Appendix D2

Geotechnical investigations:

RMS Factual Geotechnical Investigation Report

coffey information
SPECIALISTS IN SCIENTIFIC TESTING SOLUTIONS

Job No: **INFOLCOV00959AA**

Consolidation Test

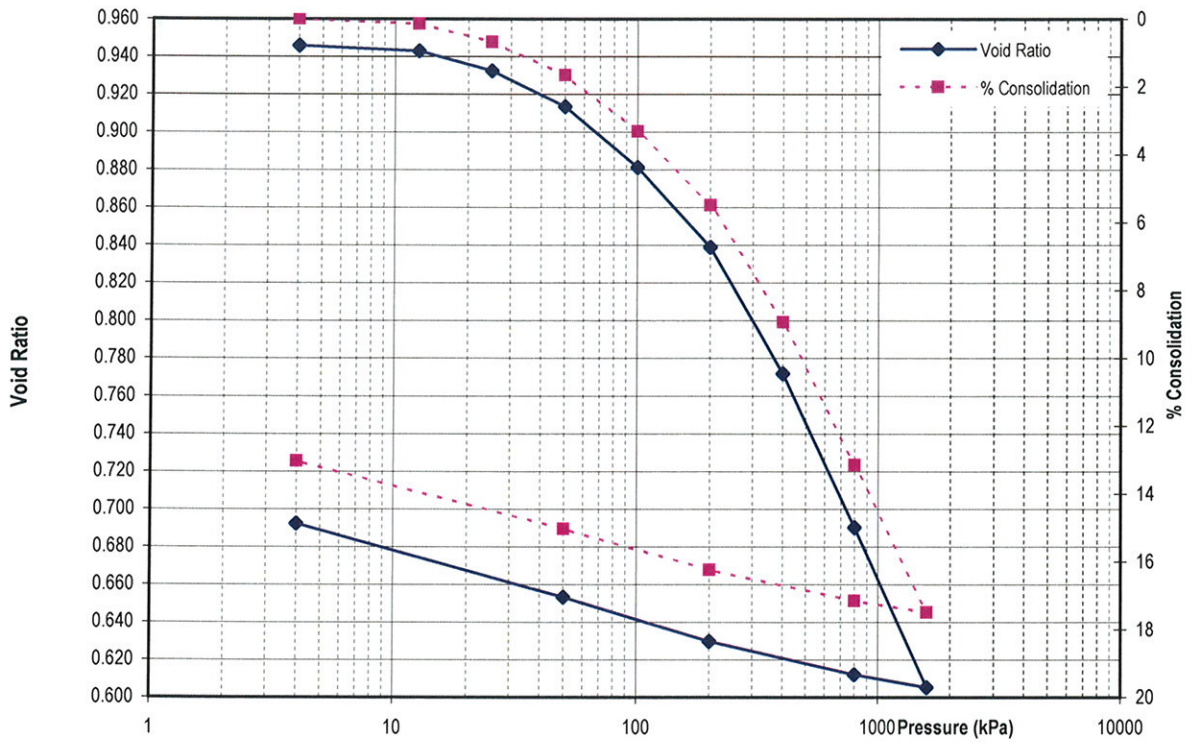
Sheet 1 of 1

Client:	ROADS AND MARITIME SERVICES, SOUTHERN REGION	Office:	SYDNEY
Principal:	ROADS AND MARITIME SERVICES, SOUTHERN REGION	Date:	21/5/2012
Project:	BERRY BYPASS	By:	GKC
Location:	PRINCES HIGHWAY	Checked:	GKC

Test Procedure:	AS1289 6.6.1				
Borehole:	B5	Depth:	1.05 to 1.55 m	Report No:	IOLT 5559
Sample No.	B5	Laboratory No's	LCOV12S-00422	Sample Type:	Undisturbed
Material Description:	(SC) CLAYEY SAND - fine to coarse, mottled brown, fines of high plasticity.				

Initial Dry Density (t/m^3):	1.36	Initial Moisture Content (%):	35.1	Initial Degree of Saturation (%):	97.6
Soil Particle Density (t/m^3):	2.65	Final Moisture Content (%):	28.0	Initial Specimen Height (mm):	20.023

Pressure Range (kPa)		Void Ratio		Consolidation	c_v	m_v	C_c	C_α
From	To	at start of load increment	at end of load increment	(%)	m^2/year	m^2/kN		
4	12.5	0.946	0.943	0.150	1.26538	0.00018	0.00589	
12.5	25	0.943	0.932	0.689	1.82883	0.00043	0.03486	
25	50	0.932	0.913	1.663	5.08850	0.00039	0.06295	
50	100	0.913	0.881	3.321	8.00377	0.00034	0.10718	
100	200	0.881	0.839	5.494	5.23385	0.00022	0.14043	
200	400	0.839	0.772	8.945	7.52972	0.00018	0.22307	
400	800	0.772	0.690	13.145	5.37089	0.00012	0.27149	
800	1600	0.690	0.605	17.500	5.28685	0.00006	0.28150	
1600	800	0.605	0.612	17.155				
800	200	0.612	0.630	16.246				
200	50	0.630	0.653	15.043				
50	4	0.653	0.692	13.035				



GLEN-CONS RPT-001-2010

Lane Cove West Laboratory - Accreditation No. 431

This document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025
The results of the tests, calibrations, and/or measurements included in this document are traceable to Australian/national standards

Garry K Collins

Approved Signatory

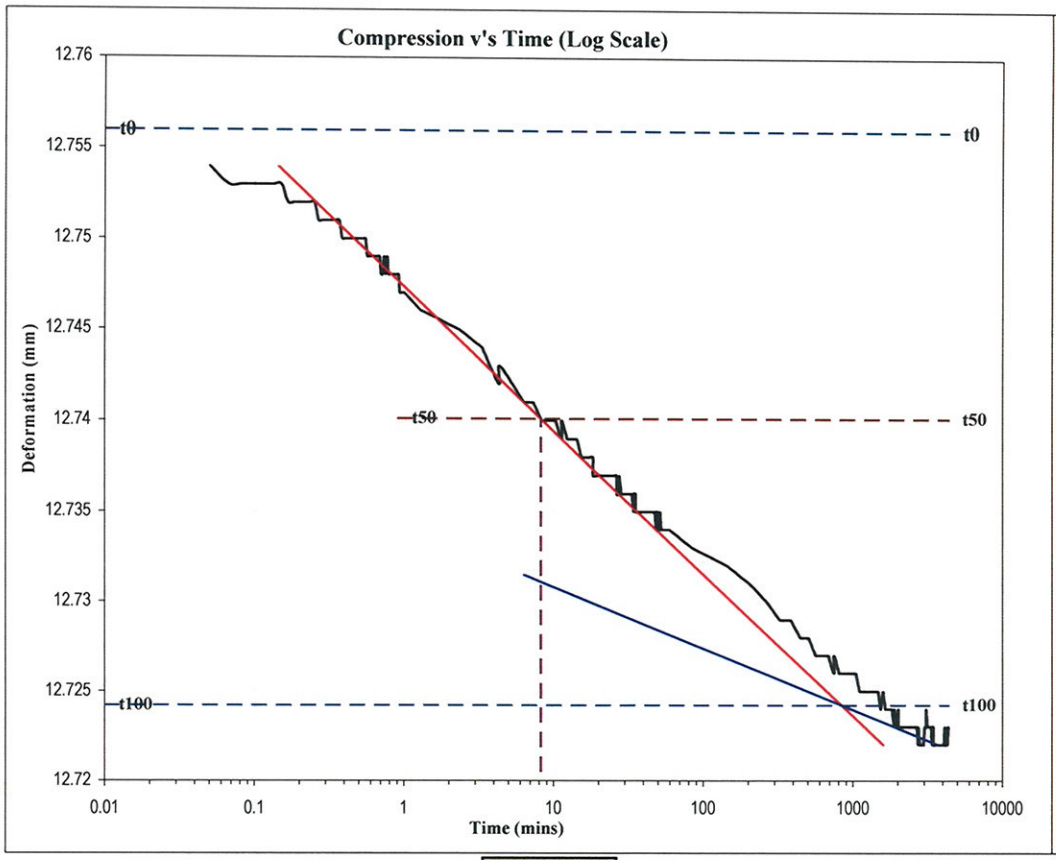
Stage Load : 13 kPa

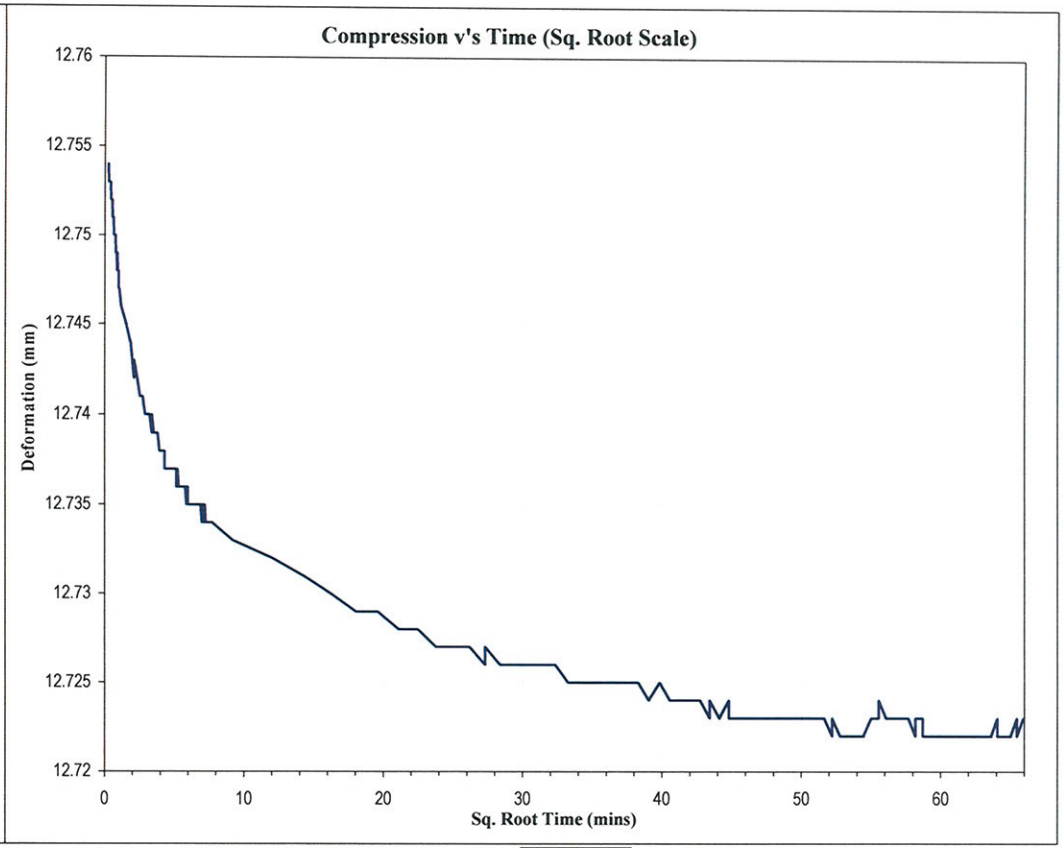
Rig Number : 11

Stage : 4.0 to 12.5

Stage 1

SAMPLE NO : LCOV12S-00422





Adjust max value of x axis

Primary	
6.3	Time (mins)
48.3	Time (mins)

