

ANNEX E Chemical Analysis Data for Soils

Primary Development Site - Soil Leachate Chemical Test Results Summary and Screening

	DWQS	EQS	Units	TPA3	TPA22	WSA1	WSA7	BHA24	BHA29	BHA30	BHM1 (PTM1)
				1	0.5	0.1	0.5	0.6	0	1.5	0.2
				1-30/11/05	25/09/2006	1-30/11/05	1-30/11/05	16/08/2007	02/09/2007	16/08/2007	16/08/2007
				Date							
Leachate Data	(µg/l)	(µg/l)									
Arsenic	10.00	50.00	ug/L	11	<10	<10	<10	<5	2	<5	<5
Cadmium	5.00	5.00	ug/L	<5	<5	<5	<5	<1	<0.4	<1	<1
Chromium	50.00	50.00	ug/L	<6	<5	<6	<6	<5	1	<5	<5
Copper	2000.00	28.00	ug/L	<5	<5	7	8	<5	5	<5	<5
Nickel	20.00	200.00	ug/L	<5	<5	<5	<5	<5	4	<5	<5
Lead	25.00	20.00	ug/L	<22	<10	<22	<22	<5	3	<5	<5
Zinc	-	125.00	ug/L	<7	<7	<7	<7	<5	5	<5	<5
Barium	1000.00	-	ug/L	-	-	-	-	-	-	-	-
Beryllium	-	-	ug/L	-	-	-	-	-	-	-	-
Vanadium	-	60.00	ug/L	-	-	-	-	-	-	-	-
Mercury	1.00	1.00	ug/L	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05
Selenium	10.00	-	ug/L	<10	<5	<10	<10	<5	<1	<5	<5
Boron	1000.00	2000.00	ug/L	-	-	-	-	41	<10	12	15
Cyanide	50.00	-	ug/L	<40	<40	<40	<40	<20	<0.05	<20	<20
pH	6.5-10.0	-	pH Units	7.7	7.9	7.4	7.7	-	-	-	-
w/s Sulphate (2:1)	250.00	-		-	-	-	-	-	-	-	-
PhOH			ug/l	<200	-	<200	<200	-	-	-	-
PAH's											
Naphthalene			ug/L	<0.3	<0.3	<0.3	<0.3	-	-	-	-
acenaphthylene			ug/L	<0.3	<0.3	<0.3	<0.3	-	-	-	-
acenaphthene			ug/L	<0.3	<0.3	<0.3	<0.3	-	-	-	-
fluorene			ug/L	<0.3	<0.3	<0.3	<0.3	-	-	-	-
phenanthrene			ug/L	<0.3	<0.3	<0.3	<0.3	-	-	-	-
anthracene			ug/L	<0.3	<0.3	<0.3	<0.3	-	-	-	-
fluoranthene			ug/L	<0.3	<0.3	<0.3	<0.3	-	-	-	-
pyrene			ug/L	<0.3	<0.3	<0.3	<0.3	-	-	-	-
benzo(a)anthracene			ug/L	<0.3	<0.3	<0.3	<0.3	-	-	-	-
chrysene			ug/L	<0.3	<0.3	<0.3	<0.3	-	-	-	-
benzo(k)fluoranthene			ug/L	<0.3	<0.3	<0.3	<0.3	-	-	-	-
benzo(b)fluoranthene			ug/L	<0.3	<0.3	<0.3	<0.3	-	-	-	-
benzo(a)pyrene			ug/L	<0.05	<0.05	<0.05	<0.05	-	-	-	-
indeno[1,2,3-cd]pyrene			ug/L	<0.3	<0.3	<0.3	<0.3	-	-	-	-
dibenzo(a,h)anthracene			ug/L	<0.3	<0.3	<0.3	<0.3	-	-	-	-
benzo[ghi]perylene			ug/L	<0.3	<0.3	<0.3	<0.3	-	-	-	-
PAH Total 16			ug/L	<1.5	<1.5	<1.5	<1.5	-	-	-	-

