Kariong, Gosford Laboratory

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coffey information
SPECIALISTS IN SCIENTIFIC TESTING SOLUTIONS

Report No: SSI:KARI10S-00645
Issue No: 1

Shrink Swell Index Report

Client:	Coffey Environments Pty Ltd 118, Auburn street Wollongong NSW 2500
Principal:	TruEnergy
Project No.:	INFOKARI00148AA
Project Name:	ENVIWOLL00250AB
Lot No.:	**TRN:**

NATA
WORLD RECOGNISED ACCREDITATION

Approved Signatory: Lachlan Smith
(Senior Geotechnician)
NATA Accredited Laboratory Number:431
Date of Issue: 20/03/2010

Sample Details

Sample ID:	KARI10S-00645	**Sampling Method:**	Submitted by client
Field ID:	CTP36	**Material:**	CLAY, HP, brown, trace gravel
Date Sampled:	10/02/2010	**Source:**	
Date Submitted:	10/03/2010	**Specification:**	
Project Location:	Tallawarra Lands, Yallah, NSW		
Sample Location:			
Borehole Number:	CTP36		
Borehole Depth (m):	1.4 - 1.8m		

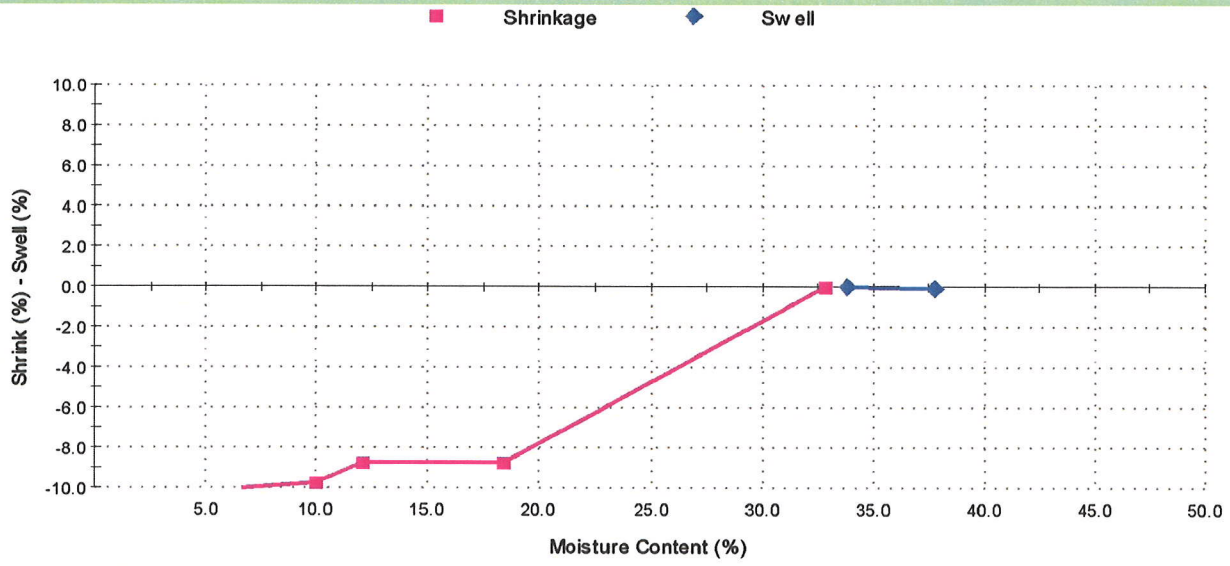
Swell Test — AS 1289.7.1.1

Swell on Saturation (%):	-0.1
Moisture Content before (%):	33.8
Moisture Content after (%):	37.8
Est. Unc. Comp. Strength before (kPa):	150
Est. Unc. Comp. Strength after (kPa):	80

Shrink Test — AS 1289.7.1.1

Shrinkage Moisture Content (%):	32.9
Shrink on drying (%):	10.6
Est. inert material (%):	<5
Crumbling during shrinkage:	Nil
Cracking during shrinkage:	Nil

Shrink Swell



Shrink Swell Index - Iss (%): 5.9

Comments

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SPECIALISTS IN SCIENTIFIC TESTING SOLUTIONS

Report No: SSI:KARI10S-00646
Issue No: 1

Shrink Swell Index Report

Client:	Coffey Environments Pty Ltd 118, Auburn street Wollongong NSW 2500
Principal:	TruEnergy
Project No.:	INFOKARI00148AA
Project Name:	ENVIWOLL00250AB
Lot No.:	**TRN:**

NATA
WORLD RECOGNISED ACCREDITATION

Approved Signatory: Lachlan Smith
(Senior Geotechnician)
NATA Accredited Laboratory Number:431
Date of Issue: 20/03/2010

Sample Details

Sample ID:	KARI10S-00646	**Sampling Method:**	Submitted by client
Field ID:	CTP49	**Material:**	CLAY, HP, brown
Date Sampled:	10/02/2010	**Source:**	
Date Submitted:	10/03/2010	**Specification:**	
Project Location:	Tallawarra Lands, Yallah, NSW		
Sample Location:			
Borehole Number:	CTP49		
Borehole Depth (m):	0.5 - 0.9m		

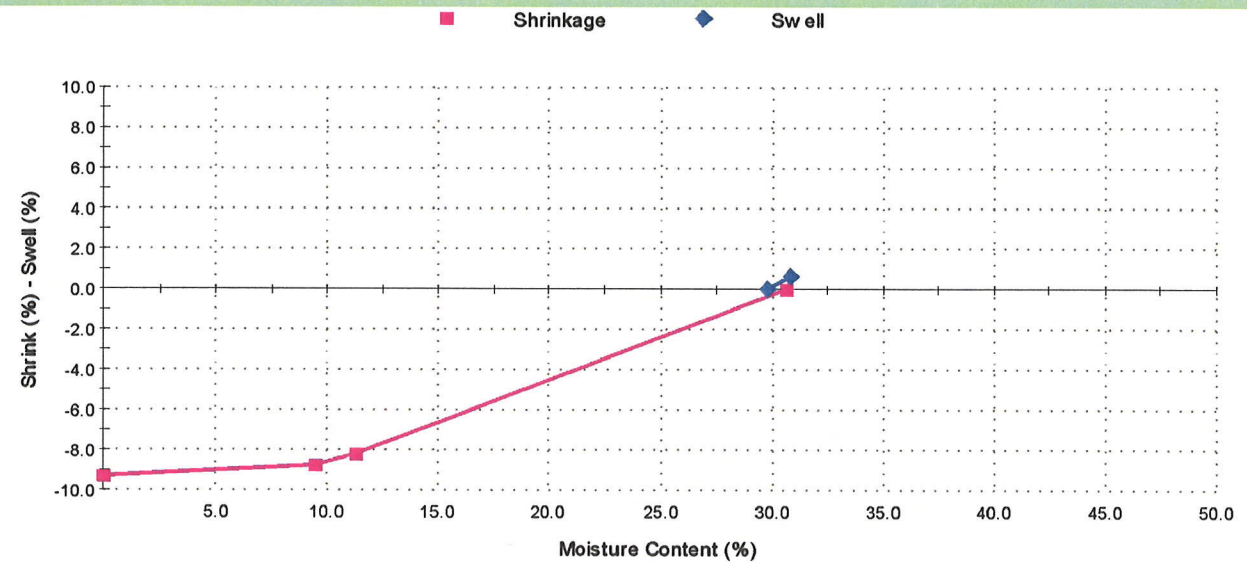
Swell Test AS 1289.7.1.1

Swell on Saturation (%):	0.6
Moisture Content before (%):	29.8
Moisture Content after (%):	30.8
Est. Unc. Comp. Strength before (kPa):	300
Est. Unc. Comp. Strength after (kPa):	170

Shrink Test AS 1289.7.1.1

Shrinkage Moisture Content (%):	30.6
Shrink on drying (%):	9.3
Est. inert material (%):	<10
Crumbling during shrinkage:	*
Cracking during shrinkage:	Nil

Shrink Swell



Shrink Swell Index - Iss (%): 5.3

Comments

Kariong, Gosford Laboratory

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SPECIALISTS IN SCIENTIFIC TESTING SOLUTIONS

Report No: SSI:KARI10S-00647
Issue No: 1

Shrink Swell Index Report

Client:	Coffey Environments Pty Ltd 118, Auburn street Wollongong NSW 2500
Principal:	TruEnergy
Project No.:	INFOKARI00148AA
Project Name:	ENVIWOLL00250AB
Lot No.:	**TRN:**

NATA
WORLD RECOGNISED ACCREDITATION

Approved Signatory: Lachlan Smith
(Senior Geotechnician)
NATA Accredited Laboratory Number:431
Date of Issue: 20/03/2010

Sample Details

Sample ID:	KARI10S-00647	**Sampling Method:**	Submitted by client
Field ID:	CTP51	**Material:**	CLAY, HP, brown, trace gravel
Date Sampled:	10/02/2010	**Source:**	
Date Submitted:	10/03/2010	**Specification:**	
Project Location:	Tallawarra Lands, Yallah, NSW		
Sample Location:			
Borehole Number:	CTP51		
Borehole Depth (m):	0.8 - 1.2m		

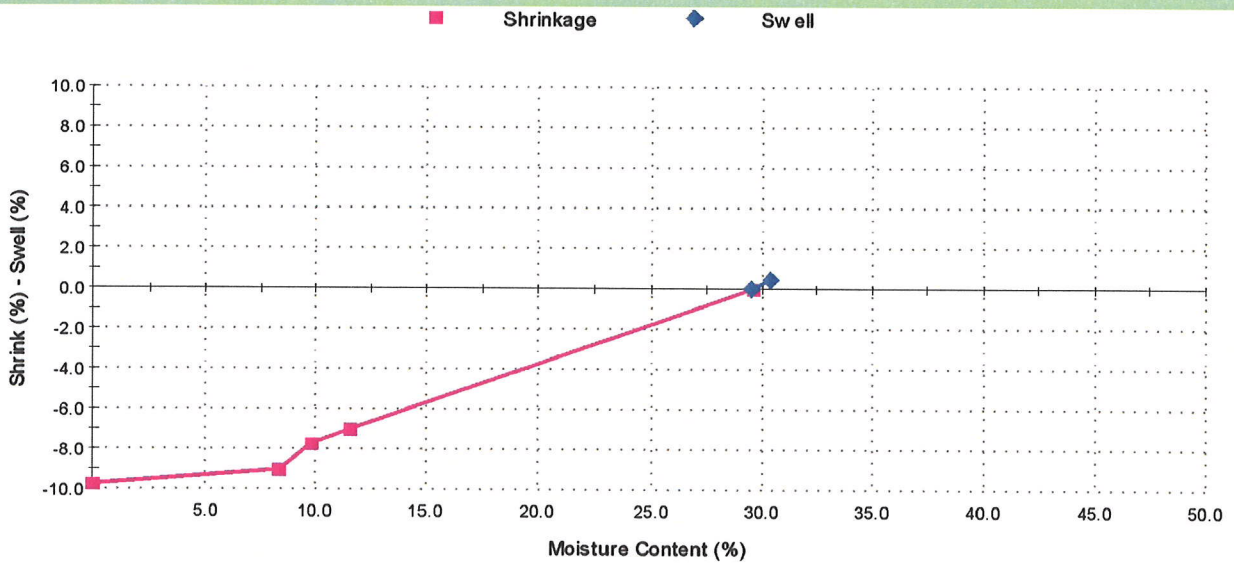
Swell Test — AS 1289.7.1.1

Swell on Saturation (%):	0.5
Moisture Content before (%):	29.5
Moisture Content after (%):	30.3
Est. Unc. Comp. Strength before (kPa):	250
Est. Unc. Comp. Strength after (kPa):	150

Shrink Test — AS 1289.7.1.1

Shrinkage Moisture Content (%):	29.6
Shrink on drying (%):	9.7
Est. inert material (%):	<10
Crumbling during shrinkage:	Nil
Cracking during shrinkage:	Nil

Shrink Swell



Shrink Swell Index - Iss (%): 5.5

Comments

Kariong, Gosford Laboratory

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SPECIALISTS IN SCIENTIFIC TESTING SOLUTIONS

Report No: SSI:KARI10S-00648
Issue No: 1

Shrink Swell Index Report

Client: Coffey Environments Pty Ltd
118, Auburn street
Wollongong NSW 2500

Principal: TruEnergy
Project No.: INFOKARI00148AA
Project Name: ENVIWOLL00250AB
Lot No.: **TRN:**

NATA
WORLD RECOGNISED ACCREDITATION

Approved Signatory: Lachlan Smith
(Senior Geotechnician)
NATA Accredited Laboratory Number:431
Date of Issue: 20/03/2010

Sample Details

Sample ID:	KARI10S-00648	**Sampling Method:**	Submitted by client
Field ID:	CTP60	**Material:**	CLAY, HP, brown, trace gravel
Date Sampled:	10/02/2010	**Source:**	
Date Submitted:	10/03/2010	**Specification:**	
Project Location:	Tallawarra Lands, Yallah, NSW		
Sample Location:			
Borehole Number:	CTP60		
Borehole Depth (m):	0.3 - 0.7		

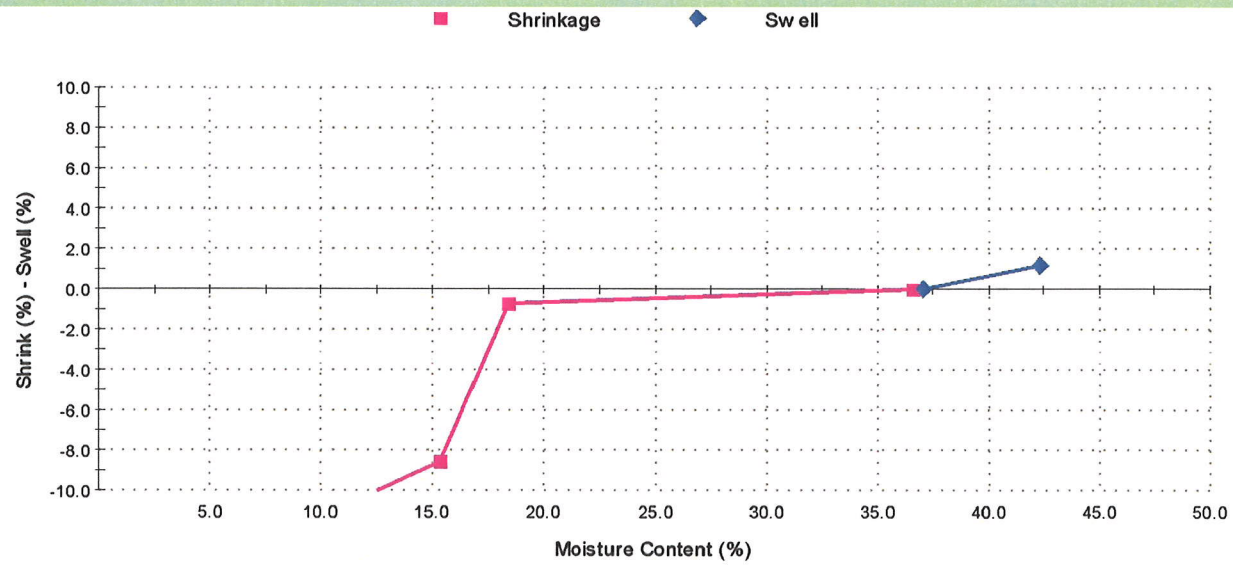
Swell Test AS 1289.7.1.1

Swell on Saturation (%):	1.1
Moisture Content before (%):	37.0
Moisture Content after (%):	42.3
Est. Unc. Comp. Strength before (kPa):	150
Est. Unc. Comp. Strength after (kPa):	100

Shrink Test AS 1289.7.1.1

Shrinkage Moisture Content (%):	36.6
Shrink on drying (%):	11.7
Est. inert material (%):	<10
Crumbling during shrinkage:	Nil
Cracking during shrinkage:	Minor Transverse

Shrink Swell



Shrink Swell Index - Iss (%): 6.8

Comments

Appendix H

Particle Size Distribution including Hydrometer

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SPECIALISTS IN SCIENTIFIC TESTING SOLUTIONS

Material Test Report

Report No: MAT:FYSH10S-00803
Issue No: 1

Client:	Coffey Environments Pty Ltd 118, Auburn street Wollongong NSW 2500
Principal:	TruEnergy
Project No.:	INFOFYSH00258AA
Project Name:	GEOTECHNICAL INVESTIGATION
Lot No.:	- **TRN:** -

Approved Signatory: Rod Wilkins
(Senior Geotechnician)
NATA Accredited Laboratory Number:431
Date of Issue: 29/03/2010

Sample Details

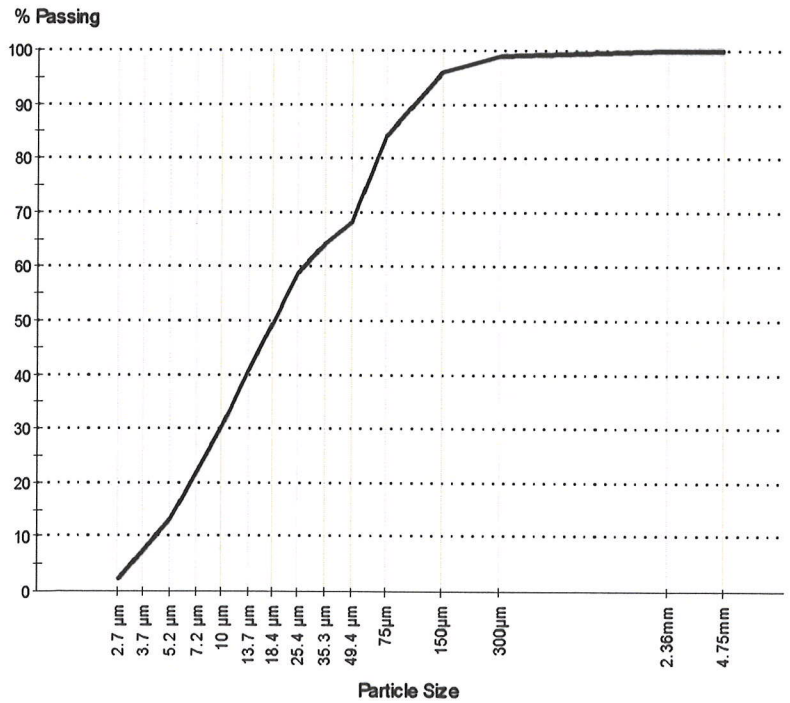
Sample ID:	FYSH10S-00803
Field Sample:	00002
Date Sampled:	10/03/2010
Source:	Borehole
Material:	
Specification:	AS Grading
Sampling Method:	Submitted by client
Project Location:	TALLAWARRA LANDS, YALLAH, NSW
Sample Location:	BH06: 0.3m to 1.2m

Other Test Results

Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	0.0	
Mould Length (mm)		254	
Crumbling		No	
Curling		No	
Liquid Limit (%)	AS 1289.3.1.2	52	
Method		One Point	
Plastic Limit (%)	AS 1289.3.2.1	NP	
Plasticity Index (%)	AS 1289.3.3.1	NP	

Particle Size Distribution

Method: AS 1289.3.6.3
Drying by:



