <0.200	<0.100	<0.100	<0.100	<0.100
TPH (C7-C8 aromatic)	T209	M105	0.100	mg/kg	(2) <0.200	<0.100	<0.100	<0.100	<0.100	(2) <0.200	<0.100	<0.100	<0.100	<0.100
TPH (C8-C10 aromatic)	T209	M105	0.100	mg/kg	(2) <0.200	<0.100	<0.100	0.794	0.168	(2) <0.200	<0.100	<0.100	<0.100	1.36
TPH (C10-C12 aromatic)	T206	M105	1	mg/kg	(9) <10	1	(9) <10	2	<1	(9) <10	<1	<1	<1	<1
TPH (C12-C16 aromatic)	T206	M105	1	mg/kg	(9) <10	12	(9) <10	21	2	34	9	1	12	4
TPH (C16-C21 aromatic)	T206	M105	1	mg/kg	(9) <10	16	(9) <10	21	3	170	41	2	42	16
TPH (C21-C35 aromatic)	T206	M105	1	mg/kg	(9) <10	86	(13.9) <10	8	8	590	130	15	110	32

SAL Reference: 157461
Project Site: Coed Darcy Trial Area 1
Customer Reference: 514216

Soil Analysed as Soil
Total Petroleum Hydrocarbons CWG

SAL Reference					157461 022	157461 023	157461 024	157461 027	157461 028	157461 031	157461 032	157461 034	157461 038	157461 039
Customer Sample Reference					TA1 17	TA1 19	TA1 21	TA1 24	TA1 25	TA1 28	TA1 29	TA1 31	TA1 34	TA1 36
Bottom Depth					0.9	0.5	0.4	0.9	0.8	0.8	1.1	0.8	0.9	0.5
Date Sampled					18-FEB- 2009	19-FEB- 2009	19-FEB- 2009	19-FEB- 2009	19-FEB- 2009	19-FEB- 2009	19-FEB- 2009	19-FEB- 2009	19-FEB- 2009	19-FEB- 2009
Top Depth					0.7	0.3	0.2	0.7	0.6	0.6	0.9	0.6	0.7	0.3
Type					Clay	Clay	Clay	Clay	Clay	Sand	Clay	Sand	Sand	Sand
Determinand	Method	Test Sample	LOD	Units										
Benzene	T209	M105	10	µg/kg	(9) <40	<10	<10	(2) <40	<10	<10	<10	<10	<10	<10
EthylBenzene	T209	M105	10	µg/kg	(19) 1100	<10	<10	(2) <40	<10	<10	<10	<10	<10	<10
M/P Xylene	T209	M105	10	µg/kg	(19) 5900	<10	20	(2) <40	<10	<10	<10	<10	<10	<10
Methyl-tert-Butyl Ether	T209	M105	10	µg/kg	(9) <40	<10	<10	(2) <40	<10	<10	<10	<10	<10	<10
O Xylene	T209	M105	10	µg/kg	(19) 4100	<10	22	(2) <40	<10	<10	<10	<10	<10	<10
Toluene	T209	M105	10	µg/kg	(13,19) 160	(13) <10	(13) <10	(2,13) <40	(13) <10	(13) <10	(13) <10	(13) <10	(13) <10	(13) <10
TPH (C5-C6 aliphatic)	T209	M105	0.100	mg/kg	(19) 2.52	<0.100	<0.100	(2) <0.400	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
TPH (C6-C8 aliphatic)	T209	M105	0.100	mg/kg	(19) 44.8	<0.100	0.259	0.717	0.178	<0.100	0.153	<0.100	<0.100	<0.100
TPH (C8-C10 aliphatic)	T209	M105	0.100	mg/kg	(19) 31.1	0.558	3.98	5.79	2.02	0.369	1.25	<0.100	<0.100	<0.100
TPH (C10-C12 aliphatic)	T206	M105	1	mg/kg	20	14	100	18	10	2	930	2	<1	(9) <10
TPH (C12-C16 aliphatic)	T206	M105	2	mg/kg	260	490	660	560	240	20	4900	16	4	(9) <20
TPH (C16-C21 aliphatic)	T206	M105	1	mg/kg	580	1100	990	240	150	29	4500	36	8	(13,9) <10
TPH (C21-C35 aliphatic)	T206	M105	4	mg/kg	570	1100	720	12	15	18	4300	64	9	(9) <40
TPH (C6-C7 aromatic)	T209	M105	0.100	mg/kg	(9) <0.400	<0.100	<0.100	(2) <0.400	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
TPH (C7-C8 aromatic)	T209	M105	0.100	mg/kg	(9) <0.400	<0.100	<0.100	(2) <0.400	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
TPH (C8-C10 aromatic)	T209	M105	0.100	mg/kg	(19) 23.3	0.120	0.482	(2) <0.400	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
TPH (C10-C12 aromatic)	T206	M105	1	mg/kg	<1	(9) <10	2	<1	<1	<1	(9) <10	<1	<1	(9) <10
TPH (C12-C16 aromatic)	T206	M105	1	mg/kg	20	27	54	25	7	<1	160	<1	<1	(9) <10
TPH (C16-C21 aromatic)	T206	M105	1	mg/kg	100	120	230	19	8	<1	640	1	<1	(9) <10
TPH (C21-C35 aromatic)	T206	M105	1	mg/kg	180	290	270	7	9	(13) <1	2000	11	(13) <1	(9) <10

SAL Reference: 157461
Project Site: Coed Darcy Trial Area 1
Customer Reference: 514216

Soil Analysed as Soil
Total Petroleum Hydrocarbons CWG

SAL Reference					157461 040	157461 041	157461 042	157461 043	157461 044	157461 045
Customer Sample Reference					TA1 38	TA1 39	TA1 40	TA1 41	TA1 41	TA1 42
Bottom Depth					0.7	0.6	0.6	0.5	1.3	0.3
Date Sampled					19-FEB- 2009	20-FEB- 2009	20-FEB- 2009	20-FEB- 2009	20-FEB- 2009	20-FEB- 2009
Top Depth					0.5	0.4	0.4	0.3	1.1	0.1
Type					Clay	Sand	Clay	Sand	Clay	Clay
Determinand	Method	Test Sample	LOD	Units						
Benzene	T209	M105	10	µg/kg	<10	<10	<10	<10	<10	<10
EthylBenzene	T209	M105	10	µg/kg	<10	<10	<10	<10	<10	<10
M/P Xylene	T209	M105	10	µg/kg	<10	<10	<10	<10	<10	<10
Methyl-tert-Butyl Ether	T209	M105	10	µg/kg	<10	<10	<10	<10	<10	<10
O Xylene	T209	M105	10	µg/kg	<10	<10	<10	<10	<10	<10
Toluene	T209	M105	10	µg/kg	(13) <10	(13) <10	(13) <10	(13) <10	(13) <10	(13) <10
TPH (C5-C6 aliphatic)	T209	M105	0.100	mg/kg	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
TPH (C6-C8 aliphatic)	T209	M105	0.100	mg/kg	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
TPH (C8-C10 aliphatic)	T209	M105	0.100	mg/kg	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
TPH (C10-C12 aliphatic)	T206	M105	1	mg/kg	1	<1	16	<1	<1	(9) <10
TPH (C12-C16 aliphatic)	T206	M105	2	mg/kg	12	2	30	5	<2	(9) <20
TPH (C16-C21 aliphatic)	T206	M105	1	mg/kg	20	14	5	10	(13) <1	88
TPH (C21-C35 aliphatic)	T206	M105	4	mg/kg	13	220	110	14	<4	3000
TPH (C6-C7 aromatic)	T209	M105	0.100	mg/kg	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
TPH (C7-C8 aromatic)	T209	M105	0.100	mg/kg	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
TPH (C8-C10 aromatic)	T209	M105	0.100	mg/kg	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
TPH (C10-C12 aromatic)	T206	M105	1	mg/kg	<1	<1	<1	<1	<1	(9) <10
TPH (C12-C16 aromatic)	T206	M105	1	mg/kg	<1	1	(13) <1	<1	<1	(9) <10
TPH (C16-C21 aromatic)	T206	M105	1	mg/kg	(13) <1	<1	<1	1	<1	(9) <10
TPH (C21-C35 aromatic)	T206	M105	1	mg/kg	(13) <1	4	(13) <1	5	<1	30



Customer Reference: 514216

SAL Reference					157461 012	157461 018	157461 020	157461 032	157461 034	157461 038
Customer Sample Reference					TA1 11	TA1 14	TA1 15	TA1 29	TA1 31	TA1 34
Bottom Depth					0.7	1.4	1.8	1.1	0.8	0.9
Date Sampled					18-FEB-2009	18-FEB-2009	18-FEB-2009	19-FEB-2009	19-FEB-2009	19-FEB-2009
Top Depth					0.5	1.2	1.6	0.9	0.6	0.7
Type					Clay	Sand	Topsoil	Clay	Sand	Sand
Determinand	Method	Test Sample	LOD	Units						
1,1,1,2-Tetrachloroethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,1,1-Trichloroethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,1,2,2-Tetrachloroethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,1,2-Trichloroethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,1-Dichloroethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,1-Dichloroethylene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,1-Dichloropropene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,2,3-Trichloropropane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,2,4-Trimethylbenzene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,2-dibromoethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,2-Dichlorobenzene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,2-Dichloroethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,2-Dichloropropane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,3,5-Trimethylbenzene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,3-Dichlorobenzene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,3-Dichloropropane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,4-Dichlorobenzene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
2,2-Dichloropropane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
2-Chlorotoluene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
4-Chlorotoluene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Benzene	T209	M105	10	µg/kg	<10	<10	<10	<10	<10	<10
Bromobenzene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Bromochloromethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Bromodichloromethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Bromoform	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Bromomethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Carbon tetrachloride	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Chlorobenzene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Chlorodibromomethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Chloroethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Chloroform	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Chloromethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Cis-1,2-Dichloroethylene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Cis-1,3-Dichloropropene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Dibromomethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Dichlorodifluoromethane	T209	M105								

Project Site: Coed Darcy Trial Area 1
Customer Reference: 514216

SAL Reference					157461 039	157461 040	157461 041	157461 043	157461 044	157461 045
Customer Sample Reference					TA1 36	TA1 38	TA1 39	TA1 41	TA1 41	TA1 42
Bottom Depth					0.5	0.7	0.6	0.5	1.3	0.3
Date Sampled					19-FEB-2009	19-FEB-2009	20-FEB-2009	20-FEB-2009	20-FEB-2009	20-FEB-2009
Top Depth					0.3	0.5	0.4	0.3	1.1	0.1
Type					Sand	Clay	Sand	Sand	Clay	Clay
Determinand	Method	Test Sample	LOD	Units						
1,1,1,2-Tetrachloroethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,1,1-Trichloroethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,1,2,2-Tetrachloroethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,1,2-Trichloroethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,1-Dichloroethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,1-Dichloroethylene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,1-Dichloropropene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,2,3-Trichloropropane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,2,4-Trimethylbenzene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,2-dibromoethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,2-Dichlorobenzene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,2-Dichloroethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,2-Dichloropropane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,3,5-Trimethylbenzene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,3-Dichlorobenzene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,3-Dichloropropane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
1,4-Dichlorobenzene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
2,2-Dichloropropane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
2-Chlorotoluene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
4-Chlorotoluene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Benzene	T209	M105	10	µg/kg	<10	<10	<10	<10	<10	<10
Bromobenzene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Bromochloromethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Bromodichloromethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Bromoform	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Bromomethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Carbon tetrachloride	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Chlorobenzene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Chlorodibromomethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Chloroethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Chloroform	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Chloromethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Cis-1,2-Dichloroethylene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Cis-1,3-Dichloropropene	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Dibromomethane	T209	M105	50	µg/kg	<50	<50	<50	<50	<50	<50
Dichlorodifluoromethane	T209	M105	5							



Scientific Analysis Laboratories is a
limited company registered in England and
Wales (No 2514788) whose address is at
Hadfield House, Hadfield Street, Manchester M16 9FE