Hatton's Road Area - Soils Chemical Test Results Summary and Screening

	SGV/GAC (Resi + Gardens)	Units	TPD20	TPD22	TPD23	TPD26	TPD31	TPD34	TPD38	TPD39	BHD6
Depth (m)			1.9	0.6	1	0.2	0.2	0.3	0.2	2	0.8
Asbestos											
Asbestos Screen						ND					
Metals / General Suite											
Arsenic	32.00	mg/kg	16	14	9	21	15	19	17	13	40
Cadmium	10.00	mg/kg	<0.25	<0.25	<0.25	0.32	<0.25	0.30	<0.25	<0.25	0.36
Chromium	3000.00	mg/kg	56	53	43	48	38	72	57	61	46
Copper	2300.00	mg/kg	18	14	12	17	14	24	22	14	17
Nickel	130.00	mg/kg	14	37	29	35	27	41	39	38	47
Lead	410.00	mg/kg	23	14	12	24	19	24	20	19	18
Zinc	3700.00	mg/kg	33	55	51	81	61	114	84	90	84
Barium	225.00	mg/kg	62	-	-	-	-	149	-	-	-
Beryllium	51.00	mg/kg	<2.5	-	-	-	-	<2.5	-	-	-
Vanadium	190.00	mg/kg	79	-	-	-	-	114	-	-	-
Mercury	7.40	mg/kg	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Selenium	350.00	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1
Boron	290.00	mg/kg	1.8	2.0	1.2	1.6	1.5	3.5	1.9	1.9	1.9
Cyanide	60.00	mg/kg	<2	<2	<2	<2	<2	<1	<2	<2	<2
pH		pH Units	6.4	7.6	7.7	7.3	7.4	6.7	7.6	7.5	7.80
w/s Sulphate (2:1)		mg/kg	1588	108	326.4	599.5	1124	140	103.1	4397	137.00
Organic Matter		%		2.9							
Organic Carbon		%		1.7							
TPH1											
C8-C16	19	mg/kg	<50	<50	<50	<50	<50	<50	<50	<50	<50
C16-C24	250	mg/kg	<50	<50	<50	<50	<50	<50	<50	<50	<50
C24-C40	890	mg/kg	<50	91	<50	<50	<50	<50	<50	<50	<50
Total TPH (C8-C40)		mg/kg	<50	126	<50	<50	<50	<50	59	50	73
PAH's											
Naphthalene	1.5	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3
acenaphthylene	170.0	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3
acenaphthene	205.0	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3
fluorene	160.0	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3
phenanthrene	92.0	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3
anthracene	2250.0	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3
fluoranthene	260.0	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3
pyrene	560.0	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3
benzo(a)anthracene	3.1	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3
chrysene	6.0	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3
benzo(k)fluoranthene	8.5	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3
benzo(b)fluoranthene	5.6	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3
benzo(a)pyrene	0.8	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3
indeno[1,2,3-cd]pyrene	3.2	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3
dibenzo(a,h)anthracene	0.8	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3
benzo[ghi]perylene	44.0	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3
PAH total 16		mg/kg	<3	<3	<3	<3	<3	<3	<3	-	<3
PHENOLS											
Phenol		ug/kg	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	-	<0.4
4-Nitrophenol		ug/kg	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	-	<0.4
2,4-Dinitrophenol		ug/kg	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	-	<0.4
2-Chlorophenol		ug/kg	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	-	<0.4
2-Nitrophenol		ug/kg	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	-	<0.4
2,4-Dimethylphenol		ug/kg	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	-	<0.4
2,4,6-Trichlorophenol		ug/kg	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	-	<0.4
4-Chloro-3-methylphenol		ug/kg	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	-	<0.4
2,4-Dichlorophenol		ug/kg	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	-	<0.4
2-Methyl-4,6-Dinitrophenol		ug/kg	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	-	<0.4
Pentachlorophenol		ug/kg	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	-	<0.4
Phenols total		ug/kg	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	-	<0.4

Hatton's Road Area - Soil Leachate Chemical Test Results Summary and Screening

				TPD20	TPD22	TPD23	TPD26	TPD31	TPD34	TPD38	TPD39	BHD6
Depth (m)	DWQS	EQS	Units	1.9	0.6	1	0.2	0.2	0.3	0.2	2	0.8
Leachate												
Arsenic	10.00	50.00	ug/L	-	14.20	-	<10	-	-	-	-	-
Cadmium	5.00	5.00	ug/L	-	<5	-	<5	-	-	-	-	-
Chromium	50.00	50.00	ug/L	-	8.19	-	<6	-	-	-	-	-
Copper	2000.00	28.00	ug/L	-	6.75	-	7.68	-	-	-	-	-
Nickel	20.00	200.00	ug/L	-	<5	-	<5	-	-	-	-	-
Lead	25.00	20.00	ug/L	-	<22	-	<22	-	-	-	-	-
Zinc	-	125.00	ug/L	-	<7	-	<7	-	-	-	-	-
Mercury	1.00	1.00	ug/L	-	<0.2	-	<0.2	-	-	-	-	-
Selenium	10.00	-	ug/L	-	<10	-	<10	-	-	-	-	-
Boron	1000.00	2000.00	ug/L	-	78.90	-	43.45	-	-	-	-	-
Cyanide	50.00	-	ug/L	-	<40	-	<40	-	-	-	-	-
pH	6.5-10.0	-	pH Units	-	8.40	-	8.00	-	-	-	-	-
Phenols												
Phenol	-	7.7	mg/l	-	<0.005	-	<0.005	-	-	-	-	0.0006
Cresols	-	-	mg/l	-	<0.005	-	<0.005	-	-	-	-	<0.005
Xylenols & Ethyl Phenols	-	-	mg/l	-	<0.005	-	<0.005	-	-	-	-	<0.005
Naphthols	-	-	mg/l	-	<0.005	-	<0.005	-	-	-	-	<0.005
Propyl or Trimethyl Phenols	-	-	mg/l	-	<0.005	-	<0.005	-	-	-	-	<0.005
Butyl Phenols	-	-	mg/l	-	<0.005	-	<0.005	-	-	-	-	<0.005
Phenols (Sum)	-	7.7	mg/l	-	ND	-	ND	-	-	-	-	0.0006

ANNEX F Chemical Analysis Data for Groundwater and Surface Water

Site	EWQS	EGS	Units	BW1	BW2	BW3	BW4	BW5	BW6	BW7	BW8	BW9	BW10	BW11	BW12	BW13	BW14	BW15	BW16	BW17	BW18	BW19	BW20	BW21	BW22	BW23	BW24	BW25	BW26	BW27	BW28	BW29	BW30	BW31	BW32	BW33	BW34	BW35	BW36	BW37	BW38	BW39	BW40	BW41	BW42	BW43	BW44	BW45	BW46	BW47	BW48	BW49	BW50
Acetone	100	100	mg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10			
Acetone	100	100	mg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		