Particle Size	% Passing	Limits
4.75mm	100	
2.36mm	100	
300µm	99	
150µm	96	
75µm	84	
49.4 µm	68.4	
35.3 µm	64.2	
25.4 µm	58.9	
18.4 µm	49.4	
13.7 µm	40.8	
10.0 µm	30.4	
7.2 µm	21.8	
5.2 µm	13.3	
3.7 µm	7.6	
2.7 µm	2.0	

Comments

Moisture Content AS1289 2.1.1 as recieved 58.4%

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SPECIALISTS IN SCIENTIFIC TESTING SOLUTIONS

Material Test Report

Report No: MAT:FYSH10S-00802
Issue No: 1

Client:	Coffey Environments Pty Ltd 118, Auburn street Wollongong NSW 2500
Principal:	TruEnergy
Project No.:	INFOFYSH00258AA
Project Name:	GEOTECHNICAL INVESTIGATION
Lot No.:	- **TRN:** -

Approved Signatory: Rod Wilkins
(Senior Geotechnician)
NATA Accredited Laboratory Number:431
Date of Issue: 29/03/2010

Sample Details

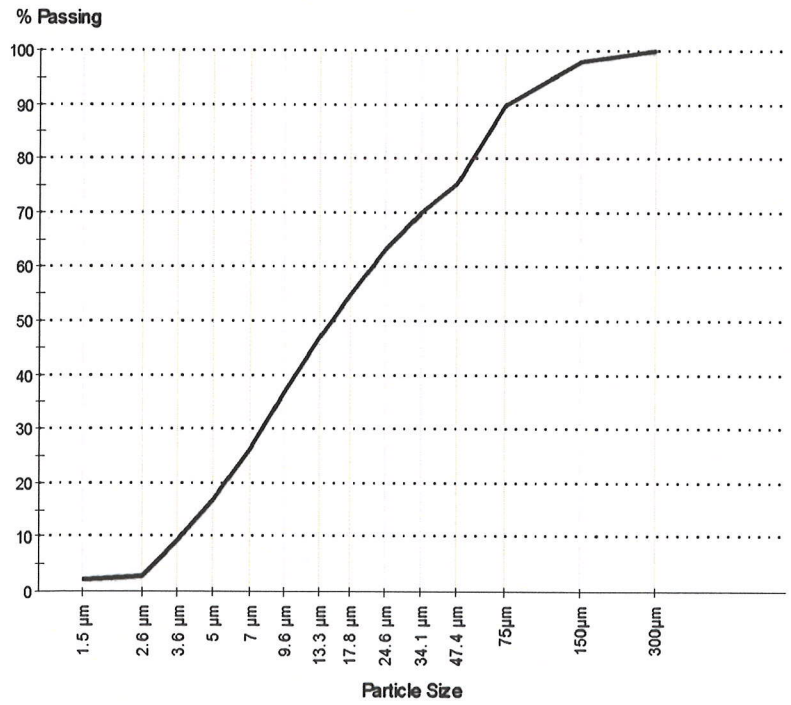
Sample ID:	FYSH10S-00802
Field Sample:	00001
Date Sampled:	10/03/2010
Source:	Borehole
Material:	
Specification:	AS Grading
Sampling Method:	Submitted by client
Project Location:	TALLAWARRA LANDS, YALLAH, NSW
Sample Location:	BH05: 1.1m to 2.6m

Other Test Results

Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	0.0	
Mould Length (mm)		254	
Crumbling		No	
Curling		No	
Liquid Limit (%)	AS 1289.3.1.2	52	
Method		One Point	
Plastic Limit (%)	AS 1289.3.2.1	NP	
Plasticity Index (%)	AS 1289.3.3.1	NP	

Particle Size Distribution

Method: AS 1289.3.6.3
Drying by:



Particle Size	% Passing	Limits
300µm	100	
150µm	98	
75µm	90	
47.4 µm	75.4	
34.1 µm	69.8	
24.6 µm	63.2	
17.8 µm	54.7	
13.3 µm	47.1	
9.6 µm	36.8	
7.0 µm	26.4	
5.0 µm	16.9	
3.6 µm	9.4	
2.6 µm	2.8	
1.5 µm	2.0	

Comments

Moisture Content AS1289 2.1.1 as recieved 58.5%

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coffey information
SPECIALISTS IN SCIENTIFIC TESTING SOLUTIONS

Report No: MAT:FYSH10S-00804
Issue No: 1

Material Test Report

Client:	Coffey Environments Pty Ltd 118, Auburn street Wollongong NSW 2500
Principal:	TruEnergy
Project No.:	INFOFYSH00258AA
Project Name:	GEOTECHNICAL INVESTIGATION
Lot No.:	- **TRN:** -

Approved Signatory: Rod Wilkins
(Senior Geotechnician)
NATA Accredited Laboratory Number:431
Date of Issue: 29/03/2010

Sample Details

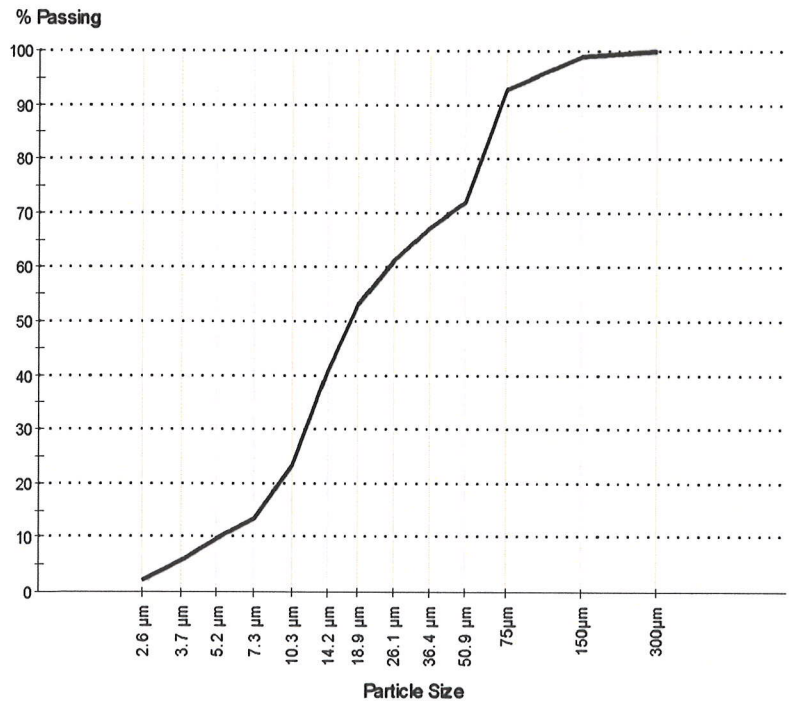
Sample ID:	FYSH10S-00804
Field Sample:	00003
Date Sampled:	10/03/2010
Source:	Borehole
Material:	
Specification:	AS Grading
Sampling Method:	Submitted by client
Project Location:	TALLAWARRA LANDS, YALLAH, NSW
Sample Location:	BH04: 5.5m to 6.9m

Other Test Results

Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	0.0	
Mould Length (mm)		254	
Crumbling		No	
Curling		No	
Liquid Limit (%)	AS 1289.3.1.2	60	
Method		One Point	
Plastic Limit (%)	AS 1289.3.2.1	NP	
Plasticity Index (%)	AS 1289.3.3.1	NP	

Particle Size Distribution

Method: AS 1289.3.6.3
Drying by:



Particle Size	% Passing	Limits
300µm	100	
150µm	99	
75µm	93	
50.9 µm	72.0	
36.4 µm	67.2	
26.1 µm	61.3	
18.9 µm	53.0	
14.2 µm	40.9	
10.3 µm	23.3	
7.3 µm	13.6	
5.2 µm	9.7	
3.7 µm	5.8	
2.6 µm	2.1	

Comments

Moisture Content AS1289 2.1.1 as recieved 72.8%

Fyshwick,Canberra Laboratory

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SPECIALISTS IN SCIENTIFIC TESTING SOLUTIONS

Material Test Report

Report No: MAT:FYSH10S-00805
Issue No: 1

Client:	Coffey Environments Pty Ltd 118, Auburn street Wollongong NSW 2500
Principal:	TruEnergy
Project No.:	INFOFYSH00258AA
Project Name:	GEOTECHNICAL INVESTIGATION
Lot No.:	- **TRN:** -

Approved Signatory: Rod Wilkins
(Senior Geotechnician)
NATA Accredited Laboratory Number:431
Date of Issue: 29/03/2010

Sample Details

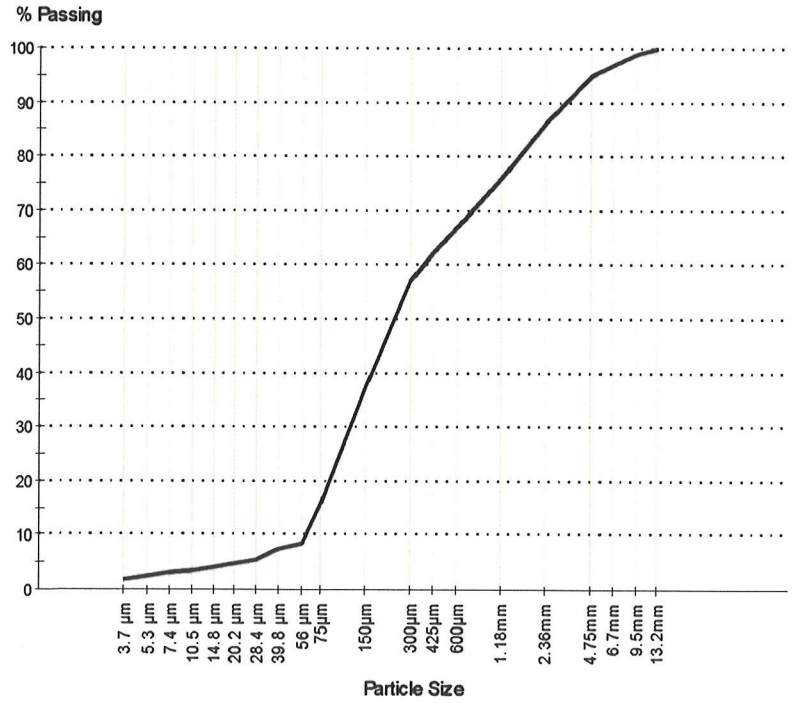
Sample ID:	FYSH10S-00805
Field Sample:	00004
Date Sampled:	10/03/2010
Source:	Borehole
Material:	
Specification:	AS Grading
Sampling Method:	Submitted by client
Project Location:	TALLAWARRA LANDS, YALLAH, NSW
Sample Location:	BH01: 9.5m to 10.25m

Other Test Results

Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	N/A	
Mould Length (mm)		0	
Crumbling		No	
Curling		No	
Liquid Limit (%)	AS 1289.3.1.2	54	
Method		One Point	
Plastic Limit (%)	AS 1289.3.2.1	NP	
Plasticity Index (%)	AS 1289.3.3.1	NP	

Particle Size Distribution

Method: AS 1289.3.6.3
Drying by:



Particle Size	% Passing	Limits
13.2mm	100	
9.5mm	99	
6.7mm	97	
4.75mm	95	
2.36mm	86	
1.18mm	76	
600µm	67	
425µm	62	
300µm	57	
150µm	37	
75µm	16	
56.0 µm	8.5	
39.8 µm	7.3	
28.4 µm	5.5	
20.2 µm	4.7	
14.8 µm	3.9	
10.5 µm	3.5	
7.4 µm	3.1	
5.3 µm	2.4	
3.7 µm	1.6	

Comments

Moisture Content AS1289 2.1.1 as recieved 50.3%

Appendix H

Particle Size Distribution and Atterberg Limits including Linear Shrinkage

Wollongong Laboratory

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SPECIALISTS IN SCIENTIFIC TESTING SOLUTIONS

Report No: MAT:WOLL10S-00202
Issue No: 1

Material Test Report

Client:	Coffey Environments Pty Ltd 118, Auburn street Wollongong NSW 2500
Principal:	Tru Energy
Project No.:	INFOWOLL00137AA
Project Name:	ENVIWOLL00250AB- Environmental Investigation
Lot No.:	**TRN:**

Approved Signatory: Clint Manning
(Laboratory Manager)
NATA Accredited Laboratory Number:431
Date of Issue: 22/04/2010

Sample Details

Sample ID:	WOLL10S-00202
Field Sample:	S1
Date Sampled:	25/02/2010
Source:	
Material:	
Specification:	No Specification
Sampling Method:	Submitted by client
Project Location:	Tallawarra Lands Redevelopment
Sample Location:	CTP 12, 0.60m-0.80m

Other Test Results

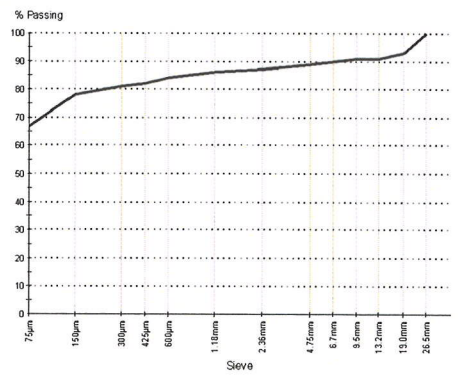
Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	9.5	
Mould Length (mm)		126	
Crumbling		No	
Curling		No	
Liquid Limit (%)	AS 1289.3.1.1	36	
Method		Four Point	
Plastic Limit (%)	AS 1289.3.2.1	21	
Plasticity Index (%)	AS 1289.3.3.1	15	

Particle Size Distribution

Method: AS 1289.3.6.1
Drying by: Oven
Note: Sample Washed

Sieve Size	% Passing	Limits
26.5mm	100	
19.0mm	93	
13.2mm	91	
9.5mm	91	
6.7mm	90	
4.75mm	89	
2.36mm	87	
1.18mm	86	
600µm	84	
425µm	82	
300µm	81	
150µm	78	
75µm	67	

Chart



Comments

N/A

Wollongong Laboratory

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SPECIALISTS IN SCIENTIFIC TESTING SOLUTIONS

Report No: MAT:WOLL10S-00201
Issue No: 1

Material Test Report

Client:	Coffey Environments Pty Ltd 118, Auburn street Wollongong NSW 2500
Principal:	Tru Energy
Project No.:	INFOWOLL00137AA
Project Name:	ENVIWOLL00250AB- Environmental Investigation
Lot No.:	**TRN:**

NATA
WORLD RECOGNISED ACCREDITATION

Approved Signatory: Clint Manning
(Laboratory Manager)
NATA Accredited Laboratory Number:431
Date of Issue: 22/04/2010

Sample Details

Sample ID:	WOLL10S-00201
Field Sample:	S2
Date Sampled:	25/02/2010
Source:	
Material:	
Specification:	No Specification
Sampling Method:	Submitted by client
Project Location:	Tallawarra Lands Redevelopment
Sample Location:	CTP 45, 0.00m-0.10m

Other Test Results

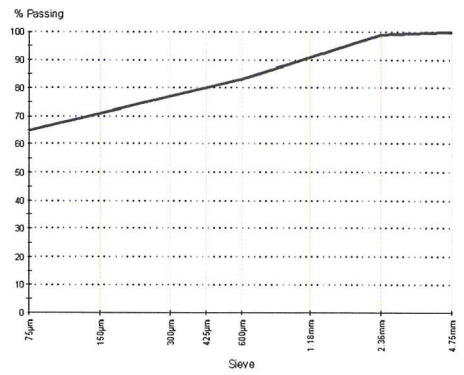
Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	9.5	
Mould Length (mm)		126	
Crumbling		No	
Curling		No	
Liquid Limit (%)	AS 1289.3.1.1	52	
Method		Four Point	
Plastic Limit (%)	AS 1289.3.2.1	37	
Plasticity Index (%)	AS 1289.3.3.1	15	

Particle Size Distribution

Method: AS 1289.3.6.1
Drying by: Oven
Note: Sample Washed

Sieve Size	% Passing	Limits
4.75mm	100	
2.36mm	99	
1.18mm	91	
600µm	83	
425µm	80	
300µm	77	
150µm	71	
75µm	65	

Chart



Comments

N/A

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coffey information
SPECIALISTS IN SCIENTIFIC TESTING SOLUTIONS

Report No: MAT:WOLL10S-00198
Issue No: 1

Material Test Report

Client:	Coffey Environments Pty Ltd 118, Auburn street Wollongong NSW 2500
Principal:	Tru Energy
Project No.:	INFOWOLL00137AA
Project Name:	ENVIWOLL00250AB- Environmental Investigation
Lot No.:	**TRN:**

Approved Signatory: Clint Manning
(Laboratory Manager)
NATA Accredited Laboratory Number:431
Date of Issue: 22/04/2010

Sample Details

Sample ID:	WOLL10S-00198
Field Sample:	S6
Date Sampled:	25/02/2010
Source:	
Material:	
Specification:	No Specification
Sampling Method:	Submitted by client
Project Location:	Tallawarra Lands Redevelopment
Sample Location:	CTP 48, 0.30m-0.40m

Other Test Results

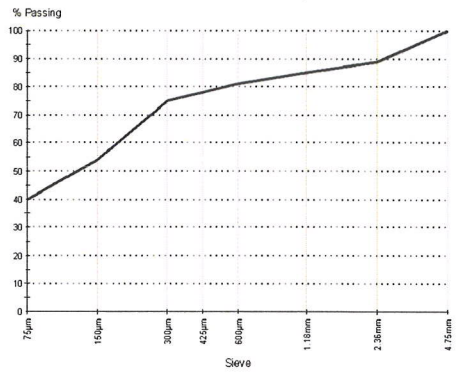
Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	8.5	
Mould Length (mm)		126	
Crumbling		No	
Curling		No	
Liquid Limit (%)	AS 1289.3.1.1	34	
Method		Four Point	
Plastic Limit (%)	AS 1289.3.2.1	24	
Plasticity Index (%)	AS 1289.3.3.1	10	

Particle Size Distribution

Method: AS 1289.3.6.1
Drying by: Oven
Note: Sample Washed

Sieve Size	% Passing	Limits
4.75mm	100	
2.36mm	89	
1.18mm	85	
600µm	81	
425µm	78	
300µm	75	
150µm	54	
75µm	40	

Chart



Comments

N/A

Wollongong Laboratory

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coffey information
SPECIALISTS IN SCIENTIFIC TESTING SOLUTIONS

Report No: MAT:WOLL10S-00203
Issue No: 1

Material Test Report

Client:	Coffey Environments Pty Ltd 118, Auburn street Wollongong NSW 2500
Principal:	Tru Energy
Project No.:	INFOWOLL00137AA
Project Name:	ENVIWOLL00250AB- Environmental Investigation
Lot No.:	**TRN:**

Approved Signatory: Clint Manning
(Laboratory Manager)
NATA Accredited Laboratory Number:431
Date of Issue: 22/04/2010

Sample Details

Sample ID:	WOLL10S-00203
Field Sample:	S7
Date Sampled:	25/02/2010
Source:	
Material:	
Specification:	No Specification
Sampling Method:	Submitted by client
Project Location:	Tallawarra Lands Redevelopment
Sample Location:	CTP 66, 0.00m-0.10m

Other Test Results

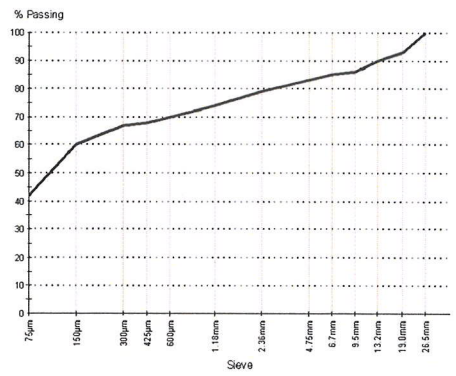
Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	9.5	
Mould Length (mm)		125	
Crumbling		No	
Curling		No	
Liquid Limit (%)	AS 1289.3.1.1	37	
Method		Four Point	
Plastic Limit (%)	AS 1289.3.2.1	19	
Plasticity Index (%)	AS 1289.3.3.1	18	

Particle Size Distribution

Method: AS 1289.3.6.1
Drying by: Oven
Note: Sample Washed

Sieve Size	% Passing	Limits
26.5mm	100	
19.0mm	93	
13.2mm	90	
9.5mm	86	
6.7mm	85	
4.75mm	83	
2.36mm	79	
1.18mm	74	
600µm	70	
425µm	68	
300µm	67	
150µm	60	
75µm	42	

Chart



Comments

N/A

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coffey information
SPECIALISTS IN SCIENTIFIC TESTING SOLUTIONS

Material Test Report

Report No: MAT:WOLL10S-00200
Issue No: 1

Client:	Coffey Environments Pty Ltd 118, Auburn street Wollongong NSW 2500
Principal:	Tru Energy
Project No.:	INFOWOLL00137AA
Project Name:	ENVIWOLL00250AB- Environmental Investigation
Lot No.:	**TRN:**

NATA
WORLD RECOGNISED ACCREDITATION

This document is issued in accordance with NATAs accreditation requirements. Accredited for compliance with ISO/IEC 17025.

