TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

White Rock GeoEnvironmental Ltd.
597 Walsall Road,
Great Wyrley
Staffs.
WS6 6AE

For the attention of Mr. S. LeLuan

Report No: C5871
Issue No 04

LABORATORY TEST REPORT

Project Name	**PARRYS QUARRY, SOURCE 1 - CELL 1**		
Project Number	**C5871**	Date samples received	31/10/2016
Your Ref		Date written instructions received	31/10/2016
Purchase Order	PO_014_01_Cell 1_Terratek	Date testing commenced	13/12/2017

Please find enclosed the results as summarised below

Item No	Test Quantity	Description	ISO 17025 Accredited
6.31	4	Triaxial permeability	Yes

Remarks : This completes the testing for this schedule.

Issued by : L. Anaz Date of Issue : 03/01/2017

Approved Signatories : L. A. 03/01/2017

G Wilson (JMD/Laboratories Director), M D Brown (Quality Manager), L Anaz (Supervisor), Julie Hopkins (Administrator), A Davison (Supervisor)

Key to symbols used in this report
S/C : Testing was sub-contracted

Unless we are notified to the contrary, samples will be disposed after a period of one month from this date.
The results reported relate to samples received in the laboratory only.
All results contained in this report are provisional unless signed by an approved signatory
This report should not be reproduced except in full without the written approval of the laboratory.
Under multisite accreditation the testing contained in this report may have been performed at another Terra Tek laboratory.
The enclosed results remain the property of Terra Tek Limited and we reserve the right to withdraw
our report if we have not received cleared funds in accordance with our standard terms and conditions
Only those results indicated in this report are UKAS accredited and any opinions or interpretations expressed are outside the scope of UKAS accreditation.
Feedback on the this report may be left via our website www.terratek.co.uk/contact-us

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME
UKAS TESTING 0126
25 YEARS 1990-2015

Unit 2 Springfield Road, Chesham, Bucks, HP51PW
Tel: +44 (0)1494 810 136 Fax: +44 (0)1494 784 837
chesham@terratek.co.uk
www.terratek.co.uk
Terra Tek Ltd is registered in Scotland No. 121594
Offices in Airdrie, Birmingham, Belfast and Chesham
Head Office : 62 Rochsolloch Road, Airdrie, ML6 9BG

Description: Firm intact reddish brown slightly sandy slightly gravelly CLAY. Gravel is fine to medium

Sample Details:	Initial:	Final:
Diameter:	100.1 mm	99.3 mm
Height:	101.6 mm	100.8 mm
Moisture content:	15.7 %	15.8 %
Bulk density:	2.20 Mg/m³	2.25 Mg/m³
Dry density:	1.90 Mg/m³	1.94 Mg/m³
Sample condition:	Undisturbed	

Saturation Stage: (Saturation by increments of cell pressure and back pressure)

Initial pore pressure coefficient, B:	0.55
Final pore pressure coefficient, B:	0.97
Duration of stage:	4 days

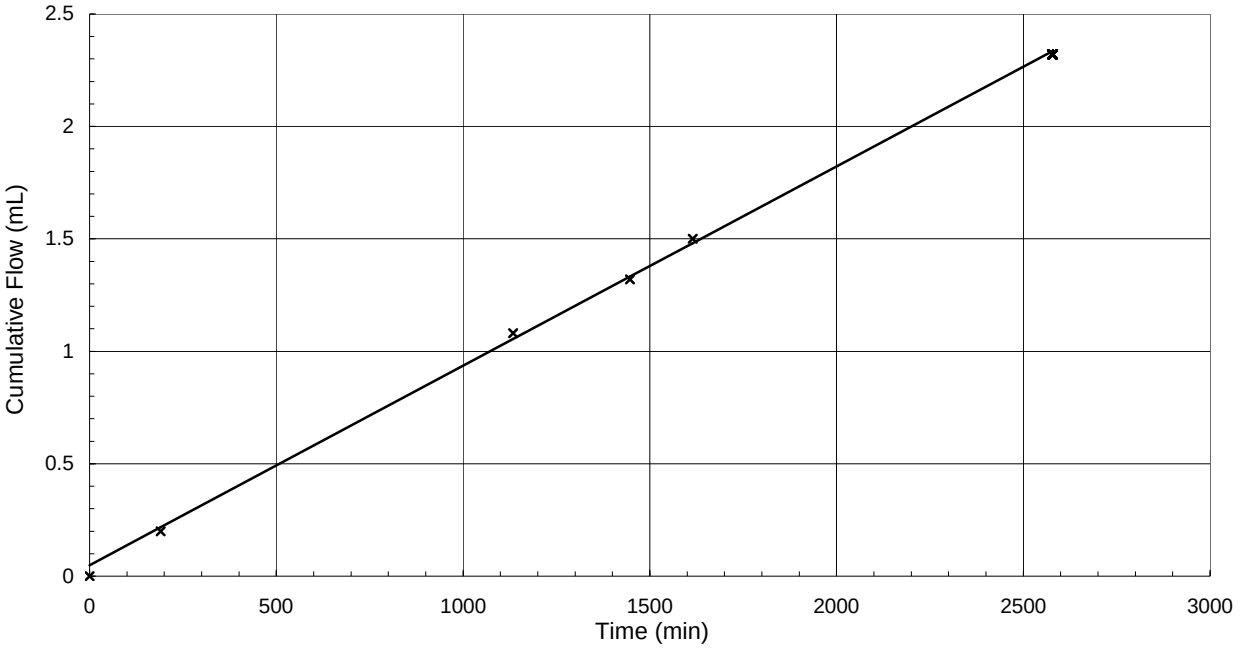
Consolidation stage:

