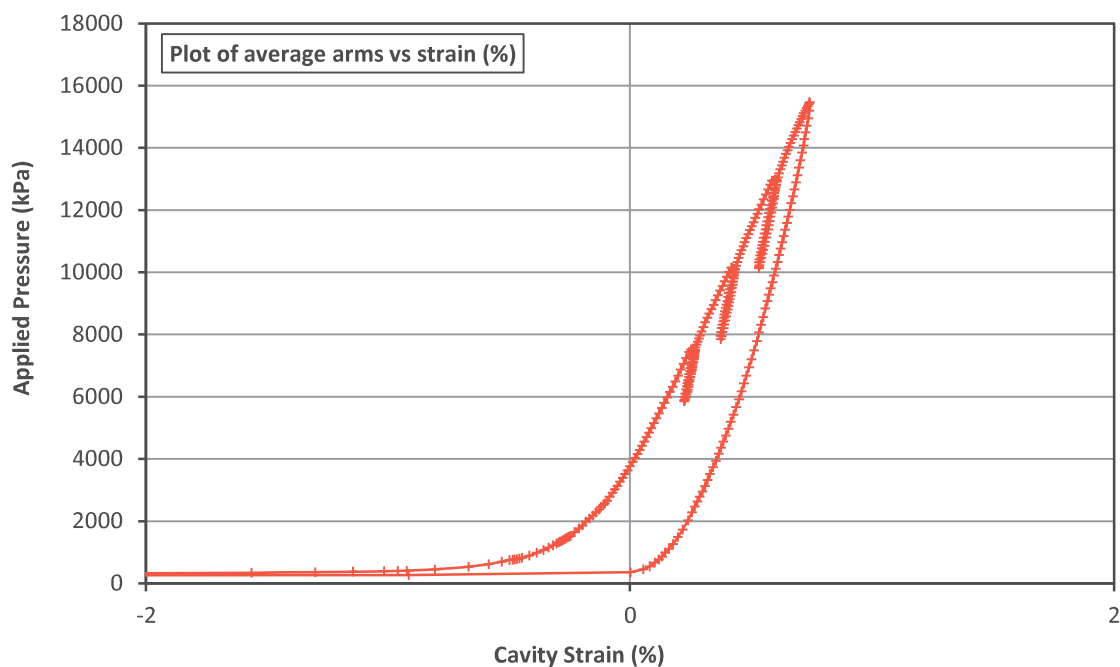
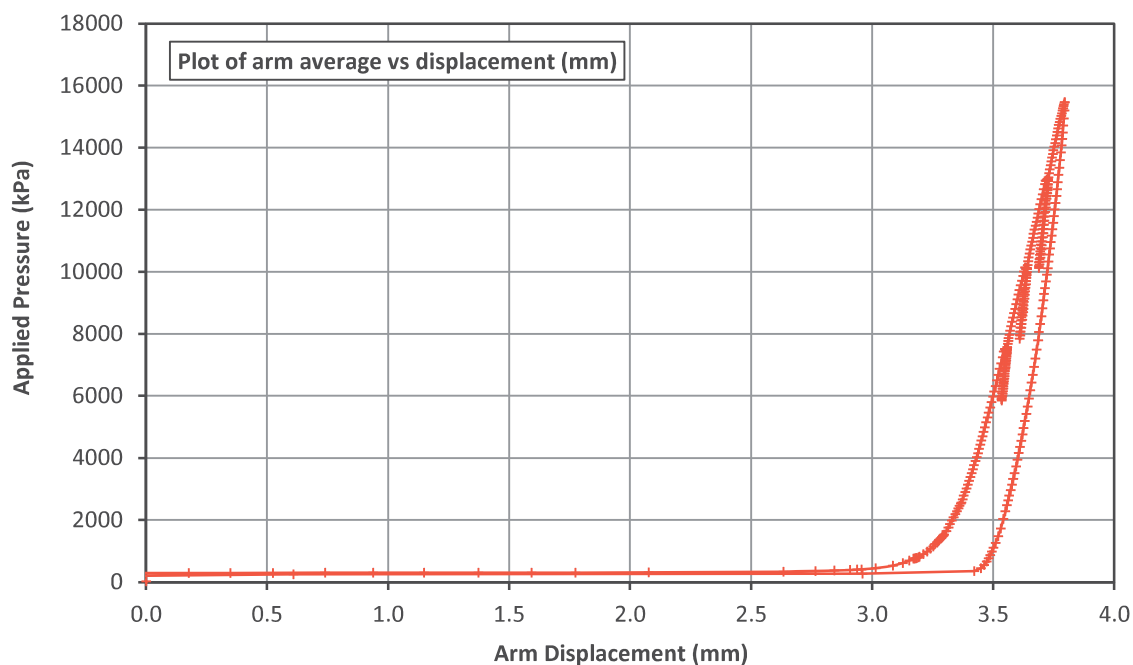


Pressuremeter Test - Average Arm Plots

IN SITU
SITE INVESTIGATION

Test Date	23/04/2021	Test No.	5
Borehole	BH1R	Test Depth (m)	32.60

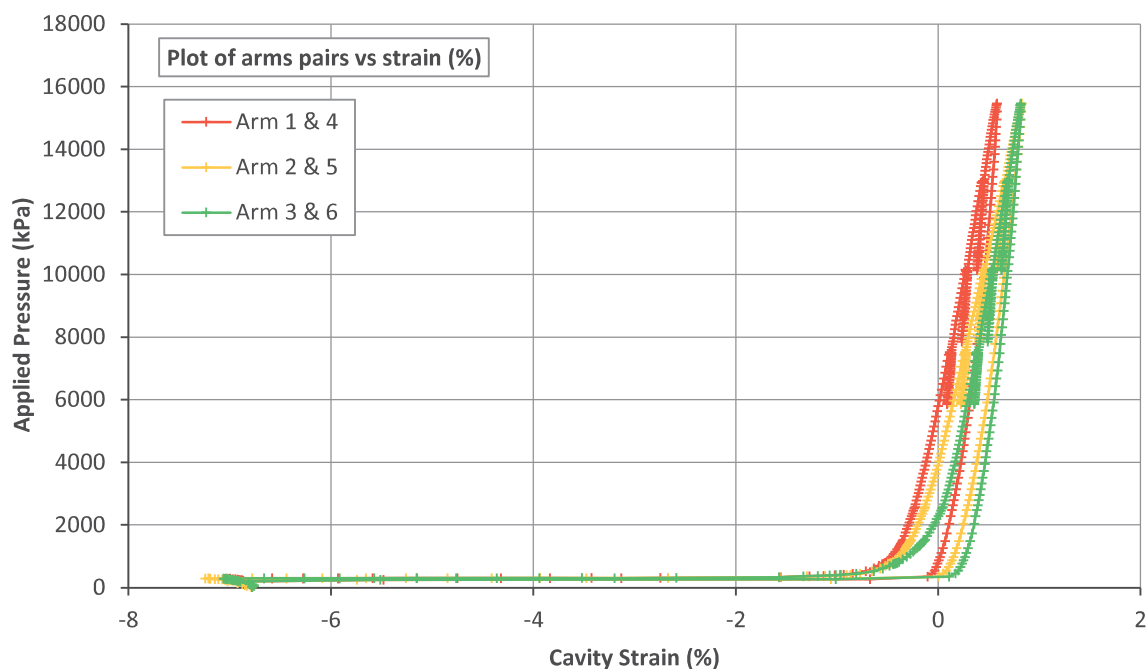
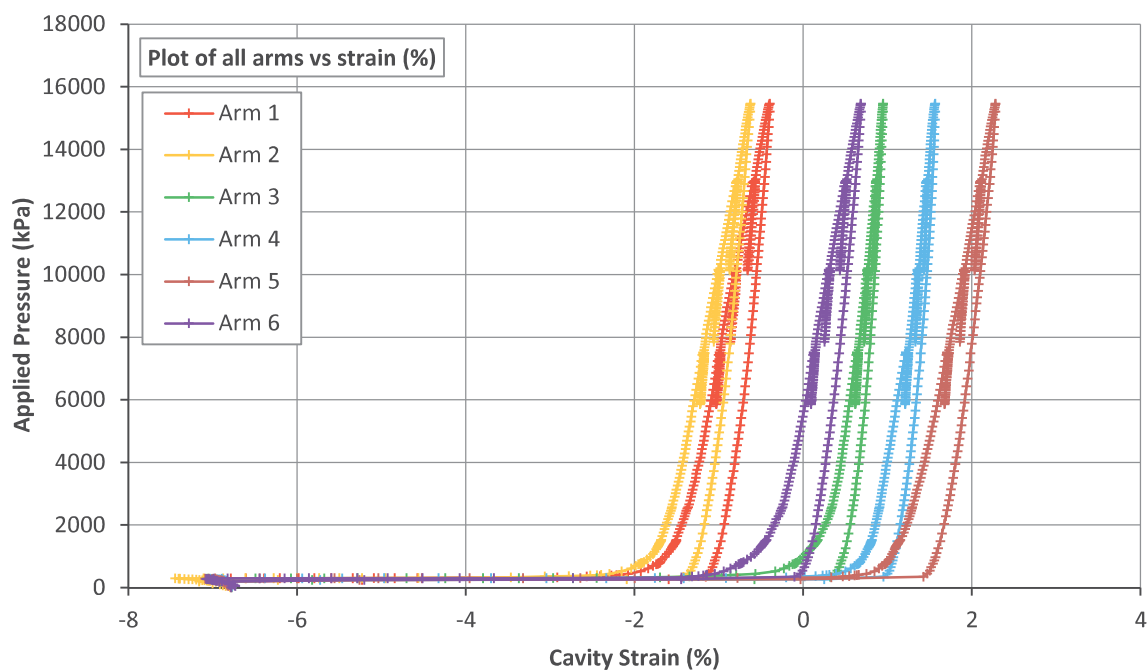


Project	Great Jackson Street, Manchester	Figure No.	BH1R T05 - 02
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Test - Arm Displacement vs Strain (%)

IN SITU
SITE INVESTIGATION

Test Date	23/04/2021	Test No.	5
Borehole	BH1R	Test Depth (m)	32.60

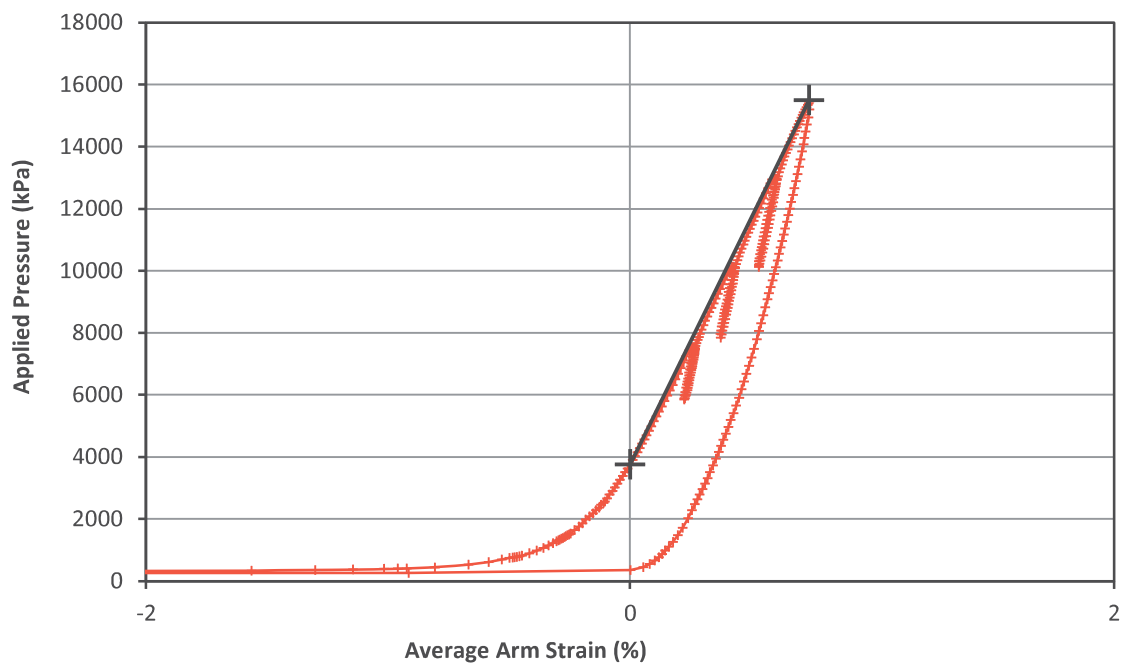


Project	Great Jackson Street, Manchester	Figure No.	BH1R T05 - 03
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis - Initial Modulus & In Situ Horizontal Stress

IN SITU
SITE INVESTIGATION

Test Date	23/04/2021	Test No.	5
Borehole	BH1R	Test Depth (m)	32.60



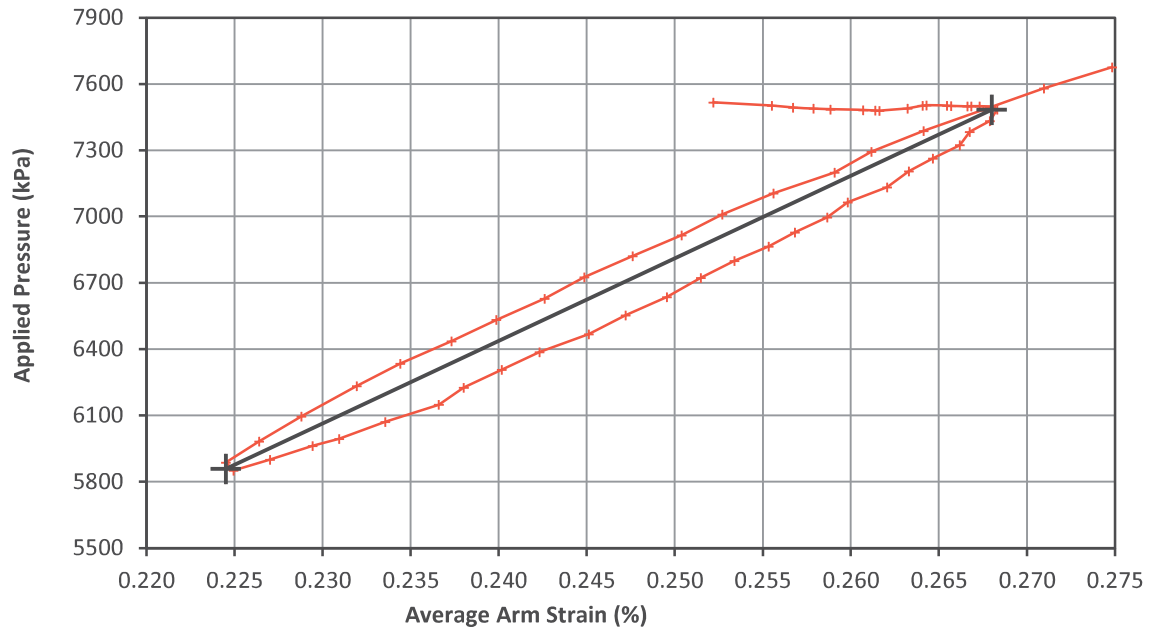
Initial Modulus	Shear Modulus	798.9 MPa
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Project	Great Jackson Street, Manchester	Figure No.	BH1R T05 - 04
Client	GeoAssist		
Project No.	P1210114		

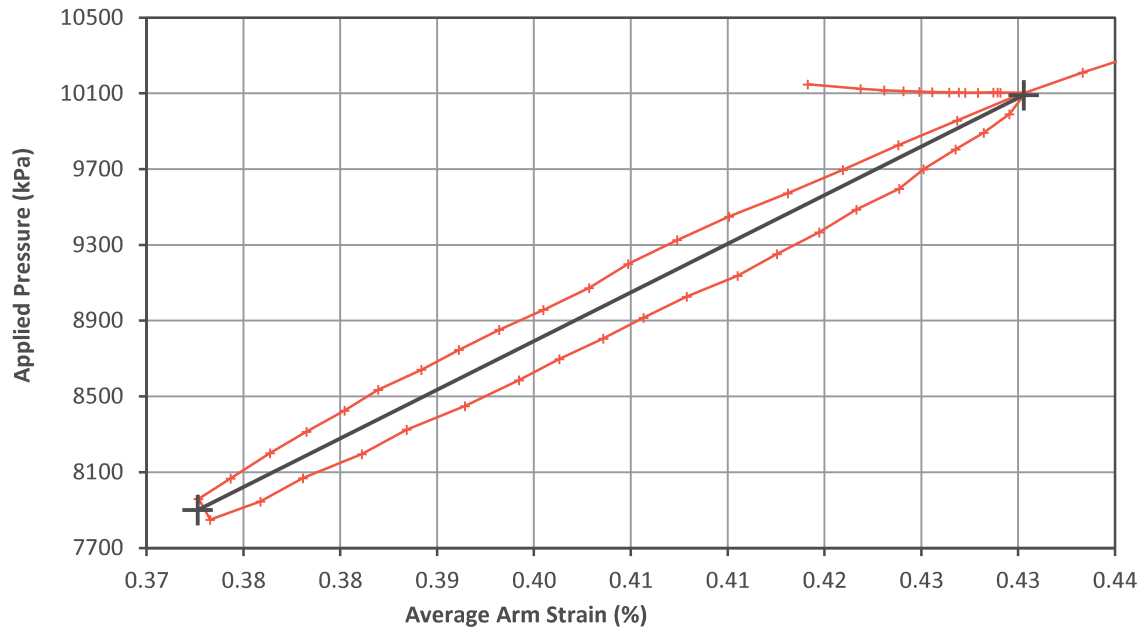
Pressuremeter Analysis - Unload Reload Loop

IN SITU
SITE INVESTIGATION

Test Date	23/04/2021	Test No.	5
Borehole	BH1R	Test Depth (m)	32.60



Loop 1	Shear Modulus	1872.4	MPa
	Cavity Strain Range	0.044	%



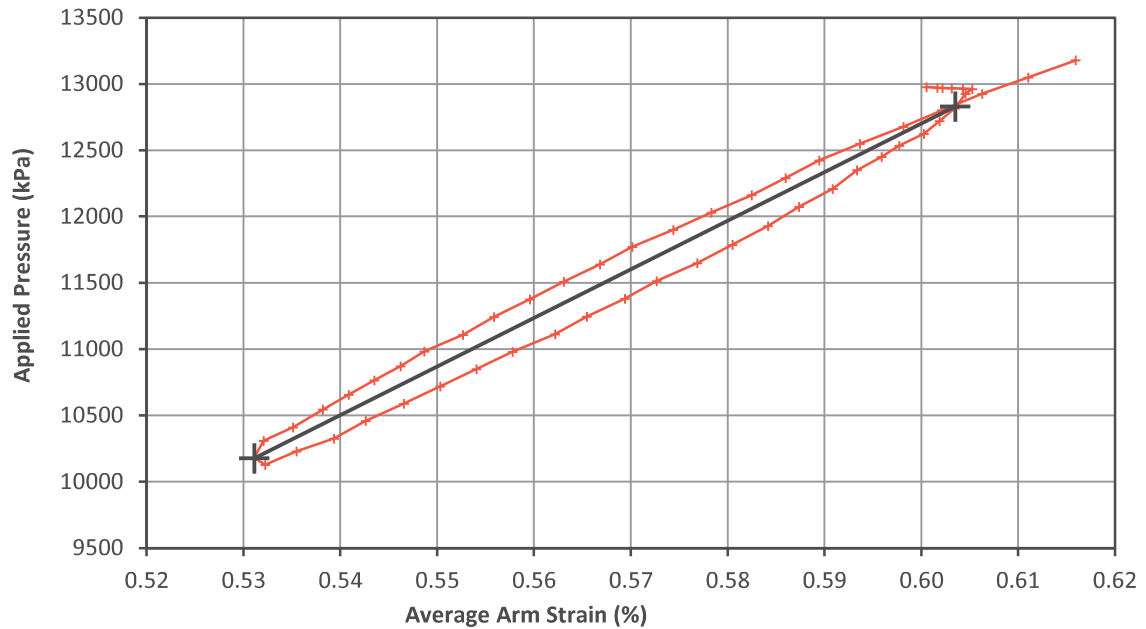
Loop 2	Shear Modulus	1843.7	MPa
	Cavity Strain Range	0.060	%

Project	Great Jackson Street, Manchester	Figure No.	BH1R T05 - 05
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis - Unload Reload Loop

IN SITU
SITE INVESTIGATION

Test Date	23/04/2021	Test No.	5
Borehole	BH1R	Test Depth (m)	32.60



Loop 3	Shear Modulus	1842.0	MPa
	Cavity Strain Range	0.072	%

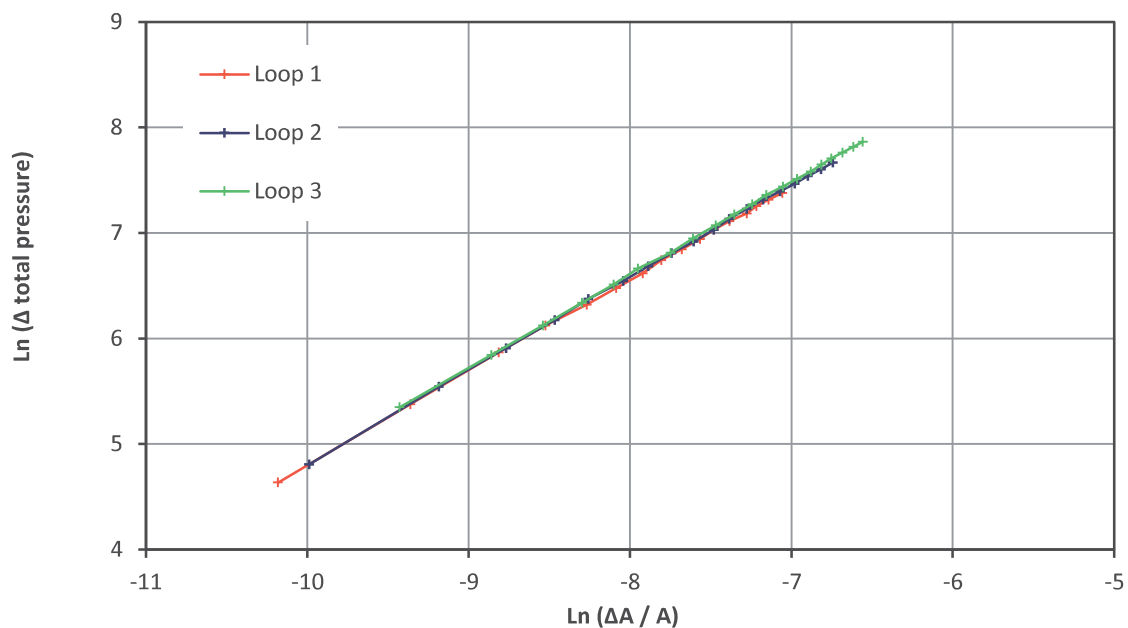
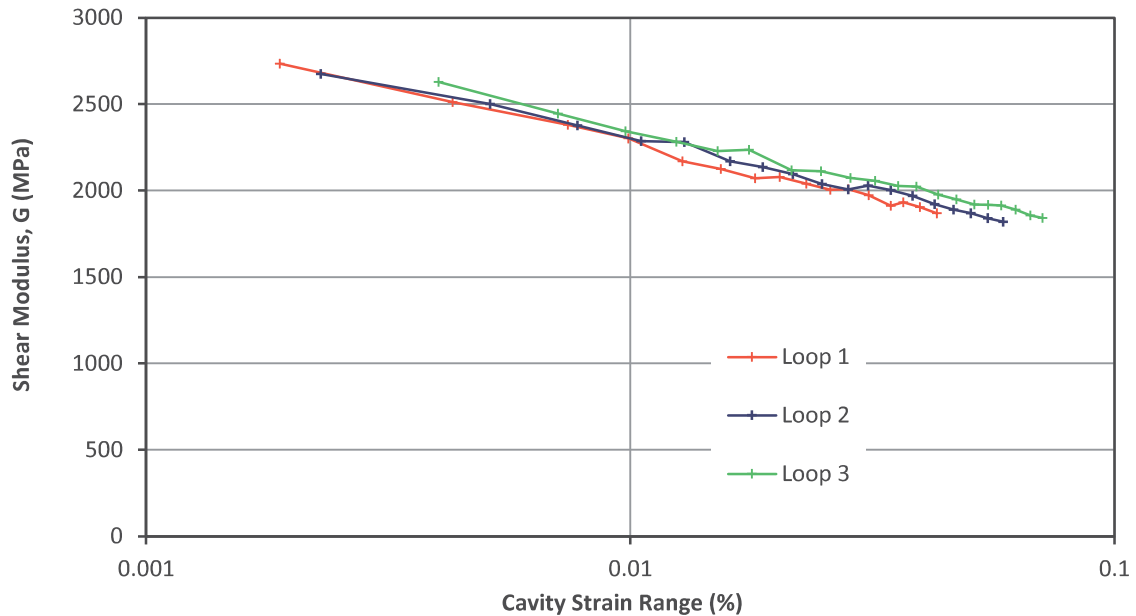
Project	Great Jackson Street, Manchester	Figure No.	BH1R T05 - 06
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis

Small Strain Stiffness and Bolton & Whittle (1999)

IN SITU
SITE INVESTIGATION

Test Date	23/04/2021	Test No.	5
Borehole	BH1R	Test Depth (m)	32.60



Loop 1		Loop 2		Loop 3	
Gradient(β)	Intercept	Gradient(β)	Intercept	Gradient(β)	Intercept
0.877	788.479	0.879	813.061	0.880	840.975
	(MPa)		(MPa)		(MPa)

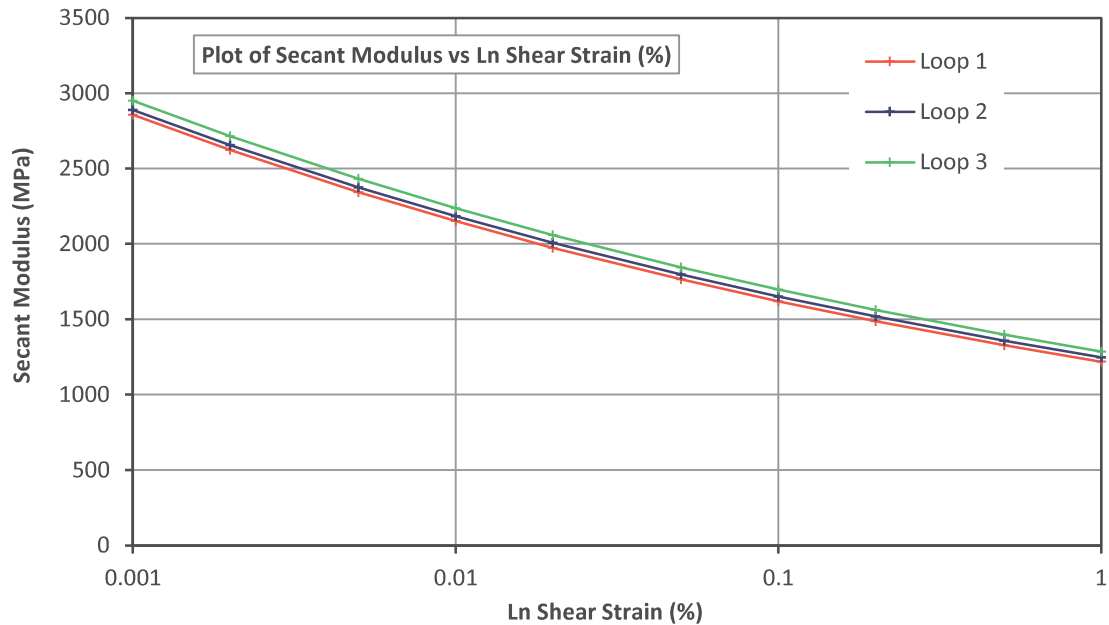
Project	Great Jackson Street, Manchester	Figure No.	BH1R T05 - 07
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis

Secant Modulus - Shear Strain (%)

IN SITU
SITE INVESTIGATION

Test Date	23/04/2021	Test No.	5
Borehole	BH1R	Test Depth (m)	32.60



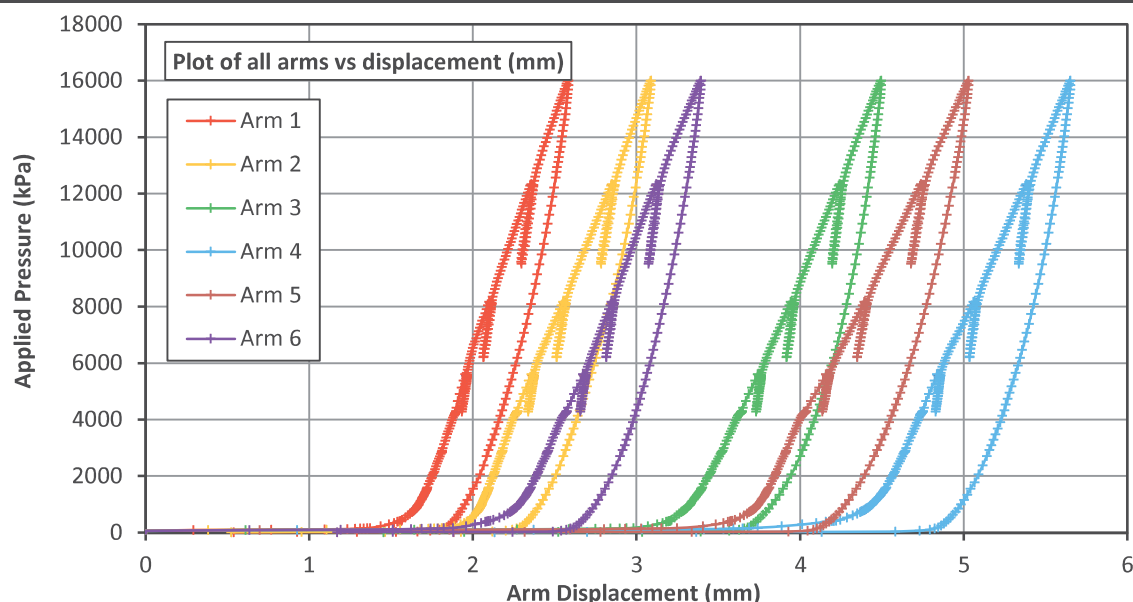
Shear Strain	Loop 1	Loop 2	Loop 3
0.001%	2857	2889	2951
0.002%	2623	2656	2715
0.005%	2343	2376	2432
0.010%	2151	2184	2238
0.020%	1975	2008	2059
0.050%	1764	1797	1844
0.100%	1620	1652	1697
0.200%	1487	1519	1561
0.500%	1328	1359	1398
1.000%	1219	1249	1287

Project	Great Jackson Street, Manchester	Figure No.	BH1R T05 - 08
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Test Overview High Pressure Dilatometer (HPD)

IN SITU
SITE INVESTIGATION

Test Date	26/04/2021		Test No.	1
Borehole	BH4R		Test Depth (m)	10.70
Coordinates (m)	383464.9 (E)	397232.7 (N)	Elevation (m)	33.26



Material description from borehole log:

SANDSTONE.

Test pocket conditions:

Total core recovery:	100 %	Test pocket depth range:	
Solid core recovery:	91 %	From:	9.90 m to: 12.10 m
Rock quality designation:	64 %	Flush:	Water

Test comment:

The test pocket was reasonable with arms lifting off at 1.5 to 4.5mm. The po was estimated to be at 1913kPa, with the following loading section being long and linear. No material yield was seen and the test was taken to a high pressure of 15998kPa. The displacement-pressure response shown by the arms was reasonably consistent albeit with some slight variation in expansion. Analysis of three unload reload loops provides modulus values of 963 to 972MPa.

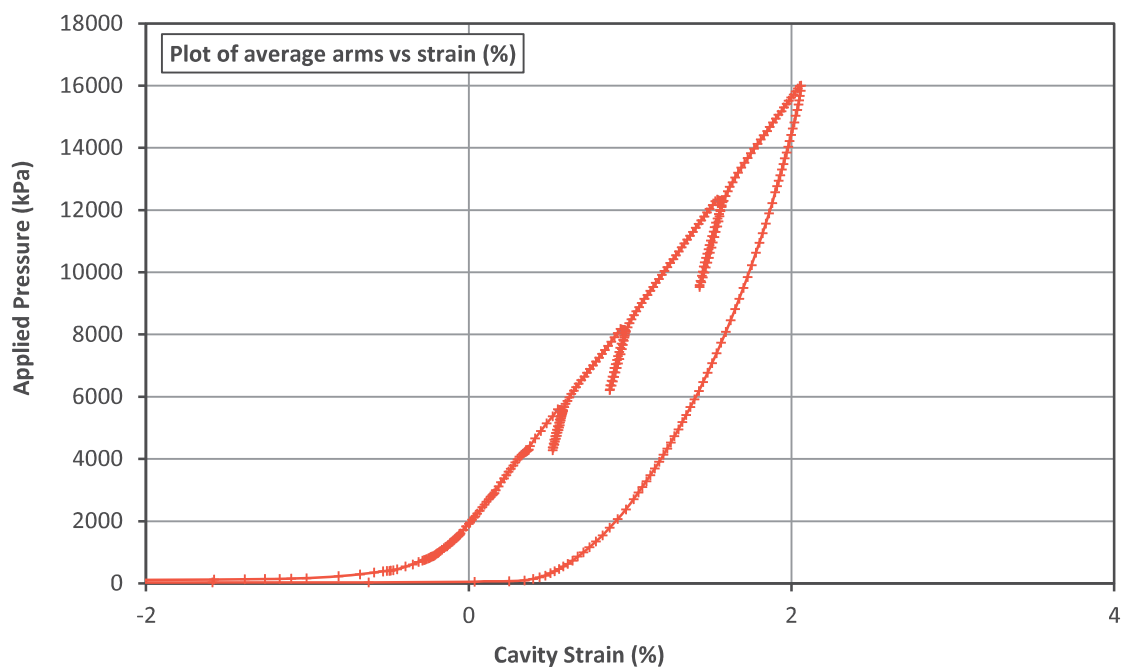
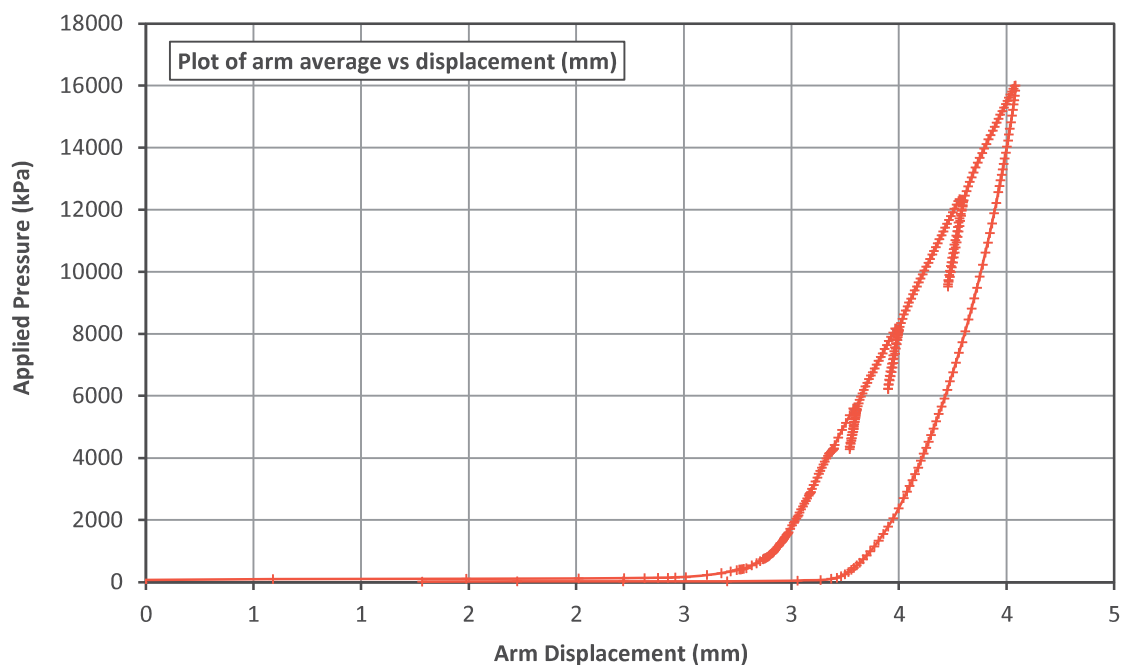
Test details:		Instrument:		Eleanor (HPD04)		
Drilling method:	Rotary coring			mV	mV/mm	mV
Casing depth:	9.90 m	Arm 1:	-2381.3	122.9	TPC A:	292.6
Water level:	9.00 m	Arm 2:	-2055.5	124.9	TPC B:	-2133.8
		Arm 3:	-2295.5	129.5		
Test time:		Arm 4:	-2122.7	127.4		
Start (probe in):	11:50 hrs	Arm 5:	-2298.4	132.1		
Finish (probe out):	13:30 hrs	Arm 6:	-2147.9	124.1		

Project	Great Jackson Street, Manchester	Figure No.	BH4R T01 - 01
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Test - Average Arm Plots

IN SITU
SITE INVESTIGATION

Test Date	26/04/2021	Test No.	1
Borehole	BH4R	Test Depth (m)	10.70

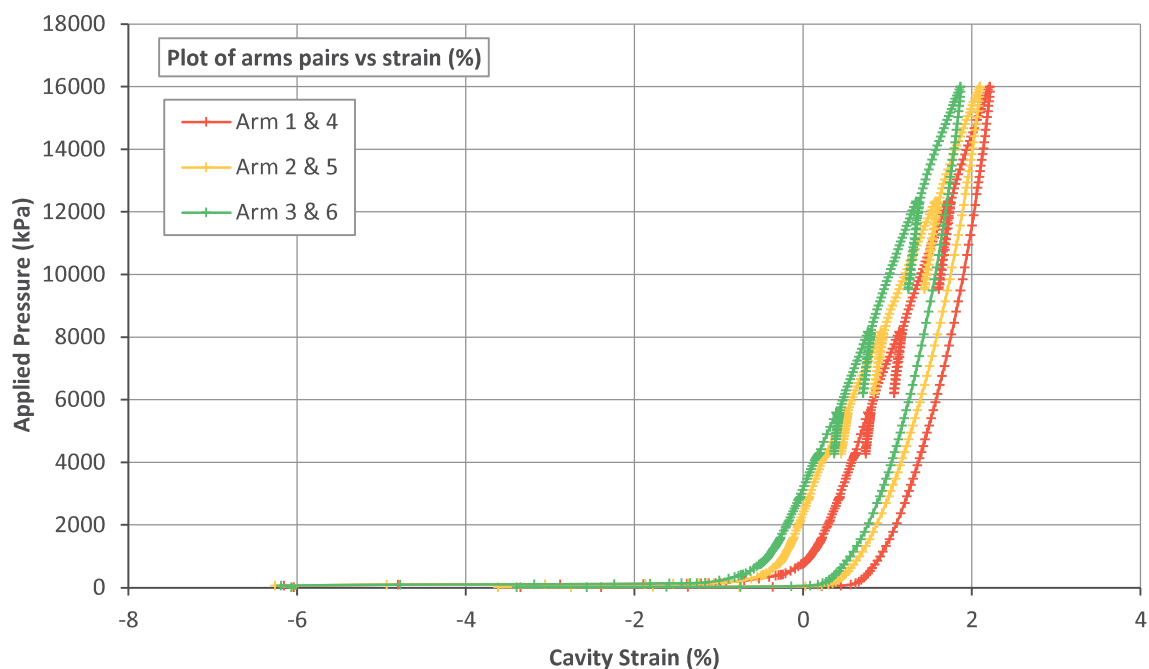
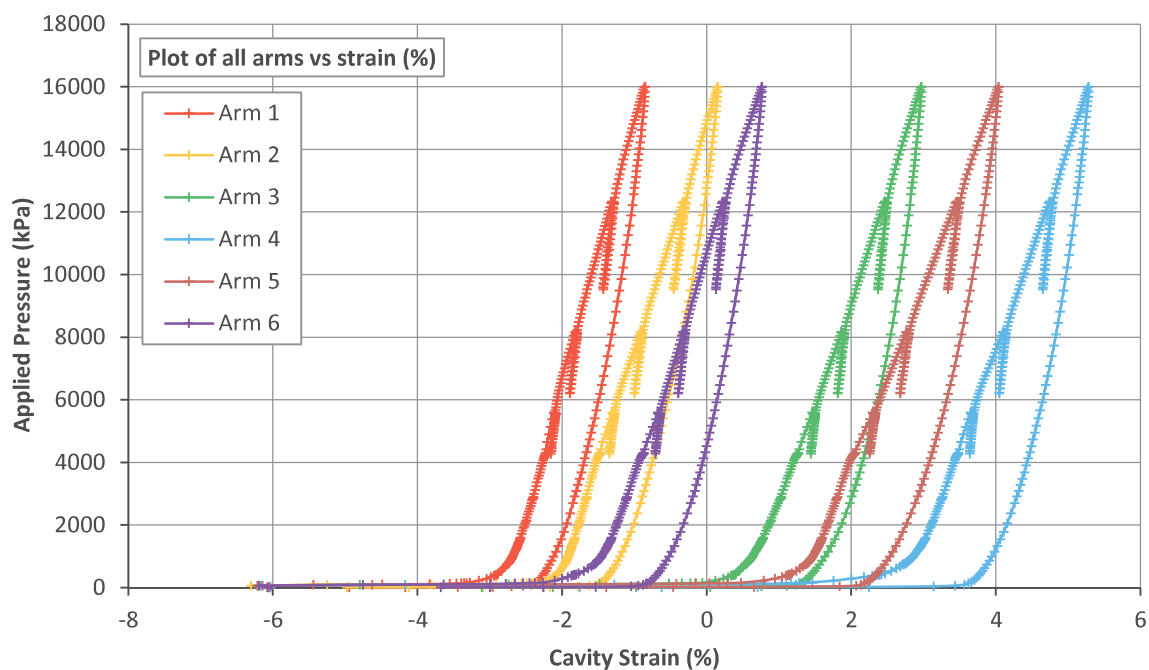


Project	Great Jackson Street, Manchester	Figure No.	BH4R T01 - 02
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Test - Arm Displacement vs Strain (%)

IN SITU
SITE INVESTIGATION

Test Date	26/04/2021	Test No.	1
Borehole	BH4R	Test Depth (m)	10.70

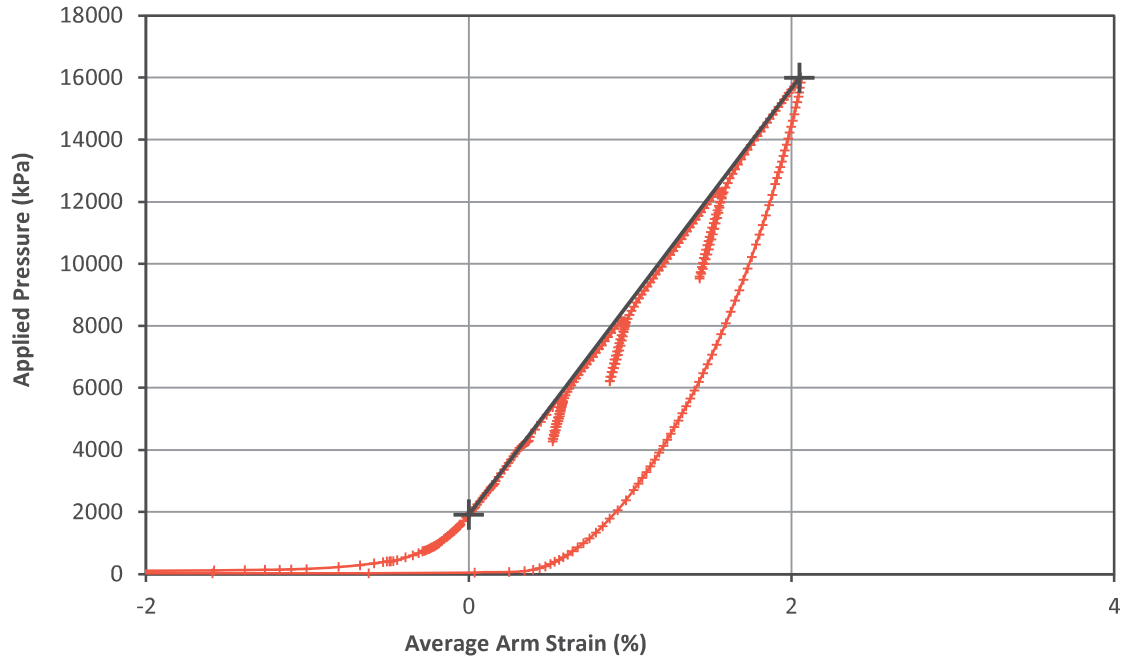


Project	Great Jackson Street, Manchester	Figure No.	BH4R T01 - 03
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis - Initial Modulus & In Situ Horizontal Stress