Secondary	
1884.3	Time (mins)
3684.3	Time (mins)

Adjust max value of x axis

Primary	
	Root Time
	Root Time

(Dial) t0 = 12.756 mm

(Dial) t100 = 12.724 mm

t100 = 831.5 mins

(Dial) t50 = 12.740 mm

t50 = 8.2 mins

ΔHα 0.0034 mm/log cycle

Initial dial gauge height = 12.754 mm

Final dial gauge height = 12.722 mm

t0 = #N/A mm

t90 = #N/A mm

t90 = #N/A mins

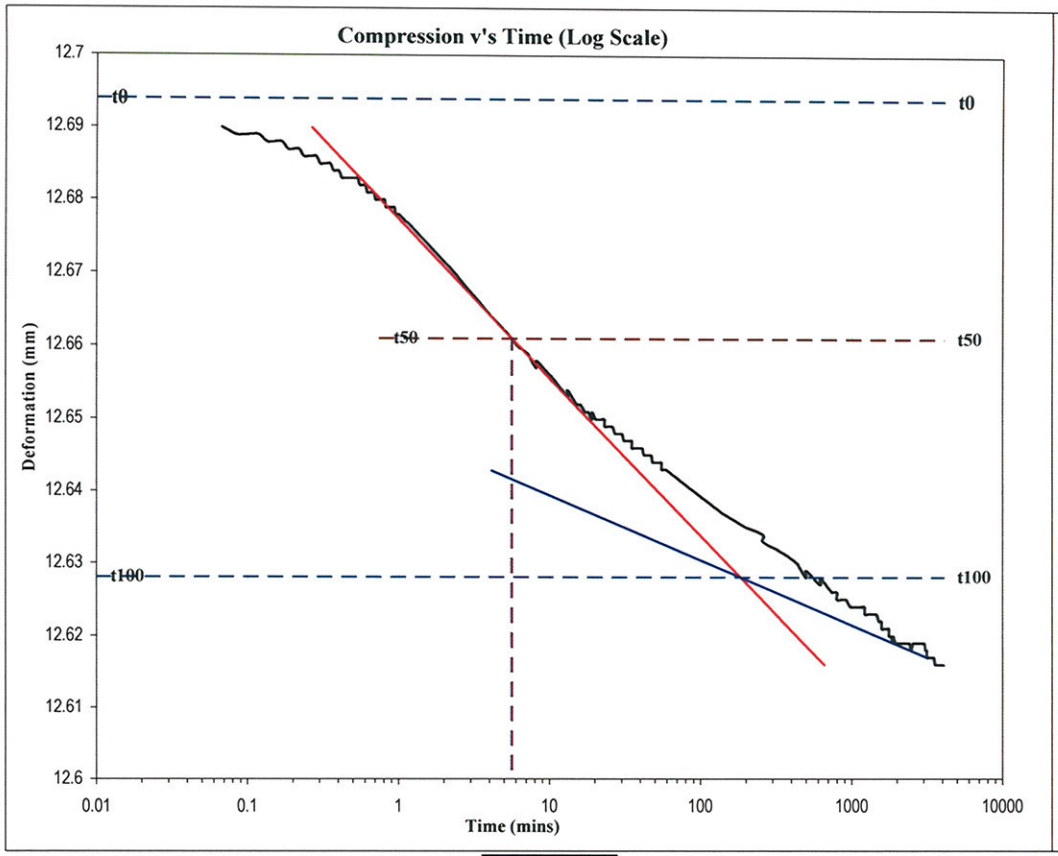
Stage Load : 25 kPa

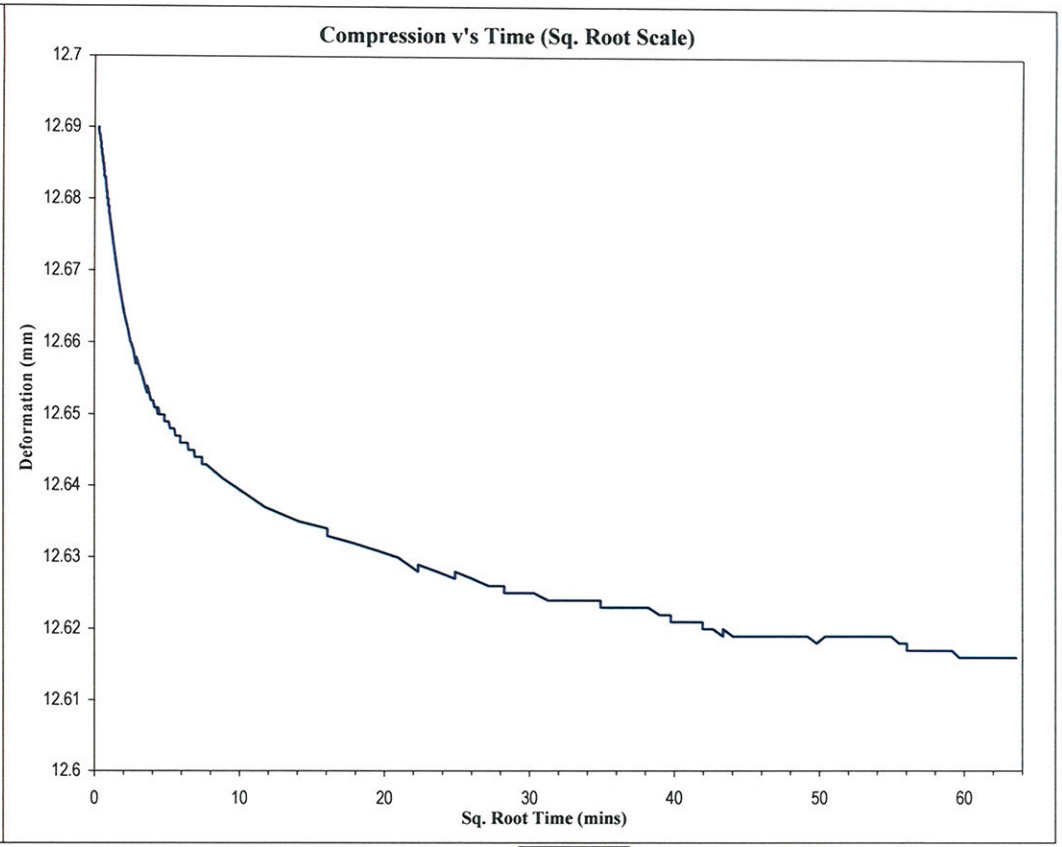
Rig Number : 11

Stage : 12.5 - 25

Stage 2

SAMPLE NO : LCOV12S-00422





Adjust max value of x axis

Adjust max value of x axis

Primary	
4.1	Time (mins)
13.117	Time (mins)

Secondary	
1878.117	Time (mins)
3138.134	Time (mins)

