

**ALLIED EXPLORATION & GEOTECHNICS t/a IGNE**

Unit 25 Stella Gill Industrial Estate , Pelton Fell

Chester-le-Street , Co Durham DH2 2RG

a UKAS TESTING Laboratory No.1367

DETERMINATION OF PERMEABILITY IN TRIAXIAL CELL

BS 1377 Part 6 1990

SITE: Woodhouse Gate Farm - Permeability Testing**JOB No:** SLS1630**CLIENT:** Woodhouse Gate Farm**Type of specimen:** Remoulded
(2.5kg rammer)
n/a**Sample No:** Sample / B05**Depth (m):** 0.00**Specific Depth (m):**

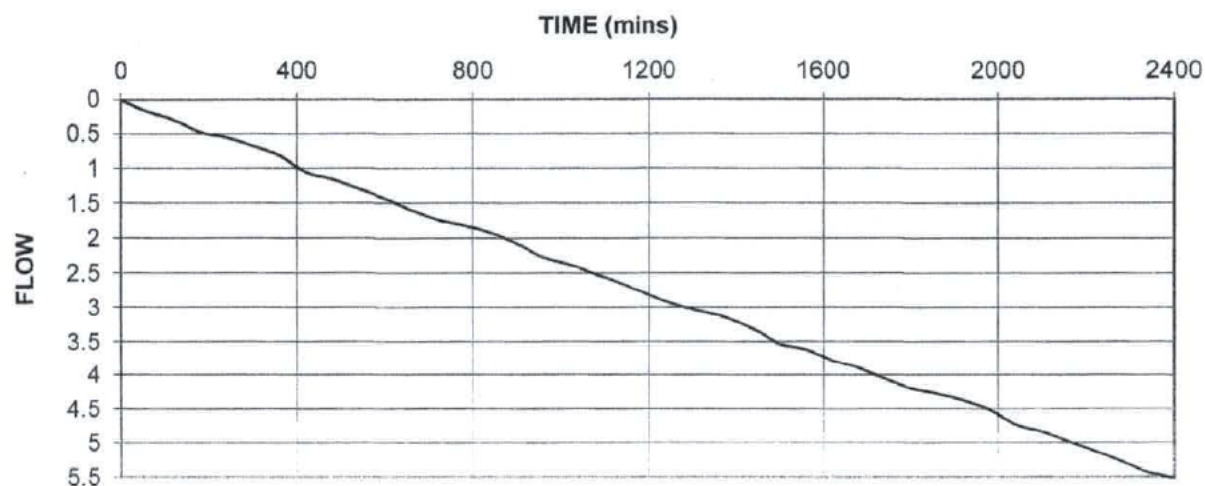
For sample description please refer to sample description sheet.

SPECIMEN DETAILS:

		INITIAL	FINAL
Length	mm	121.2	120.2
Diameter	mm	102.2	101.6
Moisture Content	%	23	21
Wet Density	Mg/m ³	2.03	2.05
Dry Density	Mg/m ³	1.65	1.69

DEGREE OF SATURATION: % 99.4**PERMEABILITY :**

Cell Pressure	kPa	350
Top Back Pressure	kPa	300
Base Back Pressure	kPa	330
Mean Effective Stress	kPa	35
Mean Flow Rate	ml/min	0.002280
Permeability	m/sec	1.83E-10

**TEST DURATION:** 4 Days**DATE TESTED:** 01/05/2026**DATE OF ISSUE:** 07/05/2026**APPROVED BY:****NAME:**

M Selkirk

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BS 1377 Part 6 1990

SITE: Woodhouse Gate Farm - Permeability Testing**JOB No:** SLS1630**CLIENT:** Woodhouse Gate Farm**Type of specimen:** Remoulded
(2.5kg rammer)**Sample No:** Sample / B04**Depth (m):** 0.00**Specific Depth (m):** n/a