IN SITU
SITE INVESTIGATION

Test Date	26/04/2021	Test No.	1
Borehole	BH4R	Test Depth (m)	10.70



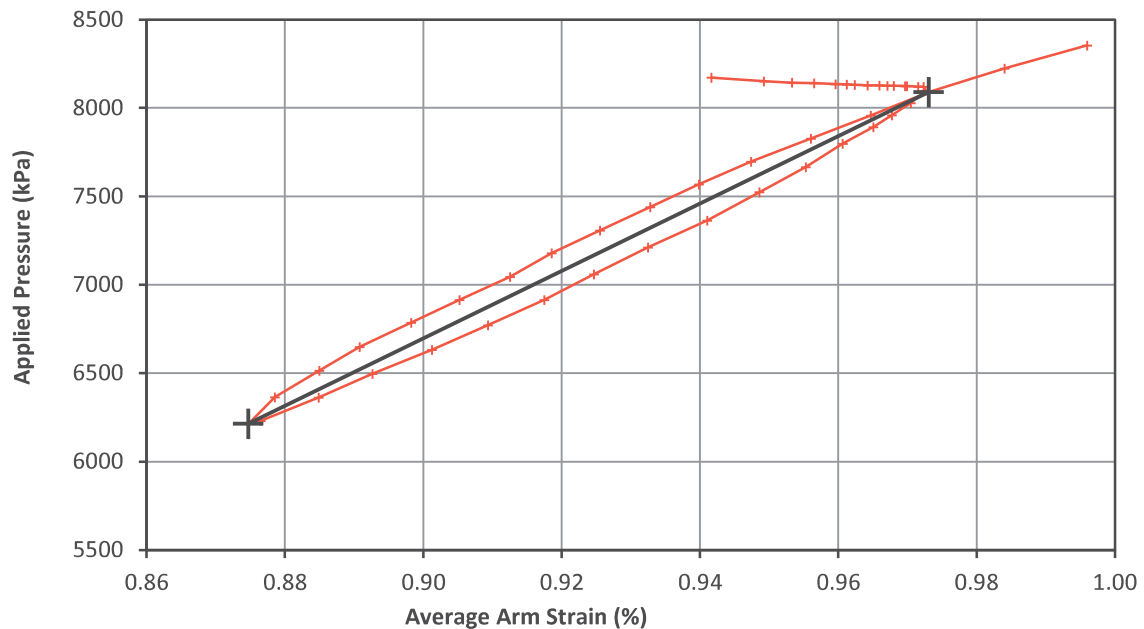
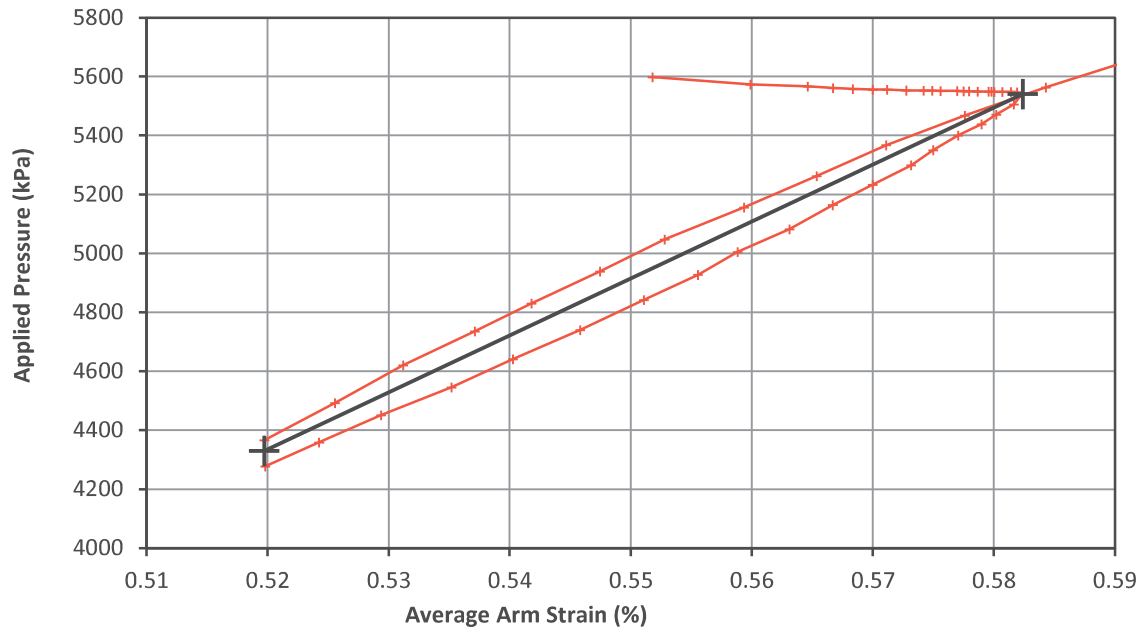
Initial Modulus	Shear Modulus	350.6 MPa
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Project	Great Jackson Street, Manchester	Figure No.	BH4R T01 - 04
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis - Unload Reload Loop

IN SITU
SITE INVESTIGATION

Test Date	26/04/2021	Test No.	1
Borehole	BH4R	Test Depth (m)	10.70

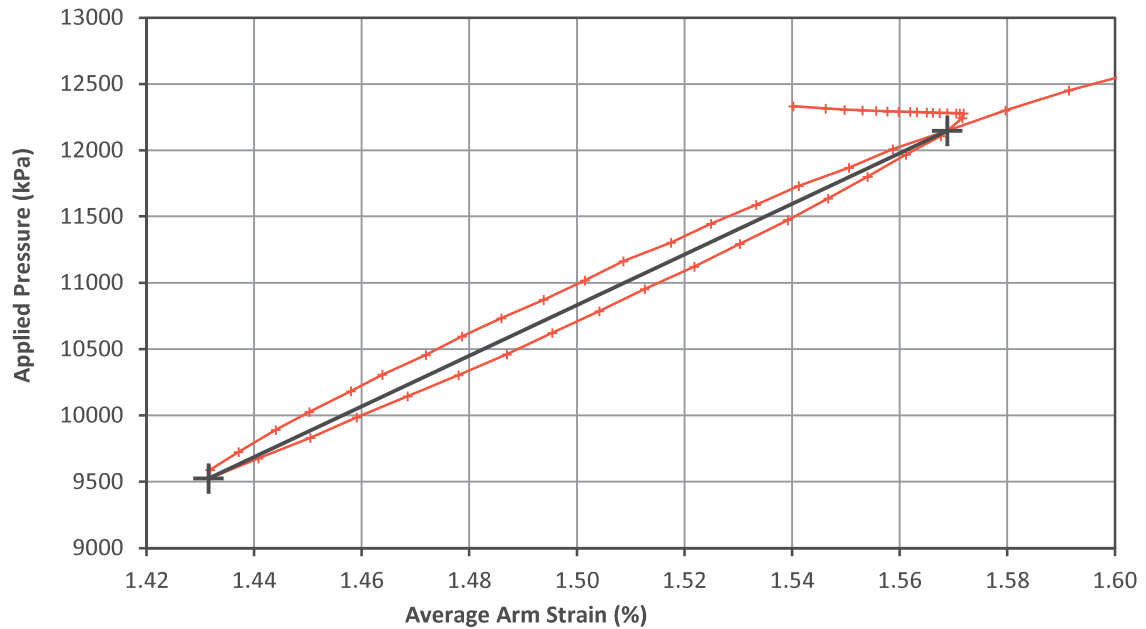


Project	Great Jackson Street, Manchester	Figure No.	BH4R T01 - 05
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis - Unload Reload Loop

IN SITU
SITE INVESTIGATION

Test Date	26/04/2021	Test No.	1
Borehole	BH4R	Test Depth (m)	10.70



Loop 3	Shear Modulus	969.1	MPa
	Cavity Strain Range	0.137	%

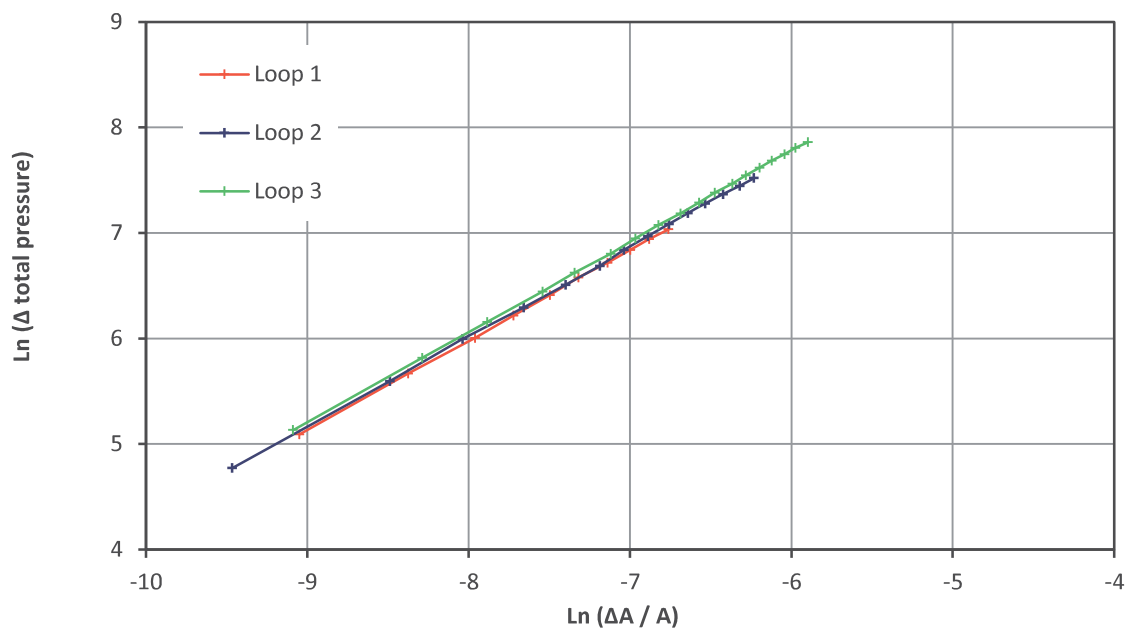
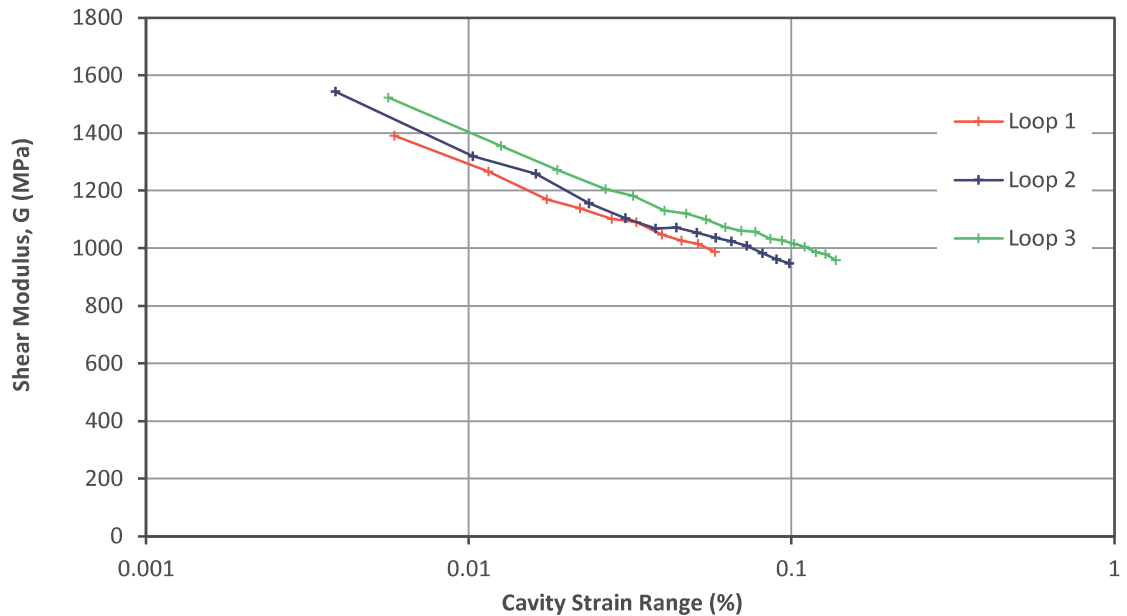
Project	Great Jackson Street, Manchester	Figure No.	BH4R T01 - 06
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis

Small Strain Stiffness and Bolton & Whittle (1999)

IN SITU
SITE INVESTIGATION

Test Date	26/04/2021	Test No.	1
Borehole	BH4R	Test Depth (m)	10.70



Loop 1		Loop 2		Loop 3	
Gradient(β)	Intercept	Gradient(β)	Intercept	Gradient(β)	Intercept
0.853	364.758 (MPa)	0.854	378.685 (MPa)	0.861	418.792 (MPa)

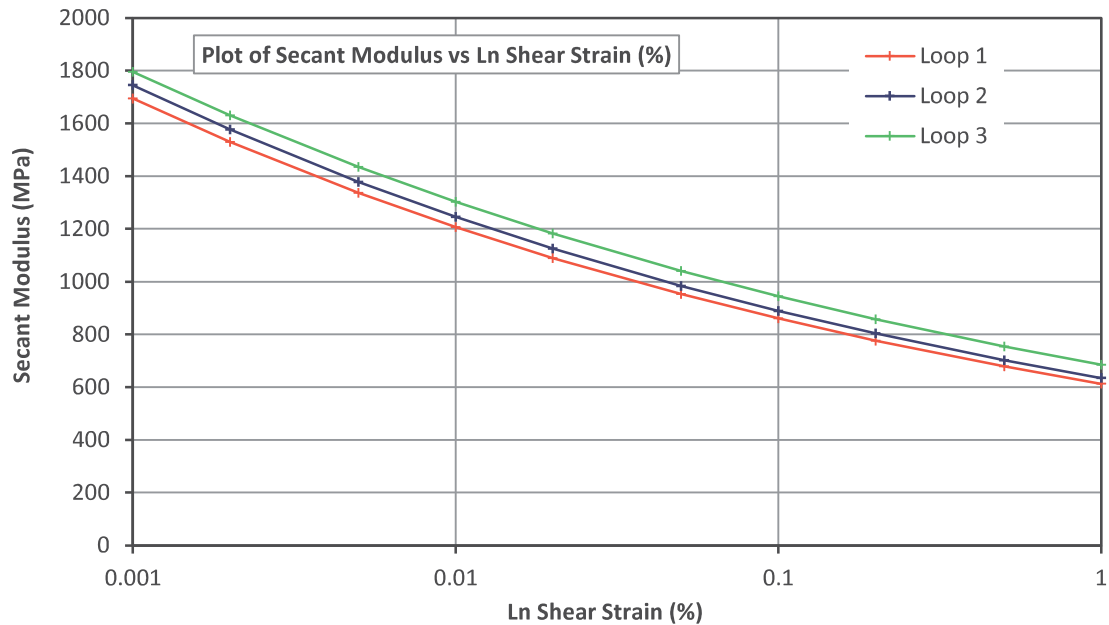
Project	Great Jackson Street, Manchester	Figure No.	BH4R T01 - 07
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis

Secant Modulus - Shear Strain (%)

IN SITU
SITE INVESTIGATION

Test Date	26/04/2021	Test No.	1
Borehole	BH4R	Test Depth (m)	10.70



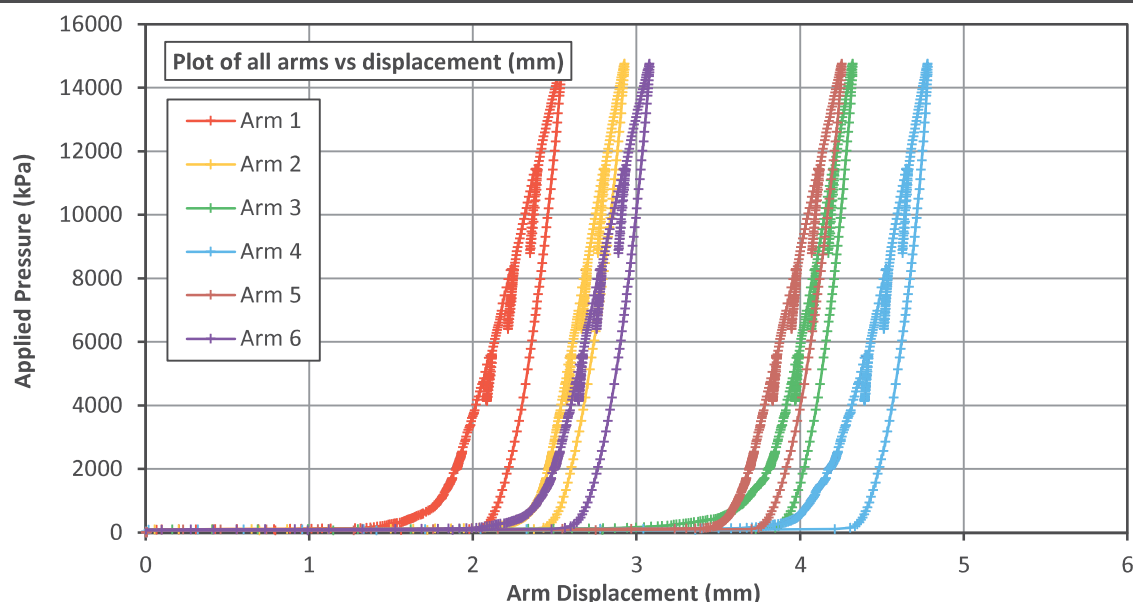
Shear Strain	Loop 1	Loop 2	Loop 3
0.001%	1694	1745	1795
0.002%	1529	1576	1630
0.005%	1336	1379	1434
0.010%	1207	1245	1302
0.020%	1090	1125	1182
0.050%	952	984	1040
0.100%	860	889	944
0.200%	776	803	857
0.500%	679	702	755
1.000%	613	634	685

Project	Great Jackson Street, Manchester	Figure No.	BH4R T01 - 08
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Test Overview High Pressure Dilatometer (HPD)

IN SITU
SITE INVESTIGATION

Test Date	27/04/2021		Test No.	2
Borehole	BH4R		Test Depth (m)	16.50
Coordinates (m)	383464.9 (E)	397232.7 (N)	Elevation (m)	33.26



Material description from borehole log:

SANDSTONE.

Test pocket conditions:

Total core recovery:	88 %	Test pocket depth range:
Solid core recovery:	81 %	From: 15.20 m to: 17.80 m
Rock quality designation:	58 %	Flush: Water

Test comment:

The test pocket was reasonable with arms lifting off at 1.5 to 4.5mm. The po was estimated to be at 2600kPa, with the following loading section being long and linear. No material yield was seen and the test was taken to a high pressure of 14764kPa. The displacement-pressure response shown by the arms was reasonably consistent albeit with some slight variation in expansion. Analysis of three unload reload loops provides increasing modulus values of 1293 to 1512MPa.

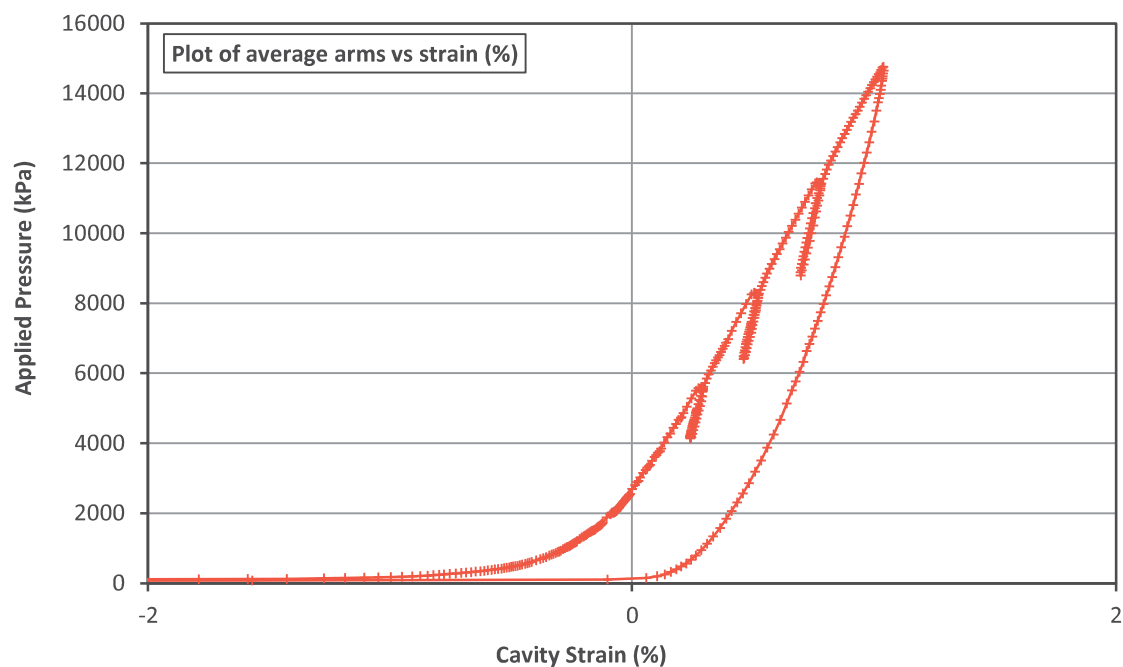
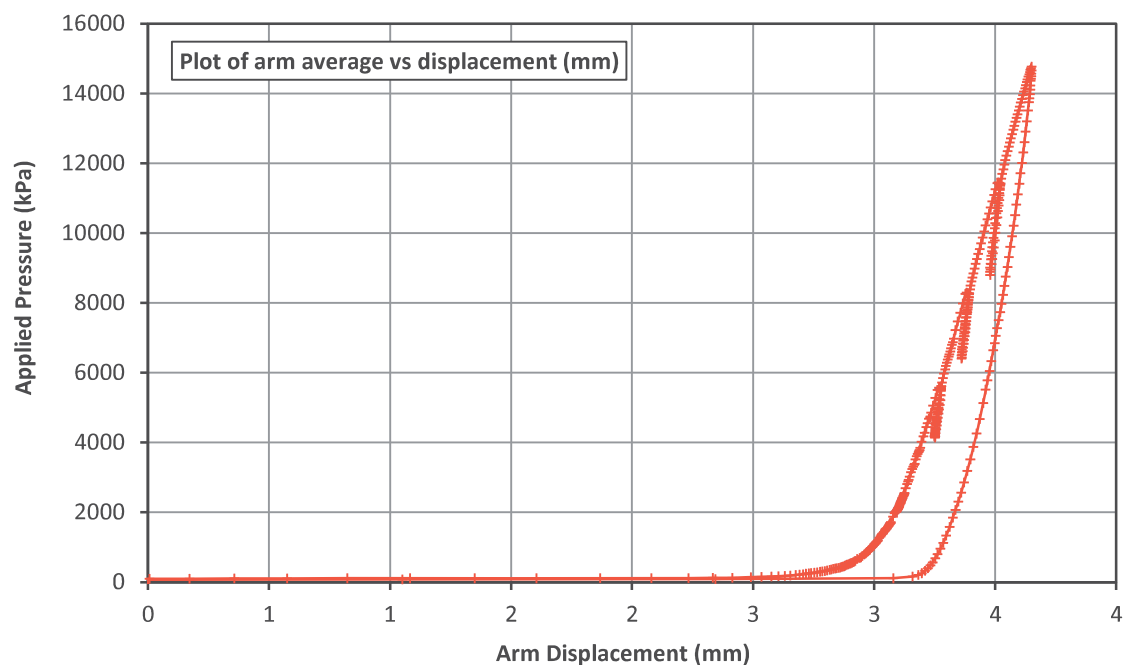
Test details:		Instrument:		Eleanor (HPD04)		
Drilling method:	Rotary coring		mV	mV/mm	mV	mV/MPa
Casing depth:	15.20 m	Arm 1:	-2379.6	122.9	TPC A:	294.0
Water level:	9.00 m	Arm 2:	-2056.0	124.9	TPC B:	-2134.4
		Arm 3:	-2295.3	129.5		
Test time:		Arm 4:	-2123.7	127.4		
Start (probe in):	11:30 hrs	Arm 5:	-2296.9	132.1		
Finish (probe out):	13:30 hrs	Arm 6:	-2149.0	124.1		