Primary	
	Root Time
	Root Time

(Dial) t0 = 12.694 mm

(Dial) t100 = 12.628 mm

t100 = 182.9 mins

(Dial) t50 = 12.661 mm

t50 = 5.6 mins

ΔHα 0.009 mm/log cycle

Initial dial gauge height = 12.690 mm

Final dial gauge height = 12.616 mm

t0 = #N/A mm

t90 = #N/A mm

t90 = #N/A mins

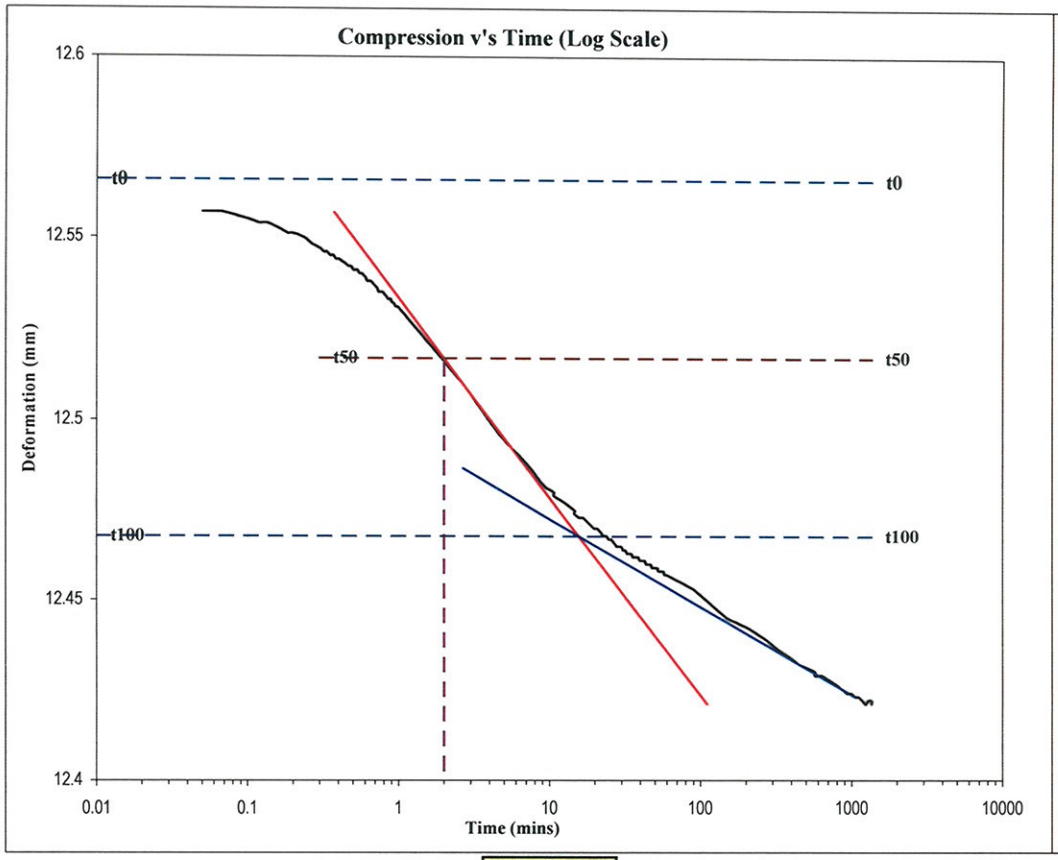
Stage Load : 50 kPa

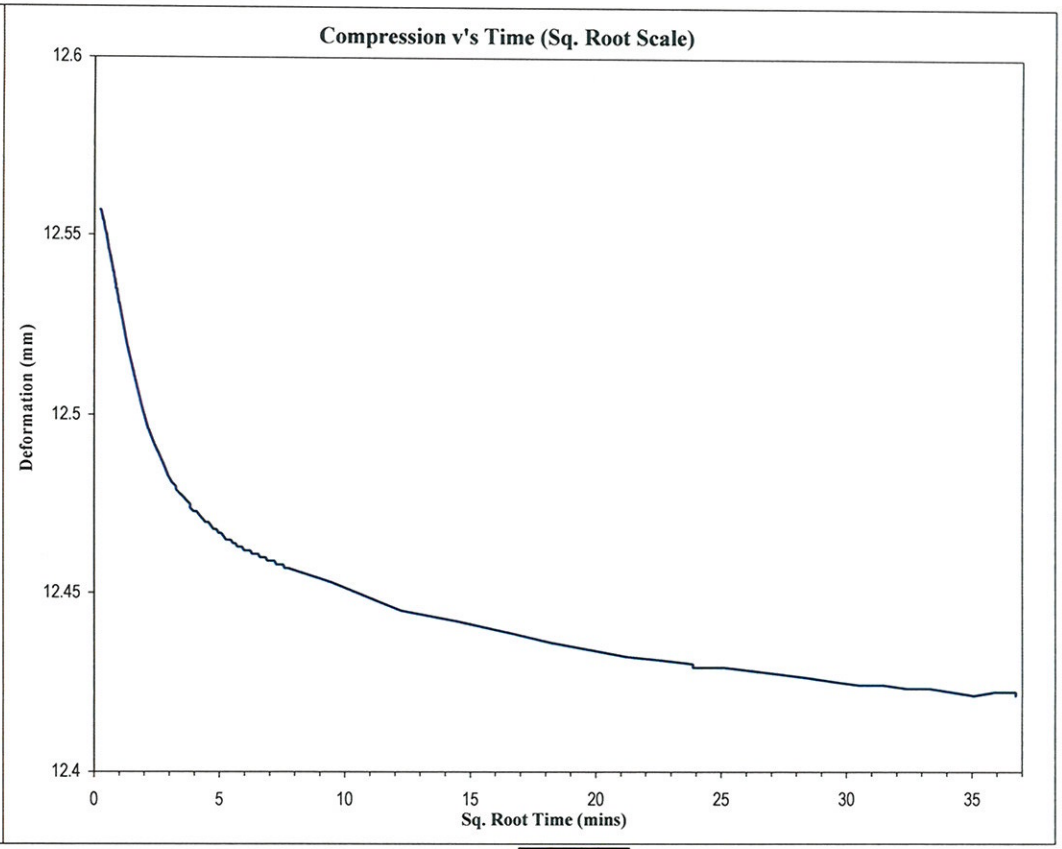
Rig Number : 11

Stage : 25 - 50

Stage 3

SAMPLE NO : LCOV12S-00422





Adjust max value of x axis

Primary	
2.65	Time (mins)
5.633	Time (mins)

Secondary	
869.633	Time (mins)
1049.65	Time (mins)

Adjust max value of x axis

Primary	
	Root Time
	Root Time

(Dial) t0 = 12.566 mm

(Dial) t100 = 12.468 mm

t100 = 15.5 mins

(Dial) t50 = 12.517 mm

t50 = 2.0 mins

ΔHα 0.0245 mm/log cycle

Initial dial gauge height = 12.557 mm

Final dial gauge height = 12.421 mm

t0 = #N/A mm

t90 = #N/A mm

t90 = #N/A mins

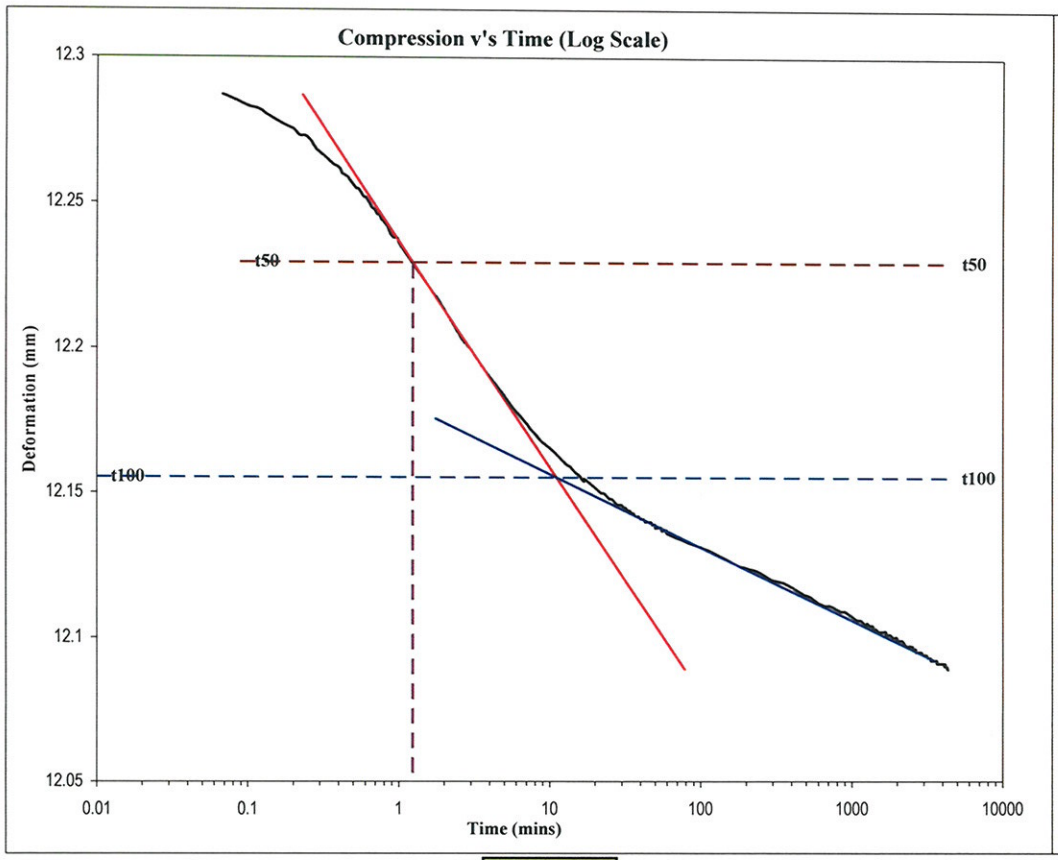
Stage Load : 100 kPa

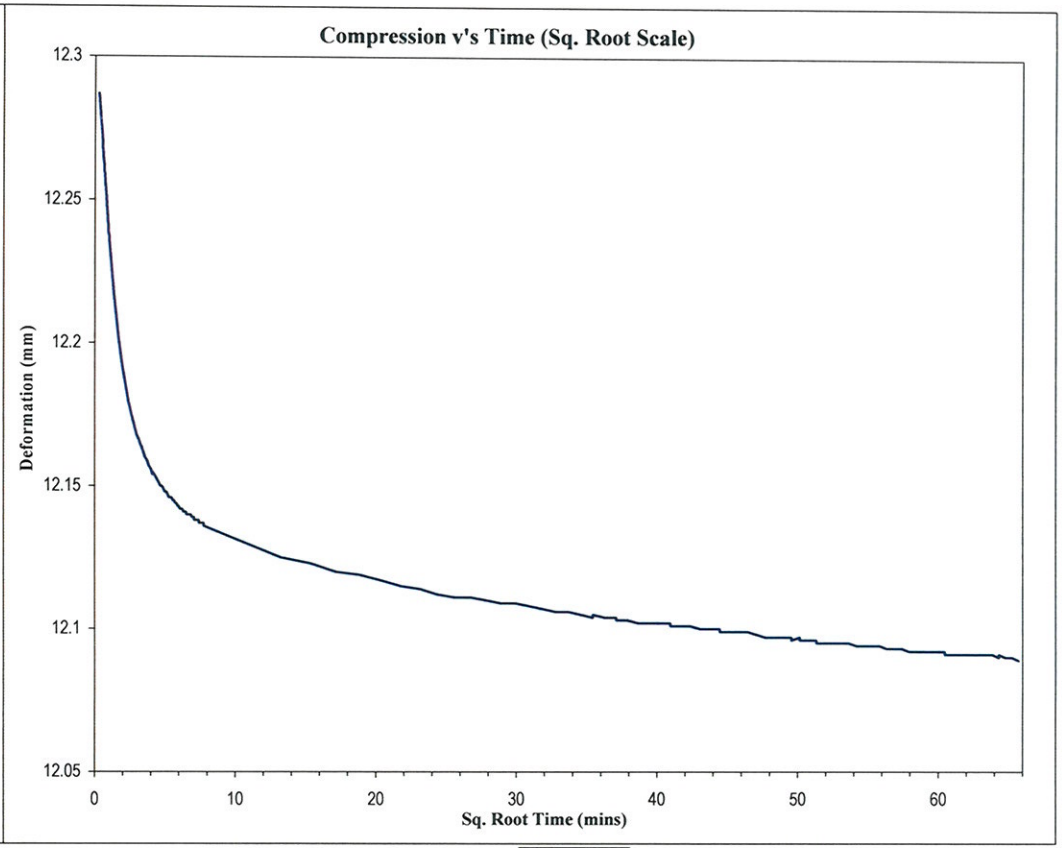
Rig Number : 11

Stage : 50 - 100

Stage 4

SAMPLE NO : LCOV12S-00422





Adjust max value of x axis

Adjust max value of x axis

Primary	
1.733	Time (mins)
3.733	Time (mins)

Secondary	
2454.75	Time (mins)
3534.717	Time (mins)