Scientific Analysis Laboratories

Certificate of Analysis

Hadfield House
Hadfield Street
Cornbrook
Manchester
M16 9FE
Tel : 0161 874 2400
Fax : 0161 874 2468

Report Number: 166839-1

Date of Report: 18-Jun-2009

Customer: Atkins
Atkins Limited
Longcross Court
47 Newport Road
Cardiff
CF24 0AD

Customer Contact: Mr Graham Farrer

Customer Job Reference:

Customer Site Reference: Coed Darcy Urban Village

Date Job Recieved at SAL: 01-Jun-2009

Date Analysis Started: 05-Jun-2009

Date Analysis Completed: 18-Jun-2009

The results reported relate to samples received in the laboratory
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
Tests covered by this certificate were conducted in accordance with SAL SOPs



Report checked
and authorised by :
Miss Carrie Hughes
Senior Project Manager

Issued by :

Index to symbols used in 166839-1

Value	Description
AR	As Received
M105	Analysis conducted on an "as received" aliquot. Results are reported on a dry weight basis where moisture content was determined by assisted drying of sample at 105C
M40	Analysis conducted on sample assisted dried at no more than 40C. Results are reported on a dry weight basis.
N.D.	Not Detected
13	Results have been blank corrected.
9	LOD raised due to dilution of sample
19	Due to high levels the analysis was conducted on a diluted sample
157	No obvious asbestos containing materials detected. Customers should be clear that this test does not confirm the absence of asbestos from the sample
U	Analysis is UKAS accredited
M	Analysis is MCERTS accredited
N	Analysis is not accredited

Methods

Value	Description
T209	GC/MS(Head Space)(MCERTS)
T207	GC/MS(MCERTS)
T7	Probe
T162	Grav (1 Dec) (105 C)
T277	Grav (1 Dec) (40 C)
T8	GC/FID
T6	ICP/OES
T161	Visual
T206	GC/FID (MCERTS)

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Asbestos(Screen Only)	T161	AR			N	007,009-013
pH	T7	AR			M	001-013
Total Petroleum Hydrocarbons	T8	M105	1.0	mg/kg	M	001-002,005-009,012-013
Arsenic	T6	M40	2.0	mg/kg	M	001-013
Cadmium	T6	M40	1.0	mg/kg	M	001-013
Chromium	T6	M40	1.0	mg/kg	M	001-013
Copper	T6	M40	1.0	mg/kg	M	001-013
Lead	T6	M40	1.0	mg/kg	M	001-013
Mercury	T6	M40	1.0	mg/kg	M	001-013
Nickel	T6	M40	1.0	mg/kg	M	001-013
Selenium	T6	M40	3.0	mg/kg	M	001-013
Zinc	T6	M40	1.0	mg/kg	M	001-013
Moisture	T277	AR	0.1	%	N	001-013
Moisture @ 105 C	T162	AR	0.1	%	N	001-013
Naphthalene	T207	M105	0.1	mg/kg	M	001-013
Acenaphthylene	T207	M105	0.1	mg/kg	U	001-013
Acenaphthene	T207	M105	0.1	mg/kg	M	001-013
Fluorene	T207	M105	0.1	mg/kg	M	001-013
Phenanthrene	T207	M105	0.1	mg/kg	M	001-013
Anthracene	T207	M105	0.1	mg/kg	U	001-013
Fluoranthene	T207	M105	0.1	mg/kg	M	001-013
Pyrene	T207	M105	0.1	mg/kg	M	001-013
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	M	001-013
Chrysene	T207	M105	0.1	mg/kg	M	001-013
Benzo(b/k)Fluoranthene	T207	M105	0.1	mg/kg	M	001-013
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	M	001-013
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	M	001-013
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	M	001-013
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	M	001-013
PAH(total)	T207	M105	0.1	mg/kg	U	001-013
Benzene	T209	M105	10.0	µg/kg	M	003-005,008,010-011
EthylBenzene	T209	M105	10.0	µg/kg	M	003-005,008,010-011
M/P Xylene	T209	M105	10.0	µg/kg	M	003-005,008,010-011
Methyl tert-Butyl Ether	T209	M105	10.0	µg/kg	M	003-004,010-011
O Xylene	T209	M105	10.0	µg/kg	M	003-005,008,010-011
Toluene	T209	M105	10.0	µg/kg	M	003-005,008,010-011
TPH (C5-C6 aliphatic)	T209	M105	0.1	mg/kg	N	003-004,010-011

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
TPH (C6-C8 aliphatic)	T209	M105	0.1	mg/kg	N	003-004,010-011
TPH (C8-C10 aliphatic)	T209	M105	0.1	mg/kg	N	003-004,010-011
TPH (C10-C12 aliphatic)	T206	M105	1.0	mg/kg	M	003-004,010-011
TPH (C12-C16 aliphatic)	T206	M105	2.0	mg/kg	M	003-004,010-011
TPH (C16-C21 aliphatic)	T206	M105	1.0	mg/kg	M	003-004,010-011
TPH (C21-C35 aliphatic)	T206	M105	4.0	mg/kg	M	003-004,010-011
TPH (C6-C7 aromatic)	T209	M105	0.1	mg/kg	N	003-004,010-011
TPH (C7-C8 aromatic)	T209	M105	0.1	mg/kg	N	003-004,010-011
TPH (C8-C10 aromatic)	T209	M105	0.1	mg/kg	N	003-004,010-011
TPH (C10-C12 aromatic)	T206	M105	1.0	mg/kg	M	003-004,010-011
TPH (C12-C16 aromatic)	T8	M105	1.0	mg/kg	N	003-004,010-011
TPH (C16-C21 aromatic)	T206	M105	1.0	mg/kg	M	003-004,010-011
TPH (C21-C35 aromatic)	T206	M105	1.0	mg/kg	M	003-004,010-011
1,1,1,2-Tetrachloroethane	T209	M105	50.0	µg/kg	M	005,008
1,1,1-Trichloroethane	T209	M105	50.0	µg/kg	M	005,008
1,1,2,2-Tetrachloroethane	T209	M105	50.0	µg/kg	U	005,008
1,1,2-Trichloroethane	T209	M105	50.0	µg/kg	M	005,008
1,1-Dichloroethane	T209	M105	50.0	µg/kg	M	005,008
1,1-Dichloroethylene	T209	M105	50.0	µg/kg	M	005,008
1,1-Dichloropropene	T209	M105	50.0	µg/kg	M	005,008
1,2,3-Trichloropropane	T209	M105	50.0	µg/kg	U	005,008
1,2,4-Trimethylbenzene	T209	M105	50.0	µg/kg	M	005,008
1,2-dibromoethane	T209	M105	50.0	µg/kg	M	005,008
1,2-Dichlorobenzene	T209	M105	50.0	µg/kg	M	005,008
1,2-Dichloroethane	T209	M105	50.0	µg/kg	M	005,008
1,2-Dichloropropane	T209	M105	50.0	µg/kg	M	005,008
1,3,5-Trimethylbenzene	T209	M105	50.0	µg/kg	M	005,008
1,3-Dichlorobenzene	T209	M105	50.0	µg/kg	M	005,008
1,3-Dichloropropane	T209	M105	50.0	µg/kg	M	005,008
1,4-Dichlorobenzene	T209	M105	50.0	µg/kg	M	005,008
2,2-Dichloropropane	T209	M105	50.0	µg/kg	U	005,008
2-Chlorotoluene	T209	M105	50.0	µg/kg	U	005,008
4-Chlorotoluene	T209	M105	50.0	µg/kg	U	005,008
Bromobenzene	T209	M105	50.0	µg/kg	M	005,008
Bromochloromethane	T209	M105	50.0	µg/kg	M	005,008
Bromodichloromethane	T209	M105	50.0	µg/kg	M	005,008
Bromoform	T209	M105	50.0	µg/kg	M	005,008
Bromomethane	T209	M105	50.0	µg/kg	U	005,008
Carbon tetrachloride	T209	M105	50.0	µg/kg	M	005,008
Chlorobenzene	T209	M105	50.0	µg/kg	M	005,008
Chlorodibromomethane	T209	M105	50.0	µg/kg	M	005,008
Chloroethane	T209	M105	50.0	µg/kg	M	005,008
Chloroform	T209	M105	50.0	µg/kg	M	005,008
Chloromethane	T209	M105	50.0	µg/kg	U	005,008
Cis-1,2-Dichloroethylene	T209	M105	50.0	µg/kg	M	005,008
Cis-1,3-Dichloropropene	T209	M105	50.0	µg/kg	M	005,008
Dibromomethane	T209	M105	50.0	µg/kg	M	005,008
Dichlorodifluoromethane	T209	M105	50.0	µg/kg	M	005,008
Dichloromethane	T209	M105	50.0	µg/kg	U	005,008
Isopropyl benzene	T209	M105	50.0	µg/kg	M	005,008
n-Propylbenzene	T209	M105	50.0	µg/kg	M	005,008
p-Isopropyltoluene	T209	M105	50.0	µg/kg	M	005,008
S-Butylbenzene	T209	M105	50.0	µg/kg	M	005,008
Styrene	T209	M105	50.0	µg/kg	U	005,008
T-Butylbenzene	T209	M105	50.0	µg/kg	M	005,008
Tetrachloroethylene	T209	M105	50.0	µg/kg	M	005,008
Trans-1,2-Dichloroethene	T209	M105	50.0	µg/kg	M	005,008
Trans-1,3-Dichloropropene	T209	M105	50.0	µg/kg	M	005,008
Trichloroethylene	T209	M105	50.0	µg/kg	M	005,008
Trichlorofluoromethane	T209	M105	50.0	µg/kg	M	005,008
Vinyl chloride	T209	M105	50.0	µg/kg	M	005,008

SAL Reference					166839 008	166839 009	166839 010	166839 011	166839 012	166839 013
Customer Sample Reference					TA2 06 0.7	TA2 07 0.5	TA2 07 1.8	TA2 08 0.6	TA2 09 0.5	TA2 10 0.5
Depth					0.7	0.5	1.8	0.6	0.5	0.5
Date Sampled					29-MAY-2009	29-MAY-2009	29-MAY-2009	29-MAY-2009	29-MAY-2009	29-MAY-2009
Type					Sand	Sand	Sand	Sand	Topsoil	Topsoil
Determinand	Method	Test Sample	LOD	Units						
Arsenic	T6	M40	2	mg/kg	120	17	16	21	55	14
Cadmium	T6	M40	1	mg/kg	6	<1	<1	<1	2	1
Chromium	T6	M40	1	mg/kg	32	18	18	16	18	22
Copper	T6	M40	1	mg/kg	480	41	34	40	110	55
Lead	T6	M40	1	mg/kg	27000	180	120	160	890	90
Mercury	T6	M40	1	mg/kg	<1	<1	<1	<1	<1	<1
Nickel	T6	M40	1	mg/kg	57	40	43	32	31	46
Selenium	T6	M40	3	mg/kg	<3	<3	<3	<3	<3	<3
Zinc	T6	M40	1	mg/kg	9200	250	200	360	1500	260

SAL Reference					166839 001	166839 002	166839 003	166839 004	166839 005	166839 006	166839 007	166839 008	166839 009	166839 010
Customer Sample Reference					TA2 01 0.6	TA2 01 1.5	TA2 02 1.1	TA2 03 0.6	TA2 03 1.8	TA2 04 0.7	TA2 05 0.4	TA2 06 0.7	TA2 07 0.5	TA2 07 1.8
Depth					0.6	1.5	1.1	0.6	1.8	0.7	0.4	0.7	0.5	1.8
Date Sampled					29-MAY-2009	29-MAY-2009	29-MAY-2009	29-MAY-2009	29-MAY-2009	29-MAY-2009	29-MAY-2009	29-MAY-2009	29-MAY-2009	29-MAY-2009
Type					Sand	Sand	Clay	Sand	Sand	Sand	Sand	Sand	Sand	Sand
Determinand	Method	Test Sample	LOD	Units										
Asbestos(Screen Only)	T161	AR			-	-	-	-	-	-	(157) N.D.	-	(157) N.D.	(157) N.D.
pH	T7	AR			7.7	6.1	7.5	7.2	6.7	8.1	7.5	7.5	8.2	7.4
Total Petroleum Hydrocarbons	T8	M105	1	mg/kg	620	140	-	-	270	180	23	240	9	-