Project	Great Jackson Street, Manchester	Figure No.	BH4R T02 - 01
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Test - Average Arm Plots

IN SITU
SITE INVESTIGATION

Test Date	27/04/2021	Test No.	2
Borehole	BH4R	Test Depth (m)	16.50

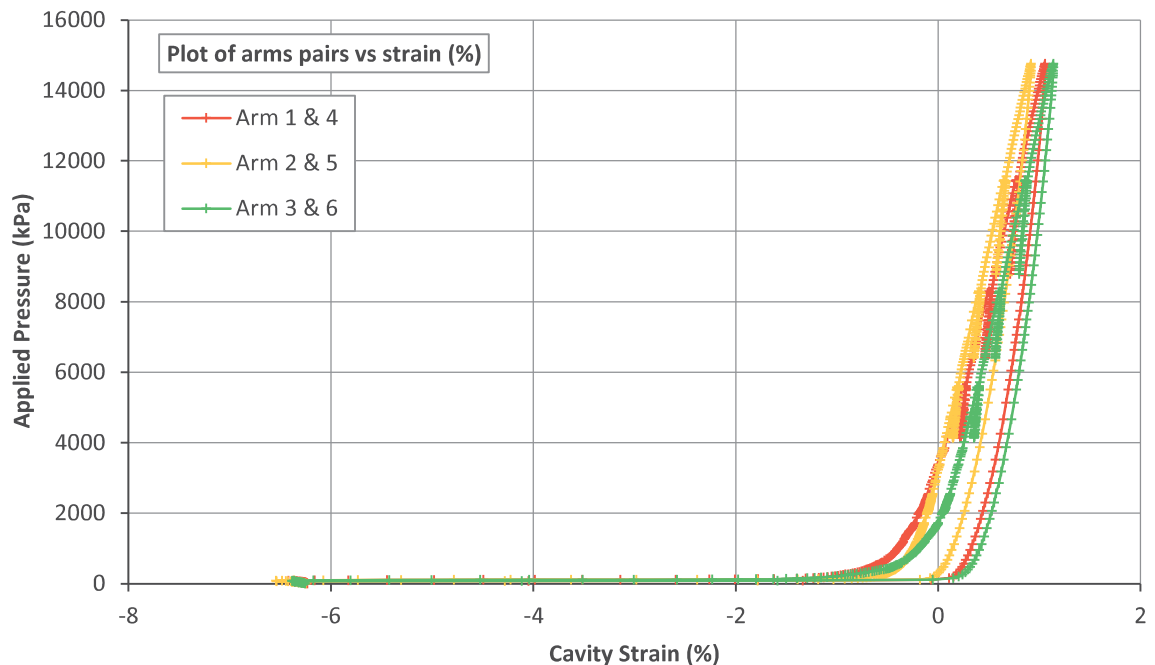
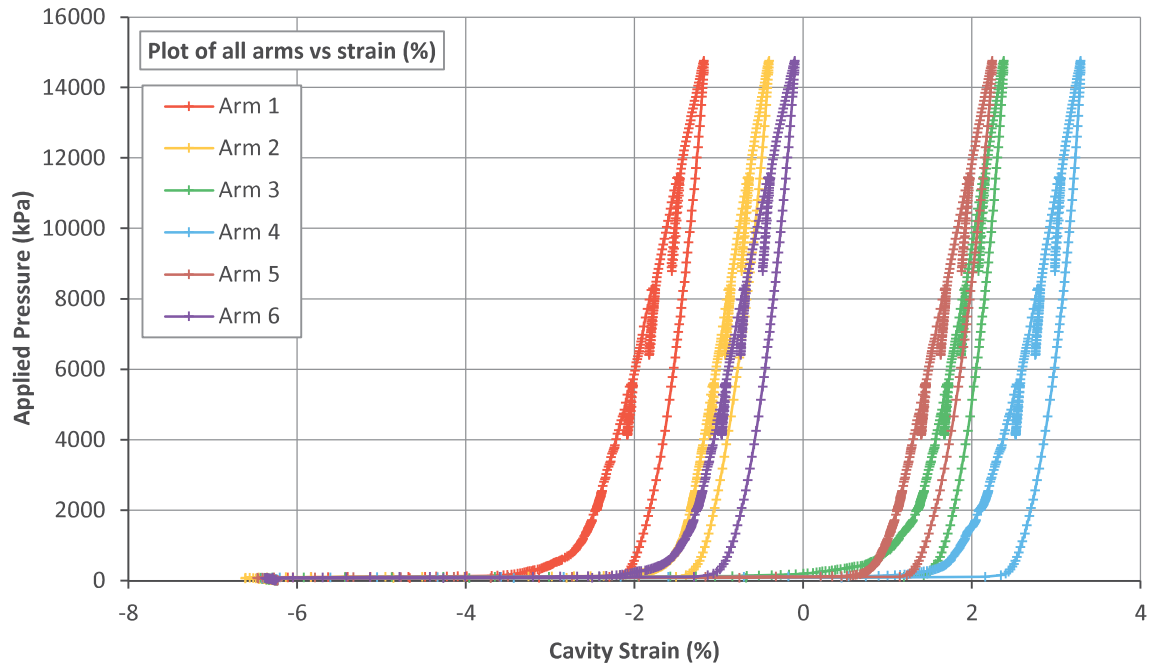


Project	Great Jackson Street, Manchester	Figure No.	BH4R T02 - 02
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Test - Arm Displacement vs Strain (%)

IN SITU
SITE INVESTIGATION

Test Date	27/04/2021	Test No.	2
Borehole	BH4R	Test Depth (m)	16.50

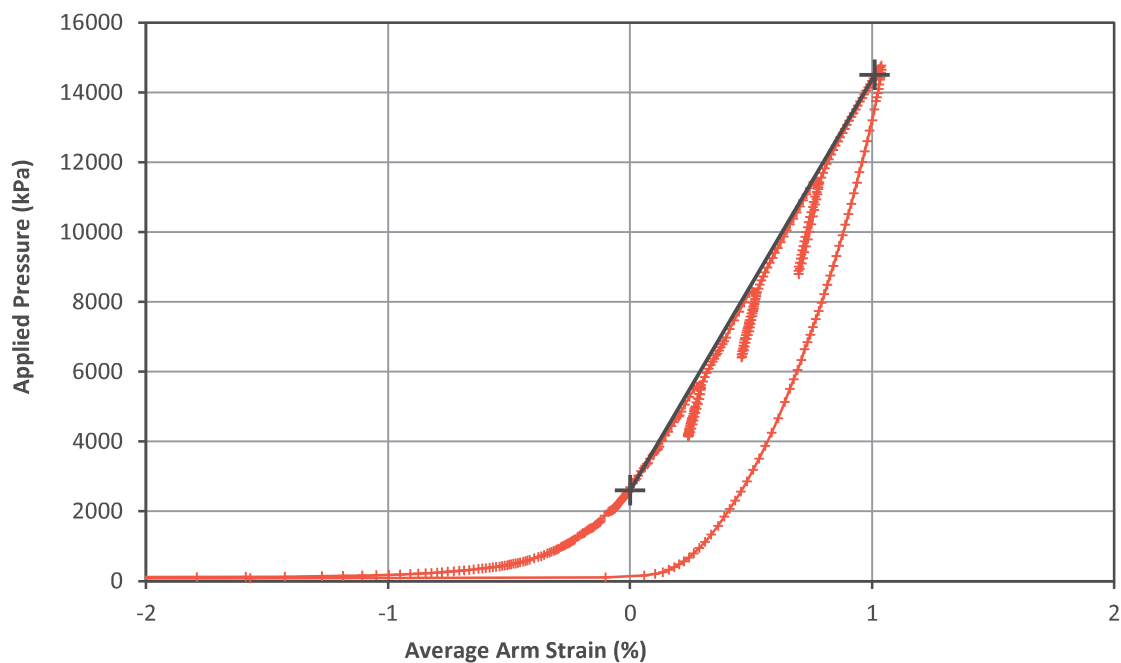


Project	Great Jackson Street, Manchester	Figure No.	BH4R T02 - 03
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis - Initial Modulus & In Situ Horizontal Stress

IN SITU
SITE INVESTIGATION

Test Date	27/04/2021	Test No.	2
Borehole	BH4R	Test Depth (m)	16.50



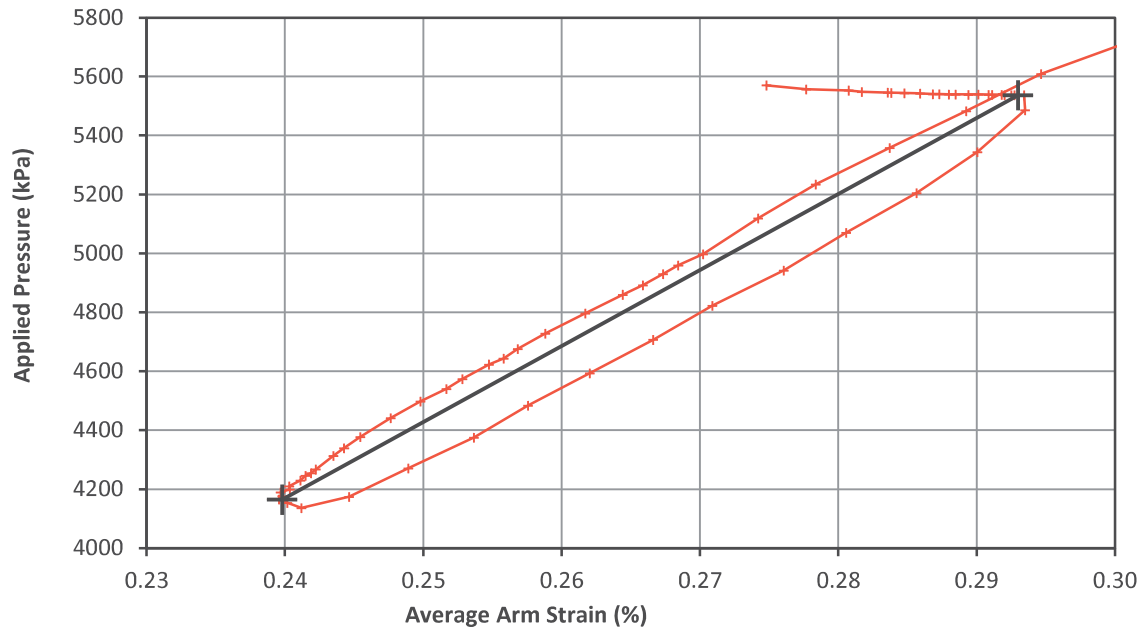
Initial Modulus	Shear Modulus	595.1 MPa
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Project	Great Jackson Street, Manchester	Figure No.	BH4R T02 - 04
Client	GeoAssist		
Project No.	P1210114		

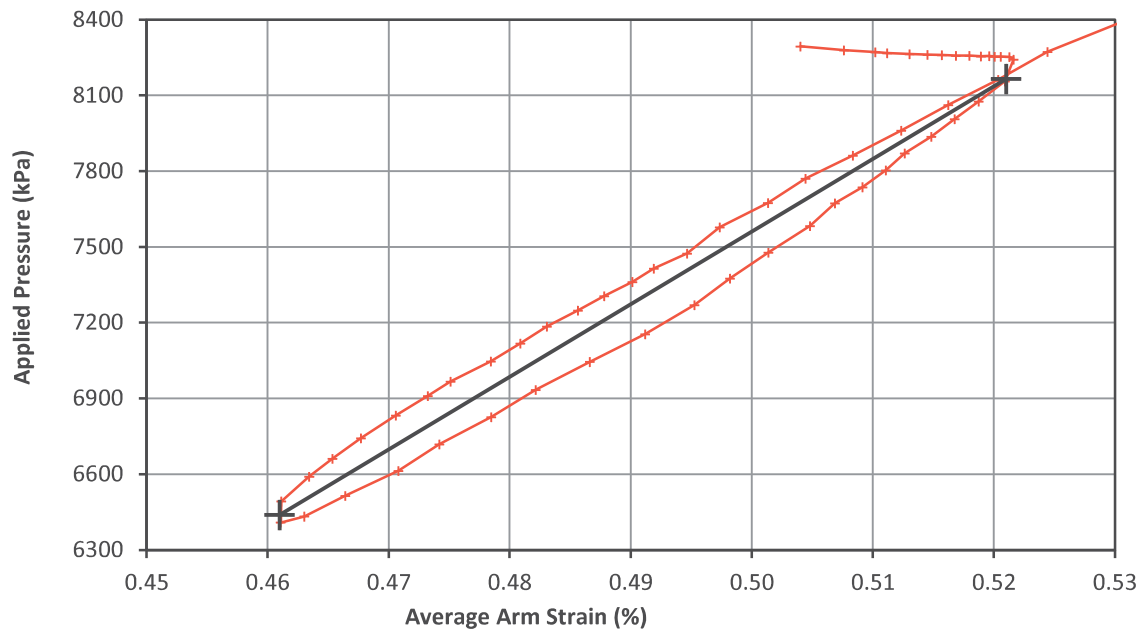
Pressuremeter Analysis - Unload Reload Loop

IN SITU
SITE INVESTIGATION

Test Date	27/04/2021	Test No.	2
Borehole	BH4R	Test Depth (m)	16.50



Loop 1	Shear Modulus	1293.4 MPa
	Cavity Strain Range	0.053 %



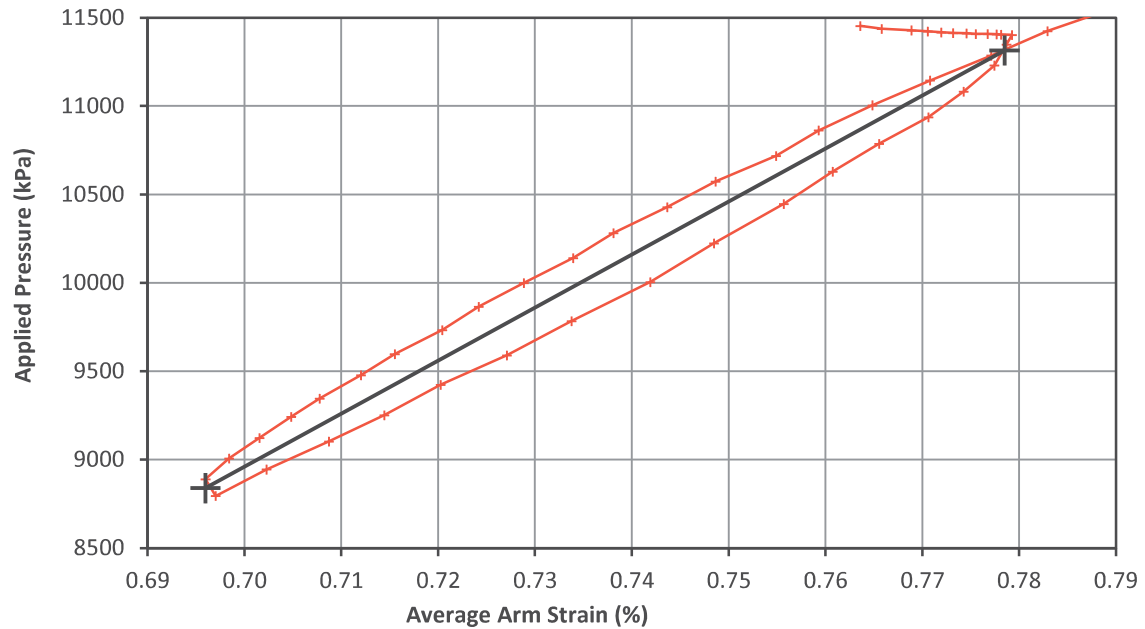
Loop 2	Shear Modulus	1445.0 MPa
	Cavity Strain Range	0.060 %

Project	Great Jackson Street, Manchester	Figure No.	BH4R T02 - 05
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis - Unload Reload Loop

IN SITU
SITE INVESTIGATION

Test Date	27/04/2021	Test No.	2
Borehole	BH4R	Test Depth (m)	16.50



Loop 3	Shear Modulus	1511.7	MPa
	Cavity Strain Range	0.083	%

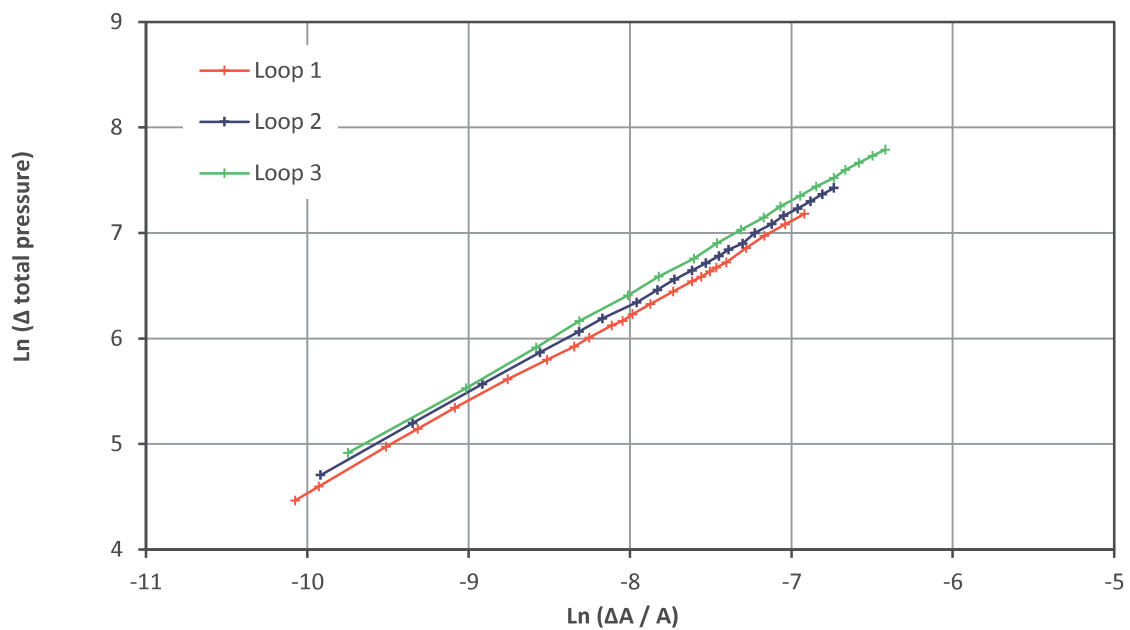
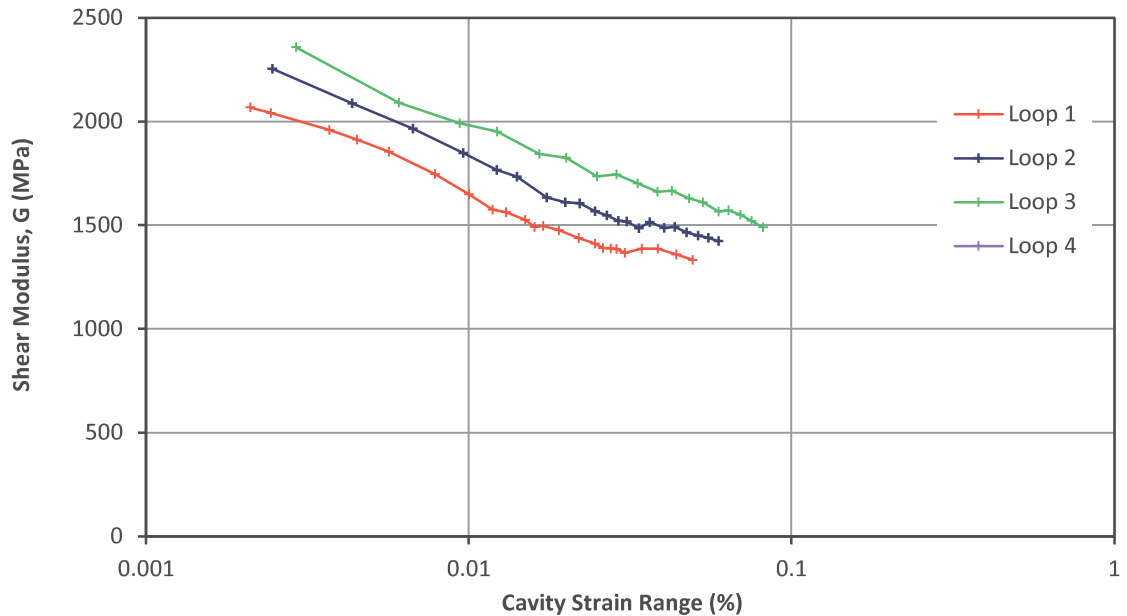
Project	Great Jackson Street, Manchester	Figure No.	BH4R T02 - 06
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis

Small Strain Stiffness and Bolton & Whittle (1999)

IN SITU
SITE INVESTIGATION

Test Date	27/04/2021	Test No.	2
Borehole	BH4R	Test Depth (m)	16.50



Loop 1		Loop 2		Loop 3	
Gradient(β)	Intercept	Gradient(β)	Intercept	Gradient(β)	Intercept
0.840	420.978	0.852	511.680	0.870	650.572
	(MPa)		(MPa)		(MPa)