Approved Signatory: Clint Manning
(Laboratory Manager)
NATA Accredited Laboratory Number:431
Date of Issue: 22/04/2010

Sample Details

Sample ID:	WOLL10S-00200
Field Sample:	S3
Date Sampled:	25/02/2010
Source:	
Material:	
Specification:	No Specification
Sampling Method:	Submitted by client
Project Location:	Tallawarra Lands Redevelopment
Sample Location:	CTP 69, 0.80m-1.00m

Other Test Results

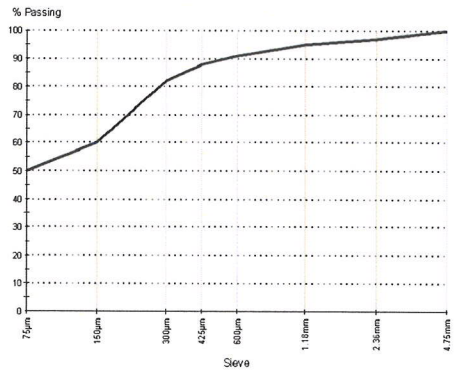
Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	11.0	
Mould Length (mm)		126	
Crumbling		No	
Curling		No	
Liquid Limit (%)	AS 1289.3.1.1	43	
Method		Four Point	
Plastic Limit (%)	AS 1289.3.2.1	23	
Plasticity Index (%)	AS 1289.3.3.1	20	

Particle Size Distribution

Method: AS 1289.3.6.1
Drying by: Oven
Note: Sample Washed

Sieve Size	% Passing	Limits
4.75mm	100	
2.36mm	97	
1.18mm	95	
600µm	91	
425µm	88	
300µm	82	
150µm	60	
75µm	50	

Chart



Comments

N/A

Wollongong Laboratory

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coffey information
SPECIALISTS IN SCIENTIFIC TESTING SOLUTIONS

Report No: MAT:WOLL10S-00197
Issue No: 1

Material Test Report

Client:	Coffey Environments Pty Ltd 118, Auburn street Wollongong NSW 2500
Principal:	Tru Energy
Project No.:	INFOWOLL00137AA
Project Name:	ENVIWOLL00250AB- Environmental Investigation
Lot No.:	**TRN:**

Approved Signatory: Clint Manning
(Laboratory Manager)
NATA Accredited Laboratory Number:431
Date of Issue: 22/04/2010

Sample Details

Sample ID:	WOLL10S-00197
Field Sample:	S4
Date Sampled:	25/02/2010
Source:	
Material:	
Specification:	No Specification
Sampling Method:	Submitted by client
Project Location:	Tallawarra Lands Redevelopment
Sample Location:	CTP 70, 0.00m-0.10m

Other Test Results

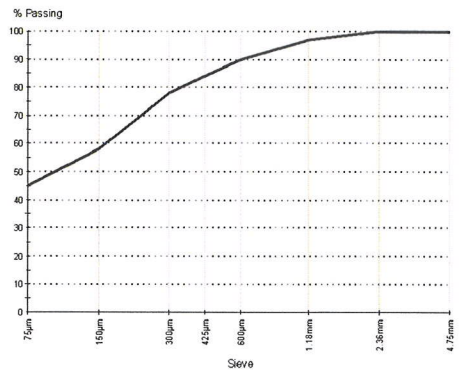
Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	12.0	
Mould Length (mm)		126	
Crumbling		No	
Curling		No	
Liquid Limit (%)	AS 1289.3.1.1	42	
Method		Four Point	
Plastic Limit (%)	AS 1289.3.2.1	24	
Plasticity Index (%)	AS 1289.3.3.1	18	

Particle Size Distribution

Method: AS 1289.3.6.1
Drying by: Oven
Note: Sample Washed

Sieve Size	% Passing	Limits
4.75mm	100	
2.36mm	100	
1.18mm	97	
600µm	90	
425µm	84	
300µm	78	
150µm	58	
75µm	45	

Chart



Comments

N/A

Appendix I
Data Validation Reports

Geotechnical, Contamination and Groundwater Investigation,
Tallawarra Lands, Yallah, NSW

Coffey Environments Pty Ltd

A.C.N. 090 522 759 A.B.N. 45 090 522 759

QA/QC DATA VALIDATION REPORT

Job No: ENVIWOLL00250AB Batches: SE76228 (SGS) & ES1003848 (ALS)

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

I. SAMPLE HANDLING

	Yes	No (Comment below)
1. Were the sample **holding times** met?	☒	☐
2. Were the samples in **proper custody** between the field and reaching the laboratory?	☒	☐
3. Were the samples **properly and adequately** preserved? *This includes keeping the samples chilled, where applicable.*	☒	☐
4. Were the samples received by the laboratory in good condition?	☒	☐

COMMENTS:

Sample Handling was: ☒ Satisfactory ☐ Unsatisfactory ☐ Partially Satisfactory

II PRECISION/ACCURACY ASSESSMENT

	Yes	No (Comment below)
1. Was a NATA registered laboratory used?	☒	☐
2. Did the laboratory perform the requested tests?	☒	☐
3. Were the laboratory methods adopted NATA endorsed?	☒	☐
4. Were the appropriate test procedures followed?	☒	☐
5. Were the reporting limits satisfactory?	☒	☐
6. Was the NATA Seal on the reports?	☒	☐
7. Were the reports signed by an authorised person?	☒	☐

COMMENTS:

Precision/Accuracy of the Laboratory Report	☒ Satisfactory ☐ Partially Satisfactory	☐ Unsatisfactory

III. FIELD QA/QC

1. Number of Primary Samples Analysed — Soil: 15; Water: 0

2. Number of Days of Sampling: — Soil: 4; Water: N/A

3. Number and Type of QA/QC Samples Collected:

	SOIL	WATER
Field Duplicates (at least 1 in 10 samples)	1 intra lab + 1 inter lab	NA
Trip Blanks (at least 1/day or sampling event)	1	NA
Wash Blanks (at least 1/day/matrix/equipment)	0	NA
Other (Field Blanks, Spiked Trip Blanks, etc.)	1 Trip Spike	NA

4. FIELD DUPLICATES

	Yes	No (Comment below)
A. Were an Adequate Number of field duplicates analysed for each chemical (min. 10%)?	☒	☐
B. Were RPDs within Control Limits?		
a. Organics (< 50 % for soil)	☒	☐
b. Metals/Inorganics (< 50 % for soil)	☐	☒

COMMENTS:

- RPDs ranging between 70% and 117%, above the control limit of 50%, were recorded for copper, lead and zinc between soil duplicate pairs CTP75/2.0-2.1m and DJD23 (batch ES1003848). This result is considered to be attributed to the heterogeneous nature of the contaminant distribution throughout the soil/fill matrix.
- Two inconsistencies were recorded between soil duplicate pairs CTP75/2.0-2.1m and DJD23 (batch ES1003848) for arsenic and cadmium. The contaminant was either not detected in primary sample but is detected in duplicate sample, or vice versa. This result is not considered significant as concentrations were close to the laboratory limit of reporting (LOR).
- RPDs calculated for this project have been presented at the end of this report in Table QAQC1.

5. TRIP BLANKS

	Yes	No (Comment below)
A. Were an Adequate Number of trip blanks collected?	☒	☐
B. Were the Trip Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	☐	☒

6. WASH BLANKS

	Yes	No (Comment below)
A. Were an adequate number of Wash Blanks collected?	☐	☒
B. Were the Wash Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	N/A	N/A

COMMENTS:

- A laboratory prepared trip spike sample (spiked with BTEX) was taken into the field and transported with the laboratory samples. The recoveries of the trip spike sample ranged between 70% and 75% which are within the control limits of 60% and 110% and are reported in batch SE76228 (See Table QAQC3).
- Soil samples were either collected directly from the excavator bucket or ground surface using a clean pair of disposable gloves for each sample and therefore a wash blank sample was not considered necessary.

Field QA/QC was:	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

IV LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

1. Type of QA/QC Samples

Batch SE76228

	TPH (C_6-C_9), BTEX	TPH (C_{10}-C_{36})	PAH	OCP	PCB	Metals	Mercury	Asbestos
Laboratory Blanks/Reagent Blanks (at least 1 per batch)	1	1	1	1	1	1	1	N/A
Laboratory Duplicates (at least 1 per batch or 1 per 10 samples whichever is the smaller)	2	1	2	2	2	2	2	N/A
Matrix Spikes/Matrix Spike Duplicates (1 for each soil type)	-	-	-	1	1	1	-	N/A
Laboratory Control Spike	1	1	1	-	-	-	1	N/A
Surrogate (where appropriate)*	1	-	3	1	1	-	-	N/A

*Number of surrogates spikes carried out on each sample

Batch ES1003848

	TPH (C_6-C_9), BTEX	TPH (C_{10}-C_{36})	PAH	OCP	PCB	Metals	Mercury	Asbestos
Laboratory Blanks/Reagent Blanks (at least 1 per batch)	-	-	1	1	1	1	1	-
Laboratory Duplicates (at least 1 per batch or 1 per 10 samples whichever is the smaller)	-	-	1	1	1	2	2	-
Matrix Spikes/Matrix Spike Duplicates (1 for each soil type)	-	-	1	1	1	1	1	-
Laboratory Control Spike	-	-	1	1	1	1	1	-
Surrogate (where appropriate)*	-	-	3	1	1			-

*Number of surrogates spikes carried out on each sample

	Yes	No (Comment below)
2 Were the laboratory blanks/reagents blanks free of contamination?	☒	☐
3. Were the spike recoveries within control limits?		
a. Organics (60% to 110%)	☐	☒
b. Metals/Inorganic (70% to 130%)	☒	☐
4. Were the RPDs of the laboratory duplicates within control limits?	☒	☐
5. Were the surrogate recoveries within control limits?	☐	☒

COMMENTS:

Batch SE76228

- PAH surrogates recorded recoveries of 111% and 113% for soil samples CTP82/1.7-1.8m and CTP16/2.75-2.9m, which are outside the upper control limit of 110%. This result can be disregarded for CTP82 as concentrations of PAHs were below the LOR. For CTP16, this result may indicate slightly higher concentrations of PAHs may have been recorded than what was actually present.
- In the batch QA/QC, several laboratory control spikes (LCS) recorded recoveries ranging between 112% and 125% for some OCPs and PAHs in soil, which are outside the upper control limit of 110%. This result can be disregarded for OCPs, as concentrations were below the LOR. This result may indicate that slightly higher concentrations of PAHs may have been recorded than what was actually present.

Batch ES1003848

- Spike and surrogate recoveries were within control limits.

5. The laboratory internal QA/QC was:	☐ Satisfactory	☐ Unsatisfactory
	☒ Partially Satisfactory	

V. DATA USABILITY

1. Data Directly Usable ☐
2. Data Usable with the following corrections/modifications (see comment below) ☒
3. Data Not Usable. ☐

COMMENTS:

Some higher RPDs were recorded between the duplicate pairs for heavy metals (arsenic, cadmium, copper, lead, zinc). This result is considered to be attributed to the heterogeneous nature of the soil/fill matrix. Therefore, some variability in heavy metal concentrations can be expected.

Higher surrogate and laboratory spike recoveries were recorded for some soil samples, which is outside the upper control limit of 110%. In soil samples where detectable concentrations of PAHs were reported; this result may indicate slightly higher concentrations of PAHs may have been recorded than what was actually present. This is not considered significant as concentrations of PAH recorded in this sample were well below the adopted human health investigation levels for residual landuse with accessible soils.

QA/QC Report Prepared by Colee Quayle

QA/QC Report Reviewed by: Manuel Fernandez
(Reviewer)

Coffey Environments Pty Ltd

A.C.N. 090 522 759 A.B.N. 45 090 522 759

QA/QC DATA VALIDATION REPORT

Job No: ENVIWOLL00250AB Batch: SE76250

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

I. SAMPLE HANDLING

	Yes	No (Comment below)
1. Were the sample **holding times** met?	☒	☐
2. Were the samples in **proper custody** between the field and reaching the laboratory?	☒	☐
3. Were the samples **properly and adequately** preserved? *This includes keeping the samples chilled, where applicable.*	☒	☐
4. Were the samples received by the laboratory in good condition?	☒	☐

COMMENTS:

Sample Handling was: ☒ Satisfactory ☐ Unsatisfactory ☐ Partially Satisfactory

II PRECISION/ACCURACY ASSESSMENT

	Yes	No (Comment below)
1. Was a NATA registered laboratory used?	☒	☐
2. Did the laboratory perform the requested tests?	☒	☐
3. Were the laboratory methods adopted NATA endorsed?	☒	☐
4. Were the appropriate test procedures followed?	☒	☐
5. Were the reporting limits satisfactory?	☒	☐
6. Was the NATA Seal on the reports?	☒	☐
7. Were the reports signed by an authorised person?	☒	☐

COMMENTS:

Precision/Accuracy of the Laboratory Report	☒ Satisfactory ☐ Partially Satisfactory	☐ Unsatisfactory

III. FIELD QA/QC

1. Number of Primary Samples Analysed — Soil: 15; Water: 0

2. Number of Days of Sampling: — Soil: 4; Water: N/A

3. Number and Type of QA/QC Samples Collected:

	SOIL	WATER
Field Duplicates (at least 1 in 10 samples)	2 intra lab	NA
Trip Blanks (at least 1/day or sampling event)	0	NA
Wash Blanks (at least 1/day/matrix/equipment)	0	NA
Other (Field Blanks, Spiked Trip Blanks, etc.)	0	NA

4. FIELD DUPLICATES

	Yes	No (Comment below)
A. Were an Adequate Number of field duplicates analysed for each chemical (min. 10%)?	☒	☐
B. Were RPDs within Control Limits?		
a. Organics (< 50 % for soil)	☒	☐
b. Metals/Inorganics (< 50 % for soil)	☒	☐

COMMENTS:

- RPDs calculated for this project have been presented at the end of this report in Table QAQC1.

5. TRIP BLANKS

	Yes	No (Comment below)
A. Were an Adequate Number of trip blanks collected?	☐	☒
B. Were the Trip Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	☐	☐

6. WASH BLANKS

	Yes	No (Comment below)
A. Were an adequate number of Wash Blanks collected?	☐	☒
B. Were the Wash Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	N/A	N/A

COMMENTS:

- A laboratory prepared trip spike sample (spiked with BTEX) was taken into the field and transported with the laboratory samples. The recoveries of the trip spike sample ranged between 70% and 75% which are within the control limits of 60% and 110% and are reported in batch SE76228 (See Table QAQC3).
- Soil samples were either collected directly from the excavator bucket or ground surface using a clean pair of disposable gloves for each sample and therefore a wash blank sample was not considered necessary.

Field QA/QC was:	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

IV LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

1. Type of QA/QC Samples

	TPH (C_6-C_9), BTEX	TPH (C_{10}-C_{36})	PAH	OCP	PCB	Metals	Mercury	Asbestos
Laboratory Blanks/Reagent Blanks (at least 1 per batch)	1	1	1	1	1	1	1	N/A
Laboratory Duplicates (at least 1 per batch or 1 per 10 samples whichever is the smaller)	1	1	2	2	1	2	2	N/A
Matrix Spikes/Matrix Spike Duplicates (1 for each soil type)	1	-	1	1	1	1	-	N/A
Laboratory Control Spike	-	1	-	-	-	-	1	N/A
Surrogate (where appropriate)*	1	-	3	1	1	-	-	N/A

*Number of surrogates spikes carried out on each sample

	Yes	**No** (Comment below)
2 Were the laboratory blanks/reagents blanks free of contamination?	☒	☐
3. Were the spike recoveries within control limits?		
a. Organics (60% to 110%)	☐	☒
b. Metals/Inorganic (70% to 130%)	☒	☐
4. Were the RPDs of the laboratory duplicates within control limits?	☒	☐
5. Were the surrogate recoveries within control limits?	☐	☒

COMMENTS:

- A PAH surrogate recorded a recovery of 64% for soil samples CTP67/0.0-0.1m, which is outside the lower control limit of 60%. This result may indicate that slightly lower concentrations of PAH may have been recorded than what was actually present.
- In the batch QA/QC, matrix spikes corresponding to soil sample CTP74/0.0-0.1m recorded recoveries ranging between 111% and 121% for some OCPs in soil, which are outside the upper control limit of 110%. This result can be disregarded as concentrations of OCPs in this sample were below the laboratory limit of reporting (LOR).
- In the batch QA/QC, laboratory control spike recorded a recovery of 122% for the TPH fractions C_{15}-C_{28} in soil, which are outside the upper control limit of 110%. This result can be disregarded as concentrations of TPH in the batch were below the LOR.

5. The laboratory internal QA/QC was:	☐ Satisfactory	☐ Unsatisfactory
	☒ Partially Satisfactory	

V. DATA USABILITY

1.	Data Directly Usable	☐
2.	Data Usable with the following corrections/modifications (see comment below)	☒
3.	Data Not Usable.	☐

COMMENTS:

A lower surrogate spike recovery was reported for CTP67/0.0-0.1m for PAHs, which was outside the adopted control limits. This result may indicate slightly lower concentrations of PAHs were recorded than what was actually present. This result is not considered significant as its duplicate pair; sample QC1 recorded the same result for PAHs, that is, below the LOR. Therefore, the concentrations of PAHs in sample CTP67/0.0-0.1m are considered representative of the soil conditions at the location tested.