Redox Monitoring Sheet

Site: Northstowe

Date: 16/04/07 -
24/02/07

Pressure

Start:
End:

Time

Start: 11:45am
End:

HC Sheen? / Comments	Well	Temp. (°C)	Conductivity		Salinity	Dissolved Oxygen		pH	pH mV	ORP	TDS (g/l)	Date
			mS/cm ^c	mS/cm		%	mg/l					
Yellow water, didn't purge dry not much	BHA1	8.92	0.946			71		7.33	-27.3	-168.2		16.04.07
Small ant of sand in bucket. Purged dry	BHA2	10.29	4.587			74.6						16.04.07
Water grey first, then light orange	BHA3	9.4	0.83			78.7		7.81	-53.7	-124.2		16.04.07
Purged dry - reading taken after h2o	BHA12	11.22	5.543			44.3		6.85	-0.6	-135.9		16.04.07
Purged dry - reading taken after h2o	BH9	10.15	5.788			55.1		7.24	-22.3	-205.7		16.04.07
Purged dry - Sand in bucket	BH1	10.45	0.988			88.1		7.33	-27.1	-109.8		16.04.07
Purge dry - measurement taken	BHA7	10.03	4.364			63		6.94	-5.4	-205.9		17.04.07
Sample taken from bucket - water grey												

Additional Comments:

Site: Northstowe

13/08/07-15/08/07

Pressure Start:
End:

Time Start:
End:

HC Sheen? / Comments	Well	emp. (°C)	Conductivity		Salinity	Dissolved Oxygen		pH	pH mV	ORP	Depth GW(M)	Date
			mS/cm ^c	mS/cm		%	mg/l					
Orange brown, become clear after 8	BHA1	14.49	1.132	0.905	0.57	64.1	6.51	7.31	-22.5	27.7	1.55	13/08/2007
Light brown, sediment, purge dry	BHA2	12.63	4.45	3.409	2.4	8.9	0.92	7.53	-34	-16.6	3.8	13/08/2007
Purged dry 15 secs, dull brown	BHA7	15.25	4.269	3.451	2.28	23.4	2.2	7.41	-27.3	-62.7		15/08/2007
Brown, lots of sand. Purged dry	BHA13 (1)	15.01	1.147	0.928	0.57	17.5	1.72	7.9	-55.6	-33.5	2.34	13/08/2007
Brown, some sand. Purged dry	BHA13 (2)	11.53	1.565	1.163	0.8	12.8	1.39	7.61	-39.9	-55.6	6.39	13/08/2007
Light brown, little sand, purged dry	BHA18	11.08	4.907	3.551	2.6	10.8	1.14	7.4	-27.5	-18.9	6.15	13/08/2007
Slight odour, grey/brown,black	BHA23 (1)	14.48	0.945	0.753	0.47	25.4	2.25	8.61	-95	-195	2.3	13/08/2007
Grey brown, some sand	BHA23(2)	11.4	1.172	0.867	0.59	4.1	0.44	7.79	-48.8	-196.5	5.01	13/08/2007
Orange brown, become clear after 7 mins	BHA30(1)	12.63	1.02	1.788	0.51	12.7	1.33	7.6	-34.8	-30.7	1.96	13/08/2007
COULD NOT FIT WASP PUMP DOWN (BH)	BHA30(2)											13/08/2007
Light grey/beige. No sediment	BHA32	12.67	1.186	0.907	0.59	9.7	1.02	7.36	-25.1	-6.4	1.83	13/08/2007
Light brown	PTBHM1	15.71	0.81	0.732	0.44	31.4	3.11	7.49	-32.7	27.2	1.81	13/08/2007

ANNEX G Geotechnical Test Data



Summary of Geotechnical Laboratory results

Sample Data				Classification BS 1377:Part 2								Compaction BS1377:Part 4			Chemical BS 1377:Part 3				Strength & Compression testing BS 1377:Part's 5 & 7								Remarks												
BH/TP/MS No	Sample No	Specimen Ref	Sample Type	Depth From (m)	Depth to (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Plasticity category	Material passing 425um %	Bulk Density Mg/m3	Dry Density Mg/m3	Particle Size Distribution	Particle Density Mg/m3	CBR	MCV	Compaction	Water Soluble Sphate gl/ *	pH *	Organic Matter % **	Loss on Ignition % **	Water Soluble Chloride gl/ *	Triaxial Type	Diameter mm	Cell Pressure Kpa	Corrected Deviator Stress Kpa	Undrained Shear Strength CU Kpa	Strain @ Failure %	Mode of Failure	Hand Shear Vane Kpa	One dimensional Consolidation *							
BHA4			S	1	1.5									X																									
BHA4			C	3.4	3.85	25	42	27	15	CL	100																												
BHA4			C	4.2	4.65	23	NP	NP	NP	NP											0.42			UUM	101.1	401	175	87	13.8	C									
BHA5			G	2	2.5									X	2.7																								
BHA5			S	6	6.45									X																									
BHA10			C	0.8		20	50	20	30	CL	95																												
BHA10			C	3.2	3.65	30	75	28	47	CL	100									2.17	7.8			UUM	184.21	401.5	191	95	6.94	C									
BHA10			C	6.2	6.65	28	63	27	36	CL	100																												
BHA11			C	0.5		32	81	27	54	CL	100																												
BHA12			C	4.0	4.45		61	27	34	CL	100																												