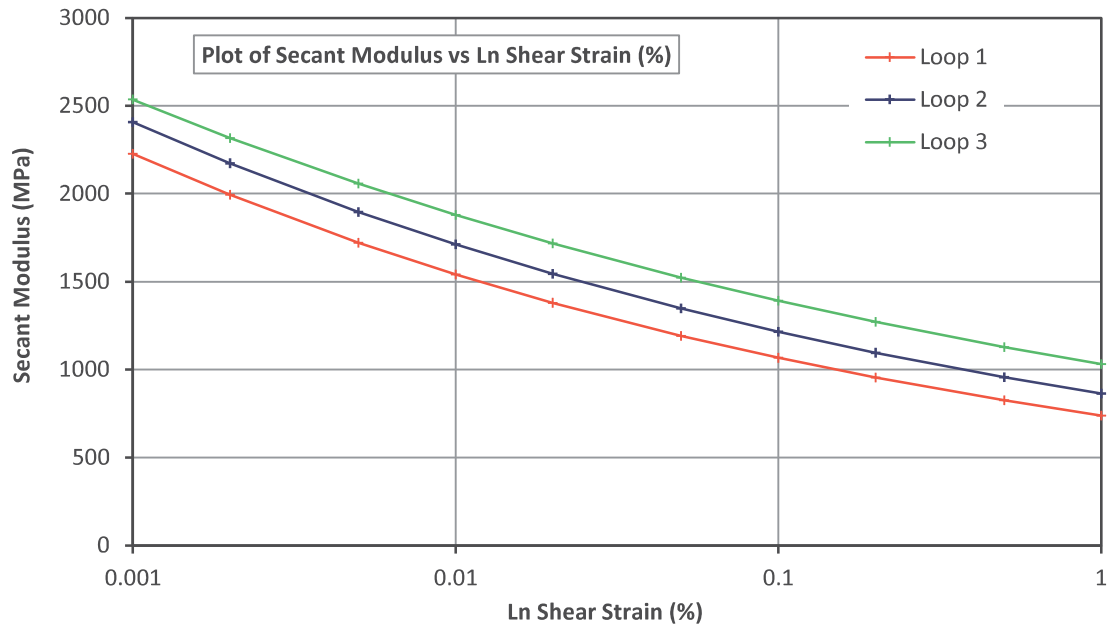
Project	Great Jackson Street, Manchester	Figure No.	BH4R T02 - 07
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis

Secant Modulus - Shear Strain (%)

IN SITU
SITE INVESTIGATION

Test Date	27/04/2021	Test No.	2
Borehole	BH4R	Test Depth (m)	16.50



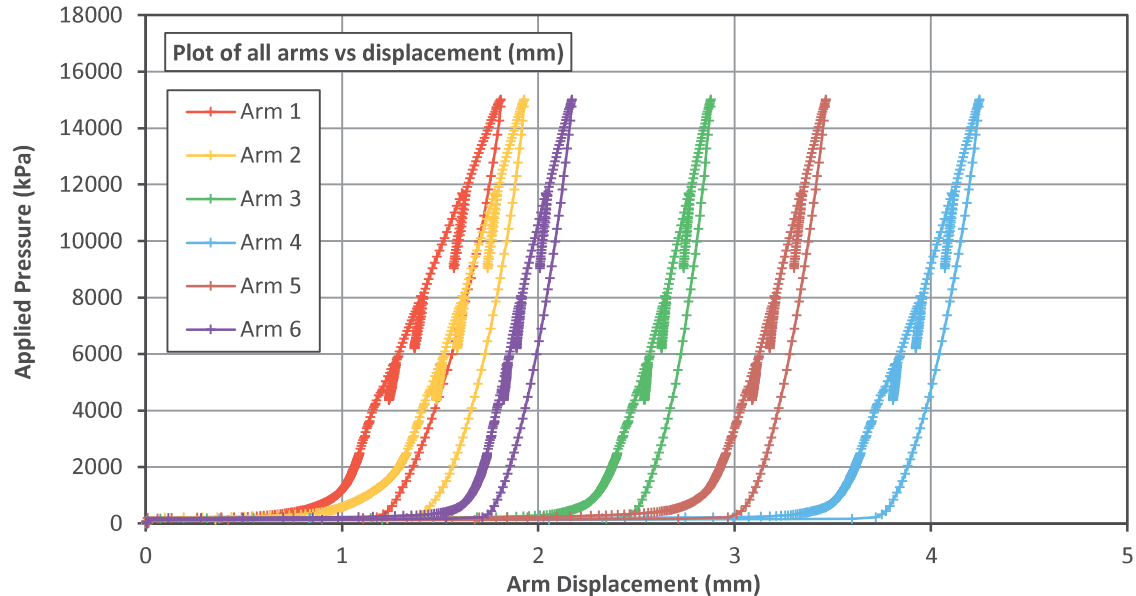
Shear Strain	Loop 1	Loop 2	Loop 3
0.001%	2226	2408	2535
0.002%	1993	2172	2316
0.005%	1721	1896	2056
0.010%	1541	1711	1878
0.020%	1379	1543	1716
0.050%	1191	1347	1523
0.100%	1067	1215	1392
0.200%	955	1096	1271
0.500%	825	957	1128
1.000%	738	863	1031

Project	Great Jackson Street, Manchester	Figure No.	BH4R T02 - 08
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Test Overview High Pressure Dilatometer (HPD)

IN SITU
SITE INVESTIGATION

Test Date	28/04/2021		Test No.	3
Borehole	BH4R		Test Depth (m)	22.30
Coordinates (m)	383464.9 (E)	397232.7 (N)	Elevation (m)	33.26



Material description from borehole log:

SANDSTONE.

Test pocket conditions:

Total core recovery:	100 %	Test pocket depth range:
Solid core recovery:	97 %	From: 20.50 m to: 23.50 m
Rock quality designation:	73 %	Flush: Water

Test comment:

The test pocket was good with arms lifting off at 1.5 to 3.0mm. The p_0 was estimated to be at 3234kPa, with the following loading section being long and linear. The start of material yield is indicated at 13650kPa and the test was taken to a high pressure of 15012kPa. The displacement-pressure response shown by the arms was reasonably consistent albeit at some variation in expansion. Analysis of three unload reload loops provides increasing modulus values of 1279 to 1375MPa. Derived undrained shear strength analysis provides values of 10.4 to 11.1MPa, although these should be treated as minimum values due to incomplete failure.

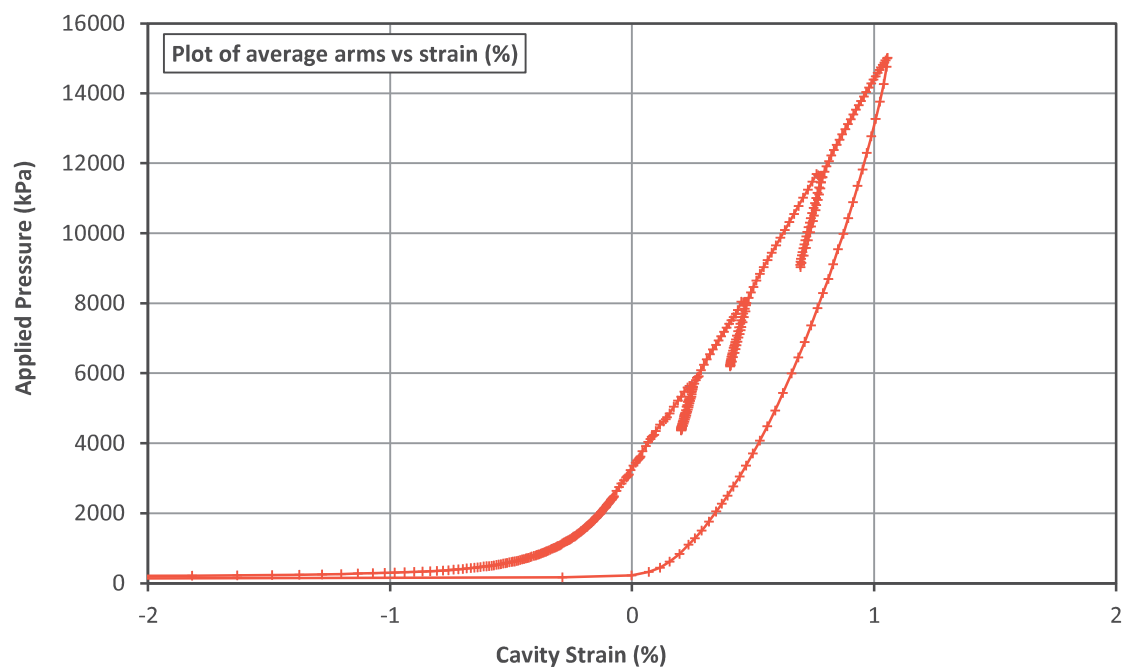
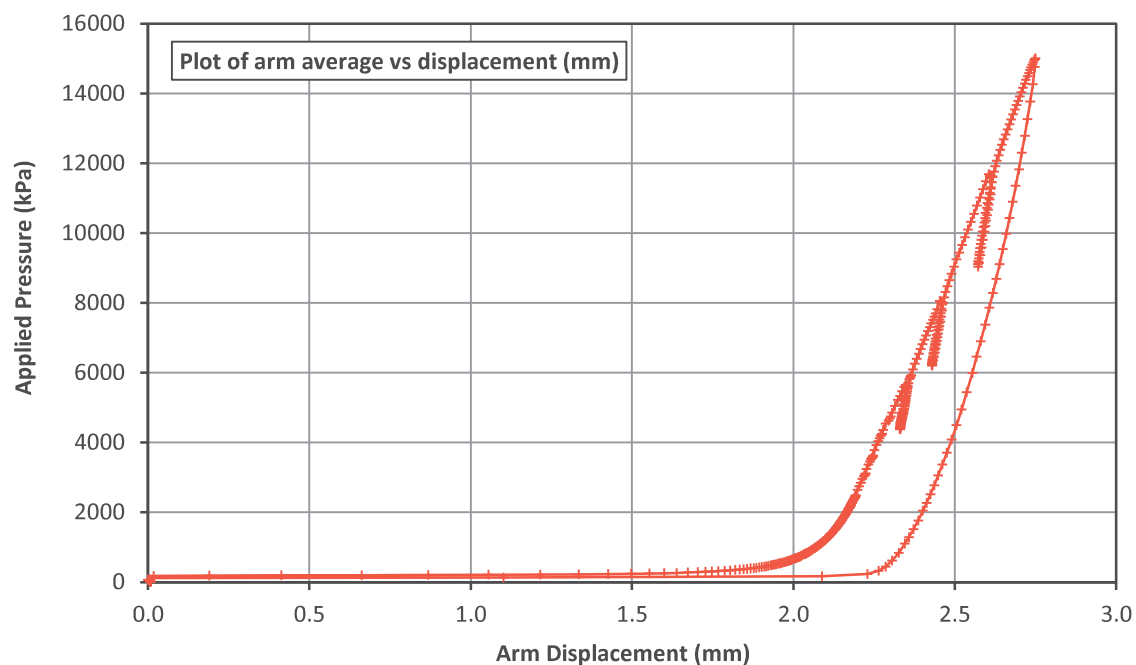
Test details:		Instrument:		Eleanor (HPD04)		
Drilling method:	Rotary coring			mV	mV/mm	mV
Casing depth:	20.50 m	Arm 1:	-2376.0	122.9	TPC A:	292.5
Water level:	10.10 m	Arm 2:	-2043.4	124.9	TPC B:	-2135.9
		Arm 3:	-2290.4	129.5		
Test time:		Arm 4:	-2119.3	127.4		
Start (probe in):	11:05 hrs	Arm 5:	-2289.7	132.1		
Finish (probe out):	12:50 hrs	Arm 6:	-2141.7	124.1		

Project	Great Jackson Street, Manchester	Figure No.	BH4R T03 - 01
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Test - Average Arm Plots

IN SITU
SITE INVESTIGATION

Test Date	28/04/2021	Test No.	3
Borehole	BH4R	Test Depth (m)	22.30

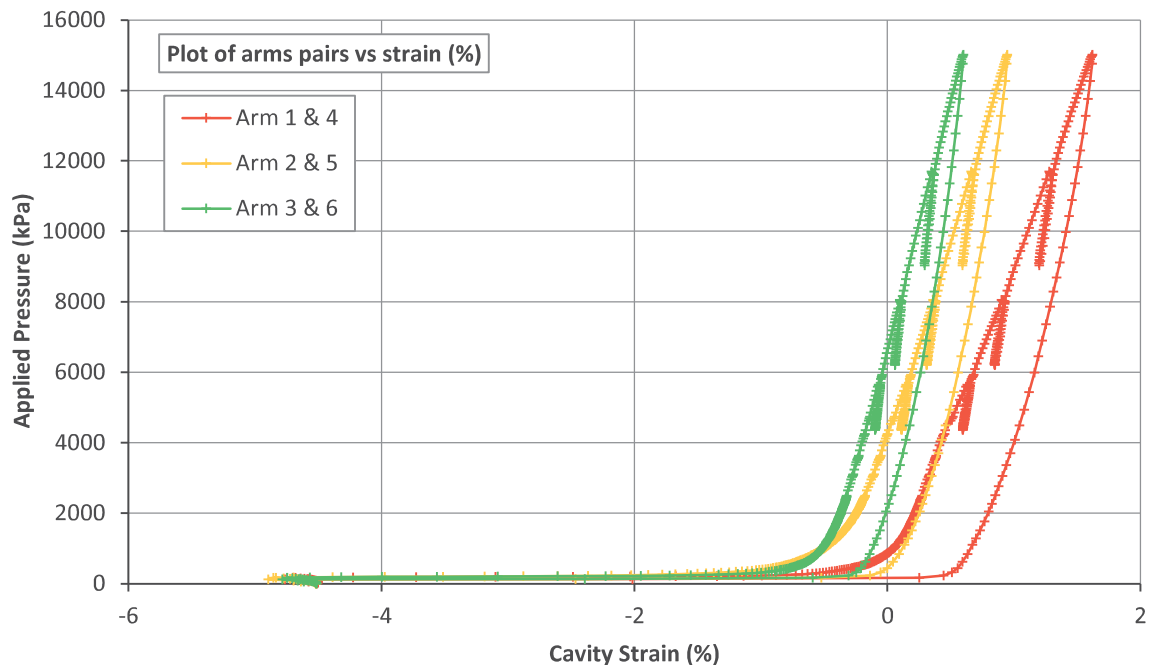
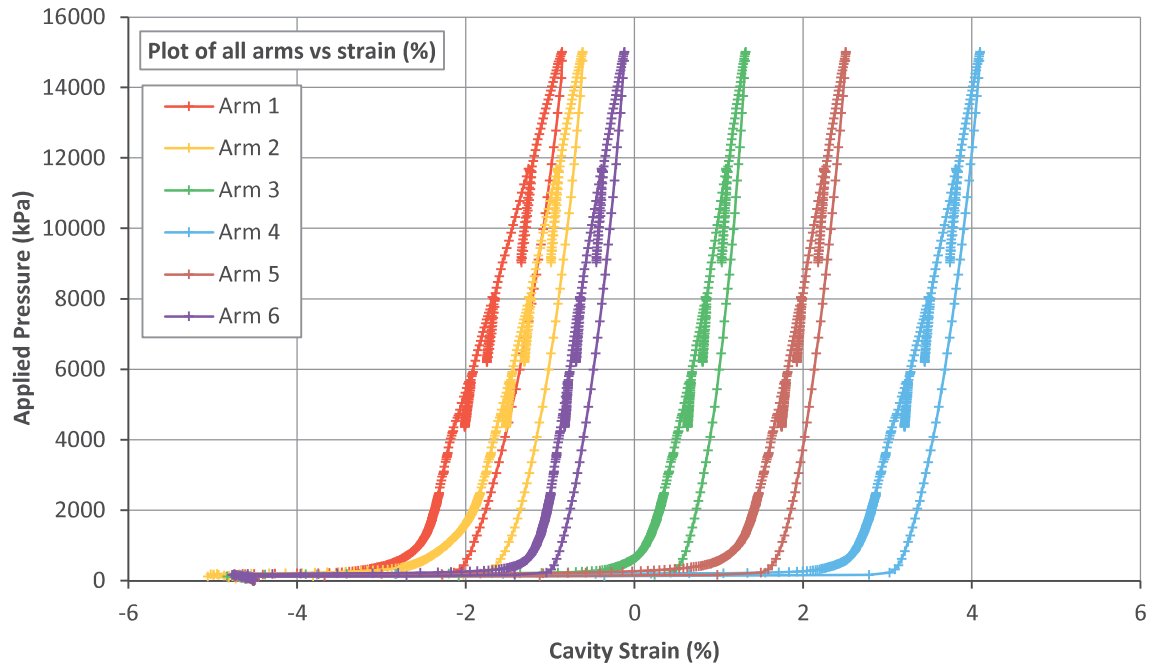


Project	Great Jackson Street, Manchester	Figure No.	BH4R T03 - 02
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Test - Arm Displacement vs Strain (%)

IN SITU
SITE INVESTIGATION

Test Date	28/04/2021	Test No.	3
Borehole	BH4R	Test Depth (m)	22.30

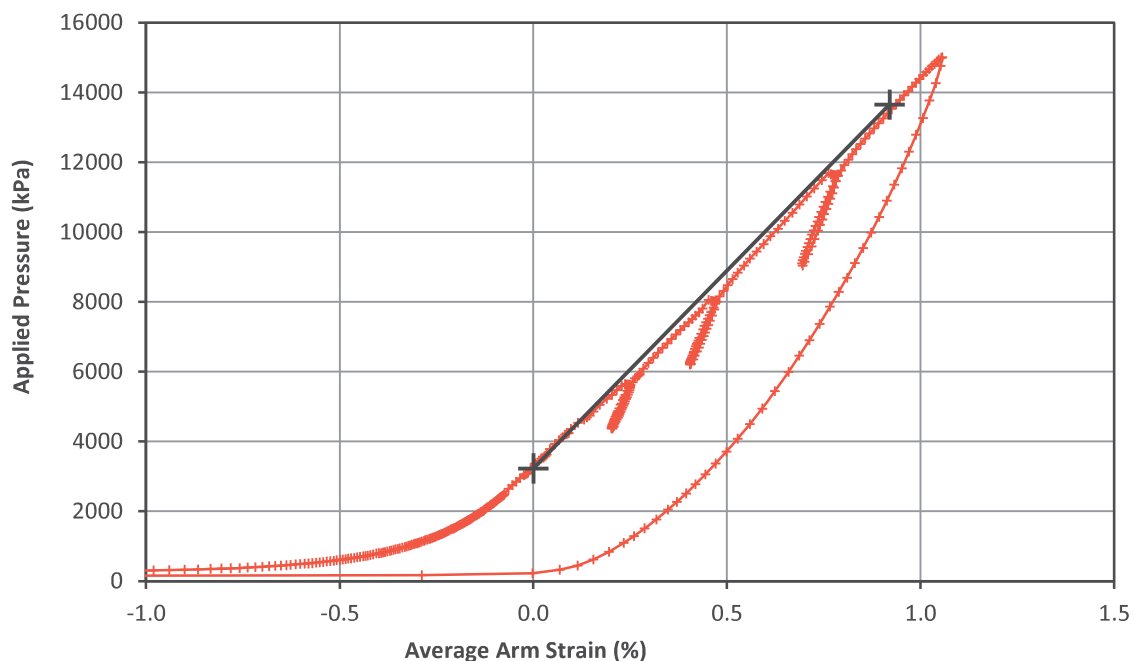


Project	Great Jackson Street, Manchester	Figure No.	BH4R T03 - 03
Client	GeoAssist		
Project No.	P1210114		

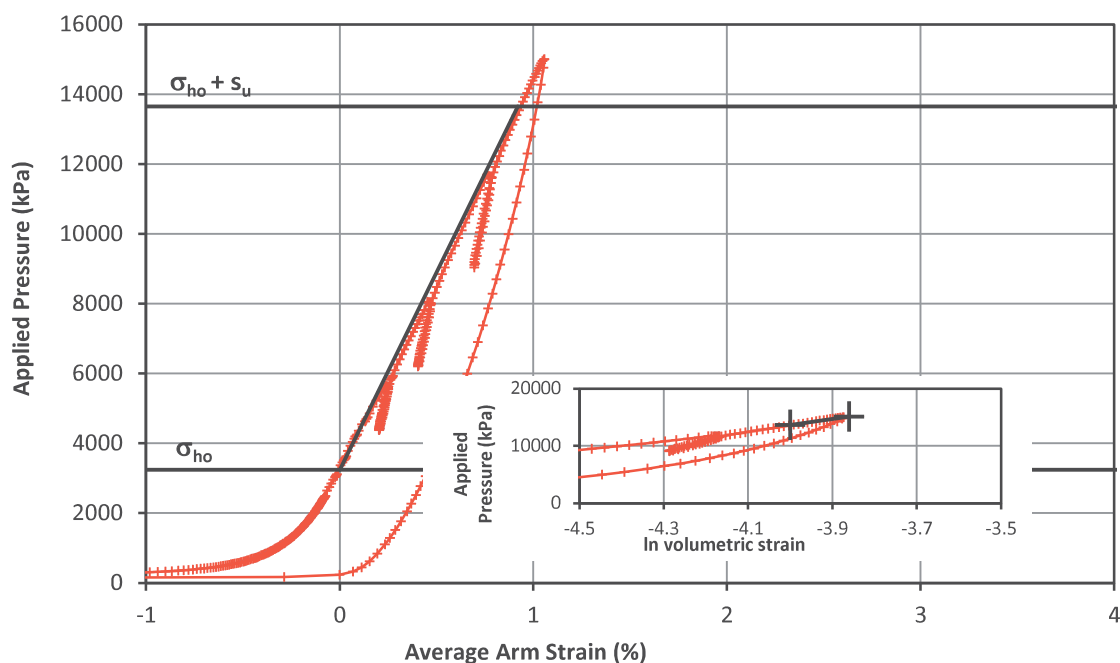
Pressuremeter Analysis - Initial Modulus & In Situ Horizontal Stress