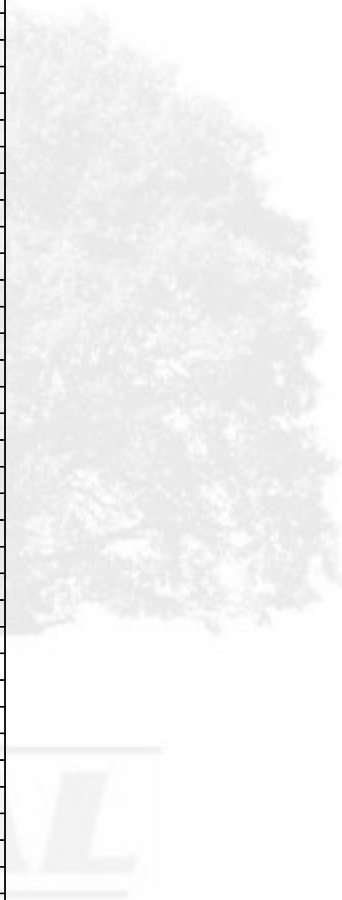
SAL Reference					166839 011	166839 012	166839 013
Customer Sample Reference					TA2 08 0.6	TA2 09 0.5	TA2 10 0.5
Depth					0.6	0.5	0.5
Date Sampled					29-MAY- 2009	29-MAY- 2009	29-MAY- 2009
Type					Sand	Topsoil	Topsoil
Determinand	Method	Test Sample	LOD	Units			
Asbestos(Screen Only)	T161	AR			(157) N.D.	(157) N.D.	(157) N.D.
pH	T7	AR			10.9	10.4	8.4
Total Petroleum Hydrocarbons	T8	M105	1	mg/kg	-	12	88

Soil	Analysed as Soil
Total Petroleum Hydrocarbons CWG	

SAL Reference					166839 003	166839 004	166839 010	166839 011
Customer Sample Reference					TA2 02 1.1	TA2 03 0.6	TA2 07 1.8	TA2 08 0.6
Depth					1.1	0.6	1.8	0.6
Date Sampled					29-MAY-2009	29-MAY-2009	29-MAY-2009	29-MAY-2009
Type					Clay	Sand	Sand	Sand
Determinand	Method	Test Sample	LOD	Units				
Benzene	T209	M105	10	µg/kg	(13) <10	(13,19) <40	(13) <10	(13) <10
EthylBenzene	T209	M105	10	µg/kg	<10	(19) <40	<10	<10
M/P Xylene	T209	M105	10	µg/kg	<10	(19) <40	<10	<10
Methyl tert-Butyl Ether	T209	M105	10	µg/kg	<10	(19) <40	<10	<10
O Xylene	T209	M105	10	µg/kg	<10	(19) <40	<10	<10
Toluene	T209	M105	10	µg/kg	<10	(19) <40	<10	<10
TPH (C5-C6 aliphatic)	T209	M105	0.100	mg/kg	<0.100	(19,9) <0.400	<0.100	<0.100
TPH (C6-C8 aliphatic)	T209	M105	0.100	mg/kg	<0.100	(19) 0.965	0.126	<0.100
TPH (C8-C10 aliphatic)	T209	M105	0.100	mg/kg	0.169	(19) 25.7	6.45	<0.100
TPH (C10-C12 aliphatic)	T206	M105	1	mg/kg	<1	2	<1	<1
TPH (C12-C16 aliphatic)	T206	M105	2	mg/kg	6	22	5	<2
TPH (C16-C21 aliphatic)	T206	M105	1	mg/kg	12	46	11	<1
TPH (C21-C35 aliphatic)	T206	M105	4	mg/kg	24	70	12	<4
TPH (C6-C7 aromatic)	T209	M105	0.100	mg/kg	<0.100	(9,19) <0.400	<0.100	<0.100
TPH (C7-C8 aromatic)	T209	M105	0.100	mg/kg	<0.100	(19,9) <0.400	<0.100	<0.100
TPH (C8-C10 aromatic)	T209	M105	0.100	mg/kg	<0.100	(9,19) <0.400	<0.100	<0.100
TPH (C10-C12 aromatic)	T206	M105	1	mg/kg	<1	31	2	<1
TPH (C12-C16 aromatic)	T8	M105	1	mg/kg	3	140	25	<1
TPH (C16-C21 aromatic)	T206	M105	1	mg/kg	7	140	33	<1
TPH (C21-C35 aromatic)	T206	M105	1	mg/kg	22	120	17	<1

Project Site: Coed Darcy Urban Village
Customer Reference:

SAL Reference	166839 005	166839 008
Customer Sample Reference	TA2 03 1.8	TA2 06 0.7
Depth	1.8	0.7
Date Sampled	29-MAY-2009	29-MAY-2009
Type	Sand	Sand



Appendix G

See Attached CD

Appendix H

See Attached CD

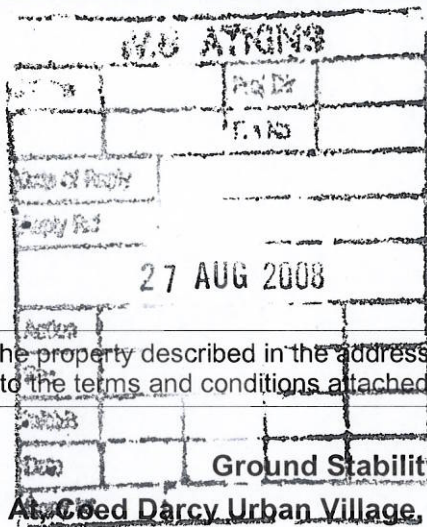
Appendix I



Issued by:

Ground Stability Report Office, 200 LICHFIELD LANE, BERRY HILL, MANSFIELD, NOTTINGHAMSHIRE, NG18 4RG
Website: www.coalminingreports.co.uk - Phone: 0845 762 6848 - DX 716176 MANSFIELD 5

ATKINS,
THE AXIS 10,
HOLLIDAY STREET,
BIRMINGHAM,
WEST MIDLANDS,
B1 1TF



Person dealing with this matter: **Simon Leeming**
Our reference: **00056014-08**
Your reference:
Electronic Ref:
RRUID: 007.00023581370001
Date of your enquiry: **15 August 2008**
Date we received your enquiry: **15 August 2008**
Date of issue:

This report is for the property described in the address below and the attached plan. The report is issued subject to the terms and conditions attached, which you are strongly advised to read.

Ground Stability Report Site At: Cled Darcy Urban Village, Swansea, West Glamorgan

This report is based on and limited to the records in the possession of the Coal Authority; the records and geological interpretation of The British Geological Survey (BGS) and the records of the Cheshire Brine Subsidence Compensation Board, at the time the search is answered.

Coal mining	Yes
Shrinkable clay	Yes
Running sand	Yes
Compressible deposits	Yes
Collapsible deposits	No
Landslide potential	Yes
Soluble rocks	No
Brine extraction	No

Information from the Coal Authority

Underground Coal Mining

Past

The property is in the likely zone of influence from workings in 4 seams of coal at shallow to 180m depth, and last worked in 1914.

Present

The property is not in the likely zone of influence of any present underground coal workings.

Future

The property is not in an area for which the Coal Authority is determining whether to grant a licence to remove coal using underground methods.

The property is not in an area for which a licence has been granted to remove coal using underground methods.

The property is not in an area that is likely to be affected at the surface from any planned future workings.

However reserves of coal exist in the local area which could be worked at some time in the future.

No notice of the risk of the land being affected by subsidence has been given under section 46 of the Coal Mining Subsidence Act 1991.

Mine entries

Within, or within 20 metres of, the boundary of the property there are 25 mine entries, the approximate positions of which are shown on the attached plan.

Coal Authority records disclose the following information:

271195-007. This shaft was filled and capped in February 1973 .

272195-004. No treatment details.

272196-007. Shaft plugged with 3m deep concrete mass and capped with reinforced concrete cap 6.2m x 4.2m x 0.5m deep. Underside of plug 3.75m below ground level and foundation depth of cap is 0.75m .Work carried out in 1995 by IMCL for the Coal Authority. .

271195-008. No treatment details.

272195-006. No treatment details.

272196-006. This shaft was plugged and capped in May/June 1995. The dimensions of cap 6.2m x 4.2m x 0.5m .

271194-002. No treatment details.

272195-001. No treatment details.

271195-004. No treatment details.

270195-001. No treatment details.

271195-006. No treatment details.

270195-003. No treatment details.

271195-005. A 6.4m reinforced concrete cap is placed over this filled mine shaft at rockhead. A stainless steel vent pipe has been incorporated through the backfill above the cap. A marker post marks the position of the shaft at the surface. These works were undertaken by Dean and Dyball Constuction Ltd to a design provided by Quadrant Consulting Engineers in accordance with CIRIA gudelines .

271194-005. No treatment details.

270193-009. No treatment details.

272195-003. No treatment details.

272195-005. No treatment details.

272196-001. This shaft was filled to an unknown specification in June 1972. .

271194-006. No treatment details.

270195-002. No treatment details.

270193-010. No treatment details.

270194-001. No treatment details.

271194-003. No treatment details.

271195-009. No treatment details.

271194-004. No treatment details.

Records may be incomplete. Consequently, there may exist in the local area mine entries of which the Coal Authority has no knowledge.

Coal-mining geology

At the surface, there are no known faults or other lines of weakness due to coal mining that have made the property unstable.

Opencast Coal Mining

Past

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

Present

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

Future

The property is not within 800 metres of the boundary of an opencast site for which the Coal Authority is determining whether to grant a licence to remove coal by opencast methods.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

Coal-mining subsidence

The Coal Authority has not received a damage notice or claim for the property since 1 January 1984. There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority has not received a request to carry out preventive work before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas

There is no record of a mine gas emission requiring action by the Coal Authority within the boundary of the property.

Hazards related to coal mining

The property has been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

Withdrawal of Support

The property is not in an area for which a notice of entitlement to withdraw support has been published.

The property is not in an area for which a notice has been given under section 41 of the Coal Industry Act 1994, revoking the entitlement to withdraw support.

Working Facilities Orders

The property is not in an area for which an Order has been made under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

Payments to Owners of Former Copyhold Land

The property is not in an area for which a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Comments on Coal Authority information

In view of the mining circumstances a prudent developer would seek appropriate technical advice before any works are undertaken.

Therefore if development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. Developers should be aware that the investigation of coal seams/ former mines of coal may have the potential to generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.

Information from the British Geological Survey on potential for natural ground movement

Shrinkable Clay

The property is in an area underlain by clay. Clay can swell or shrink if the moisture content changes.

However, the clay deposits in this area are considered to be mainly of "low plasticity". This means it is unlikely that they will cause ground movement.

Running sand

The property is in an area underlain by sand. Some sands, if voids are present, may flow if they come into contact with water.

The nature of the sand deposits in this area means that ground movement could occur.

Deposits which could compress

The property is in an area underlain by natural compressible deposits. When this material is overloaded, or dries out, it can become unstable causing ground movement.

Because of these compressible deposits, ground movement could occur.

Deposits which could collapse

The property is not in an area underlain by deposits which could collapse and cause ground movement.

Natural landslide activity

The property is in an area where the local geology and steepness of slope could combine to create the likelihood of landslide activity.

Because of the nature of the geology in this area landslide activity could occur.

Soluble rocks

The property is not in an area underlain by soluble rocks.

Comments on the British Geological Survey information

These features should not necessarily give cause for concern.

Whether or not a property is affected by ground movement can depend on a number of factors such as its age, type of construction, and on its surroundings and such matters as drainage and nearby trees.