**Undrained Shear Strength in Triaxial
Compression without measurement of Pore
Pressure (Quick Undrained)**

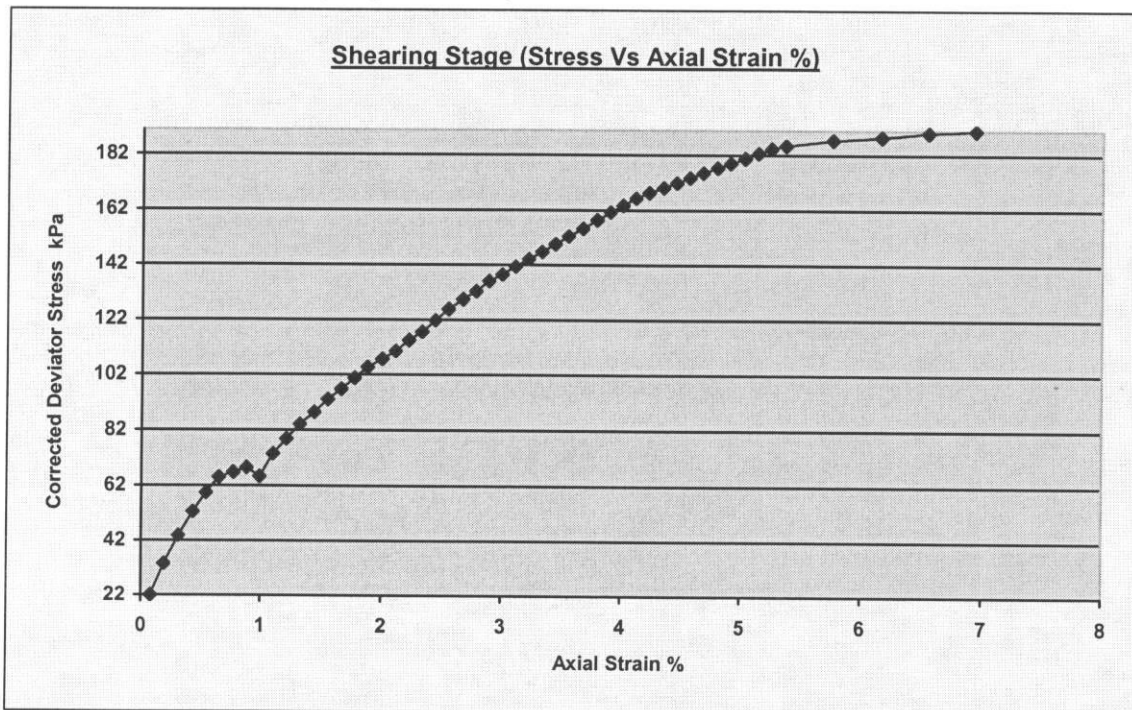


Client	Gallagher Estates	Lab Ref	06/0468/S
Project	Northstowe New Town	Job	12170626 002
Borehole	BHA10	Sample	BHA10 320-365m

Test & Sample Details			
Standard	BS 1377 : Part 7 : Clause 9	Sample Depth	3.20 m
Sample Type	Undisturbed sample - open drive	Particle Density	2.65 Mg/m ³
Sample Description	Grey/dark grey firm friable laminated fissured slightly sandy and gravelly CLAY	Lab. Temperature	21.5 deg.C
Variations from Procedure	None		

Specimen Details			
Specimen Reference	A1	Stage Reference	1
Depth within Sample	20.00 mm	Description	As above
Initial Height	184.21 mm	Orientation within Sample	vertical
Preparation	Undisturbed	Initial Diameter	103.13 mm
Initial Bulk Density	1.95 Mg/m ³	Initial Moisture Content*	26.8 % (trimmings: 27.6 %)
Initial Dry Density	1.54 Mg/m ³	Membrane Thickness	0.30 mm
Comments	none		

* Calculated from initial and dry weights of whole specimen



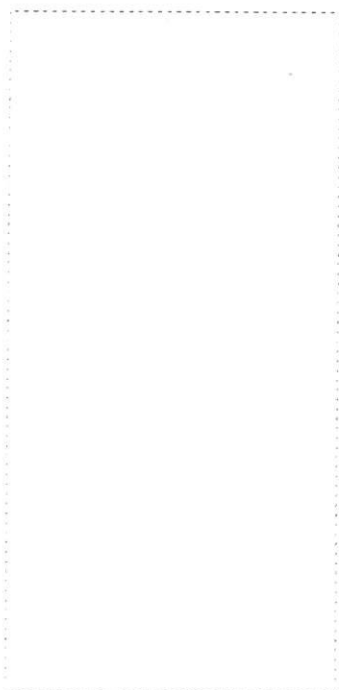
**Undrained Shear Strength in Triaxial
Compression without measurement of Pore
Pressure (Quick Undrained)**



Client	Gallagher Estates	Lab Ref	06/0468/S
Project	Northstowe New Town	Job	12170626 002
Borehole	BHA10	Sample	BHA10 320- 365m