Primary	
	Root Time
	Root Time

(Dial) t0 = 12.304 mm

(Dial) t100 = 12.155 mm

t100 = 11.0 mins

(Dial) t50 = 12.230 mm

t50 = 1.2 mins

ΔHα 0.0253 mm/log cycle

Initial dial gauge height = 12.287 mm

Final dial gauge height = 12.089 mm

t0 = #N/A mm

t90 = #N/A mm

t90 = #N/A mins

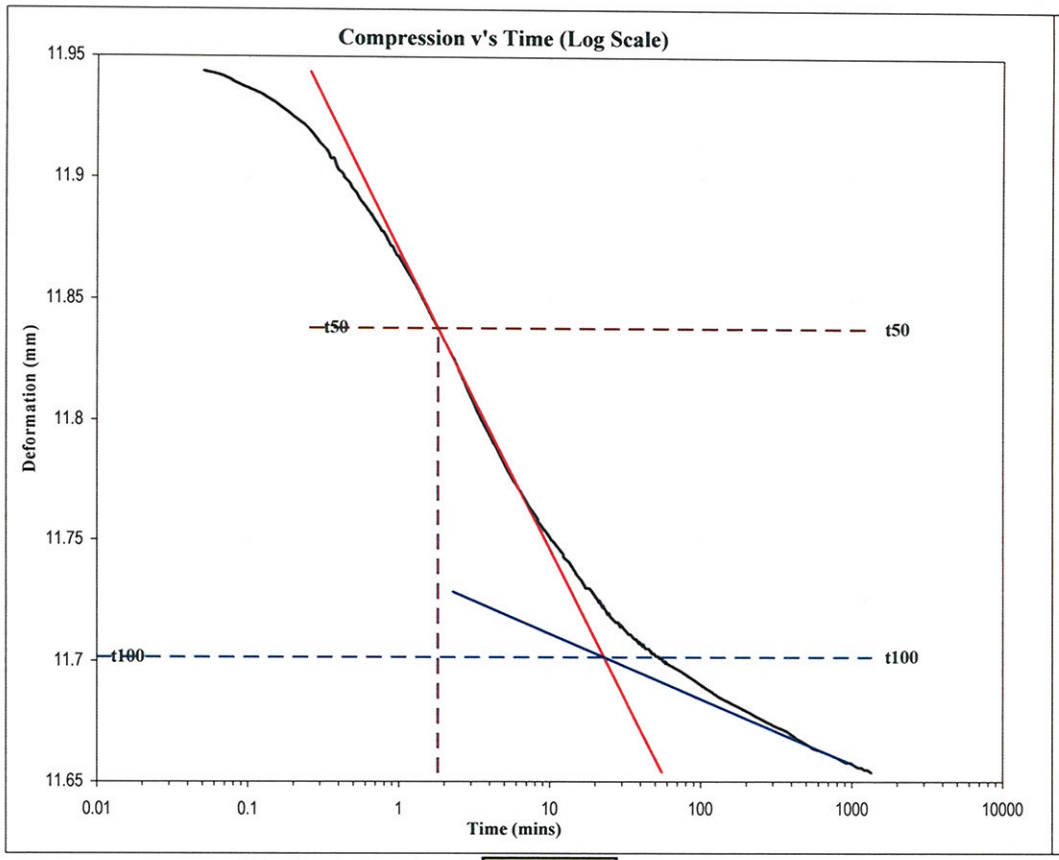
Stage Load : 200 kPa

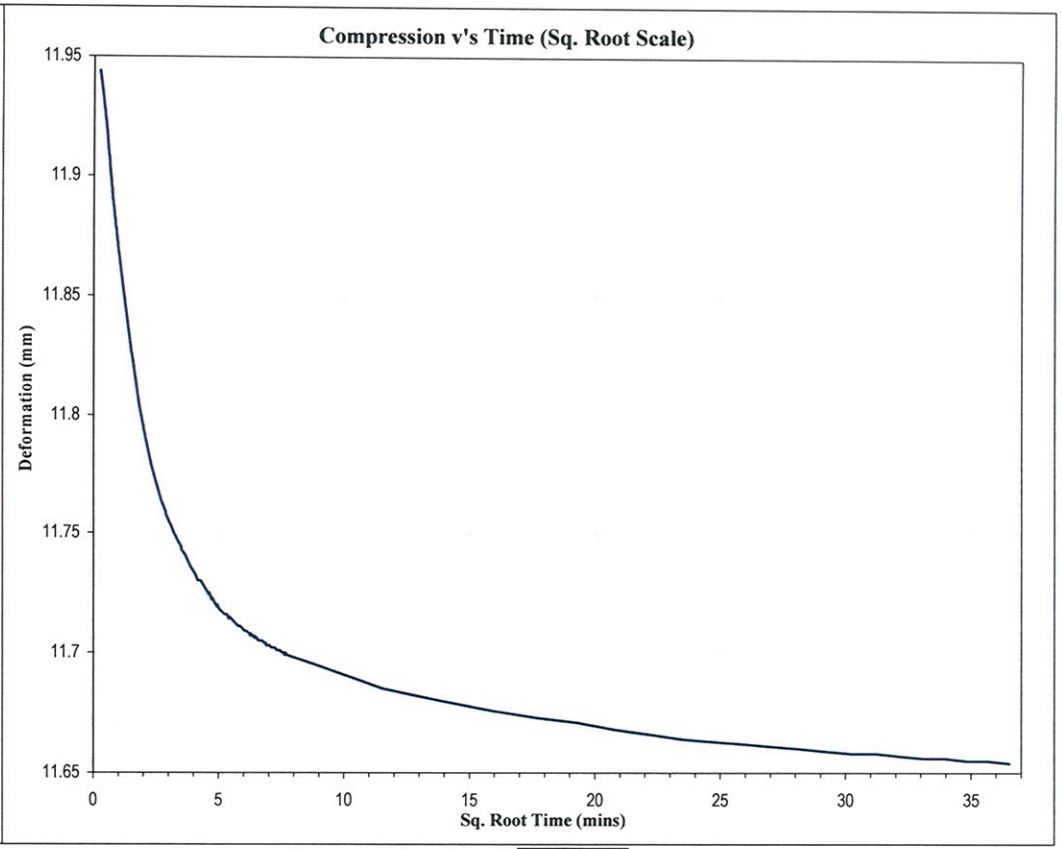
Rig Number : 11

Stage : 100 - 200

Stage 5

SAMPLE NO : LCOV12S-00422





Adjust max value of x axis

Adjust max value of x axis

Primary	
2.267	Time (mins)
6.283	Time (mins)

Secondary	
673.283	Time (mins)
1033.283	Time (mins)