IN SITU
SITE INVESTIGATION

Test Date	28/04/2021	Test No.	3
Borehole	BH4R	Test Depth (m)	22.30



Initial Modulus	Shear Modulus	571.3 MPa
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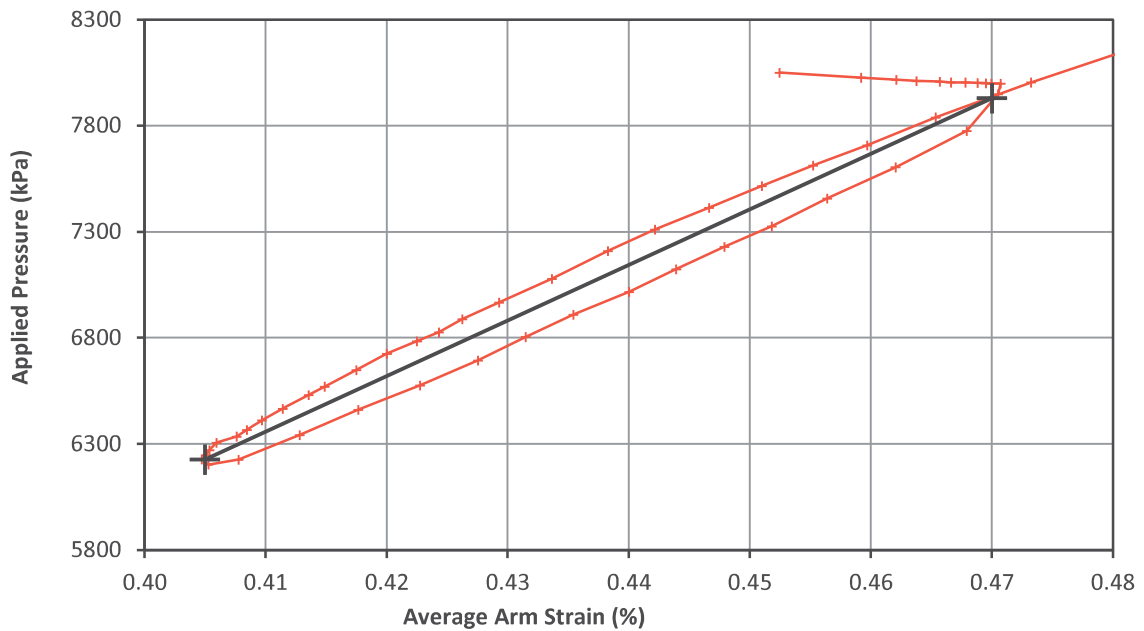
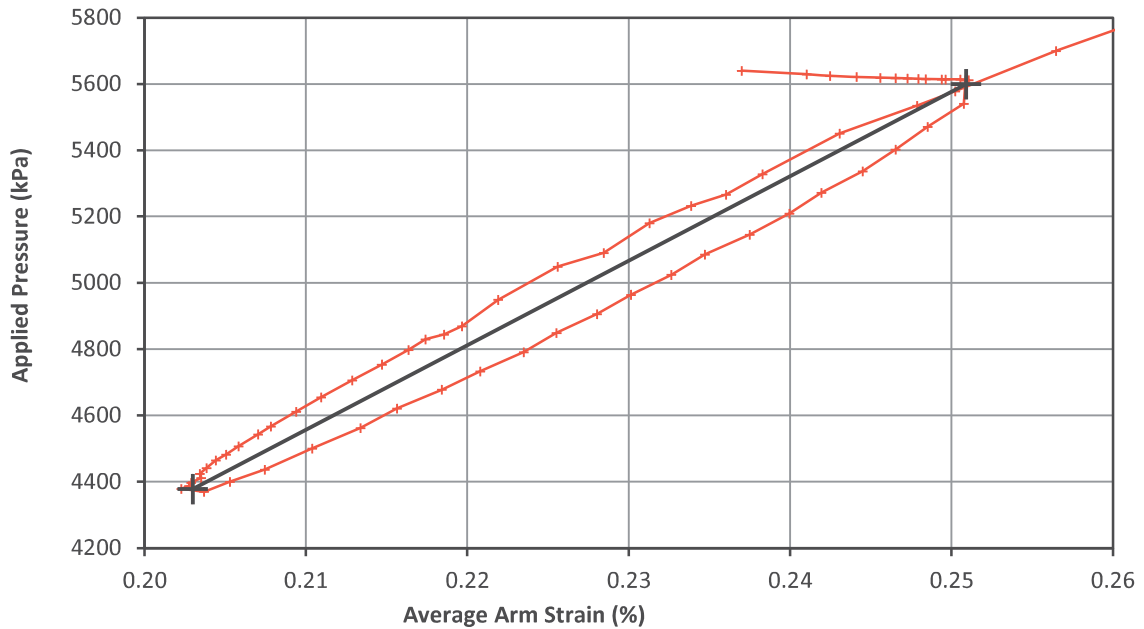
Marsland & Randolph	In situ horizontal stress	3234 kPa
	Undrained Strength	10416 kPa

Project	Great Jackson Street, Manchester	Figure No.	BH4R T03 - 04
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis - Unload Reload Loop

IN SITU
SITE INVESTIGATION

Test Date	28/04/2021	Test No.	3
Borehole	BH4R	Test Depth (m)	22.30

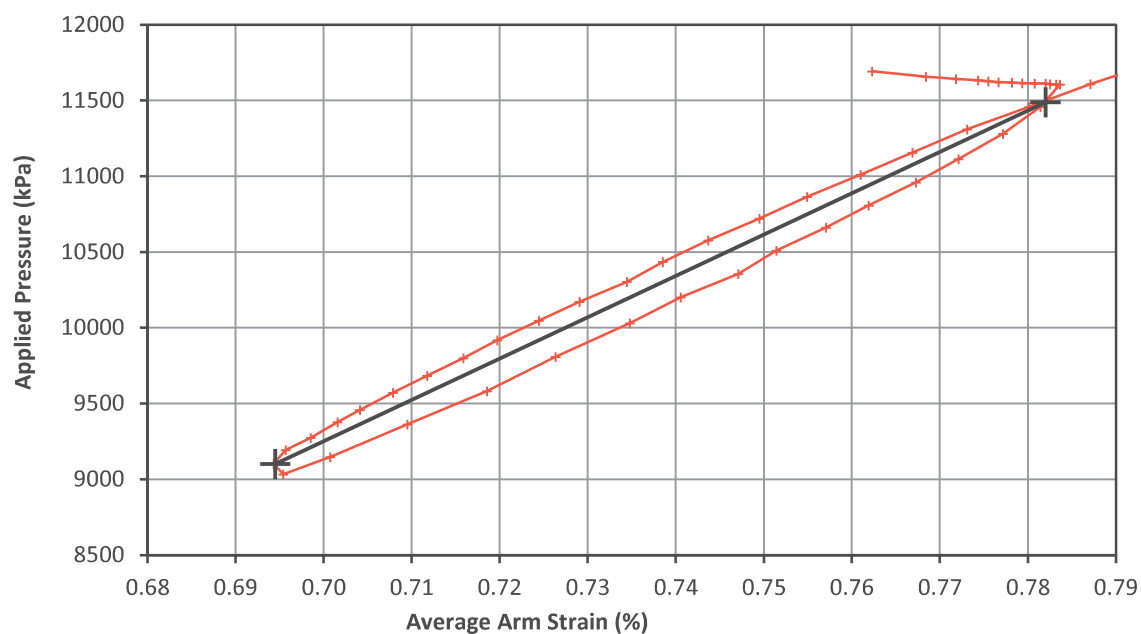


Project	Great Jackson Street, Manchester	Figure No.	BH4R T03 - 05
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis - Unload Reload Loop

IN SITU
SITE INVESTIGATION

Test Date	28/04/2021	Test No.	3
Borehole	BH4R	Test Depth (m)	22.30



Loop 3	Shear Modulus	1375.2	MPa
	Cavity Strain Range	0.088	%

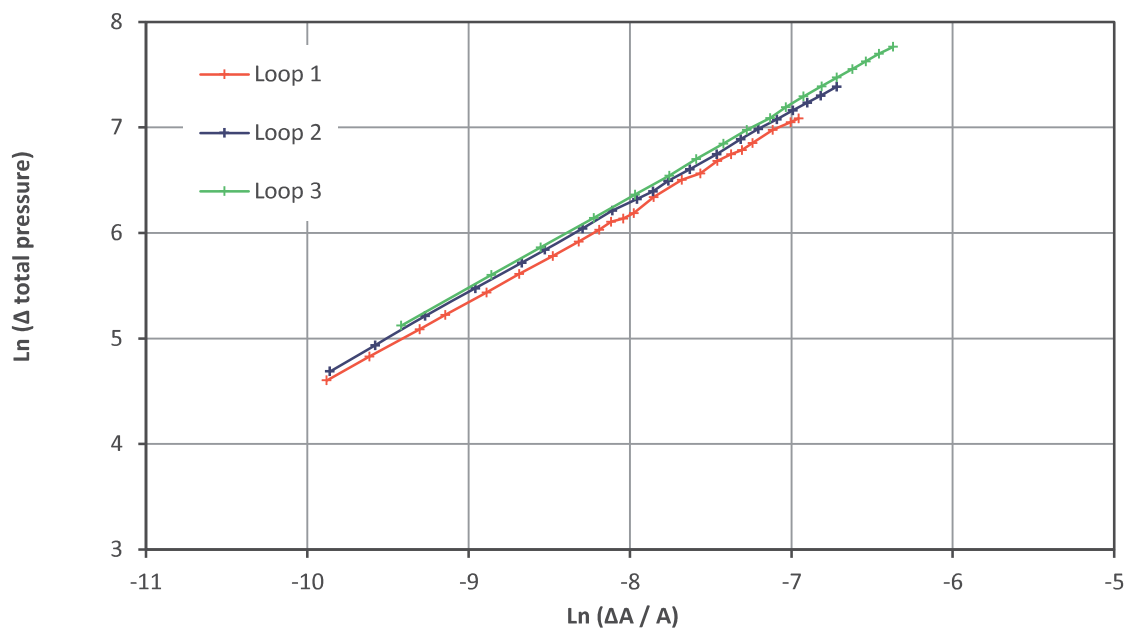
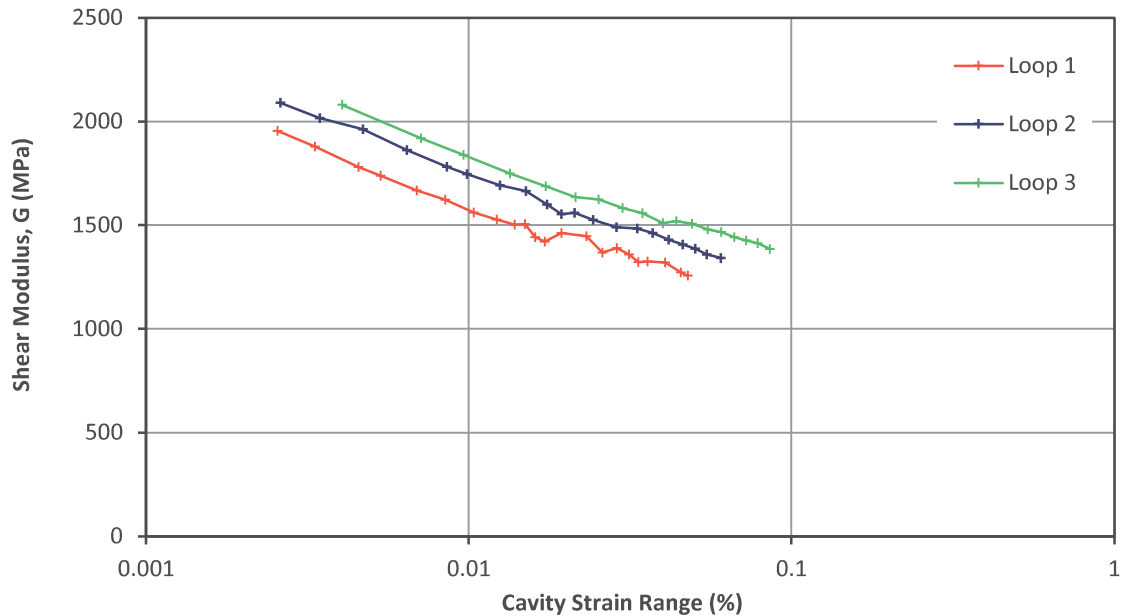
Project	Great Jackson Street, Manchester	Figure No.	BH4R T03 - 06
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis

Small Strain Stiffness and Bolton & Whittle (1999)

IN SITU
SITE INVESTIGATION

Test Date	28/04/2021	Test No.	3
Borehole	BH4R	Test Depth (m)	22.30



Loop 1		Loop 2		Loop 3	
Gradient(β)	Intercept	Gradient(β)	Intercept	Gradient(β)	Intercept
0.856	466.257	0.858	517.584	0.873	613.685
	(MPa)		(MPa)		(MPa)

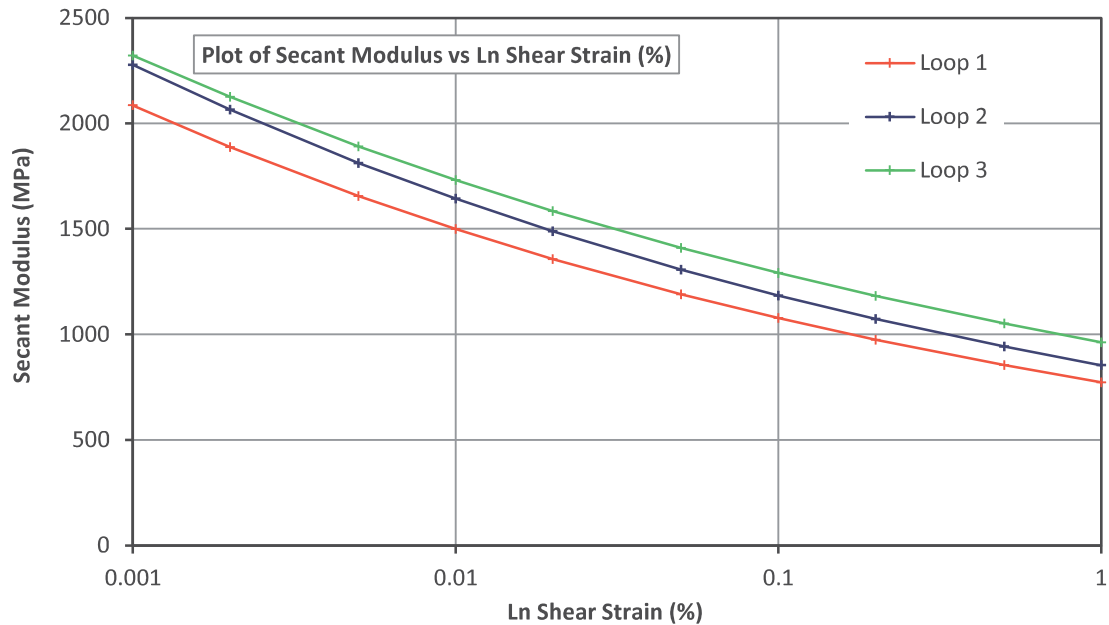
Project	Great Jackson Street, Manchester	Figure No.	BH4R T03 - 07
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis

Secant Modulus - Shear Strain (%)

IN SITU
SITE INVESTIGATION

Test Date	28/04/2021	Test No.	3
Borehole	BH4R	Test Depth (m)	22.30



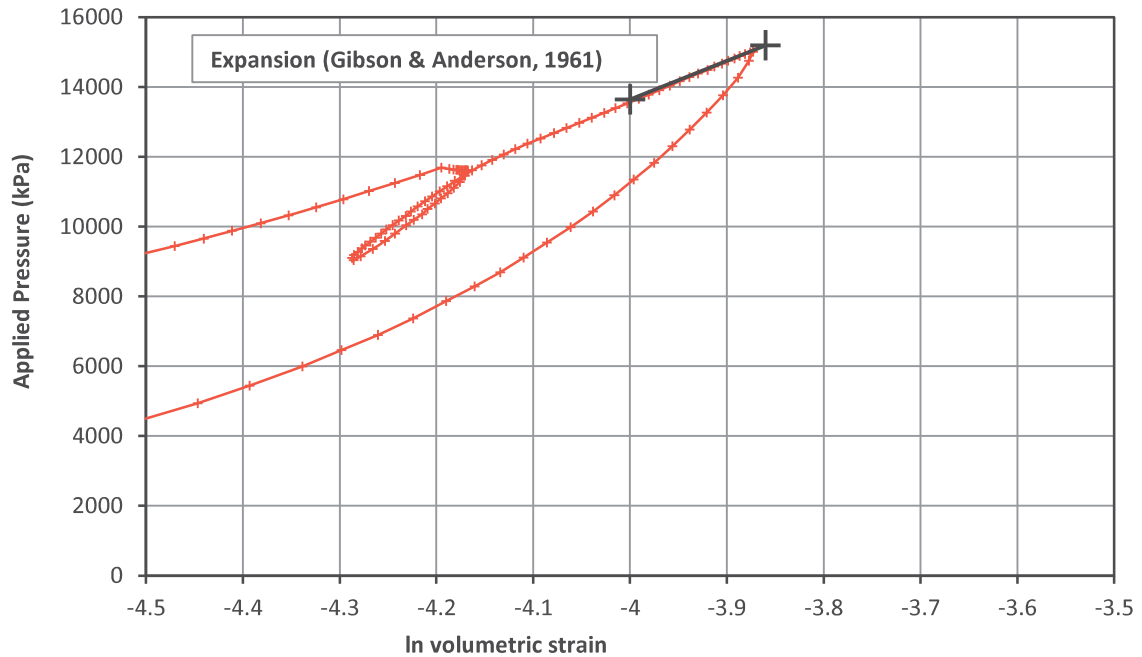
Shear Strain	Loop 1	Loop 2	Loop 3
0.001%	2086	2277	2321
0.002%	1888	2064	2125
0.005%	1655	1812	1891
0.010%	1499	1642	1731
0.020%	1357	1488	1585
0.050%	1189	1307	1410
0.100%	1077	1184	1291
0.200%	975	1073	1182
0.500%	854	942	1052
1.000%	774	854	963

Project	Great Jackson Street, Manchester	Figure No.	BH4R T03 - 08
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis - Undrained Strength

IN SITU
SITE INVESTIGATION

Test Date	28/04/2021	Test No.	3
Borehole	BH4R	Test Depth (m)	22.30



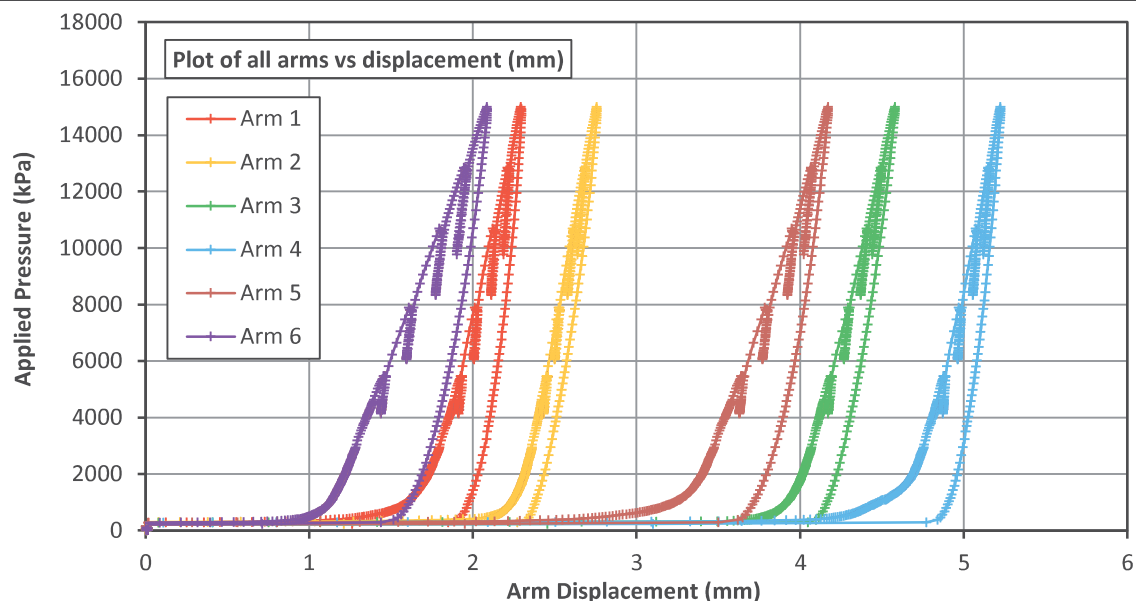
Strength (loading)	Undrained Shear	11071	kPa
	Limit Pressure	57936	kPa

Project	Great Jackson Street, Manchester	Figure No.	BH4R T03 - 09
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Test Overview High Pressure Dilatometer (HPD)

IN SITU
SITE INVESTIGATION

Test Date	29/04/2021		Test No.	4
Borehole	BH4R		Test Depth (m)	31.20
Coordinates (m)	383464.9 (E)	397232.7 (N)	Elevation (m)	33.26



Material description from borehole log:

SANDSTONE.

Test pocket conditions:

Total core recovery:	100 %	Test pocket depth range:
Solid core recovery:	95 %	From: 29.50 m to: 32.50 m
Rock quality designation:	52 %	Flush: Water

Test comment:

The test pocket was reasonable with arms lifting off at 1.0 to 4.5mm. The p_0 was estimated to be at 3537kPa, with the following loading section being long and linear. The start of material yield is indicated at 14100kPa and the test was taken to a high pressure of 14995kPa. The displacement-pressure response shown by the arms was reasonably consistent albeit at some variation in expansion. Analysis of four unload reload loops provides increasing modulus values of 1366 to 1457MPa. Derived undrained shear strength analysis provides values of 10.6 to 12.5MPa, although these should be treated as minimum values due to incomplete failure.