Shear Conditions			
Rate of Axial Strain	0.54%/min	Cell Pressure	401.5kPa

Conditions at Failure			
Failure Criterion	Max Deviator Stress or Max allowed Strain		
Maximum Corrected Deviator Stress	191kPa	Shear Strength	95kPa -
Axial Strain	6.94%		
Deviator Stress Correction	0.5 kPa		
Final Density	1.95 Mg/m3	Final Moisture Content	26.8 %



Mode of Failure

Tested By and Date:	SL:30/11/06
Checked By and Date:	<i>[Signature]</i> 16.12.06
Approved By and Date:	<i>[Signature]</i> 16.12.06

Undrained Shear Strength in Triaxial Compression without measurement of Pore Pressure (Quick Undrained)

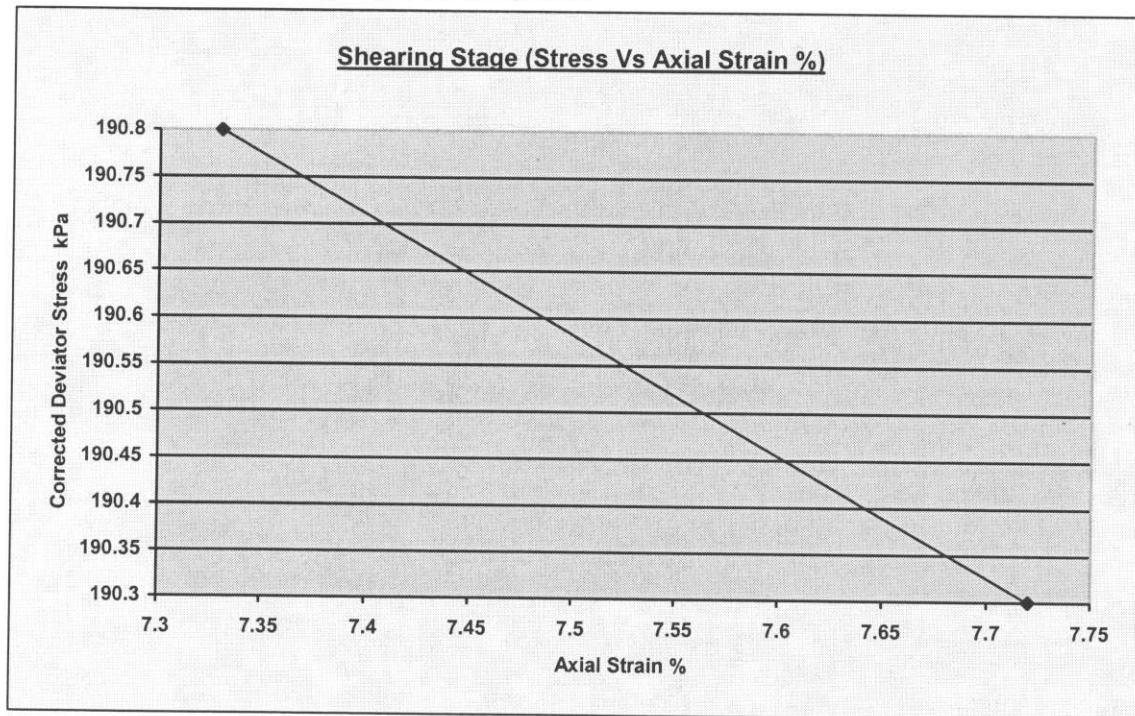


Client	Gallagher Estates	Lab Ref	06/0468/S
Project	Northstowe New Town	Job	12170626 002
Borehole	BHA10	Sample	BHA10 320-365m

Test & Sample Details			
Standard	BS 1377 : Part 7 : Clause 9	Sample Depth	3.20 m
Sample Type	Undisturbed sample - open drive	Particle Density	2.65 Mg/m ³
Sample Description	Grey/dark grey firm friable laminated fissured slightly sandy and gravelly CLAY	Lab. Temperature	21.5 deg.C
Variations from Procedure	None		

Specimen Details			
Specimen Reference	A2	Stage Reference	2
Depth within Sample	20.00 mm	Description	As above
Initial Height	184.21 mm	Orientation within Sample	vertical
Preparation	Undisturbed	Initial Diameter	103.13 mm
Initial Bulk Density	1.95 Mg/m ³	Initial Moisture Content*	26.8 % (trimmings: 27.6 %)
Initial Dry Density	1.54 Mg/m ³	Membrane Thickness	0.30 mm
Comments	none		

* Calculated from initial and dry weights of whole specimen



**Undrained Shear Strength in Triaxial
Compression without measurement of Pore
Pressure (Quick Undrained)**



Client	Gallagher Estates	Lab Ref	06/0468/S
Project	Northstowe New Town	Job	12170626 002
Borehole	BHA10	Sample	BHA10 320- 365m

Shear Conditions			
Rate of Axial Strain	0.54%/min	Cell Pressure	603.0kPa

Conditions at Failure			
Failure Criterion	Max Deviator Stress or Max allowed Strain		
Maximum Corrected Deviator Stress	191kPa	Shear Strength	95kPa -
Axial Strain	7.33%		
Deviator Stress Correction	0.5 kPa		
Final Density	1.95 Mg/m ³	Final Moisture Content	26.8 %



Tested By and Date:	SL:30/11/06
Checked By and Date:	<i>[Signature]</i> 16.12.06
Approved By and Date:	<i>[Signature]</i> 16.12.06

Mode of Failure

Undrained Shear Strength in Triaxial Compression without measurement of Pore Pressure (Quick Undrained)