Primary	
	Root Time
	Root Time

(Dial) t0 = 11.975 mm

(Dial) t100 = 11.702 mm

t100 = 22.8 mins

(Dial) t50 = 11.838 mm

t50 = 1.8 mins

ΔHα 0.0269 mm/log cycle

Initial dial gauge height = 11.944 mm

Final dial gauge height = 11.654 mm

t0 = #N/A mm

t90 = #N/A mm

t90 = #N/A mins

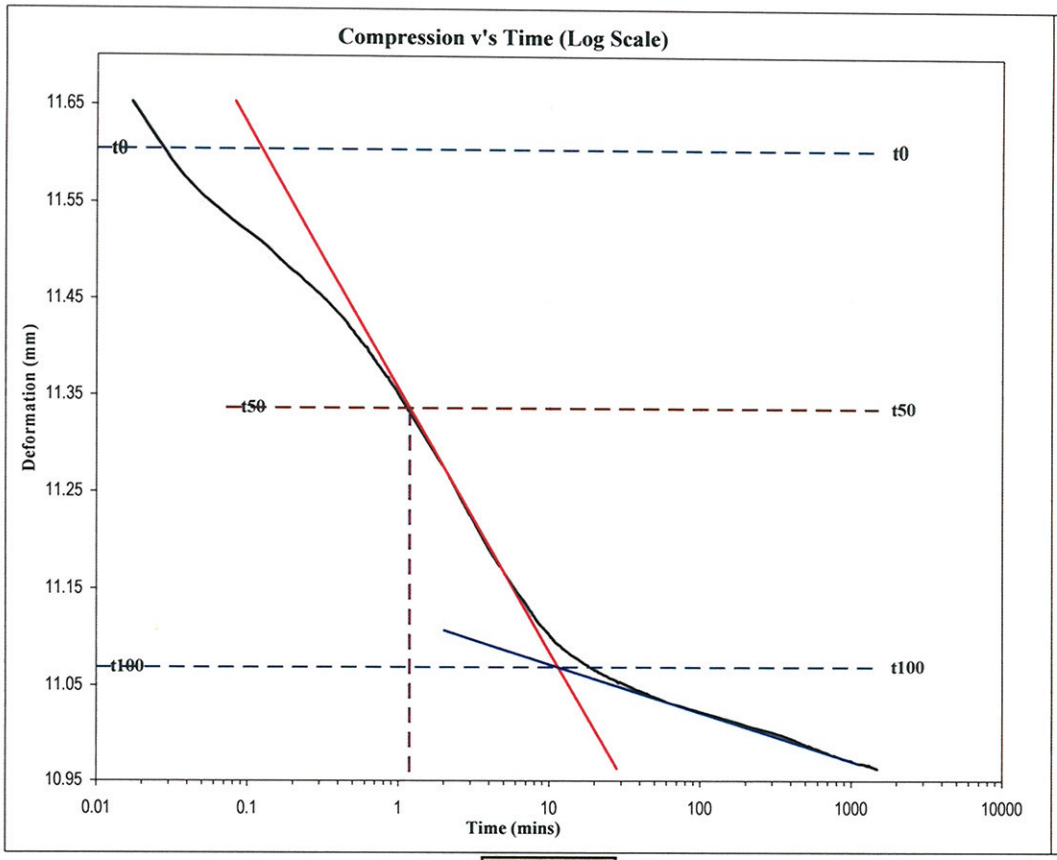
Stage Load : 400 kPa

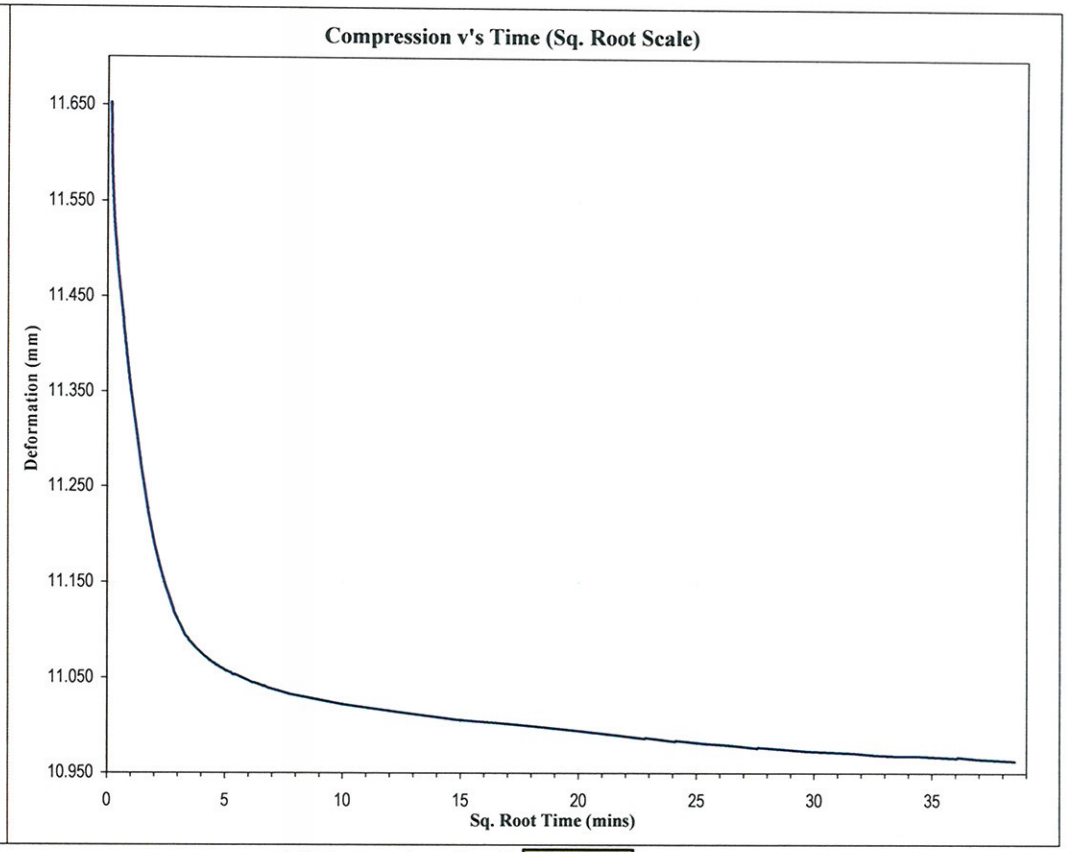
Rig Number : 11

Stage : 200 - 400

Stage 6

SAMPLE NO : LCOV12S-00422





Adjust max value of x axis

Primary	
2	Time (mins)
4.983	Time (mins)

Secondary	
100	Time (mins)
1121	Time (mins)

Adjust max value of x axis

Primary	
	Root Time
	Root Time

(Dial) t0 = 11.605 mm

(Dial) t100 = 11.069 mm

t100 = 11.4 mins

(Dial) t50 = 11.337 mm

t50 = 1.2 mins

ΔHα 0.0508 mm/log cycle

Initial dial gauge height = 11.653 mm

Final dial gauge height = 10.963 mm

t0 = #N/A mm

t90 = #N/A mm

t90 = #N/A mins

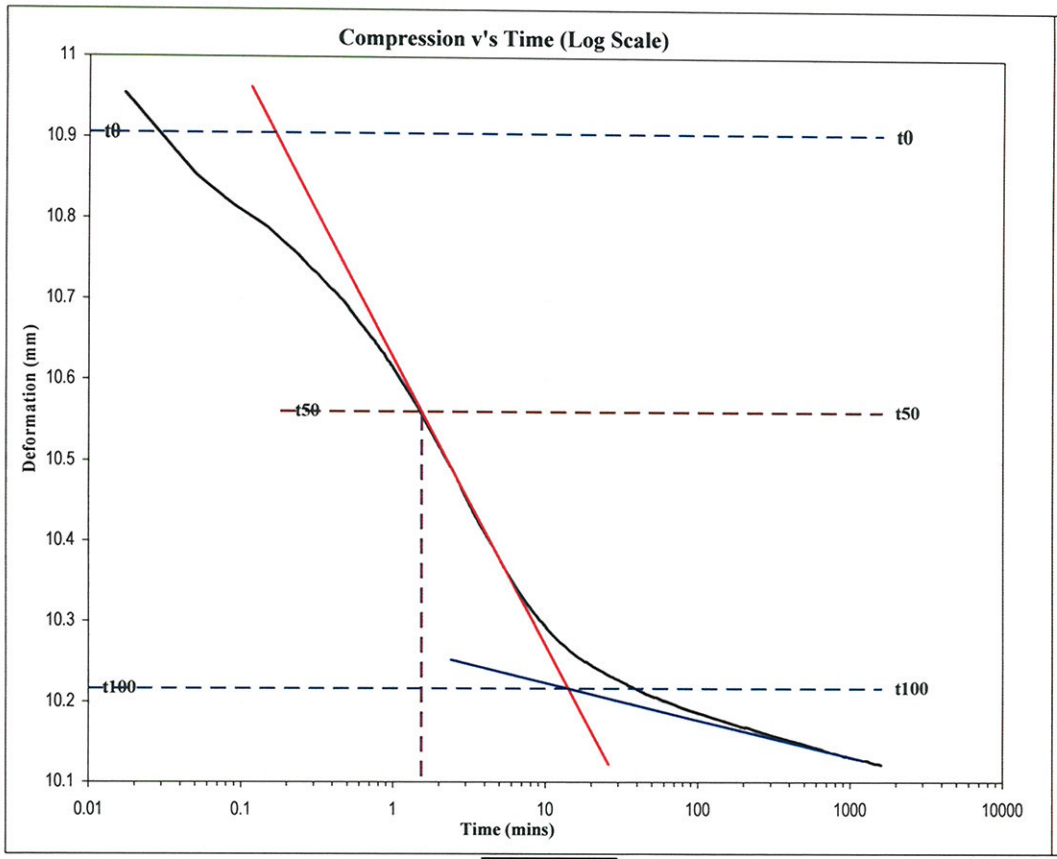
Stage Load : 800 kPa

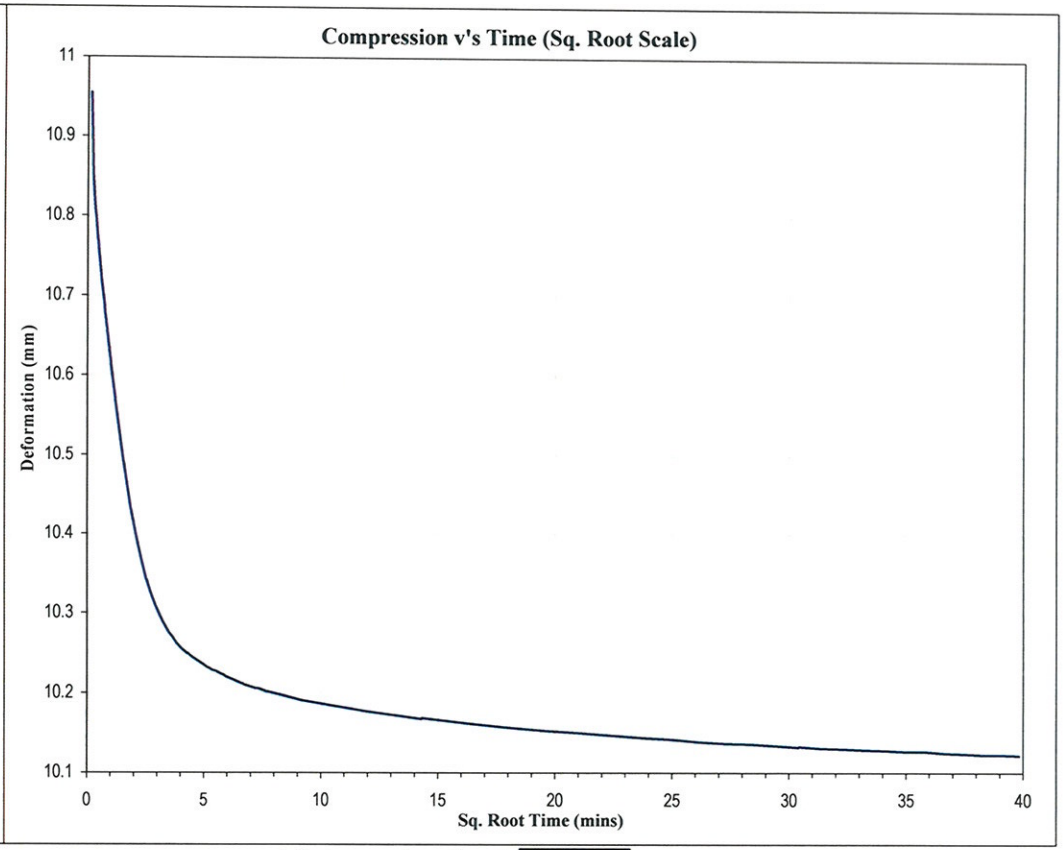
Rig Number : 11

Stage : 400 - 800

Stage 7

SAMPLE NO : LCOV12S-00422





Adjust max value of x axis

Primary	
2.383	Time (mins)
5.4	Time (mins)

Secondary	
744.383	Time (mins)
1224.4	Time (mins)