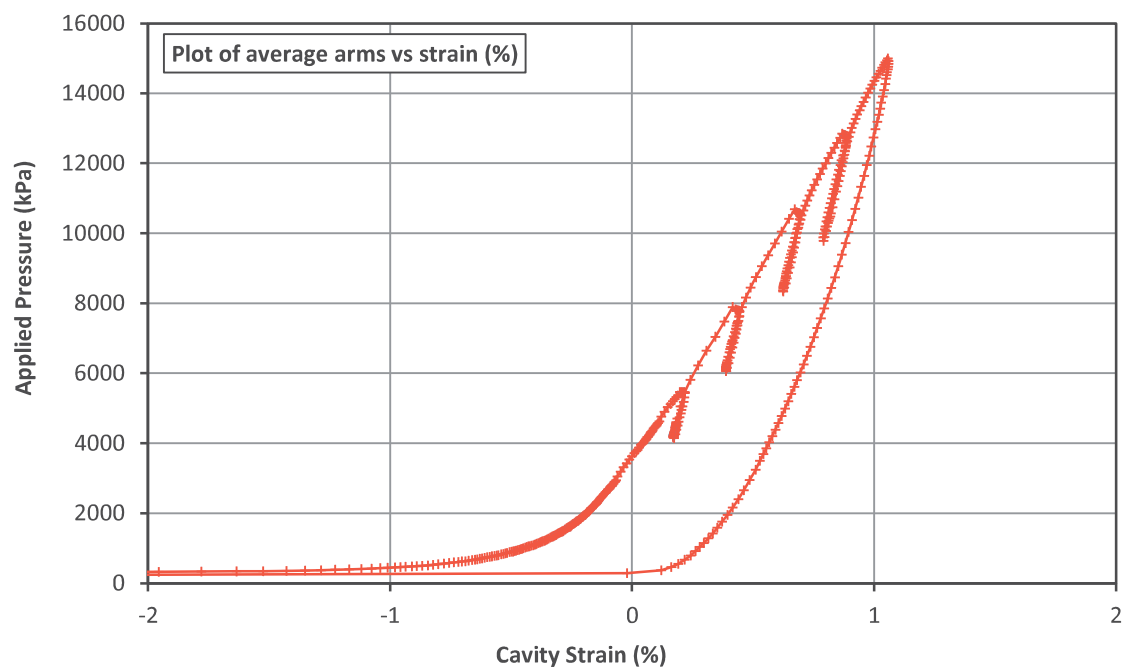
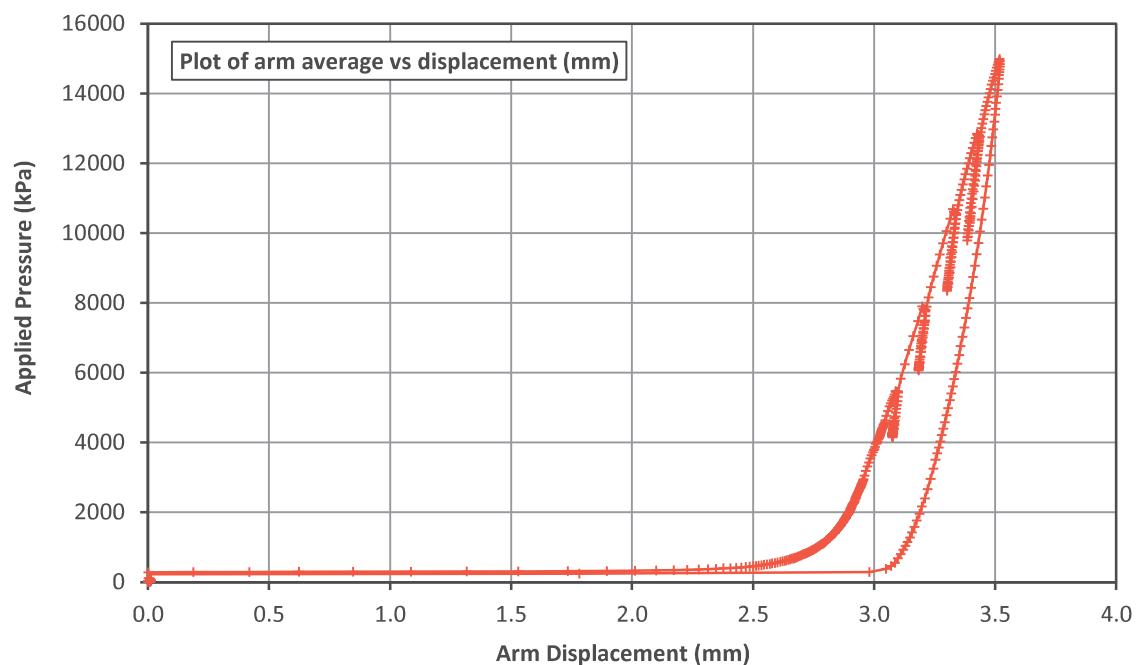
Test details:		Instrument:		Eleanor (HPD04)		
Drilling method:	Rotary coring			mV	mV/mm	mV
Casing depth:	29.50 m	Arm 1:	-2371.9	122.9	TPC A:	291.9
Water level:	10.10 m	Arm 2:	-2034.1	124.9	TPC B:	-2136.8
		Arm 3:	-2287.6	129.5		
Test time:		Arm 4:	-2117.1	127.4		
Start (probe in):	10:30 hrs	Arm 5:	-2287.2	132.1		
Finish (probe out):	13:30 hrs	Arm 6:	-2138.4	124.1		

Project	Great Jackson Street, Manchester	Figure No.	BH4R T04 - 01
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Test - Average Arm Plots

IN SITU
SITE INVESTIGATION

Test Date	29/04/2021	Test No.	4
Borehole	BH4R	Test Depth (m)	31.20

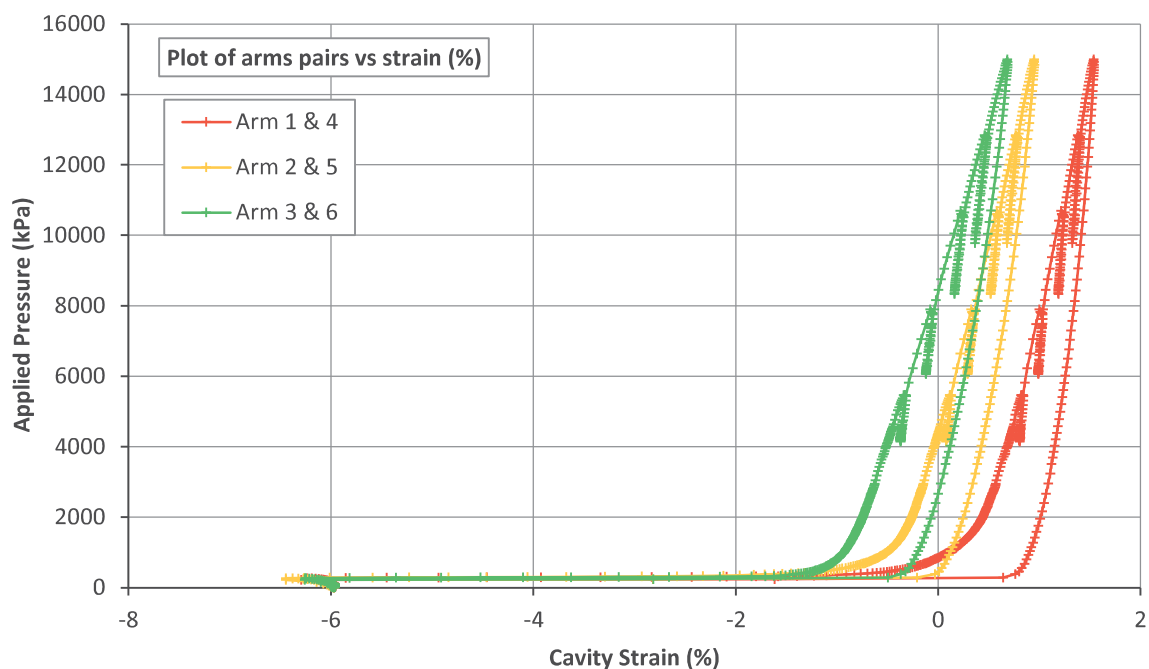
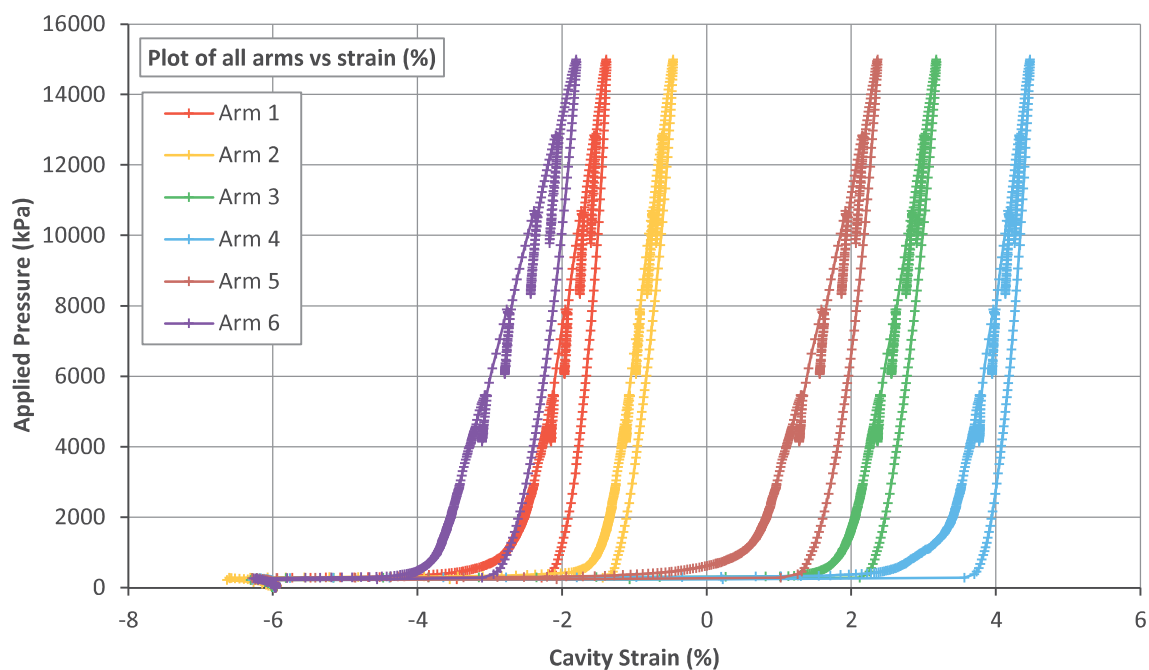


Project	Great Jackson Street, Manchester	Figure No.	BH4R T04 - 02
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Test - Arm Displacement vs Strain (%)

IN SITU
SITE INVESTIGATION

Test Date	29/04/2021	Test No.	4
Borehole	BH4R	Test Depth (m)	31.20

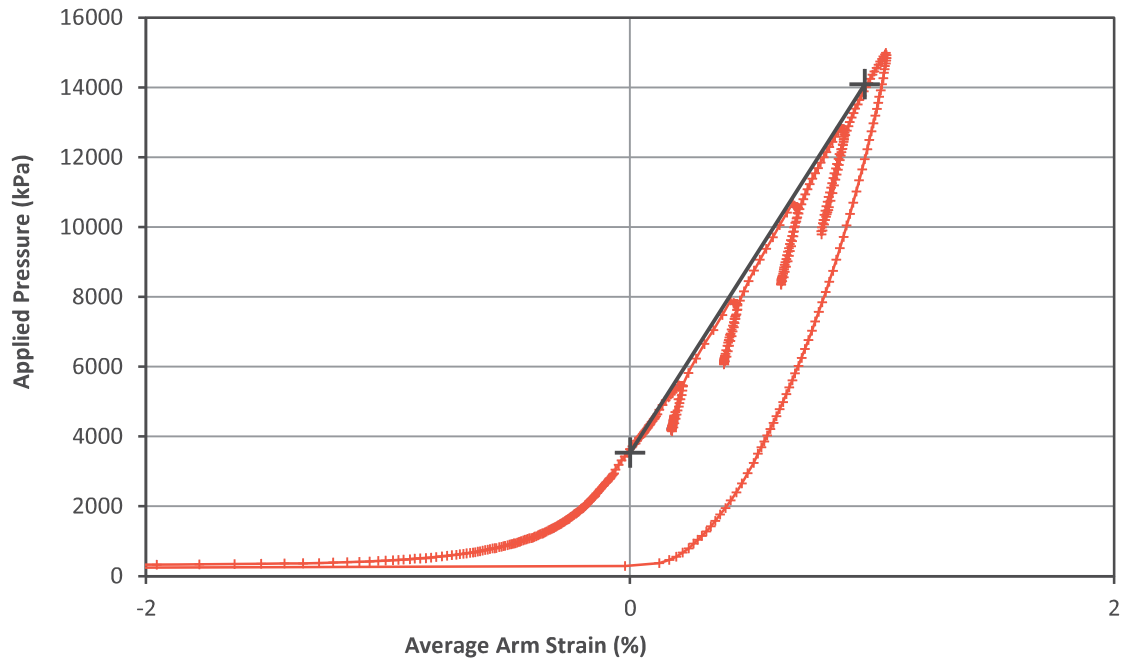


Project	Great Jackson Street, Manchester	Figure No.	BH4R T04 - 03
Client	GeoAssist		
Project No.	P1210114		

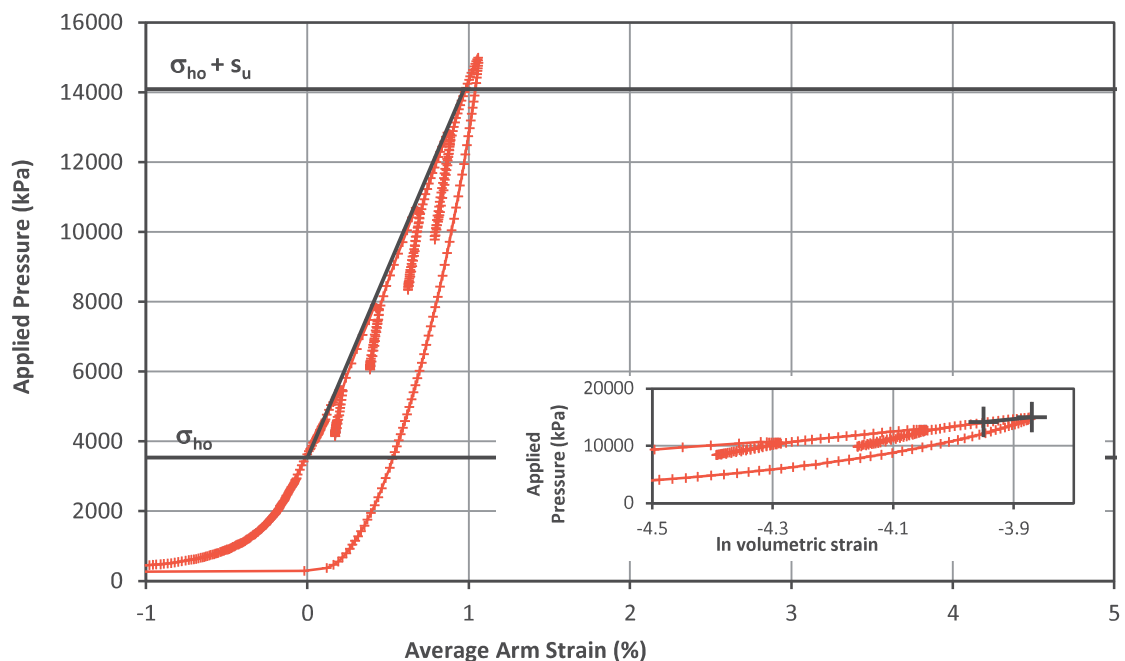
Pressuremeter Analysis - Initial Modulus & In Situ Horizontal Stress

IN SITU
SITE INVESTIGATION

Test Date	29/04/2021	Test No.	4
Borehole	BH4R	Test Depth (m)	31.20



Initial Modulus	Shear Modulus	549.8 MPa
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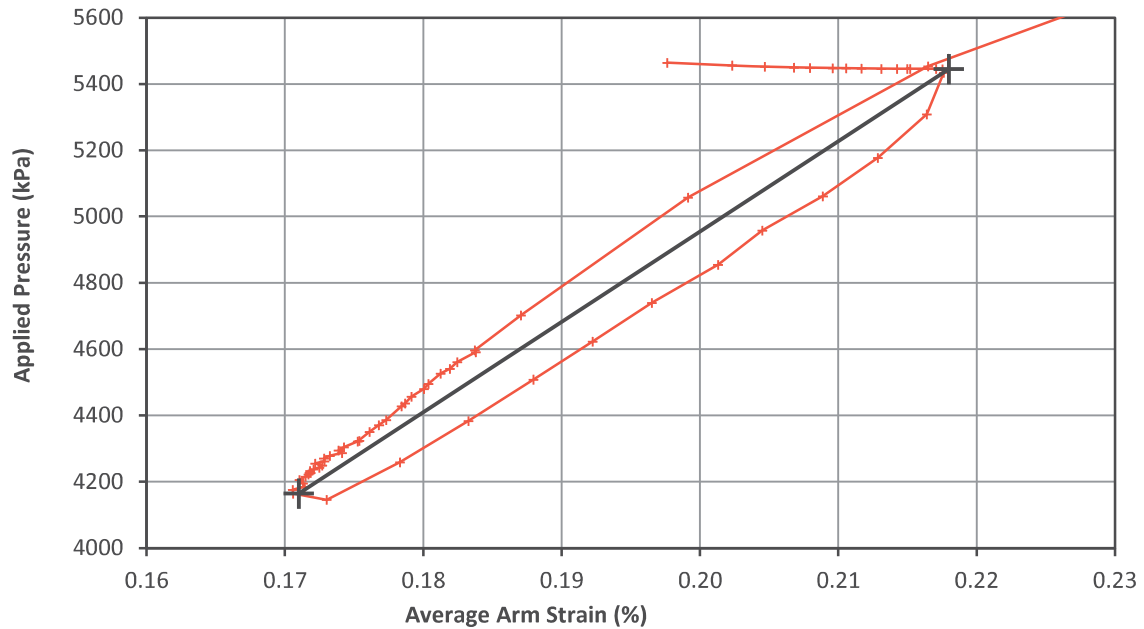
Marsland & Randolph	In situ horizontal stress	3537 kPa
	Undrained Strength	10563 kPa

Project	Great Jackson Street, Manchester	Figure No.	BH4R T04 - 04
Client	GeoAssist		
Project No.	P1210114		

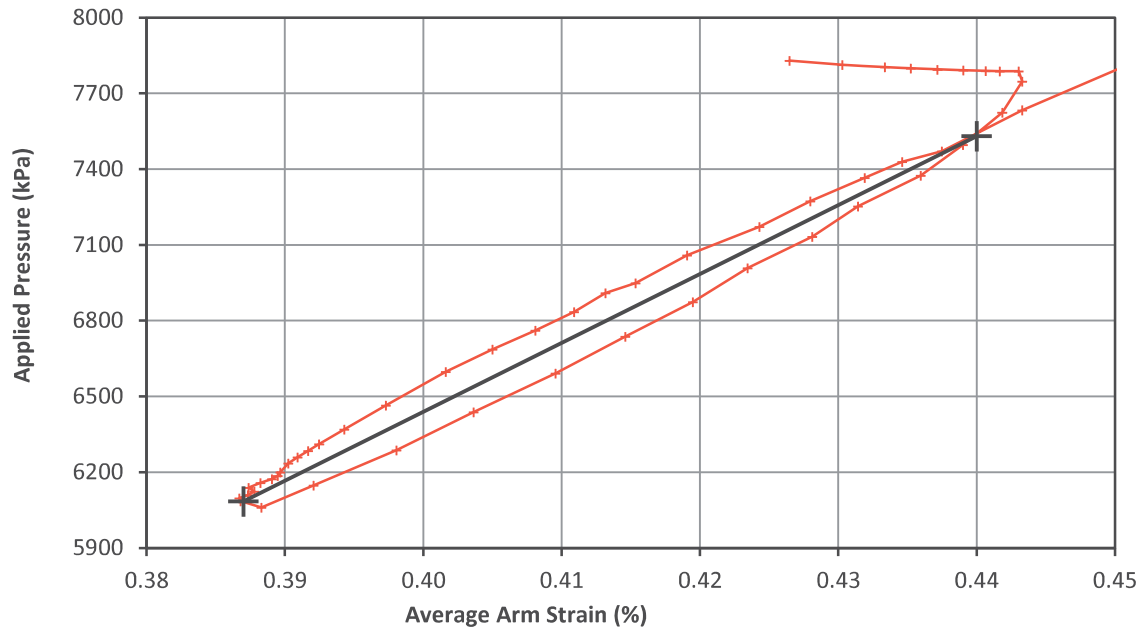
Pressuremeter Analysis - Unload Reload Loop

IN SITU
SITE INVESTIGATION

Test Date	29/04/2021	Test No.	4
Borehole	BH4R	Test Depth (m)	31.20



Loop 1	Shear Modulus	1365.7 MPa
	Cavity Strain Range	0.047 %



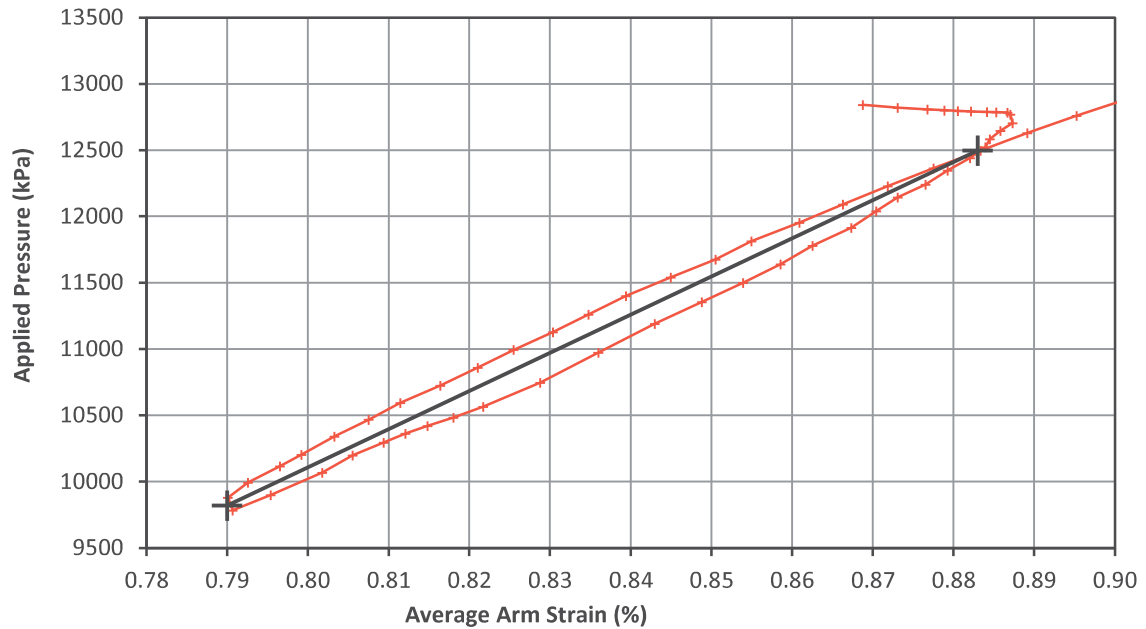
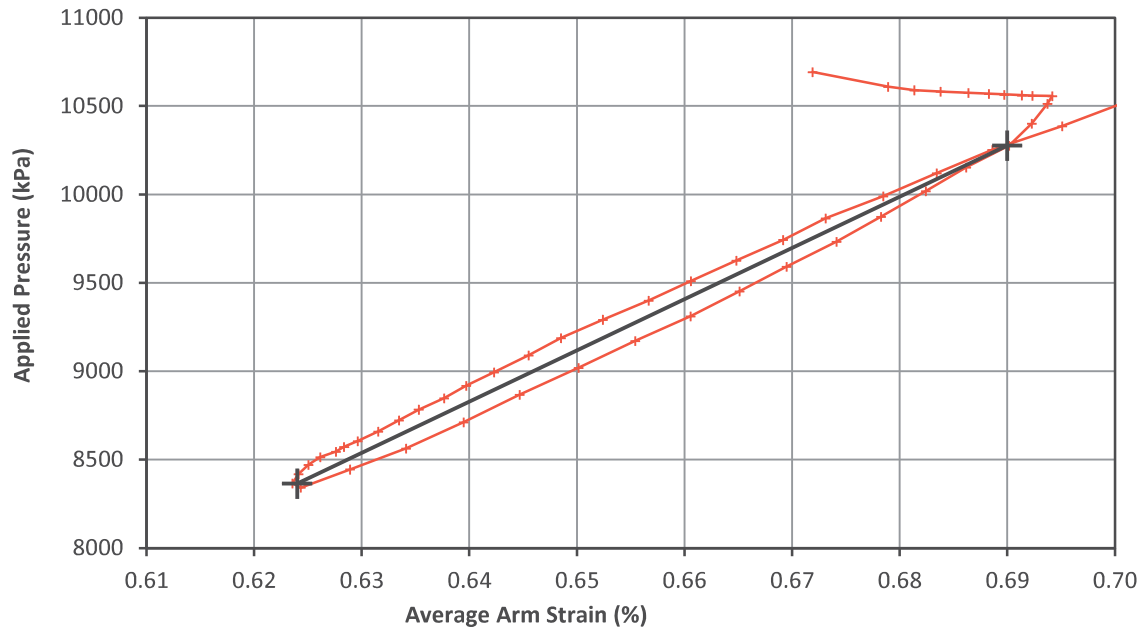
Loop 2	Shear Modulus	1369.2 MPa
	Cavity Strain Range	0.053 %