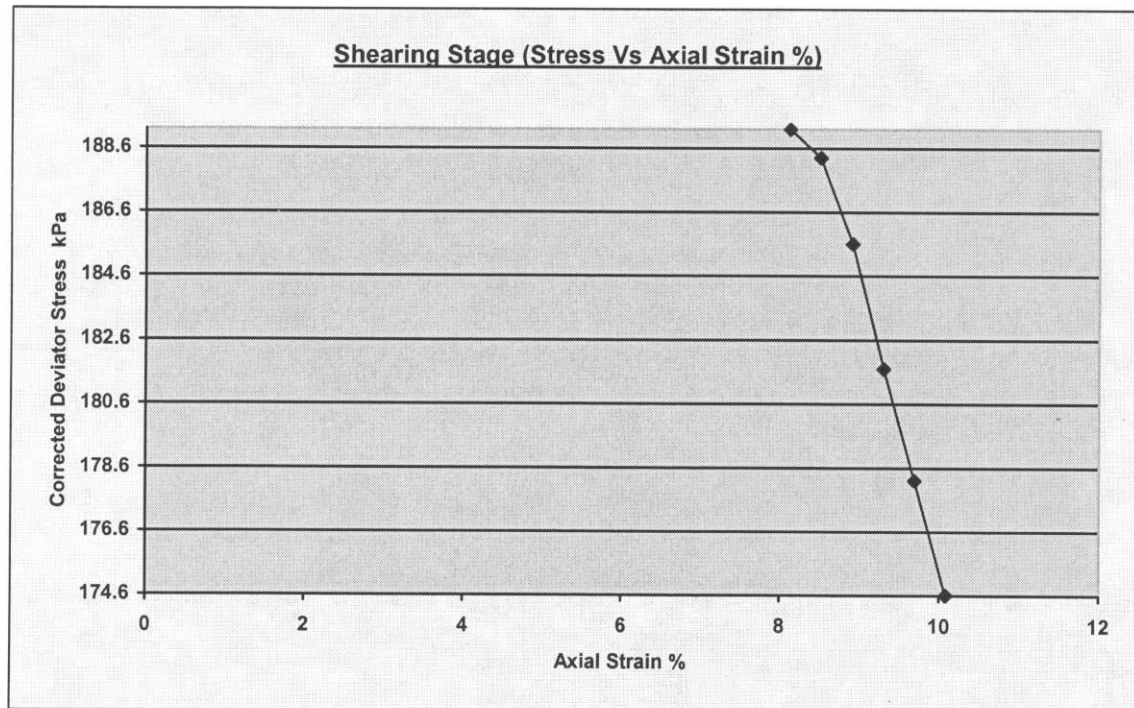


Client	Gallagher Estates	Lab Ref	06/0468/S
Project	Northstowe New Town	Job	12170626 002
Borehole	BHA10	Sample	BHA10 320-365m

Test & Sample Details			
Standard	BS 1377 : Part 7 : Clause 9	Sample Depth	3.20 m
Sample Type	Undisturbed sample - open drive	Particle Density	2.65 Mg/m ³
Sample Description	Grey/dark grey firm friable laminated fissured slightly sandy and gravelly CLAY	Lab. Temperature	21.5 deg.C
Variations from Procedure	None		

Specimen Details			
Specimen Reference	A3	Stage Reference	3
Depth within Sample	20.00 mm	Description	As above
Initial Height	184.21 mm	Orientation within Sample	vertical
Preparation	Undisturbed	Initial Diameter	103.13 mm
Initial Bulk Density	1.95 Mg/m ³	Initial Moisture Content*	26.8 % (trimmings: 27.6 %)
Initial Dry Density	1.54 Mg/m ³	Membrane Thickness	0.30 mm
Comments	none		

* Calculated from initial and dry weights of whole specimen



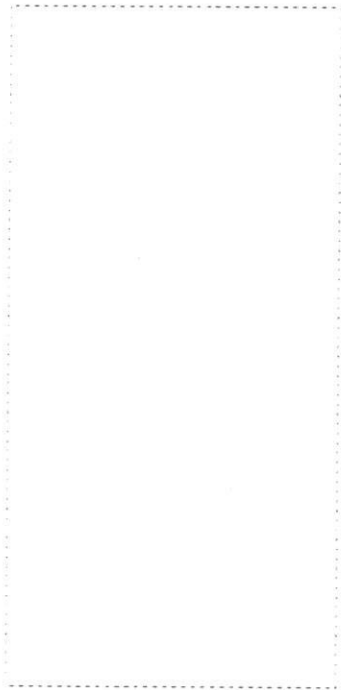
**Undrained Shear Strength in Triaxial
Compression without measurement of Pore
Pressure (Quick Undrained)**



Client	Gallagher Estates	Lab Ref	06/0468/S
Project	Northstowe New Town	Job	12170626 002
Borehole	BHA10	Sample	BHA10 320- 365m

Shear Conditions			
Rate of Axial Strain	0.54%/min	Cell Pressure	659.7kPa

Conditions at Failure			
Failure Criterion	Max Deviator Stress or Max allowed Strain		
Maximum Corrected Deviator Stress	189kPa	Shear Strength	95kPa
Axial Strain	8.12%		
Deviator Stress Correction	0.6 kPa		
Final Density	1.95 Mg/m ³	Final Moisture Content	26.8 %