Since 1992 buildings should have been designed and constructed according to buildings regulations to ensure natural ground movement will not cause damage to a building.

However, you should consider the possible consequences before you:

- carry out any building or excavation work;
- alter the ground surface or drainage of surface or ground water; or
- plant or remove large shrubs or trees

Ground movement can cause uneven damage or subsidence to a property.

Developers should always carry out an appropriate risk assessment before starting any work on, or around, a property.

If you own the property and it is damaged by ground movement: You should contact your insurance company and anyone else who has an interest in the property, for example, the mortgage lender.

If you are considering buying the property and BGS has identified that ground movement could occur you should tell your professional advisers.

Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

Additional remarks

This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority, British Geological Survey and the Cheshire Brine Subsidence Compensation Board's Terms and Conditions 2006. These are available to view at www.groundstability.com or by contacting the Coal Authority's customer service team on 0845 762 6848 or by email to groundstability@coal.gov.uk. These terms and conditions apply regardless of the method used to order and receive reports. The report is compliant with Home Information Pack and Purchaser Information Pack requirements.

The Coal Authority and British Geological Survey own the copyright in this report. The information we have used to write this report is protected by our database right. All rights are reserved and unauthorised use is prohibited. If we provide a ground stability report for you, this does not mean that the copyright and any other rights will pass to you. However, you can use the report for your own purposes.

Issued by:	The Coal Authority, 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG
Date:	15 Aug 2008
Ground stability report at:	Site At, Coed Darcy Urban Village, Swansea, West Glamorgan
Reference number:	00056014-08
Cost:	£1,974.47
Plus VAT:	£345.53
Total received:	£2,320.00
VAT registration number:	598 5850 68

TERMS

DEFINITIONS

In these Terms the following words have the following meanings:

"BGS" means the British Geological Survey of Kingsley Dunham Centre, Keyworth, Nottingham, NG12 5GG, a component organisation of the Natural Environment Research Council;

"CA" means the Coal Authority of 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG;

"Cheshire Brine" means the Cheshire Brine Subsidence Compensation Board of Sir Henry Doulton House, Forge Lane, Etruria, Stoke on Trent, ST1 5BD;

"Customer" means the person, firm or company placing the Order, either on its own behalf as User or as agent for a User;

"Guidance" means the relevant current version of the Guidance Notes and User Guide for the Report, available on request and displayed on the Website;

"Order" means any request for a Report made by the Customer;

"Property" means the address or location specified by the Customer in the Order;

"Report" means a ground stability report (in printed, electronic or any other form) which combines information on coal mining, brine subsidence claims and natural ground movement which has been prepared by CA in respect of the Property using data from, amongst others, the Suppliers and to which these Terms apply;

"Supplier(s)" means all or any of CA, BGS and/or Cheshire Brine;

"these Terms" means these terms and conditions, incorporating the Guidance (if and to the extent of any conflict between these Terms and the Guidance, the provisions of these Terms will prevail);

"User(s)" means the person or persons so described in Clause 15; and

"Website" means CA's website for the provision of the Reports service (currently www.coalminingreports.gov.uk).

TERMS

1. These Terms apply to the provision of Reports by CA to the Customer and/or the User.
2. The Customer and the User agree that the placing of an Order indicates their acceptance of these Terms.
3. These Terms shall apply to the exclusion of all other terms and conditions.
4. CA reserves the right to change these Terms from time to time with immediate effect and without prior notice. Any changes to these Terms will be displayed on the Website. Placement of Orders after any such variation will be deemed to be an acceptance of these Terms as amended in respect of Reports which are provided in response to Orders placed after the variation is made.
5. Where the Customer is acting as an agent for a User, the Customer will provide a copy of the Report and these Terms to the User.

LIMITATIONS OF THE REPORT

General

6. The Report is prepared with due skill and care, but has a number of limitations which are set out in these Terms which the Customer and the User acknowledge and accept when relying on it.

Sources of Information

7. The Report has been prepared by CA using information held by CA, together with information supplied to it by BGS and Cheshire Brine. The Report is based on, and is limited to:
 - a) the specific features identified in the Report, as more particularly described in the Guidance; and

b) each Supplier's interpretation of the records it holds relating to the particular features for which the Report states that the Supplier is responsible (and, in the case of information from BGS and Cheshire Brine, as provided to CA) at the time the Report is prepared.

The Customer and the User therefore acknowledge and agree that the records used to prepare the Report do not represent an exhaustive or comprehensive list of all records that may exist or may be available for the Property (see further Clause 8). The Customer and the User also acknowledge that no physical inspection of the Property has or will be carried out in the preparation of the Report.

8. Without prejudice to the generality of Clause 7:

a) information from CA is based on records in its possession relating to coal mining activity. There may be information held by others on historical coal mining, and information on other types mining, which is not searched as part of the Report;

b) information from BGS relates solely to the following six natural ground stability hazards: shrinkable clay; running sand; compressible deposits; collapsible deposits; landslide activity; and soluble rocks. It does not cover any other geological hazards, or man-made hazards (such as contaminated land). BGS may hold data on other geological hazards and features that may affect the Property which are not searched as part of the Report and consequently the Report should not be taken as a guarantee that there are no other geological hazards or other issues affecting the Property; and

c) information from BGS is prepared using the BGS GeoSure database which is based on 1:10,000 scale geological mapping reduced to 1:50,000 scale. The Customer and the User therefore acknowledge that BGS may be able to provide a more specific and detailed interpretation relating to the geological conditions and ground stability at the Property than that which is included in the Report. A more detailed interpretation is available via the BGS GeoReports service on BGS's website www.bgs.ac.uk.

9. The information from the Suppliers may be derived from records from a number of disparate sources which vary in age, quantity and quality. Such records may include material donated to the Suppliers by third parties, which may not have been subject to any verification or other quality control process.

10. Raw data used to prepare the Reports may have been transcribed from analogue to digital format, or may have been acquired by means of automated measuring techniques. Although such processes are subjected, where possible, to quality control to ensure reliability, some raw data may have been processed without human intervention and may in consequence contain undetected errors.

11. The records available to the Suppliers are constantly being updated. The Suppliers cannot be responsible to the Customer or Users for any changes in the information on which the Report is based which occur after the date on which the Report is prepared. Where this Report is for a residential property, insurance is included to cover loss in property value caused and arising from these circumstances. The Report includes a policy and key facts summary which outlines the significant features, benefits and limitations of the cover provided. The full terms, conditions and exclusions are shown in the policy document.

Maps

12. The Customer and the User must take all reasonable steps to check that the details in the Order are correct and that the Report provided by CA has been prepared for the correct location and property type, and that the boundaries of the Property as shown in the Report's plan correspond with those of the Property. Any discrepancies between the Order and the Report must be notified to the CA within 28 days after the issue date of the Report and CA will, in the case of error by CA, issue a revised Report free of charge; otherwise a new Report should be ordered with payment of the appropriate fee.

13. The Property has been located using Ordnance Survey ("OS") mapping. The Suppliers do not warrant that the OS information is complete or accurate and accept no liability for the plotted position of the Property as shown on OS maps. Further, the relative position between surface features and coal mining and other geological features may differ between OS maps and the Suppliers' maps used to prepare the Report, depending upon when the Suppliers' maps were prepared.

14. The plan or plans accompanying the Report must not be enlarged otherwise the accuracy will be affected.

RELIANCE ON THE REPORT

Who may rely on the Report

15. Only the following persons ("Users") may rely on the Report:

- a) the owner of the Property at the time the Report is prepared;
- b) any purchaser of the whole of the Property from the owner described in a above; and
- c) any person who provides funding to the persons in a or b above which is secured on the whole of the Property.

Such reliance will be subject to the provisions of Clauses 17 and 24 to 28 (inclusive).

Extent of Reliance

16. The Report has been prepared for use by the Users only and the Report should not be relied upon by any other third party.

17. Customers or Users may not act in reliance upon the Report (either by purchasing the Property, providing funding secured on the Property or carrying out any works on or affecting the Property) more than ninety (90) days after its date of issue.

18. The Report gives an indication of whether ground movement could occur at the Property. This does not necessarily mean that the Property is or will be affected by ground instability. Such an assessment can only be made by inspection of the Property by a qualified professional, such as a surveyor or engineer. The Report DOES NOT therefore:

- a) include any information or warranty relating to the actual state, or the structural or other condition, of the Property;
- b) determine the saleability or value, or the safety, of the Property;
- c) indicate the suitability of the Property for any particular purpose (including, without limitation, its suitability for development (within the meaning of section 55 of the Town and Country Planning Act 1990 as amended) or any building, excavation or landscaping work); or
- d) act as a substitute for any physical inspection, specialist interpretations and/or professional advice.

19. No representations, warranties or terms (whether express or implied by statute, common law, custom, trade usage, course of dealing or otherwise) are given in relation to the Report unless they are expressly set out in these Terms, save to the extent that such terms cannot be excluded by law.

USE OF THE REPORT

20. The Customer and the User acknowledge that the Report is confidential and that it is intended for the purposes of the User only. Accordingly the Customer and the User agree that they are permitted to use and copy the Report for these purposes only.

21. The Customer and the User (or any person who is provided with a copy of the Report) will not:

- a) remove, obliterate or alter any trade mark or any copyright or other proprietary notice which is contained in the Report;
- b) reformat or otherwise change, add to or enhance the Report, or combine it with or incorporate it into any other information, data or materials; or
- c) create any product which is derived directly or indirectly from the data contained in the Report; or
- d) resell the Report (other than in the case of a bona fide legal adviser recharging the cost of the Report as a disbursement) unless this has been specifically authorised in writing by CA.

22. The copyright and all other intellectual property rights in the Report will remain the property of the Suppliers or other third parties (as appropriate). Neither the Customer nor the User will acquire any rights in respect of the Report other than as expressly provided in these Terms.

EVENTS BEYOND THE SUPPLIERS' CONTROL

23. A Supplier will not be liable to the Customer or the User for any delay or failure in performance of its obligations which result from circumstances beyond its reasonable control (including, without limitation, fire, explosion, flood, tempest, unusually adverse weather conditions, war, hostilities, riot, acts of terrorism, failure or shortage of power supplies, telecommunications or processing failure or computer malfunction) or the acts or omissions of any person for which a Supplier is not legally responsible.

LIABILITY

24. The Report has been prepared for the Property on the basis of information on the Property's location and type provided by the Customer and/or the User, and consequently the Suppliers exclude all liability which may arise from any errors or omissions in the information so provided or from any failure to check for discrepancies pursuant to Clause 12.

25. The Report has been prepared specifically for the Property, and on the basis of the property type specified in the Order. Under no circumstances will the Suppliers be liable if a Report is relied on for any other property, or if a Report on a residential property is used for a non-residential or commercial property or for the development of the Property, and vice versa.

26. Except in the circumstances described in Clause 28 the total liability of the Suppliers to the Customer and the User arising from an error in the Report caused by negligence, breach of contract or in any other way will be limited to:

- a) the reasonable costs of carrying out necessary remedial work on the Property reasonably promptly; or
- b) the difference between the true market value of the Property and the market value of the Property on the basis of the Report at the time of reliance on the Report in accordance with these Terms.

27. Except in the circumstances described in Clause 28 or to the extent that a Supplier is found to be liable for the losses described in Clause 26 (a) or (b) arising from an error in the Report, the Supplier will not be liable to the Customer or the User for: loss of business, goodwill, profits or savings, loss of use or opportunity, lost or wasted staff time or for any indirect or consequential loss (whether arising from negligence, breach of contract or in any other way) even if the Customer or User was advised of or knew of the likelihood of that loss or type of loss arising.

28. Nothing in these Terms excludes or limits the liability of the Suppliers for death or personal injury caused by their negligence, or for fraud.

GENERAL

29. The headings in these Terms are for ease of reference only and do not affect their interpretation or construction.

30. Use of the singular includes the plural and vice versa, and use of any gender includes the other genders.

31. The benefit of these Terms cannot be assigned or transferred by the Customer or the User without the Suppliers' prior written consent. The Suppliers may assign any or all of their rights and obligations under these Terms without prior notice.