Adjust max value of x axis

Primary	
	Root Time
	Root Time

(Dial) t0 = 10.906 mm

(Dial) t100 = 10.217 mm

t100 = 14.0 mins

(Dial) t50 = 10.561 mm

t50 = 1.5 mins

ΔHα 0.0463 mm/log cycle

Initial dial gauge height = 10.963 mm

Final dial gauge height = 10.122 mm

t0 = #N/A mm

t90 = #N/A mm

t90 = #N/A mins

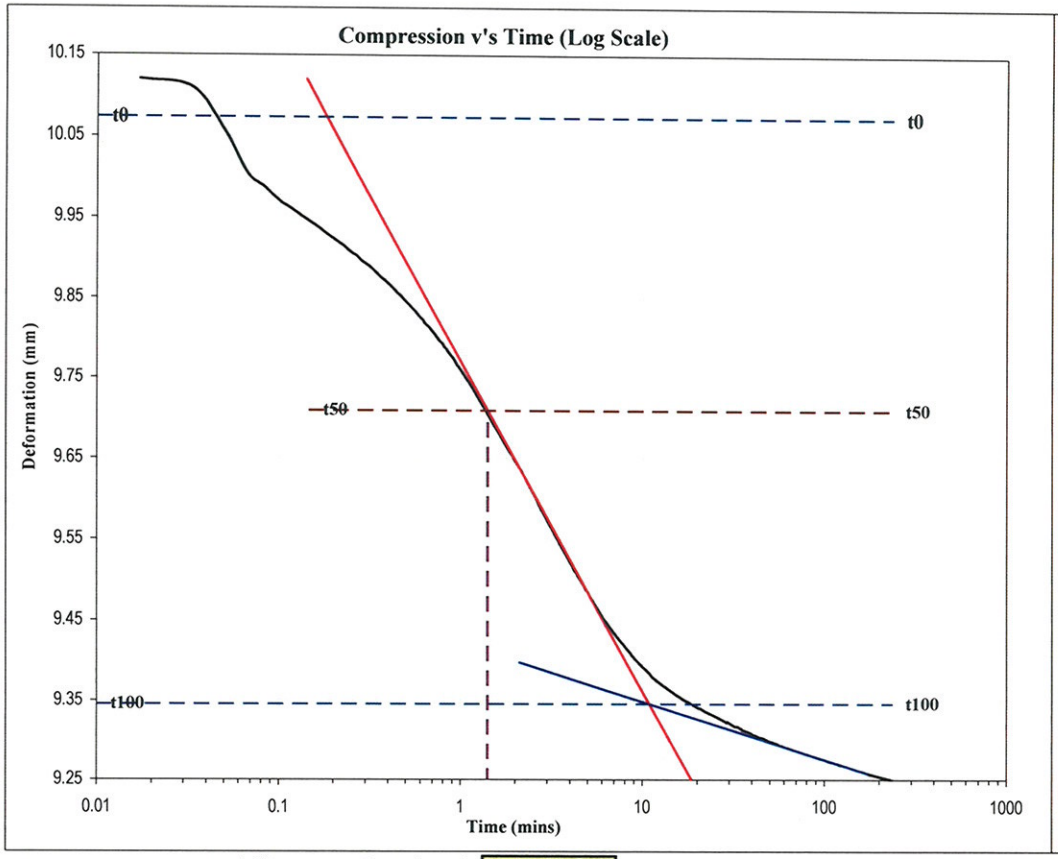
Stage Load : 1600 kPa

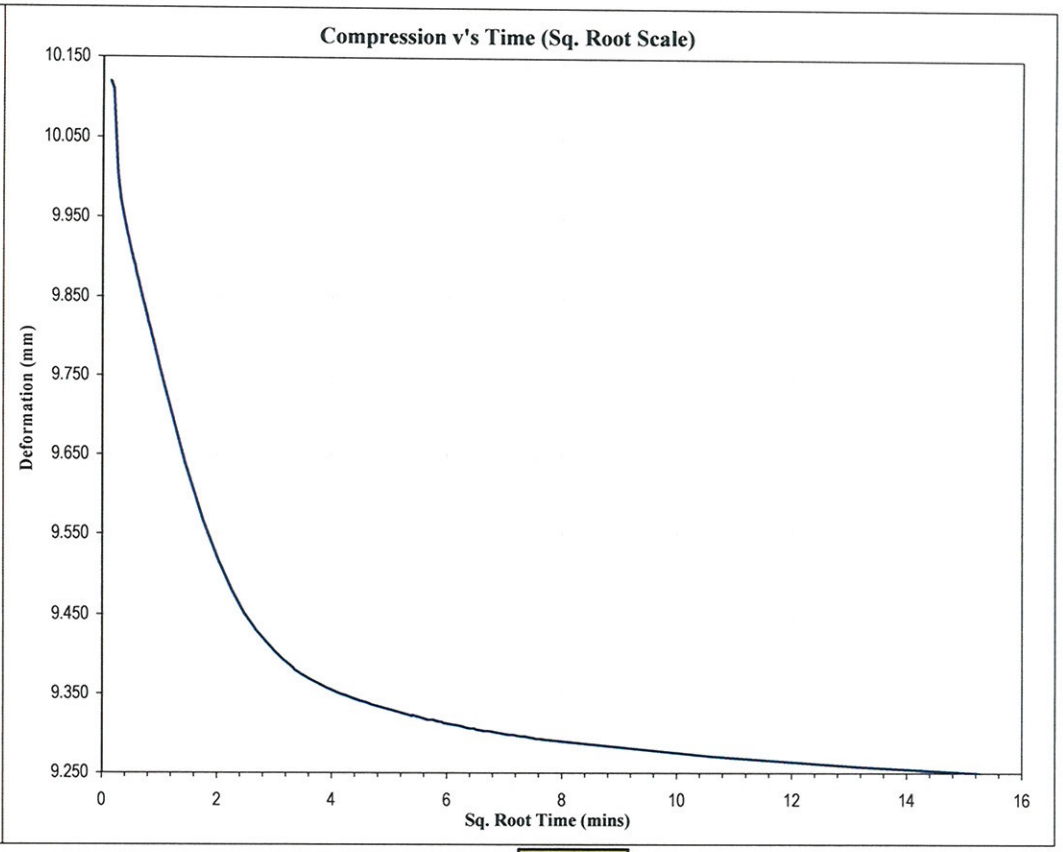
Rig Number : 11

Stage : 800 - 1600

Stage 8

SAMPLE NO : LCOV12S-00422





Adjust max value of x axis

Primary	
2.1	Time (mins)
5.1	Time (mins)

Secondary	
100	Time (mins)
200	Time (mins)

Adjust max value of x axis

Primary	
	Root Time
	Root Time

(Dial) t0 = 10.074 mm

(Dial) t100 = 9.346 mm

t100 = 10.8 mins

(Dial) t50 = 9.710 mm

t50 = 1.4 mins

ΔHα 0.0729 mm/log cycle

Initial dial gauge height = 10.120 mm

Final dial gauge height = 9.250 mm

t0 = #N/A mm

t90 = #N/A mm

t90 = #N/A mins

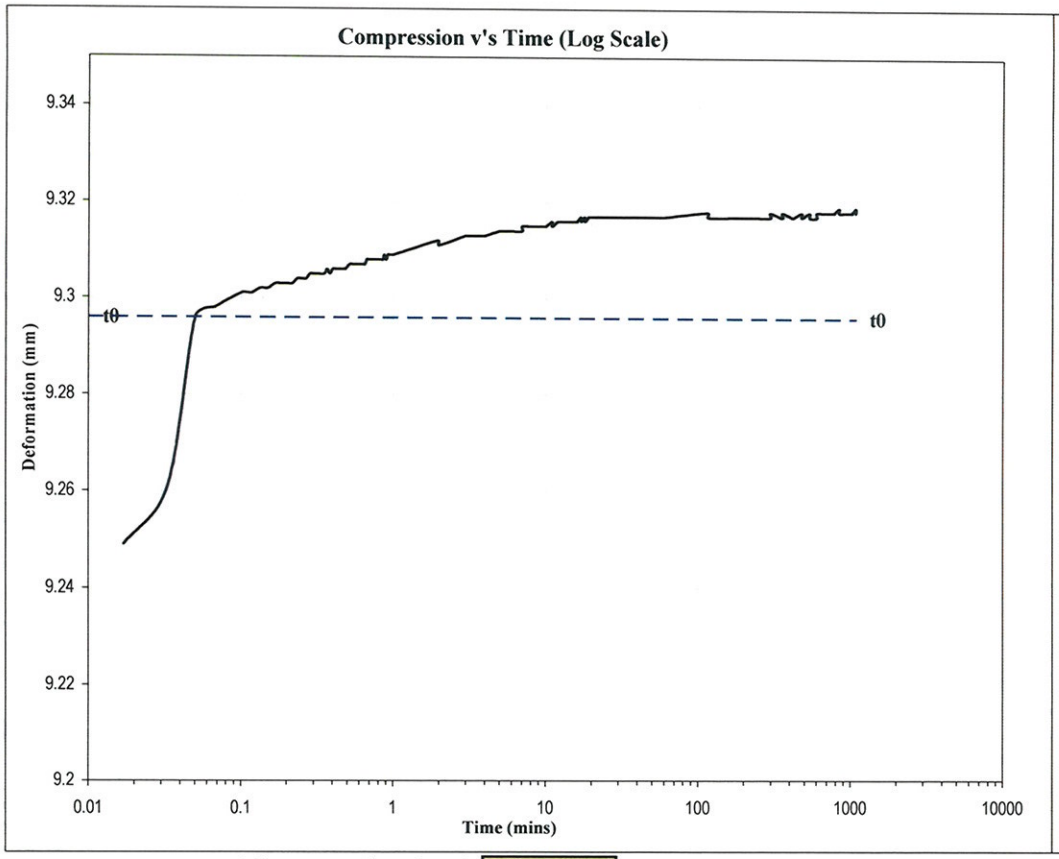
Stage Load : 800 kPa

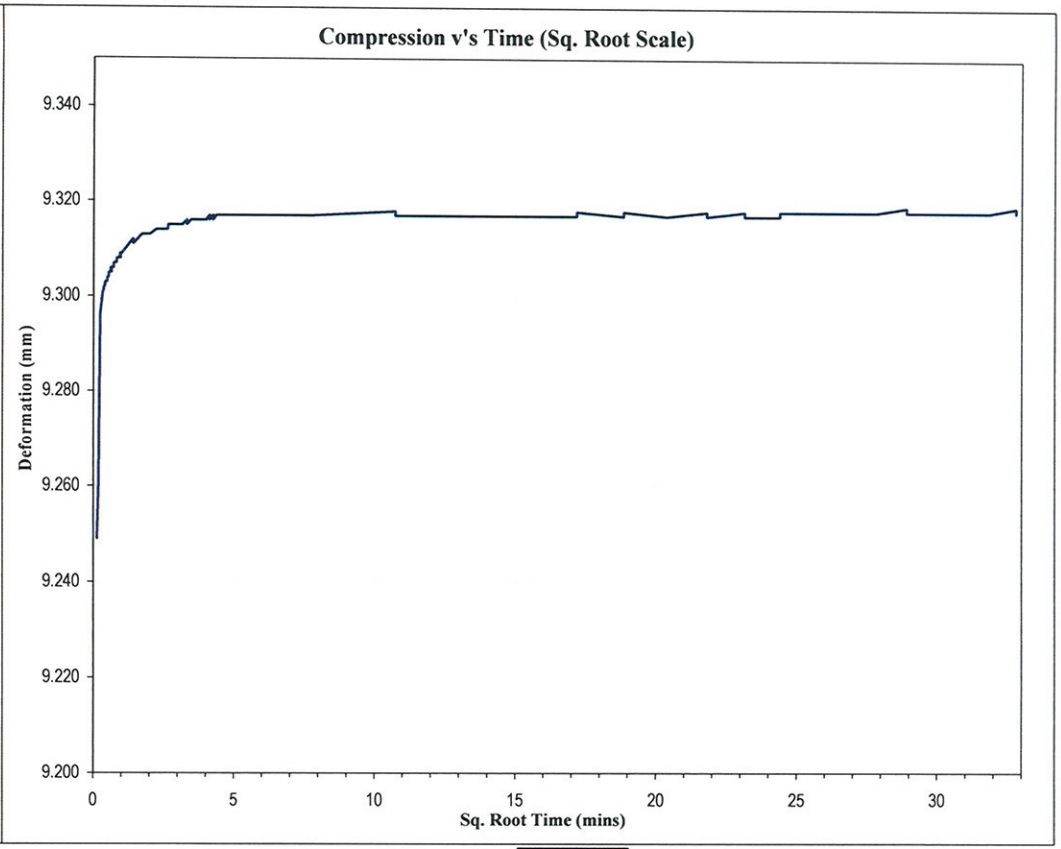
Rig Number : 11

Stage : 1600 - 800

Stage 9 (Rebound)