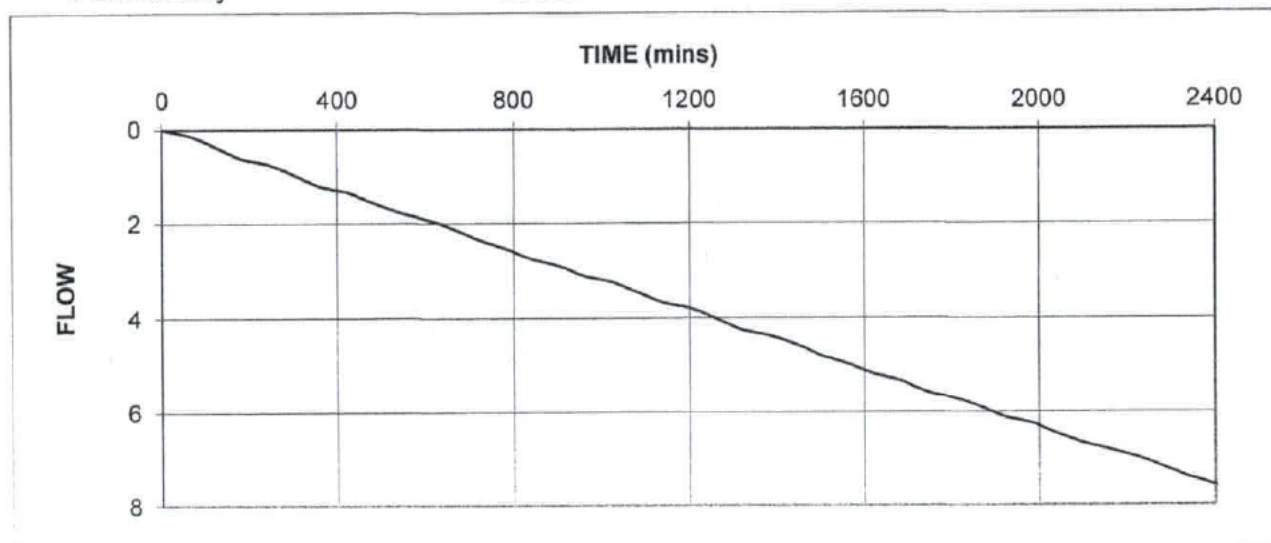
For sample description please refer to sample description sheet.

SPECIMEN DETAILS:

		INITIAL	FINAL
Length	mm	121.0	119.5
Diameter	mm	103.1	102.3
Moisture Content	%	21	20
Wet Density	Mg/m ³	2.04	2.08
Dry Density	Mg/m ³	1.69	1.73

DEGREE OF SATURATION: % 99.9**PERMEABILITY :**

Cell Pressure	kPa	350
Top Back Pressure	kPa	300
Base Back Pressure	kPa	330
Mean Effective Stress	kPa	35
Mean Flow Rate	ml/min	0.003127
Permeability	m/sec	2.46E-10

**TEST DURATION:** 4 Days**DATE TESTED:** 27/04/2026**DATE OF ISSUE:** 05/05/2026**APPROVED BY:****NAME:**

M Selkirk

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DETERMINATION OF PERMEABILITY IN TRIAXIAL CELL

BS 1377 Part 6 1990

SITE: Woodhouse Gate Farm - Permeability Testing**JOB No:** SLS1630**CLIENT:** Woodhouse Gate Farm**Type of specimen:**Remoulded
(2.5kg rammer)
n/a**Sample No:** Sample / B03**Depth (m):** 0.00**Specific Depth (m):**