Drainage condition:	Double end drainage
Effective pressure:	100 kPa
Duration of stage:	1 day

Permeability stage:

Pressure difference across specimen:	20 kPa
Mean effective stress:	100 kPa
Duration of stage:	2 days

Coefficient of permeability at 20°C, Kv: 9.5×10^{-11} m/s



Originator	Checked & Approved
MB	03/01/2017

PERMEABILITY IN A TRIAXIAL CELL

BS1377 : Part 6 : Clause 6 : 1990

Permeability under constant head conditions in a triaxial cell

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	PARRYS QUARRY, SOURCE 1 - CELL 1	**Contract No.**	**C5871**
		Date Sampled	27/10/2016
Client	White Rock GeoEnvironmental Ltd.	Sample Ref	SWTL1/L1/04 P
Engineer	-	Sample Type	CC

Description: Firm intact reddish brown slightly sandy slightly gravelly CLAY. Gravel is fine to medium

Sample Details:	Initial:	Final:
Diameter:	99.9 mm	99.0 mm
Height:	101.1 mm	100.2 mm
Moisture content:	18.7 %	16.4 %
Bulk density:	2.23 Mg/m³	2.25 Mg/m³
Dry density:	1.88 Mg/m³	1.93 Mg/m³
Sample condition:	Undisturbed	

Saturation Stage: (Saturation by increments of cell pressure and back pressure)

Initial pore pressure coefficient, B:	0.64
Final pore pressure coefficient, B:	0.98
Duration of stage:	6 days

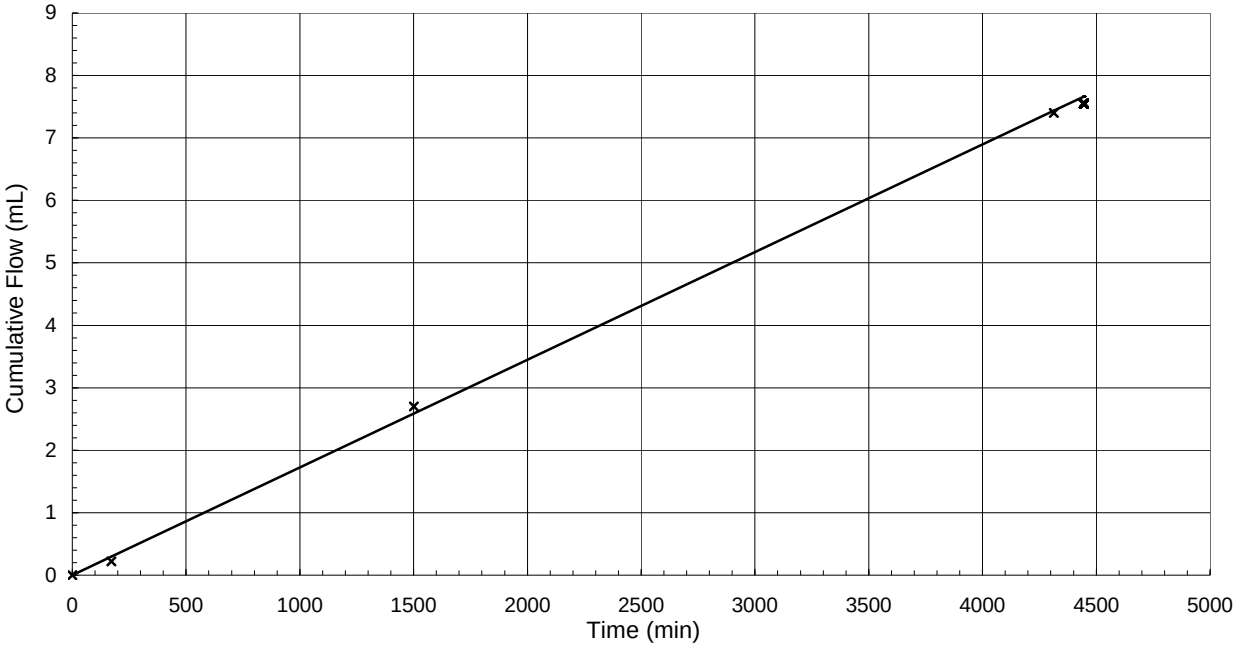
Consolidation stage:

Drainage condition:	Double end drainage
Effective pressure:	100 kPa
Duration of stage:	1 day

Permeability stage:

Pressure difference across specimen:	20 kPa
Mean effective stress:	100 kPa
Duration of stage:	2 days

Coefficient of permeability at 20°C, Kv: 1.9×10^{-10} m/s



Originator	Checked & Approved
MB	03/01/2017

PERMEABILITY IN A TRIAXIAL CELL

BS1377 : Part 6 : Clause 6 : 1990

Permeability under constant head conditions in a triaxial cell

TERRA TEK SITE INVESTIGATION AND LABORATORY SERVICES

Site	PARRYS QUARRY, SOURCE 1 - CELL 1	**Contract No.**	**C5871**
Client	White Rock GeoEnvironmental Ltd.	Date Sampled	27/10/2016
Engineer	-	Sample	SWTL1/L2/06 P
		Sample Type	CC

Description: Firm intact reddish brown slightly sandy slightly gravelly CLAY. Gravel is fine to medium

Sample Details:	Initial:	Final:
Diameter:	100.1 mm	99.2 mm
Height:	101.2 mm	100.3 mm
Moisture content:	13.2 %	15.0 %
Bulk density:	2.17 Mg/m³	2.27 Mg/m³
Dry density:	1.92 Mg/m³	1.97 Mg/m³
Sample condition:	Undisturbed	

Saturation Stage: (Saturation by increments of cell pressure and back pressure)

Initial pore pressure coefficient, B:	0.77
Final pore pressure coefficient, B:	0.97
Duration of stage:	4 days

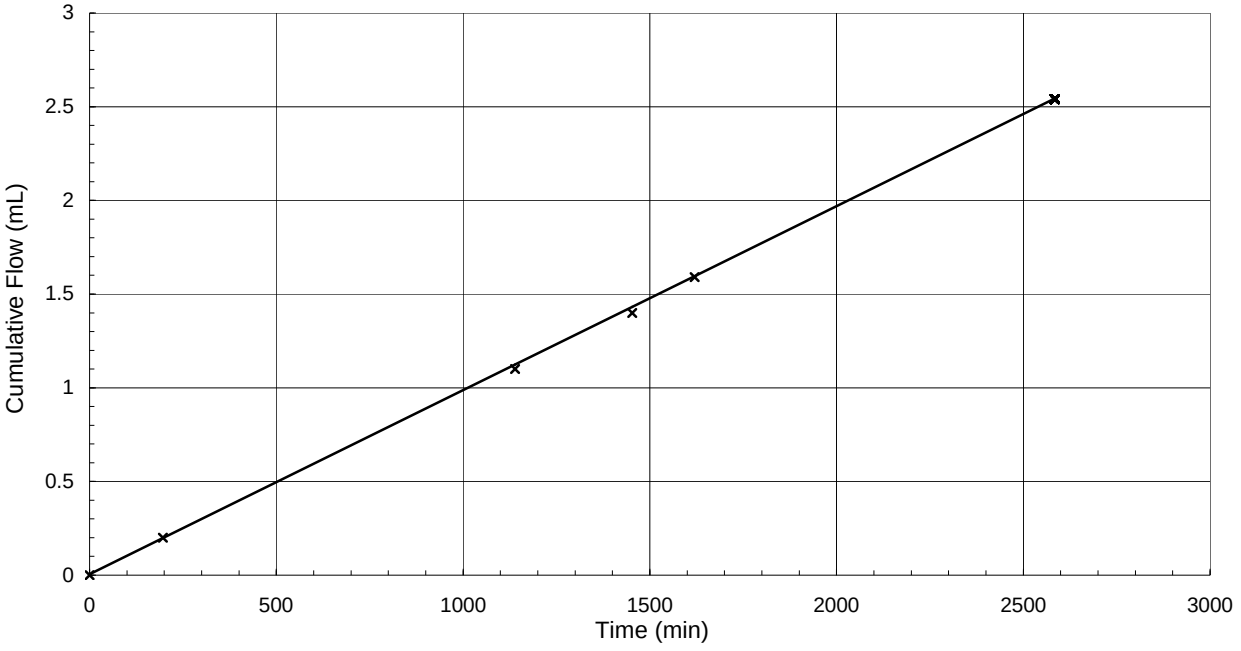
Consolidation stage:

Drainage condition:	Double end drainage
Effective pressure:	100 kPa
Duration of stage:	1 day

Permeability stage:

Pressure difference across specimen:	20 kPa
Mean effective stress:	100 kPa
Duration of stage:	2 days

Coefficient of permeability at 20°C, Kv: 1.0×10^{-10} m/s



Originator	Checked & Approved
MB	03/01/2017

PERMEABILITY IN A TRIAXIAL CELL

BS1377 : Part 6 : Clause 6 : 1990

Permeability under constant head conditions in a triaxial cell

Description: Firm intact reddish brown slightly sandy slightly gravelly CLAY. Gravel is fine to medium

Sample Details:	Initial:	Final:
Diameter:	100.2 mm	99.1 mm
Height:	101.2 mm	100.1 mm
Moisture content:	14.3 %	15.4 %
Bulk density:	2.13 Mg/m³	2.23 Mg/m³
Dry density:	1.86 Mg/m³	1.93 Mg/m³
Sample condition:	Undisturbed	

Saturation Stage: (Saturation by increments of cell pressure and back pressure)

Initial pore pressure coefficient, B:	0.50
Final pore pressure coefficient, B:	1.00
Duration of stage:	4 days

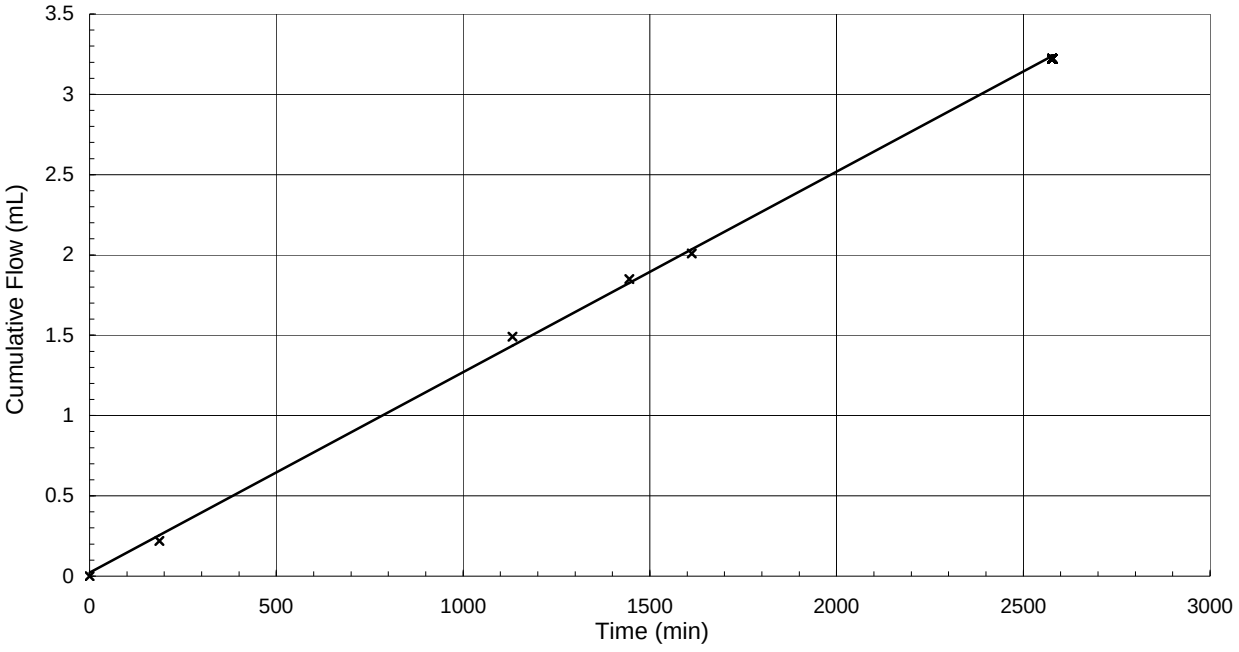
Consolidation stage:

Drainage condition:	Double end drainage
Effective pressure:	100 kPa
Duration of stage:	1 day

Permeability stage:

Pressure difference across specimen:	20 kPa
Mean effective stress:	100 kPa
Duration of stage:	2 days

Coefficient of permeability at 20°C, Kv: 1.3×10^{-10} m/s



Originator	Checked & Approved
MB	03/01/2017

PERMEABILITY IN A TRIAXIAL CELL

BS1377 : Part 6 : Clause 6 : 1990

Permeability under constant head conditions in a triaxial cell