SAMPLE NO : LCOV12S-00422





Adjust max value of x axis

Adjust max value of x axis

Primary	
	Time (mins)
	Time (mins)

Secondary	
	Time (mins)
	Time (mins)

Primary	
	Root Time
	Root Time

(Dial) t0 = 9.296 mm

(Dial) t100 = #N/A mm

t100 = #N/A mins

(Dial) t50 = #N/A mm

t50 = #N/A mins

Δhα #N/A mm/log cycle

Initial dial gauge height = 9.249 mm

Final dial gauge height = 9.319 mm

t0 = #N/A mm

t90 = #N/A mm

t90 = #N/A mins

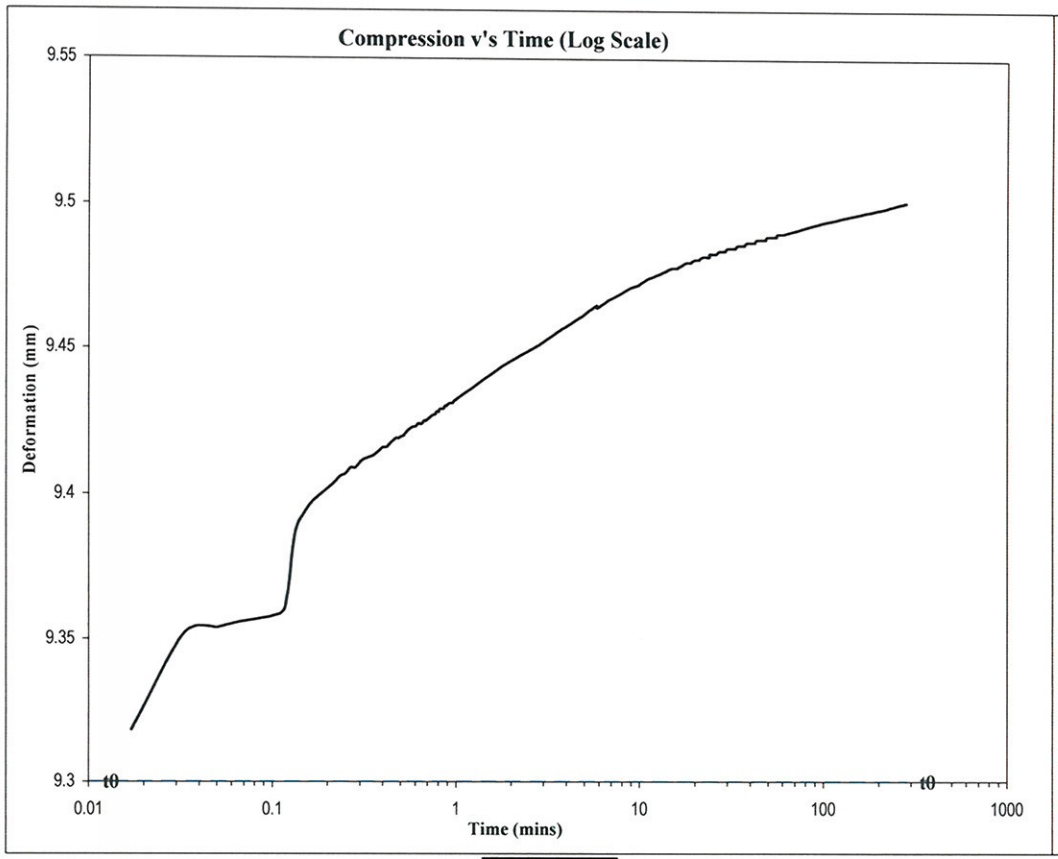
Stage Load : 200 kPa

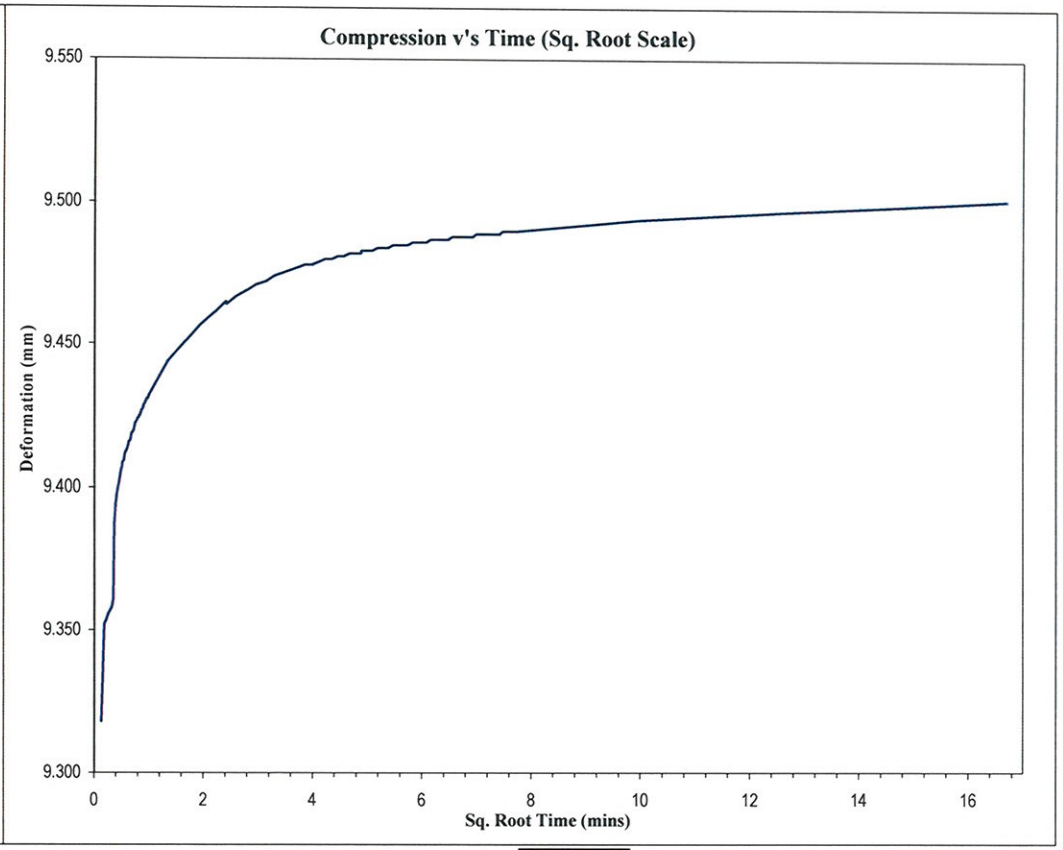
Rig Number : 11

Stage : 800 - 200

Stage 10 (Rebound)

SAMPLE NO : LCOV12S-00422





Adjust max value of x axis

Adjust max value of x axis

Primary	
	Time (mins)
	Time (mins)

Secondary	
	Time (mins)
	Time (mins)

