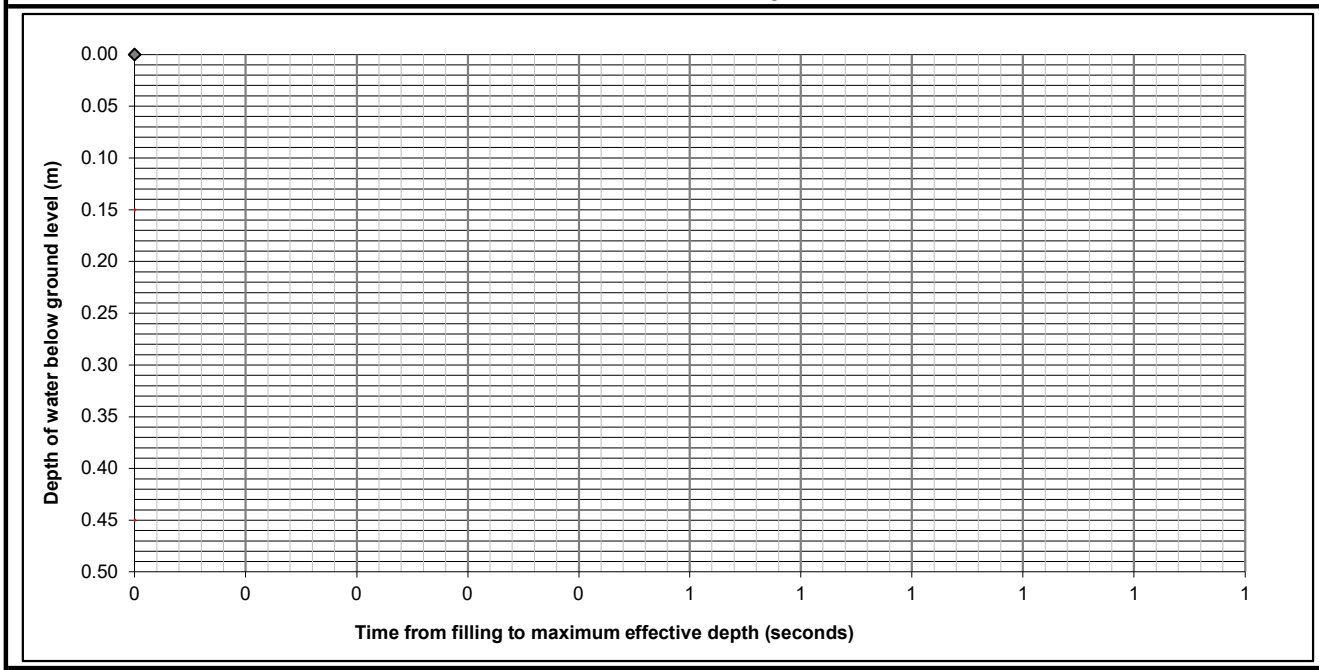
Tetra Tech
1st Floor Hodge House, 114-116 St Mary's Street, Cardiff, CF10 1DY
Environmental Consultancy
Ground Engineering Services

TETRA TECH

DATE:	17/03/2026
PROJECT No:	784-B077402
PROJECT NAME:	Goat_Mill_Road_GI
CLIENT:	Merthyr Tydfil County Borough
TRIAL PIT ID:	TP705
TEST NUMBER:	1

SOAKAWAY TEST - SOIL INFILTRATION RATE/PERMEABILITY CALCULATION



Time Elapsed (s)	Time Elapsed (mins)	Distance to water surface from ground level (m)
	0.00	0.000

PIT LENGTH (m):	2.55	**Pit construction**
PIT WIDTH (m):	0.80	Open - No Gravel
PIT DEPTH (m):	0.60	Location could not be filled due to rapid infiltration

INPUT PARAMETERS:		
Total volume of pit	(m^3)	1.22
Pit volume between 75% and 25% depths = L x W x ½D	(m^3)	0.61
Effective depth of Pit	(m)	0.60
Proportion of pit volume occupied by gravel solids	(0-1)	0.00
Maximum potential volume of Water	(m^3)	1.22
Level of water in pit at 75% effective depth (p_{75})	(m)	0.15
Level of water in pit at 25% effective depth (p_{25})	(m)	0.45
Effective volume between 75% & 25% depth Vp_{75-25} = V x Pg	(m^3)	0.61
Surface area of pit up to 50% effective depth (A_{p50})	(m^2)	4.05
Time at 75% effective depth (p_{75})	(s)	#N/A
Time at 25% effective depth (p_{25})	(s)	#N/A
Time for outflow for 75% and 25% effective depth (Tp75-25)	(s)	#N/A

OUTPUT:			
SOIL INFILTRATION RATE (f)	$\frac{V_{p75-25}}{A_{p50} \times T_{p75-25}}$	(m/s)	**#N/A**

WATER INPUT:	1700	l	8mins

GEOLOGY OF TEST SECTION:

Made Ground

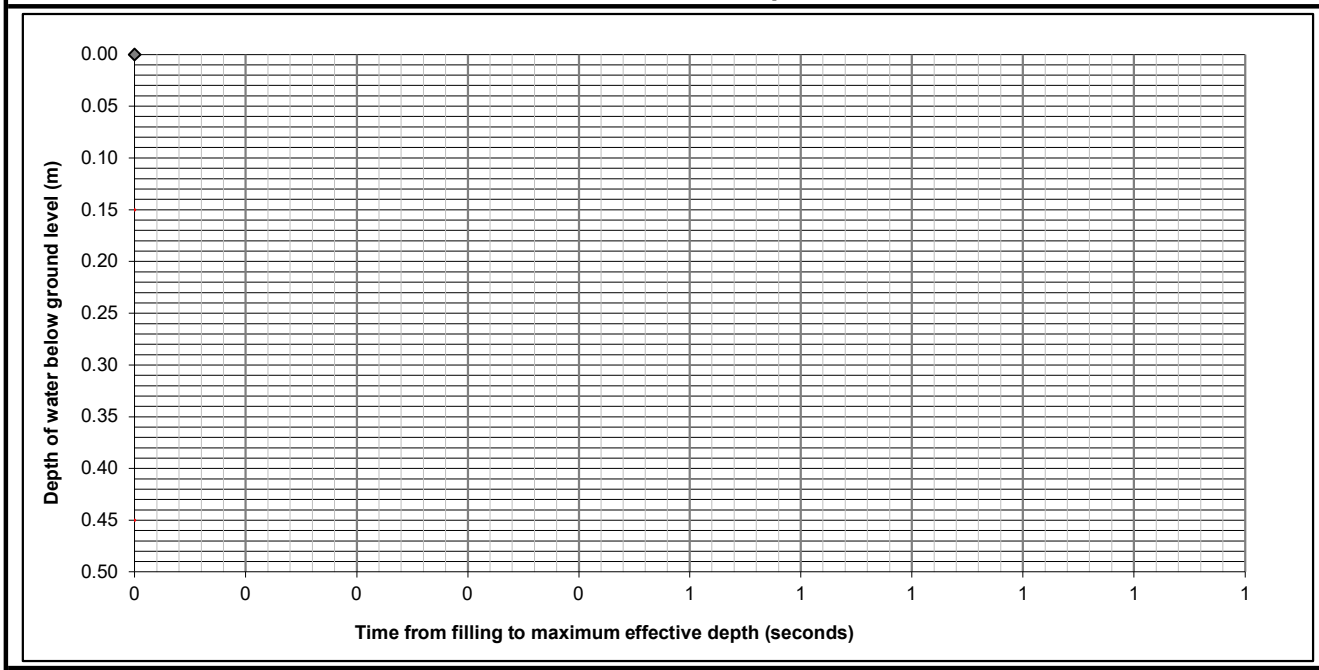
Compiled by:	SW
Checked by:	JC

Tetra Tech
1st Floor Hodge House, 114-116 St Mary's Street, Cardiff, CF10 1DY
Environmental Consultancy
Ground Engineering Services

TETRA TECH

DATE:	17/03/2026
PROJECT No:	784-B077402
PROJECT NAME:	Goat_Mill_Road_GI
CLIENT:	Merthyr Tydfil County Borough
TRIAL PIT ID:	TP706
TEST NUMBER:	1

SOAKAWAY TEST - SOIL INFILTRATION RATE/PERMEABILITY CALCULATION



Time Elapsed (s)	Time Elapsed (mins)	Distance to water surface from ground level (m)
	0.00	0.000

PIT LENGTH (m):	2.40	**Pit construction**	
PIT WIDTH (m):	0.60	Open - No Gravel	
PIT DEPTH (m):	0.60	Note:	Pit could not be filled due to rapid infiltration

INPUT PARAMETERS:		
Total volume of pit	(m^3)	0.86
Pit volume between 75% and 25% depths = L x W x ½D	(m^3)	0.43
Effective depth of Pit	(m)	0.60
Proportion of pit volume occupied by gravel solids	(0-1)	0.00
Maximum potential volume of Water	(m^3)	0.86
Level of water in pit at 75% effective depth (p_{75})	(m)	0.15
Level of water in pit at 25% effective depth (p_{25})	(m)	0.45
Effective volume between 75% & 25% depth Vp_{75-25} = V x Pg	(m^3)	0.43
Surface area of pit up to 50% effective depth (A_{p50})	(m^2)	3.24
Time at 75% effective depth (p_{75})	(s)	#N/A
Time at 25% effective depth (p_{25})	(s)	#N/A
Time for outflow for 75% and 25% effective depth (Tp75-25)	(s)	#N/A

OUTPUT:			
SOIL INFILTRATION RATE (f)	$\frac{V_{p75-25}}{A_{p50} \times T_{p75-25}}$	(m/s)	**#N/A**

WATER INPUT:	1700 l	8mins

GEOLOGY OF TEST SECTION:

Made Ground

Compiled by: SW
Checked by: JC

Tetra Tech

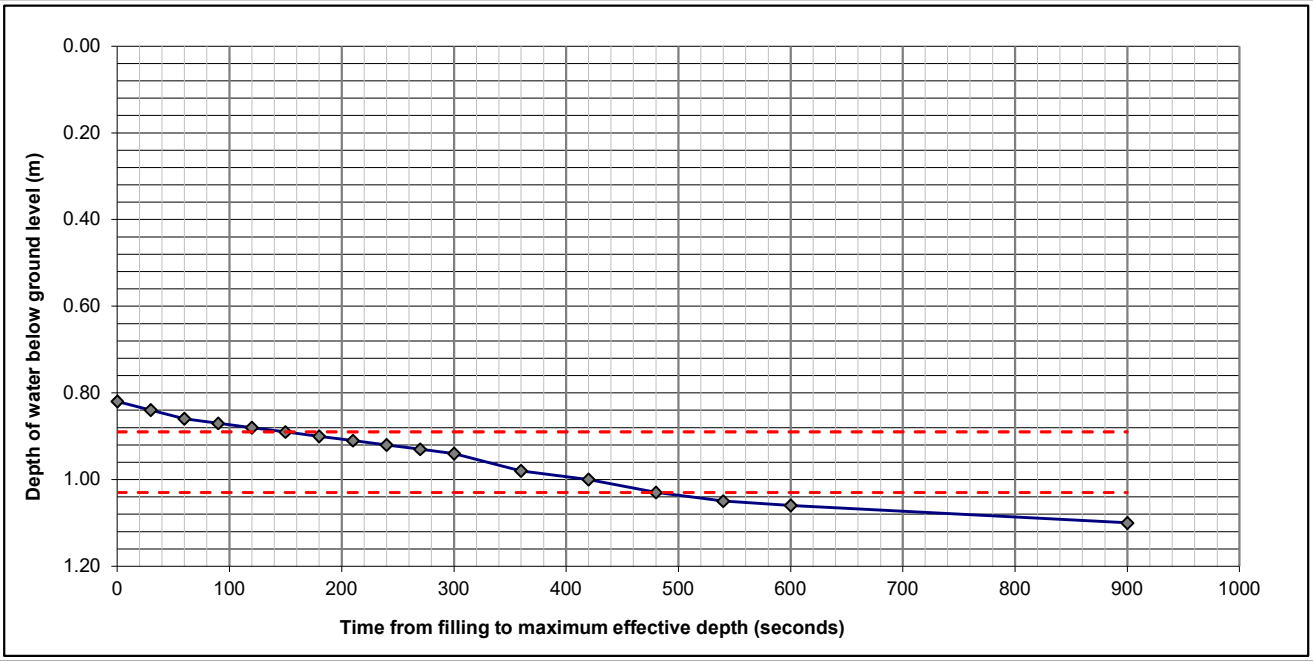
Hodge House, 114-116 St Mary Street, Cardiff, CF10 1DY

Environmental Consultancy
Ground Engineering Services

TETRA TECH

DATE:	26/03/2026
PROJECT No:	B077402
PROJECT NAME:	Goat_Mill_Road_GI
CLIENT:	Merthyr Tydfil County Borough Council
TRIAL PIT ID:	TP801
TEST NUMBER:	1

SOAKAWAY TEST - SOIL INFILTRATION RATE/PERMEABILITY CALCULATION



Time Elapsed (s)	Time Elapsed (mins)	Distance to water surface from ground level (m)
	0.00	0.820
30	0.50	0.840
60	1.00	0.860
90	1.50	0.870
120	2.00	0.880
150	2.50	0.890
180	3.00	0.900
210	3.50	0.910
240	4.00	0.920
270	4.50	0.930
300	5.00	0.940
360	6.00	0.980
420	7.00	1.000
480	8.00	1.030
540	9.00	1.050
600	10.00	1.060
900	15.00	1.100

PIT LENGTH (m):	2.70	**Pit construction**
PIT WIDTH (m):	0.90	Open - No gravel
PIT DEPTH (m):	1.10	

INPUT PARAMETERS:		
Total volume of pit	(m^3)	0.68
Pit volume between 75% and 25% depths = L x W x ½D	(m^3)	0.34
Effective depth of Pit	(m)	0.28
Proportion of pit volume occupied by gravel solids	(0-1)	0.00
Maximum potential volume of Water	(m^3)	0.68
Level of water in pit at 75% effective depth (p_{75})	(m)	0.07
Level of water in pit at 25% effective depth (p_{25})	(m)	0.21
Effective volume between 75% & 25% depth $Vp_{75\text{-}25}$ = V x Pg	(m^3)	0.34
Surface area of pit up to 50% effective depth (A_{p50})	(m^2)	3.44
Time at 75% effective depth (p_{75})	(s)	150
Time at 25% effective depth (p_{25})	(s)	480
Time for outflow for 75% and 25% effective depth (Tp75-25)	(s)	330

OUTPUT:

SOIL INFILTRATION RATE (f)	$\frac{V_{p75-25}}{A_{p50} \times T_{p75-25}}$	(m/s)	**3.00E-04**

WATER INPUT: 1000 l 5

GEOLOGY OF TEST SECTION:

Made Ground

Compiled by: IR
Checked by: JC

After BRE Digest 365, Soakaway Design, 2016

APPENDIX H: PLATE LOAD TESTS

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr

Date: 31.03.26

Test Reference: TP 601 A T1

Test Depth: 0.50m bgl

Plate Diameter: 600mm

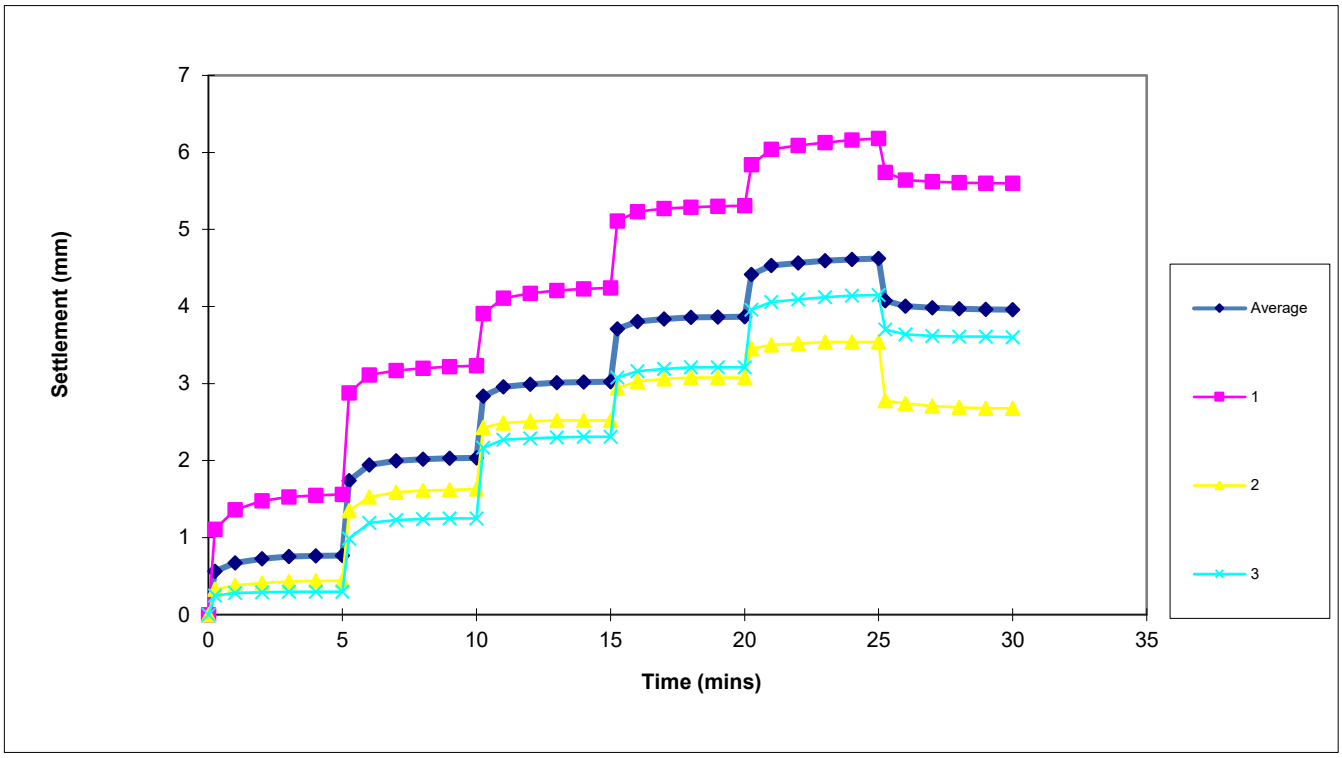
Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	1.11	0.33	0.25	0.56
	1	1.36	0.38	0.28	0.67
	2	1.48	0.41	0.29	0.73
	3	1.53	0.43	0.30	0.75
	4	1.55	0.44	0.30	0.76
	5	1.56	0.44	0.30	0.77
50kN/m^2 Load	5.25	2.88	1.35	0.99	1.74
	6	3.11	1.53	1.19	1.94
	7	3.17	1.59	1.23	2.00
	8	3.20	1.61	1.24	2.02
	9	3.22	1.62	1.25	2.03
	10	3.23	1.63	1.25	2.04
75kN/m^2 Load	10.25	3.91	2.43	2.17	2.84
	11	4.11	2.49	2.27	2.96
	12	4.17	2.51	2.29	2.99
	13	4.21	2.52	2.30	3.01
	14	4.23	2.52	2.31	3.02
	15	4.24	2.52	2.31	3.02
100kN/m^2 Load	15.25	5.11	2.94	3.08	3.71
	16	5.23	3.03	3.16	3.81
	17	5.27	3.06	3.19	3.84
	18	5.29	3.08	3.21	3.86
	19	5.30	3.08	3.21	3.86
	20	5.31	3.08	3.21	3.87
125kN/m^2 Load	20.25	5.84	3.45	3.96	4.42
	21	6.04	3.50	4.06	4.53
	22	6.09	3.52	4.09	4.57
	23	6.13	3.54	4.12	4.60
	24	6.16	3.54	4.14	4.61
	25	6.18	3.54	4.15	4.62
0kN/m^2 Unload	25.25	5.74	2.78	3.70	4.07
	26	5.64	2.74	3.64	4.01
	27	5.62	2.71	3.62	3.98
	28	5.61	2.69	3.61	3.97
	29	5.60	2.68	3.61	3.96
	30	5.60	2.68	3.60	3.96

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 601 A T1



Contract: Goat Mill Lane Merthyr

Date: 31.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

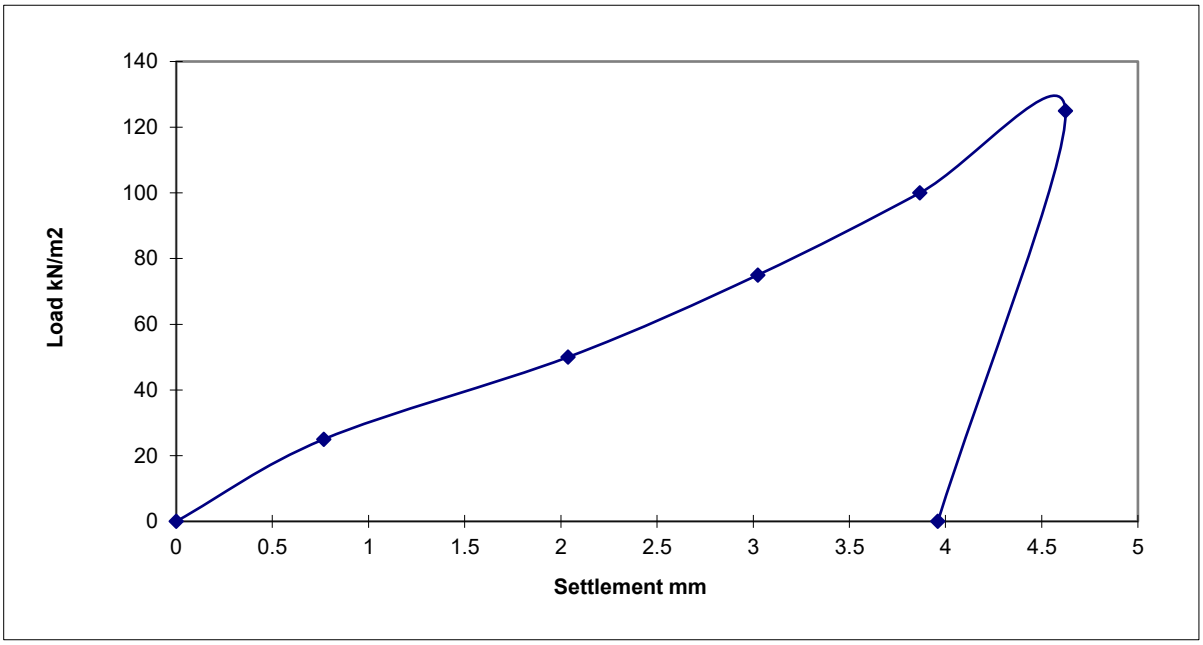
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey silty sandy gravel
TP 601 A T1	0.50m bgl	Counterweight: Tracked excavator	Weather Conditions: Sunny

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.77	25	5
2.04	50	10
3.02	75	15
3.87	100	20
4.62	125	25
3.96	0	30

Deformation Modulus (E)	11.6	MN/m^2
Degree of Rebound (%)	14.3	%
Load req'd to achieve 1.25mm settlement	33.8	kN/m^2
Modulus of subgrade reaction (K762)	24603	kPa/m
Derived CBR Value	4.2	%

σmax	125	kN/m^2
s at σmax	4.62	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 31.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr

Date: 31.03.26

Test Reference: TP601A T2

Test Depth: 1.00m bgl

Plate Diameter: 600mm

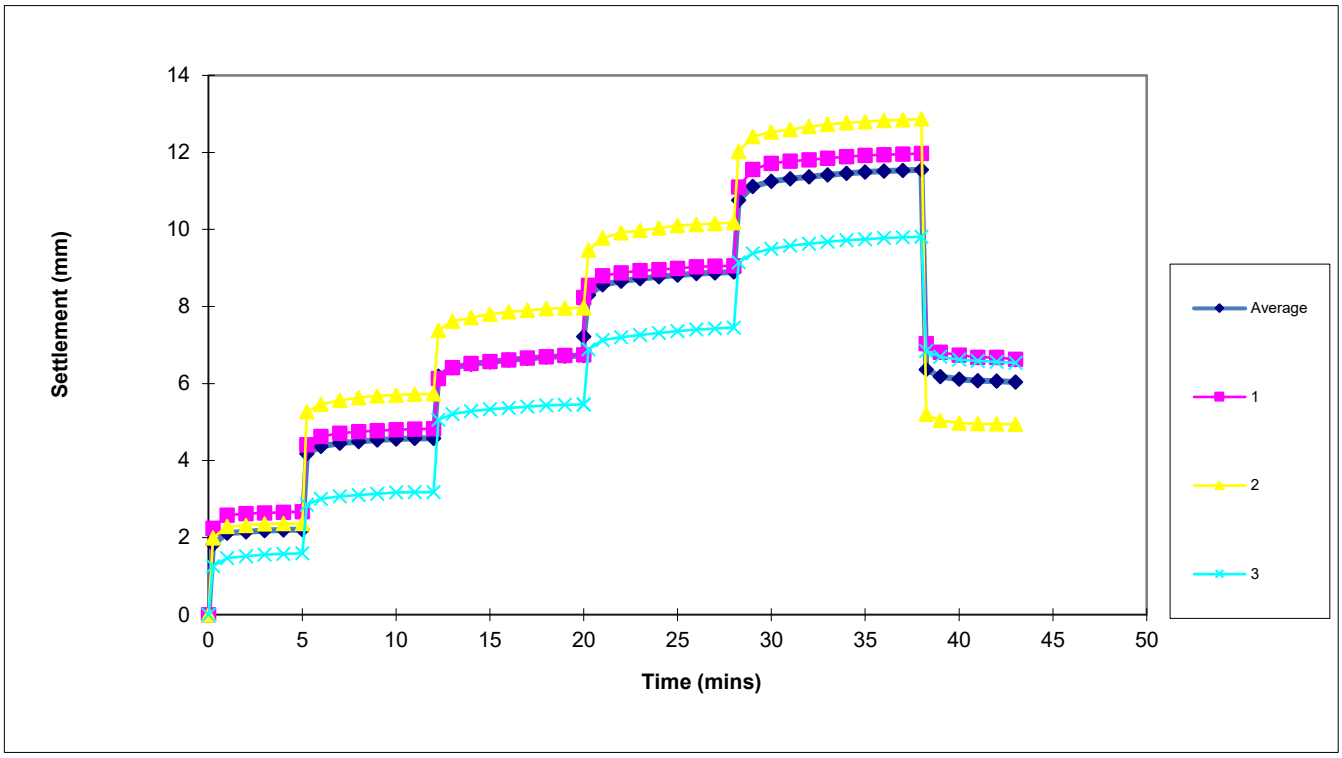
Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	2.24	1.99	1.26	1.83
	1	2.58	2.29	1.47	2.11
	2	2.62	2.32	1.52	2.15
	3	2.64	2.36	1.56	2.19
	4	2.66	2.37	1.58	2.20
	5	2.67	2.37	1.59	2.21
50kN/m^2 Load	5.25	4.41	5.27	2.86	4.18
	6	4.63	5.46	3.01	4.37
	7	4.71	5.57	3.07	4.45
	8	4.75	5.63	3.11	4.50
	9	4.78	5.68	3.14	4.53
	10	4.80	5.70	3.17	4.56
	11	4.82	5.72	3.18	4.57
	12	4.83	5.73	3.18	4.58
75kN/m^2 Load	12.25	6.13	7.38	5.06	6.19
	13	6.41	7.62	5.21	6.41
	14	6.52	7.71	5.28	6.50
	15	6.57	7.80	5.33	6.57
	16	6.61	7.86	5.37	6.61
	17	6.66	7.90	5.40	6.65
	18	6.70	7.94	5.43	6.69
	19	6.73	7.96	5.45	6.71
	20	6.75	7.97	5.46	6.73
	20	8.23	7.97	5.46	7.22
100kN/m^2 Load	20.25	8.55	9.46	6.89	8.30
	21	8.80	9.78	7.13	8.57
	22	8.87	9.91	7.20	8.66
	23	8.93	9.98	7.26	8.72
	24	8.96	10.04	7.31	8.77
	25	8.99	10.10	7.36	8.82
	26	9.03	10.13	7.40	8.85
	27	9.05	10.15	7.43	8.88
	28	9.06	10.18	7.45	8.90
125kN/m^2 Load	28.25	11.10	12.02	9.15	10.76
	29	11.56	12.41	9.38	11.12
	30	11.72	12.53	9.50	11.25
	31	11.77	12.60	9.58	11.32
	32	11.81	12.67	9.63	11.37
	33	11.85	12.73	9.68	11.42
	34	11.89	12.77	9.72	11.46
	35	11.92	12.80	9.75	11.49
	36	11.94	12.83	9.78	11.52
	37	11.96	12.85	9.80	11.54
	38	11.97	12.87	9.81	11.55
0kN/m^2 Unload	38.25	7.04	5.20	6.85	6.36
	39	6.81	5.04	6.70	6.18
	40	6.74	4.98	6.62	6.11
	41	6.68	4.96	6.59	6.08
	42	6.68	4.95	6.56	6.06
	43	6.63	4.94	6.54	6.04

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP601A T2



Contract: Goat Mill Lane Merthyr

Date: 31.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

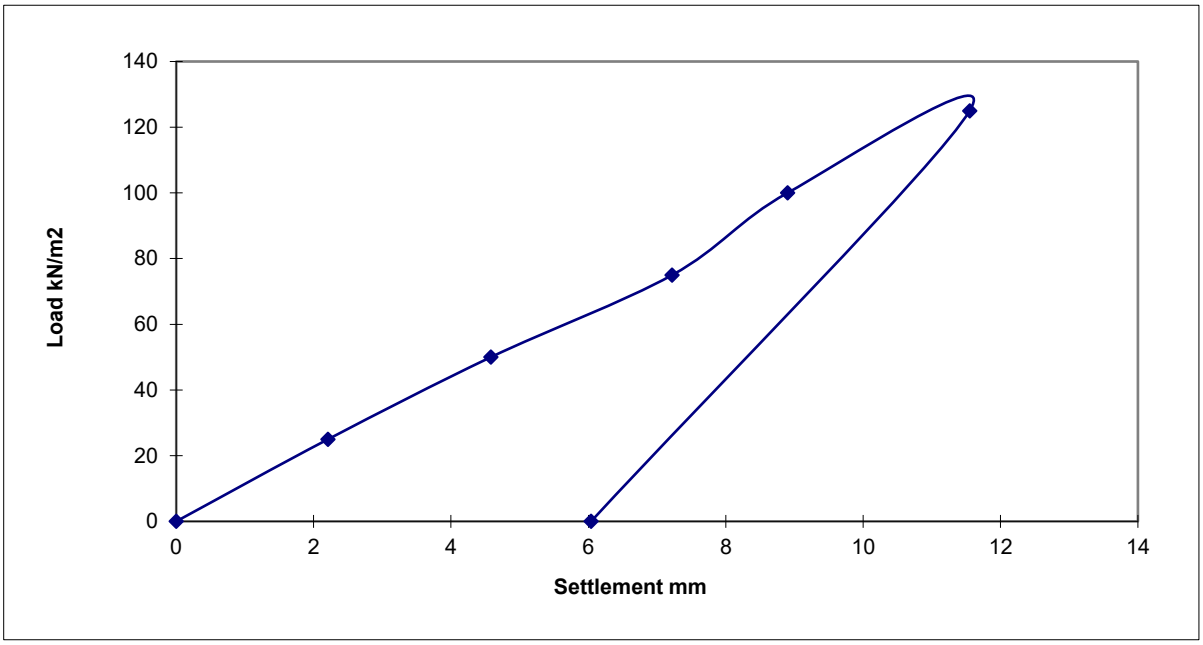
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey silty sandy gravel
TP601A T2	1.00m bgl	Counterweight: Tracked excavator	Weather Conditions: Sunny

Average Plate Settlement (mm)	Load (kN/m²)	Time (mins)
0	0	0
2.21	25	5
4.58	50	12
7.22	75	20
8.90	100	28
11.55	125	38
6.04	0	43

Deformation Modulus (E)	4.7	MN/m²
Degree of Rebound (%)	47.7	%
Load req'd to achieve 1.25mm settlement	13.5	kN/m²
Modulus of subgrade reaction (K762)	9848	kPa/m
Derived CBR Value	1.3	%

σmax	125	kN/m²
s at σmax	11.55	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 31.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 18.03.26