32. These Terms (together with the Order and the Guidance) represent the entire agreement relating to the supply of the Report and the relationship which that supply creates between the Suppliers and Customers and Users. No prior statement, representation or arrangement of any nature (whether written or oral) will add to, vary or waive terms of this agreement and the Customer and the User acknowledge that they have not relied on any

statement or representation made by or on behalf of CA or any other Supplier in agreeing to enter into this agreement. Nothing in this Clause 32 will operate to limit or exclude liability for fraud.

33. The illegality or invalidity of any part of these Terms will not affect the legality or validity of the remainder of these Terms.

34. Except to the extent that these Terms confer benefits on the Suppliers and the Users, no third party is entitled to the benefit of these Terms under the Contracts (Rights of Third Parties) Act 1999.

35. These Terms are governed by English law. The English courts (where the Property is situated in England or Wales) and the Scottish courts (where the Property is situated in Scotland) have exclusive jurisdiction to deal with any dispute which may arise out of or in connection with them.

**THESE TERMS ARE AVAILABLE IN LARGER PRINT FOR THOSE WITH IMPAIRED VISION OR AT
WWW.COAL.GOV.UK**

This page is intentionally blank

Appendix J

Subject: Coed Darcy Urban Village_
Intrusive Investigation of Recorded Mine Entries

Reference: 5041216-REM-TN-000458

Revision: Draft

Author: Michelle Lee

Checker: Howel Morris

Issued to: Lee Owen (lee.owen@prosurv.co.uk)
Dan Smith (Daniel.Smith@prosurv.co.uk)
Neil Williams (neil.williams@stmodwen.co.uk)

Reviewer: Mike Poland

Date: November 2010

Authoriser: Mike Poland

Background

A Ground Stability report for the former refinery (ref.00056014-08) indicates that the site is in the likely zone of influence from workings in 4 seams of coal at shallow to 180m depth, and last worked in 1914.

A total of 25 mine entries were highlighted within, or within 20 metres of, the boundary of the former refinery. Two of the recorded entries have been shown to lie within the vicinity of the 'first 300' development plot. The exact location of these two features is, therefore, currently under assessment. The following document has been prepared in order to provide a summary of information to enable a provisional sum for proposed intrusive investigation to be determined.

Recorded Ground Conditions and Geophysical Investigations

Previous investigations indicate ground conditions within the vicinity of a former shaft (refer to Drawing 5041216-REM-DWG-000685) to comprise a loose brown silty sand containing gravel, cobbles and boulders overlying sandstone bedrock at depths of shallow up to 3.1m bgl. Copies of relevant exploratory hole records are attached for information.

These ground conditions have been confirmed by Atkins during a preliminary trenching exercise at the recorded location of the shaft. Investigations within the vicinity of the recorded adit are restricted by the presence of steep slopes and an existing road. A geophysical survey has recently been instructed in order to try and identify the potential location of these features for further intrusive investigation. The following approach assumes that the geophysical survey works have been completed and that anomalies have been located within the vicinity of the two recorded features.

Proposed Further Investigation

On completion of the proposed geophysical survey, it is anticipated that further intrusive investigation will be undertaken at the location of any identified anomalies. A preliminary scope of works, based on the information available, to date is outlined below.

All relevant Coal Authority Permissions shall be obtained by Atkins on behalf of SMD.

Recorded Mineshaft

A single rotary borehole shall be drilled vertically at the centre of the recorded anomaly. Where bedrock is encountered at shallow depth, the depth to solid bedrock shall be proven to 1m below rockhead and the borehole terminated.

Where bedrock is not encountered, the borehole shall be continued until solid strata is proven for a depth of 2m below the base of the shaft. The nature of any encountered fill material shall be accurately recorded, based on any arisings. A provisional depth of 30m should be allowed for at this location.

Once the location and depth of the shaft has been confirmed, the diameter of the shaft shall be identified by four further rotary boreholes. These should be drilled at a distance of 1m to the north, south, east and west of the recorded shaft location, as directed by the site engineer. Where fill materials are encountered, a

second set of boreholes may be required at a distance of 2m from the central borehole. A provisional depth of up to 10m should be allowed for at these locations.

Due to the presence of loose superficial soils and the potential for loose fill materials within the shaft, a provision for some form of temporary casing should be allowed for. This should be left in place on completion for use during any subsequent shaft treatment (see later request for provisional sum for shaft treatment).

Adit

Based on the information available, it is anticipated that the adit runs perpendicular to the existing road and into the existing south facing slope.

The exact location, height and diameter of the adit and the nature of any fill materials within the adit shall be proven by two rows of rotary boreholes through the existing road and perpendicular to the recorded adit.

Each row shall comprise four boreholes, two of which shall be located outside of the adit. A provisional depth of 10m should be assumed for each of these boreholes.

Health & Safety Precautions

In order to ensure safety, all drilling within the vicinity of the shaft shall be carried out from a suitable platform.

Drilling rigs shall be fitted with gas monitors, which shall be used to monitor for hazardous soils gases throughout the works. All monitoring data shall be recorded on the relevant exploratory hole logs for each location.

Records

Daily drilling records shall be provided for each hole and contain the following information;

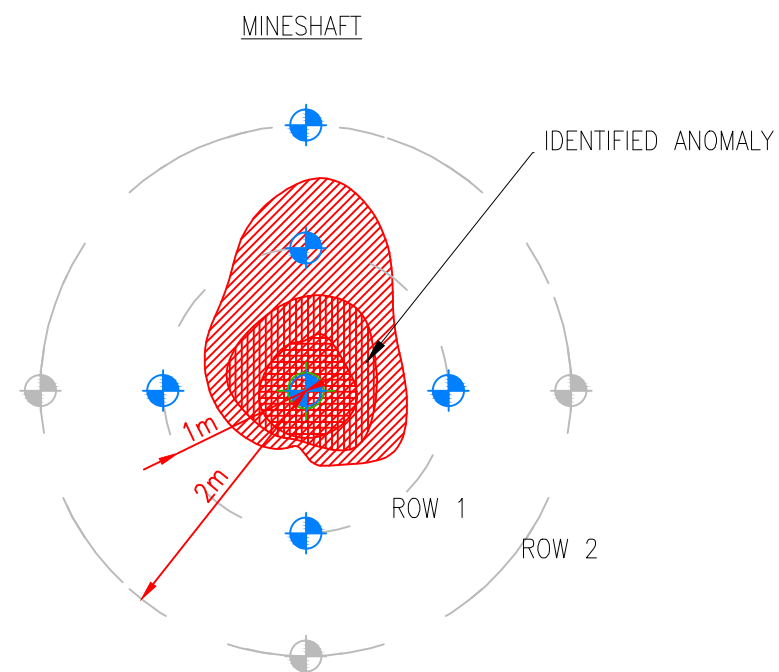
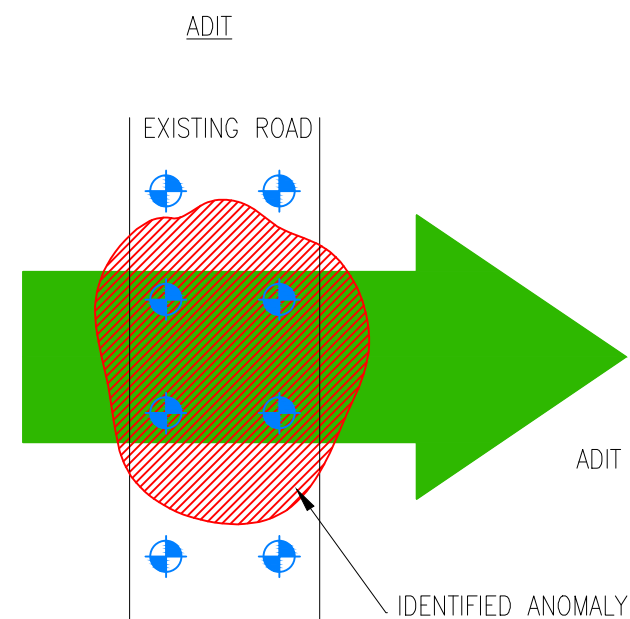
- Job title and location
- Hole reference number
- Date
- Contractor's name
- Plant in use, crew members and hours worked
- Method of boring or drilling, flushing medium and type of drill bit
- Type, diameter and depth of casing
- Diameter and depth of hole at the beginning and end of each working day or shift
- Loss of any flushing medium during drilling
- Standing time, with reason, or time lost overcoming obstructions
- Daily and cumulative length drilled
- Depth to each major change of stratum
- Description, with identification, of the stratum and whether it is intact or broken
- Each depth at which groundwater is encountered (if apparent), the depth to which it rose and any steps taken to seal the flow
- Details of any voids or suspected workings
- Details of any emissions of gas, water etc
- Depth of completed borehole

Shaft Treatment

A provisional sum for the treatment of the recorded shaft shall be provided based upon an anticipated diameter of <2.5m and estimated depth of up to 30m bgl. The proposed costs shall include all necessary mobilisations and materials,, allowing for a grout mix of 10 parts pulverised fuel ash (PFA) to 1 part Ordinary Portland Cement (OPC). Costs for appropriate testing shall also be included, in accordance with published guidance.

A total of three treatment boreholes shall be allowed for.

Exact details for the treatment of the shaft will be confirmed following the intrusive investigation and will be outlined in a specification. Subject to the scope of the proposed works, it may be possible to combine these works with the intrusive investigation, however, a provisional sum for a second mobilisation should also be allowed for should the timescales preclude the carrying out of works in a single operation.



- Key
- Historical trial pits
 - Rotary boreholes
 - Recorded Mine Entry
 - Recorded Mine Adit

Note
Information taken from Coal Authority/BGS
Ground Stability Report ref. 00056018-08
date 15th August 2008

REVISIONS		Drawn By	Checked By	Date
PURPOSE OF ISSUE		Rev.	Authorised for issue	Date
Atkins Limited Telford Office Cornerstone House Stafford Park 13 Telford TF3 3AZ Birmingham Office The Axis, 10 Holliday Street Birmingham West Midlands B1 1TF Tel 01952 201234 Fax 01952 200981 Tel 0121 483 5000 Fax 0121 483 5252 © THIS DRAWING IS NOT TO BE SCALED				
CLIENT				
ST.MODWEN				
PROJECT				
COED DARCY URBAN VILLAGE				
DRAWING TITLE				
INTRUSIVE INVESTIGATION OF RECORDED MINE ENTRIES				
SCALES	DRAWN	CHECKED	CO-ORD CHECK	
1:2000	RE	ML		
	DATE	DATE	DATE	
	03.11.11	03.11.11		
DRAWING NO		SHEET	PLOT DATE	
5041216-OSW-DWG-807		A3	01.12.10	
		REV		
		-		

Technical Note 494

Subject: Coed Darcy Urban Village
Investigation of recorded mine entries on upper terrace

Reference:	5041216-REM-TN-000494	Revision:	DRAFT
Author:	Michelle Lee	Checker:	Michael Poland
Issued to:	Neil Williams (SMD) Paul Dunning/Dan Smith/Lee Owen (Prosurv)	Reviewer:	Michael Poland
Date:	6 th January 2011	Authoriser:	Michael Poland

Background:

This Technical Note has been prepared as an addendum to 5041216_OSW_TN_445 to provide a summary of the findings of recent geophysical survey works, along with recommendations for further investigative works.

The findings of the geophysical survey works, as undertaken between 7th and 8th December 2010, are reported in Bentham Geoconsulting Ltd report ref BGC372, December 2010.

Summary of report:

Based upon survey works within the vicinity of the recorded shaft, the report identifies five anomalies, as shown on figure 5 attached.

Of these, the report suggests that anomalies A and B should be prioritised due to their proximity to the recorded shaft location. The report also recommends that further investigation be undertaken relating to the remaining mass concrete within the base of the former cooling towers due to concentrations of magnetic and conductive anomalies in this area. The report suggests, however, that such anomalies could be due to the presence of existing culverts etc at this location. The location of all anomalies and relevant co-ordinates for each location are presented on Figure 5 attached.