Project	Great Jackson Street, Manchester	Figure No.	BH4R T04 - 05
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis - Unload Reload Loop

IN SITU
SITE INVESTIGATION

Test Date	29/04/2021	Test No.	4
Borehole	BH4R	Test Depth (m)	31.20



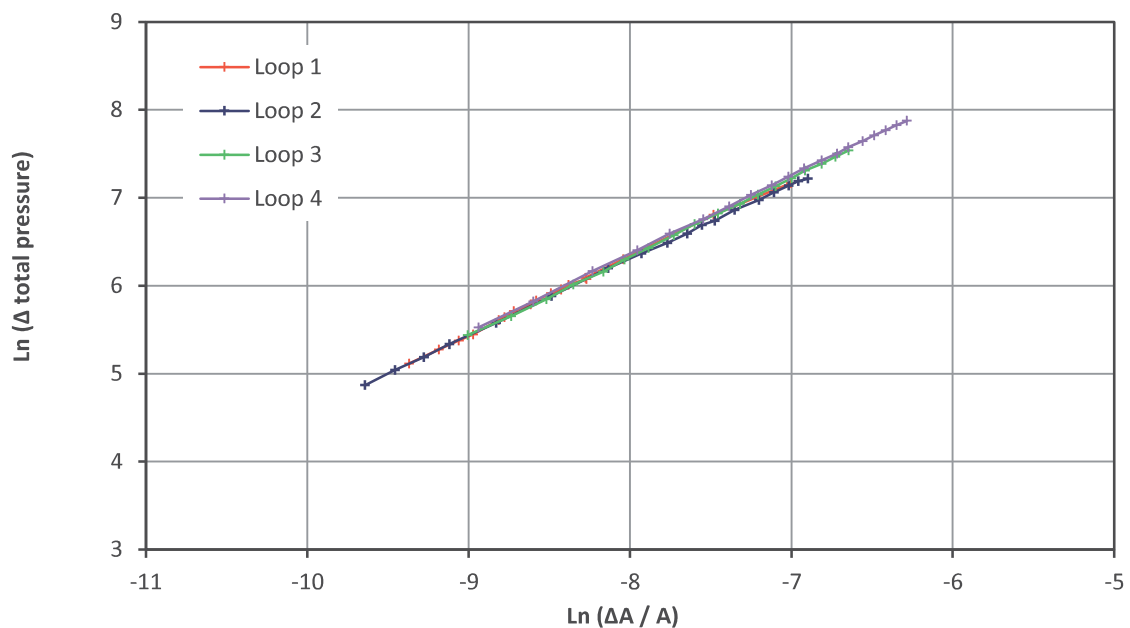
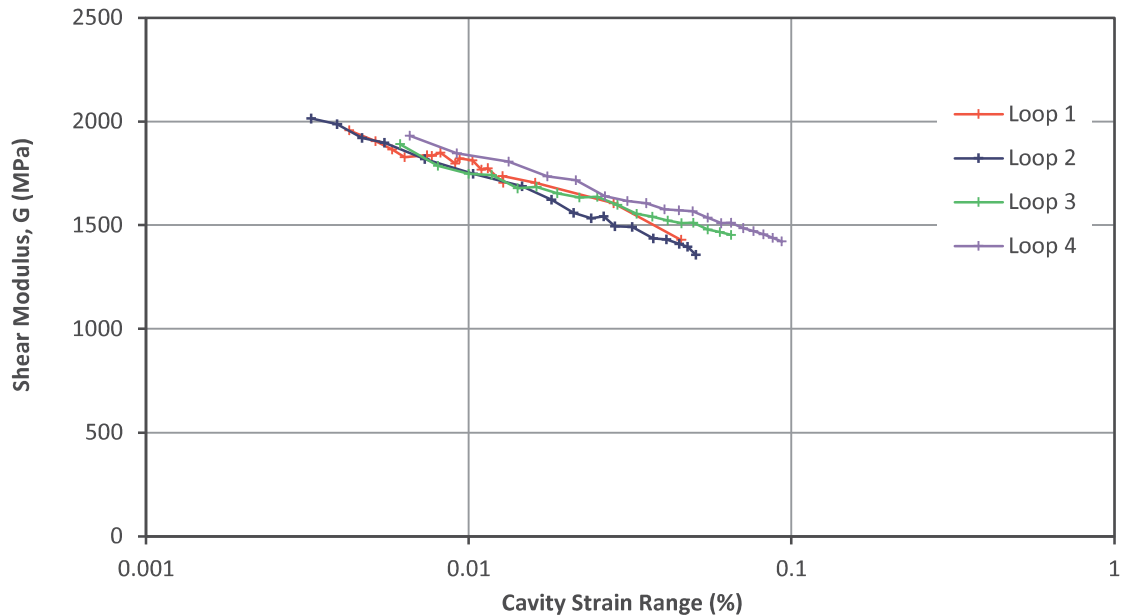
Project	Great Jackson Street, Manchester	Figure No.	BH4R T04 - 06
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis

Small Strain Stiffness and Bolton & Whittle (1999)

IN SITU
SITE INVESTIGATION

Test Date	29/04/2021	Test No.	4
Borehole	BH4R	Test Depth (m)	31.20



Loop 1		Loop 2		Loop 3		Loop 4	
Gradient(β)	Intercept	Gradient(β)	Intercept	Gradient(β)	Intercept	Gradient(β)	Intercept
0.881	646.683 (MPa)	0.859	524.069 (MPa)	0.897	732.838 (MPa)	0.888	707.906 (MPa)

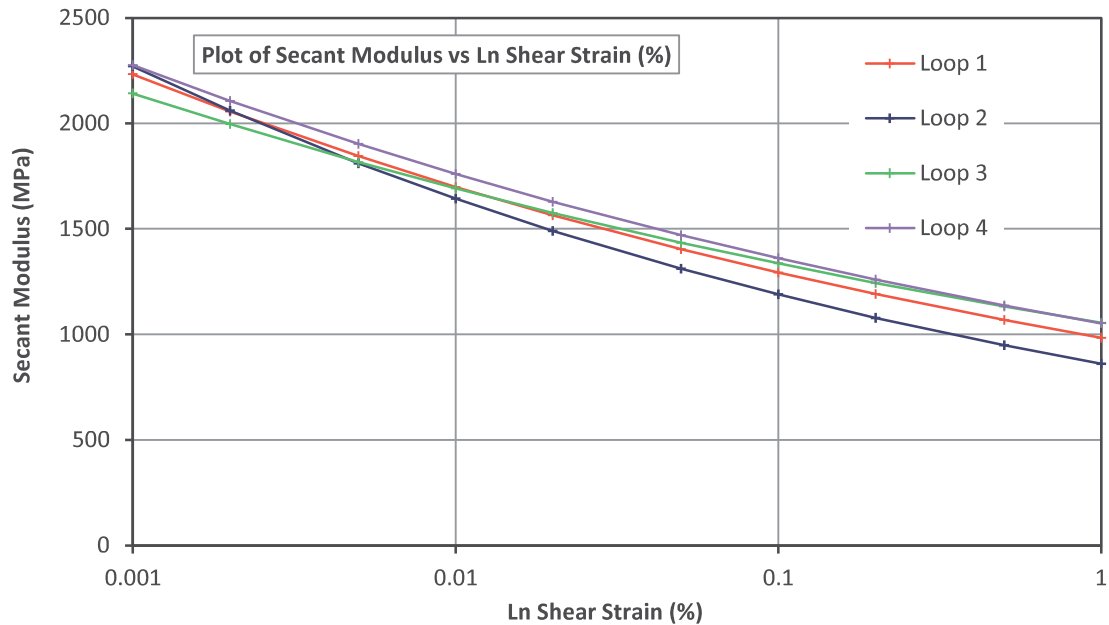
Project	Great Jackson Street, Manchester	Figure No.	BH4R T04 - 07
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis

Secant Modulus - Shear Strain (%)

IN SITU
SITE INVESTIGATION

Test Date	29/04/2021	Test No.	4
Borehole	BH4R	Test Depth (m)	31.20



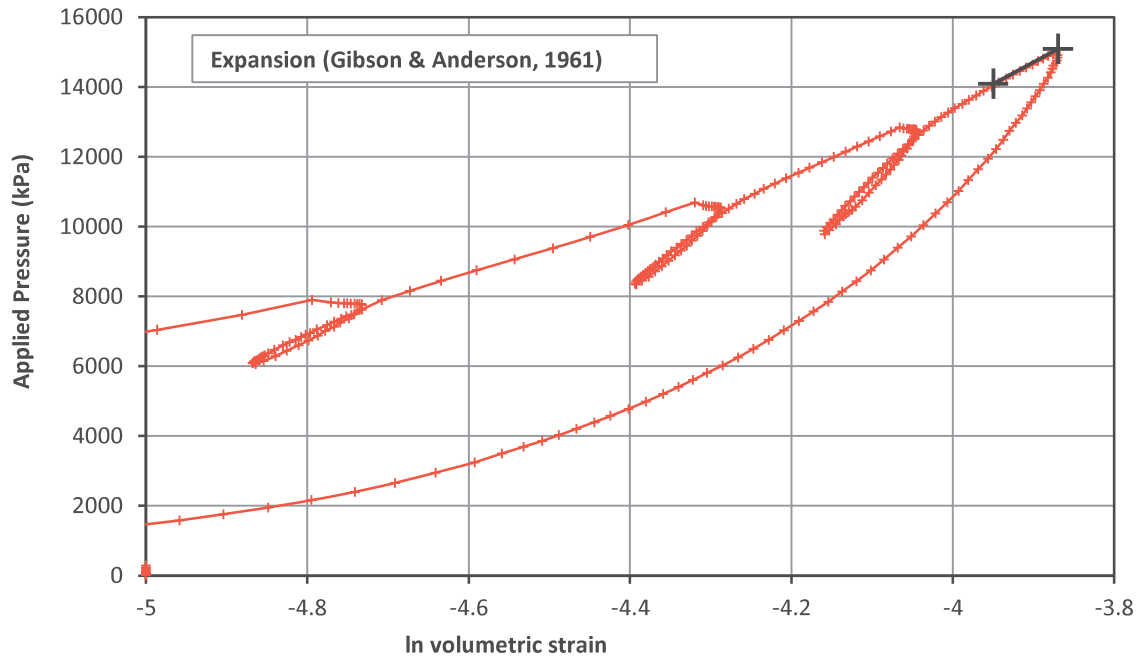
Shear Strain	Loop 1	Loop 2	Loop 3	Loop 4
0.001%	2232	2271	2142	2276
0.002%	2056	2060	1995	2106
0.005%	1844	1811	1816	1901
0.010%	1699	1643	1692	1760
0.020%	1565	1491	1576	1629
0.050%	1404	1311	1434	1470
0.100%	1293	1189	1336	1361
0.200%	1191	1079	1244	1259
0.500%	1068	948	1133	1137
1.000%	984	860	1055	1052

Project	Great Jackson Street, Manchester	Figure No.	BH4R T04 - 08
Client	GeoAssist		
Project No.	P1210114		

Pressuremeter Analysis - Undrained Strength

IN SITU
SITE INVESTIGATION

Test Date	29/04/2021	Test No.	4
Borehole	BH4R	Test Depth (m)	31.20



Strength (loading)	Undrained Shear	12500 kPa
	Limit Pressure	63475 kPa

Project	Great Jackson Street, Manchester	Figure No.	BH4R T04 - 09
Client	GeoAssist		
Project No.	P1210114		

APPENDIX B

Calibrations

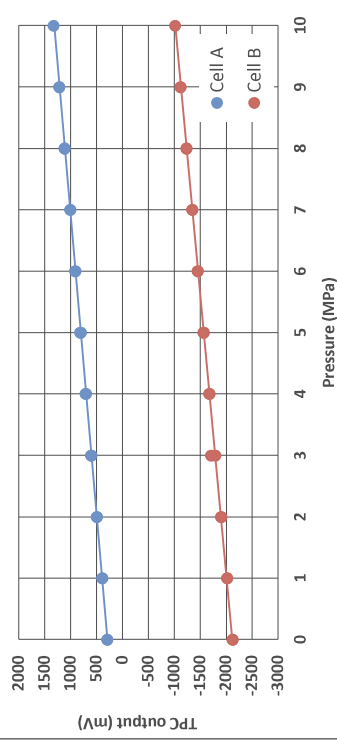
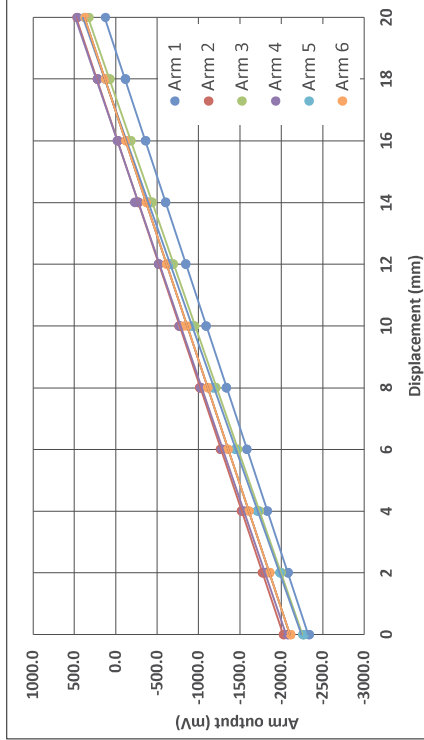
Description
HPD 04 – Eleanor

Arms 05/01/2021

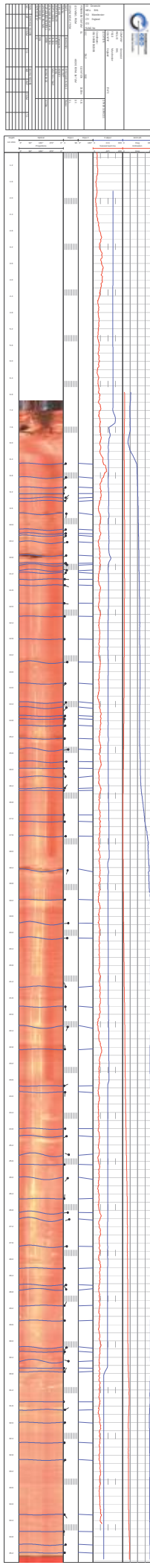
Displacement	Arm 1	Arm 2	Arm 3	Arm 4	Arm 5	Arm 6
mm	mV	mV	mV	mV	mV	mV
0	-2333.7	-2025.8	-2263.9	-2074.9	-2272.0	-2112.3
2	-2080.0	-1772.3	-1996.0	-1808.9	-1982.3	-1860.2
4	-1828.4	-1516.2	-1730.6	-1544.2	-1707.6	-1608.3
6	-1580.8	-1264.4	-1468.3	-1283.1	-1440.2	-1353.4
8	-1334.5	-1012.9	-1207.0	-1025.1	-1173.4	-1109.8
10	-1090.1	-764.0	-948.6	-770.2	-911.1	-863.3
12	-845.7	-517.3	-691.4	-516.2	-650.2	-616.4
14	-602.2	-270.0	-436.5	-226.8	-388.0	-369.2
16	-359.0	-22.0	-180.9	-21.8	-130.5	-122.1
18	-115.9	224.9	73.2	218.6	124.6	123.2
20	123.6	471.6	324.6	462.4	374.9	371.2
18	-117.2	224.3	71.8	215.7	122.9	124.4
16	-359.8	-23.1	-182.8	-24.3	-131.1	-121.4
14	-602.9	-271.9	-438.0	-268.0	-389.5	-367.9
12	-846.1	-519.1	-693.5	-517.8	-651.0	-613.5
10	-1090.7	-766.0	-950.5	-770.5	-913.1	-816.4
8	-1335.5	-1015.2	-1209.3	-1025.5	-1177.5	-1108.4
6	-1582.2	-1265.9	-1470.4	-1284.5	-1445.4	-1356.3
4	-1830.1	-1517.3	-1732.2	-1546.0	-1713.6	-1607.6
2	-2081.4	-1773.7	-1996.9	-1812.2	-1982.9	-1860.8
0	-2335.6	-2029.8	-2264.1	-2077.5	-2256.6	-2114.0
Slope (mV/mm)	122.9	124.9	129.5	127.4	132.1	124.1
Zero (mV)	-2320.8	-2016.0	-2247.9	-2048.6	-2239.4	-2100.3

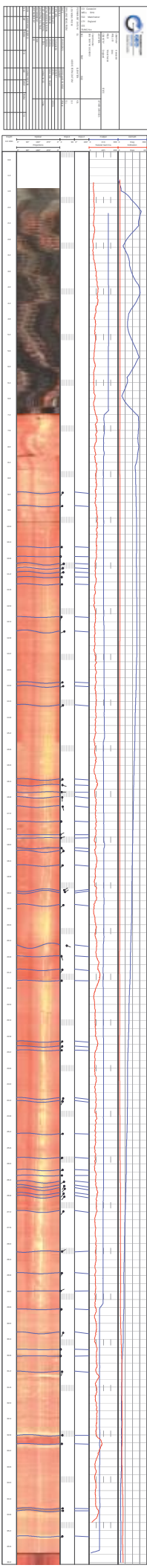
Pressure Cells 05/01/2021

Pressure	Cell A		Cell B	
MPa	V	mV	V	mV
0	0.28680	286.80	-2.13130	-2131.30
1	0.38170	381.70	-2.02690	-2026.90
2	0.48700	487.00	-1.91240	-1912.40
3	0.59470	594.70	-1.79570	-1795.70
4	0.69650	696.50	-1.68570	-1685.70
5	0.79720	797.20	-1.57620	-1576.20
6	0.90180	901.80	-1.46320	-1463.20
7	0.99580	995.80	-1.35570	-1355.70
8	1.11100	1111.00	-1.24260	-1242.60
9	1.20970	1209.70	-1.12670	-1126.70
10	1.32210	1322.10	-1.01750	-1017.50
9	1.21310	1213.10	-1.12740	-1127.40
8	1.11260	1112.60	-1.23620	-1236.20
7	1.00560	1005.60	-1.35050	-1350.50
6	0.91020	910.20	-1.45420	-1454.20
5	0.81050	810.50	-1.56330	-1563.30
4	0.70700	707.00	-1.67560	-1675.60
3	0.60080	600.80	-1.70910	-1709.10
2	0.49520	495.20	-1.90440	-1904.40
1	0.39070	390.70	-2.01780	-2017.80
0	0.29140	291.40	-2.12820	-2128.20
Slope (mV/MPa)		102.94462		110.68170
Zero (mV)		287.0		-2122.3



Calibrated by:	Dave Lewins
Calibrated at:	Rotherham
Checked by:	John Holt
Date:	05/01/2021





Site Reference:	6069 CGJ
Project Site:	Plots F1 & F2 Great Jackson Street
Project Location:	Manchester
Client:	Coffey Geotechnics Ltd

Ground Gas Readings

Date - Time	BH	CH4 (%)	CO2 (%)	O2 (%)	H2S (ppm)	CO (ppm)	LEL (%)	aP (mb)	Flw (l/h)	H2O (m)	State
24/05/2021	WS1	0.0	0.8	18.0	0.0	0.0	0.0	997	0.0		
24/05/2021	WS2	0.0	0.1	20.3	0.0	0.0	0.0	998	0.0		
24/05/2021	WS3	0.0	1.3	18.0	0.0	0.0	0.0	998	0.0		
24/05/2021	WS4	0.0	0.3	20.3	0.0	0.0	0.0	998	0.0		
24/05/2021	WS5	0.0	0.7	20.1	0.0	0.0	0.0	997	0.0		
24/05/2021	WS6	0.0	0.3	20.3	0.0	0.0	0.0	998	0.0		
07/07/2021	WS1	0.0	1.2	15.9	0.0	0.0	0.0	1006	0.0		
07/07/2021	WS2	0.0	0.1	20.5	0.0	0.0	0.0	1006	0.0		
07/07/2021	WS3	0.0	3.2	15.5	0.0	0.0	0.0	1006	0.0		
07/07/2021	WS4	0.0	0.6	19.9	0.0	0.0	0.0	1005	0.0		
07/07/2021	WS5	0.0	0.5	19.0	0.0	0.0	0.0	1005	0.0		
07/07/2021	WS6	0.0	0.0	20.7	0.0	0.0	0.0	1006	0.0		
16/07/2021	WS1	0.0	2.7	14.5	0.0	0.0	0.0	1024	0.0		
16/07/2021	WS2	0.0	0.3	20.5	0.0	0.0	0.0	1024	0.0		
16/07/2021	WS3	0.0	3.4	15.6	0.0	0.0	0.0	1024	0.0		
16/07/2021	WS4	0.0	0.0	21.3	0.0	0.0	0.0	1023	0.0		
16/07/2021	WS5	0.0	1.3	18.6	0.0	0.0	0.0	1024	0.0		
16/07/2021	WS6	0.0	0.1	20.9	0.0	0.0	0.0	1024	0.0		
26/07/2021	WS1	0.0	6.1	6.5	0.0	0.0	0.0	1007	0.0		
26/07/2021	WS2	0.0	0.3	20.4	0.0	0.0	0.0	1007	0.0		
26/07/2021	WS3	0.0	3.7	14.8	0.0	0.0	0.0	1007	0.0		
26/07/2021	WS4	0.0	0.0	20.6	0.0	0.0	0.0	1006	0.0		
26/07/2021	WS5	0.0	1.8	17.3	0.0	0.0	0.0	1006	0.0		
26/07/2021	WS6	0.0	0.3	20.5	0.0	0.0	0.0	1006	0.0		
28/07/2021	WS1	0.0	0.0	20.7	0.0	0.0	0.0	1000	0.0		
28/07/2021	WS2	0.0	0.0	20.7	0.0	0.0	0.0	1000	0.0		
28/07/2021	WS3	0.0	3.7	14.9	0.0	0.0	0.0	999	0.0		
28/07/2021	WS4	0.0	0.0	20.6	0.0	0.0	0.0	999	0.0		
28/07/2021	WS5	0.0	1.7	16.9	0.0	0.0	0.0	998	0.0		
28/07/2021	WS6	0.0	0.0	20.6	0.0	0.0	0.0	998	0.0		
25/08/2021	WS1	0.0	3.8	13.8	0.0	0.0	0.0	1023	0.0		
25/08/2021	WS2	0.0	2.2	18.1	0.0	0.0	0.0	1023	0.0		
25/08/2021	WS3	0.0	3.7	16.0	0.0	0.0	0.0	1023	0.0		
25/08/2021	WS4	0.0	0.0	20.2	0.0	0.0	0.0	1024	0.0		
25/08/2021	WS5	0.0	1.5	18.3	0.0	0.0	0.0	1024	0.0		
25/08/2021	WS6	0.0	0.3	20.3	0.0	0.0	0.0	1024	0.0		