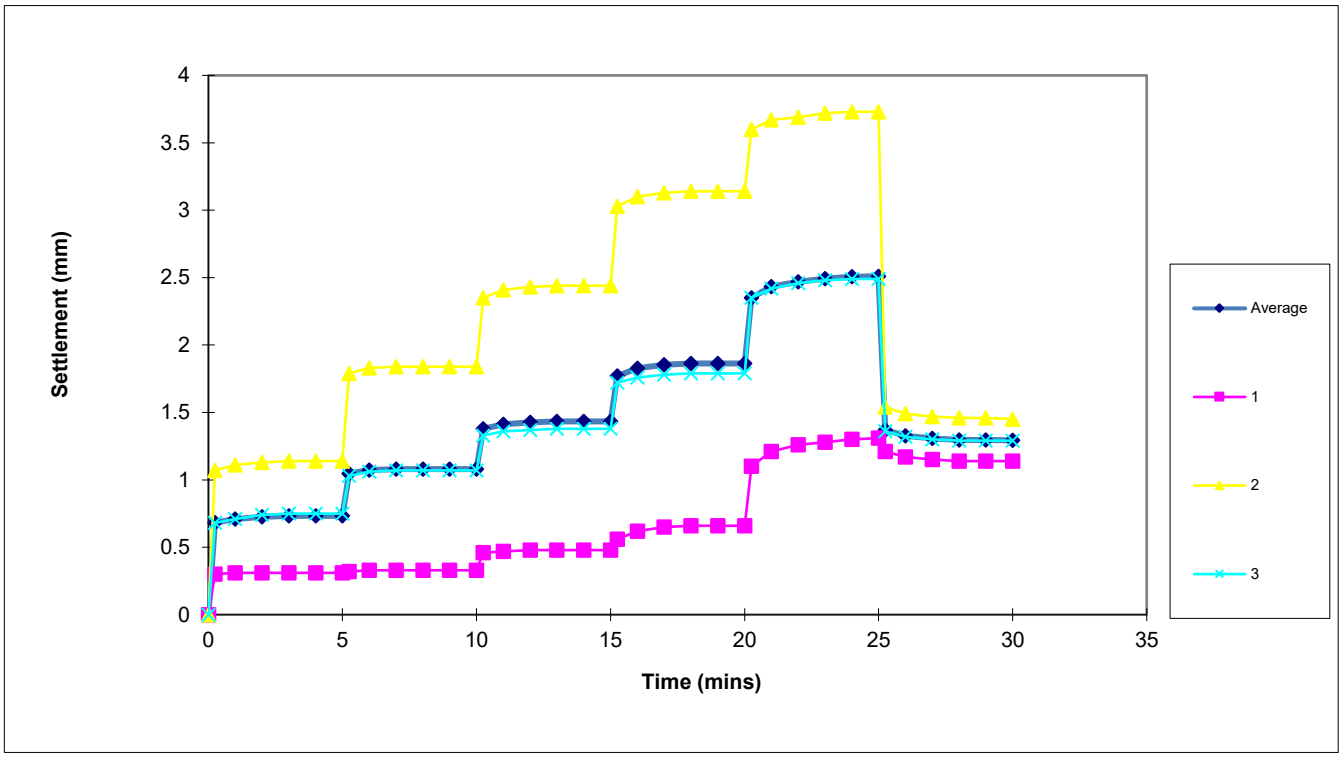
Test Reference: TP 602 T1 | Test Depth: 0.50m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.30	1.07	0.68	0.68
	1	0.31	1.11	0.71	0.71
	2	0.31	1.13	0.74	0.73
	3	0.31	1.14	0.75	0.73
	4	0.31	1.14	0.75	0.73
	5	0.31	1.14	0.75	0.73
50kN/m^2 Load	5.25	0.32	1.79	1.03	1.05
	6	0.33	1.83	1.06	1.07
	7	0.33	1.84	1.07	1.08
	8	0.33	1.84	1.07	1.08
	9	0.33	1.84	1.07	1.08
	10	0.33	1.84	1.07	1.08
75kN/m^2 Load	10.25	0.46	2.35	1.33	1.38
	11	0.47	2.41	1.36	1.41
	12	0.48	2.43	1.37	1.43
	13	0.48	2.44	1.38	1.43
	14	0.48	2.44	1.38	1.43
	15	0.48	2.44	1.38	1.43
100kN/m^2 Load	15.25	0.56	3.03	1.72	1.77
	16	0.62	3.10	1.76	1.83
	17	0.65	3.13	1.78	1.85
	18	0.66	3.14	1.79	1.86
	19	0.66	3.14	1.79	1.86
	20	0.66	3.14	1.79	1.86
125kN/m^2 Load	20.25	1.10	3.60	2.35	2.35
	21	1.21	3.67	2.42	2.43
	22	1.26	3.69	2.46	2.47
	23	1.28	3.72	2.48	2.49
	24	1.30	3.73	2.49	2.51
	25	1.31	3.73	2.49	2.51
0kN/m^2 Unload	25.25	1.21	1.54	1.36	1.37
	26	1.17	1.49	1.32	1.33
	27	1.15	1.47	1.30	1.31
	28	1.14	1.46	1.29	1.30
	29	1.14	1.46	1.29	1.30
	30	1.14	1.45	1.29	1.29

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 602 T1



Contract: Goat Mill Lane Merthyr

Date: 18.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

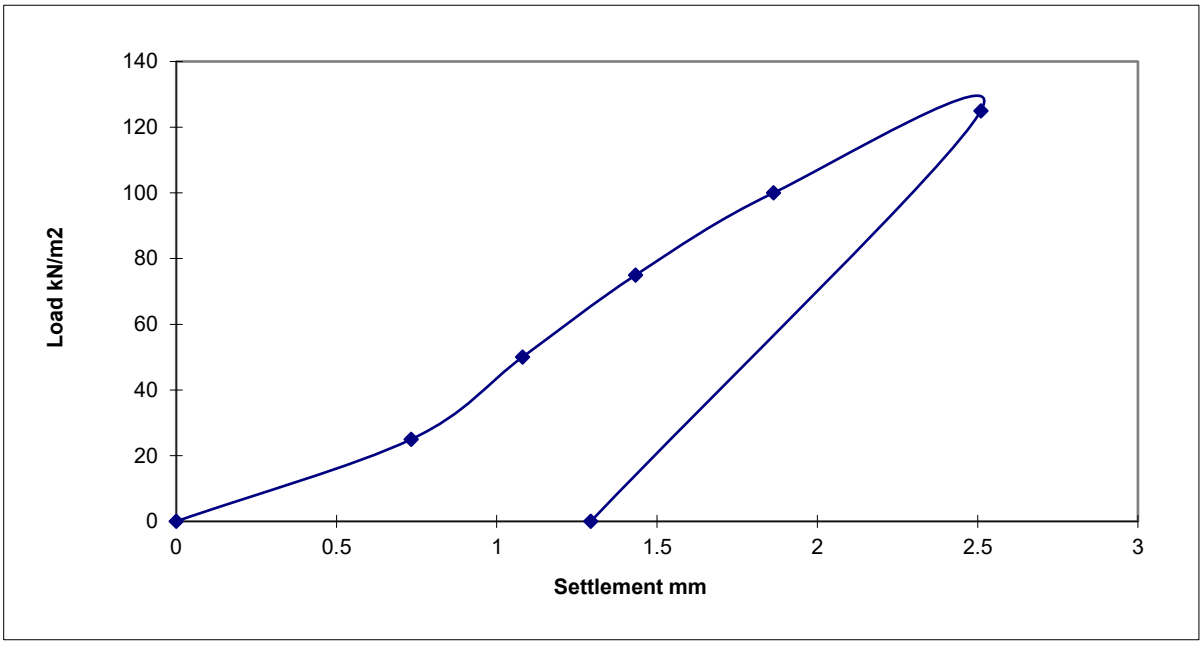
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey silty sandy gravel
TP 602 T1	0.50m bgl	Counterweight: Tracked excavator	Weather Conditions: Sunny

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.73	25	5
1.08	50	10
1.43	75	15
1.86	100	20
2.51	125	25
1.29	0	30

Deformation Modulus (E)	21.4	MN/m^2
Degree of Rebound (%)	48.5	%
Load req'd to achieve 1.25mm settlement	62.3	kN/m^2
Modulus of subgrade reaction (K762)	45319	kPa/m
Derived CBR Value	9.3	%

σmax	125	kN/m^2
s at σmax	2.51	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 18.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 18.03.26

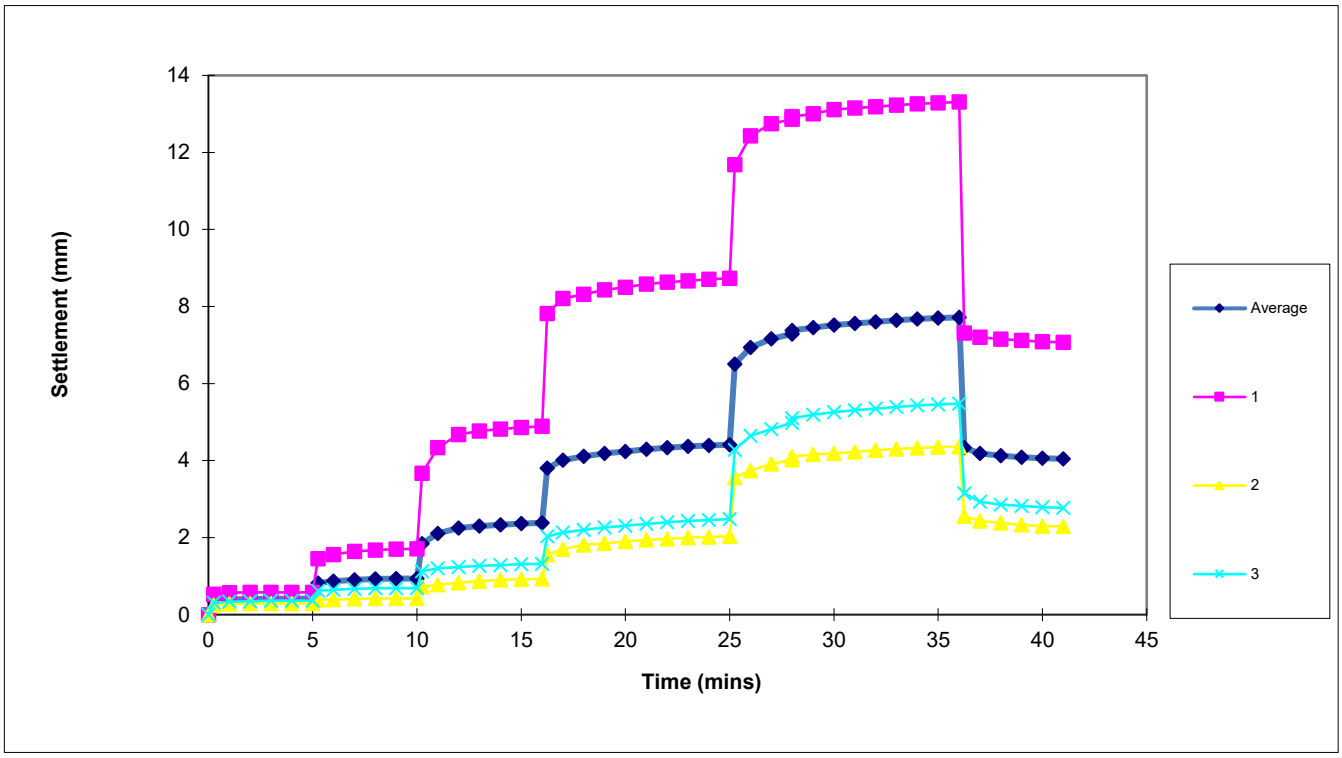
Test Reference: TP 602 T2 | Test Depth: 1.00m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.53	0.25	0.31	0.36
	1	0.57	0.28	0.34	0.40
	2	0.58	0.29	0.35	0.41
	3	0.58	0.29	0.36	0.41
	4	0.58	0.29	0.36	0.41
	5	0.58	0.29	0.36	0.41
50kN/m^2 Load	5.25	1.45	0.38	0.62	0.82
	6	1.56	0.39	0.65	0.87
	7	1.64	0.41	0.67	0.91
	8	1.68	0.42	0.69	0.93
	9	1.70	0.42	0.69	0.94
	10	1.71	0.42	0.69	0.94
75kN/m^2 Load	10.25	3.67	0.72	1.13	1.84
	11	4.34	0.78	1.20	2.11
	12	4.68	0.83	1.24	2.25
	13	4.77	0.87	1.27	2.30
	14	4.82	0.90	1.29	2.34
	15	4.86	0.92	1.31	2.36
	16	4.89	0.93	1.32	2.38
100kN/m^2 Load	16.25	7.82	1.56	2.03	3.80
	17	8.21	1.70	2.13	4.01
	18	8.32	1.81	2.20	4.11
	19	8.43	1.85	2.27	4.18
	20	8.50	1.90	2.31	4.24
	21	8.58	1.94	2.36	4.29
	22	8.63	1.97	2.40	4.33
	23	8.67	2.00	2.43	4.37
	24	8.71	2.02	2.46	4.40
	25	8.73	2.03	2.48	4.41
125kN/m^2 Load	25.25	11.68	3.56	4.28	6.51
	26	12.43	3.74	4.64	6.94
	27	12.75	3.91	4.82	7.16
	28	12.86	4.02	4.98	7.29
	28	12.93	4.10	5.10	7.38
	29	13.00	4.16	5.19	7.45
	30	13.11	4.19	5.26	7.52
	31	13.15	4.23	5.31	7.56
	32	13.19	4.27	5.35	7.60
	33	13.23	4.30	5.39	7.64
	34	13.26	4.33	5.43	7.67
	35	13.29	4.35	5.46	7.70
	36	13.31	4.36	5.48	7.72
0kN/m^2 Unload	36.25	7.31	2.56	3.15	4.34
	37	7.20	2.43	2.93	4.19
	38	7.15	2.38	2.86	4.13
	39	7.12	2.33	2.82	4.09
	40	7.09	2.30	2.79	4.06
	41	7.07	2.29	2.77	4.04

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 602 T2



Contract: Goat Mill Lane Merthyr

Date: 18.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

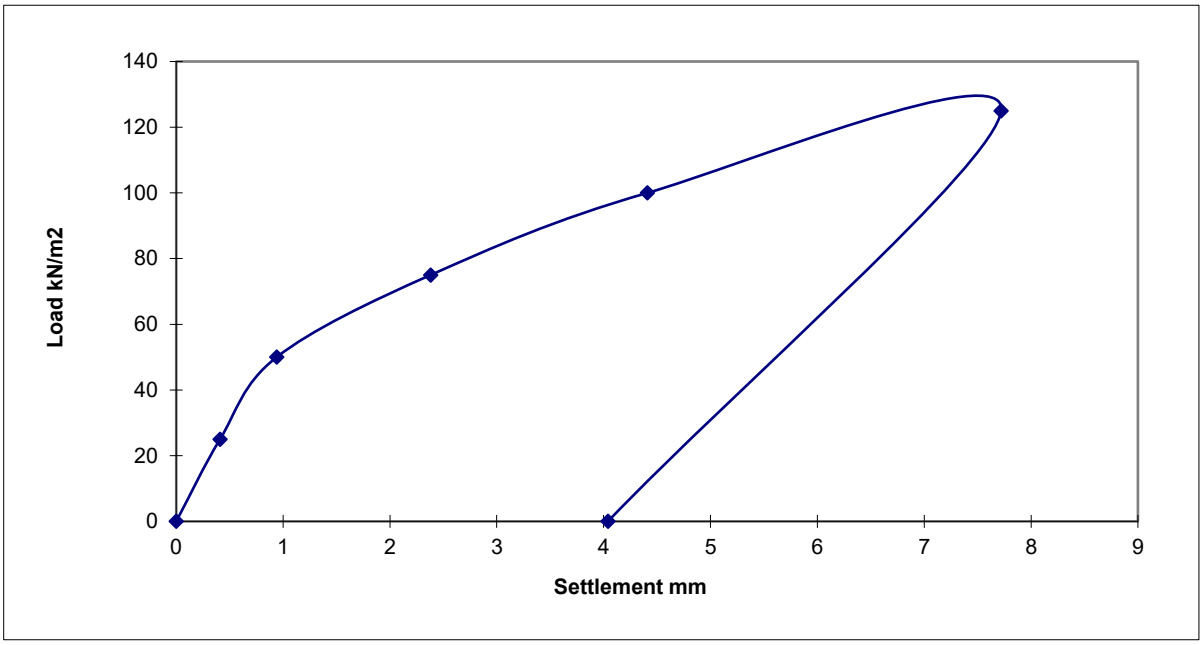
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey silty sandy gravel
TP 602 T2	1.00m bgl	Counterweight: Tracked excavator	Weather Conditions: Sunny

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.41	25	5
0.94	50	10
2.38	75	16
4.41	100	25
7.72	125	36
4.04	0	41

Deformation Modulus (E)	7.0	MN/m^2
Degree of Rebound (%)	47.7	%
Load req'd to achieve 1.25mm settlement	20.2	kN/m^2
Modulus of subgrade reaction (K762)	14734	kPa/m
Derived CBR Value	2.2	%

σmax	125	kN/m^2
s at σmax	7.72	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 18.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 18.03.26

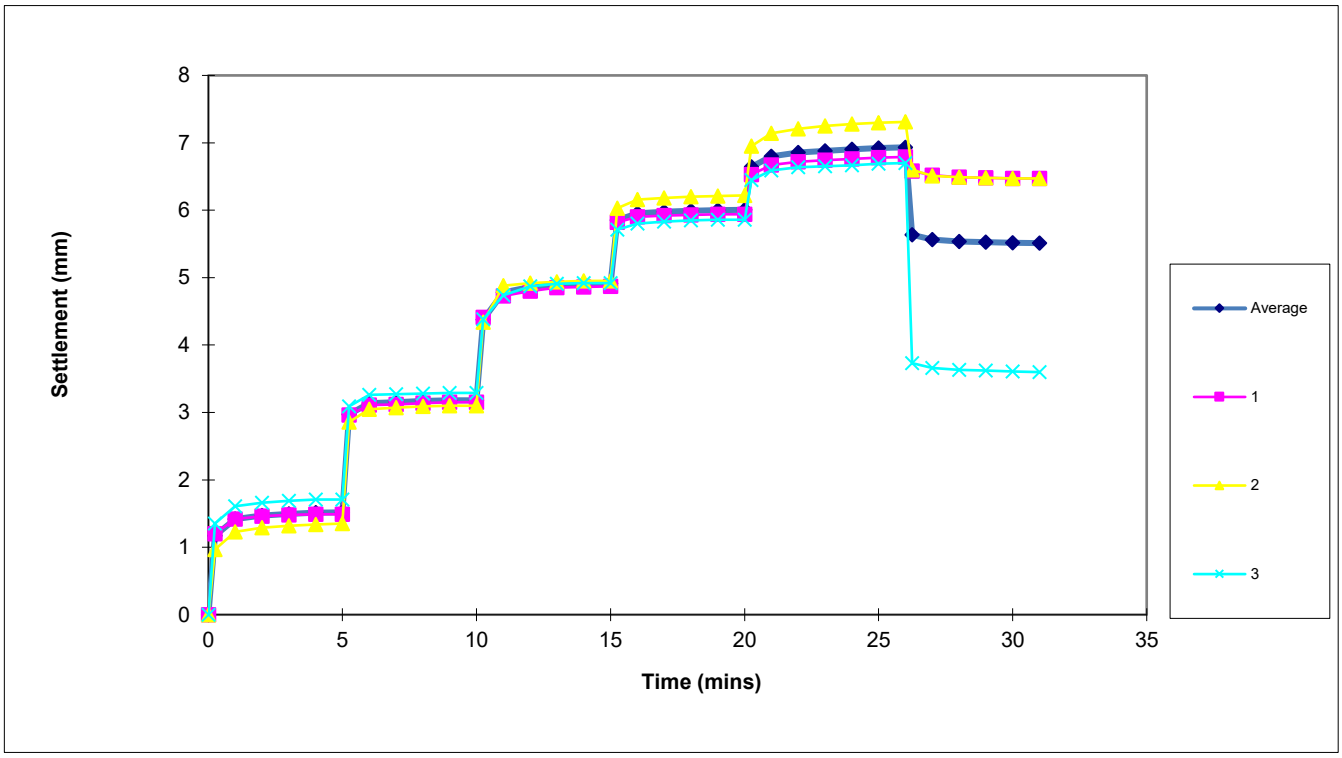
Test Reference: TP 603 T1 | Test Depth: 0.50m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	1.20	0.97	1.35	1.17
	1	1.42	1.23	1.61	1.42
	2	1.46	1.29	1.66	1.47
	3	1.48	1.32	1.69	1.50
	4	1.49	1.34	1.71	1.51
	5	1.49	1.35	1.71	1.52
50kN/m^2 Load	5.25	2.96	2.86	3.09	2.97
	6	3.11	3.05	3.26	3.14
	7	3.12	3.07	3.27	3.15
	8	3.14	3.09	3.28	3.17
	9	3.15	3.10	3.29	3.18
	10	3.15	3.10	3.29	3.18
75kN/m^2 Load	10.25	4.41	4.34	4.38	4.38
	11	4.73	4.88	4.74	4.78
	12	4.80	4.92	4.87	4.86
	13	4.85	4.94	4.91	4.90
	14	4.86	4.95	4.92	4.91
	15	4.87	4.95	4.92	4.91
100kN/m^2 Load	15.25	5.82	6.03	5.71	5.85
	16	5.90	6.16	5.80	5.95
	17	5.92	6.18	5.83	5.98
	18	5.93	6.20	5.85	5.99
	19	5.94	6.21	5.86	6.00
	20	5.94	6.22	5.86	6.01
125kN/m^2 Load	20.25	6.53	6.95	6.45	6.64
	21	6.67	7.14	6.59	6.80
	22	6.72	7.21	6.64	6.86
	23	6.74	7.25	6.65	6.88
	24	6.76	7.28	6.67	6.90
	25	6.78	7.30	6.69	6.92
	26	6.79	7.31	6.70	6.93
0kN/m^2 Unload	26.25	6.58	6.60	3.73	5.64
	27	6.52	6.51	3.66	5.56
	28	6.49	6.49	3.63	5.54
	29	6.48	6.48	3.62	5.53
	30	6.47	6.47	3.61	5.52
	31	6.47	6.47	3.60	5.51

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 603 T1



Contract: Goat Mill Lane Merthyr

Date: 18.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

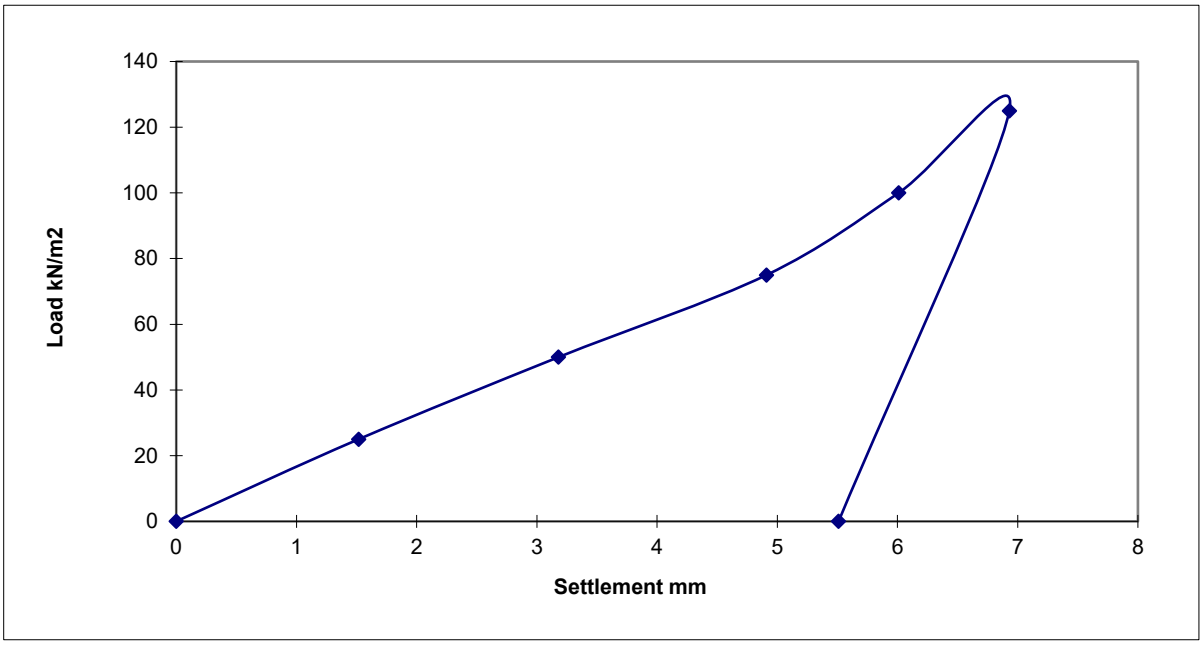
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey silty sandy gravel
TP 603 T1	0.50m bgl	Counterweight: Tracked excavator	Weather Conditions: Sunny

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
1.52	25	5
3.18	50	10
4.91	75	15
6.01	100	20
6.93	125	26
5.51	0	31

Deformation Modulus (E)	7.8	MN/m^2
Degree of Rebound (%)	20.5	%
Load req'd to achieve 1.25mm settlement	22.5	kN/m^2
Modulus of subgrade reaction (K762)	16414	kPa/m
Derived CBR Value	2.5	%

σmax	125	kN/m^2
s at σmax	6.93	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 18.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 18.03.26

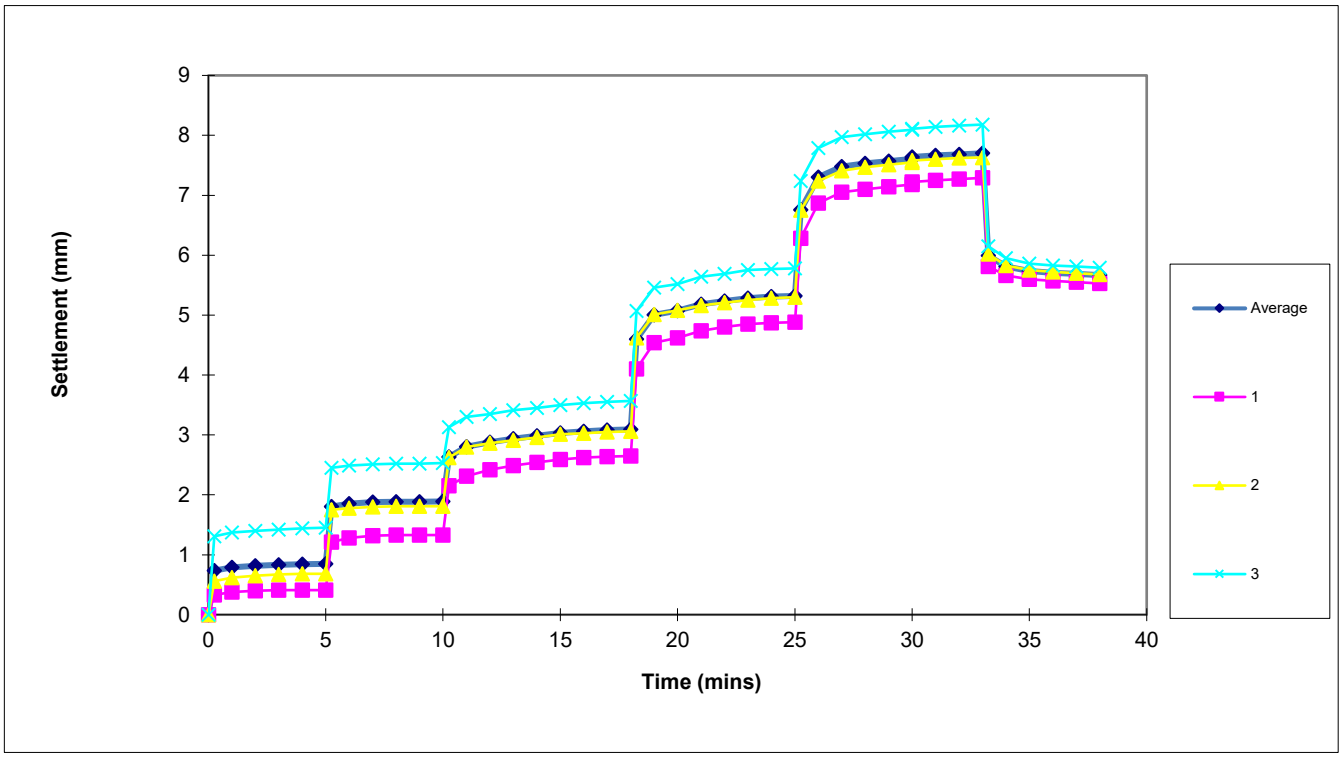
Test Reference: TP 603 T2 | Test Depth: 1.00m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.33	0.56	1.31	0.73
	1	0.38	0.62	1.37	0.79
	2	0.40	0.65	1.40	0.82
	3	0.41	0.67	1.42	0.83
	4	0.41	0.68	1.44	0.84
	5	0.41	0.68	1.45	0.85
50kN/m^2 Load	5.25	1.21	1.75	2.45	1.80
	6	1.28	1.78	2.49	1.85
	7	1.32	1.80	2.51	1.88
	8	1.33	1.81	2.52	1.89
	9	1.33	1.81	2.52	1.89
	10	1.33	1.81	2.53	1.89
75kN/m^2 Load	10.25	2.15	2.62	3.13	2.63
	11	2.31	2.80	3.30	2.80
	12	2.42	2.86	3.35	2.88
	13	2.49	2.91	3.41	2.94
	14	2.54	2.96	3.45	2.98
	15	2.59	3.01	3.50	3.03
	16	2.62	3.03	3.53	3.06
	17	2.64	3.05	3.55	3.08
	18	2.65	3.06	3.57	3.09
100kN/m^2 Load	18.25	4.10	4.62	5.07	4.60
	19	4.54	5.01	5.46	5.00
	20	4.62	5.08	5.52	5.07
	21	4.74	5.16	5.64	5.18
	22	4.80	5.21	5.69	5.23
	23	4.85	5.25	5.75	5.28
	24	4.87	5.28	5.77	5.31
	25	4.88	5.30	5.78	5.32
125kN/m^2 Load	25.25	6.28	6.75	7.24	6.76
	26	6.87	7.24	7.79	7.30
	27	7.05	7.41	7.97	7.48
	28	7.10	7.47	8.02	7.53
	29	7.14	7.51	8.06	7.57
	30	7.18	7.55	8.09	7.61
	30	7.22	7.58	8.11	7.64
	31	7.25	7.60	8.14	7.66
	32	7.27	7.62	8.16	7.68
	33	7.29	7.63	8.18	7.70
0kN/m^2 Unload	33.25	5.81	6.02	6.15	5.99
	34	5.66	5.83	5.95	5.81
	35	5.60	5.75	5.86	5.74
	36	5.57	5.72	5.83	5.71
	37	5.55	5.70	5.81	5.69
	38	5.53	5.68	5.79	5.67

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 603 T2



Contract: Goat Mill Lane Merthyr

Date: 18.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

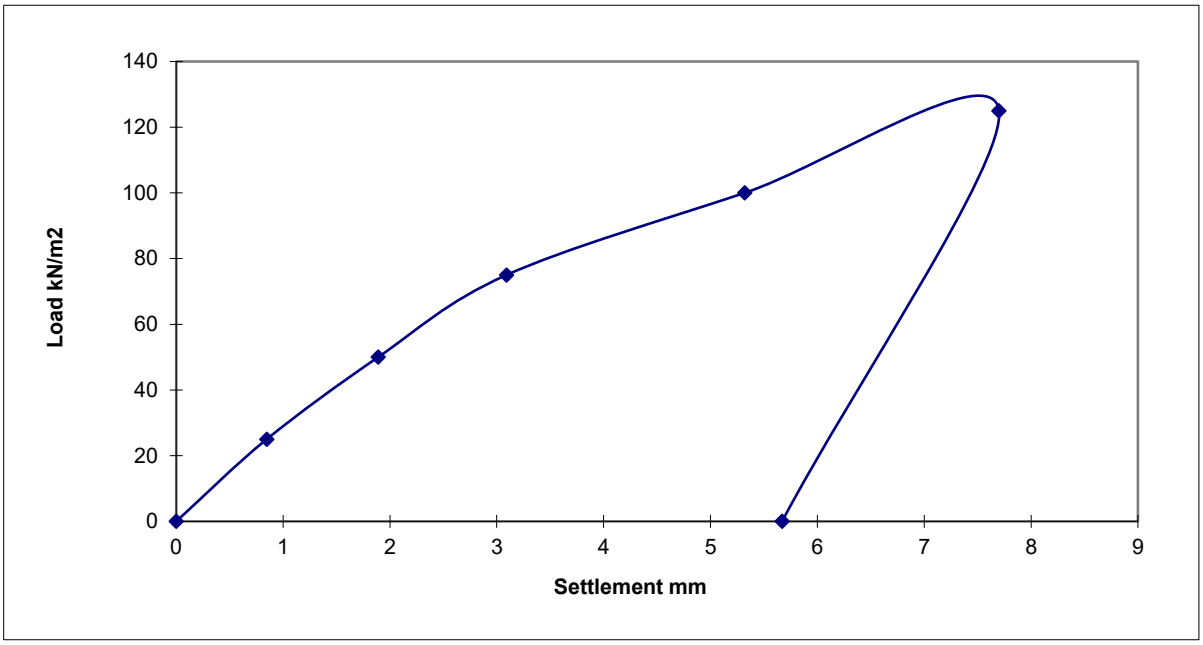
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey silty sandy gravel
TP 603 T2	1.00m bgl	Counterweight: Tracked excavator	Weather Conditions: Sunny

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.85	25	5
1.89	50	10
3.09	75	18
5.32	100	25
7.70	125	33
5.67	0	38

Deformation Modulus (E)	7.0	MN/m^2
Degree of Rebound (%)	26.4	%
Load req'd to achieve 1.25mm settlement	20.3	kN/m^2
Modulus of subgrade reaction (K762)	14773	kPa/m
Derived CBR Value	2.2	%

σmax	125	kN/m^2
s at σmax	7.70	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 18.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 23.03.26