Within the vicinity of the recorded adit, the report also identifies a number of anomalies. The report suggests the 'priority target' to lie between eastings 271056 and 271058 and represented by an 'extensive low' in magnetic, conductivity and resistivity data, as would be expected from an infilled adit at a depth of around 3m bgl.

Two 'secondary targets are also highlighted within the report, as presented on Figure 5 attached.

Recommendations for further works

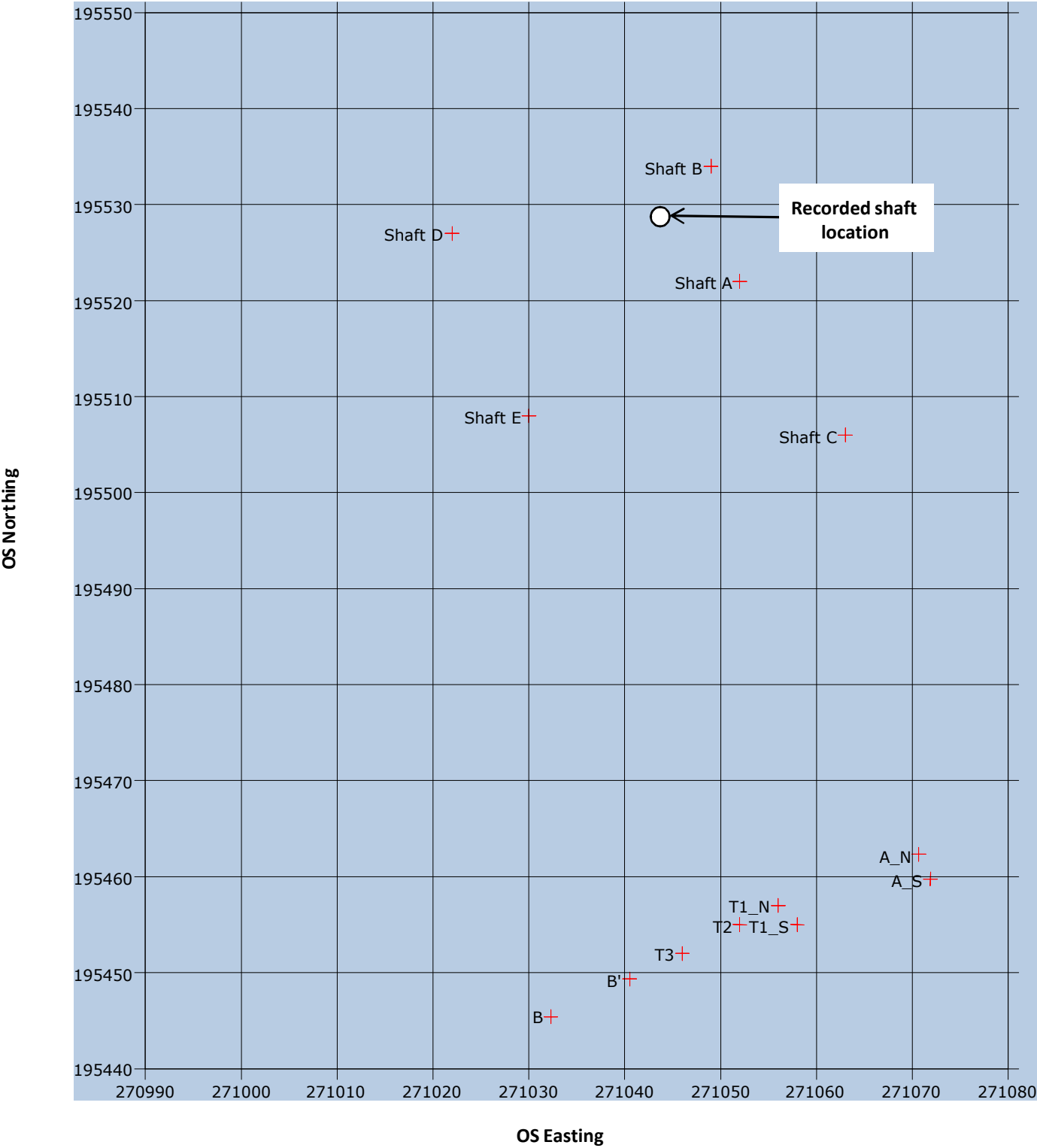
Based on the shallow depth of rockhead within the vicinity of the recorded shaft and the suggested depth of the anomaly within the vicinity of the recorded adit, it is recommended that the next phase of investigative works comprise a series of machine excavated pits and trenches at the locations of each of the recorded anomalies in order to confirm the nature of each feature and to confirm the exact location of the shaft/adit for subsequent rotary investigation. The pitting/trenching works should initially focus on the priority locations, identified within the report.

For ease of reference, it is recommended that the locations identified on the attached Figure 5 are 'pegged out' on site. Due to the location of the recorded adit, it is anticipated that excavations will need to be undertaken through the existing road. As this road is no longer in use, no allowance for the reinstatement of the existing hard surface at this location has been made at the time of writing.

In line with the aforementioned scope of works, the following actions are recommended:

- Atkins to produce plan showing anomaly locations on current Masterplan.
- Atkins to obtain Coal Authority Permission (to include subsequent rotary works)

- Atkins to liaise with Hawk to ensure locations marked out on site.
- On receipt of permission, Atkins to liaise with Hawk over the availability of a suitable machine.



Key:

SHAFT TARGETS	
Shaft A	OS 271052 195522
Shaft B	OS 271049 195534
Shaft C	OS 271063 195506
Shaft D	OS 271022 195527
Shaft E	OS 271030 195508

ADIT TARGETS

Targets indicated as North and South sides of road as N and S respectively.

Primary target

T1N	OS 271056 195457
T1S	OS 271058 195455

Secondary target

T2	OS 271052 195455
----	------------------

Tertiary target

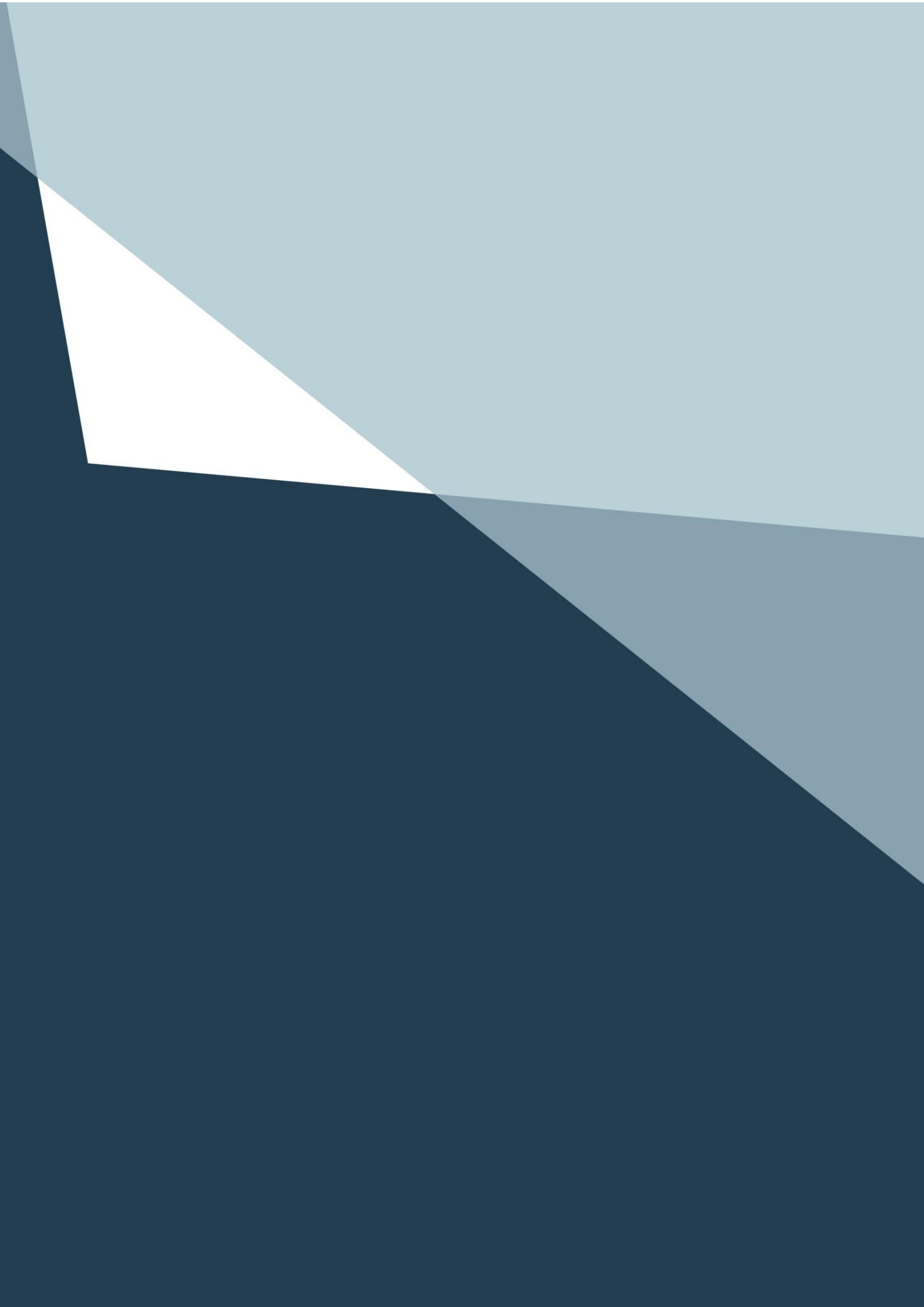
T3	OS 271046 195452
----	------------------

Other targets

A_N	OS 271071 195462
A_S	OS 271072 195460

Area between:-

B	OS 271032 195445
and	
B'	OS 271041 195449





St. Modwen Developments Ltd

Coed Darcy

Geo-Environmental Assessment Report

Temporary Collection Chamber

(Monitor Phase 20)

April 2012

Coed Darcy

Geo-Environmental Assessment Report

Temporary Collection Chamber

(Monitor Phase 20)

April 2012

Notice

This report was produced by Atkins Limited for St. Modwen Developments Limited (SMD) for the specific purpose of Coed Darcy.

This report may not be used by any person other than SMD without their express permission. In any event, Atkins accepts no liability for any costs, liabilities or losses arising as a result of the use of or reliance upon the contents of this report by any person other than SMD

Atkins Limited

Document History

JOB NUMBER: 5092635.262			DOCUMENT REF: 5041216-REM-RPT-783			
0	Draft	MB	ML	MP	MP	April 2012
Revision	Purpose Description	Originated	Checked	Reviewed	Authorised	Date

Plan Design Enable

Contents

Section	Page
Glossary of Terms	2
1. Introduction	3
1.1 Client Brief & Scope of Works	3
1.2 Limitations	4
1.3 Sources of Information	4
2. Review of Available Information	6
2.1 General	6
2.2 The Site	6
3. Overview of Key Issues	9
4. Scope of Remedial Works	10

Drawings

Appendices

- Appendix A – Photographs
- Appendix B – Exploratory hole logs
- Appendix C – Adopted thresholds
- Appendix D – Laboratory certificates

Glossary of Terms

Term	Meaning / Definition
CSM	Conceptual Site Model
RBSL	Risk Based Screening Level
TPH	Total Petroleum Hydrocarbons
PAH	Polyaromatic Hydrocarbons
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
FFL	Finished Floor Level*
ACM	Asbestos Containing Material
VO	Visual/Olfactory Observations
BGL	Below Ground Level

1. Introduction

1.1 Client Brief & Scope of Works

Atkins Limited has been commissioned by St. Modwen Developments Ltd to provide consultancy advice with regard to the redevelopment of the former Llandarcy Oil Refinery. The proposed development is referred to as Coed Darcy.