QA/QC Report Prepared by Colee Quayle

QA/QC Report Reviewed by: Manuel Fernandez
(Reviewer)

Coffey Environments Pty Ltd

A.C.N. 090 522 759 A.B.N. 45 090 522 759

QA/QC DATA VALIDATION REPORT

Job No: ENVIWOLL00250AB Batch: SE76295

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

I. SAMPLE HANDLING

	Yes	No (Comment below)
1. Were the sample **holding times** met?	☒	☐
2. Were the samples in **proper custody** between the field and reaching the laboratory?	☒	☐
3. Were the samples **properly and adequately** preserved? *This includes keeping the samples chilled, where applicable.*	☒	☐
4. Were the samples received by the laboratory in good condition?	☒	☐

COMMENTS:

Sample Handling was: ☒ Satisfactory ☐ Partially Satisfactory ☐ Unsatisfactory

II PRECISION/ACCURACY ASSESSMENT

	Yes	No (Comment below)
1. Was a NATA registered laboratory used?	☒	☐
2. Did the laboratory perform the requested tests?	☒	☐
3. Were the laboratory methods adopted NATA endorsed?	☒	☐
4. Were the appropriate test procedures followed?	☒	☐
5. Were the reporting limits satisfactory?	☒	☐
6. Was the NATA Seal on the reports?	☒	☐
7. Were the reports signed by an authorised person?	☒	☐

COMMENTS:

Precision/Accuracy of the Laboratory Report	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

III. FIELD QA/QC

1. Number of Samples Analysed — Soil: 6; Water: 0

2. Number of Days of Sampling: — Soil: 1; Water: N/A

3. Number and Type of QA/QC Samples Collected:

	SOIL	WATER
Field Duplicates (at least 1 in 10 samples)	1 intra lab	NA
Trip Blanks (at least 1/day or sampling event)	0	NA
Wash Blanks (at least 1/day/matrix/equipment)	0	NA
Other (Field Blanks, Spiked Trip Blanks, etc.)	0	NA

4. FIELD DUPLICATES

	Yes	No (Comment below)
A. Were an Adequate Number of field duplicates analysed for each chemical (min. 10%)?	☒	☐
B. Were RPDs within Control Limits?		
a. Organics (< 50 % for soil)	☐	☒
b. Metals/Inorganics (< 50 % for soil)	☐	☒

COMMENTS:

- RPDs ranging between 53% and 175%, above the control limit of 50%, were recorded for chromium and total PAHs between CTP86/0.0-0.1m and DJD28 soil duplicate pairs. For chromium, this result is considered to be attributed to the heterogeneous nature of the contaminant distribution throughout the soil/fill matrix. For total PAHs this result is not considered significant as concentrations were close to the laboratory limits of reporting (LOR).
- Two inconsistencies were recorded between the soil duplicate pairs for arsenic and cadmium. The contaminant was either not detected in primary sample but is detected in duplicate sample, or vice versa. This result is not considered significant as concentrations were close to the LOR.
- RPDs calculated for this project have been presented at the end of this report in Table QAQC1.

5. TRIP BLANKS

	Yes	No (Comment below)
A. Were an Adequate Number of trip blanks collected?	☐	☒
B. Were the Trip Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	☐	☐

6. WASH BLANKS

	Yes	No (Comment below)
A. Were an adequate number of Wash Blanks collected?	☐	☒
B. Were the Wash Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	☐	☐

COMMENTS:

- A laboratory prepared trip spike sample (spiked with BTEX) was taken into the field and transported with the laboratory samples. The recoveries of the trip spike sample ranged between 70% and 75% which are within the control limits of 60% and 110% and are reported in batch SE76228.
- Soil samples were either collected directly from the excavator bucket or ground surface using a clean pair of disposable gloves for each sample and therefore a wash blank sample was not considered necessary.

Field QA/QC was:	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

IV LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

1. Type of QA/QC Samples

	TPH (C_6-C_9), BTEX	TPH (C_{10}-C_{36})	PAH	OCP	PCB	Metals	Mercury	Asbestos
Laboratory Blanks/Reagent Blanks (at least 1 per batch)	1	1	1	1	1	1	1	N/A
Laboratory Duplicates (at least 1 per batch or 1 per 10 samples whichever is the smaller)	-	-	1	-	-	-	-	N/A
Matrix Spikes/Matrix Spike Duplicates (1 for each soil type)	-	-	-	-	-	-	-	N/A
Laboratory Control Spike	1	1	1	1	1	1	1	N/A
Surrogate (where appropriate)*	1	-	3	1	1	-	-	N/A

*Number of surrogates spikes carried out on each sample

	Yes	**No** (Comment below)
2 Were the laboratory blanks/reagents blanks free of contamination?	☒	☐
3. Were the spike recoveries within control limits?		
a. Organics (60% to 110%)	☐	☒
b. Metals/Inorganic (70% to 130%)	☒	☐
4. Were the RPDs of the laboratory duplicates within control limits?	☒	☐
5. Were the surrogate recoveries within control limits?	☐	☒

COMMENTS:

- An insufficient number of matrix spikes were performed due to the batch size containing a relatively small number of samples, that is, less than ten samples.
- Two soil samples (CTP84/1.25-1.35m, CTP86A/0.0-0.05m) recorded BTEX surrogates recoveries of 116% and 117%, respectively, which are outside the upper control limit of 110%. These results can be disregarded as concentrations of BTEX were below the LOR.
- In the batch QA/QC, laboratory control spikes recorded recoveries ranging between 117% and 127% for some OCPs and PAH (acenaphthene) in soil, which are outside the upper control limit of 110%. This result can be disregarded for OCPs and acenaphthene as concentrations in the batch were below the LOR.

5. The laboratory internal QA/QC was:	☐ Satisfactory	☐ Unsatisfactory
	☒ Partially Satisfactory	

V. DATA USABILITY

1.	Data Directly Usable	☐
2.	Data Usable with the following corrections/modifications (see comment below)	☒
3.	Data Not Usable.	☐

COMMENTS:

Some higher RPDs were recorded between the duplicate pairs for heavy metals (arsenic, cadmium, chromium). This result is considered to be attributed to the heterogeneous nature of the soil/fill matrix. Therefore, some variability in heavy metal concentrations can be expected.

QA/QC Report Prepared by Colee Quayle

QA/QC Report Reviewed by: Manuel Fernandez
(Reviewer)

Coffey Environments Pty Ltd

A.C.N. 090 522 759 A.B.N. 45 090 522 759

QA/QC DATA VALIDATION REPORT

Job No: ENVIWOLL00250AB Batches: SE76561 and SE76561A (CE66993) (CrR Sulfur testing)

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

I. SAMPLE HANDLING

	Yes	No (Comment below)
1. Were the sample **holding times** met?	☒	☐
2. Were the samples in **proper custody** between the field and reaching the laboratory?	☒	☐
3. Were the samples **properly and adequately** preserved? *This includes keeping the samples chilled, where applicable.*	☒	☐
4. Were the samples received by the laboratory in good condition?	☐	☒

COMMENTS:

- The laboratory indicated that several samples had not been received and some additional samples had been received that were not included on the chain of custody. This was not significant as these samples did not require testing.

Sample Handling was:

☐ Satisfactory
☒ Partially Satisfactory
☐ Unsatisfactory

II PRECISION/ACCURACY ASSESSMENT

	Yes	No (Comment below)
1. Was a NATA registered laboratory used?	☒	☐
2. Did the laboratory perform the requested tests?	☒	☐
3. Were the laboratory methods adopted NATA endorsed?	☒	☐
4. Were the appropriate test procedures followed?	☒	☐
5. Were the reporting limits satisfactory?	☒	☐
6. Was the NATA Seal on the reports?	☒	☐
7. Were the reports signed by an authorised person?	☒	☐

COMMENTS:

Precision/Accuracy of the Laboratory Report	☒ Satisfactory ☐ Partially Satisfactory	☐ Unsatisfactory

III. FIELD QA/QC

1. Number of Primary Samples Analysed — Soil: 30 (soil) + 1 (materials) + 6 (Scr); Water: 0

2. Number of Days of Sampling: — Soil: 4; Water: N/A

3. Number and Type of QA/QC Samples Collected:

	SOIL	WATER
Field Duplicates (at least 1 in 10 samples)	2 intra lab	NA
Trip Blanks (at least 1/day or sampling event)	0	NA
Wash Blanks (at least 1/day/matrix/equipment)	0	NA
Other (Field Blanks, Spiked Trip Blanks, etc.)	0	NA

4. FIELD DUPLICATES

	Yes	No (Comment below)
A. Were an Adequate Number of field duplicates analysed for each chemical (min. 10%)?	☒	☐
B. Were RPDs within Control Limits?		
a. Organics (< 50 % for soil)	☒	☐
b. Metals/Inorganics (< 50 % for soil)	☐	☒

COMMENTS:

- Two inconsistencies were recorded between soil duplicate pairs CTP28/0.0-0.1m and QC9 for arsenic and cadmium. The contaminant was either not detected in primary sample but is detected in duplicate sample, or vice versa. This result is not considered significant as concentrations were close to the laboratory limits of reporting (LOR).
- RPDs calculated for this project have been presented at the end of this report in Table QAQC1.

5. TRIP BLANKS

	Yes	No (Comment below)
A. Were an Adequate Number of trip blanks collected?	☐	☒
B. Were the Trip Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	☐	☐

6. WASH BLANKS

	Yes	No (Comment below)
A. Were an adequate number of Wash Blanks collected?	☐	☒
B. Were the Wash Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	☐	☐

COMMENTS:

- A laboratory prepared trip spike sample (spiked with BTEX) was taken into the field and transported with the laboratory samples. The recoveries of the trip spike sample ranged between 70% and 75% which are within the control limits of 60% and 110% and are reported in batch SE76228 (See Table QAQC3).
- Soil samples were either collected directly from the excavator bucket or ground surface using a clean pair of disposable gloves for each sample and therefore a wash blank sample was not considered necessary.

Field QA/QC was:	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

IV LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

1. Type of QA/QC Samples

	TPH (C_6-C_9), BTEX	TPH (C_{10}-C_{36})	PAH	OCP/PCB	pH_{FOX}	pH_F	Metals	CrR Sulphur Suite**	Asbestos
Laboratory Blanks/Reagent Blanks (at least 1 per batch)	1	1	1	1	-	-	1	-	N/A
Laboratory Duplicates (at least 1 per batch or 1 per 10 samples whichever is the smaller)	1	1	1	-	3	2	-	1	N/A
Matrix Spikes/Matrix Spike Duplicates (1 for each soil type)	1	1	1	-	-	-	-	1	N/A
Laboratory Control Spike	-	-	-	1	-	-	1	1	N/A
Surrogate (where appropriate)*	1	-	3	2	-	-	-	-	N/A

*Number of surrogates spikes carried out on each sample

** Batch SE76564A (CE66993)

	Yes	No (Comment below)
2 Were the laboratory blanks/reagents blanks free of contamination?	☒	☐
3. Were the spike recoveries within control limits?		
a. Organics (60% to 110%)	☐	☒
b. Metals/Inorganic (70% to 130%)	☒	☐
4. Were the RPDs of the laboratory duplicates within control limits?	☒	☐
5. Were the surrogate recoveries within control limits?	☐	☒

COMMENTS:

- BTEX, OCP and PCB surrogates recorded recoveries of 129% and 116% for samples CTP28/0.0-0.1m and CTP27/0.5-0.6m, which are outside the upper control limit of 110%. These results can be disregarded for these samples as concentrations of OCP, PCB and BTEX were below the LOR.
- In the batch QA/QC, matrix spikes and laboratory control spikes recorded recoveries ranging between 111% and 120% for BTEX, some PAHs and OCPs in soil, which are outside the upper control limit of 110%. These results can be disregarded for these samples as concentrations of OCP, PCB and BTEX were below the LOR.

5. The laboratory internal QA/QC was:	☐ Satisfactory	☐ Unsatisfactory
	☒ Partially Satisfactory	

V. DATA USABILITY

1.	Data Directly Usable	☒
2.	Data Usable with the following corrections/modifications (see comment below)	☐
3.	Data Not Usable.	☐

COMMENTS:

QA/QC Report Prepared by Colee Quayle

QA/QC Report Reviewed by: Manuel Fernandez
(Reviewer)

Coffey Environments Pty Ltd

A.C.N. 090 522 759 A.B.N. 45 090 522 759

QA/QC DATA VALIDATION REPORT

Job No: ENVIWOLL00250AB Batch: SE76607

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

I. SAMPLE HANDLING

	Yes	No (Comment below)
1. Were the sample **holding times** met?	☒	☐
2. Were the samples in **proper custody** between the field and reaching the laboratory?	☒	☐
3. Were the samples **properly and adequately** preserved? *This includes keeping the samples chilled, where applicable.*	☒	☐
4. Were the samples received by the laboratory in good condition?	☐	☒

COMMENTS:

- The laboratory indicated that several samples had not been received and some additional samples had been received that were not included on the chain of custody. Upon querying the laboratory, additional samples were found. This was not significant as these samples did not require testing.

Sample Handling was: ☐ Satisfactory ☐ Unsatisfactory ☒ Partially Satisfactory

II PRECISION/ACCURACY ASSESSMENT

	Yes	No (Comment below)
1. Was a NATA registered laboratory used?	☒	☐
2. Did the laboratory perform the requested tests?	☒	☐
3. Were the laboratory methods adopted NATA endorsed?	☒	☐
4. Were the appropriate test procedures followed?	☒	☐
5. Were the reporting limits satisfactory?	☒	☐
6. Was the NATA Seal on the reports?	☒	☐
7. Were the reports signed by an authorised person?	☒	☐

COMMENTS:

Precision/Accuracy of the Laboratory Report	☒ Satisfactory ☐ Partially Satisfactory	☐ Unsatisfactory

III. FIELD QA/QC

1. Number of Primary Samples Analysed — Soil: 2; Water: 0

2. Number of Days of Sampling: — Soil: 1; Water: N/A

3. Number and Type of QA/QC Samples Collected:

	SOIL	WATER
Field Duplicates (at least 1 in 10 samples)	0	NA
Trip Blanks (at least 1/day or sampling event)	0	NA
Wash Blanks (at least 1/day/matrix/equipment)	0	NA
Other (Field Blanks, Spiked Trip Blanks, etc.)	0	NA

4. FIELD DUPLICATES

	Yes	No (Comment below)
A. Were an Adequate Number of field duplicates analysed for each chemical (min. 10%)?	☐	☒
B. Were RPDs within Control Limits?		
a. Organics (< 50 % for soil)	☐	☐
b. Metals/Inorganics (< 50 % for soil)	☐	☐

COMMENTS:

- No duplicate soil samples were collected as part of this batch. Sufficient duplicate soil samples have been collected for the project.
- RPDs calculated for this project have been presented at the end of this report in Table QAQC1.

5. TRIP BLANKS

	Yes	No (Comment below)
A. Were an Adequate Number of trip blanks collected?	☐	☒
B. Were the Trip Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	☐	☐

6. WASH BLANKS

	Yes	No (Comment below)
A. Were an adequate number of Wash Blanks collected?	☐	☒
B. Were the Wash Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	☐	☐

COMMENTS:

- A laboratory prepared trip spike sample (spiked with BTEX) was taken into the field and transported with the laboratory samples. The recoveries of the trip spike sample ranged between 70% and 75% which are within the control limits of 60% and 110% and are reported in batch SE76228 (See Table QAQC3).
- Soil samples were either collected directly from the excavator bucket or ground surface using a clean pair of disposable gloves for each sample and therefore a wash blank sample was not considered necessary.

Field QA/QC was:	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

IV LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

1. Type of QA/QC Samples

	TPH (C_6-C_9), BTEX	TPH (C_{10}-C_{36})	PAH	OCP	PCB	Metals	Mercury	Asbestos
Laboratory Blanks/Reagent Blanks (at least 1 per batch)	NT	NT	1	1	NT	1	1	N/A
Laboratory Duplicates (at least 1 per batch or 1 per 10 samples whichever is the smaller)	NT	NT	-	-	NT	-	-	N/A
Matrix Spikes/Matrix Spike Duplicates (1 for each soil type)	NT	NT	-	-	NT	-	-	N/A
Laboratory Control Spike	NT	NT	1	1	NT	1	1	N/A
Surrogate (where appropriate)*	NT	NT	3	1	NT	-	-	N/A

*Number of surrogates spikes carried out on each sample
NT – Not tested

	Yes	**No** (Comment below)
2 Were the laboratory blanks/reagents blanks free of contamination?	☒	☐
3. Were the spike recoveries within control limits?		
a. Organics (60% to 110%)	☒	☐
b. Metals/Inorganic (70% to 130%)	☒	☐
4. Were the RPDs of the laboratory duplicates within control limits?	☐	☐
5. Were the surrogate recoveries within control limits?	☐	☒

COMMENTS:

- An insufficient number of laboratory duplicates and matrix spikes were performed due to the batch size containing a relatively small number of samples.
- OCP surrogates recorded recoveries of 117% and 118% for soil samples SS101 and SS102, which are outside the upper control limit of 110%. These results can be disregarded for these samples as concentrations of OCP were below the laboratory limit of reporting (LOR).

5. The laboratory internal QA/QC was:	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

V. DATA USABILITY

1.	Data Directly Usable	☒
2.	Data Usable with the following corrections/modifications (see comment below)	☐
3.	Data Not Usable.	☐

COMMENTS:

QA/QC Report Prepared by: Colee Quayle

QA/QC Report Reviewed by: Manuel Fernandez
(Reviewer)

Coffey Environments Pty Ltd

A.C.N. 090 522 759 A.B.N. 45 090 522 759

QA/QC DATA VALIDATION REPORT

Job No: ENVIWOLL00250AB Batch: SE78952

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

I. SAMPLE HANDLING

	Yes	No (Comment below)
1. Were the sample **holding times** met?	☒	☐
2. Were the samples in **proper custody** between the field and reaching the laboratory?	☒	☐
3. Were the samples **properly and adequately** preserved? *This includes keeping the samples chilled, where applicable.*	☒	☐
4. Were the samples received by the laboratory in good condition?	☒	☐

COMMENTS:

Sample Handling was: ☒ Satisfactory ☐ Unsatisfactory ☐ Partially Satisfactory

II PRECISION/ACCURACY ASSESSMENT

	Yes	No (Comment below)
1. Was a NATA registered laboratory used?	☒	☐
2. Did the laboratory perform the requested tests?	☒	☐
3. Were the laboratory methods adopted NATA endorsed?	☒	☐
4. Were the appropriate test procedures followed?	☒	☐
5. Were the reporting limits satisfactory?	☒	☐
6. Was the NATA Seal on the reports?	☒	☐
7. Were the reports signed by an authorised person?	☒	☐

COMMENTS:

Precision/Accuracy of the Laboratory Report	☒ Satisfactory ☐ Partially Satisfactory	☐ Unsatisfactory

III. FIELD QA/QC

1. Number of Primary Samples Analysed — Soil: 10; Water: 0

2. Number of Days of Sampling: — Soil: 1; Water: N/A

3. Number and Type of QA/QC Samples Collected:

	SOIL	WATER
Field Duplicates (at least 1 in 10 samples)	2	NA
Trip Blanks (at least 1/day or sampling event)	0	NA
Wash Blanks (at least 1/day/matrix/equipment)	0	NA
Other (Field Blanks, Spiked Trip Blanks, etc.)	0	NA

4. FIELD DUPLICATES

	Yes	No (Comment below)
A. Were an Adequate Number of field duplicates analysed for each chemical (min. 10%)?	☒	☐
B. Were RPDs within Control Limits?		
a. Organics (< 50 % for soil)	☒	☐
b. Metals/Inorganics (< 50 % for soil)	☐	☐

COMMENTS:

- An inconsistency was recorded between soil duplicate pairs CTP51/0.0-0.1m and QC2000 for arsenic. The contaminant was either not detected in primary sample but is detected in duplicate sample, or vice versa. This result is not considered significant as concentrations were close to the laboratory limit of reporting (LOR).
- RPDs calculated for this project have been presented at the end of this report in Table QAQC1.