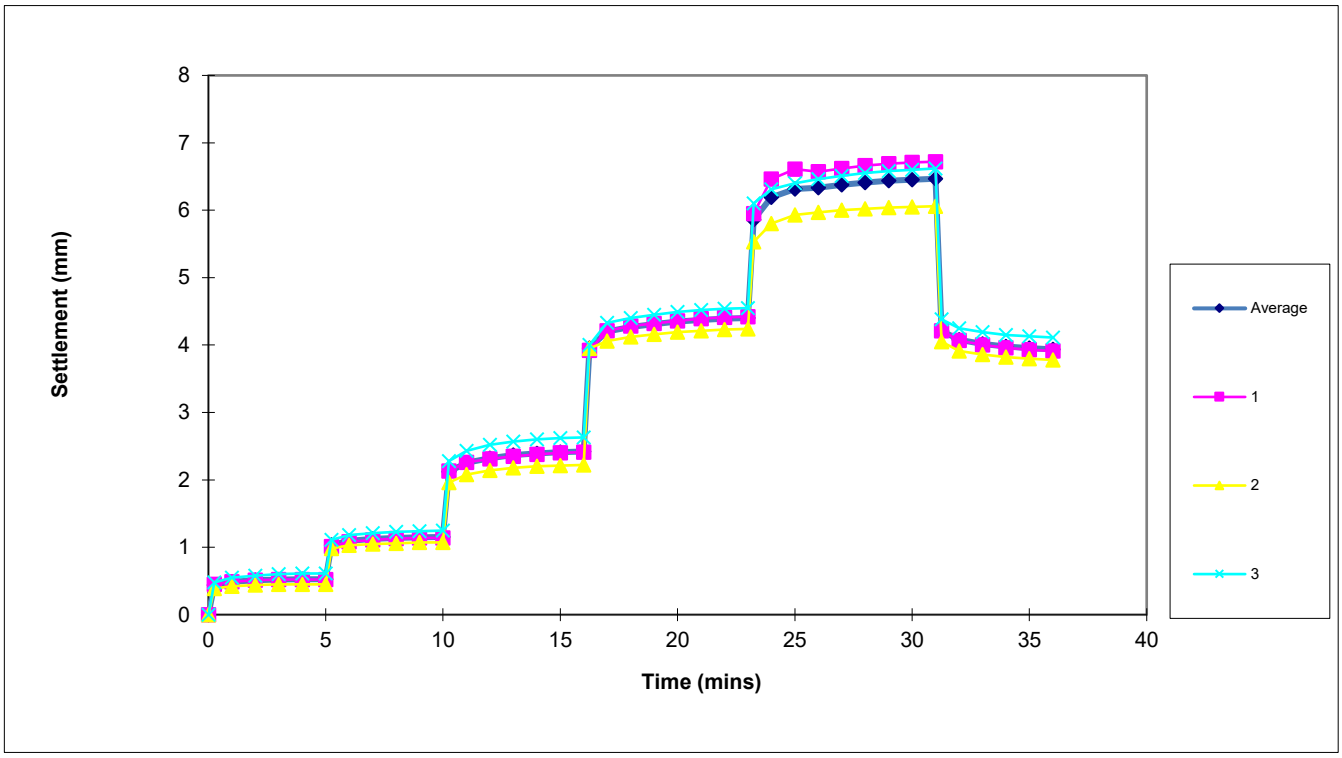
Test Reference: TP 604 T1 | Test Depth: 0.50m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.45	0.39	0.48	0.44
	1	0.49	0.42	0.55	0.49
	2	0.51	0.44	0.58	0.51
	3	0.52	0.45	0.60	0.52
	4	0.52	0.45	0.61	0.53
	5	0.52	0.45	0.61	0.53
50kN/m^2 Load	5.25	1.01	0.98	1.11	1.03
	6	1.08	1.03	1.18	1.10
	7	1.11	1.05	1.21	1.12
	8	1.13	1.06	1.23	1.14
	9	1.14	1.07	1.24	1.15
	10	1.14	1.07	1.25	1.15
75kN/m^2 Load	10.25	2.13	1.96	2.28	2.12
	11	2.26	2.08	2.43	2.26
	12	2.31	2.14	2.52	2.32
	13	2.35	2.18	2.57	2.37
	14	2.38	2.20	2.60	2.39
	15	2.40	2.21	2.62	2.41
	16	2.41	2.22	2.63	2.42
100kN/m^2 Load	16.25	3.92	3.95	4.00	3.96
	17	4.21	4.06	4.33	4.20
	18	4.28	4.12	4.40	4.27
	19	4.32	4.16	4.45	4.31
	20	4.36	4.19	4.49	4.35
	21	4.39	4.21	4.52	4.37
	22	4.41	4.23	4.54	4.39
	23	4.42	4.24	4.55	4.40
125kN/m^2 Load	23.25	5.95	5.53	6.10	5.86
	24	6.46	5.80	6.31	6.19
	25	6.61	5.93	6.40	6.31
	26	6.57	5.97	6.46	6.33
	27	6.62	6.00	6.51	6.38
	28	6.66	6.02	6.55	6.41
	29	6.69	6.04	6.58	6.44
	30	6.71	6.05	6.60	6.45
	31	6.72	6.06	6.62	6.47
0kN/m^2 Unload	31.25	4.21	4.05	4.38	4.21
	32	4.07	3.91	4.25	4.08
	33	4.00	3.86	4.19	4.02
	34	3.96	3.82	4.15	3.98
	35	3.93	3.80	4.13	3.95
	36	3.91	3.78	4.11	3.93

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 604 T1



Contract: Goat Mill Lane Merthyr

Date: 23.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

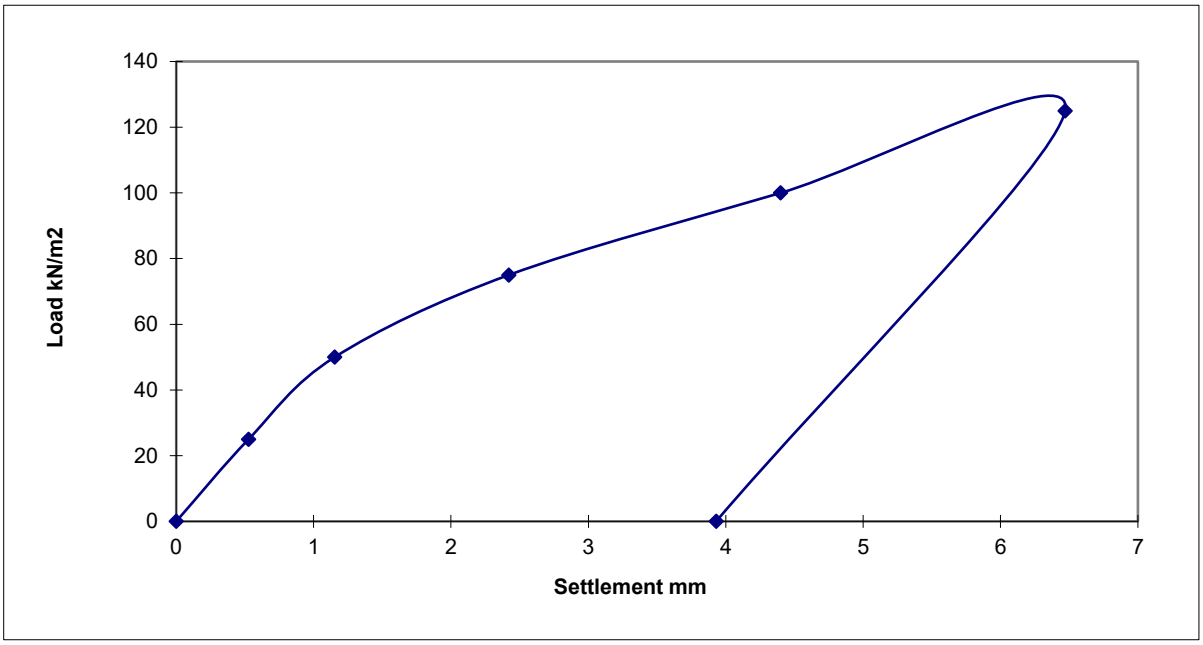
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Colliery Spoil
TP 604 T1	0.50m bgl	Counterweight: Tracked excavator	Weather Conditions: Sunny

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.53	25	5
1.15	50	10
2.42	75	16
4.40	100	23
6.47	125	31
3.93	0	36

Deformation Modulus (E)	8.3	MN/m^2
Degree of Rebound (%)	39.3	%
Load req'd to achieve 1.25mm settlement	24.1	kN/m^2
Modulus of subgrade reaction (K762)	17581	kPa/m
Derived CBR Value	2.8	%

σmax	125	kN/m^2
s at σmax	6.47	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 23.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 23.03.26

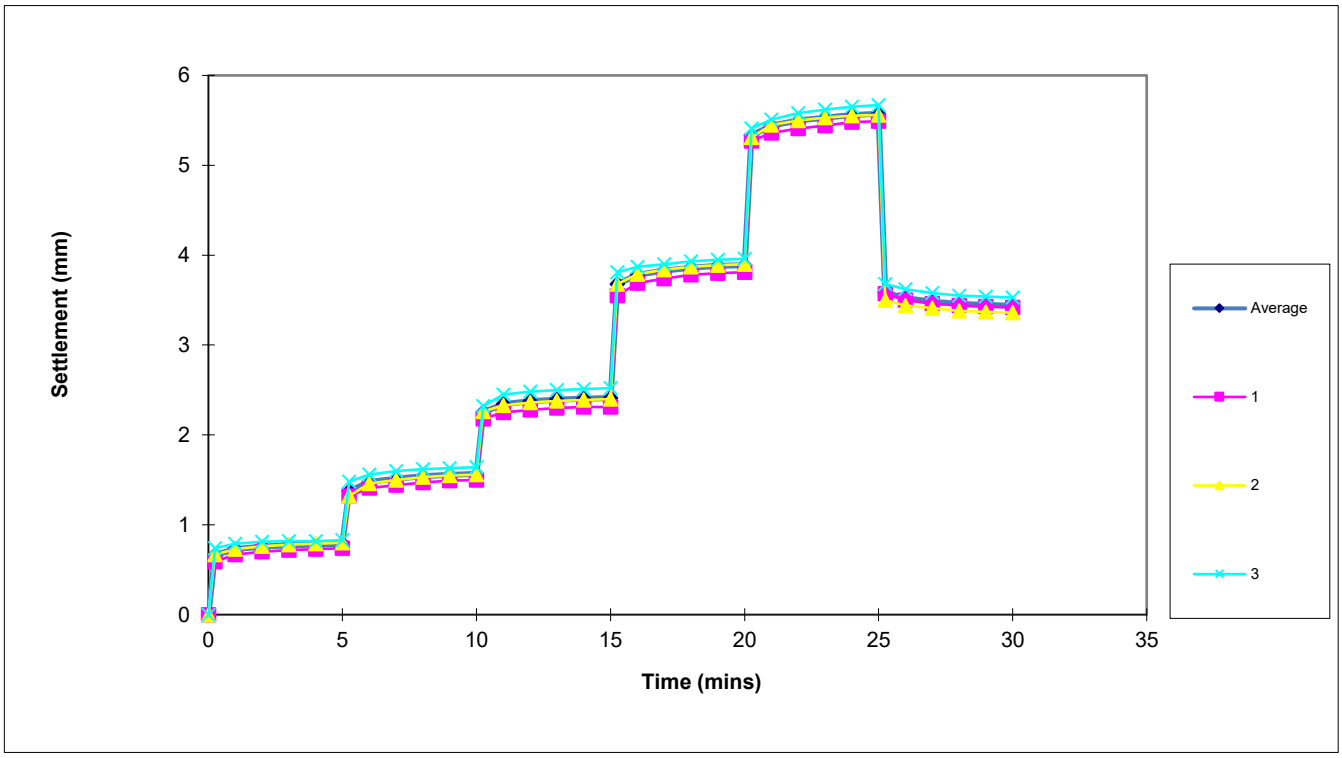
Test Reference: TP 604 T2 | Test Depth: 1.00m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.59	0.67	0.74	0.67
	1	0.67	0.73	0.79	0.73
	2	0.70	0.76	0.81	0.76
	3	0.72	0.78	0.82	0.77
	4	0.73	0.79	0.82	0.78
	5	0.74	0.80	0.83	0.79
50kN/m^2 Load	5.25	1.32	1.32	1.48	1.37
	6	1.41	1.46	1.56	1.48
	7	1.44	1.50	1.60	1.51
	8	1.47	1.53	1.62	1.54
	9	1.49	1.55	1.63	1.56
	10	1.50	1.56	1.64	1.57
75kN/m^2 Load	10.25	2.18	2.26	2.32	2.25
	11	2.25	2.33	2.45	2.34
	12	2.28	2.36	2.48	2.37
	13	2.30	2.38	2.50	2.39
	14	2.31	2.39	2.51	2.40
	15	2.31	2.40	2.52	2.41
100kN/m^2 Load	15.25	3.55	3.68	3.81	3.68
	16	3.69	3.79	3.87	3.78
	17	3.74	3.84	3.90	3.83
	18	3.78	3.87	3.93	3.86
	19	3.80	3.89	3.95	3.88
	20	3.81	3.90	3.96	3.89
125kN/m^2 Load	20.25	5.27	5.31	5.41	5.33
	21	5.36	5.45	5.51	5.44
	22	5.41	5.50	5.58	5.50
	23	5.44	5.53	5.62	5.53
	24	5.48	5.55	5.65	5.56
	25	5.49	5.56	5.67	5.57
0kN/m^2 Unload	25.25	3.57	3.50	3.68	3.58
	26	3.50	3.44	3.62	3.52
	27	3.46	3.41	3.58	3.48
	28	3.44	3.38	3.55	3.46
	29	3.43	3.37	3.54	3.45
	30	3.42	3.36	3.53	3.44

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 604 T2



Contract: Goat Mill Lane Merthyr

Date: 23.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

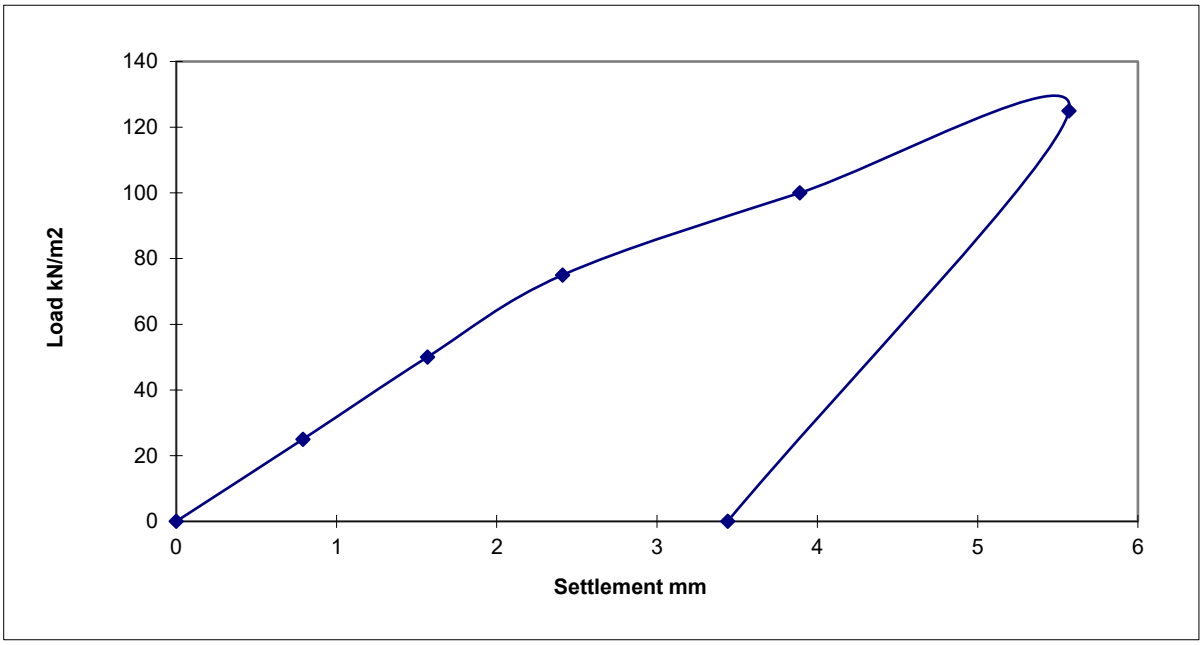
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Colleiry Spoil
TP 604 T2	1.00m bgl	Counterweight: Tracked excavator	Weather Conditions: Sunny

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.79	25	5
1.57	50	10
2.41	75	15
3.89	100	20
5.57	125	25
3.44	0	30

Deformation Modulus (E)	9.6	MN/m^2
Degree of Rebound (%)	38.2	%
Load req'd to achieve 1.25mm settlement	28.1	kN/m^2
Modulus of subgrade reaction (K762)	20422	kPa/m
Derived CBR Value	3.3	%

σmax	125	kN/m^2
s at σmax	5.57	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 23.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 20.03.26

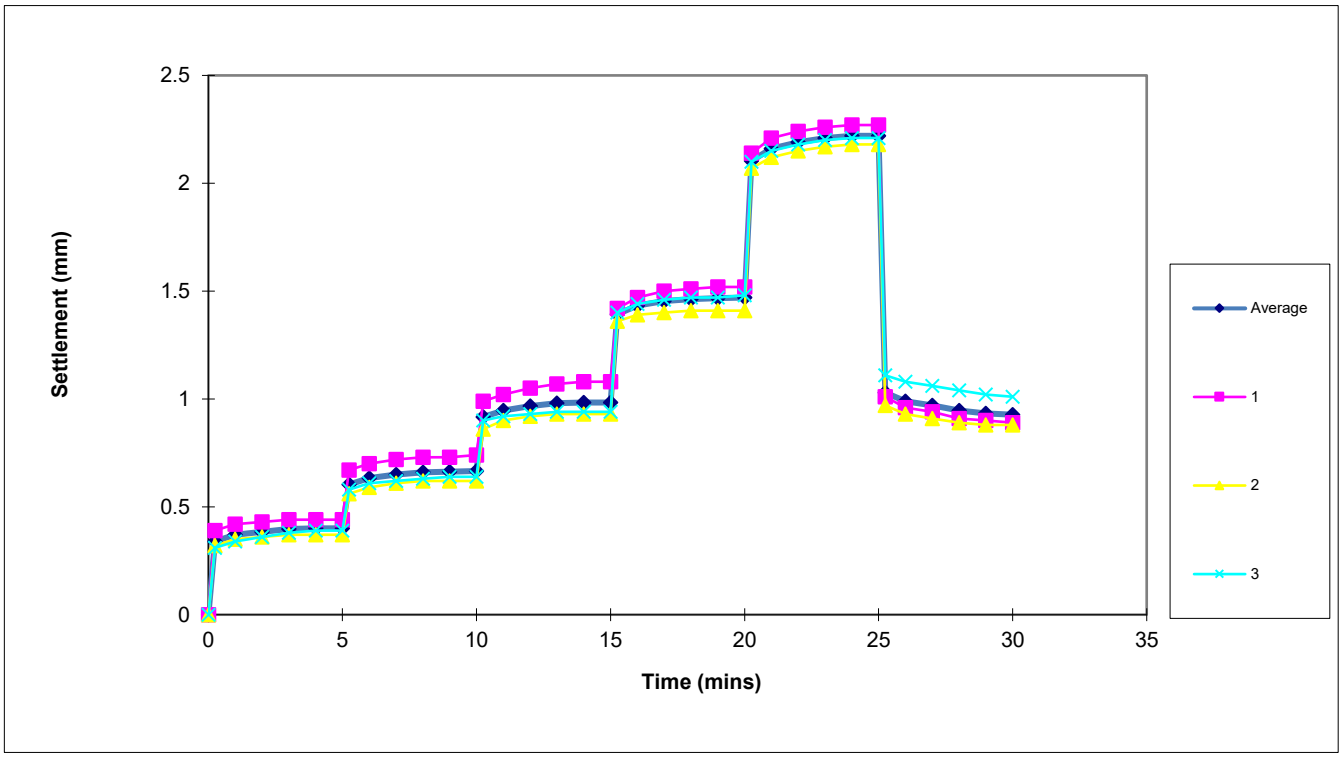
Test Reference: TP 605 T1 | Test Depth: 0.50m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.39	0.32	0.31	0.34
	1	0.42	0.35	0.34	0.37
	2	0.43	0.36	0.36	0.38
	3	0.44	0.37	0.38	0.40
	4	0.44	0.37	0.39	0.40
	5	0.44	0.37	0.39	0.40
50kN/m^2 Load	5.25	0.67	0.56	0.58	0.60
	6	0.70	0.59	0.61	0.63
	7	0.72	0.61	0.62	0.65
	8	0.73	0.62	0.63	0.66
	9	0.73	0.62	0.64	0.66
	10	0.74	0.62	0.64	0.67
75kN/m^2 Load	10.25	0.99	0.86	0.90	0.92
	11	1.02	0.90	0.92	0.95
	12	1.05	0.92	0.93	0.97
	13	1.07	0.93	0.94	0.98
	14	1.08	0.93	0.94	0.98
	15	1.08	0.93	0.94	0.98
100kN/m^2 Load	15.25	1.42	1.36	1.40	1.39
	16	1.47	1.39	1.44	1.43
	17	1.50	1.40	1.46	1.45
	18	1.51	1.41	1.47	1.46
	19	1.52	1.41	1.47	1.47
	20	1.52	1.41	1.48	1.47
125kN/m^2 Load	20.25	2.14	2.07	2.10	2.10
	21	2.21	2.12	2.15	2.16
	22	2.24	2.15	2.18	2.19
	23	2.26	2.17	2.20	2.21
	24	2.27	2.18	2.21	2.22
	25	2.27	2.18	2.21	2.22
0kN/m^2 Unload	25.25	1.01	0.97	1.11	1.03
	26	0.96	0.93	1.08	0.99
	27	0.94	0.91	1.06	0.97
	28	0.91	0.89	1.04	0.95
	29	0.90	0.88	1.02	0.93
	30	0.89	0.88	1.01	0.93

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 605 T1



Contract: Goat Mill Lane Merthyr

Date: 20.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

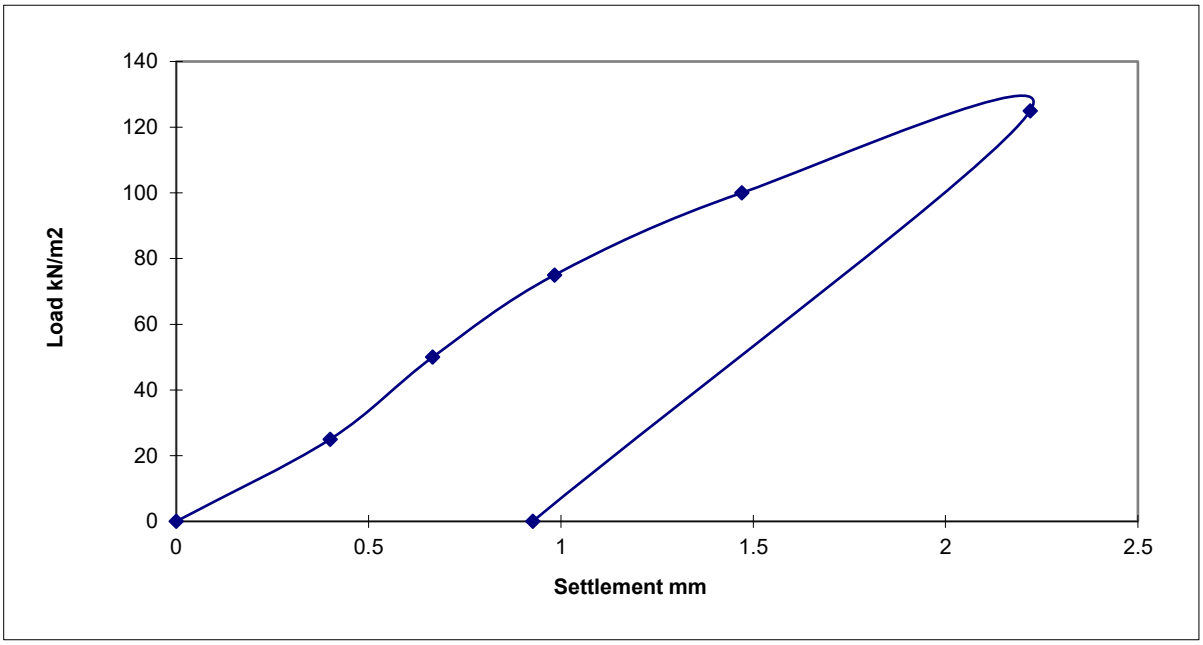
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey silty sandy shale
TP 605 T1	0.50m bgl	Counterweight: Tracked excavator	Weather Conditions: Sunny

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.40	25	5
0.67	50	10
0.98	75	15
1.47	100	20
2.22	125	25
0.93	0	30

Deformation Modulus (E)	24.2	MN/m^2
Degree of Rebound (%)	58.3	%
Load req'd to achieve 1.25mm settlement	70.4	kN/m^2
Modulus of subgrade reaction (K762)	51239	kPa/m
Derived CBR Value	10.9	%

σmax	125	kN/m^2
s at σmax	2.22	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 20.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 20.03.26

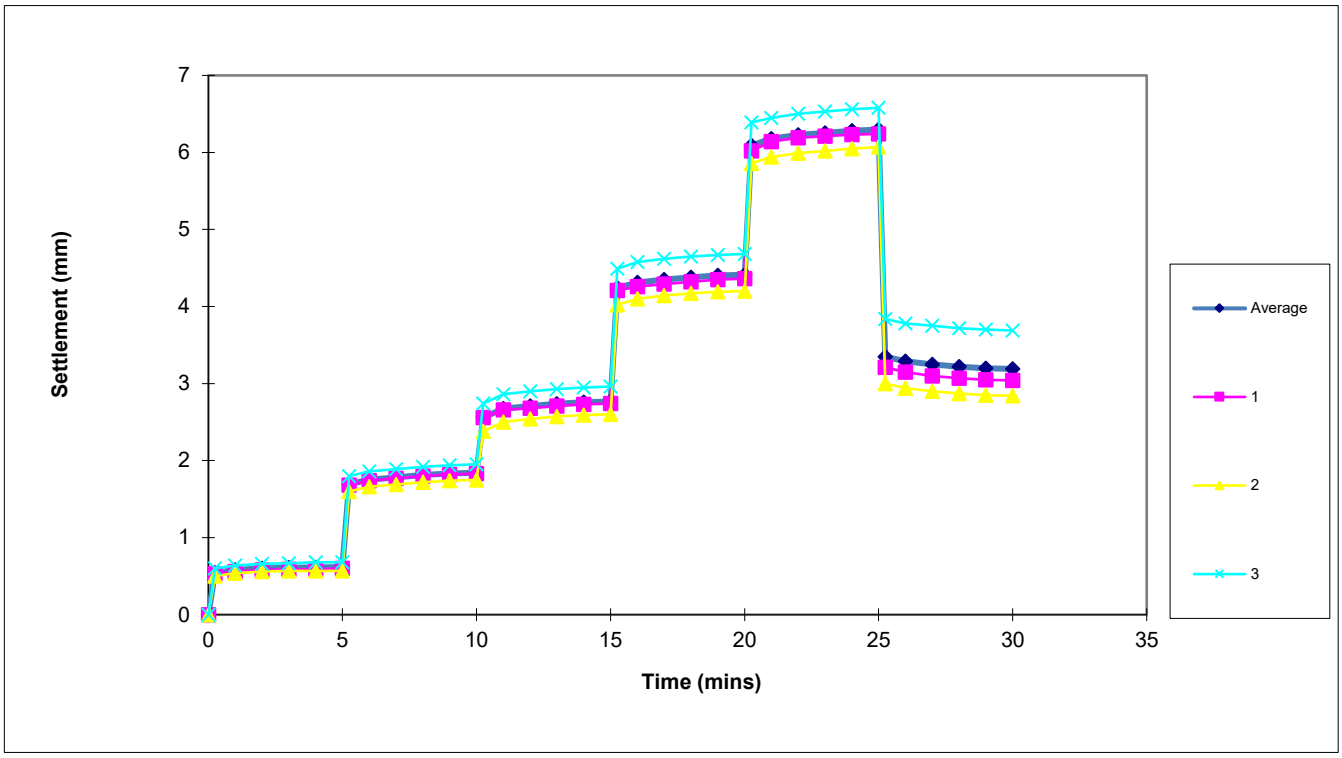
Test Reference: TP 605 T2 | Test Depth: 1.00m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.53	0.50	0.60	0.54
	1	0.56	0.54	0.64	0.58
	2	0.58	0.56	0.66	0.60
	3	0.59	0.57	0.67	0.61
	4	0.59	0.57	0.68	0.61
	5	0.60	0.57	0.68	0.62
50kN/m^2 Load	5.25	1.68	1.60	1.80	1.69
	6	1.74	1.66	1.86	1.75
	7	1.77	1.69	1.89	1.78
	8	1.80	1.72	1.92	1.81
	9	1.82	1.74	1.94	1.83
	10	1.83	1.75	1.95	1.84
75kN/m^2 Load	10.25	2.56	2.38	2.74	2.56
	11	2.66	2.50	2.86	2.67
	12	2.68	2.54	2.90	2.71
	13	2.71	2.57	2.93	2.74
	14	2.73	2.59	2.95	2.76
	15	2.74	2.60	2.96	2.77
100kN/m^2 Load	15.25	4.21	4.02	4.49	4.24
	16	4.26	4.10	4.58	4.31
	17	4.29	4.14	4.62	4.35
	18	4.32	4.17	4.65	4.38
	19	4.35	4.19	4.67	4.40
	20	4.36	4.20	4.68	4.41
125kN/m^2 Load	20.25	6.02	5.86	6.39	6.09
	21	6.14	5.94	6.45	6.18
	22	6.19	5.99	6.50	6.23
	23	6.21	6.02	6.53	6.25
	24	6.23	6.05	6.56	6.28
	25	6.24	6.07	6.58	6.30
0kN/m^2 Unload	25.25	3.21	3.00	3.84	3.35
	26	3.15	2.94	3.78	3.29
	27	3.10	2.90	3.75	3.25
	28	3.07	2.87	3.72	3.22
	29	3.05	2.85	3.70	3.20
	30	3.04	2.84	3.69	3.19

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 605 T2



Contract: Goat Mill Lane Merthyr

Date: 20.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

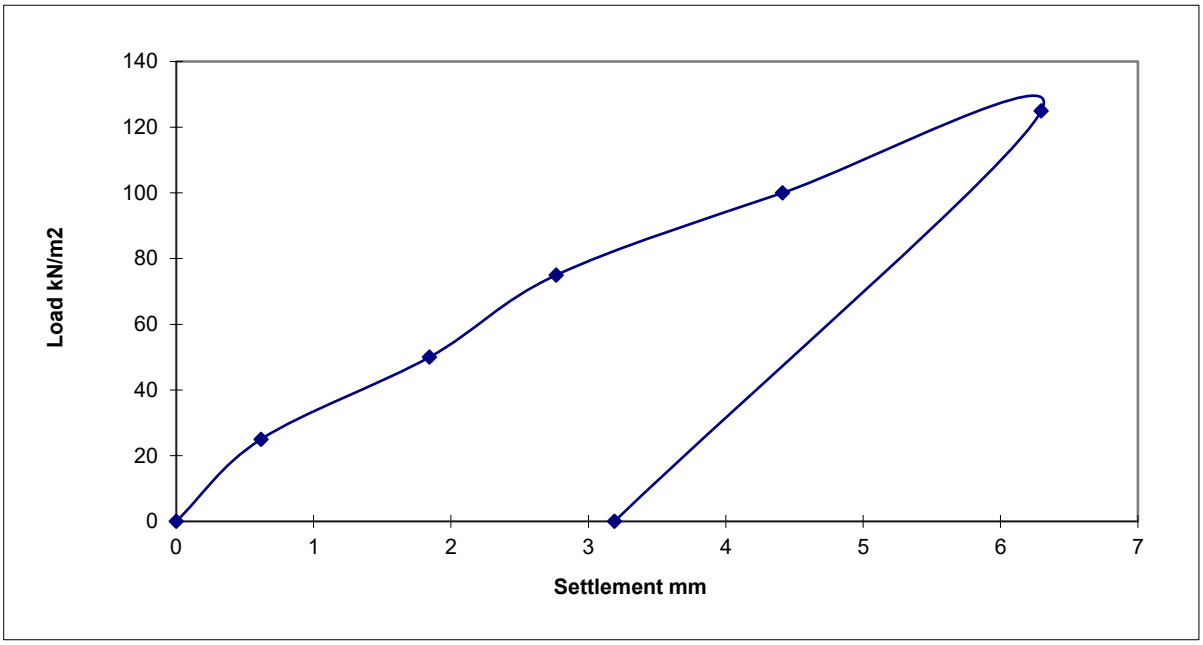
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey silty sandy shale
TP 605 T2	1.00m bgl	Counterweight: Tracked excavator	Weather Conditions: Sunny

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.62	25	5
1.84	50	10
2.77	75	15
4.41	100	20
6.30	125	25
3.19	0	30

Deformation Modulus (E)	8.5	MN/m^2
Degree of Rebound (%)	49.3	%
Load req'd to achieve 1.25mm settlement	24.8	kN/m^2
Modulus of subgrade reaction (K762)	18065	kPa/m
Derived CBR Value	2.9	%

σmax	125	kN/m^2
s at σmax	6.30	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 20.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 20.03.26