The purpose of this report is to provide a summary of available information with regard to the area of a proposed collection chamber for foul water and the associated pipe route shown on Drawing 5041216-ENG-DWG-001156. For ease of reference, this area will be referred to as the 'study area' for the remainder of the report.

For the purpose of Phase Works Completion, in accordance with the S106, this area is referred to as Monitor Phase 20, the extent of which is shown on Drawing 5041216/REM/DWG/1201.

The proposed works are a temporary solution associated with the provision of services to the first phase of residential housing at Coed Darcy, which is to be constructed by Persimmon Homes. It is understood that the proposed chamber will be replaced by a permanent solution when full services are installed as part of the ongoing redevelopment.

In the long term, this area is shown on the most recent Masterplan for Coed Darcy (Alan Baxter Drawing No. 1332/400/MP/SK/TERT) to comprise commercial/residential properties. It is considered that this is most likely to comprise residential flats above shops (Alan Baxter Drawing No. 1332/400/MP/SK/TERT).

This report presents the following:

- A review of desk study information,
- A summary of historic and recent ground investigation data and the ground conditions encountered,
- A discussion of geotechnical and environmental characteristics of the underlying materials,
- Discussion of anticipated remedial works required in line with the S106 for the proposed redevelopment.

This report has been prepared in line with the Defra and the Environment Agency (EA) document 'Contaminated Land Report 11, Model Procedures for the Management of Land Contamination' (CLR11).

The basis of CLR11 is the development of a conceptual site model (CSM) which is a representation of potential or known source-pathway-receptor (pollutant) linkages on which the assessment of risk can be based.

Soil Quality Assessment Standards

To maintain consistency of approach the assessment standards for historic and recent data are those indicated in the S106 Agreement for Coed Darcy. The existing visual and aesthetic classification system defined within the S106, is provided as Table 1.1.

Atkins proposes to continue this system for the classification of aesthetic impact and in order to aid assessment of the remediation scope within each area of the refinery. Where relevant, these values are quoted in brackets as part of the soils description on each investigation log.

Table 1.1 – Scale of Aesthetic Criteria

Class	Visual	Olfactory
0	No visible staining of soil, no visible suspect ACM*.	No detectable odour on soil.
1	Occasional staining of soil, no visible suspect ACM*.	Faint odour on soil.
2	Frequent staining of soil.	Distinct but not strong odour on soil.
3	Occasional heavy staining of soil.	Strong odour on soil.
4	Heavy staining of soil.	Strong odour discernable in ambient air.
5	Visible hydrocarbon present.	Overwhelming odour.

*visible suspect ACM refers to asbestos containing material visible to the naked eye which a reasonable and prudent person used to managing asbestos may suspect to be asbestos containing.

The S106 presents a series of Risk Based Screening levels (RBSLs) which are defined as being the 'minimum base level standard' for redevelopment remediation works (Schedule 8, Part 2, Paragraph 2.5). In order to update the assessment of contamination in line with current UK guidance, these RBSLs are also now supplemented by a series of Remedial Target Concentrations (RTCs) derived by Atkins (Atkins reference: 5041216-REM-REP-000216).

To date, RTCs have been derived for residential and commercial end uses, the former DiMe and public open spaces. Due to the proposed end use of the study area on the Coed Darcy Masterplan (refer to Section 1.1) the RTCs for a commercial end use have been adopted to enable an assessment of the levels of contamination present. A summary of the adopted thresholds are presented as Appendix C.

1.2 Limitations

Detailed information on proposed layouts and/or development levels for the final development of this area are not known at present. As final development levels are not known at the time of writing, all stated depths relate to existing levels across the site. Any changes in ground levels relating to the installation of the temporary drainage collection chamber are likely to be temporary.

It is anticipated that the Temporary Collection Chamber will comprise a buried pre-fabricated cylindrical plastic tank on a concrete base. The area immediately surrounding the chamber will comprise hardstanding to enable access and maintenance and the area will be surrounded by fencing to prevent unauthorised access.

It is understood that the detailed of the proposed chamber has not yet been finalised. Liaison with the relevant design team is ongoing at the time of writing.

1.3 Sources of Information

The following principal sources of information have been reviewed as part of the preparation of this report:

- URS Report no. 4438274/BRRP0001 'BP Llandarcy Refinery Desk Study' dated 5th July 2007.
- URS Report no. FR1287 'Final Factual Report for Whole Site Investigation – BP Llandarcy Refinery', dated 12th August 2005.
- Atkins report 5041216-REM-REP-000216 v3 Derivation of Remediation Target Criteria (January 2010).

- Section 106 Deed of planning Obligations (Dewey & LeBoeuf report GNP/NJR/13773-2). February 2008;

2. Review of Available Information

2.1 General

The former refinery has been subject to a number of previous investigations by both the former owners BP and current owners St Modwen Developments Ltd.

Salient detail from these investigations, undertaken both in and within the vicinity of the study area, are summarised below.

2.2 The Site

2.2.1 General

Early historic maps record much of the former refinery to have been undeveloped woodland.

Llandarcy Oil Refinery was first developed in 1921 to produce motor spirit, lubricating oil and fuel oils from crude oil. The refinery continued to expand until the late 1970s, however, from the mid 1980s a series of rationalisations occurred with notice being given to close the site in 1997.

The study area comprises an irregular shaped parcel of land covering an area of approximately 1ha. The land slopes gently towards the north, from an elevation of approximately 47mAOD to 43mAOD. Historically, this area formed a grassed slope within the former refinery but is currently disused and has been scraped clean of topsoil and surface vegetation. Demolition rubble is visible across the surface locally.

The location of the proposed Temporary Collection Chamber lies to the southeast and upslope of the former DiMe Area. The spur along the proposed route of the surface and foul water pipes runs parallel to main site access road on its northern-side.

Selected photographs of the study area, at the time of writing, are presented in Appendix A.

2.2.2 Historical use

Based on a review of the desk study for the former refinery (URS Report no. 4438274/BRRP0001), plans of the former refinery indicate that a substation (Substation 18) and an unidentified building lay within the north of the study area.

A historical map dated 1964-1965, predating the refinery plans contained within the URS report, shows a railway line as terminating within the north of the study area (www.old-maps.co.uk).

Land to the north of the study area (the DiMe Plant) is shown as containing numerous structures and tanks of varying sizes. There are also two substations shown within this area. This land lies downslope of the current study area and hence the risk of contamination from these historical activities relating to the proposed Phase boundary is considered to be low.

To the west, historical refinery buildings include the 'New' Boiler House and the Central Substation which occupy a similar level to the study area. To the south, upslope of the study area, lay the canteen, former laboratory (Technical Building), tanks storage and sump separators. The area of the former canteen and laboratory have been recently remediated in preparation for the construction of residential housing. These works are to be extended across the former sump separators and tank storage in late spring 2012.

Historically there has been limited development to the immediate east of Monitor Phase 20, this area comprising the Security Lodge and main refinery access.

2.2.3 Recorded Ground Conditions

Previous investigation of the study area has been undertaken by URS in report FR1287. More recent investigation has also been carried out by Atkins in 2011 (Atkins report

5041216/PLOTS/RPT/626) and also in 2012. The location of the exploratory holes from both the historical and more recent investigation are shown on Drawing No. 5041216-DWG-1173. Relevant exploratory hole logs are presented in Appendix B.

Made Ground within the vicinity of Monitor Phase 20 was recorded from ground level to depths of up to 2.25m bgl (CATP002) within all of the exploratory holes across the study area except FTS3. Where encountered, the Made Ground was predominantly granular in nature comprising silty gravelly sand with inclusions of ash, clinker, concrete, brick and sandstone ranging from sand sized to small cobbles and flags.

Natural soils, where encountered, typically comprised cohesive sandy gravelly clays overlying sandstone bedrock (Pennant Sandstone). The clayey deposits became increasingly sandy with depth where overlying the weathered sandstone bedrock. Apparent relict topsoil was encountered within FTS4 and FTS5 where rootlets were noted at depths of 1.4m and 0.35m respectively underlying Made Ground.

The depth to bedrock across the study area varies between 0.15m in FTS3 and 2.25m within FTS4 and CATP002. The upper surface of the sandstone was noted as being highly weathered and recovered as a sandy fine-coarse gravel at some locations.

Groundwater was encountered within four of the exploratory holes (FTS4, FTS5, CATP002 and CATP003) during excavation and was generally encountered at the base of the superficial deposits at depths ranging between 2.1m (CATP002) and 2.7m (FTS4). Groundwater was also noted within the Made Ground within FTS5. Previous assessment of this area (URS Report FR1287-refer to Section 1,3) suggests that groundwater flow direction within this area is towards the north-northeast.

Obstructions were encountered within some of the excavations. FTS6, which lies within the western part of the proposed Phase boundary, was terminated at a depth of 0.5m on a reinforced concrete slab. Concrete was also encountered within WSMW077 at 0.9m bgl and was proven to be approximately 1m thick. Pipe work, rubber hosing and relict services were also found within CATP001 CATP002, FB1 and FTS5.

2.2.4 Soil and Groundwater Contamination

Soil

A review of the exploratory hole logs from URS and Atkins across Monitor Phase 20 suggests evidence of localised free product and visual/olfactory evidence of hydrocarbons within the vicinity of the following:

- WSMW065. Strong hydrocarbon odours and staining (natural soils >0.75m bgl)
- MSTP165. Oily dark green clay (natural soils 1.0m to 1.25m bgl)
- FTS1. Strong hydrocarbon odour (VO=2,1, Made Ground 0.8m to 1.2m bgl).
- FTS4. Moderate odour (VO=2,3, natural soils 1.4m to 1.7m bgl) and free product at 2.7m bgl (VO=5,4, natural soils 2.25m to 2.7m bgl)
- FTS5. Slight odour (VO=1,1, natural soils 0.35m to 1.4m bgl) and strong odour (VO=1,3, natural soils 1.4m to 2.0m bgl)

The proposed use of Monitor Phase 20, in the short term, relates to the installation of a temporary drainage chamber. In the longer term, this area is indicated as being a commercial/residential end use. In order to try and combine any short term remedial requirements associated with the installation of the proposed chamber, with the remediation of this area in the longer term, the adopted thresholds for a commercial end use have been adopted to provide an assessment of the levels of contamination present within this area.

Comparison of the reported laboratory data from across this area does not indicate any concentrations in excess of the adopted thresholds for a commercial end use.

Copies of the laboratory certificates for recent testing undertaken by Atkins and a summary of the screened data are presented in Appendix D.

No asbestos containing materials (ACMs) was identified during recent investigation.

Groundwater

The result of the most recent analysis on a groundwater sample from WSMW077 (March 2011) indicates TPH (aliphatic/aromatic C5 to C35) concentrations of 1670µg/l. Comparison of the reported data with the adopted RTCs indicates concentrations of TPH Aliphatic C₈-C₁₀ (185µg/l) and TPH Aliphatic C₁₀-C₁₂ (779µg/l), which lie in excess of the required thresholds (29.6µg/l and 22.8µg/l respectively) relating to Human Health.

Free product was recorded at this location during gas monitoring in May 2011, when a thickness of 0.13m of product was recorded. It is recommended that further monitoring at this location should be carried out as part of any further assessment.

3. Overview of Key Issues

The current site area comprises an existing slope.

Ground conditions beneath this area have been shown to comprise granular Made Ground and natural cohesive soils overlying sandstone bedrock at depths up to 2.25m bgl.

Comparison of the results of laboratory analysis with the adopted thresholds for a commercial end use indicate no exceedences. Localised visual/olfactory evidence of hydrocarbon contamination, including free product, was, however, identified across the western end of Monitor Phase 20.

In the short term, this area represents the location of a temporary drainage chamber associated with the provision of services to the first phase of residential housing at Coed Darcy. In the longer term, it is believed that this area will comprise a commercial/residential end use. This is considered likely to comprise commercial premises with overlying residential properties.

The detailed design for the proposed chamber is not yet finalised and is ongoing at the time of writing.