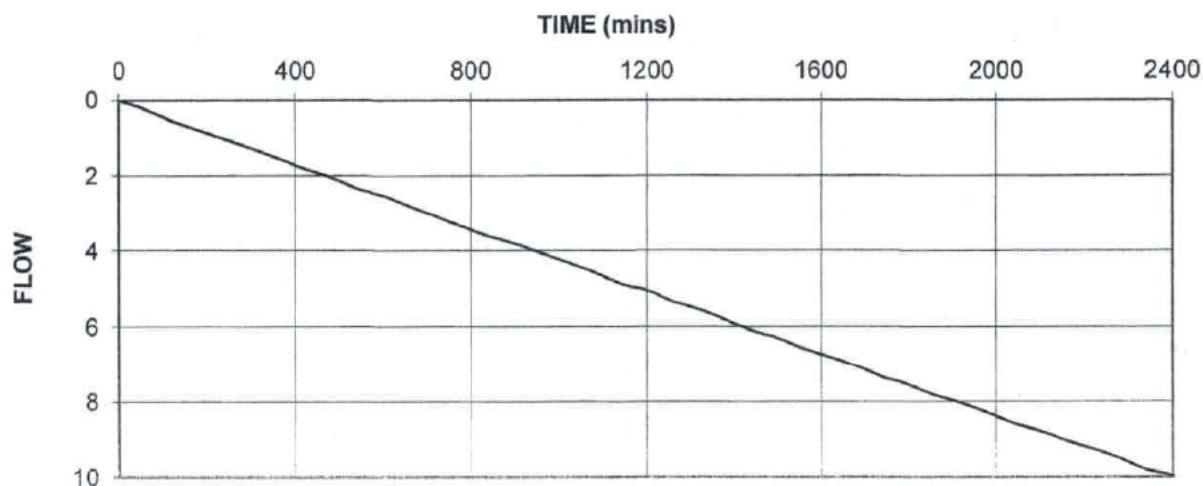
For sample description please refer to sample description sheet.

SPECIMEN DETAILS:

		INITIAL	FINAL
Length	mm	121.5	121.0
Diameter	mm	102.0	99.1
Moisture Content	%	28	25
Wet Density	Mg/m ³	1.92	2.00
Dry Density	Mg/m ³	1.50	1.60

DEGREE OF SATURATION: % 99.9**PERMEABILITY :**

Cell Pressure	kPa	350
Top Back Pressure	kPa	300
Base Back Pressure	kPa	330
Mean Effective Stress	kPa	35
Mean Flow Rate	ml/min	0.004127
Permeability	m/sec	3.33E-10

**TEST DURATION:** 4 Days**DATE TESTED:** 27/04/2026**DATE OF ISSUE:** 05/05/2026**APPROVED BY:****NAME:**

M Selkirk

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DETERMINATION OF PERMEABILITY IN TRIAXIAL CELL

BS 1377 Part 6 1990

SITE: Woodhouse Gate Farm - Permeability Testing**JOB No:** SLS1630**CLIENT:** Woodhouse Gate Farm**Type of specimen:**Remoulded
(2.5kg rammer)
n/a**Sample No:** Sample / B02**Depth (m):** 0.00**Specific Depth (m):**

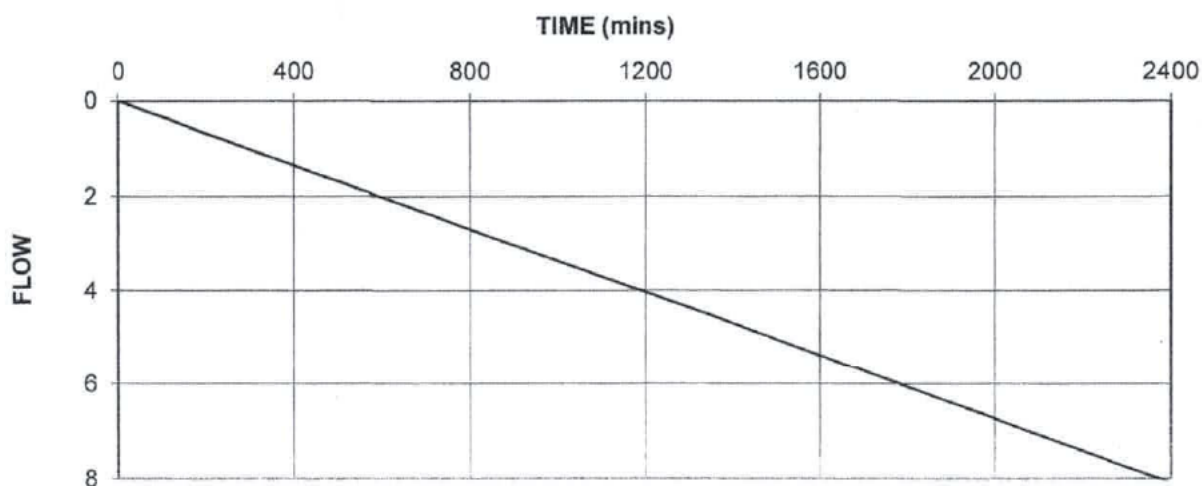
For sample description please refer to sample description sheet.