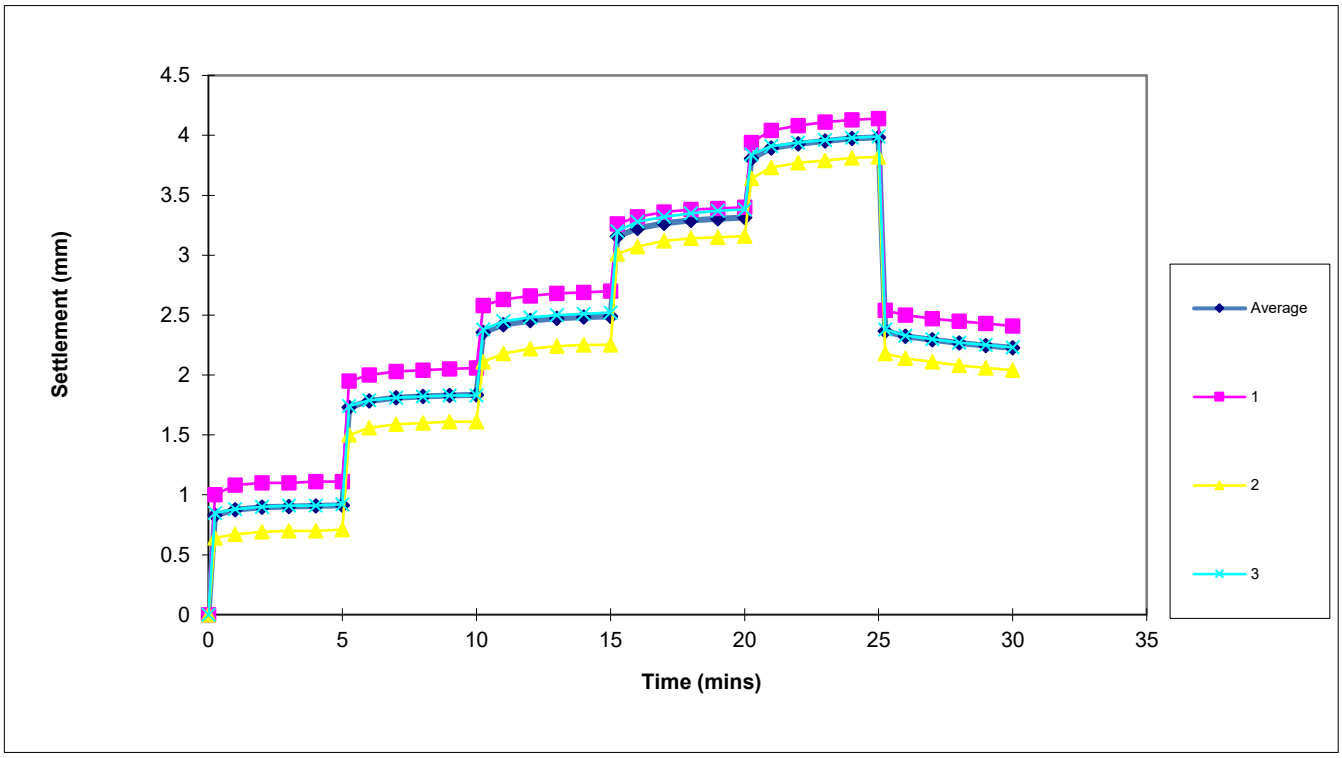
Test Reference: TP 606 T1 | Test Depth: 0.50m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	1.00	0.64	0.85	0.83
	1	1.08	0.67	0.88	0.88
	2	1.10	0.69	0.90	0.90
	3	1.10	0.70	0.91	0.90
	4	1.11	0.70	0.91	0.91
	5	1.11	0.71	0.92	0.91
50kN/m^2 Load	5.25	1.95	1.50	1.74	1.73
	6	2.00	1.56	1.79	1.78
	7	2.03	1.59	1.81	1.81
	8	2.04	1.60	1.82	1.82
	9	2.05	1.61	1.83	1.83
	10	2.06	1.61	1.83	1.83
75kN/m^2 Load	10.25	2.58	2.11	2.38	2.36
	11	2.63	2.18	2.45	2.42
	12	2.66	2.22	2.48	2.45
	13	2.68	2.24	2.50	2.47
	14	2.69	2.25	2.51	2.48
	15	2.70	2.25	2.52	2.49
100kN/m^2 Load	15.25	3.26	3.01	3.20	3.16
	16	3.32	3.07	3.28	3.22
	17	3.36	3.12	3.32	3.27
	18	3.38	3.14	3.35	3.29
	19	3.39	3.15	3.37	3.30
	20	3.40	3.16	3.38	3.31
125kN/m^2 Load	20.25	3.94	3.64	3.84	3.81
	21	4.04	3.73	3.91	3.89
	22	4.08	3.77	3.94	3.93
	23	4.11	3.79	3.96	3.95
	24	4.13	3.81	3.98	3.97
	25	4.14	3.82	3.99	3.98
0kN/m^2 Unload	25.25	2.54	2.18	2.38	2.37
	26	2.50	2.14	2.33	2.32
	27	2.47	2.11	2.30	2.29
	28	2.45	2.08	2.27	2.27
	29	2.43	2.06	2.25	2.25
	30	2.41	2.04	2.23	2.23

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 606 T1



Contract: Goat Mill Lane Merthyr

Date: 20.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

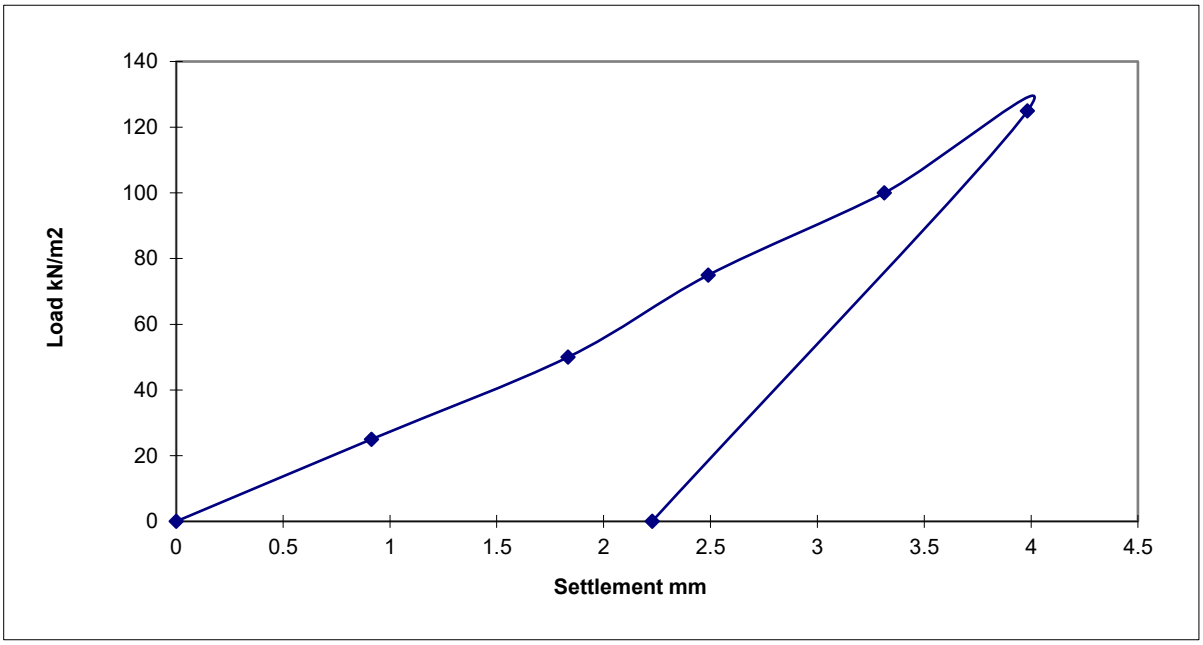
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey silty sandy shale
TP 606 T1	0.50m bgl	Counterweight: Tracked excavator	Weather Conditions: Sunny

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.91	25	5
1.83	50	10
2.49	75	15
3.31	100	20
3.98	125	25
2.23	0	30

Deformation Modulus (E)	13.5	MN/m^2
Degree of Rebound (%)	44.1	%
Load req'd to achieve 1.25mm settlement	39.2	kN/m^2
Modulus of subgrade reaction (K762)	28556	kPa/m
Derived CBR Value	5.1	%

σmax	125	kN/m^2
s at σmax	3.98	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 20.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 23.03.26

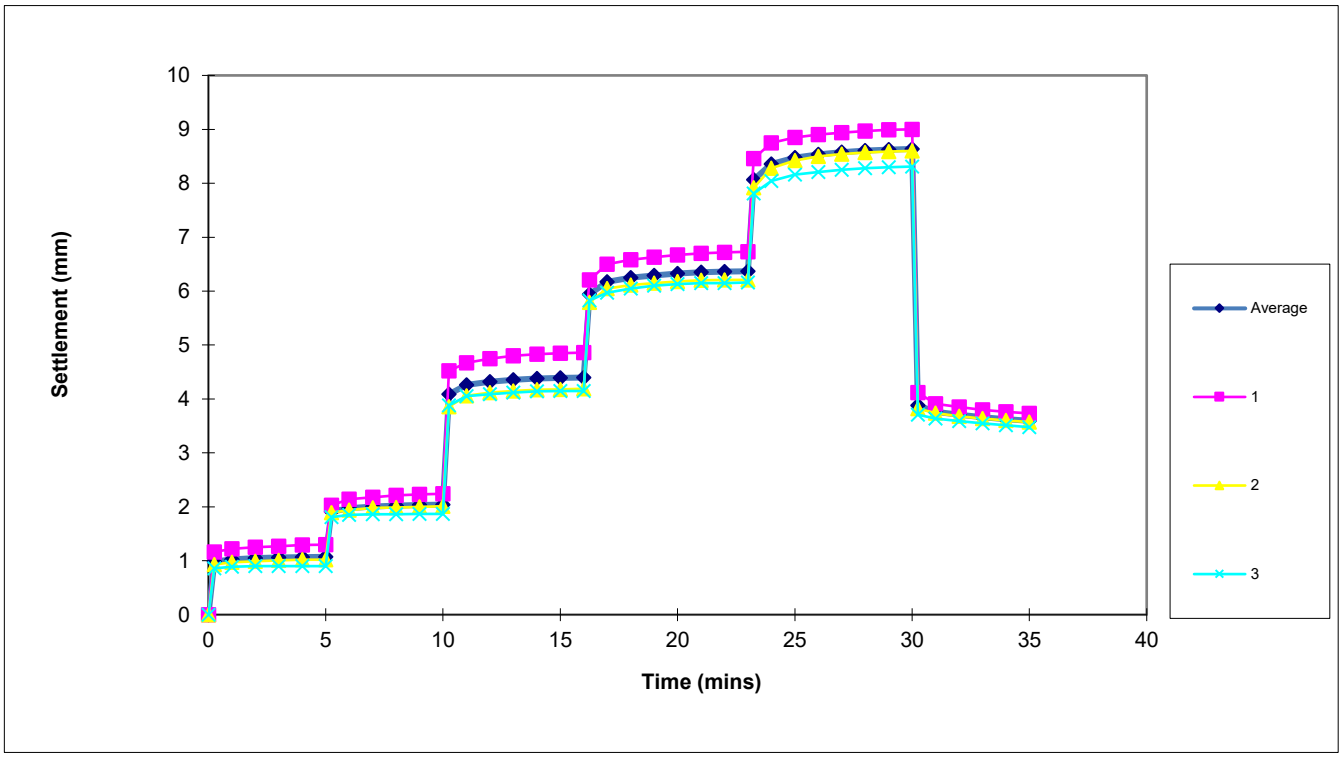
Test Reference: TP 606 T2 | Test Depth: 1.00m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	1.16	0.93	0.86	0.98
	1	1.22	0.97	0.89	1.03
	2	1.25	0.99	0.90	1.05
	3	1.27	1.01	0.90	1.06
	4	1.29	1.02	0.90	1.07
	5	1.30	1.02	0.90	1.07
50kN/m^2 Load	5.25	2.03	1.89	1.81	1.91
	6	2.14	1.94	1.85	1.98
	7	2.18	1.98	1.86	2.01
	8	2.21	1.99	1.86	2.02
	9	2.23	2.00	1.87	2.03
	10	2.24	2.01	1.87	2.04
75kN/m^2 Load	10.25	4.52	3.86	3.88	4.09
	11	4.67	4.06	4.05	4.26
	12	4.75	4.12	4.09	4.32
	13	4.80	4.15	4.12	4.36
	14	4.83	4.17	4.14	4.38
	15	4.85	4.18	4.15	4.39
	16	4.86	4.19	4.15	4.40
100kN/m^2 Load	16.25	6.21	5.79	5.83	5.94
	17	6.50	6.05	5.97	6.17
	18	6.58	6.11	6.05	6.25
	19	6.63	6.15	6.10	6.29
	20	6.67	6.18	6.13	6.33
	21	6.70	6.20	6.15	6.35
	22	6.72	6.21	6.15	6.36
	23	6.73	6.21	6.16	6.37
125kN/m^2 Load	23.25	8.46	7.92	7.81	8.06
	24	8.75	8.28	8.04	8.36
	25	8.85	8.42	8.16	8.48
	26	8.90	8.50	8.21	8.54
	27	8.94	8.54	8.25	8.58
	28	8.97	8.57	8.28	8.61
	29	8.99	8.59	8.30	8.63
	30	9.00	8.60	8.31	8.64
0kN/m^2 Unload	30.25	4.12	3.82	3.71	3.88
	31	3.91	3.74	3.64	3.76
	32	3.85	3.68	3.59	3.71
	33	3.80	3.64	3.55	3.66
	34	3.76	3.60	3.51	3.62
	35	3.73	3.57	3.48	3.59

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 606 T2



Contract: Goat Mill Lane Merthyr

Date: 23.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

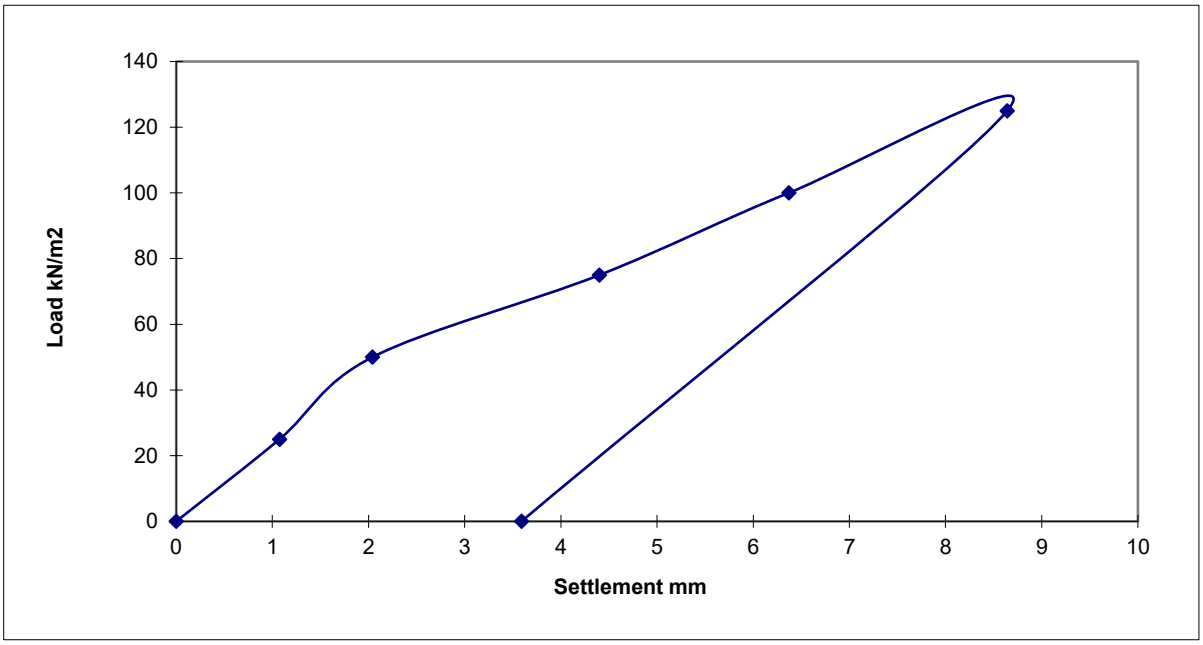
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey Clayey shale
TP 606 T2	1.00m bgl	Counterweight: Tracked excavator	Weather Conditions: Sunny

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
1.07	25	5
2.04	50	10
4.40	75	16
6.37	100	23
8.64	125	30
3.59	0	35

Deformation Modulus (E)	6.2	MN/m^2
Degree of Rebound (%)	58.4	%
Load req'd to achieve 1.25mm settlement	18.1	kN/m^2
Modulus of subgrade reaction (K762)	13166	kPa/m
Derived CBR Value	1.9	%

σmax	125	kN/m^2
s at σmax	8.64	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 23.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 23.03.26

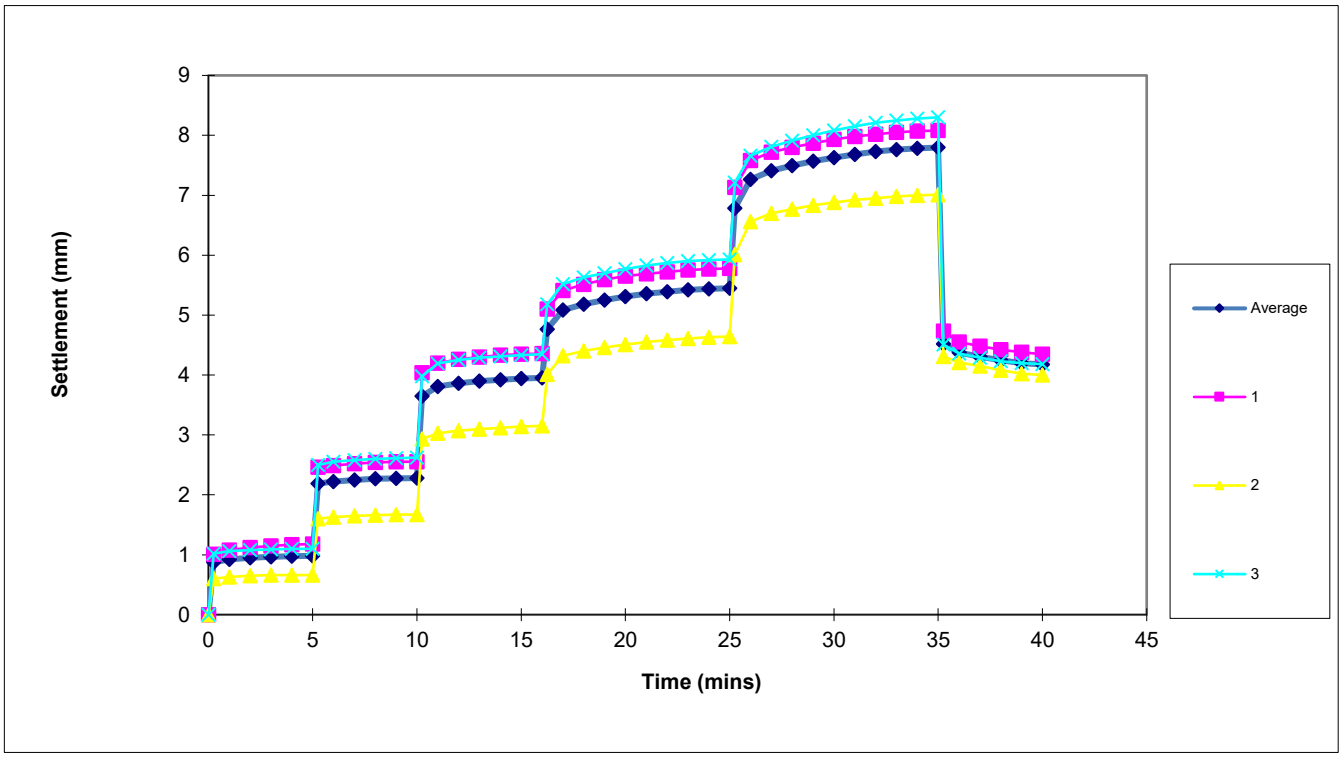
Test Reference: TP 607 T1 | Test Depth: 0.50m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	1.01	0.60	1.02	0.88
	1	1.08	0.63	1.06	0.92
	2	1.12	0.65	1.08	0.95
	3	1.15	0.66	1.09	0.97
	4	1.17	0.66	1.10	0.98
	5	1.18	0.66	1.10	0.98
50kN/m^2 Load	5.25	2.46	1.60	2.50	2.19
	6	2.49	1.63	2.55	2.22
	7	2.52	1.65	2.58	2.25
	8	2.54	1.66	2.60	2.27
	9	2.55	1.67	2.61	2.28
	10	2.55	1.67	2.62	2.28
75kN/m^2 Load	10.25	4.04	2.93	3.98	3.65
	11	4.20	3.03	4.19	3.81
	12	4.26	3.07	4.25	3.86
	13	4.30	3.10	4.29	3.90
	14	4.33	3.12	4.31	3.92
	15	4.35	3.14	4.33	3.94
	16	4.36	3.15	4.35	3.95
100kN/m^2 Load	16.25	5.10	4.01	5.18	4.76
	17	5.41	4.32	5.52	5.08
	18	5.51	4.40	5.63	5.18
	19	5.59	4.46	5.70	5.25
	20	5.65	4.51	5.77	5.31
	21	5.69	4.55	5.83	5.36
	22	5.72	4.58	5.87	5.39
	23	5.75	4.61	5.90	5.42
	24	5.77	4.63	5.92	5.44
	25	5.78	4.64	5.93	5.45
125kN/m^2 Load	25.25	7.13	6.01	7.21	6.78
	26	7.58	6.56	7.66	7.27
	27	7.72	6.70	7.81	7.41
	28	7.80	6.77	7.91	7.49
	29	7.87	6.83	8.00	7.57
	30	7.93	6.88	8.08	7.63
	31	7.98	6.92	8.15	7.68
	32	8.02	6.95	8.21	7.73
	33	8.05	6.98	8.25	7.76
	34	8.07	7.00	8.28	7.78
	35	8.08	7.01	8.30	7.80
0kN/m^2 Unload	35.25	4.73	4.31	4.51	4.52
	36	4.55	4.21	4.36	4.37
	37	4.48	4.15	4.29	4.31
	38	4.42	4.08	4.23	4.24
	39	4.38	4.02	4.20	4.20
	40	4.35	4.00	4.18	4.18

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 607 T1



Contract: Goat Mill Lane Merthyr

Date: 23.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

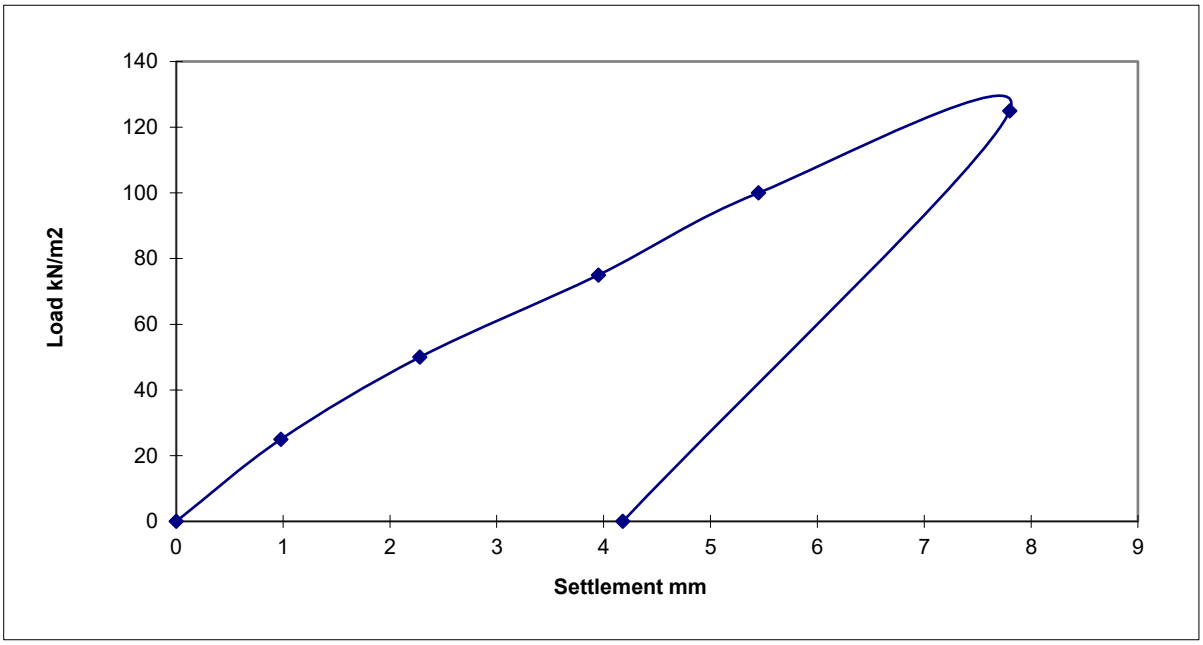
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Colliery Spoil
TP 607 T1	0.50m bgl	Counterweight: Tracked excavator	Weather Conditions: Sunny

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.98	25	5
2.28	50	10
3.95	75	16
5.45	100	25
7.80	125	35
4.18	0	40

Deformation Modulus (E)	6.9	MN/m^2
Degree of Rebound (%)	46.4	%
Load req'd to achieve 1.25mm settlement	20.0	kN/m^2
Modulus of subgrade reaction (K762)	14583	kPa/m
Derived CBR Value	2.2	%

σmax	125	kN/m^2
s at σmax	7.80	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 23.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 23.03.26

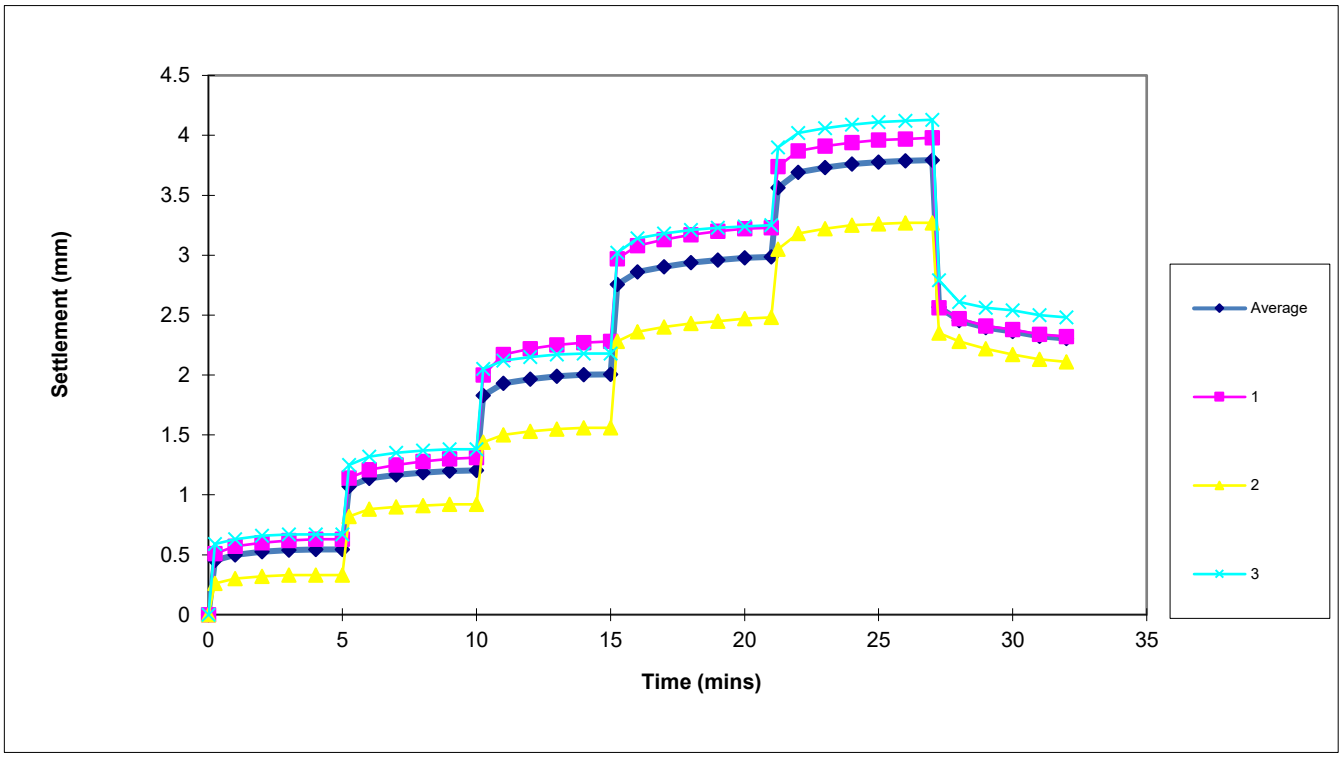
Test Reference: TP 607 T2 | Test Depth: 1.00m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.51	0.26	0.59	0.45
	1	0.57	0.30	0.63	0.50
	2	0.60	0.32	0.66	0.53
	3	0.62	0.33	0.67	0.54
	4	0.63	0.33	0.67	0.54
	5	0.63	0.33	0.67	0.54
50kN/m^2 Load	5.25	1.14	0.82	1.25	1.07
	6	1.21	0.88	1.32	1.14
	7	1.25	0.90	1.35	1.17
	8	1.28	0.91	1.37	1.19
	9	1.30	0.92	1.38	1.20
	10	1.31	0.92	1.38	1.20
75kN/m^2 Load	10.25	2.00	1.44	2.05	1.83
	11	2.17	1.50	2.12	1.93
	12	2.22	1.53	2.15	1.97
	13	2.25	1.55	2.17	1.99
	14	2.27	1.56	2.18	2.00
	15	2.28	1.56	2.18	2.01
100kN/m^2 Load	15.25	2.97	2.28	3.02	2.76
	16	3.08	2.36	3.14	2.86
	17	3.13	2.40	3.18	2.90
	18	3.17	2.43	3.21	2.94
	19	3.20	2.45	3.23	2.96
	20	3.22	2.47	3.24	2.98
	21	3.23	2.48	3.25	2.99
125kN/m^2 Load	21.25	3.74	3.05	3.90	3.56
	22	3.87	3.18	4.02	3.69
	23	3.91	3.22	4.06	3.73
	24	3.94	3.25	4.09	3.76
	25	3.96	3.26	4.11	3.78
	26	3.97	3.27	4.12	3.79
	27	3.98	3.27	4.13	3.79
0kN/m^2 Unload	27.25	2.56	2.35	2.79	2.57
	28	2.47	2.28	2.61	2.45
	29	2.41	2.22	2.56	2.40
	30	2.38	2.17	2.54	2.36
	31	2.34	2.13	2.50	2.32
	32	2.32	2.11	2.48	2.30

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 607 T2



Contract: Goat Mill Lane Merthyr

Date: 23.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

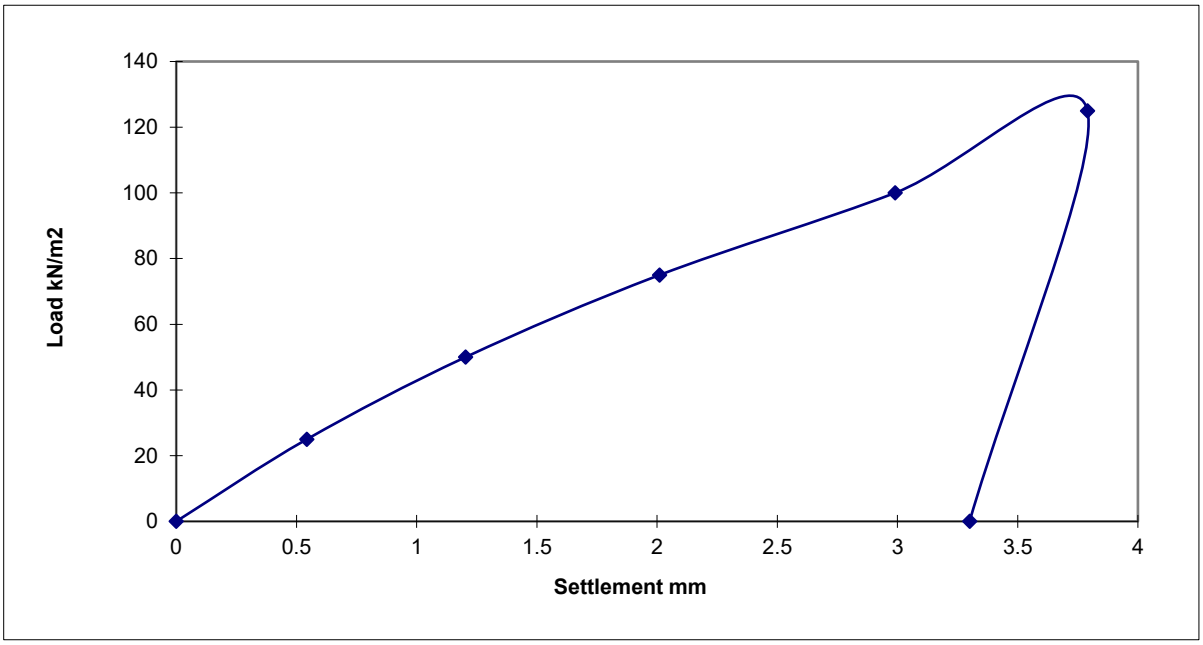
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Colleiry Spoil
TP 607 T2	1.00m bgl	Counterweight: Tracked excavator	Weather Conditions: Sunny

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.54	25	5
1.20	50	10
2.01	75	15
2.99	100	21
3.79	125	27
3.30	0	32

Deformation Modulus (E)	14.2	MN/m^2
Degree of Rebound (%)	12.9	%
Load req'd to achieve 1.25mm settlement	41.2	kN/m^2
Modulus of subgrade reaction (K762)	30013	kPa/m
Derived CBR Value	5.5	%

σmax	125	kN/m^2
s at σmax	3.79	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 23.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 23.03.26