Tested By and Date:	SL:30/11/06
Checked By and Date:	<i>[Signature]</i> 16.12.06
Approved By and Date:	<i>[Signature]</i> 16.12.06

Mode of Failure

Undrained Shear Strength in Triaxial Compression without measurement of Pore Pressure (Quick Undrained)



Client	Gallagher Estates LTD	Lab Ref	06/0468/S
Project	Northstowe New Town	Job	12170626 002
Borehole	BHA10	Sample	BHA10 620-665m

Test & Sample Details

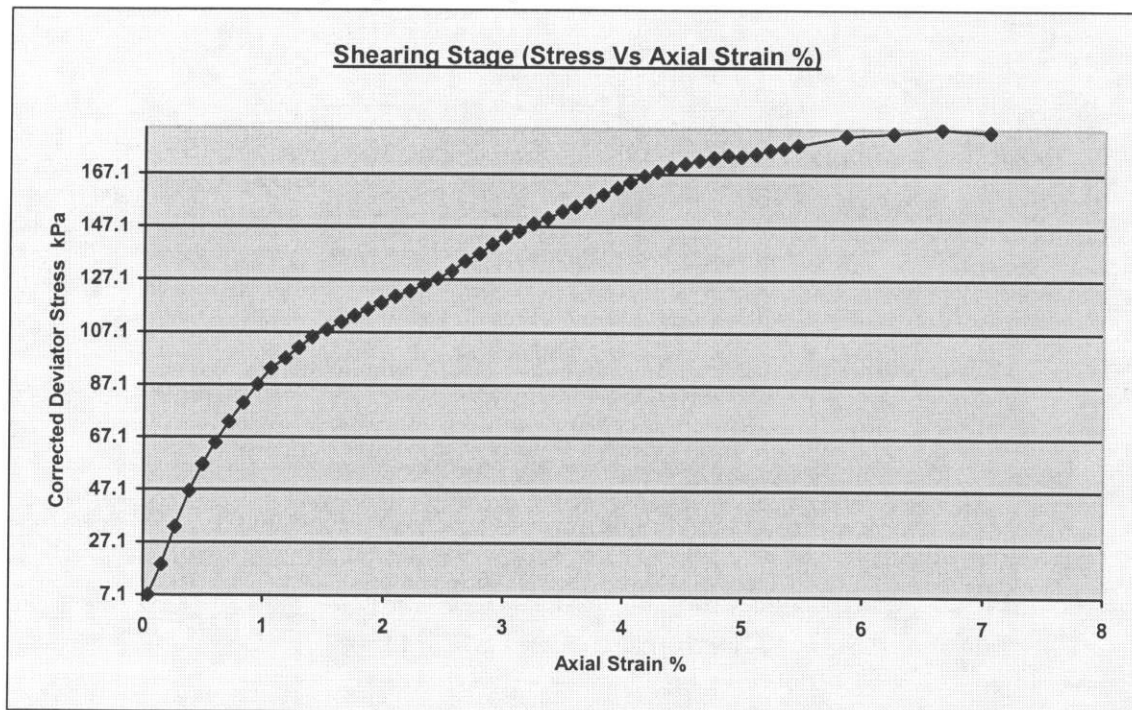
Standard	BS 1377 : Part 7 : Clause 9	Sample Depth	6.20 m
Sample Type	Undisturbed sample - open drive	Particle Density	2.65 Mg/m ³
Sample Description	Grey/dark grey firm-stiff friable laminated fissured slightly sandy CLAY	Lab. Temperature	20.6 deg.C
Variations from Procedure	None		

Specimen Details

Specimen Reference	A1	Stage Reference	1
Depth within Sample	16.50 mm	Description	As above
Initial Height	197.55 mm	Orientation within Sample	vertical
Preparation	Undisturbed	Initial Diameter	103.59 mm
Initial Bulk Density	1.96 Mg/m ³	Initial Moisture Content*	30.6 % (trimmings: 22.3 %)
Initial Dry Density	1.50 Mg/m ³	Membrane Thickness	0.30 mm
Comments	none		

* Calculated from initial and dry weights of whole specimen

Shearing Stage (Stress Vs Axial Strain %)



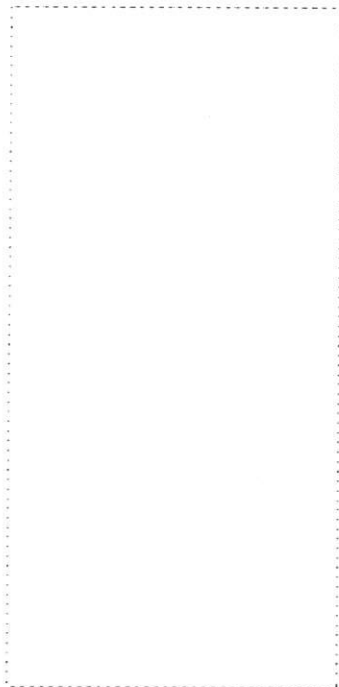
**Undrained Shear Strength in Triaxial
Compression without measurement of Pore
Pressure (Quick Undrained)**



Client	Gallagher Estates LTD	Lab Ref	06/0468/S
Project	Northstowe New Town	Job	12170626 002
Borehole	BHA10	Sample	BHA10 620- 665m