SPECIMEN DETAILS:

		INITIAL	FINAL
Length	mm	120.4	120.2
Diameter	mm	103.0	102.7
Moisture Content	%	22	21
Wet Density	Mg/m ³	2.03	2.03
Dry Density	Mg/m ³	1.67	1.68

DEGREE OF SATURATION: % 94.6**PERMEABILITY :**

Cell Pressure	kPa	350
Top Back Pressure	kPa	300
Base Back Pressure	kPa	330
Mean Effective Stress	kPa	35
Mean Flow Rate	ml/min	0.003367
Permeability	m/sec	2.64E-10

**TEST DURATION:** 4 Days**DATE TESTED:** 22/04/2026**DATE OF ISSUE:** 28/04/2026**APPROVED BY:****NAME:**

M Selkirk

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DETERMINATION OF PERMEABILITY IN TRIAXIAL CELL

BS 1377 Part 6 1990

SITE: Woodhouse Gate Farm - Permeability Testing**JOB No:** SLS1630**CLIENT:** Woodhouse Gate Farm**Type of specimen:**Remoulded
(2.5kg rammer)**Sample No:** Sample / B01**Depth (m):** 0.00**Specific Depth (m):**

n/a

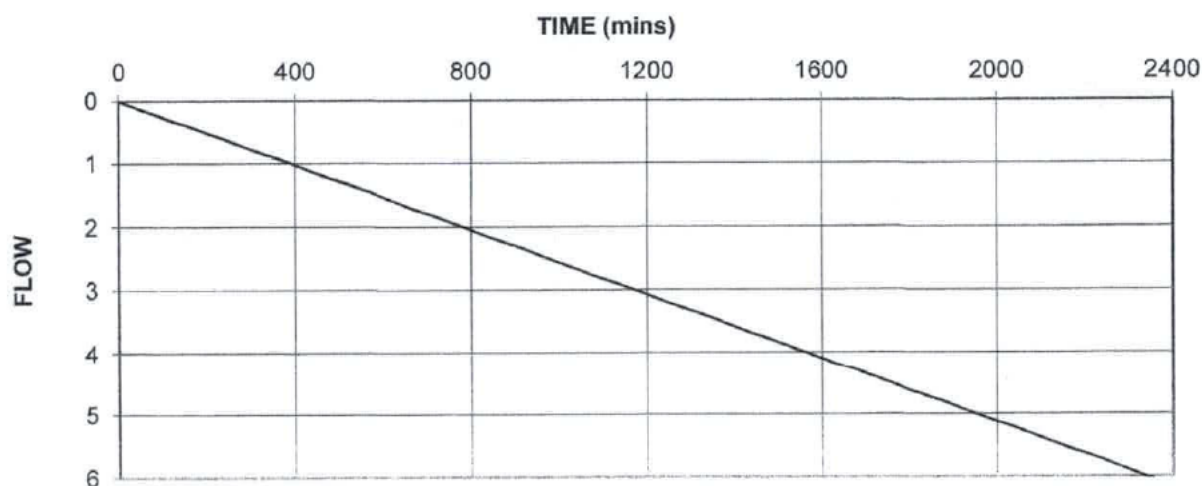
For sample description please refer to sample description sheet.

SPECIMEN DETAILS:

		INITIAL	FINAL
Length	mm	121.4	119.8
Diameter	mm	103.4	102.2
Moisture Content	%	22	21
Wet Density	Mg/m ³	2.00	2.05
Dry Density	Mg/m ³	1.64	1.70

DEGREE OF SATURATION: % 98.1**PERMEABILITY :**

Cell Pressure	kPa	350
Top Back Pressure	kPa	300
Base Back Pressure	kPa	330
Mean Effective Stress	kPa	35
Mean Flow Rate	ml/min	0.002560
Permeability	m/sec	2.01E-10