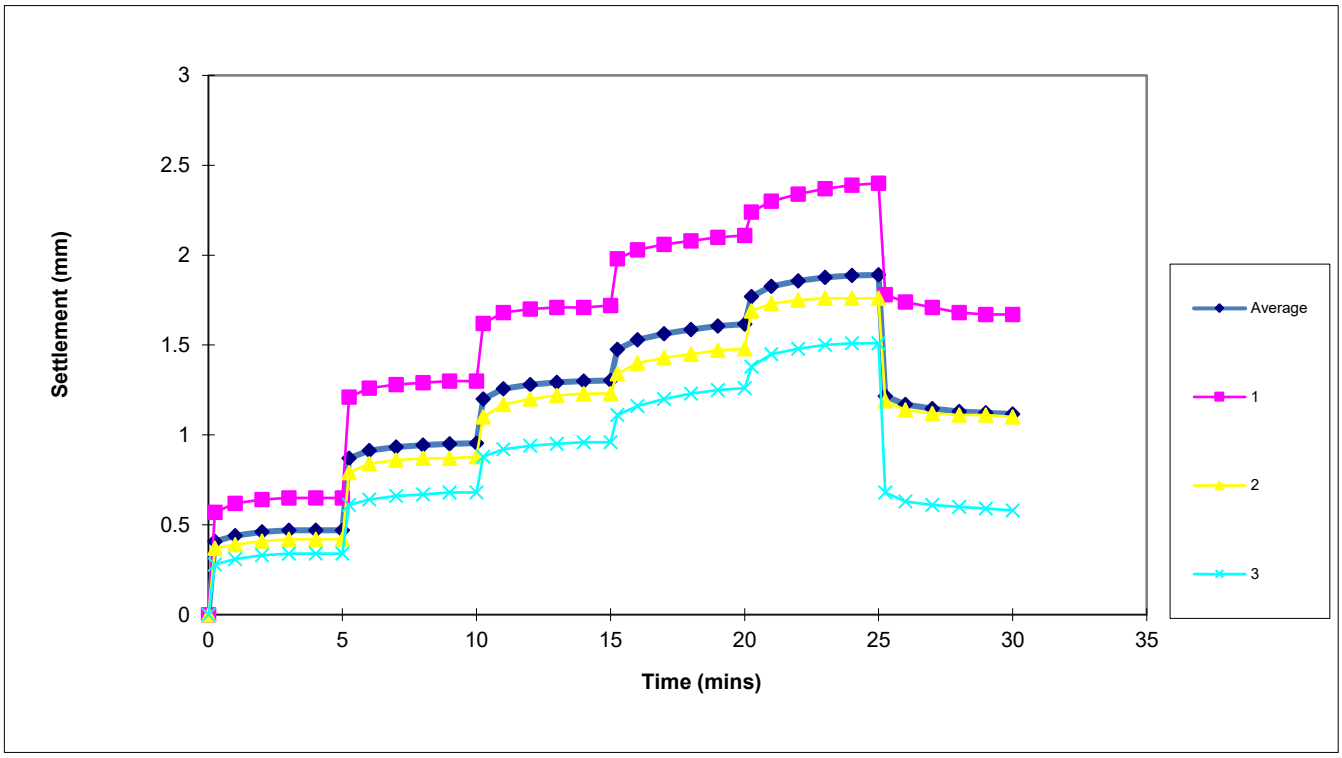
Test Reference: TP 608 T1 | Test Depth: 0.50m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.57	0.37	0.28	0.41
	1	0.62	0.39	0.31	0.44
	2	0.64	0.41	0.33	0.46
	3	0.65	0.42	0.34	0.47
	4	0.65	0.42	0.34	0.47
	5	0.65	0.42	0.34	0.47
50kN/m^2 Load	5.25	1.21	0.79	0.61	0.87
	6	1.26	0.84	0.64	0.91
	7	1.28	0.86	0.66	0.93
	8	1.29	0.87	0.67	0.94
	9	1.30	0.87	0.68	0.95
	10	1.30	0.88	0.68	0.95
75kN/m^2 Load	10.25	1.62	1.10	0.88	1.20
	11	1.68	1.17	0.92	1.26
	12	1.70	1.20	0.94	1.28
	13	1.71	1.22	0.95	1.29
	14	1.71	1.23	0.96	1.30
	15	1.72	1.23	0.96	1.30
100kN/m^2 Load	15.25	1.98	1.34	1.11	1.48
	16	2.03	1.40	1.16	1.53
	17	2.06	1.43	1.20	1.56
	18	2.08	1.45	1.23	1.59
	19	2.10	1.47	1.25	1.61
	20	2.11	1.48	1.26	1.62
125kN/m^2 Load	20.25	2.24	1.69	1.38	1.77
	21	2.30	1.73	1.45	1.83
	22	2.34	1.75	1.48	1.86
	23	2.37	1.76	1.50	1.88
	24	2.39	1.76	1.51	1.89
	25	2.40	1.76	1.51	1.89
0kN/m^2 Unload	25.25	1.78	1.19	0.68	1.22
	26	1.74	1.14	0.63	1.17
	27	1.71	1.12	0.61	1.15
	28	1.68	1.11	0.60	1.13
	29	1.67	1.11	0.59	1.12
	30	1.67	1.10	0.58	1.12

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 608 T1



Contract: Goat Mill Lane Merthyr

Date: 23.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

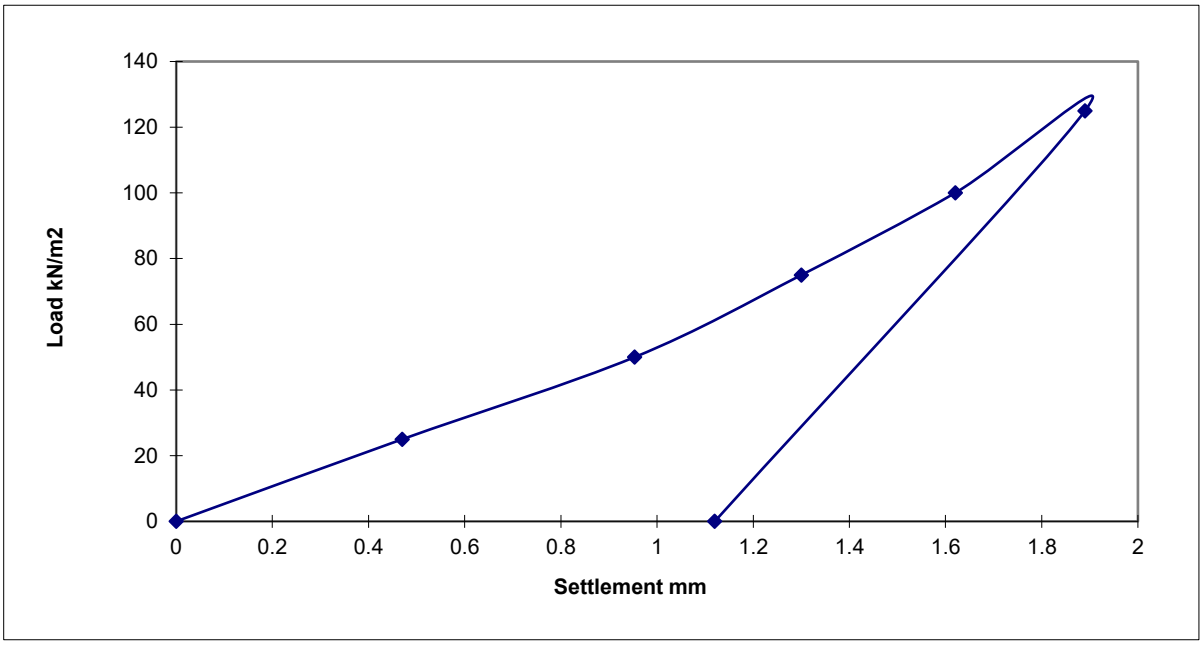
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Colliery Spoil
TP 608 T1	0.50m bgl	Counterweight: Tracked excavator	Weather Conditions: Sunny

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.47	25	5
0.95	50	10
1.30	75	15
1.62	100	20
1.89	125	25
1.12	0	30

Deformation Modulus (E)	28.4	MN/m^2
Degree of Rebound (%)	40.7	%
Load req'd to achieve 1.25mm settlement	82.7	kN/m^2
Modulus of subgrade reaction (K762)	60185	kPa/m
Derived CBR Value	13.4	%

σmax	125	kN/m^2
s at σmax	1.89	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 23.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 23.03.26

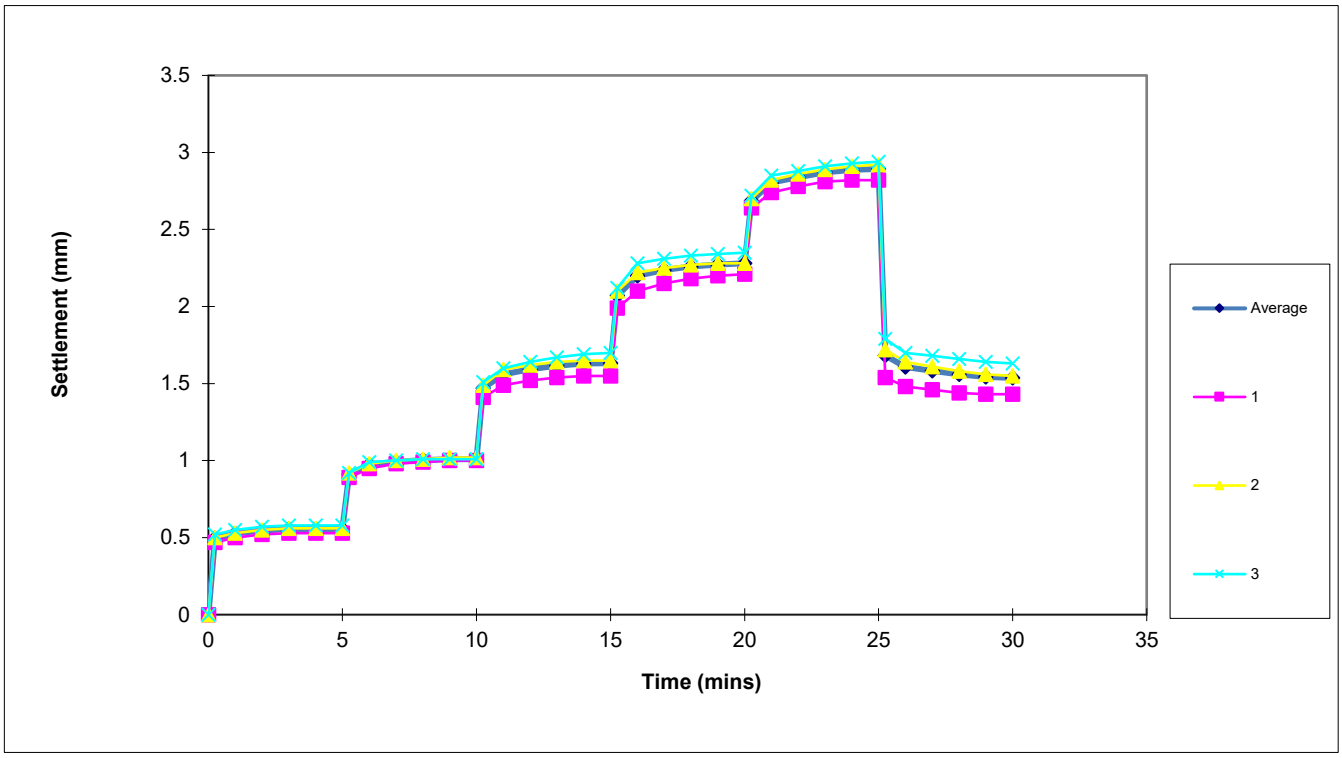
Test Reference: TP 608 T2 | Test Depth: 1.00m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.47	0.50	0.52	0.50
	1	0.50	0.53	0.55	0.53
	2	0.52	0.55	0.57	0.55
	3	0.53	0.56	0.58	0.56
	4	0.53	0.56	0.58	0.56
	5	0.53	0.56	0.58	0.56
50kN/m^2 Load	5.25	0.89	0.92	0.92	0.91
	6	0.95	0.98	0.99	0.97
	7	0.98	1.00	1.00	0.99
	8	0.99	1.01	1.01	1.00
	9	1.00	1.02	1.01	1.01
	10	1.00	1.02	1.01	1.01
75kN/m^2 Load	10.25	1.41	1.49	1.51	1.47
	11	1.49	1.59	1.60	1.56
	12	1.52	1.62	1.64	1.59
	13	1.54	1.64	1.67	1.62
	14	1.55	1.65	1.69	1.63
	15	1.55	1.65	1.70	1.63
100kN/m^2 Load	15.25	1.99	2.10	2.12	2.07
	16	2.10	2.22	2.28	2.20
	17	2.15	2.25	2.31	2.24
	18	2.18	2.27	2.33	2.26
	19	2.20	2.28	2.34	2.27
	20	2.21	2.28	2.35	2.28
125kN/m^2 Load	20.25	2.64	2.70	2.72	2.69
	21	2.74	2.82	2.85	2.80
	22	2.78	2.86	2.88	2.84
	23	2.81	2.89	2.91	2.87
	24	2.82	2.91	2.93	2.89
	25	2.82	2.92	2.94	2.89
0kN/m^2 Unload	25.25	1.54	1.72	1.79	1.68
	26	1.48	1.64	1.70	1.61
	27	1.46	1.61	1.68	1.58
	28	1.44	1.58	1.66	1.56
	29	1.43	1.56	1.64	1.54
	30	1.43	1.55	1.63	1.54

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 608 T2



Contract: Goat Mill Lane Merthyr

Date: 23.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

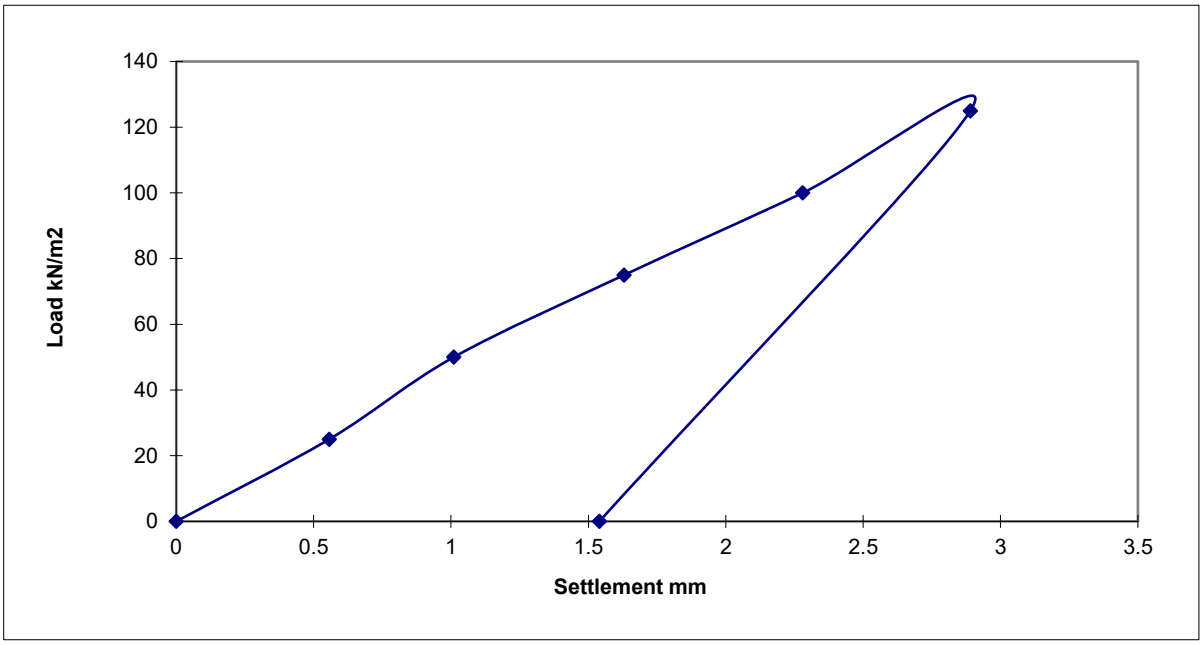
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Colleiry Spoil
TP 608 T2	1.00m bgl	Counterweight: Tracked excavator	Weather Conditions: Sunny

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.56	25	5
1.01	50	10
1.63	75	15
2.28	100	20
2.89	125	25
1.54	0	30

Deformation Modulus (E)	18.6	MN/m^2
Degree of Rebound (%)	46.7	%
Load req'd to achieve 1.25mm settlement	54.1	kN/m^2
Modulus of subgrade reaction (K762)	39360	kPa/m
Derived CBR Value	7.8	%

σmax	125	kN/m^2
s at σmax	2.89	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 23.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 24.03.26

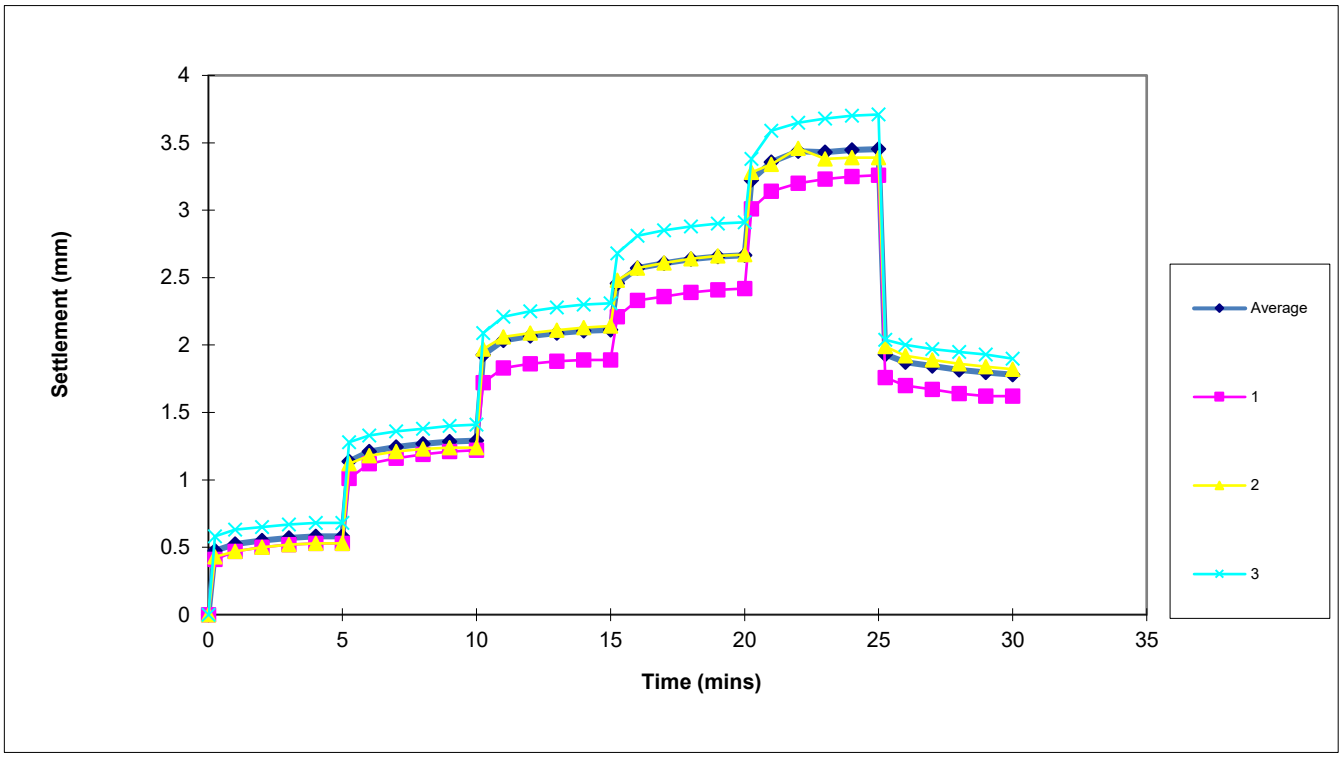
Test Reference: TP 609 T1 | Test Depth: 0.50m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.41	0.43	0.58	0.47
	1	0.47	0.47	0.63	0.52
	2	0.50	0.50	0.65	0.55
	3	0.52	0.52	0.67	0.57
	4	0.53	0.53	0.68	0.58
	5	0.53	0.53	0.68	0.58
50kN/m^2 Load	5.25	1.01	1.12	1.28	1.14
	6	1.12	1.18	1.33	1.21
	7	1.16	1.21	1.36	1.24
	8	1.19	1.23	1.38	1.27
	9	1.21	1.24	1.40	1.28
	10	1.22	1.24	1.41	1.29
75kN/m^2 Load	10.25	1.72	1.97	2.09	1.93
	11	1.83	2.06	2.21	2.03
	12	1.86	2.09	2.25	2.07
	13	1.88	2.11	2.28	2.09
	14	1.89	2.13	2.30	2.11
	15	1.89	2.14	2.31	2.11
100kN/m^2 Load	15.25	2.21	2.48	2.68	2.46
	16	2.33	2.57	2.81	2.57
	17	2.36	2.61	2.85	2.61
	18	2.39	2.64	2.88	2.64
	19	2.41	2.66	2.90	2.66
	20	2.42	2.67	2.91	2.67
125kN/m^2 Load	20.25	3.01	3.28	3.38	3.22
	21	3.14	3.34	3.59	3.36
	22	3.20	3.46	3.65	3.44
	23	3.23	3.38	3.68	3.43
	24	3.25	3.39	3.70	3.45
	25	3.26	3.39	3.71	3.45
0kN/m^2 Unload	25.25	1.76	1.99	2.04	1.93
	26	1.70	1.92	2.00	1.87
	27	1.67	1.89	1.97	1.84
	28	1.64	1.86	1.95	1.82
	29	1.62	1.84	1.93	1.80
	30	1.62	1.82	1.90	1.78

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 609 T1



Contract: Goat Mill Lane Merthyr

Date: 24.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

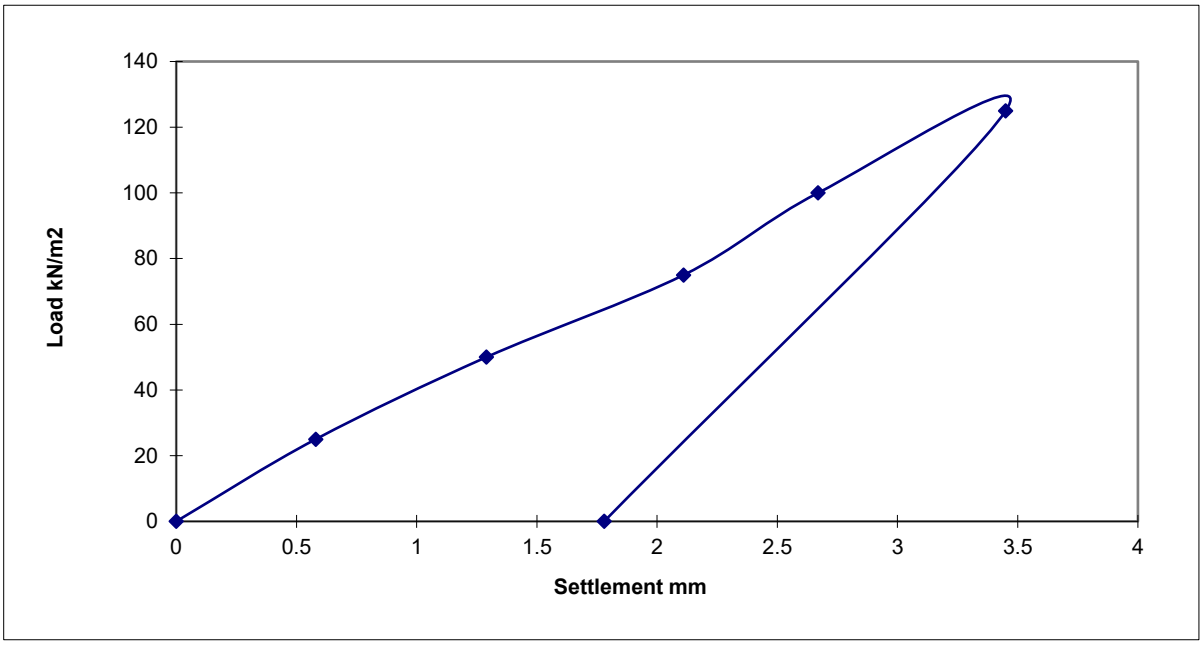
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey sandy gravel
TP 609 T1	0.50m bgl	Counterweight: Tracked excavator	Weather Conditions: Showers

Average Plate Settlement (mm)	Load (kN/m²)	Time (mins)
0	0	0
0.58	25	5
1.29	50	10
2.11	75	15
2.67	100	20
3.45	125	25
1.78	0	30

Deformation Modulus (E)	15.6	MN/m²
Degree of Rebound (%)	48.4	%
Load req'd to achieve 1.25mm settlement	45.3	kN/m²
Modulus of subgrade reaction (K762)	32971	kPa/m
Derived CBR Value	6.2	%

σmax	125	kN/m²
s at σmax	3.45	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 24.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 24.03.26

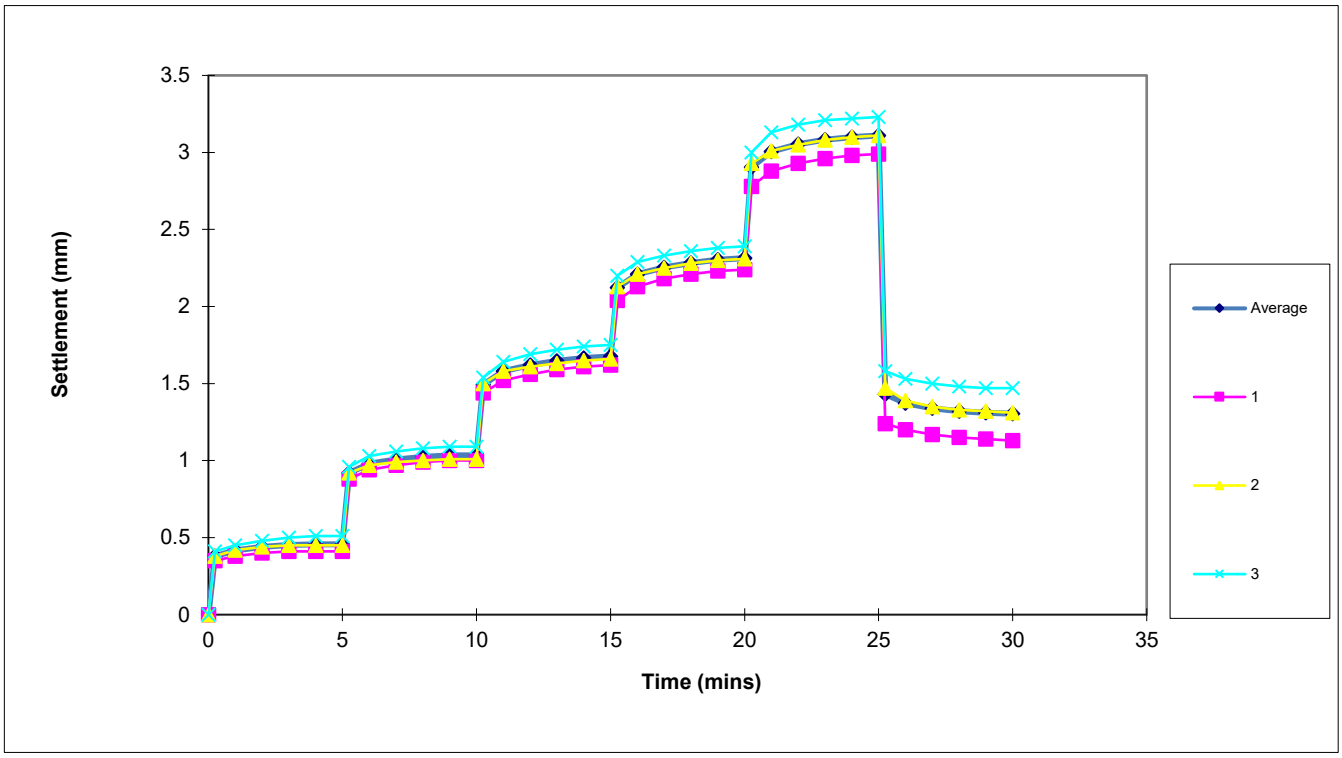
Test Reference: TP 609 T2 | Test Depth: 1.00m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.35	0.38	0.41	0.38
	1	0.38	0.42	0.45	0.42
	2	0.40	0.44	0.48	0.44
	3	0.41	0.45	0.50	0.45
	4	0.41	0.45	0.51	0.46
	5	0.41	0.45	0.51	0.46
50kN/m^2 Load	5.25	0.88	0.92	0.96	0.92
	6	0.94	0.97	1.03	0.98
	7	0.97	0.99	1.06	1.01
	8	0.99	1.00	1.08	1.02
	9	1.00	1.01	1.09	1.03
	10	1.00	1.01	1.09	1.03
75kN/m^2 Load	10.25	1.44	1.50	1.54	1.49
	11	1.52	1.58	1.64	1.58
	12	1.56	1.61	1.69	1.62
	13	1.59	1.63	1.72	1.65
	14	1.61	1.65	1.74	1.67
	15	1.62	1.66	1.75	1.68
100kN/m^2 Load	15.25	2.04	2.13	2.20	2.12
	16	2.13	2.21	2.29	2.21
	17	2.18	2.25	2.33	2.25
	18	2.21	2.28	2.36	2.28
	19	2.23	2.30	2.38	2.30
	20	2.24	2.31	2.39	2.31
125kN/m^2 Load	20.25	2.78	2.93	3.00	2.90
	21	2.88	3.01	3.13	3.01
	22	2.93	3.05	3.18	3.05
	23	2.96	3.08	3.21	3.08
	24	2.98	3.10	3.22	3.10
	25	2.99	3.11	3.23	3.11
0kN/m^2 Unload	25.25	1.24	1.47	1.58	1.43
	26	1.20	1.39	1.53	1.37
	27	1.17	1.35	1.50	1.34
	28	1.15	1.33	1.48	1.32
	29	1.14	1.32	1.47	1.31
	30	1.13	1.31	1.47	1.30

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 609 T2



Contract: Goat Mill Lane Merthyr

Date: 24.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

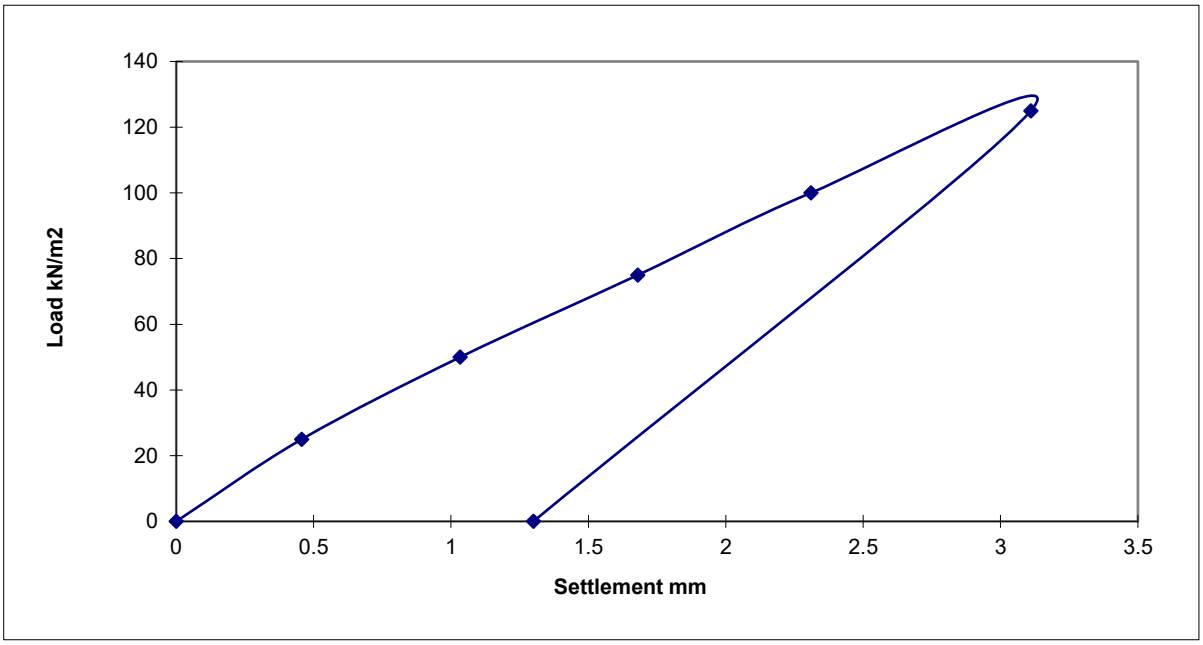
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey sandy gravels
TP 609 T2	1.00m bgl	Counterweight: Tracked excavator	Weather Conditions: Showers

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.46	25	5
1.03	50	10
1.68	75	15
2.31	100	20
3.11	125	25
1.30	0	30

Deformation Modulus (E)	17.3	MN/m^2
Degree of Rebound (%)	58.2	%
Load req'd to achieve 1.25mm settlement	50.2	kN/m^2
Modulus of subgrade reaction (K762)	36576	kPa/m
Derived CBR Value	7.1	%

σmax	125	kN/m^2
s at σmax	3.11	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 24.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 24.03.26

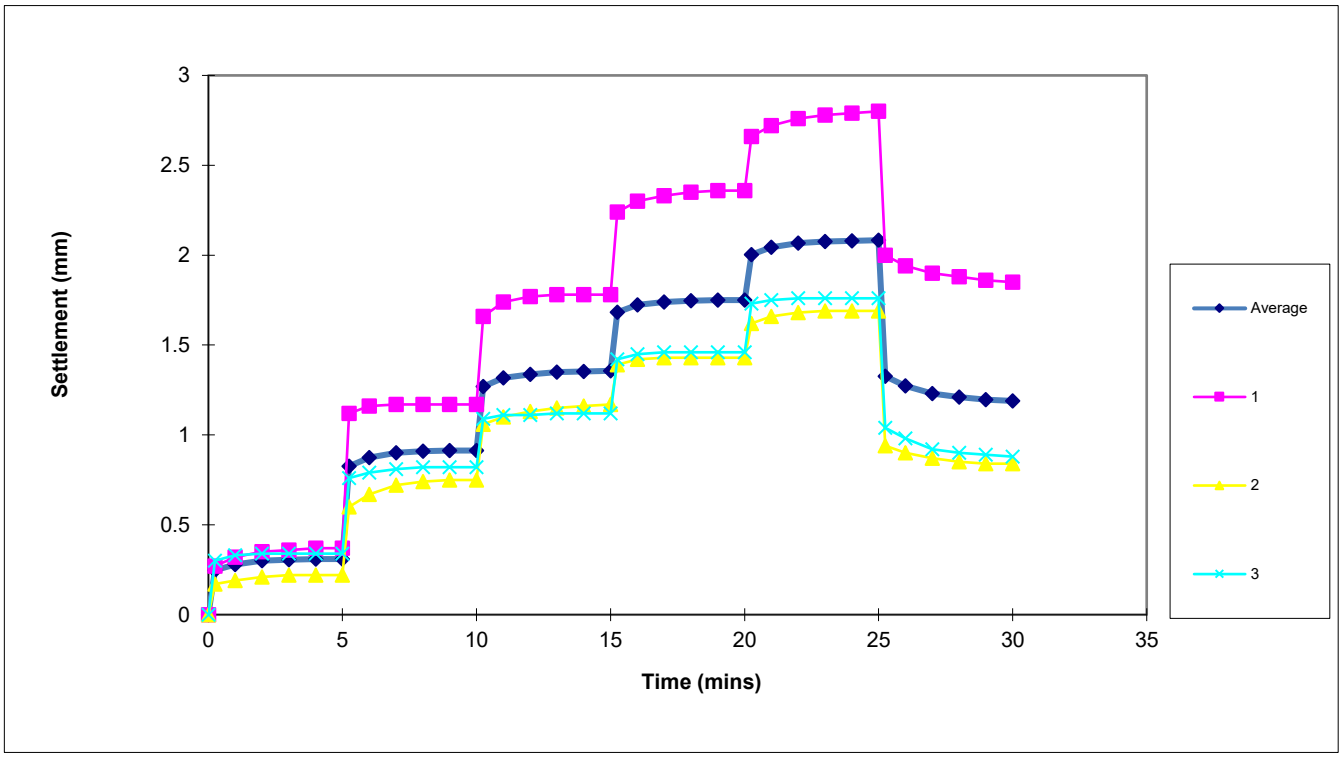
Test Reference: TP 610 T1 | Test Depth: 0.50m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.27	0.17	0.30	0.25
	1	0.32	0.19	0.33	0.28
	2	0.35	0.21	0.34	0.30
	3	0.36	0.22	0.34	0.31
	4	0.37	0.22	0.34	0.31
	5	0.37	0.22	0.34	0.31
50kN/m^2 Load	5.25	1.12	0.60	0.76	0.83
	6	1.16	0.67	0.79	0.87
	7	1.17	0.72	0.81	0.90
	8	1.17	0.74	0.82	0.91
	9	1.17	0.75	0.82	0.91
	10	1.17	0.75	0.82	0.91
75kN/m^2 Load	10.25	1.66	1.06	1.09	1.27
	11	1.74	1.10	1.11	1.32
	12	1.77	1.13	1.11	1.34
	13	1.78	1.15	1.12	1.35
	14	1.78	1.16	1.12	1.35
	15	1.78	1.17	1.12	1.36
100kN/m^2 Load	15.25	2.24	1.39	1.42	1.68
	16	2.30	1.42	1.45	1.72
	17	2.33	1.43	1.46	1.74
	18	2.35	1.43	1.46	1.75
	19	2.36	1.43	1.46	1.75
	20	2.36	1.43	1.46	1.75
125kN/m^2 Load	20.25	2.66	1.62	1.73	2.00
	21	2.72	1.66	1.75	2.04
	22	2.76	1.68	1.76	2.07
	23	2.78	1.69	1.76	2.08
	24	2.79	1.69	1.76	2.08
	25	2.80	1.69	1.76	2.08
0kN/m^2 Unload	25.25	2.00	0.94	1.04	1.33
	26	1.94	0.90	0.98	1.27
	27	1.90	0.87	0.92	1.23
	28	1.88	0.85	0.90	1.21
	29	1.86	0.84	0.89	1.20
	30	1.85	0.84	0.88	1.19