4. Scope of Remedial Works

4.1 Requirements of the S106

The scope of remedial works required associated with the development of the former refinery is defined within Schedules 8, 9 and 10 of the S106 (refer to Section 1.3).

In order to minimise the need for subsequent remedial works at a later date, it is proposed that remedial works required associated with the long term development of this area are combined with any short term requirements relating to the installation of the proposed chamber.

4.1.1 Redevelopment Remediation (Schedule 8)

Based upon the proposed end use, the study area is considered to represent a '*commercial end-use where groundwater is in soil*' scenario, as defined in the S106.

The minimum remedial action required for this scenario, as defined within the S106 (Schedule 8, Part 3, Para 6), is as follows:

- *All oil saturated soils and soil containing free product other than minor sheens shall be removed to a minimum depth of 2 m FFL or 0.5 m below the likely lowest seasonal groundwater elevation following development of the intended Urban Village, whichever is the deeper. This depth is to be established by consideration of all available groundwater level monitoring data.*
- *All soils must meet the RBSL for TPH to at least 1m below FFL.*
- *All soils must meet in bulk, considering both dispersed fibres and pieces of ACM", the RBSL for ACM to at least 1m below FFL and any visible ACM encountered during construction in the first 1m below FFL is to be removed.*
- *Where there is a risk of the migration in ground of hazardous gas or contaminated liquid into remediated areas, the Developer shall take all appropriate measures to prevent this occurring. Such measures could include the installation of interception trenches and management of discharge from those. The Developer shall monitor whatever measures are put in place after their installation to continue to demonstrate their effectiveness.*
- *Where necessary, seeps, sheens and iron rich discharges from the bedrock must be controlled such that there is no visible discharge at surface and little or no odour. Acceptable methodologies for remediation may include, but are not limited to the use of land drainage via interceptors.*

4.1.2 Placement of clean cover

In the longer term, the following additional design requirements also relate to the proposed redevelopment of this area (Schedule 10, Section 8 of the S106).

- *To provide them with a minimum thickness of suitable garden soils in residential areas, soils for landscaping in public and commercial areas and sub-base for hardsurfaced areas, the Developer shall build up the final elevation after completion of the RAP and Redevelopment Remediation Works with a minimum of 0.5m of quality controlled fill materials suitable for the use to which they are to be put and of better quality than all RBSLs for the relevant end use and meeting aesthetic type 0 for a residential end use and type 1 or better for a commercial end use.*

4.1.3 Preventative Measures (Schedule 9)

The purpose and objectives of the Preventative Measures listed in Schedule 9 of the S106 are the carrying out of all such further Remedial Action over and above that actually carried out as part of the RAP Works and the Redevelopment Remediation Works that is necessary in order to make each part of the Property suitable for its Intended Use or such other use as maybe determined from time to time. As such, the following requirements also apply to any proposed redevelopment.

- *The installation of a proprietary and appropriate ground gas resistant membrane and appropriate venting system in all structures that will be entered by people and any structure where there is a potential for gas accumulation if ground gas is present. The Developer shall develop and adopt a quality assurance programme to which CDL does not object to validate the integrity of the membrane and the adequacy of the venting system installed in each such structure.*
- *The use of appropriate construction methodologies and materials to ensure that contact with residual Pre-Transfer Date Contamination does not cause the decay or degradation of construction materials or the exposure of humans to contamination, including but not limited to contamination of drinking water by penetration of water supply pipes or other penetration of buried structures and services by contaminants.*

4.2 Proposed Scope of Works

Free product was identified within FTS4 at 2.7m bgl, associated with groundwater at the interface between the superficial deposits and the underlying sandstone bedrock. It is recommended that further excavation is undertaken in order to define the extent impacted area and to create a temporary product recovery feature to enable the recovery of recorded free product. Excavations should be taken down to sandstone bedrock, which was recorded to be at 2.7m depth at this location.

Due to the presence of product recorded during monitoring of WSMW077, a programme of product recovery should also be undertaken relating to existing wells that remain viable within this area.

Due to the existing ground levels, and the location of the current site on a slope, it is envisaged that some from of excavation and/or reprofiling will be required as part of the installation of the proposed chamber. Hydrocarbon impacted soils possessing a VO classification in excess of 3 should be removed during any proposed excavations and taken for treatment elsewhere within the refinery.

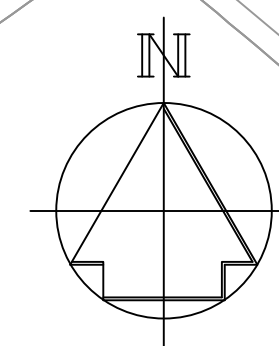
Concrete and existing services were recorded at a number of locations within the study area. It is recommended that all such materials should be removed in order in conjunction with any proposed remedial works to facilitate the longer term redevelopment of this area.

5. Conclusion and Recommendations

It is recommended that the following works are progressed in order to enable Monitor sign off relating to this Phase:

- Inspection of existing wells so that these can be defined on a plan for retention and protection during any proposed works.
- Monitoring of existing wells to determine the presence of any remaining free product.
- Recovery of free product from existing wells.
- Excavation and recovery of free product from within the vicinity of FTS4.
- Removal of existing structures, services and excavation of soils possessing a VO >3.
- Review of required validation testing frequency and further trial pitting, if required.
- Ongoing liaison with the drainage team relating to the design of the proposed chamber.

On completion of the above, a validation report should be prepared. This validation report shall outline the scope of the works undertaken, the extent of any 'hotspot' excavations and copies of relevant laboratory certifications to demonstrate the suitability of any retained soils. This validation report will be submitted to the Monitor and Local Authority for approval.



Oil Refinery

Existing SWS

To remain

Indicative
Connection Point
Temporary SWS
to Existing SWS

4

10

1

1

Flow

W

Response	Percentage
Yes, the current system is the best way to run the country	55%
No, the current system is not the best way to run the country	45%

Temporary SWS
Indicative
Route (West of
Road 3)

Foul Storage
Tank/Compound

Incoming SW/FW

Incoming SW/FW

Incoming SW/FW

Road 1

RO

Key

	Existing SW Sewer
	Proposed SW Sewer (indicative)
	Proposed FW Sewer (indicative)
	Proposed Foul Tank (indicative)

REVISIONS	Drawn By	Checked By	Date
Fee Offer 300SD11	—	TNB	02.03.12
PURPOSE OF ISSUE	Rev.	Authorised for issue	Date

Atkins Limited

Telford Office
Cornerstone House
Stafford Park 13
Telford TF3 3AZ

Birmingham Office
The Axis, 10 Holliday Street
Birmingham
West Midlands B1 1TF

Tel 01952 201234
Fax 01952 200981

Tel 0121 483 5000
Fax 0121 483 5252

THIS DRAWING IS NOT TO BE SCALED

CLIENT 

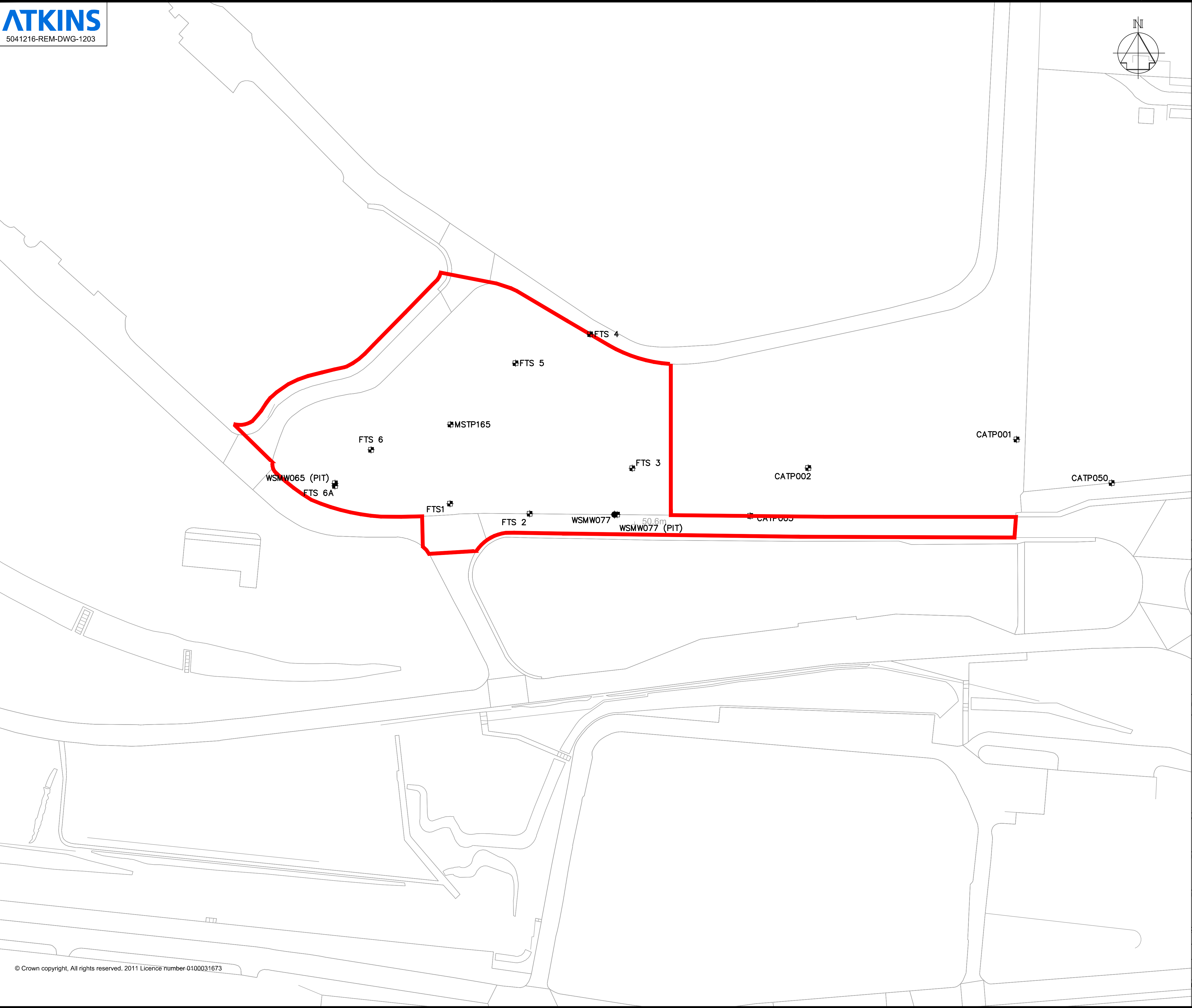
PROJECT

Coed Darcy Development

DRAWING TITLE

Phase 1 Drainage Design - Extents

Scales 1:1000	DRAWN RG	CHECKED TNB	CO-ORD CHECK TNB
DATE 02.03.12	DATE 02.03.12	DATE 02.03.12	DATE 02.03.12
		SHEET A1	PLOT DATE 02.03.12
DRAWING NO			REV
5041216.ENG.DWG.0001156			



KEY:

PROPOSED PHASE BOUNDARY (MONITOR PHASE 20)

EXPLORATORY HOLE LOCATION

REVISIONS	Drawn By	Checked By	Date
-----------	----------	------------	------

PURPOSE OF ISSUE	Rev.	Authorised for issue	Date
------------------	------	----------------------	------

Atkins Limited

Birmingham Office
The Axis, 10 Holiday Street
Birmingham
West Midlands B1 1TF

Tel 0121 483 5000
Fax 0121 483 5252

©

THIS DRAWING IS NOT TO BE SCALED

CLIENT

ST.MODWEN

PROJECT

COED DARCY

DRAWING TITLE

PROPOSED PHASE BOUNDARY
(MONITOR PHASE 20)

Scales	DRAWN MJ	CHECKED ML	CO-ORD CHECK ML
1:500	DATE 02/05/12	DATE 02/05/12	DATE 04/04/12
0		SHEET A1	PLOT DATE
DRAWING NO 5041216-REM-DWG-1203		REV -	