**TEST DURATION:** 4 Days**DATE TESTED:** 22/04/2026**DATE OF ISSUE:** 28/04/2026**APPROVED BY:****NAME:**

M Selkirk

ALLIED EXPLORATION & GEOTECHNICS LIMITED t/a IGNE

Unit 25 Stella Gill Industrial Estate, Pelton Fell, Chester-le-Street, Co. Durham, DH2 2RG - Tel: 0191 387 4700

LABORATORY SAMPLE DESCRIPTION SHEET

Exploratory Hole No.	Sample Depth (m)	ID	Description	Laboratory Tests/Remarks
Sample	0.00	B01	Brown slightly sandy slightly gravelly CLAY.	PTXL
Sample	0.00	B02	Brown slightly sandy slightly gravelly CLAY.	PTXL
Sample	0.00	B03	Brown slightly sandy slightly gravelly CLAY.	PTXL
Sample	0.00	B04	Brown slightly sandy slightly gravelly CLAY.	PTXL
Sample	0.00	B05	Brown slightly sandy slightly gravelly CLAY.	PTXL

Contract Title :-
Woodhouse Gate Farm - Permeability Testing

Client :-
Woodhouse Gate Farm

	Signed :- 	Name :- Michelle Selkirk (Laboratory Manager)	Page 1 of 1	
	Date of issue :- 08/05/2026	Certificate No :- SD/SLS1630/1	Contract No. :- SLS1630	

ALLIED EXPLORATION AND GEOTECHNICS t/a IGNE

LABORATORY REPORT CERTIFICATE

ABBREVIATIONS

B	Large disturbed (bulk) sample	OED	One Dimensional Consolidation
CBR	California Bearing Ratio	PCH	Permeability Constant Head
CDT	Consolidated Drained Triaxial	PD	Particle Density
CP2	Dry Density/Moisture Content 2.5kg	PFH	Permeability Falling Head
CP4	Dry Density/Moisture Content 4.5kg	PI	Atterberg Limits
CPV	Dry Density/Moisture Content vibrating	PL	Point Load
CUT	Consolidated Undrained Triaxial	PSD	Particle Size Distribution (sieve)
D	Small disturbed (jar) sample	PTXL	Permeability in Triaxial Cell
ES	Environmental sample	R	Remoulded
GC	Geochemical Testing	SB	Shear Box
HSV	Hand Shear Vane	SED	Sedimentation by Pipette
IS	Insufficient sample for test	U	Undisturbed sample
L	Liner sample	US	Unsuitable sample for test
M	Multi-stage testing	UUT	Undrained Unconsolidated Triaxial
MC	Moisture Content		
MCV	Moisture Content Value		

Typical Mode of Failure for Triaxial Testing

Brittle (BR)



Compound (C)



Plastic (P)



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LABORATORY REPORT CERTIFICATE

ENCLOSURES

Enclosure Number	Description	UKAS Accredited	Reference	No. of Pages
0	Laboratory Report Certificate	N/A		3
1	Sample Description Sheets	N/A		1
2	Permeability in Triaxial Cell	Yes	BS1377 Part 6 1990	5



1367



ALLIED EXPLORATION AND GEOTECHNICS t/a IGNE

LABORATORY REPORT CERTIFICATE

Contract Title: Woodhouse Gate Farm

Contract Number: SLS1630

Client Address: Woodhouse Gate Farm

We certify that Laboratory testing was carried out on samples from the above contract in accordance with techniques outlined in BS 1377: 1990, BS EN ISO 17892:2014 or other appropriate standards as quoted. The samples were received on 25th March 2026 and the following results, given on the attached enclosures, were obtained.

The tests carried out are indicated in the attached table showing the enclosure number and the total number of pages.

For and on behalf of Allied Exploration & Geotechnics Limited t/a Igne



Michelle Selkirk (Laboratory Manager)



Graeme Scaife (Assistant Laboratory Manager)



Signed

Date: 08 May 2026

Tests marked not UKAS accredited in this certificate are not included in the UKAS accreditation schedule for our laboratory. Any opinions and interpretations expressed herein are outside the scope of the laboratory's UKAS accreditation. The results reported relate to samples received in the laboratory only. This report should not be reproduced except in full without the written approval of the laboratory.

Please note the material was derived from samples taken outside the control of the laboratory.

Woodhouse Gate – Test Holes