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 610 T1



Contract: Goat Mill Lane Merthyr

Date: 24.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

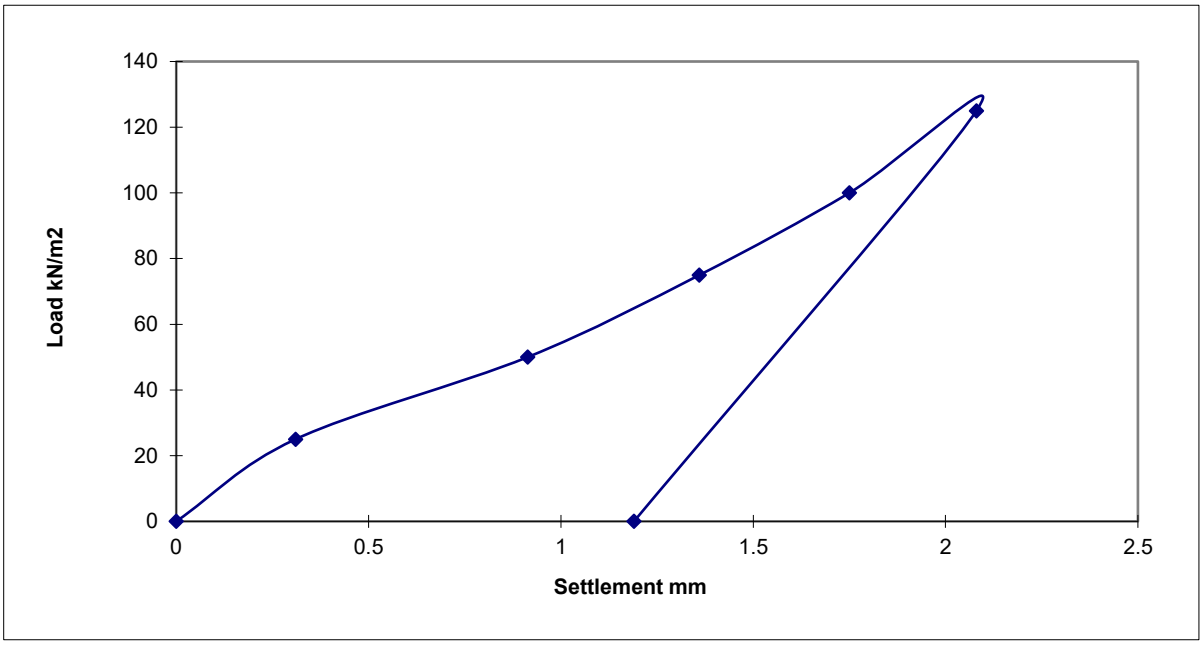
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey sandy gravel
TP 610 T1	0.50m bgl	Counterweight: Tracked excavator	Weather Conditions: Showers

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.31	25	5
0.91	50	10
1.36	75	15
1.75	100	20
2.08	125	25
1.19	0	30

Deformation Modulus (E)	25.8	MN/m^2
Degree of Rebound (%)	42.8	%
Load req'd to achieve 1.25mm settlement	75.1	kN/m^2
Modulus of subgrade reaction (K762)	54688	kPa/m
Derived CBR Value	11.8	%

σmax	125	kN/m^2
s at σmax	2.08	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 24.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 24.03.26

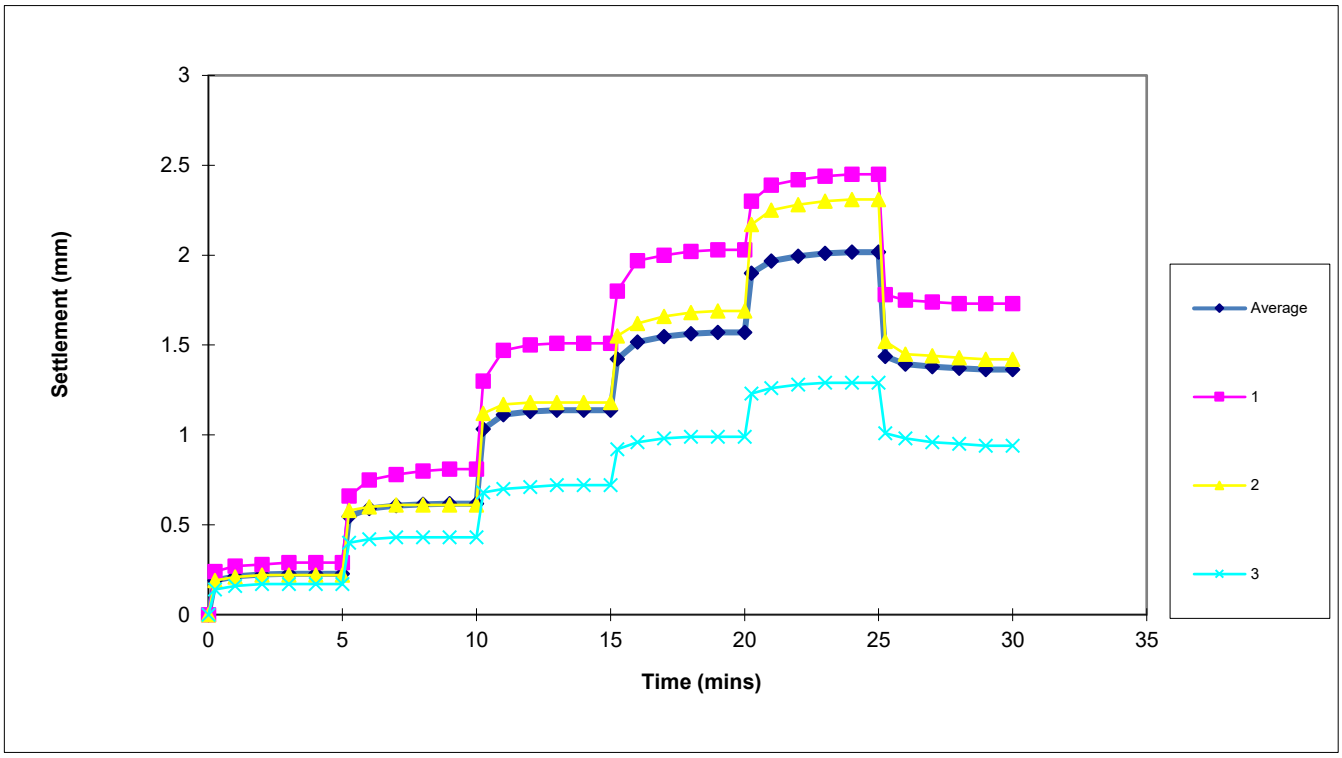
Test Reference: TP 610 T2 | Test Depth: 1.00m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.24	0.19	0.14	0.19
	1	0.27	0.21	0.16	0.21
	2	0.28	0.22	0.17	0.22
	3	0.29	0.22	0.17	0.23
	4	0.29	0.22	0.17	0.23
	5	0.29	0.22	0.17	0.23
50kN/m^2 Load	5.25	0.66	0.58	0.40	0.55
	6	0.75	0.60	0.42	0.59
	7	0.78	0.61	0.43	0.61
	8	0.80	0.61	0.43	0.61
	9	0.81	0.61	0.43	0.62
	10	0.81	0.61	0.43	0.62
75kN/m^2 Load	10.25	1.30	1.12	0.68	1.03
	11	1.47	1.17	0.70	1.11
	12	1.50	1.18	0.71	1.13
	13	1.51	1.18	0.72	1.14
	14	1.51	1.18	0.72	1.14
	15	1.51	1.18	0.72	1.14
100kN/m^2 Load	15.25	1.80	1.55	0.92	1.42
	16	1.97	1.62	0.96	1.52
	17	2.00	1.66	0.98	1.55
	18	2.02	1.68	0.99	1.56
	19	2.03	1.69	0.99	1.57
	20	2.03	1.69	0.99	1.57
125kN/m^2 Load	20.25	2.30	2.17	1.23	1.90
	21	2.39	2.25	1.26	1.97
	22	2.42	2.28	1.28	1.99
	23	2.44	2.30	1.29	2.01
	24	2.45	2.31	1.29	2.02
	25	2.45	2.31	1.29	2.02
0kN/m^2 Unload	25.25	1.78	1.52	1.01	1.44
	26	1.75	1.45	0.98	1.39
	27	1.74	1.44	0.96	1.38
	28	1.73	1.43	0.95	1.37
	29	1.73	1.42	0.94	1.36
	30	1.73	1.42	0.94	1.36

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 610 T2



Contract: Goat Mill Lane Merthyr

Date: 24.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

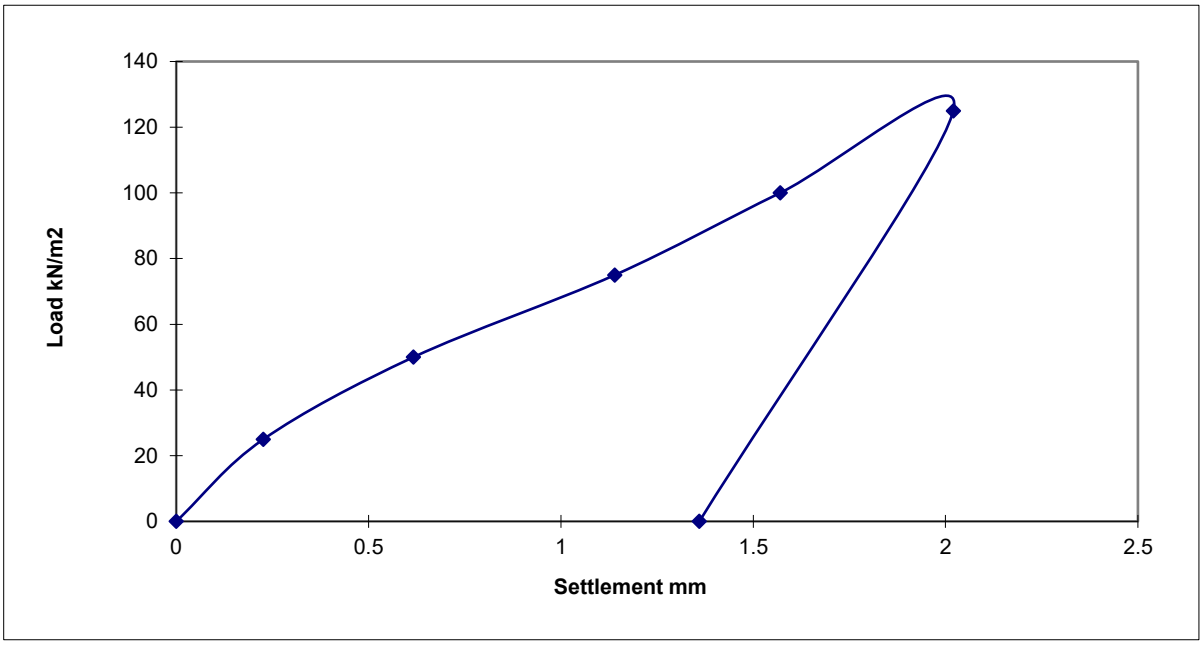
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Colliery Spoil
TP 610 T2	1.00m bgl	Counterweight: Tracked excavator	Weather Conditions: Showers

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.23	25	5
0.62	50	10
1.14	75	15
1.57	100	20
2.02	125	25
1.36	0	30

Deformation Modulus (E)	26.6	MN/m^2
Degree of Rebound (%)	32.7	%
Load req'd to achieve 1.25mm settlement	77.4	kN/m^2
Modulus of subgrade reaction (K762)	56312	kPa/m
Derived CBR Value	12.3	%

σmax	125	kN/m^2
s at σmax	2.02	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 24.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 24.03.26

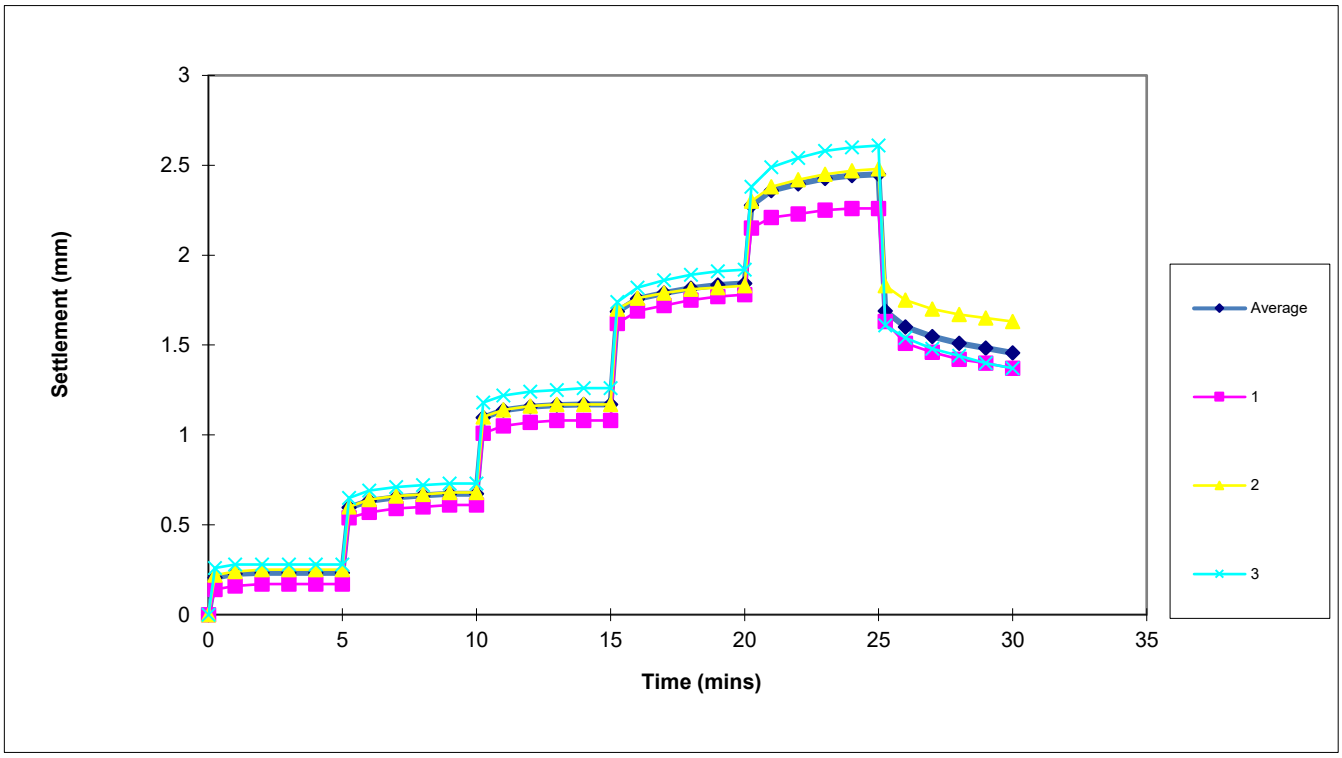
Test Reference: TP 611 T1 | Test Depth: 0.50m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.14	0.22	0.26	0.21
	1	0.16	0.24	0.28	0.23
	2	0.17	0.25	0.28	0.23
	3	0.17	0.25	0.28	0.23
	4	0.17	0.25	0.28	0.23
	5	0.17	0.25	0.28	0.23
50kN/m^2 Load	5.25	0.54	0.60	0.65	0.60
	6	0.57	0.64	0.69	0.63
	7	0.59	0.66	0.71	0.65
	8	0.60	0.67	0.72	0.66
	9	0.61	0.68	0.73	0.67
	10	0.61	0.68	0.73	0.67
75kN/m^2 Load	10.25	1.01	1.10	1.18	1.10
	11	1.05	1.14	1.22	1.14
	12	1.07	1.16	1.24	1.16
	13	1.08	1.17	1.25	1.17
	14	1.08	1.17	1.26	1.17
	15	1.08	1.17	1.26	1.17
100kN/m^2 Load	15.25	1.62	1.70	1.74	1.69
	16	1.69	1.76	1.82	1.76
	17	1.72	1.79	1.86	1.79
	18	1.75	1.81	1.89	1.82
	19	1.77	1.82	1.91	1.83
	20	1.78	1.83	1.92	1.84
125kN/m^2 Load	20.25	2.15	2.30	2.38	2.28
	21	2.21	2.38	2.49	2.36
	22	2.23	2.42	2.54	2.40
	23	2.25	2.45	2.58	2.43
	24	2.26	2.47	2.60	2.44
	25	2.26	2.48	2.61	2.45
0kN/m^2 Unload	25.25	1.63	1.83	1.61	1.69
	26	1.51	1.75	1.54	1.60
	27	1.46	1.70	1.48	1.55
	28	1.42	1.67	1.44	1.51
	29	1.40	1.65	1.40	1.48
	30	1.37	1.63	1.37	1.46

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 611 T1



Contract: Goat Mill Lane Merthyr

Date: 24.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

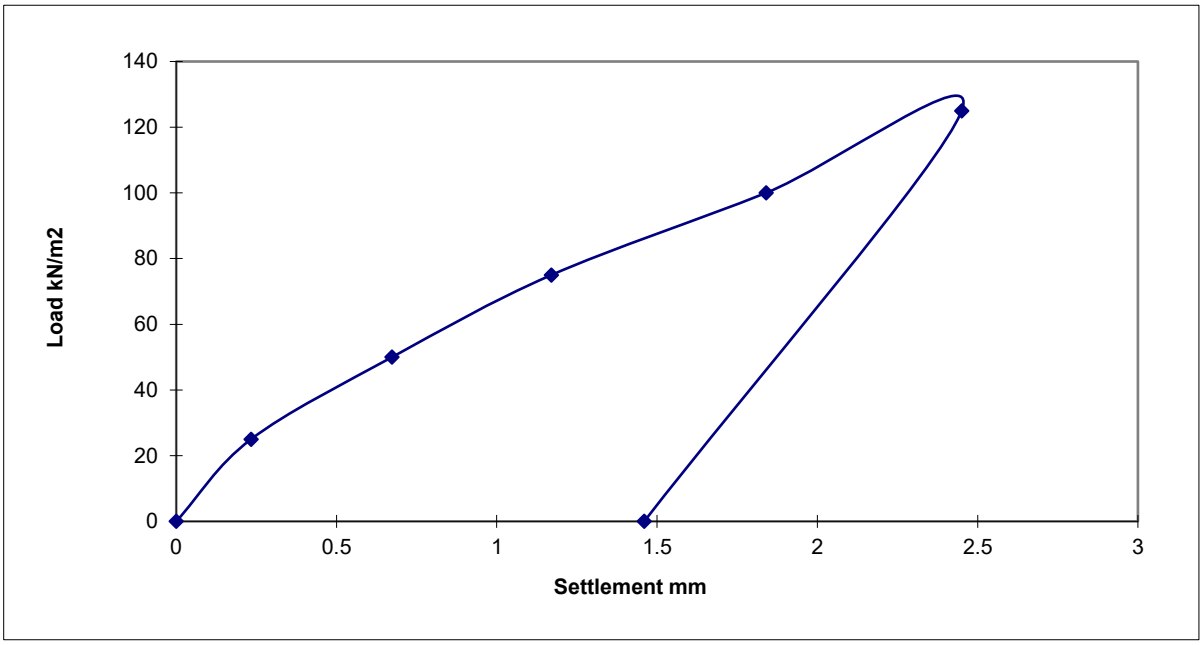
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey sandy gravel
TP 611 T1	0.50m bgl	Counterweight: Tracked excavator	Weather Conditions: Showers

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.23	25	5
0.67	50	10
1.17	75	15
1.84	100	20
2.45	125	25
1.46	0	30

Deformation Modulus (E)	21.9	MN/m^2
Degree of Rebound (%)	40.4	%
Load req'd to achieve 1.25mm settlement	63.8	kN/m^2
Modulus of subgrade reaction (K762)	46429	kPa/m
Derived CBR Value	9.6	%

σmax	125	kN/m^2
s at σmax	2.45	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 24.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 24.03.26

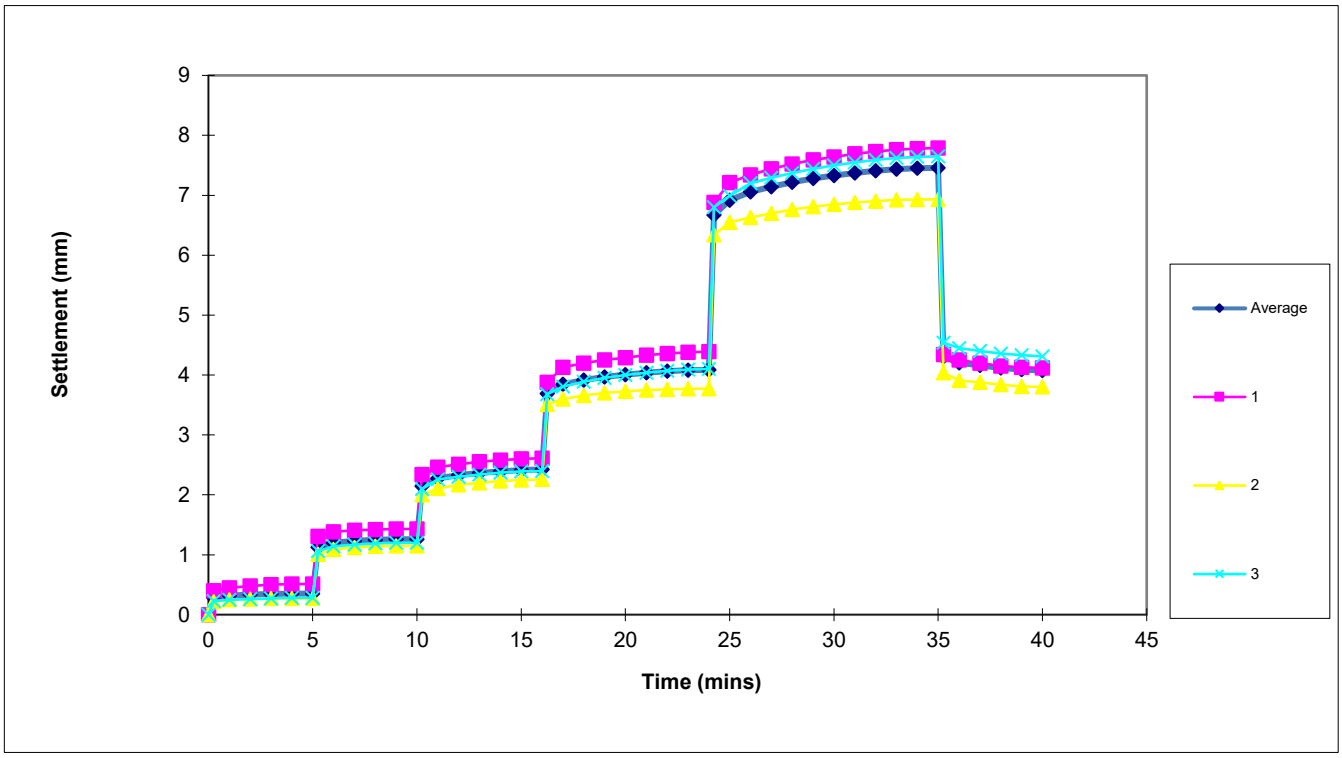
Test Reference: TP 611 T2 | Test Depth: 1.00m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.40	0.22	0.23	0.28
	1	0.45	0.25	0.25	0.32
	2	0.48	0.26	0.26	0.33
	3	0.50	0.27	0.27	0.35
	4	0.51	0.27	0.28	0.35
	5	0.51	0.27	0.28	0.35
50kN/m^2 Load	5.25	1.31	1.01	1.06	1.13
	6	1.38	1.09	1.14	1.20
	7	1.41	1.12	1.17	1.23
	8	1.42	1.14	1.19	1.25
	9	1.43	1.15	1.20	1.26
	10	1.43	1.15	1.20	1.26
75kN/m^2 Load	10.25	2.34	2.00	2.10	2.15
	11	2.46	2.11	2.26	2.28
	12	2.51	2.17	2.30	2.33
	13	2.55	2.20	2.34	2.36
	14	2.58	2.23	2.37	2.39
	15	2.60	2.25	2.39	2.41
	16	2.61	2.26	2.40	2.42
100kN/m^2 Load	16.25	3.88	3.51	3.68	3.69
	17	4.13	3.60	3.81	3.85
	18	4.20	3.66	3.89	3.92
	19	4.25	3.70	3.95	3.97
	20	4.29	3.73	4.00	4.01
	21	4.33	3.75	4.04	4.04
	22	4.36	3.76	4.07	4.06
	23	4.38	3.77	4.09	4.08
	24	4.39	3.77	4.10	4.09
125kN/m^2 Load	24.25	6.88	6.34	6.80	6.67
	25	7.21	6.55	6.99	6.92
	26	7.34	6.63	7.20	7.06
	27	7.44	6.70	7.29	7.14
	28	7.52	6.76	7.37	7.22
	29	7.59	6.81	7.44	7.28
	30	7.64	6.85	7.50	7.33
	31	7.69	6.88	7.55	7.37
	32	7.73	6.90	7.59	7.41
	33	7.76	6.92	7.62	7.43
	34	7.78	6.93	7.64	7.45
	35	7.79	6.93	7.65	7.46
0kN/m^2 Unload	35.25	4.34	4.04	4.54	4.31
	36	4.25	3.91	4.45	4.20
	37	4.20	3.88	4.40	4.16
	38	4.15	3.84	4.36	4.12
	39	4.13	3.81	4.33	4.09
	40	4.12	3.80	4.31	4.08

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 611 T2



Contract: Goat Mill Lane Merthyr

Date: 24.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

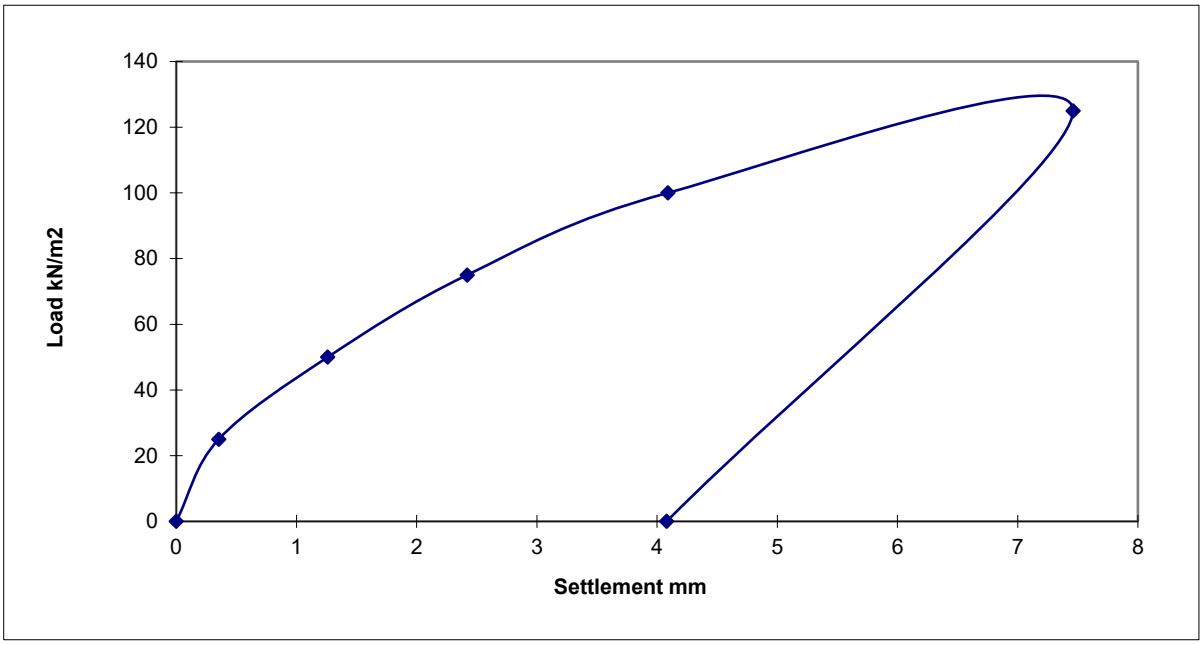
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey sandy gravels
TP 611 T2	1.00m bgl	Counterweight: Tracked excavator	Weather Conditions: Showers

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.35	25	5
1.26	50	10
2.42	75	16
4.09	100	24
7.46	125	35
4.08	0	40

Deformation Modulus (E)	7.2	MN/m^2
Degree of Rebound (%)	45.3	%
Load req'd to achieve 1.25mm settlement	20.9	kN/m^2
Modulus of subgrade reaction (K762)	15248	kPa/m
Derived CBR Value	2.3	%

σmax	125	kN/m^2
s at σmax	7.46	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 24.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 27.03.26

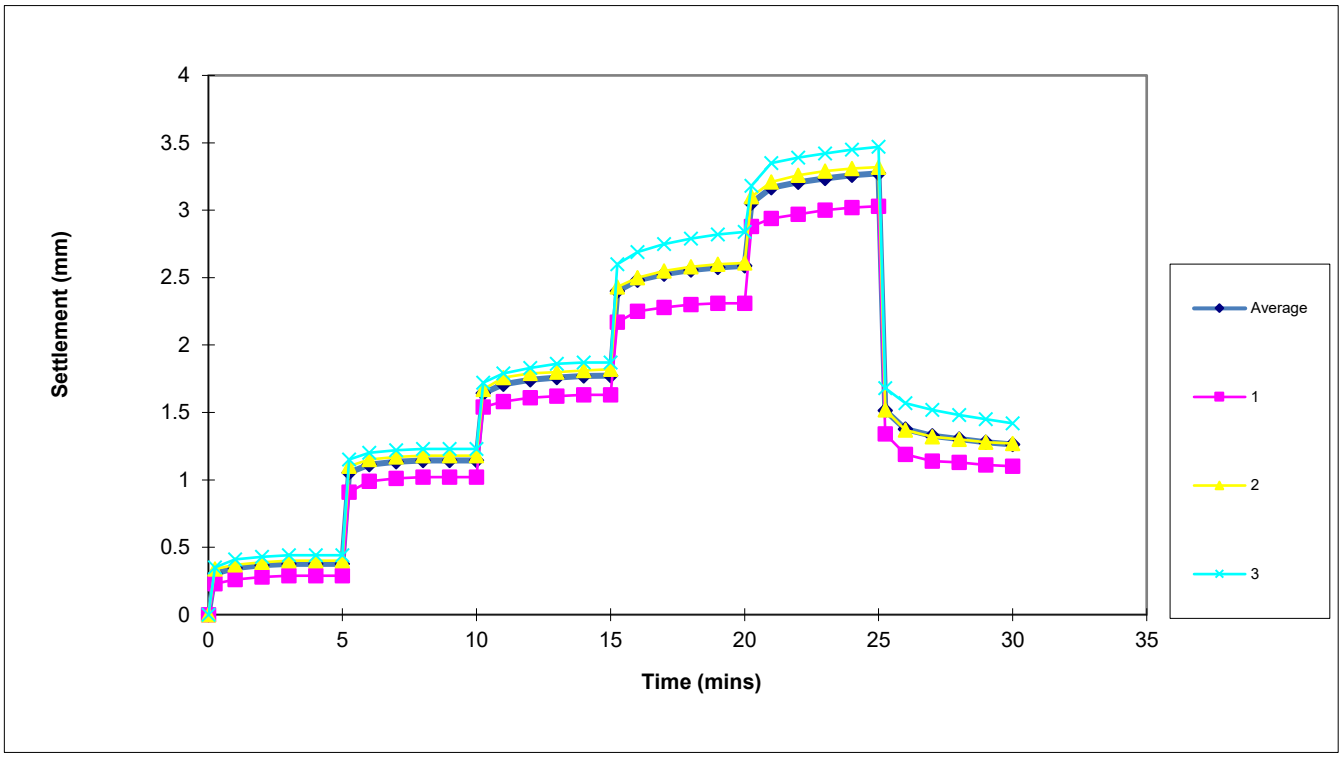
Test Reference: TP 614 T1 | Test Depth: 0.50m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.23	0.34	0.35	0.31
	1	0.26	0.37	0.41	0.35
	2	0.28	0.39	0.43	0.37
	3	0.29	0.40	0.44	0.38
	4	0.29	0.40	0.44	0.38
	5	0.29	0.40	0.44	0.38
50kN/m^2 Load	5.25	0.91	1.10	1.15	1.05
	6	0.99	1.15	1.20	1.11
	7	1.01	1.17	1.22	1.13
	8	1.02	1.18	1.23	1.14
	9	1.02	1.18	1.23	1.14
	10	1.02	1.18	1.23	1.14
75kN/m^2 Load	10.25	1.54	1.67	1.72	1.64
	11	1.58	1.76	1.79	1.71
	12	1.61	1.79	1.83	1.74
	13	1.62	1.80	1.86	1.76
	14	1.63	1.81	1.87	1.77
	15	1.63	1.82	1.87	1.77
100kN/m^2 Load	15.25	2.17	2.43	2.60	2.40
	16	2.25	2.50	2.69	2.48
	17	2.28	2.55	2.75	2.53
	18	2.30	2.58	2.79	2.56
	19	2.31	2.60	2.82	2.58
	20	2.31	2.61	2.84	2.59
125kN/m^2 Load	20.25	2.88	3.10	3.18	3.05
	21	2.94	3.21	3.35	3.17
	22	2.97	3.26	3.39	3.21
	23	3.00	3.29	3.42	3.24
	24	3.02	3.31	3.45	3.26
	25	3.03	3.32	3.47	3.27
0kN/m^2 Unload	25.25	1.34	1.52	1.68	1.51
	26	1.19	1.37	1.57	1.38
	27	1.14	1.32	1.52	1.33
	28	1.13	1.30	1.48	1.30
	29	1.11	1.28	1.45	1.28
	30	1.10	1.27	1.42	1.26