5. TRIP BLANKS

	Yes	No (Comment below)
A. Were an Adequate Number of trip blanks collected?	☐	☒
B. Were the Trip Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	☐	☐

6. WASH BLANKS

	Yes	No (Comment below)
A. Were an adequate number of Wash Blanks collected?	☐	☒
B. Were the Wash Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	☐	☐

COMMENTS:

- A laboratory prepared trip spike sample (spiked with BTEX) was taken into the field and transported with the laboratory samples. The recoveries of the trip spike sample ranged between 70% and 75% which are within the control limits of 60% and 110% and are reported in batch SE76228 (See Table QAQC3).
- Soil samples were either collected directly from the excavator bucket or ground surface using a clean pair of disposable gloves for each sample and therefore a wash blank sample was not considered necessary.

Field QA/QC was:	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

IV LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

1. Type of QA/QC Samples

	TPH (C_6-C_9), BTEX	TPH (C_{10}-C_{36})	PAH	OCP	PCB	Metals	Mercury	Asbestos
Laboratory Blanks/Reagent Blanks (at least 1 per batch)	1	1	1	1	1	1	1	N/A
Laboratory Duplicates (at least 1 per batch or 1 per 10 samples whichever is the smaller)	1	1	1	1	1	1	-	N/A
Matrix Spikes/Matrix Spike Duplicates (1 for each soil type)	-	-	1	1	1	1	-	N/A
Laboratory Control Spike	-	-	-	-	-	-	1	N/A
Surrogate (where appropriate)*	1	-	3	1	1	-	-	N/A

*Number of surrogates spikes carried out on each sample

	Yes	**No** (Comment below)
2 Were the laboratory blanks/reagents blanks free of contamination?	☒	☐
3. Were the spike recoveries within control limits?		
a. Organics (60% to 110%)	☐	☒
b. Metals/Inorganic (70% to 130%)	☒	☐
4. Were the RPDs of the laboratory duplicates within control limits?	☒	☐
5. Were the surrogate recoveries within control limits?	☐	☒

COMMENTS:

- An OCP surrogate recorded a recovery of 117% for soil sample CTP48/0.0-0.1m, which is outside the upper control limit of 110%. This result may indicate slightly higher concentrations of OCPs (Aldrin) may have been recorded than what was actually present.
- PAH, PCB and other OCP surrogates recorded recoveries of 111% and 126% for several soil samples, which are outside the upper control limit of 110%. These results can be disregarded for samples where concentrations of PAH, PCB and OCP are below the laboratory limit of reporting (LOR).
- In the batch QA/QC, several laboratory matrix spikes recorded recoveries ranging between 111% and 128% for some OCPs and PAHs in soil, which are outside the upper control limit of 110%. This result can be disregarded for OCPs and PAHs, as concentrations were below the LOR.

5. The laboratory internal QA/QC was:	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

V. DATA USABILITY

1. Data Directly Usable ☐
2. Data Usable with the following corrections/modifications (see comment below) ☒
3. Data Not Usable. ☐

COMMENTS:

A higher surrogate recovery was recorded for soil sample CTP48/0.0-0.1m, which is outside the upper control limit of 110%. This result may indicate slightly higher concentrations of OCPs (aldrin) may have been recorded than what was actually present. The concentration of aldrin reported at this location marginally exceeds the Human Health Investigation Levels (HILs) for residential landuse with accessible soils. This result may suggest the actually concentration of aldrin is lower and may not exceed the adopted HIL. Further sampling and analysis of nearby soils would be required to assess the significance of the aldrin detected.

QA/QC Report Prepared by Colee Quayle

QA/QC Report Reviewed by: Manuel Fernandez
(Reviewer)

Coffey Environments Pty Ltd

A.C.N. 090 522 759 A.B.N. 45 090 522 759

QA/QC DATA VALIDATION REPORT

Job No: ENVIWOLL00250AB Batches: SE79135 (SGS) & 268016 (MGT)

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

I. SAMPLE HANDLING

	Yes	No (Comment below)
1. Were the sample **holding times** met?	☒	☐
2. Were the samples in **proper custody** between the field and reaching the laboratory?	☒	☐
3. Were the samples **properly and adequately** preserved? *This includes keeping the samples chilled, where applicable.*	☒	☐
4. Were the samples received by the laboratory in good condition?	☒	☐

COMMENTS:

Sample Handling was: ☒ Satisfactory ☐ Unsatisfactory ☐ Partially Satisfactory

II PRECISION/ACCURACY ASSESSMENT

	Yes	No (Comment below)
1. Was a NATA registered laboratory used?	☒	☐
2. Did the laboratory perform the requested tests?	☒	☐
3. Were the laboratory methods adopted NATA endorsed?	☒	☐
4. Were the appropriate test procedures followed?	☒	☐
5. Were the reporting limits satisfactory?	☒	☐
6. Was the NATA Seal on the reports?	☒	☐
7. Were the reports signed by an authorised person?	☒	☐

COMMENTS:

Precision/Accuracy of the Laboratory Report	☒ Satisfactory ☐ Partially Satisfactory	☐ Unsatisfactory

III. FIELD QA/QC

1. Number of Primary Samples Analysed — Soil: 2; Water: 0

2. Number of Days of Sampling: — Soil: 1; Water: N/A

3. Number and Type of QA/QC Samples Collected:

	SOIL	WATER
Field Duplicates (at least 1 in 10 samples)	1 intra lab + 1 inter lab	NA
Trip Blanks (at least 1/day or sampling event)	0	NA
Wash Blanks (at least 1/day/matrix/equipment)	0	NA
Other (Field Blanks, Spiked Trip Blanks, etc.)	0	NA

4. FIELD DUPLICATES

	Yes	No (Comment below)
A. Were an Adequate Number of field duplicates analysed for each chemical (min. 10%)?	☒	☐
B. Were RPDs within Control Limits?		
a. Organics (< 50 % for soil)	☒	☐
b. Metals/Inorganics (< 50 % for soil)	☐	☒

COMMENTS:

- One inconsistency was recorded between soil duplicate pairs CTP66/0.8-0.1m (batch SE79135) and QA500 (batch 268016) for lead. The contaminant was either not detected in primary sample but is detected in duplicate sample, or vice versa. This result is not considered significant as concentrations were close to the laboratory limit of reporting (LOR).
- RPDs calculated for this project have been presented at the end of this report in Table QAQC1.

5. TRIP BLANKS

	Yes	No (Comment below)
A. Were an Adequate Number of trip blanks collected?	☒	☐
B. Were the Trip Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	☐	☒

6. WASH BLANKS

	Yes	No (Comment below)
A. Were an adequate number of Wash Blanks collected?	☐	☒
B. Were the Wash Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	N/A	N/A

COMMENTS:

- A laboratory prepared trip spike sample (spiked with BTEX) was taken into the field and transported with the laboratory samples. The recoveries of the trip spike sample ranged between 70% and 75% which are within the control limits of 60% and 110% and are reported in batch SE76228 (See Table QAQC3).
- Soil samples were either collected directly from the excavator bucket or ground surface using a clean pair of disposable gloves for each sample and therefore a wash blank sample was not considered necessary.

Field QA/QC was:	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

IV LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

1. Type of QA/QC Samples

Batch SE76228

	TPH (C_6-C_9), BTEX	TPH (C_{10}-C_{36})	PAH	OCP/PCB	OPP	Metals	Mercury	Asbestos
Laboratory Blanks/Reagent Blanks (at least 1 per batch)	1	1	1	1	1	1	1	N/A
Laboratory Duplicates (at least 1 per batch or 1 per 10 samples whichever is the smaller)	-	-	-	-	-	-	-	N/A
Matrix Spikes/Matrix Spike Duplicates (1 for each soil type)	-	-	-	-	-	-	-	N/A
Laboratory Control Spike	1	1	1	1	1	1	1	N/A
Surrogate (where appropriate)*	1	-	3	1	2	-	-	N/A

*Number of surrogates spikes carried out on each sample

Batch ES1003848

	TPH (C_6-C_9), BTEX	TPH (C_{10}-C_{36})	PAH	OCP	PCB/OPP	Metals	Mercury	Asbestos
Laboratory Blanks/Reagent Blanks (at least 1 per batch)	1	1	1	1	1	1	-	N/A
Laboratory Duplicates (at least 1 per batch or 1 per 10 samples whichever is the smaller)	1	1	1	1	1	1	-	N/A
Matrix Spikes/Matrix Spike Duplicates (1 for each soil type)	1	1	1	1	1	1	-	N/A
Laboratory Control Spike	1	1	1	1	1	1	-	N/A
Surrogate (where appropriate)*	1	-	2	1	2	-	-	N/A

*Number of surrogates spikes carried out on each sample

	Yes	No (Comment below)
2 Were the laboratory blanks/reagents blanks free of contamination?	☒	☐
3. Were the spike recoveries within control limits?		
a. Organics (60% to 110%)	☐	☒
b. Metals/Inorganic (70% to 130%)	☒	☐
4. Were the RPDs of the laboratory duplicates within control limits?	☒	☐
5. Were the surrogate recoveries within control limits?	☐	☒

COMMENTS:

Batch SE79135

- An insufficient number of laboratory duplicates and matrix spikes were performed due to the batch size containing a relatively small number of samples.
- PAH, OCP, OPP and PCB surrogates recorded recoveries of 111% and 119% for soil samples CTP66/0.0-0.1m and/or CTP66/0.8-1.0m, which are outside the upper control limit of 110%. This result can be disregarded as concentrations of PAH, OCP, OPP and PCB were below the laboratory limits of reporting (LOR).
- In the batch QA/QC, several laboratory control spikes (LCS) recorded recoveries ranging between 113% and 127% for some TPH and OPP in soil, which are outside the upper control limit of 110%. This result can be disregarded, as concentrations of TPH and OPP were below the LOR.

Batch 268016

- BTEX, OCP and PCB surrogates recorded recoveries of 112% and 123% for soil sample QA500, which are outside the upper control limit of 110%. This result can be disregarded as concentrations of BTEX, OCP and PCB were below the LOR.
- In the batch QA/QC, several laboratory control spikes (LCS) and matrix spikes recorded recoveries ranging between 111% and 128% for some OCP, PCB and OPP in soil, which are outside the upper control limit of 110%. This result can be disregarded, as concentrations of OCP, PCB and OPP were below the LOR.

5. The laboratory internal QA/QC was:	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

V. DATA USABILITY

1.	Data Directly Usable	☒
2.	Data Usable with the following corrections/modifications (see comment below)	☐
3.	Data Not Usable.	☐

COMMENTS:

QA/QC Report Prepared by Colee Quayle

QA/QC Report Reviewed by: Manuel Fernandez
(Reviewer)

Coffey Environments Pty Ltd

A.C.N. 090 522 759 A.B.N. 45 090 522 759

QA/QC DATA VALIDATION REPORT

Job No: ENVIWOLL00250AB Batch: SE79423

coffey environments
SPECIALISTS IN ENVIRONMENTAL, SOCIAL AND SAFETY PERFORMANCE

I. SAMPLE HANDLING

	Yes	No (Comment below)
1. Were the sample **holding times** met?	☒	☐
2. Were the samples in **proper custody** between the field and reaching the laboratory?	☒	☐
3. Were the samples **properly and adequately** preserved? *This includes keeping the samples chilled, where applicable.*	☒	☐
4. Were the samples received by the laboratory in good condition?	☐	☒

COMMENTS:

MW6 was mislabelled as MW7. MW7 was not sampled and the mislabelling was corrected.

Sample Handling was: ☒ Satisfactory ☐ Unsatisfactory ☐ Partially Satisfactory

II PRECISION/ACCURACY ASSESSMENT

	Yes	No (Comment below)
1. Was a NATA registered laboratory used?	☒	☐
2. Did the laboratory perform the requested tests?	☒	☐
3. Were the laboratory methods adopted NATA endorsed?	☒	☐
4. Were the appropriate test procedures followed?	☒	☐
5. Were the reporting limits satisfactory?	☐	☒
6. Was the NATA Seal on the reports?	☒	☐
7. Were the reports signed by an authorised person?	☒	☐

COMMENTS:

- The laboratory indicated that heavy metal reporting limits were raised due to interference caused by high electrical conductivity.
- Ultratrace reporting limits were not selected for PCB and OCP. The resulting reporting limits were above the adopted groundwater investigation levels. This not considered significant as PCB and OCP were not considered the main chemical of concern for groundwater.

Precision/Accuracy of the Laboratory Report	☐ Satisfactory	☐ Unsatisfactory
	☒ Partially Satisfactory	

III. FIELD QA/QC

1. Number of Primary Samples Analysed — Soil: 0; Water: 9

2. Number of Days of Sampling: — Soil: 0; Water: 2

3. Number and Type of QA/QC Samples Collected:

	SOIL	WATER
Field Duplicates (at least 1 in 10 samples)	N/A	1 intra lab
Trip Blanks (at least 1/day or sampling event)	N/A	1
Wash Blanks (at least 1/day/matrix/equipment)	N/A	1
Other (Field Blanks, Spiked Trip Blanks, etc.)	N/A	1

4. FIELD DUPLICATES

	Yes	No (Comment below)
A. Were an Adequate Number of field duplicates analysed for each chemical (min. 10%)?	☒	☐
B. Were RPDs within Control Limits?		
a. Organics (< 30 % for water)	☒	☐
b. Metals/Inorganics (< 30 % for water)	☐	☒

COMMENTS:

- A RPD of 33%, above the control limit of 30%, were recorded for lead between MW9 and BH001 groundwater duplicate pairs. This result may indicate some variability in lead concentrations at some groundwater locations.
- RPDs calculated for this project have been presented at the end of this report in Table QAQC2.

5. TRIP BLANKS

	Yes	No (Comment below)
A. Were an Adequate Number of trip blanks collected?	☒	☐
B. Were the Trip Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	☒	☐

6. WASH BLANKS

	Yes	No (Comment below)
A. Were an adequate number of Wash Blanks collected?	☒	☐
B. Were the Wash Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	☐	☒

COMMENTS:

- A laboratory prepared trip spike sample (spiked with BTEX) was taken into the field and transported with the laboratory samples. The recoveries of the trip spike sample ranged between 78% and 88% which are within the control limits of 60% and 110% (See Table QAQC3).
- Detectable concentrations of zinc and copper were recorded in the wash blank sample collected off the interface probe which was used to measure standing water levels. The source of the detectable concentrations could not be determined although relatively high zinc and copper concentrations were recorded in groundwater samples. This is not considered to be attributed to inappropriate decontamination procedures, as decontamination of sampling equipment was carried out in accordance with Coffey standard operating procedures. It is considered that cross contamination is unlikely and the concentrations may have originated in the rinsate water (See Table QAQC3).

Field QA/QC was:	☐ Satisfactory	☐ Unsatisfactory
	☒ Partially Satisfactory	

IV LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

1. Type of QA/QC Samples

	TPH (C_6-C_9), BTEX	TPH (C_{10}-C_{36})	PAH	OCP	PCB	Metals	Ammonia	Asbestos
Laboratory Blanks/Reagent Blanks (at least 1 per batch)	1	1	1	1	1	1	1	N/A
Laboratory Duplicates (at least 1 per batch or 1 per 10 samples whichever is the smaller)	1	1	1	1	1	-	1	N/A
Matrix Spikes/Matrix Spike Duplicates (1 for each soil type)	-	-	-	1	1	-	-	N/A
Laboratory Control Spike	1	1	2	-	-	1	1	N/A
Surrogate (where appropriate)*	1	-	3	1	1	-	-	N/A

*Number of surrogates spikes carried out on each sample

	Yes	**No** (Comment below)
2 Were the laboratory blanks/reagents blanks free of contamination?	☒	☐
3. Were the spike recoveries within control limits?		
a. Organics (60% to 110%)	☐	☒
b. Metals/Inorganic (70% to 130%)	☒	☐
4. Were the RPDs of the laboratory duplicates within control limits?	☒	☐
5. Were the surrogate recoveries within control limits?	☐	☒

COMMENTS:

- PAH surrogates recorded recoveries ranging between 115% and 128% for groundwater sample MW1, which is outside the upper control limit of 110%. This result may indicate slightly higher concentrations of PAHs may have been recorded than what was actually present.
- A PAH surrogate recorded a recovery of 112% for groundwater sample MW6, which are outside the upper control limit of 110%. These results can be disregarded for samples where concentrations of PAH are below the LOR.
- In the batch QA/QC, several laboratory control spikes and matrix spikes recorded recoveries ranging between 114% and 125% for some OCPs and TPH in groundwater, which are outside the upper control limit of 110%. This result can be disregarded for OCPs and TPH, as concentrations were below the LOR.

5. The laboratory internal QA/QC was:	☐ Satisfactory	☐ Unsatisfactory
	☒ Partially Satisfactory	

V. DATA USABILITY

1. Data Directly Usable ☐
2. Data Usable with the following corrections/modifications (see comment below) ☒
3. Data Not Usable. ☐

COMMENTS:

The laboratory reporting limits for heavy metals were raised above the adopted groundwater investigation levels due to matrix interference caused elevated electrical conductivity. Ultratrace analysis was not carried out for OCP and PCB, which also resulted in the raising of laboratory reporting limits above the groundwater investigation levels. Therefore, only a preliminary assessment can be made with respect to these chemicals of concern.

Higher surrogate recoveries were recorded for groundwater sample MW1, which is outside the upper control limit of 110%. This result may indicate slightly higher concentrations of PAHs may have been recorded than what was actually present. This is not considered significant as concentrations of PAH recorded in this sample were well below the adopted groundwater investigation levels.