Primary	
	Root Time
	Root Time

t0 = 9.3 mm

t100 = #N/A mm

t100 = #N/A mins

t50 = #N/A mm

t50 = #N/A mins

ΔHα #N/A mm/log cycle

t0 = #N/A mm

t90 = #N/A mm

t90 = #N/A mins

Initial stage height = 9.319 mm

Final stage height = 9.501 mm

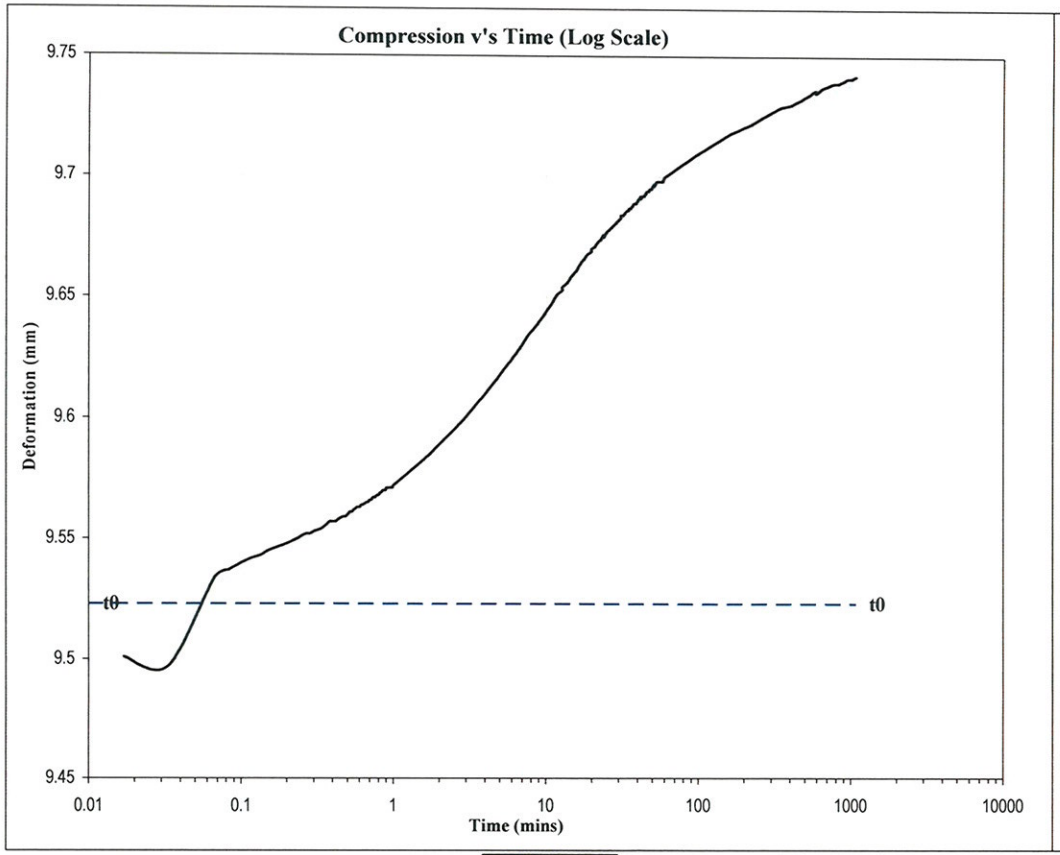
Stage Load : 50 kPa

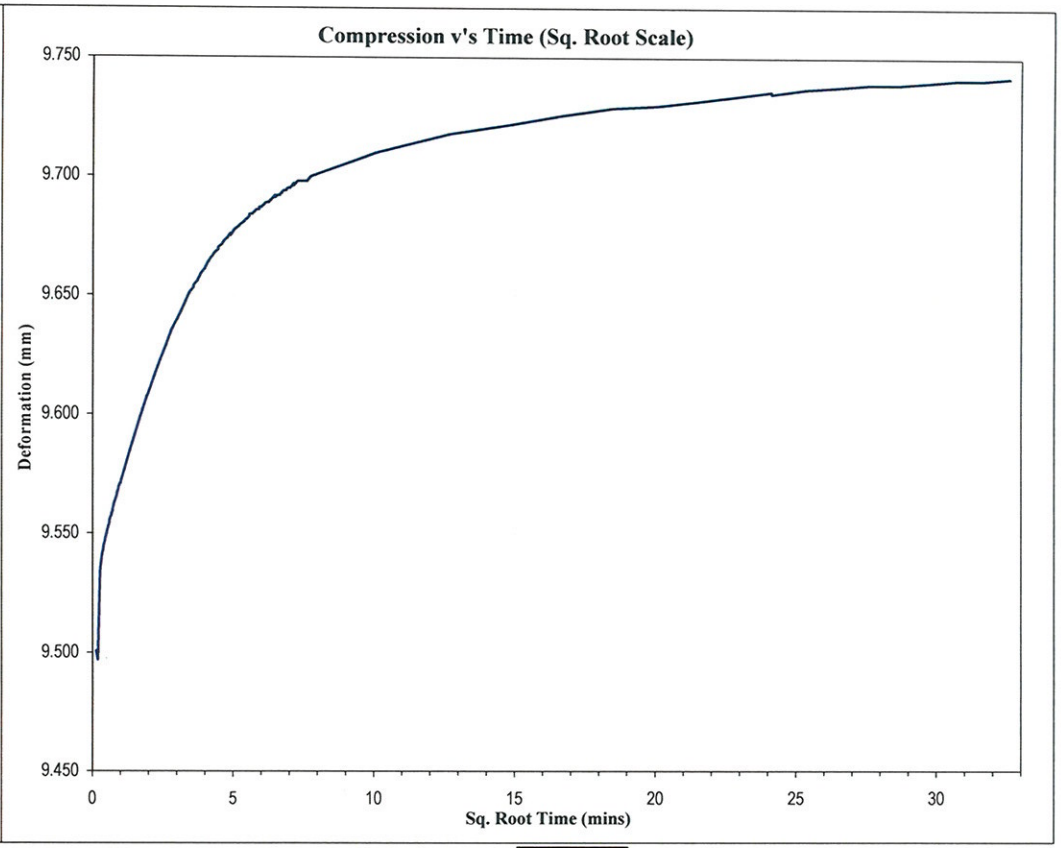
Rig Number : 11

Stage : 200 - 50

Stage 11 (Rebound)

SAMPLE NO : LCOV12S-00422





Adjust max value of x axis

Primary	
	Time (mins)
	Time (mins)

Secondary	
	Time (mins)
	Time (mins)

Adjust max value of x axis

Primary	
	Root Time
	Root Time

t0 = 9.523 mm

t100 = #N/A mm

t100 = #N/A mins

t50 = #N/A mm

t50 = #N/A mins

ΔHα #N/A mm/log cycle

Initial stage height = 9.501 mm

Final stage height = 9.742 mm

t0 = #N/A mm

t90 = #N/A mm

t90 = #N/A mins

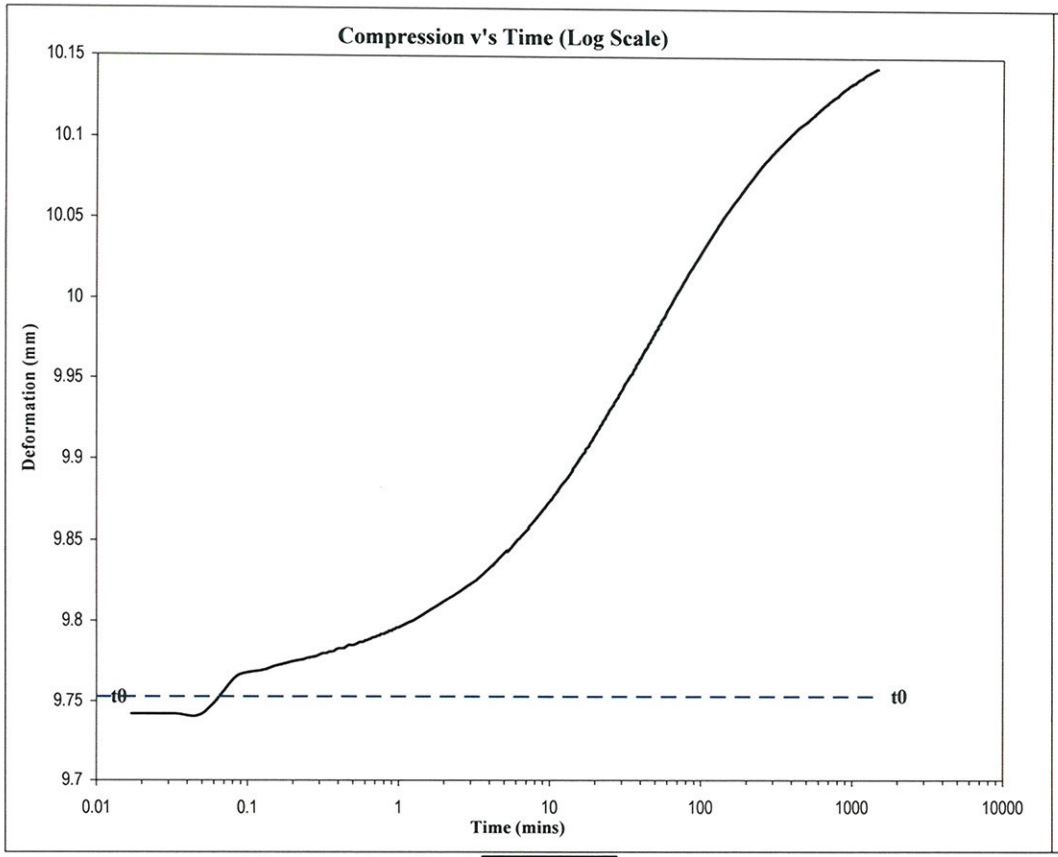
Stage Load : 4 kPa

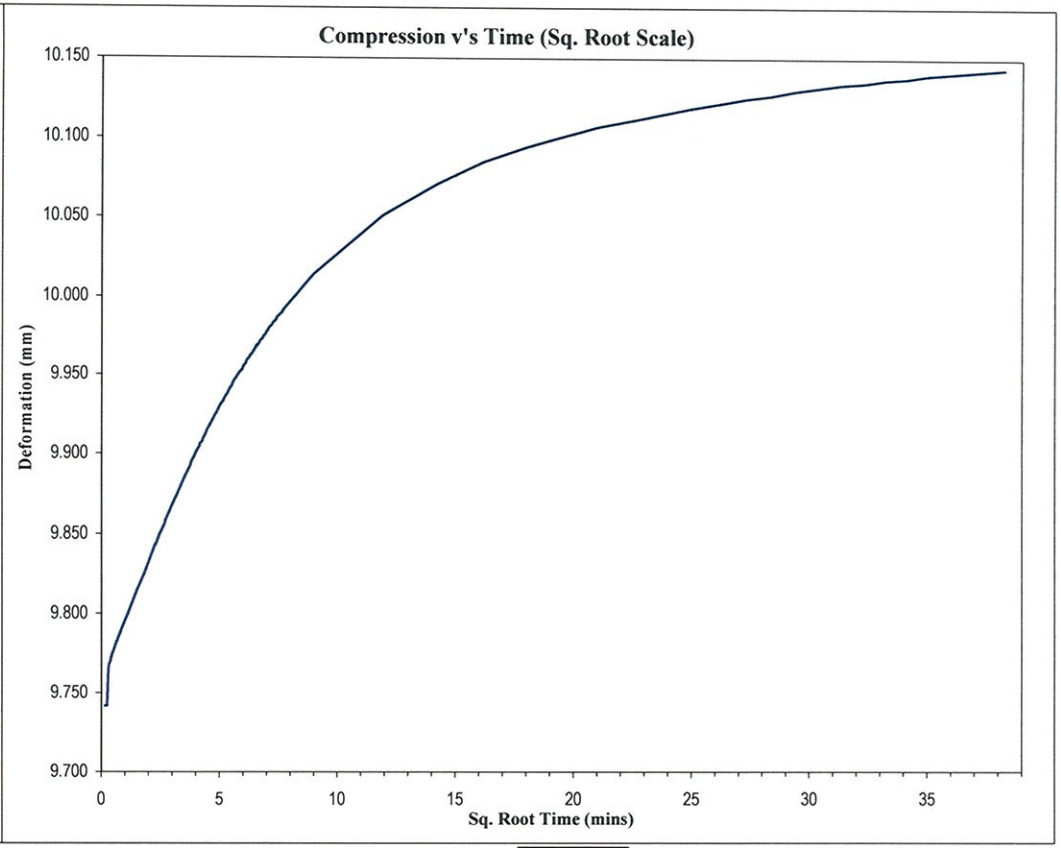
Rig Number : 11

Stage : 50 - 4

Stage 12 (Rebound)

SAMPLE NO : LCOV12S-00422





Adjust max value of x axis

Primary

Time (mins)

Time (mins)

Secondary

Time (mins)

Time (mins)

Adjust max value of x axis

Primary

Root Time

Root Time

t0 = 9.753 mm

t100 = #N/A mm

t100 = #N/A mins

t50 = #N/A mm

t50 = #N/A mins

ΔHα #N/A mm/log cycle

t0 = #N/A mm

t90 = #N/A mm

t90 = #N/A mins

Initial height = 9.742 mm

Final height = 10.144 mm