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 614 T1



Contract: Goat Mill Lane Merthyr

Date: 27.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

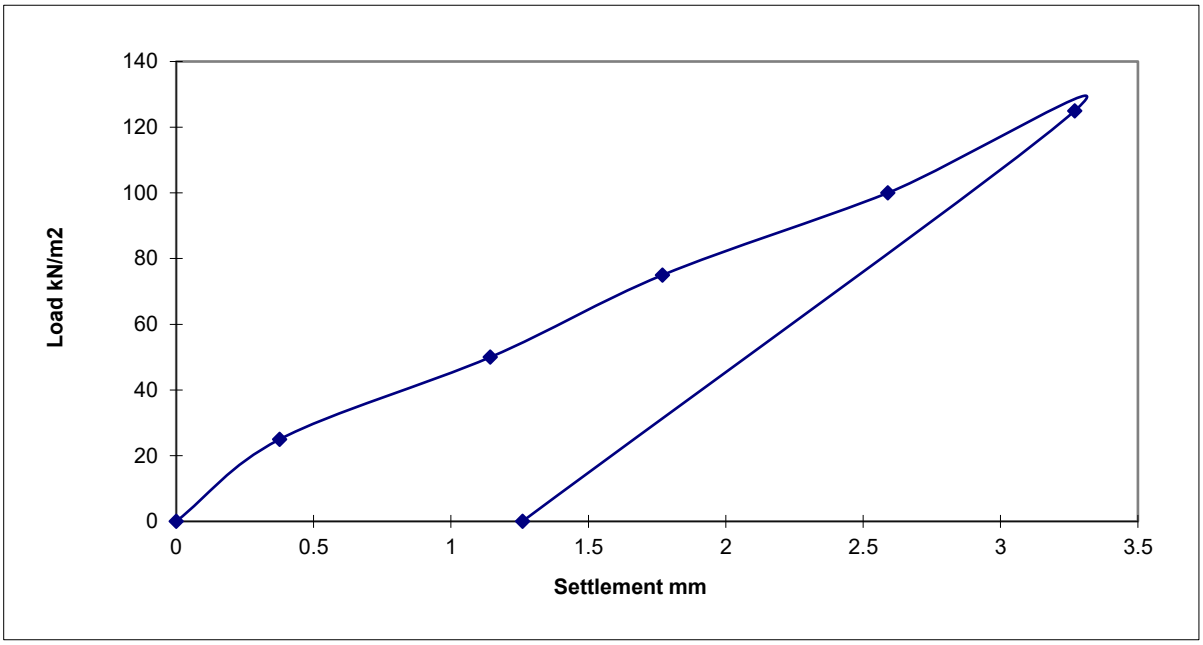
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey gravelly clay
TP 614 T1	0.50m bgl	Counterweight: Tracked excavator	Weather Conditions: Showers

Average Plate Settlement (mm)	Load (kN/m²)	Time (mins)
0	0	0
0.38	25	5
1.14	50	10
1.77	75	15
2.59	100	20
3.27	125	25
1.26	0	30

Deformation Modulus (E)	16.4	MN/m²
Degree of Rebound (%)	61.5	%
Load req'd to achieve 1.25mm settlement	47.8	kN/m²
Modulus of subgrade reaction (K762)	34786	kPa/m
Derived CBR Value	6.6	%

σmax	125	kN/m²
s at σmax	3.27	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
5: Plate settlement measured by three travel gauges fixed to datum beams.
6: Load measured using UKAS calibrated electric load cell.

Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 27.03.26

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Data

Contract: Goat Mill Lane Merthyr | Date: 27.03.26

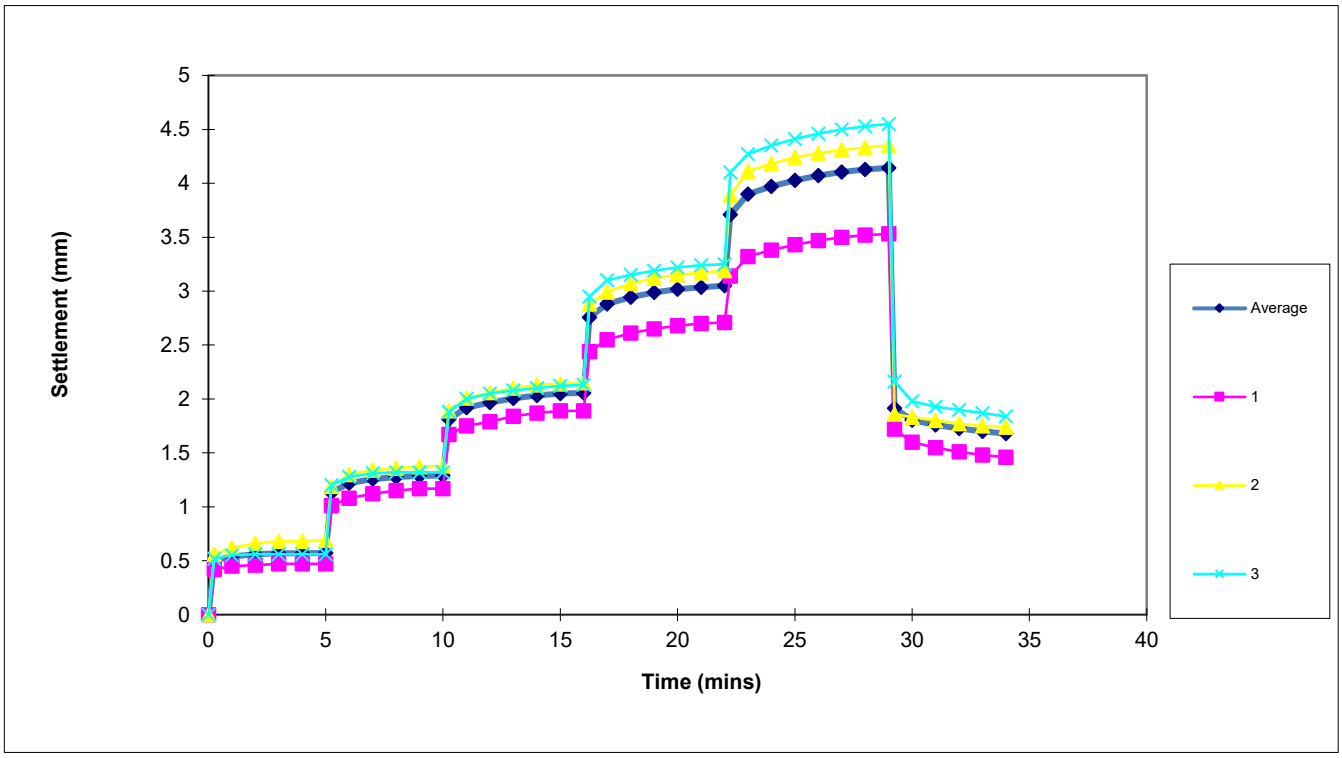
Test Reference: TP 614 T2 | Test Depth: 1.00m bgl | Plate Diameter: 600mm | Seating Load: 5kN/m^2

		Travel Gauges set on plate			
	Time (mins)	Gauge 1	Gauge 2	Gauge 3	Average Plate Settlement mm
25kN/m^2 Load	0	0	0	0	0
	0.25	0.42	0.56	0.52	0.50
	1	0.45	0.62	0.55	0.54
	2	0.46	0.66	0.56	0.56
	3	0.47	0.68	0.56	0.57
	4	0.47	0.68	0.56	0.57
	5	0.47	0.69	0.56	0.57
50kN/m^2 Load	5.25	1.01	1.19	1.20	1.13
	6	1.08	1.30	1.28	1.22
	7	1.12	1.34	1.31	1.26
	8	1.15	1.36	1.32	1.28
	9	1.17	1.37	1.32	1.29
	10	1.17	1.38	1.32	1.29
75kN/m^2 Load	10.25	1.67	1.89	1.88	1.81
	11	1.75	2.01	2.00	1.92
	12	1.79	2.06	2.05	1.97
	13	1.84	2.10	2.08	2.01
	14	1.87	2.13	2.10	2.03
	15	1.89	2.14	2.12	2.05
	16	1.89	2.15	2.13	2.06
100kN/m^2 Load	16.25	2.44	2.88	2.95	2.76
	17	2.55	2.99	3.10	2.88
	18	2.61	3.07	3.15	2.94
	19	2.65	3.12	3.19	2.99
	20	2.68	3.15	3.22	3.02
	21	2.70	3.17	3.24	3.04
	22	2.71	3.19	3.25	3.05
125kN/m^2 Load	22.25	3.14	3.89	4.10	3.71
	23	3.32	4.11	4.27	3.90
	24	3.38	4.18	4.35	3.97
	25	3.43	4.24	4.41	4.03
	26	3.47	4.28	4.46	4.07
	27	3.50	4.31	4.50	4.10
	28	3.52	4.33	4.53	4.13
	29	3.53	4.35	4.55	4.14
0kN/m^2 Unload	29.25	1.72	1.86	2.16	1.91
	30	1.60	1.83	1.98	1.80
	31	1.55	1.80	1.93	1.76
	32	1.51	1.77	1.90	1.73
	33	1.48	1.75	1.87	1.70
	34	1.46	1.74	1.84	1.68

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

Plate Load Test Settlement v Time Plot | Test Reference: TP 614 T2



Contract: Goat Mill Lane Merthyr

Date: 27.03.26

South Wales Ground Testing, Unit 25, South Cornelly Trading Estate, Bridgend, CF33 4RE

SOUTH WALES GROUND TESTING

SOUTH WALES GROUND TESTING

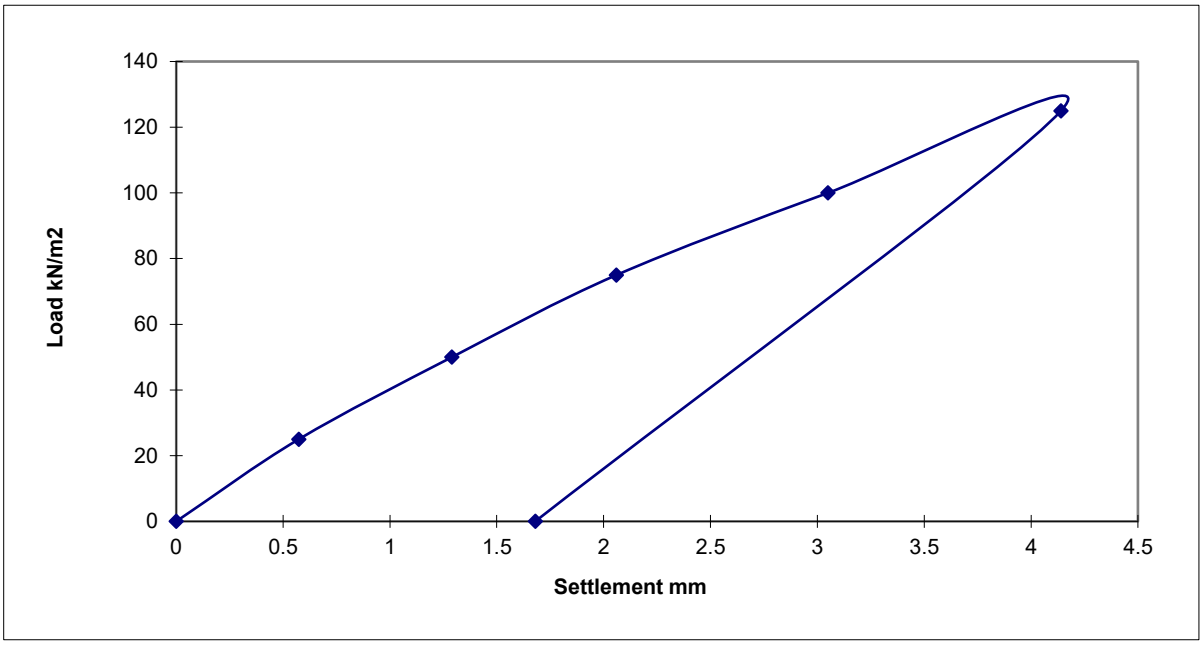
PLATE LOAD TEST REPORT

Test Reference:	Test Depth:	Plate Diameter: 600mm	Soil Description: Grey gravelly clay
TP 614 T2	1.00m bgl	Counterweight: Tracked excavator	Weather Conditions: Showers

Average Plate Settlement (mm)	Load (kN/m^2)	Time (mins)
0	0	0
0.57	25	5
1.29	50	10
2.06	75	16
3.05	100	22
4.14	125	29
1.68	0	34

Deformation Modulus (E)	13.0	MN/m^2
Degree of Rebound (%)	59.4	%
Load req'd to achieve 1.25mm settlement	37.7	kN/m^2
Modulus of subgrade reaction (K762)	27476	kPa/m
Derived CBR Value	4.9	%

σmax	125	kN/m^2
s at σmax	4.14	mm



Notes:

1: Circular steel plate bedded on uniform coarse sand.
2: Tracked excavator used as counter weight.
3: Load applied to plate via hydraulic jack and loading columns.
4: Each load increment applied until plate settlement less than 0.01mm per minute.
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Approved by : D. McArthur

David McArthur BSc MSc ARSM

REMARKS: Test carried out in accordance with BS1377.1990, Part 9.
k762 for 600mm circular plate = pressure requied to achieve 1.25mm penetration x 0.91 (HD 25/94)
Size factor correction after Croney 1991. CBR derivation from CBR USA FAA (Tuleubek and Brill)

CONTRACT:
Goat Mill Lane Merthyr

SOUTH WALES GROUND TESTING

Date: 27.03.26

APPENDIX I: TERRADAT REPORT

GEOPHYSICAL SURVEY REPORT

Project

Geophysical survey to map potential historical mine workings and the extent of the former opencast high wall

Location

Goat Mill, Merthyr Tydfil

Client

Tetra Tech

Head Office
Unit 1 Link Trade Park
Penarth Road
Cardiff CF11 8TQ
United Kingdom

Telephone: +44 (0)2920 700127
www.terradat.co.uk

Job reference: 9740

Date: April 2026

Version: 2

GEOPHYSICAL SURVEY REPORT

Project

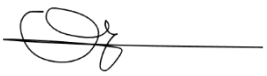
Geophysical survey to map potential historical mine workings and the extent of the former opencast high wall

Location

Goat Mill Road, Merthyr Tydfil

Client

Tetra Tech

Project Geophysicist:	O Parker BSc A Thomas MSc BSc	
Reviewer:	J Thomas BSc PhD FGS S Hughes BSc PhD FGS	
Job Reference:	9740	
Date:	May 2026	

CONTENTS

1 ..... EXECUTIVE SUMMARY 5
2 ..... INTRODUCTION 6
2.1 Site description and history 6
2.2 Geological setting 7
2.3 Survey objectives 7
2.4 Survey design 7
2.5 Quality control 8
3 ..... SURVEY DESCRIPTION 9
3.1 Topographic survey/grid layout 9
3.2 Magnetic survey (*terrestrial*) 9
3.2.1 .....Magnetic survey - field activity 9
3.2.2 .....Magnetic survey - data processing 11
3.3 Electromagnetic ground conductivity mapping 11
3.3.1 .....Electromagnetic ground conductivity survey - field activity 11
3.3.2 .....Electromagnetic ground conductivity survey – data processing 12
3.4 .....Electrical Resistivity Tomography (ERT) survey 12
3.4.1 .....ERT survey - field activity 12
3.4.2 .....ERT survey – data processing 14
4 ..... RESULTS 15
4.1 Interpretation rationale 15
4.1.1 .....Magnetic interpretation rationale 15
4.1.2 .....Electromagnetic ground conductivity interpretation rationale 16
4.1.3 .....Electrical resistivity tomography (ERT) interpretation rationale 17
4.2 Detailed discussion 18
4.2.1 .....Magnetic discussion (Figure 3) 18
4.2.2 .....Electromagnetic discussion (Figure 4) 18
4.2.3 .....Electrical resistivity tomography (ERT) discussion (Figures 5 and 6) 19
5 ..... CONCLUSIONS 22

Figures

Figure 1 – Location plan
Figure 2 – Geological location maps
Figure 3 – Magnetics - total field and analytical signal results
Figure 4 – Electromagnetic - ground conductivity and in-phase results
Figure 5 – ERT results - ERT 1 and ERT 2
Figure 6 – ERT results – ERT 3 to ERT 5
Figure 7 – Electromagnetic and magnetics - combined results plot
Figure 8 – EM ground conductivity and ERT combined results plot

Appendices

Magnetic Survey
Electromagnetic Survey
Electrical Resistivity Tomography

1 EXECUTIVE SUMMARY

TerraDat were commissioned to conduct a geophysical survey on a historical open-cast mine site located east of Goat Mill Road, Merthyr Tydfil. The survey was commissioned by Tetra Tech on behalf of WSP and conducted between the 7th and 9th of April 2026. The site comprised roughly 14 ha of open, undeveloped land with pockets of vegetation. The survey aimed to map potential historical mine entries and confirm the location of the highwall of a former open-cast pit.

The site was surveyed using a combination of magnetic, electromagnetic, and electrical resistivity methods (ERT). Magnetic and electromagnetic surveying was selected to take advantage of the contrasting geophysical signatures of historical mine workings, while the electrical resistivity method was used to identify and confirm the highwall.

The magnetic and electromagnetic survey has successfully identified zones of localised anomalous responses, representing areas of interest. These features are present on both sides of the highwall, meaning they may correspond with both mining-related activity or subsequent landscaping activity.

For the ERT survey, four of the five profiles clearly show a zone of lateral discontinuity that appears consistent with a backfilled open pit, and its position generally agrees with the mapped highwall location. However, there does appear to be two distinct elements associated with this zone, namely a shallow ‘bench’ like feature and a sub-vertical boundary that extends to depth.

It is recommended that intrusive work is carried out to ground-truth the anomalies identified by the geophysical survey. Following that process, it may be possible to extend the interpretation further and calibrate the datasets by incorporating the additional information.

2 INTRODUCTION

This report describes a geophysical survey that took place on land east of Goat Mill Road, Merthyr Tydfil. The survey was commissioned by Tetra Tech on behalf of WSP and conducted between the 7th and 9th April 2026. The survey aimed to map potential historical mine entries and to confirm the position of the high wall of the former opencast mine.

2.1 Site description and history

The site is located at the eastern extent of Merthyr Tydfil between Goat Mill Road and the A4060, centred on National Grid Reference 306219E, 206929N. The survey area consists of open, relatively flat waste ground. Dense vegetation borders the site along the western and eastern margins, while scattered gorse scrub is distributed along the southern extent. The northern portion features areas of open ground and the site compound. Two unnamed watercourses flow under Goat Mill Road through a culvert and into the site, one on the northern edge of the survey area and one on the southern edge.

The site previously had an opencast mine, thought to cover the eastern half, with the potential of unknown mine entries along the western flank. There is a small region in the southwest of the site that has been flagged up as having some bell pits. The site has remained undeveloped since remediation efforts in the 1990s.



Plate 1 – Photo of the site taken during the time of the survey, looking north.

2.2 Geological setting

According to the British Geological Survey (BGS), the overlying superficial material is comprised of glacial till material, with the natural underlying bedrock geology consisting of the South Wales Lower Coal Measures Formation, comprising mudstones, siltstones and sandstones (Figure 1).

Given the site's history, the underlying sequence is likely to comprise a mixture of natural, made ground, and backfill materials.

2.3 Survey objectives

The main survey objectives are to:

- Identify potential areas of historical mine entries
- Confirm the position of the highwall from the former opencast mine.

2.4 Survey design

Given the nature of the targets under investigation and discussions with the Client, it was decided to adopt an integrated survey approach comprising the following techniques:

- ***Magnetic survey (Sensys MagWalk)*** *– to map distortions in the Earth's magnetic field due to the presence of buried ferrous material that may be related to mine workings.*

- ***Electromagnetic surveying (Geophex GEM-2)*** *– to map variations in the near-surface ground conductivity associated with different shallow materials and structures.*

- ***Electrical Resistivity Tomography (ERT, IRIS Syscal Pro) –*** *to provide an electrical cross-section of the ground for identification of localised resistivity anomalies that may be related to the former high wall of the opencast mine.*

It should be noted that due to site restrictions, which included the site compound, dense vegetation, and drilling rigs, the original survey extent for the magnetic and electromagnetic and positions of the ERT lines had to be adjusted. During the initial survey design, 3 ERT profiles were proposed, with an additional 2 added at the client's request. Any change to the original specification, including positioning and electrode spacing, was discussed and approved by WSP.

2.5 Quality control

The geophysical data were collected in line with normal operating procedures as outlined by the instrument manufacturer and TerraDat company policy. Upon completion of the survey, the data were downloaded from the survey instrument to a computer and appropriately backed up. The acquired dataset was initially checked for errors that may have been caused by instrument noise, low battery levels, positional discrepancies, etc., and any field notes were either written up or incorporated during the initial data processing stage. The dataset is then processed using standard processing routines, and once completed, the resulting plots are subject to peer review to ensure the integrity of the interpretation. Our quality control standards are BS EN ISO 9001: 2015 certified.

3 SURVEY DESCRIPTION

The survey was carried out using the following geophysical methods:

- Magnetics *(Sensys MagWalk)*
- Electromagnetics (EM)*(Geophex GEM-2)*
- Electrical Resistivity Tomography (ERT)(*Iris Syscal Pro*)

The magnetic and electromagnetic surveys were conducted across the western extent of the site where accessible, while the 5 ERT profiles were run perpendicular to the mapped opencast highwall.

The results are presented as data plans and cross-sections that indicate the locations and physical characteristics of identified anomalous features, along with a text description.

Background information for the survey methods is provided in the appendices, and descriptions of the actual survey work carried out on the site are provided in the sections below.

3.1 Topographic survey/grid layout

A high-precision RTK dGPS system was used to establish a base point and to record the position of key features. The RTK dGPS system utilises a real-time mobile phone network correction with an accuracy of +/- 25mm. All measurements were referenced to the National Grid using the OSTN15 transformation.

3.2 Magnetic survey (*terrestrial*)

A magnetic survey is a passive technique that measures local perturbations in the Earth's magnetic field caused by magnetically susceptible objects in the subsurface. These subtle perturbations are primarily due to the presence of ferrous metals, but some ferrous-bearing materials, such as fired red brick, slag, and ash, can also produce a measurable response.

3.2.1 Magnetic survey - field activity

A Sensys MagWalk magnetometer was used in a gradient mode (positioned vertically) to acquire total field and magnetic field gradient data in "near-continuous" mode along a series of 2 m spaced parallel survey lines as specified across the survey area. The instrument was attached to a cart, which was towed across the survey area positioned by a Novatel Agstar GPS system (+/- 0.5m).

Item	Description
System	*SENSYS MagWalk*
Type	2 x Fluxgate sensors in gradient mode
Operating range	+/-100,000 nT
Line spacing	2m
Sensor height	Approximately 0.4 m and 1.4 m above ground level
Sample rate/reading interval	200 Hz / ~1cm
Acquisition method	Mounted on a cart towed behind a quad bike

***Table 1** – Magnetic equipment list and data acquisition parameters.*

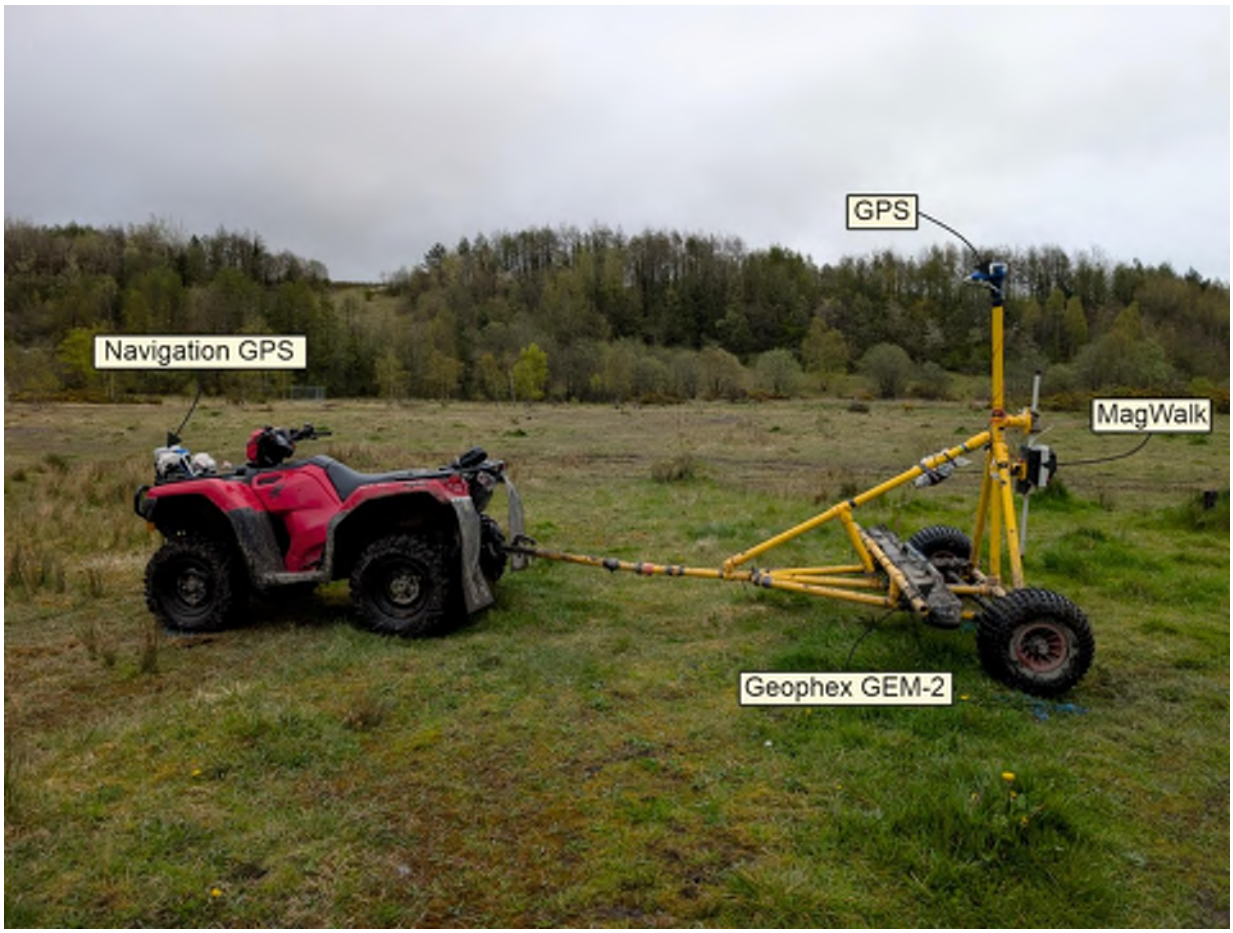


***Plate 2** – MagWalk instrument set up on site.*

3.2.2 Magnetic survey - data processing

The magnetic data were downloaded to a computer and edited for positional errors and rogue values. Depending on the survey length and atmospheric conditions, a drift correction may be applied. The data were then exported as an 'XYZ' file and, if required, translated into the appropriate coordinate system. The next step was to import the data into *OASIS MONTAJ*, where it could be edited and manipulated to enhance features of interest. The resultant colour contour plots were then integrated with site satellite imagery in *QGIS*, and the resulting plots were exported to *CorelDRAW* for final annotation.

3.3 Electromagnetic ground conductivity mapping

An electromagnetic ground conductivity survey involves transmitting an electromagnetic field into the subsurface and recording the returning signal with a receiver in the same instrument. Data are acquired on a grid covering the area of interest, and a contoured plan of the variation in ground conductivity response across the site is produced. The presence of conductive materials in the subsurface, such as clay, water, mudstone, ash, metal, rebar, leachate, etc., will be evident as regions of high values on the ground conductivity plan. Materials such as coarse-grained sediments, dry zones, and many bedrock types will appear as regions of low values.

3.3.1 *Electromagnetic ground conductivity survey - field activity*

The conductivity data were acquired using a multifrequency *Geophex GEM-2* instrument (Plate 5) along a series of 2 m spaced parallel survey lines as specified across the survey area. The data set was acquired using an EGNOS-corrected dGPS (accuracy ±0.5 m) at a nominal 0.25 m interval along a series of parallel, 2 m-spaced survey lines. The instrument was primarily configured to investigate depths of up to 3 to 5 m below ground level.

Item	Description
System	GEOPHEX GEM-2
Frequency	Multifrequency 47KHz, 13KHz and 4KHz
Line spacing	2 m
Reading interval	25 cm
Depth of investigation	Up to 3 to 5m bgl
Sensor height	Approximately 0.25 m above ground level
Acquisition method	Towed behind a quadbike

***Table 2** – EM equipment list and data acquisition parameters.*

3.3.2 Electromagnetic ground conductivity survey – data processing

The conductivity data were downloaded from the data logger and compiled using the dedicated software *WINGEM-3*. Initial editing was then carried out to remove positional errors and rogue values. The data were then exported as an 'XYZ' file and translated into the OSGB36 Coordinate system using the OSTN15 transformation. The software program *OASIS MONTAJ* was used to compile, edit and manipulate the data to enhance any features of interest. The colour contour plots were then integrated with the base plan information, and the resulting plans were exported to *CorelDRAW* for final annotation.

3.4 *Electrical Resistivity Tomography (ERT) survey*

An ERT survey involves injecting DC current into the ground at various electrode locations along a profile line. An electrical cross-section of the subsurface is then derived from the recorded data. A diverse range of features, such as clay-rich sediments, the water table, gravel lenses, fracture zones, infilled solution features, bedrock structure, and leachate, can be imaged in cross-section using a resistivity survey. A feature may be targeted using resistivity tomography, provided there is sufficient electrical contrast with its surroundings. A description of the field activity is provided below, and some background information on the survey method is found in the Appendix.

3.4.1 ERT survey - field activity

A 72-electrode *IRIS Syscal Pro* resistivity system was used to acquire four ERT profiles at 3 m electrode spacing and one at 1.5 m, using the Wenner Schlumberger array to provide high-resolution models of the top ~30 m and ~15 m of the subsurface, respectively.

Profile	Profile Start		Profile End		Minimum electrode spacing (m)	Line Length (m)
	Easting	Northings	Easting	Northing		
ERT 1	306313.653	207188.333	306376.280	207102.753	1.5	106
ERT 2	306180.592	207162.839	306316.294	206999.961	3	212
ERT 3	306112.021	207060.304	306256.148	206904.867	3	212
ERT 4	306070.331	206906.305	306274.757	206850.291	3	212
ERT 5	306064.126	206824.021	306254.750	206807.165	3	191

Table 3 *– ERT profile coordinates.*

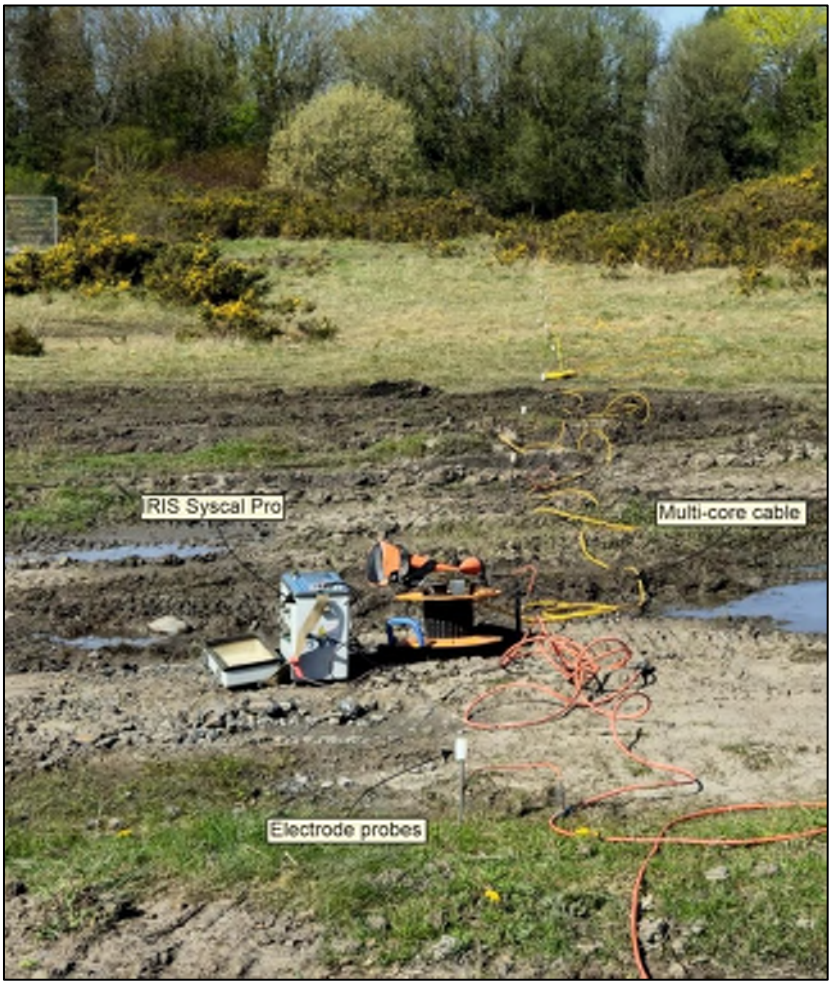


Plate 3 *– ERT set up on site.*

Item	Description
System	1x IRIS Syscal Pro
Cables	4x 18-channel cables
Electrodes	72 x stainless steel electrodes
Minimum Electrode spacing	1.5 m and 3 m
Array type	Wenner-Schlumberger
Cycle/times	Min 3 stack / 500ms
Depth of investigation	Up to 15 and 30 m

***Table 4** – ERT equipment list and data acquisition parameters.*

3.4.2 ERT survey – data processing

The data were downloaded from the instrument using the PROSYS III software; the profiles were processed using the RES2DINV software to derive modelled geo-electrical cross-sections of the subsurface. Elevation data (accuracy of +/- 25mm) were incorporated into the respective datasets before the inversion process.