QA/QC Report Prepared by Colee Quayle

QA/QC Report Reviewed by: Manuel Fernandez
(Reviewer)

Table QAQC1: Relative Percentage Difference for Soil Samples

Batch	SE76250			SE76561			SE76561			SE76250			SE76228			SE76228 / ES1003848			SE76295			SE78952			SE78952			SE79135/268016		
	Primary Sample Conc. (mg/kg)	Duplicate Sample Conc. (mg/Kg)	RPD (%)	Primary Sample Conc. (mg/kg)	Duplicate Sample Conc. (mg/Kg)	RPD (%)	Primary Sample Conc. (mg/kg)	Duplicate Sample Conc. (mg/Kg)	RPD (%)	Primary Sample Conc. (mg/kg)	Duplicate Sample Conc. (mg/Kg)	RPD (%)	Primary Sample Conc. (mg/kg)	Duplicate Sample Conc. (mg/Kg)	RPD (%)	Primary Sample Conc. (mg/kg)	Duplicate Sample Conc. (mg/Kg)	RPD (%)	Primary Sample Conc. (mg/kg)	Duplicate Sample Conc. (mg/Kg)	RPD (%)	Primary Sample Conc. (mg/kg)	Duplicate Sample Conc. (mg/Kg)	RPD (%)	Primary Sample Conc. (mg/kg)	Duplicate Sample Conc. (mg/Kg)	RPD (%)	Primary Sample Conc. (mg/kg)	Duplicate Sample Conc. (mg/Kg)	RPD (%)
Sample No.	CTP8	QC3		CTP28	QC9		CTP36	QC14		CTP67	QC1		CTP75	DJD22		CTP75	DJD23		CTP86	DJD28		CTP47	QC1000		CTP51	QC2000		CTP66	QA500	
Depth (m)	1.0-1.2	1.0-1.2		0.0-0.1	0.0-0.1		0.0-0.1	0.0-0.1		0.0-0.1	0.0-0.1		2.0-2.1	2.0-2.1		2.0-2.1	2.0-2.1		0.0-0.1	0.0-0.1		0.0-0.1	0.0-0.1		0.0-0.1	0.0-0.1		0.8-1.0	0.8-1.0	
Analyte																														
HEAVY METALS																														
Arsenic	<3	<3	ND	<3	4	**NC**	<3	<3	ND	4.00	4.00	0.00	<3	<3	ND	<3	5	**NC**	8	<3	**NC**	4	3	28.57	4	<3	**NC**	4	2.6	42.42
Cadmium	<0.3	<0.3	ND	<0.3	0.3	**NC**	<0.3	<0.3	ND	0.40	0.50	22.22	0.3	0.3	0.00	0.3	<1	**NC**	0.4	<0.3	**NC**	0.4	0.3	28.57	0.4	0.4	0.00	<0.3	< 0.5	ND
Chromium	10	8.1	20.99	13	15	14.29	15	15	0.00	21.00	22.00	4.65	14	15	6.90	14	20	35.29	19	11	**53.33**	18	27	40.00	18	20	10.53	22	29	27.45
Copper	59	60	1.68	12	11	8.70	18	17	5.71	21.00	19.00	10.00	22	21	4.65	22	84	**116.98**	6.6	11	50.00	7.8	13	50.00	16	17	6.06	13	21	47.06
Lead	10	10	0.00	15	16	6.45	9.4	9.1	3.24	16.00	16.00	0.00	12	11	8.70	12	30	**85.71**	15	11	30.77	16	13	20.69	12	11	8.70	10	< 5	**NC**
Nickel	6.9	5	31.93	3.7	3.8	2.67	5.4	4.9	9.71	7.40	7.60	2.67	5.5	6.3	13.56	5.5	7	24.00	3.5	4.2	18.18	2.2	3	30.77	4.5	4.8	6.45	5.7	5.2	9.17
Zinc	32	31	3.17	25	23	8.33	26	27	3.77	54.00	56.00	3.64	27	27	0.00	27	56	**69.88**	26	37	34.92	22	21	4.65	26	26	0.00	26	28	7.41
Mercury	<0.05	<0.05	ND	<0.05	<0.05	ND	<0.05	<0.05	ND	0.07	0.06	15.38	<0.05	<0.05	ND	<0.05	<0.1	ND	<0.05	<0.05	ND	<0.05	<0.05	ND	<0.05	<0.05	ND	<0.05	< 0.1	ND
TOTAL PETROLEUM HYDROCARBONS																														
C6 - C9 Fraction	<20	<20	ND	<20	<20	ND	<20	<20	ND	<20	<20	ND	-	-	-	-	-	-	-	-	-	<20	<20	ND	<20	<20	ND	<20	< 20	ND
C10 - C14 Fraction	<20	<20	ND	<20	<20	ND	<20	<20	ND	<20	<20	ND	-	-	-	-	-	-	-	-	-	<20	<20	ND	<20	<20	ND	<20	< 50	ND
C15 - C28 Fraction	<50	<50	ND	<50	<50	ND	<50	<50	ND	<50	<50	ND	-	-	-	-	-	-	-	-	-	<50	<50	ND	<50	<50	ND	<50	< 100	ND
C29 - C36 Fraction	<50	<50	ND	<50	<50	ND	<50	<50	ND	<50	<50	ND	-	-	-	-	-	-	-	-	-	<50	<50	ND	<50	<50	ND	<50	< 100	ND
Total C10-C36	<LOR	<LOR	ND	<LOR	<LOR	ND	<LOR	<LOR	ND	<LOR	<LOR	ND	-	-	-	-	-	-	-	-	-	<LOR	<LOR	ND	<LOR	<LOR	ND	<LOR	<LOR	ND
BTEX																														
Benzene	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.1	ND	-	-	-	-	-	-	-	-	-	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	< 0.05	ND
Toluene	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.1	ND	-	-	-	-	-	-	-	-	-	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	< 0.05	ND
Ethylbenzene	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.1	ND	-	-	-	-	-	-	-	-	-	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	< 0.05	ND
Total Xylene	<0.3	<0.3	ND	<0.3	<0.3	ND	<0.3	<0.3	ND	<0.3	<0.3	ND	-	-	-	-	-	-	-	-	-	<0.3	<0.3	ND	<0.3	<0.3	ND	<0.3	< 0.05	ND
POLYCYCLIC AROMATIC HYDROCARBONS																														
Benzo(a)pyrene	<0.05	<0.05	ND	<0.05	<0.05	ND	<0.05	<0.05	ND	<0.05	<0.05	ND	<0.05	<0.05	ND	<0.05	<0.5	ND	0.1	0.06	50.00	<0.05	<0.05	ND	<0.05	<0.05	ND	<0.05	<0.1	ND
Total PAH	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	0.89	0.06	**174.74**	<LOR	<LOR	ND	<LOR	<LOR	ND	<LOR	<LOR	ND
ORGANOCHLORINE PESTICIDES																														
Heptachlor	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.05	ND	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.05	ND
Chlordane	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.05	ND	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.1	ND	<0.1	<0.1	ND
Aldrin + Dieldrin	<0.2	<0.2	ND	<0.2	<0.2	ND	<0.2	<0.2	ND	<0.2	<0.2	ND	<0.2	<0.2	ND	<0.2	<0.1	ND	<0.2	<0.2	ND	<0.2	<0.2	ND	<0.2	<0.2	ND	<0.2	<0.1	ND
DDT + DDE + DDD	<0.3	<0.3	ND	<0.3	<0.3	ND	<0.3	<0.3	ND	<0.3	<0.3	ND	<0.3	<0.3	ND	<0.3	<0.3	ND	<0.3	<0.3	ND	<0.3	<0.3	ND	<0.3	<0.3	ND	<0.3	<0.15	ND
Other OCP	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND
POLYCHLORINATED BIPHENYLS																														
Total PCB	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND	< LOR	< LOR	ND
ASBESTOS	ND	-	N/A	ND	-	N/A	ND	-	N/A	ND	-	N/A	ND	-	N/A	ND	-	N/A	ND	-	N/A	ND	-	N/A	ND	-	N/A	ND	-	N/A

Notes:

Bold	RPD exceeds control limit of 50%
ND	Not Detected
NC	Contaminant is not detected in primary sample but is detected in duplicate sample, or vice versa
-	Not Tested
LOR	Limits of Reporting

Table QAQC2: Relative Percentage Difference for Groundwater

Batch:	SE79423		
	Primary Sample Conc. (mg/kg)	**Duplicate Sample Conc. (mg/Kg)**	**RPD (%)**
Sample No.	MW9	BH001	
Depth (m)	-	-	
Analyte			
TPH			
C6-C9	<0.02	<0.02	ND
C10-C14	<0.01	<0.01	ND
C15-C28	<0.01	<0.01	ND
C29-C36	<0.01	<0.01	ND
BTEX			
Benzene	<0.5	<0.5	ND
Toluene	<0.5	<0.5	ND
Ethylbenzene	<0.5	<0.5	ND
Total Xylene	<1.5	<1.5	ND
POLYCYCLIC AROMATIC HYDROCARBONS	< LOR	<LOR	ND
TOTAL OCP	< LOR	<LOR	ND
TOTAL PCB	< LOR	<LOR	ND
Nutrients			
Ammonia(N)	1200	1200	0.00
Heavy Metals			
Arsenic	17	17	0.00
Cadmium	<1	<1	ND
Chromium	<10	<10	ND
Copper	35	33	5.88
Lead	21	15	**33.33**
Nickel	53	59	10.71
Zinc	170	160	6.06
Mercury	<0.1	<0.1	ND

Notes:

Bold	RPD exceeds control limit of 30%
ND	Not Detected
-	Not Tested

TABLE QAQC3

SUMMARY OF FIELD CONTROL SAMPLES LABORATORY RESULTS

All results in ug/L for water and mg/kg for soil (unless otherwise specified)

Sample ID	DJD17 - Trip Spike	DJD18 - Trip Blank	Trip Spike	Trip Blank	BH002
Date of Sampling	-	-	-	-	25-Jun-10
QAQC Type	Trip Spike	Trip Blank	Trip Spike	Trip Blank	Rinsate blank - IP
Matrix	Soil	Soil	Soil	Soil	Water
HEAVY METALS					
Arsenic	-	-	-	-	<1
Cadmium	-	-	-	-	<0.1
Chromium	-	-	-	-	<1
Copper	-	-	-	-	**6**
Lead	-	-	-	-	<1
Nickel	-	-	-	-	<1
Zinc	-	-	-	-	**77**
Mercury	-	-	-	-	<0.1
ORGANOCHLORINE PESTICIDES	-	-	-	-	<L0R
POLYCHLORINATED BIPHENYLS	-	-	-	-	<L0R
AMMONIA	-	-	-	-	<L0R
TOTAL PETROLEUM HYDROCARBONS					
C6-C9 fraction	-	< 20	-	< 20	<40
C10-C14 fraction	-	-	-	-	<100
C15-C28 fraction	-	-	-	-	<200
C29-C36 fraction	-	-	-	-	<200
Total C6-C36	-	-	-	-	ND
POLYCYCLIC AROMATIC HYDROCARBONS					
All PAHs	-	-	-	-	ND
BTEX					
Benzene	75%	<0.1	88%	<0.5	<0.5
Toluene	70%	<0.1	78%	<0.5	<0.5
Ethylbenzene	71%	<0.1	85%	<0.5	<0.5
Total Xylene	73%	<0.3	87%	<1.5	<1.5

Notes:

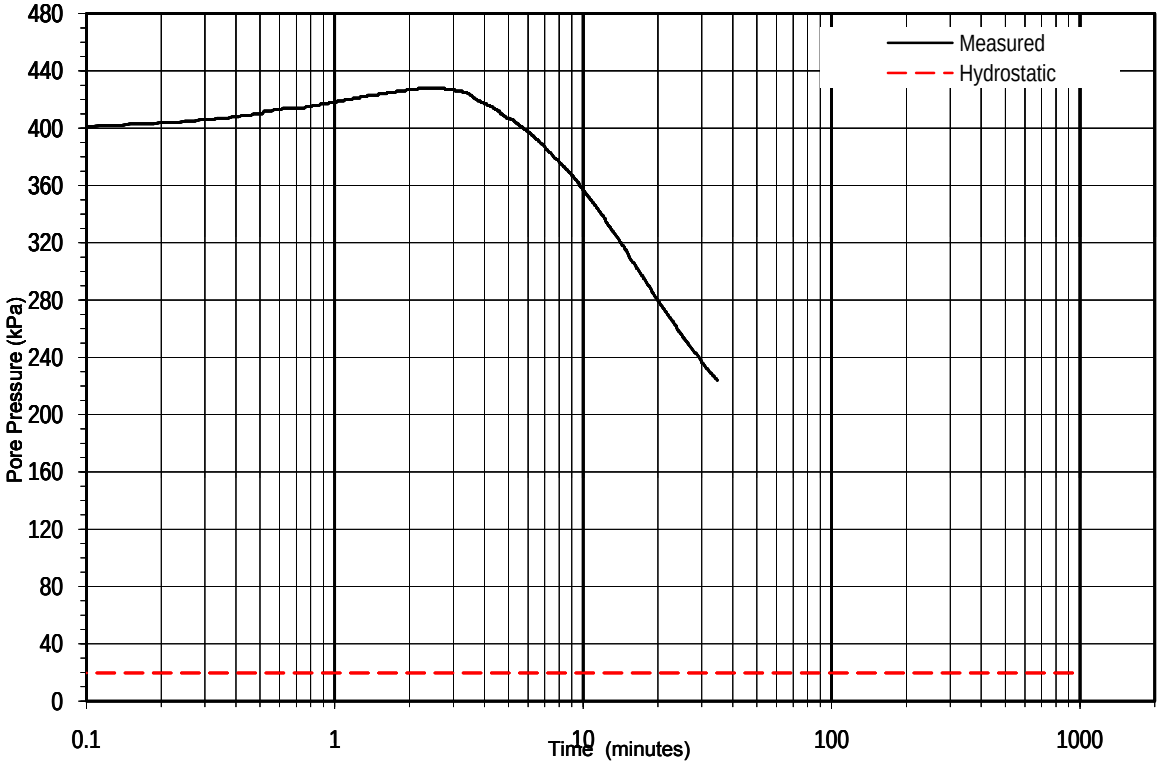
BOLD	Concentration exceeds control limit
-	Not Analysed
ND	Not Detected

QAQC Control Ordinates

Rinsate Blank	Recovery concentrations to be ND
Trip Spike	Recorvery concentrations to between 60% and 110%
Trip Blank	Recovery concentrations to be ND

Appendix J
Piezocone Dissipation Test Results

Geotechnical, Contamination and Groundwater Investigation,
Tallawarra Lands, Yallah, NSW



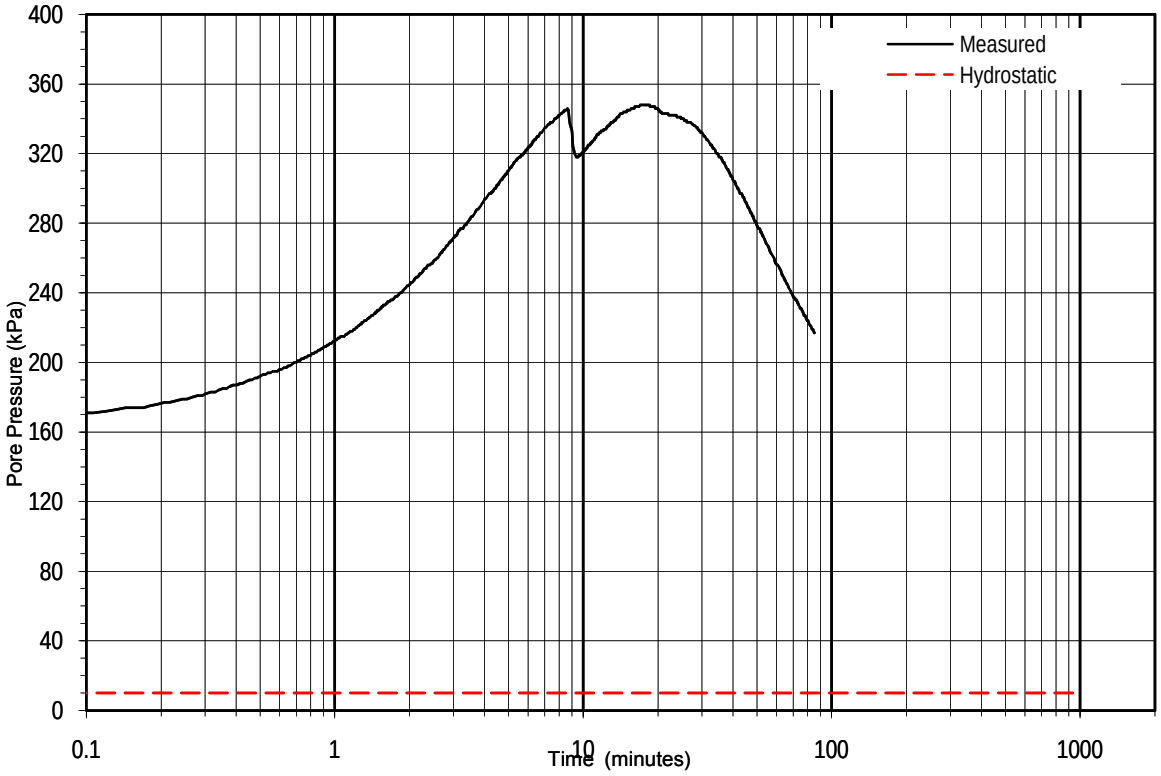
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**20**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**428**	kPa	(measured from test data)
Final pore pressure at end of test		**224**	kPa	(measured from test data)
Test duration		**35**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**35**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**6**	m^2/year	
	to	**8**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**0.8** x 10^{-6}	cm/s	
	to	**1.1** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT08 PPDT at 4.00m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



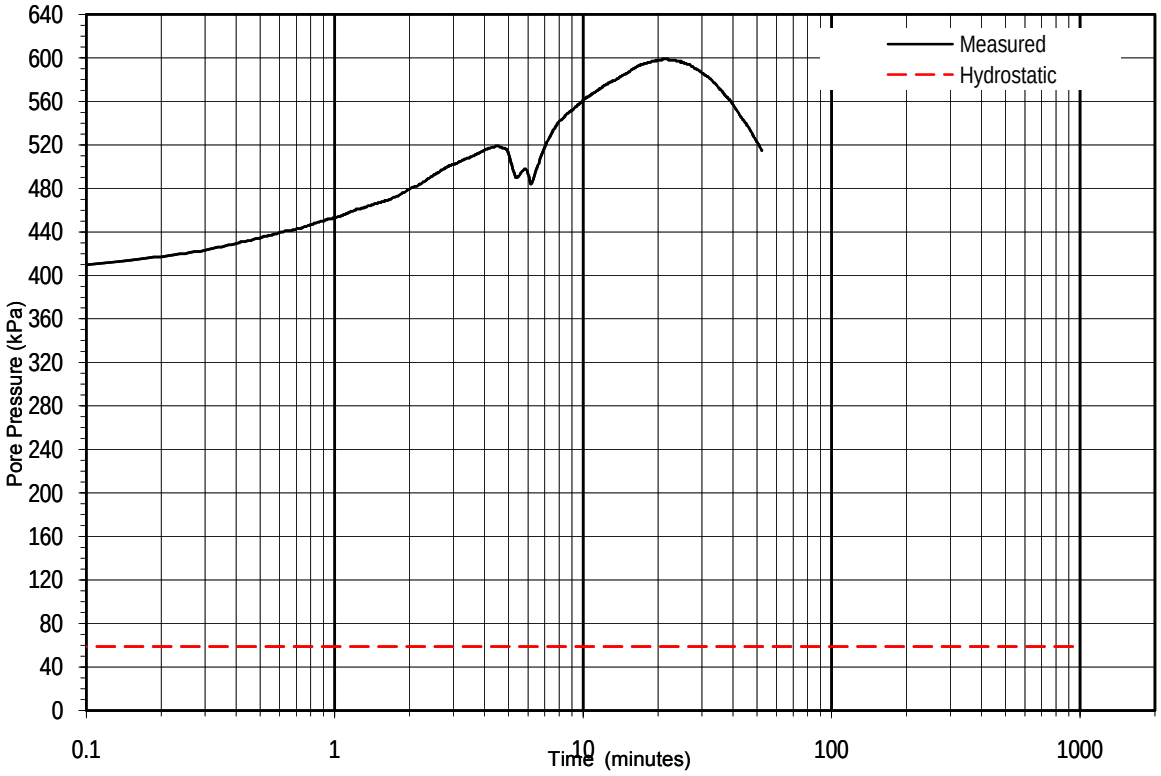
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**10**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**310**	kPa	(measured from test data)
Final pore pressure at end of test		**217**	kPa	(measured from test data)
Test duration		**85**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**64**	min	(extrapolated from test data)
Horizontal coefficient of consolidation, c_H		**3**	m^2/year	
	to	**4**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**0.4 x 10^{-6}**	cm/s	
	to	**0.6 x 10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT09 PPDT at 5.02m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