Shear Conditions			
Rate of Axial Strain	0.66%/min	Cell Pressure	402.3kPa

Conditions at Failure			
Failure Criterion	Max Deviator Stress or Max allowed Strain		
Maximum Corrected Deviator Stress	184kPa	Shear Strength	92kPa -
Axial Strain	6.64%		
Deviator Stress Correction	0.5 kPa		
Final Density	1.96 Mg/m ³	Final Moisture Content	30.6 %



Mode of Failure

Tested By and Date:	SL:29/11/06
Checked By and Date:	<i>H. Beaton</i> 16.12.06
Approved By and Date:	<i>H. Beaton</i> 16.12.06

Undrained Shear Strength in Triaxial Compression without measurement of Pore Pressure (Quick Undrained)

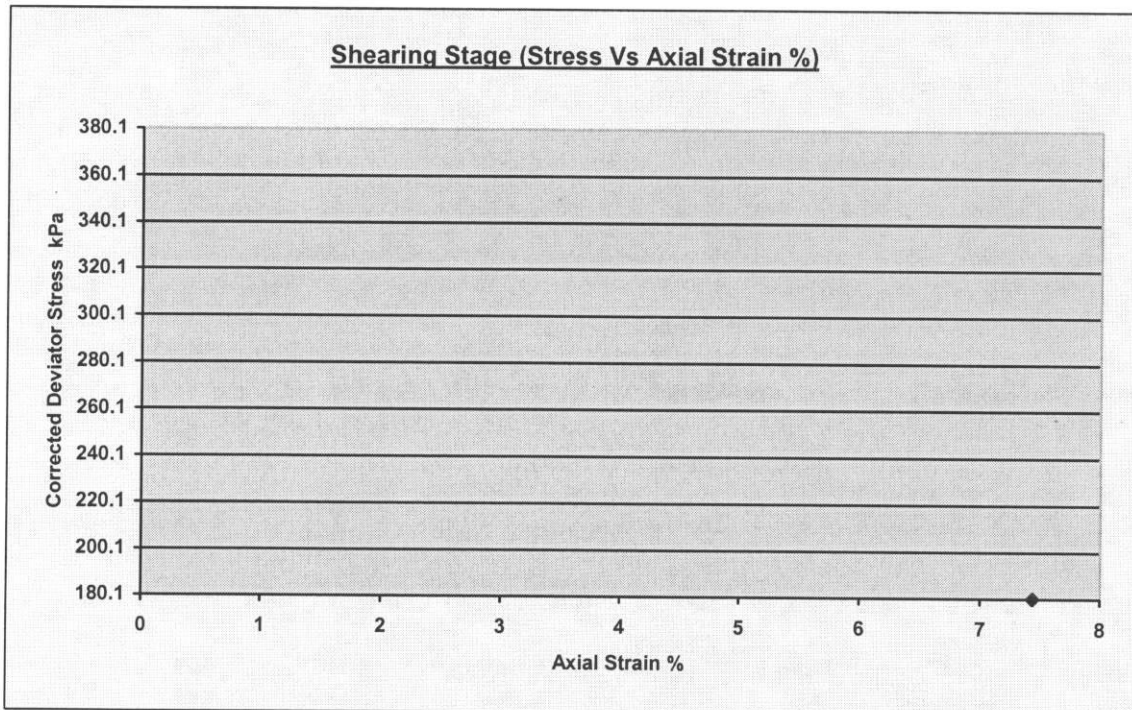


Client	Gallagher Estates LTD	Lab Ref	06/0468/S
Project	Northstowe New Town	Job	12170626 002
Borehole	BHA10	Sample	BHA10 620-665m

Test & Sample Details			
Standard	BS 1377 : Part 7 : Clause 9	Sample Depth	6.20 m
Sample Type	Undisturbed sample - open drive	Particle Density	2.65 Mg/m ³
Sample Description	Grey/dark grey firm-stiff friable laminated fissured slightly sandy CLAY	Lab. Temperature	20.6 deg.C
Variations from Procedure	None		

Specimen Details			
Specimen Reference	A2	Stage Reference	2
Depth within Sample	16.50 mm	Description	As above -
Initial Height	197.55 mm	Orientation within Sample	vertical
Preparation	Undisturbed	Initial Diameter	103.59 mm
Initial Bulk Density	1.96 Mg/m ³	Initial Moisture Content*	30.6 % (trimmings: 22.3 %)
Initial Dry Density	1.50 Mg/m ³	Membrane Thickness	0.30 mm
Comments	none		

* Calculated from initial and dry weights of whole specimen



**Undrained Shear Strength in Triaxial
Compression without measurement of Pore
Pressure (Quick Undrained)**



Client	Gallagher Estates LTD	Lab Ref	06/0468/S
Project	Northstowe New Town	Job	12170626 002
Borehole	BHA10	Sample	BHA10 620- 665m

Shear Conditions			
Rate of Axial Strain	0.66%/min	Cell Pressure	606.8kPa

Conditions at Failure			
Failure Criterion	Max Deviator Stress or Max allowed Strain		
Maximum Corrected Deviator Stress	180kPa	Shear Strength	90kPa
Axial Strain	7.44%		
Deviator Stress Correction	0.5 kPa		
Final Density	1.96 Mg/m ³	Final Moisture Content	30.6 %



Mode of Failure

Tested By and Date:	SL:29/11/06
Checked By and Date:	<i>[Signature]</i> 16.12.06
Approved By and Date:	<i>[Signature]</i> 16.12.06