To improve the inversion model's fit to the observed data, the process was, where applicable, refined by removing outliers based on the RMS error. The RMS values for all five acquired datasets were typically less than 2.6 %, indicating an excellent fit between the measured and modelled data.

The modelled data were then exported to Surfer, where they were gridded (using kriging with a cell size of half the electrode spacing) and presented as 2D cross-sections of apparent resistivity. These cross-sections were then exported to CorelDRAW for final annotation.

4 RESULTS

Background information on each survey method is provided in the appendices. Descriptions of the actual survey work carried out on the site are provided in the sections above.

The results of the geophysical surveys are presented as a series of interpreted colour-contour plots in Figures 3 to 6. Composite interpretation plans are shown in Figures 7 and 8.

A general description of the interpretation process and a detailed discussion of the results for each technique are given below.

4.1 Interpretation rationale

4.1.1 Magnetic interpretation rationale

The total magnetic field records deviations superimposed on the Earth's Total Magnetic Field (ETMF) caused by ferrous material in the subsurface. Several factors determine the character of a total field magnetic anomaly, such as magnetic susceptibility, the size and orientation of the causative body. The interpretation of a magnetic anomaly is based on observing the type (monopole/dipole), amplitude and wavelength of the anomalous feature.

As all magnetic fields are dipolar, the superimposition of a dipolar anomaly on the ETMF creates perturbations observed as localised relative increases and decreases in field strength intensity (i.e. 'positive' and 'negative'). Given these variations, total field magnetic anomalies are more difficult to interpret. They are often much less closely related to the shape of the causative body than with other total field techniques (e.g. microgravity). The interpretation process is further complicated by the horizontal displacement of the anomalies relative to the source, due to the magnetic field's non-vertical orientation. To address this issue, the analytic signal routine is applied to reduce magnetic dipoles to a single positive peak over the area of the highest magnetic gradient (i.e., the location of the source producing the response).

In terms of identifying shafts, the anomalies can be discrete features or form small groups when identifying buried structures. These responses are usually associated with buried ferrous services, disturbed ground, ferrous backfill material, remnant foundations or metal capping structures.

4.1.2 Electromagnetic ground conductivity interpretation rationale

The interpretation of the ground conductivity data is based on both published electrical properties of typical sedimentary materials (Plate 4) and, when available, correlation with on-site information. A relative increase in conductivity values usually indicates a comparative increase in the clay/ash/water content, which could signify either a lateral change in lithology or a variation in sediment thickness.

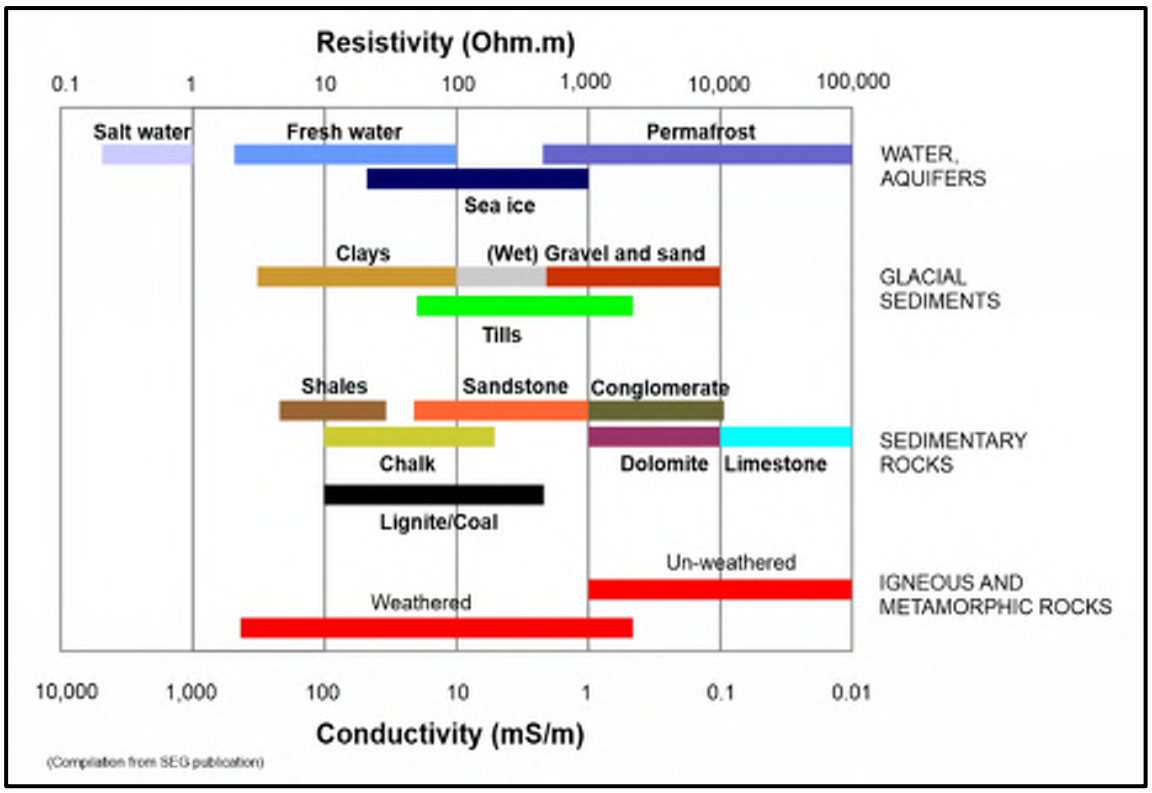


Plate 4 *– Conductivity and resistivity values of common materials*

The in-phase component is considered more sensitive to the presence of magnetic minerals, which can either be associated with metallic objects or variations within the soil.

Extreme fluctuations in conductivity/in-phase are usually indicative of instrument 'overload' due to interference from metallic features/structures. Theoretically, the higher-frequency datasets resolve shallower features, whilst the lower-frequency results characterise the deeper bulk electromagnetic ground response.

The electromagnetic technique can aid in the identification of a buried shaft/structure either by revealing an anomaly directly associated with differential materials (capping structure/backfill) or by detecting secondary effects of excavation, such as preferential water drainage or subsidiary structures.

4.1.3 Electrical resistivity tomography (ERT) interpretation rationale

The results of the ERT survey are presented as 2D colour-contoured depth profiles illustrating the apparent resistivity of the subsurface. The vertical and horizontal axes display elevation above the ordnance datum (m AOD) and chainage in meters along the profile line. The interpretation of the modelled resistivity sections is based on both published electrical properties of subsurface materials and general relationships (Plate 4), as well as correlation with onsite intrusive information or observations.

In principle, an increase in resistivity usually indicates a relative decrease in clay content or in groundwater (contamination) saturation. However, due to the non-uniqueness of electrical properties (i.e., different materials can exhibit the same resistivity), the final interpretation may be limited and require additional calibration (e.g., drilling or other supplementary geophysical techniques).

The resolution of the ERT survey is subjective, as it depends on a combination of electrode spacing, electrode array type, and resistivity contrast. The main underlying principle is that the resolution decreases exponentially with depth. If the target geological boundaries are relatively abrupt and exhibit strong electrical contrasts, this should result in sharp resistivity boundaries. However, with variable geology and more transitional boundaries, these resistivity boundaries become more 'blurred'.

The ERT technique can aid in identifying high-wall structures by virtue of a contrast in resistivity between the natural/undisturbed ground and the backfill material.

4.2 Detailed discussion

4.2.1 Magnetic discussion (Figure 3)

The results of the magnetic survey are presented in Figure 3 as colour-contoured plots of the total field and analytical signal of the bottom sensor.

The total field shows a distinct change in magnetic character across the survey area, with the northern part showing a slightly lower magnetic response (green) and the southern part a response at or above background (orange). Given that this change in character does not appear to be confined by the mapped highwall, the magnetics may be responding to reworked material and/or landscaping work.

Immediately west of the drillers' compound, there is a clear linear magnetic feature that appears to mark the boundary between two regions with different magnetic responses. At this stage, it is uncertain whether this is a buried structure or merely a boundary feature.

In addition to highlighting the zone (Z3) of increased response immediately west of the compound, the analytic signal clearly shows several clusters of anomalies across the site extent (Features **Z1-Z12**). Those features within the former open pit are likely to reflect variations in the backfill material. However, those beyond the mapped highwall could be associated with former mine entries or other mining-related activity. Without some form of calibration, it is difficult to differentiate mine-related responses to variations in the made ground/discarded metallic debris.

The full extent of each individual anomaly has been traced as a footprint polygon, with peak amplitude locations shown as points; both are presented in the combined results plot.

4.2.2 Electromagnetic discussion (Figure 4)

The results of the electromagnetic survey are presented as colour-contoured plots of ground conductivity and in-phase response (Figure 4).

The ground conductivity shows significant variation in ground character across the site, which is typical of former open-cast sites. Although there appears to be some alignment between certain responses and the mapped high wall, the overall scatter suggests a possible reworking of materials used to landscape the site post-mine workings.

The northern extent (beyond the compound) generally shows decreased conductivity, suggesting increased granular material and/or decreased moisture. As this seems to correspond to a change in magnetic character as well, a change in the ground cover is likely.

When considering features that apparently align with the highwall, along the western edge of the survey area, there is a distinct conductive zone that suggests a relative increase in clay or moisture content. Similarly, there is a subtle band of more resistive material along the eastern margin of the survey grid, almost sub-parallel to the mapped highwall.

The in-phase plot shows zones of elevated responses that generally correlate with the localised magnetic responses (**Z1-Z12**) and suggest the presence of buried metallic (ferrous) features or debris. However, there is one zone towards the middle of the survey area that does not appear to have a corresponding magnetic response.

4.2.3 Electrical resistivity tomography (ERT) discussion (Figures 5 and 6)

The quality of the ERT data was excellent, and the resulting modelled sections show a good consistency between all five profile lines. The resulting resistivity sections are characterised by contrasting layers and zones of resistivity that reflect the changes in the underlying geology.

It is to be noted that the inclusion of any borehole information will help calibrate the profiles and help refine the interpretations.

ERT 1

This is located at the northern end of the survey area, and due to limited space, the survey line had to be shortened, resulting in reduced depth coverage to up to 15 m bgl. The section shows a simple three-layered model consisting of a thin (~2 m thick) near-surface conductive layer overlying a 5m thick resistive band, which in turn is underlain by a more conductive unit. In a natural setting, this could be interpreted as a clay-rich top layer overlying a sandier/gravelly layer, followed by clay-dominated sediment or weathered mudstone. BH101 (8.16 m southwest of the line) confirms that the middle resistive band is likely glacial till material overlying natural bedrock of mudstones and siltstones.

The key observation for this particular profile line is that there does not seem to be marked lateral transitions in resistivity corresponding to the mapped position of the highwall. Although there is a localised shallowing of the resistance band and subtle step, this does not continue into the lower conductive unit. The absence of defined features could suggest that (i) the highwall does not extend this far, (ii) there is no detectible resistivity contrast, or (iii) it lies beyond the coverage of the profile.

ERT 2

This shows a number of responses that could be associated with the former open pit. Feature ***R2*** (chainage 125 to 170 m) appears to represent a marked zone of lateral discontinuity that extends to depth and corresponds to the position of the mapped highwall. The only slight proviso is that this response may have been distorted to some degree by interference from the shallow metallic material that the magnetic survey picked up (***R1***).

Immediately west of the highwall location, there is a shallow resistive unit that, in section, seems to form a potential 'bench' like feature. The edges of this feature have been flagged as '***S1***' and have been plotted on the combined results plot in Figure 8. BH104 (1.12 m northeast of profile) appears to confirm the presence of a thick made ground layer overlaying the natural bedrock, potentially forming this 'bench' like feature.

ERT 3, 4 and 5

These sections are all very similar and again display several responses that could be associated with the former open pit. There seems to be a broad zone of lateral discontinuity (***R5***) in the vicinity of the mapped position of the highwall, and, in contrast to ERT 2, all three sections show a much more well-defined edge feature (***S2***).

To the west of S2, all three sections exhibit a similar 'bench' like shallow restive unit that extends 30 to 50 m across and up to 8 m deep. The edge of this feature has again been flagged as '***S1***' and plotted on the combined results plot in Figure 8. BH111 (situated 43.86 m southeast of ERT 3) confirms the presence of made ground material forming the potential 'bench' like feature overlaying natural bedrock.

To the east of **R3**, all three sections exhibit a shallow conductive zone (**R4**) that is up to 6 m deep. This could indicate a zone of increased clay/moisture content within the backfill material.

With the assumed backfill material (i.e. to the east of S2), there is a distinct conductive zone (***R6***) on ERT 3 and ERT 4 that appears to form a band and could either reflect a change in the backfill material or remnant structure within the open pit. Although not as prominent on ERT 5, there is still a subtle reduction in resistivity within the assumed backfill material.

4.2.4 Magnetic, electromagnetic and ERT anomaly plot (Figures 7 and 8)

Figure 6 presents a compiled summary plot showing the distribution of anomalous magnetic and electromagnetic in-phase features, along with the positions of their peak responses. Beyond the mapped highwall are some clusters that could be associated with former mine entries or other mining-related activity. However, without some form of calibration, it is difficult to differentiate mine-related responses to variations in the made ground/discarded metallic debris.

Figure 7 highlights the main variations in the conductivity of the shallow subsurface and the extent of key features identified by the ERT survey. Although there appears to be some alignment between certain EM responses and the mapped high wall, the overall scatter suggests a possible reworking of materials used to landscape the site post-mine workings. For the ERT survey, four of the profiles clearly show a zone of lateral discontinuity that appears consistent with a backfilled open pit, and its position generally agrees with the mapped highwall location. However, there does appear to be two distinct elements associated with this zone, namely a shallow ‘bench’ like feature (S1) and a sub-vertical boundary that extends to depth (S2).

To accompany this report, shape files of the anomaly extents of the magnetics and electromagnetics, along with x and y coordinates for the peak of each anomaly (in the form of .csv files), will be supplied, along with a shape file of the proposed mapped highwall location based on the ERT profiles.

5 CONCLUSIONS

- The geophysical survey has provided a non-invasive means for investigating the subsurface with a high degree of spatial coverage. Considering complementary geophysical methods has significantly enhanced the ability to characterise the subsurface, as the techniques are based on different physical principles.

- The magnetic and electromagnetic survey has successfully identified zones of localised anomalous responses, representing areas of interest. These features are present on both sides of the highwall, meaning they may correspond with both mining-related activity or subsequent landscaping activity.

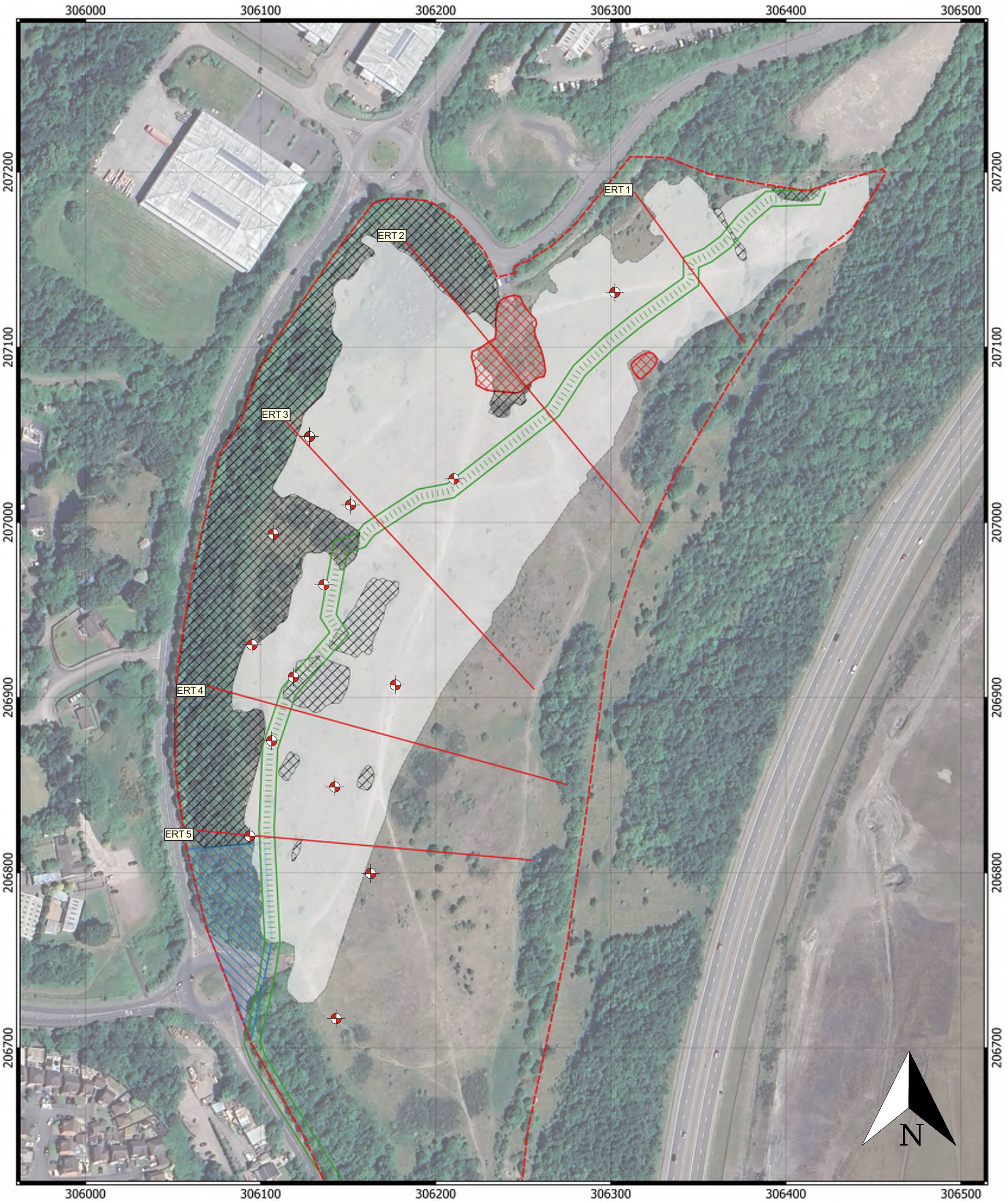
- For the ERT survey, four of the five profiles clearly show a zone of lateral discontinuity that appears consistent with a backfilled open pit, and its position generally agrees with the mapped highwall location. However, there does appear to be two distinct elements associated with this zone, namely a shallow ‘bench’ like feature (S1) and a sub-vertical boundary that extends to depth (S2).

- It is recommended that intrusive work is carried out to ground-truth the anomalies identified by the geophysical survey. Following that process, it may be possible to extend the interpretation further and calibrate the datasets by incorporating the additional information.

Disclaimer

This report represents an opinionated interpretation of the geophysical data. It is intended to guide follow-up invasive investigation. Features that do not produce measurable geophysical anomalies or are hidden by other features may remain undetected. Geophysical surveys complement invasive/destructive methods and provide a tool for investigating the subsurface; they do not produce data that can be taken as representative of all ground conditions within the surveyed area. Areas that have not been surveyed due to obstructed access or any other reason are excluded from the interpretation.

Figures



Map key:

- Obstruction (vegetation/Site compound/drilling equipment
- ERT profile
- Site boundary (provided by Client)
- Indicative high-wall position (provided by the Client)
- Borehole
- Magnetic and EM survey extent
- Site compound/drilling rig

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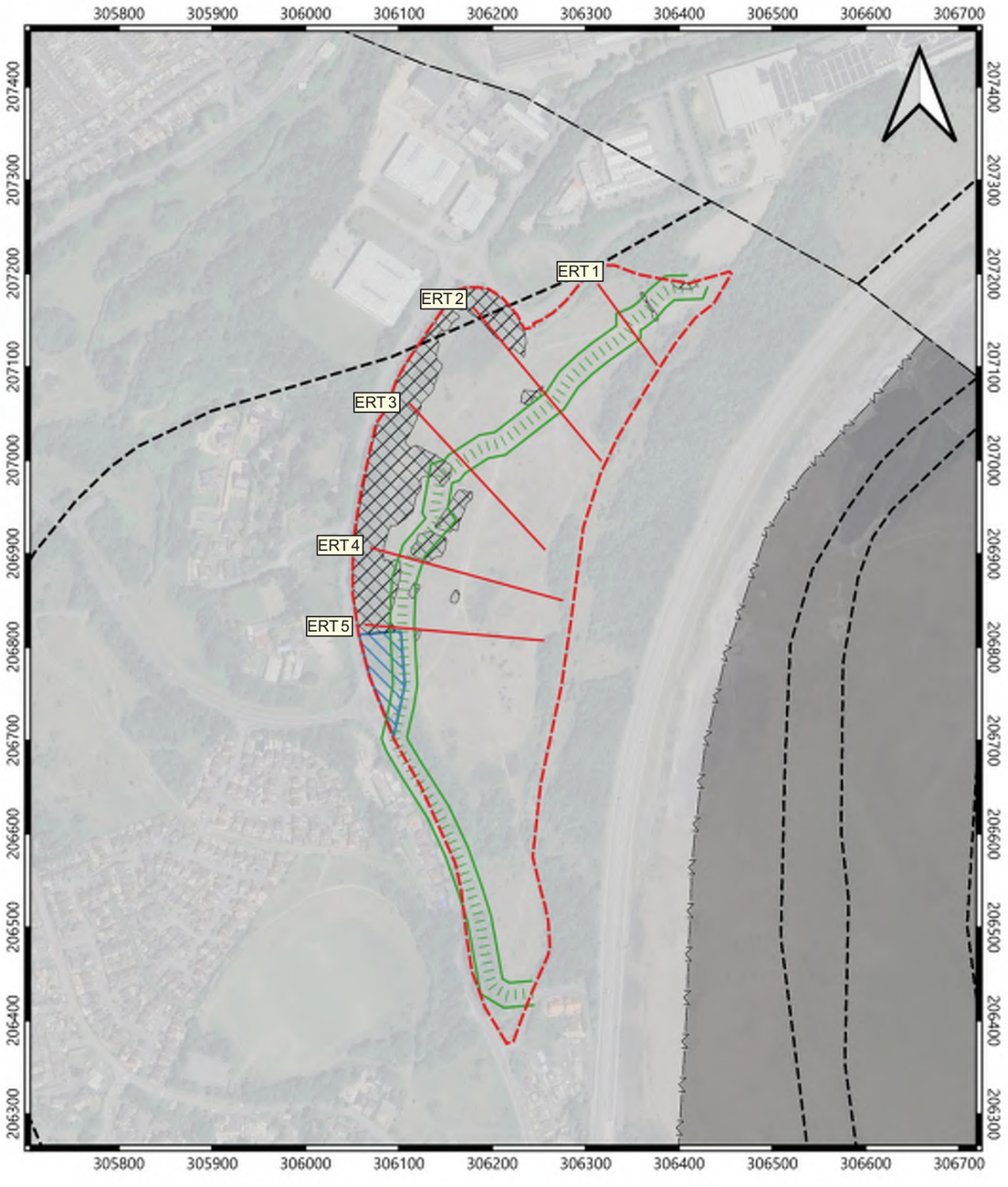
Title: Location plan

Project: Goatmill Road

Scale:	1:2000
Drawn by/Ref:	AT/9740/1
Date:	April 2026

Figure 1

a) Bedrock geology plan



b) Superficial geology plan



Map key:

- Obstruction (vegetation/Site compound/drilling equipment)
- ERT profile
- Site boundary (provided by Client)
- Indicative high-wall position (provided by the Client)
- Bell pits

Geology key:

Bedrock geology:

- South Wales Middle Coal Measures Formation (Mud, silt and sandstones)
- South Wales Lower Coal Measures Formation (Mud, silt and sandstones)

Linear features:

- Coal seam, inferred
- Coal seam, observed
- Fault, inferred
- Marine band

Superficial geology:

- Till, Devensian-Diamicton
- None

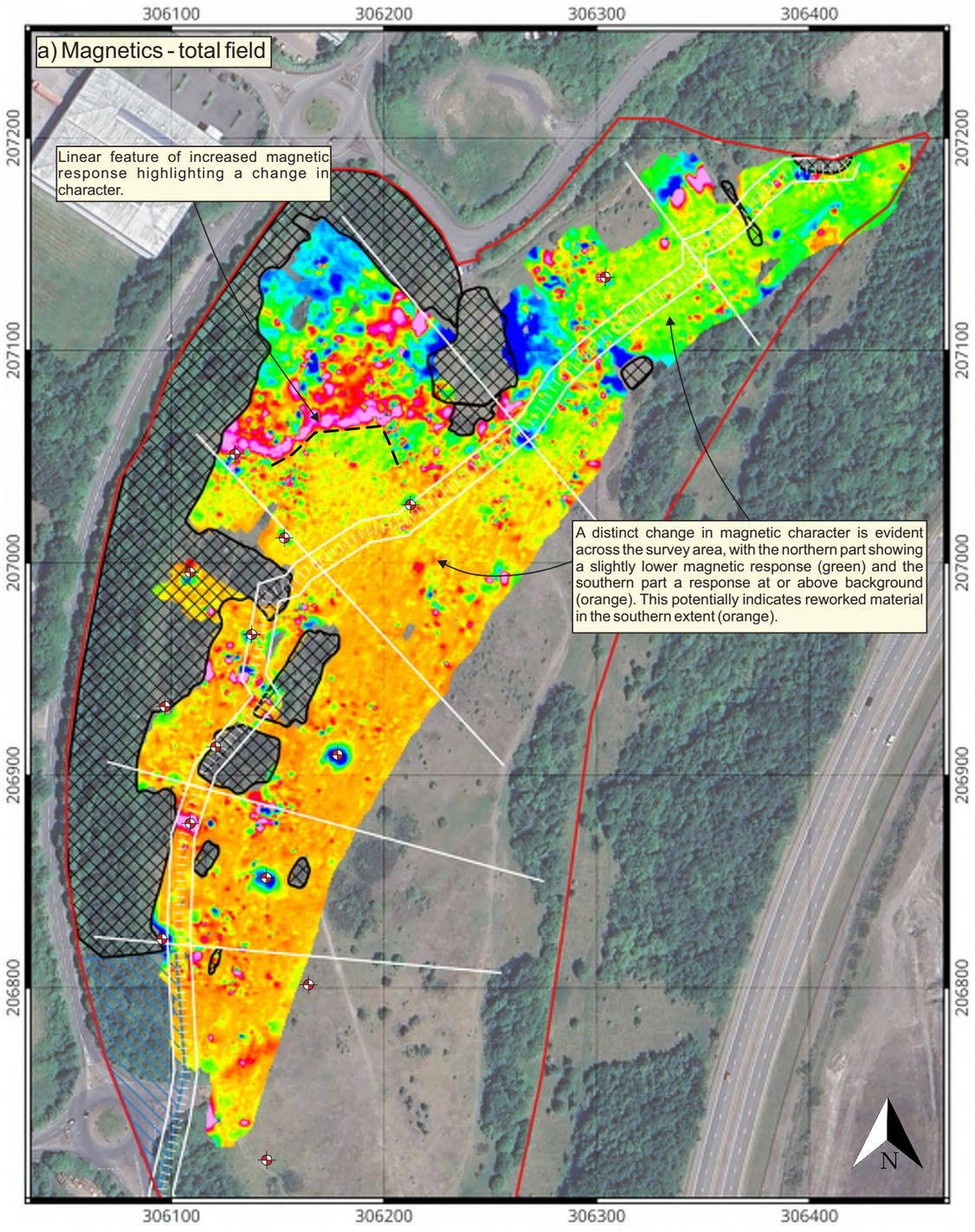
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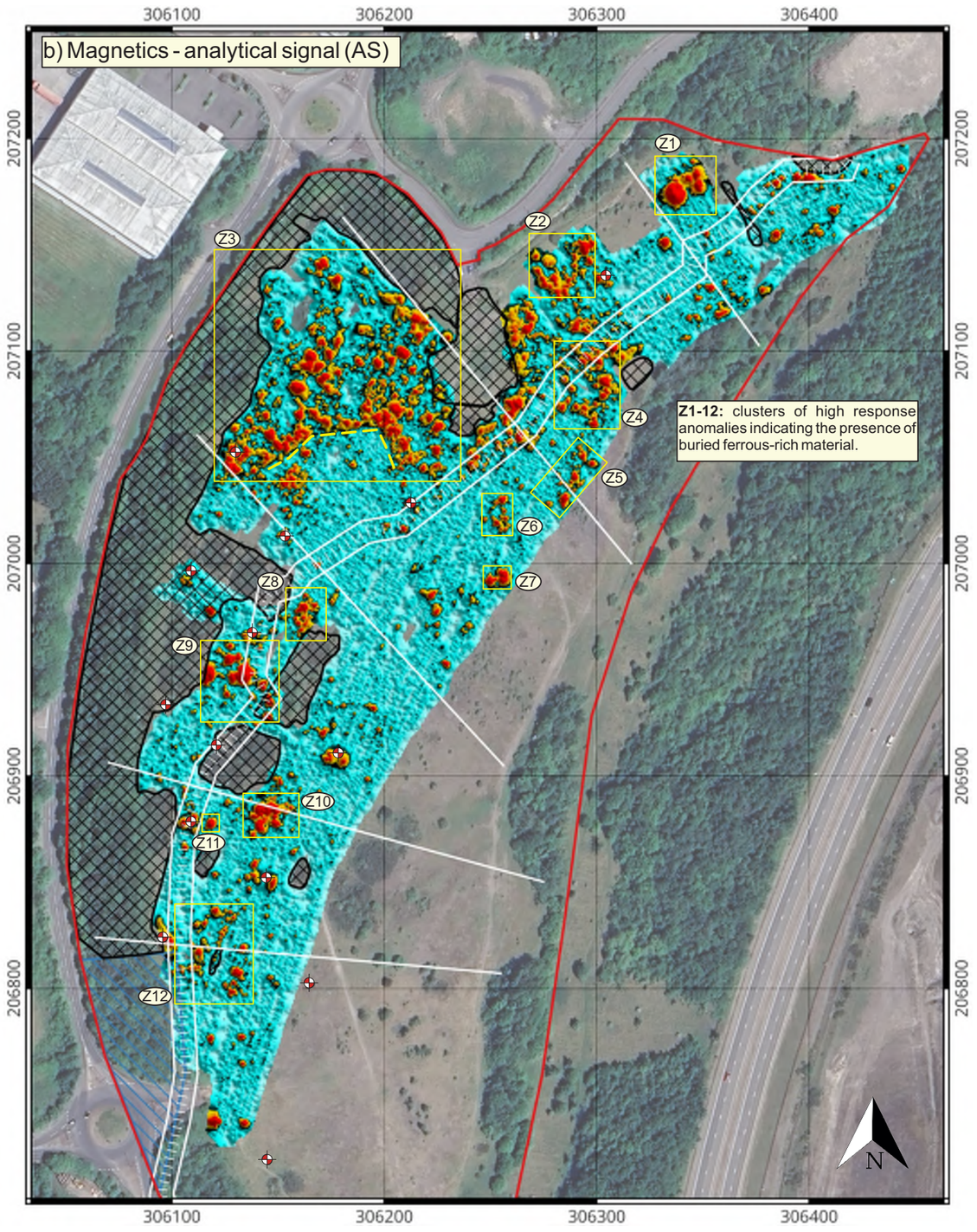
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Project: Goatmill Road

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Date:	April 2026

Figure 2





Map key:

- Obstruction (vegetation/Site compound/drilling equipment)
- ERT profile
- Site boundary (provided by Client)
- Indicative high-wall position (provided by the Client)
- Borehole
- Analytical signal features

Colour scales:

Magnetic - Total Field (nT)

40414 48782 48874 48943 49005 49067 49138 56636

Analytical signal response

0.4 15 23 32 43 56 73 100 155 26118

Notes:

The analytic signal (AS) highlights edges and peaks of magnetic anomalies regardless of source orientation. Strong responses are characteristically produced by buried ferrous material, which has a significantly higher magnetic susceptibility than the surrounding soils and geology.

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down to earth **geophysics**
Tel: +44 (0) 2920 700127
Web:www.terradat.co.uk
Email: web@terradat.co.uk

Title: Magnetics - Total field and analytical signal results

Project: Goatmill Road

Scale:	1:2500
Drawn by/Ref:	AT/9740/3
Date:	April 2026

Figure 3