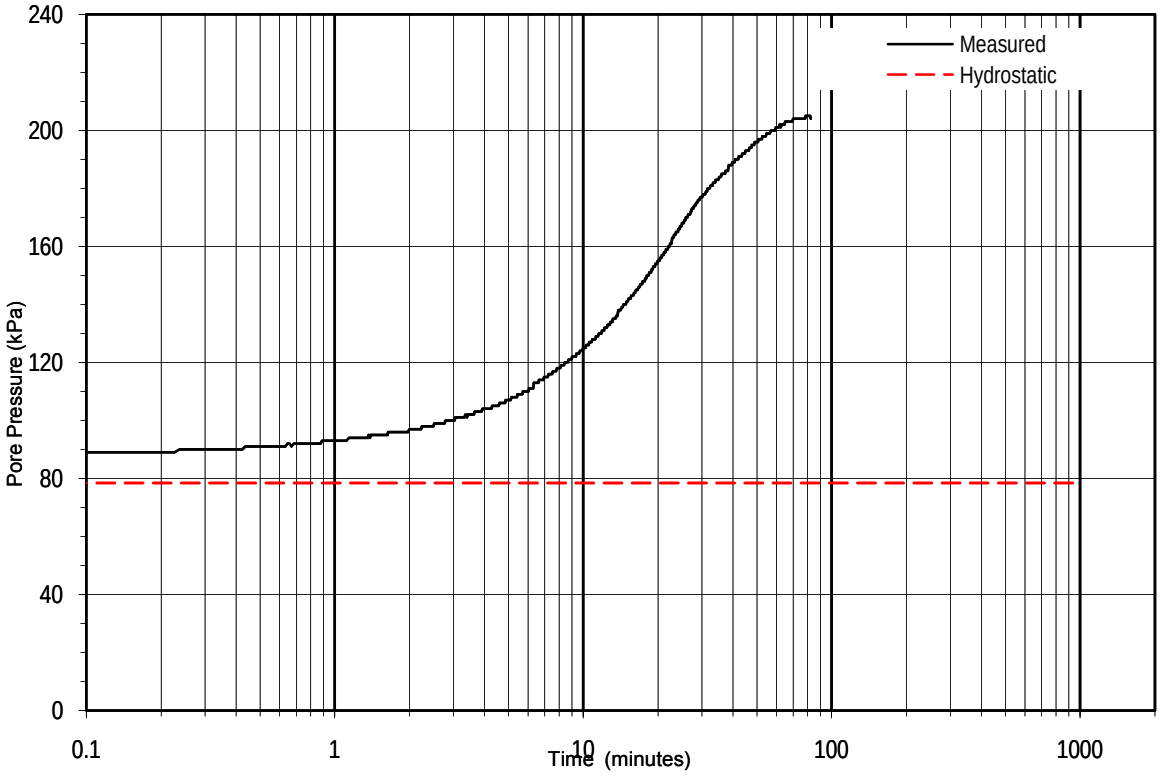
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**59**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**561**	kPa	(measured from test data)
Final pore pressure at end of test		**515**	kPa	(measured from test data)
Test duration		**52**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**76**	min	(extrapolated from test data)
Horizontal coefficient of consolidation, c_H		**3**	m^2/year	
	to	**4**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**0.3** x 10^{-6}	cm/s	
	to	**0.5** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT09 PPDT at 10.00m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



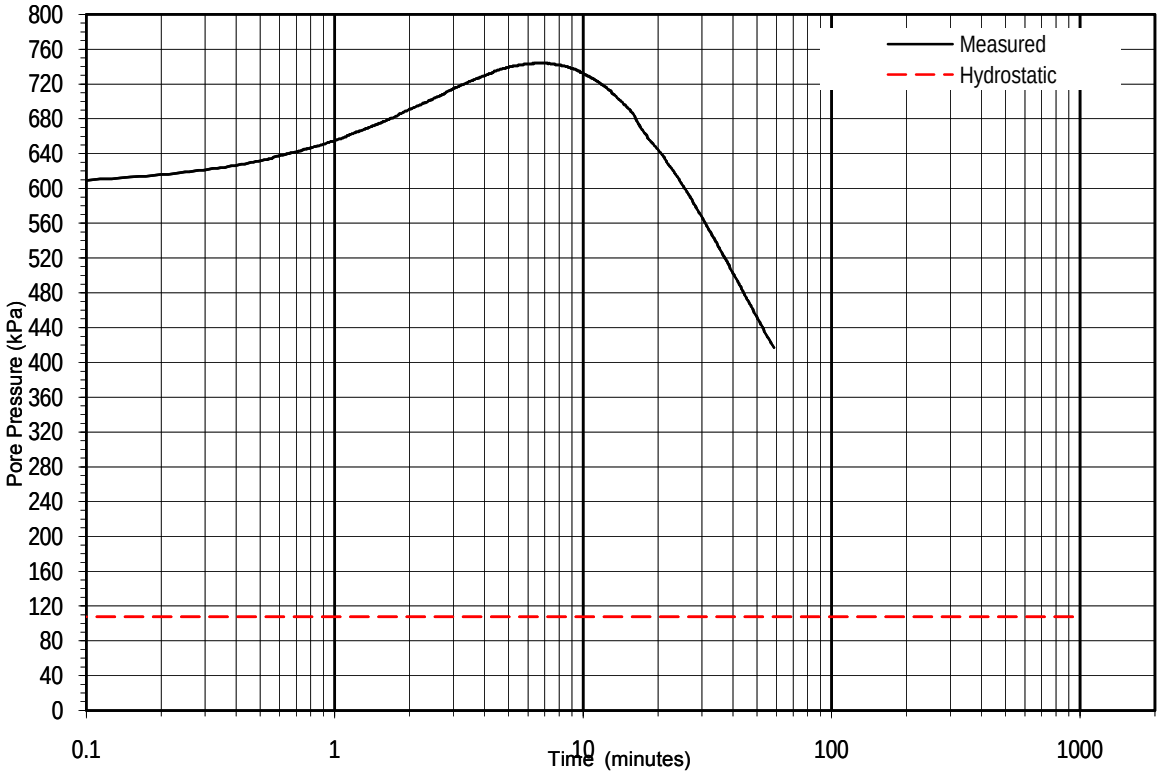
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**78**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**125**	kPa	(measured from test data)
Final pore pressure at end of test		**204**	kPa	(measured from test data)
Test duration		**82**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**101**	min	(extrapolated from test data)
Horizontal coefficient of consolidation, c_H		**2**	m^2/year	
	to	**3**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**0.3** x 10^{-6}	cm/s	
	to	**0.4** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT10 PPDT at 12m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



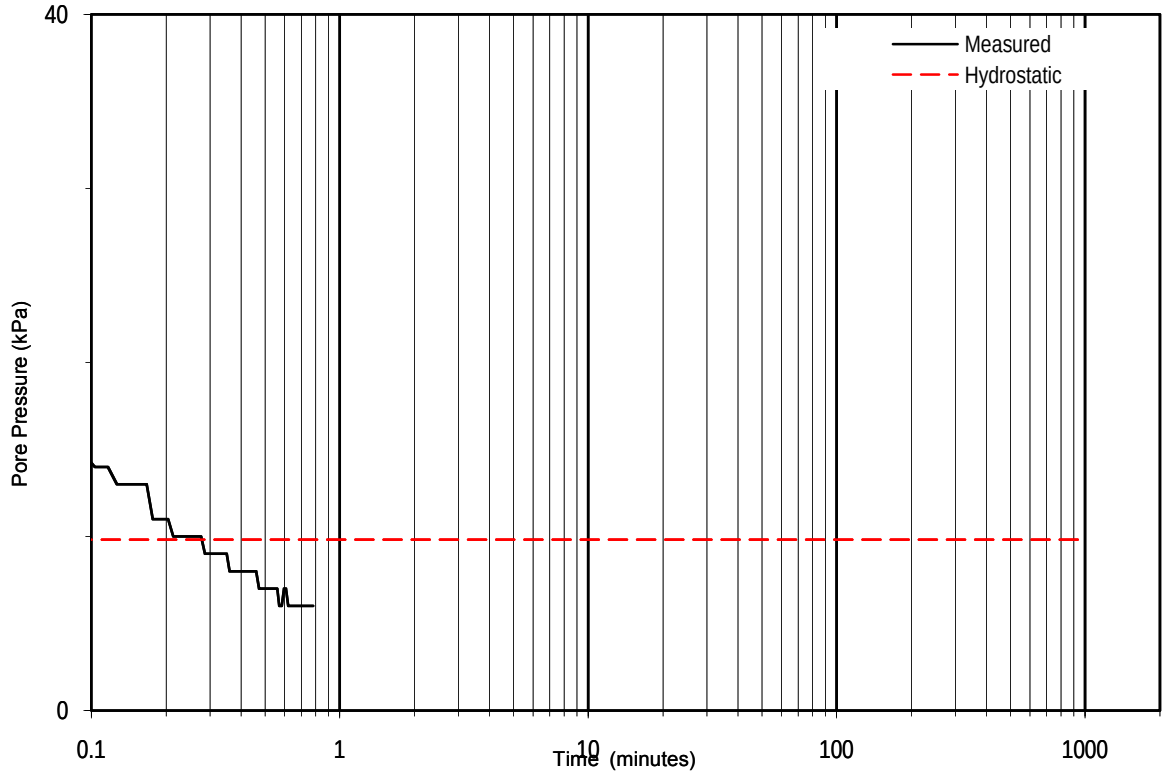
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**108**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**744**	kPa	(measured from test data)
Final pore pressure at end of test		**417**	kPa	(measured from test data)
Test duration		**59**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**56**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**4**	m^2/year	
	to	**5**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**0.5** x **10^{-6}**	cm/s	
	to	**0.7** x **10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT10 PPDT at 14.98m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



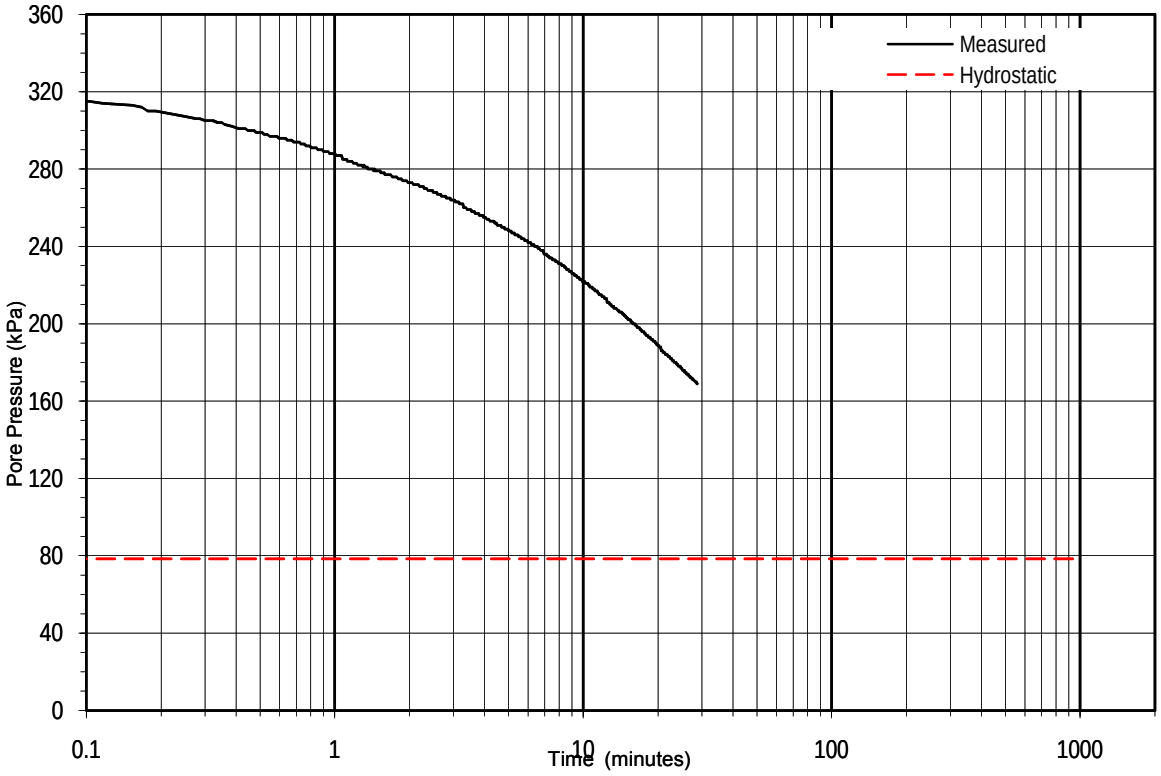
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **SAND**

Static pore pressure, u_o		**10**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**18**	kPa	(measured from test data)
Final pore pressure at end of test		**6**	kPa	(measured from test data)
Test duration		**1**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**0**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**N.A.**	m^2/year	
	to	**N.A.**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**N.A.** x 10^{-6}	cm/s	
	to	**N.A.** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT11 PPDT at 5m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



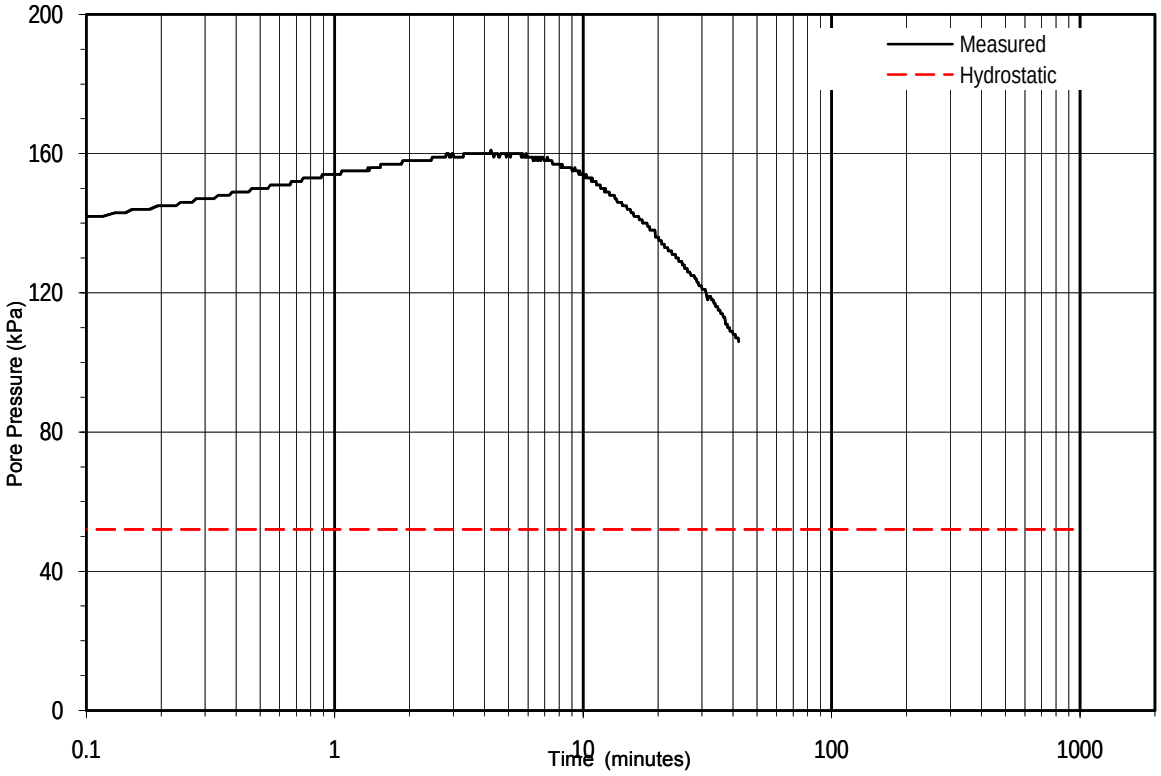
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**78**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**319**	kPa	(measured from test data)
Final pore pressure at end of test		**169**	kPa	(measured from test data)
Test duration		**29**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**17**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**12**	m^2/year	
	to	**17**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**1.6 x 10^{-6}**	cm/s	
	to	**2.2 x 10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT11 PPDT at 12m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



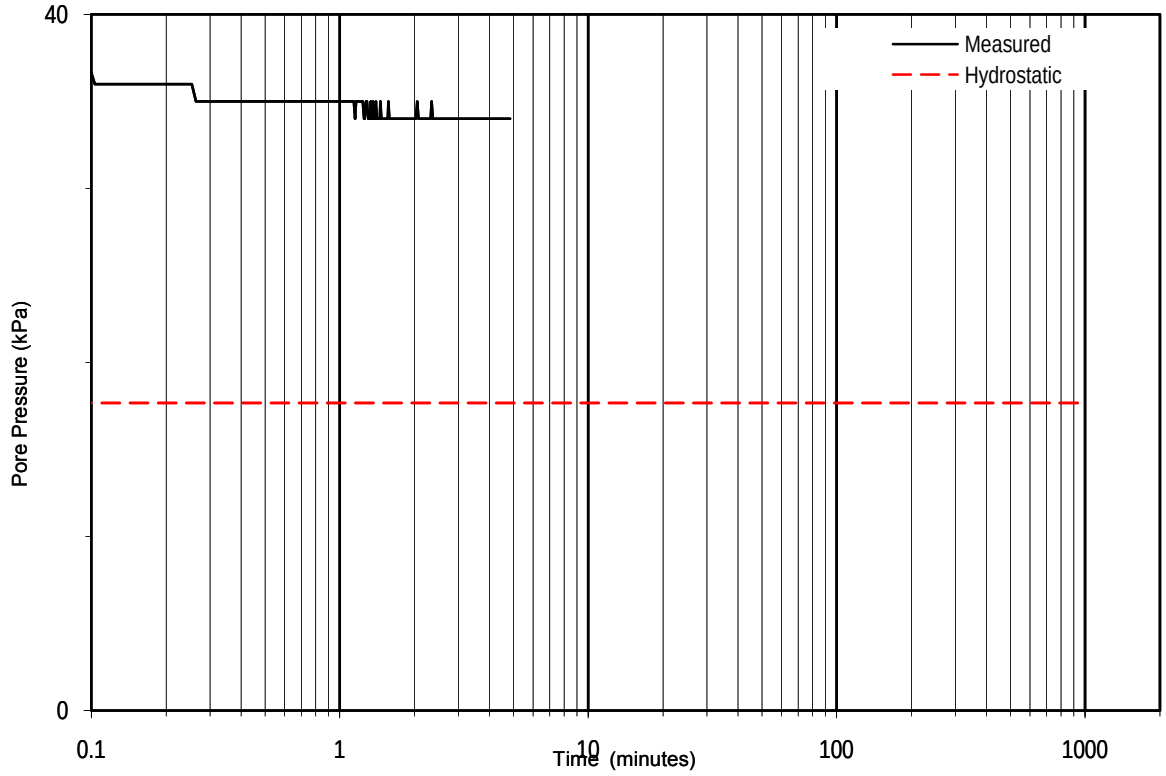
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**52**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**161**	kPa	(measured from test data)
Final pore pressure at end of test		**106**	kPa	(measured from test data)
Test duration		**42**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**42**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**5**	m^2/year	
	to	**7**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**0.6** x 10^{-6}	cm/s	
	to	**0.9** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT12 PPDT at 8.5m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



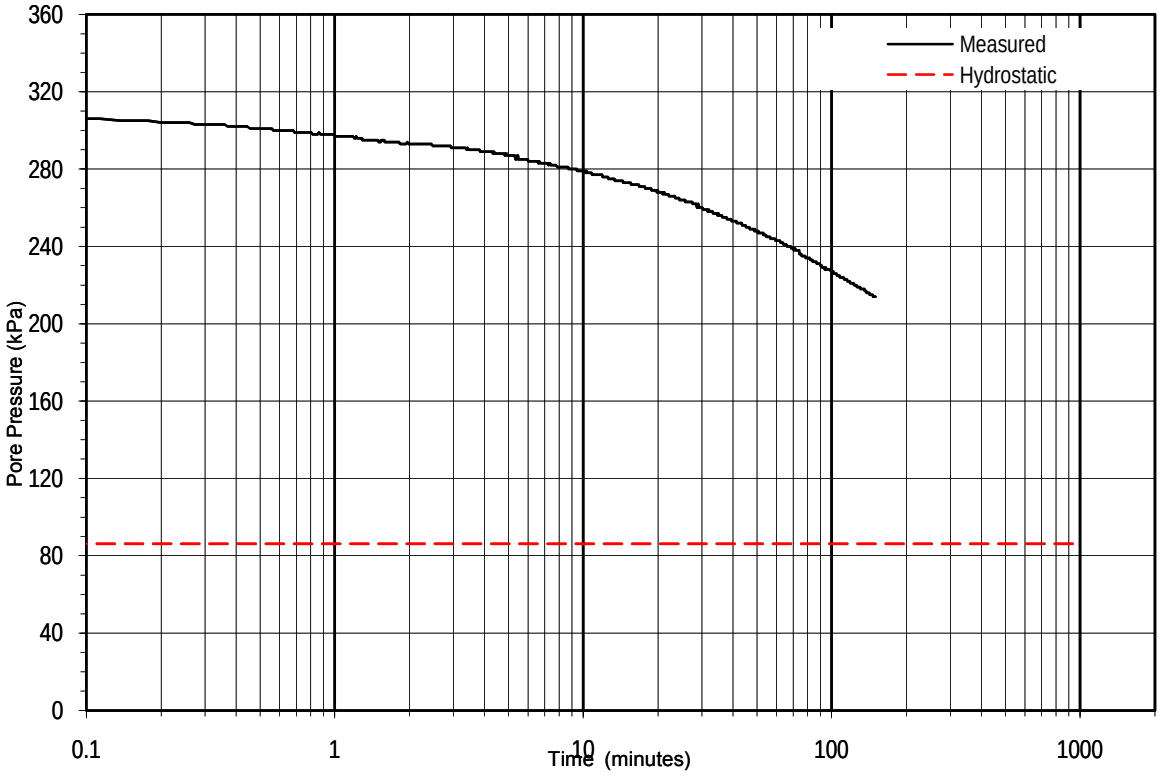
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**18**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**38**	kPa	(measured from test data)
Final pore pressure at end of test		**34**	kPa	(measured from test data)
Test duration		**5**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**23**	min	(extrapolated from test data)
Horizontal coefficient of consolidation, c_H		**9**	m^2/year	
	to	**12**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**1.1 x 10^{-6}**	cm/s	
	to	**1.6 x 10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT12 PPDT at 5m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



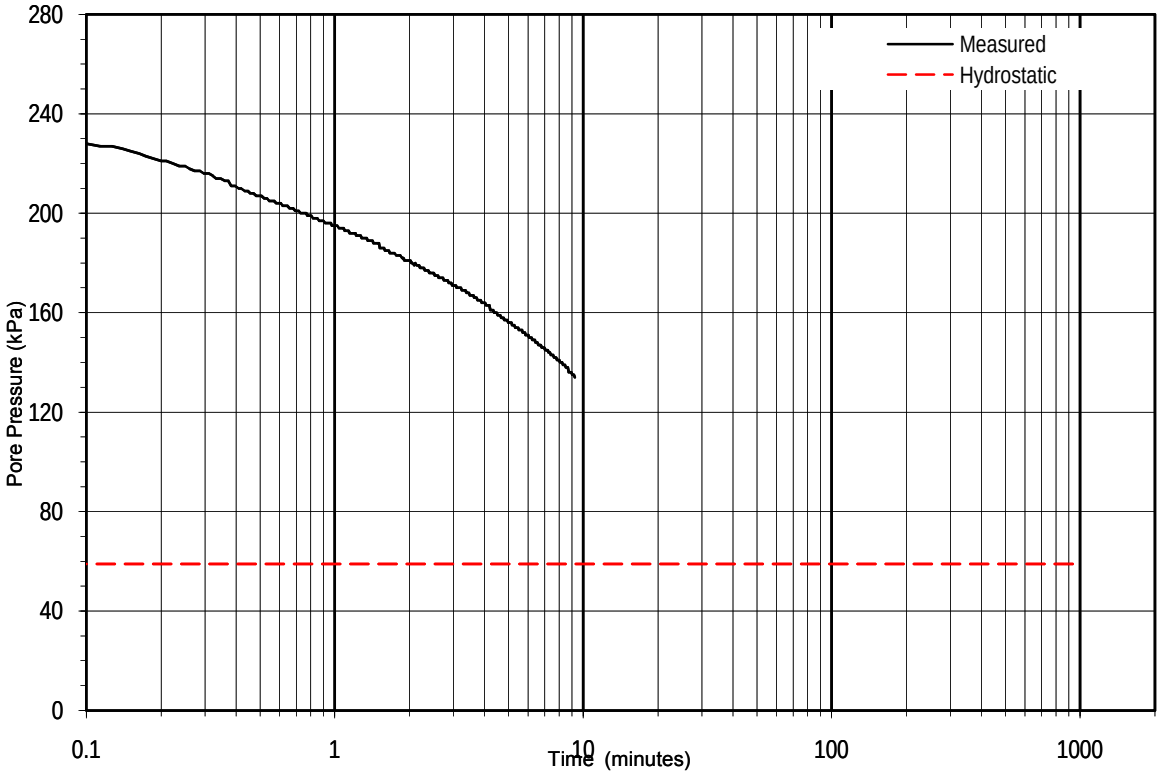
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**86**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**307**	kPa	(measured from test data)
Final pore pressure at end of test		**214**	kPa	(measured from test data)
Test duration		**150**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**125**	min	(extrapolated from test data)
Horizontal coefficient of consolidation, c_H		**2**	m^2/year	
	to	**2**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**0.2** x 10^{-6}	cm/s	
	to	**0.3** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT12 PPDT at 11.98m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



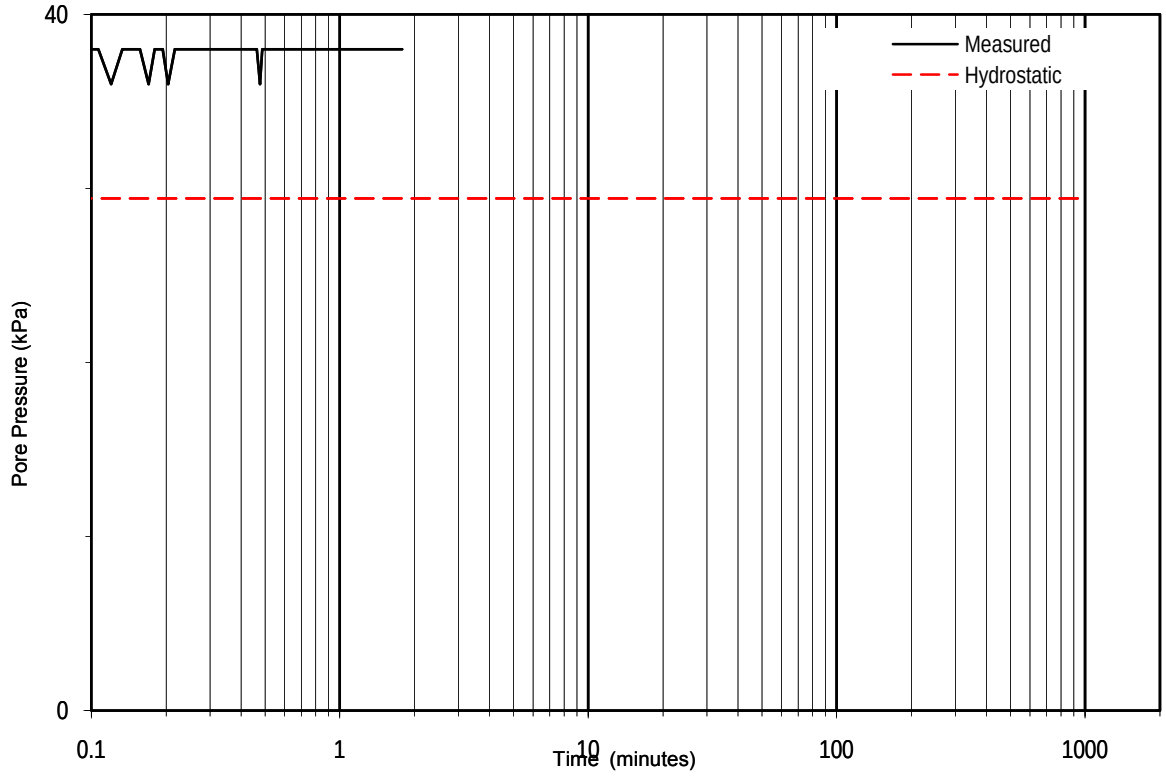
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **Sandy Clay**

Static pore pressure, u_o		**59**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**232**	kPa	(measured from test data)
Final pore pressure at end of test		**134**	kPa	(measured from test data)
Test duration		**9**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**7**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**29**	m^2/year	
	to	**40**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**3.7** x **10^{-6}**	cm/s	
	to	**5.2** x **10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT13 PPDT at 11.01m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



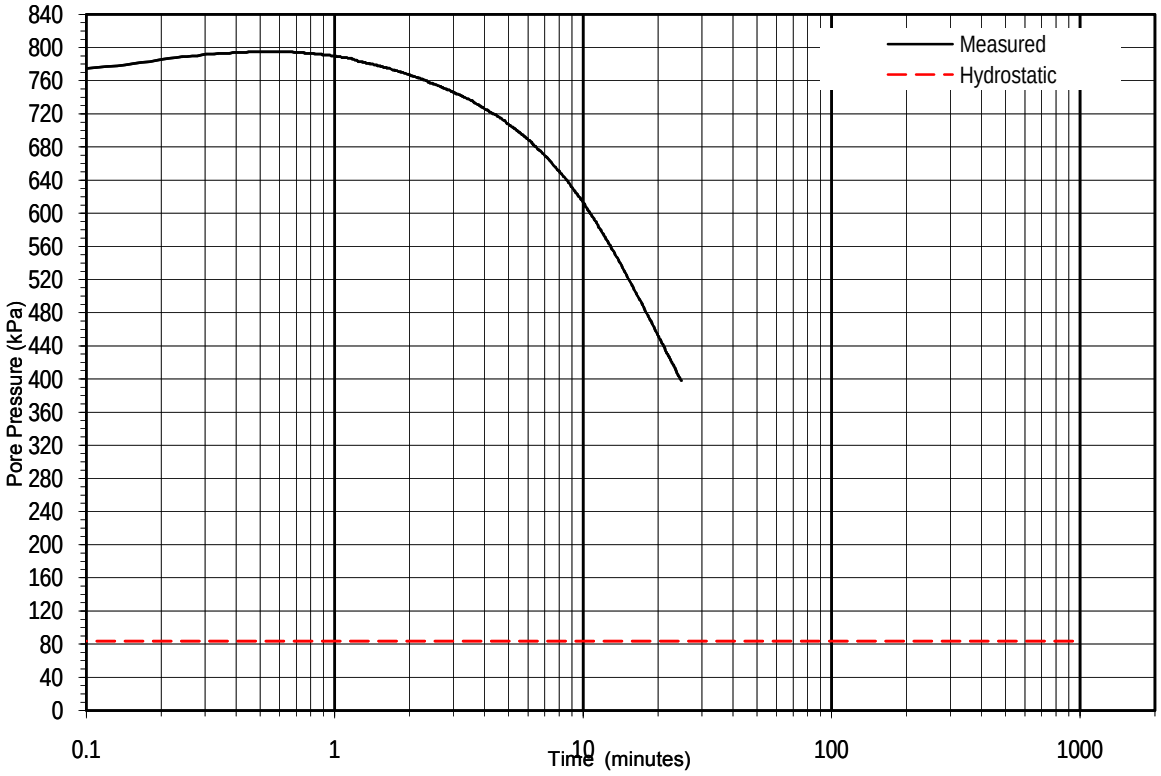
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: CLAY

Static pore pressure, u_o		**29**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**38**	kPa	(measured from test data)
Final pore pressure at end of test		**38**	kPa	(measured from test data)
Test duration		**2**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**25**	min	(extrapolated from test data)
Horizontal coefficient of consolidation, c_H		8	m^2/year	
	to	11	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		1.0 x 10^{-6}	cm/s	
	to	1.4 x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT13 PPDT at 8m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



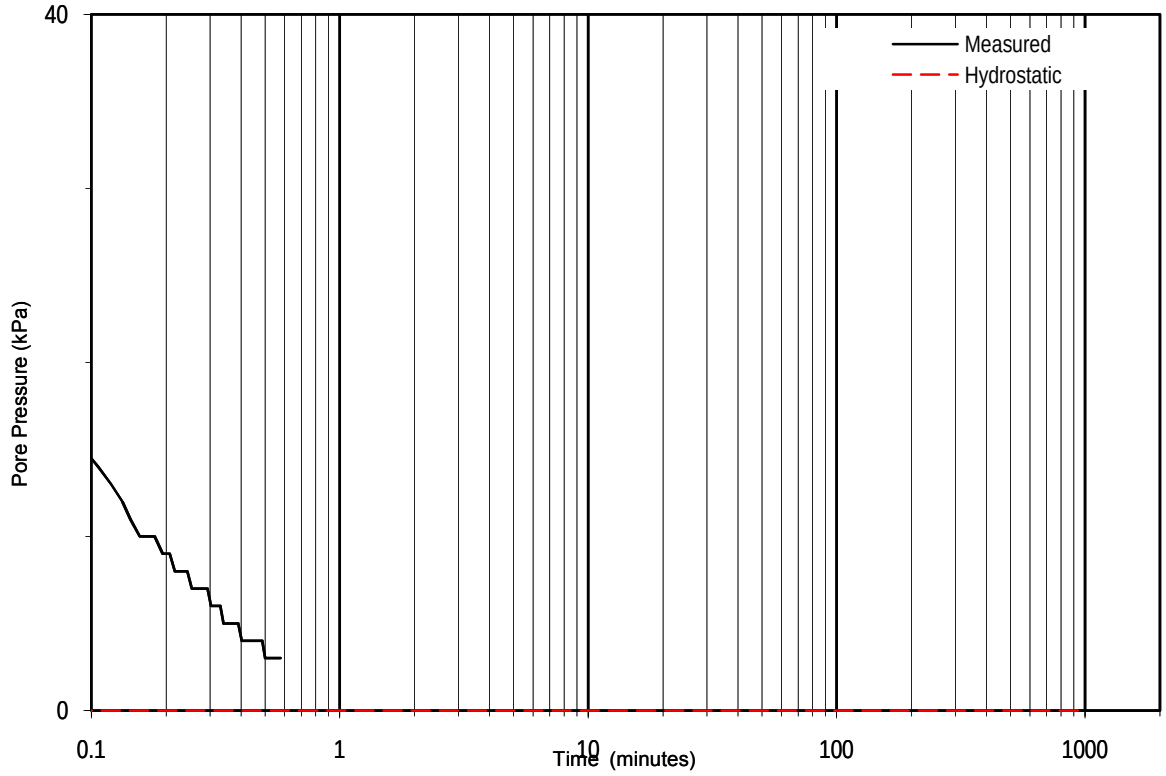
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**83**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**795**	kPa	(measured from test data)
Final pore pressure at end of test		**398**	kPa	(measured from test data)
Test duration		**25**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**21**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**9**	m^2/year	
	to	**13**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**1.2 x 10^{-6}**	cm/s	
	to	**1.7 x 10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT13 PPDT at 13.51m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



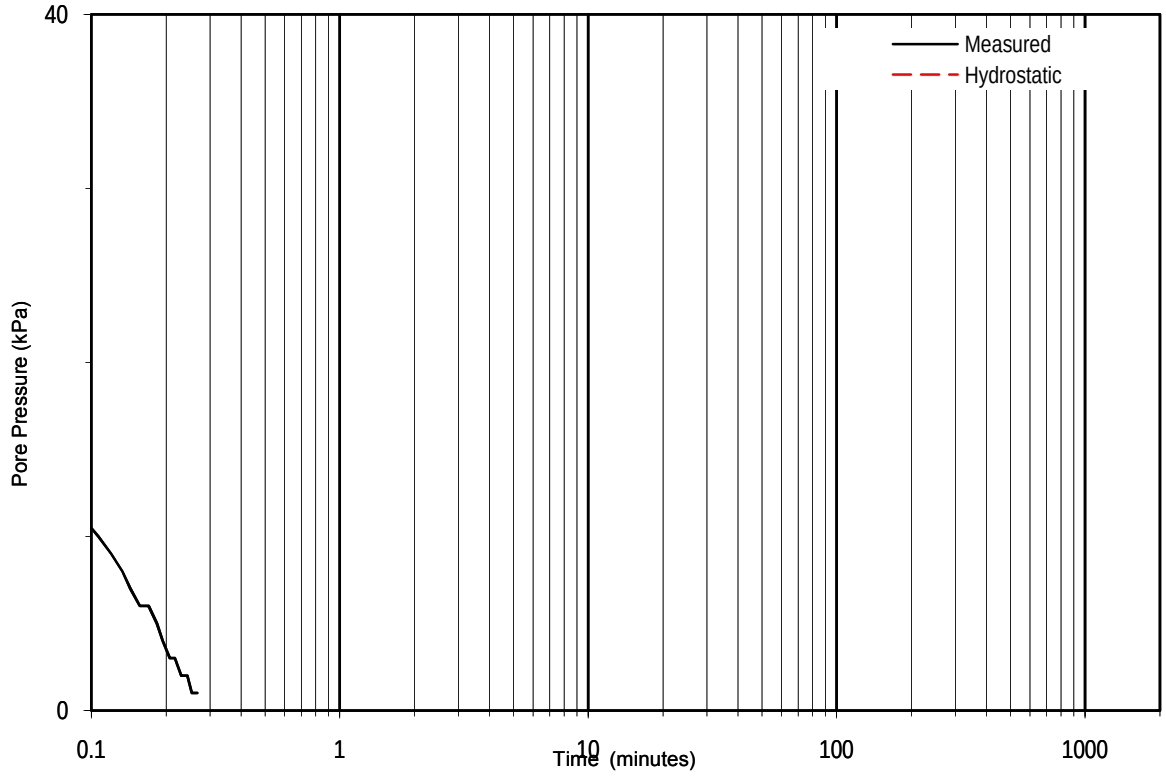
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **SAND?**

Static pore pressure, u_o		**0**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**28**	kPa	(measured from test data)
Final pore pressure at end of test		**3**	kPa	(measured from test data)
Test duration		**1**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**0**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**N.A.**	m^2/year	
	to	**N.A.**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**N.A.** x 10^{-6}	cm/s	
	to	**N.A.** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT14 PPDT at 5m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



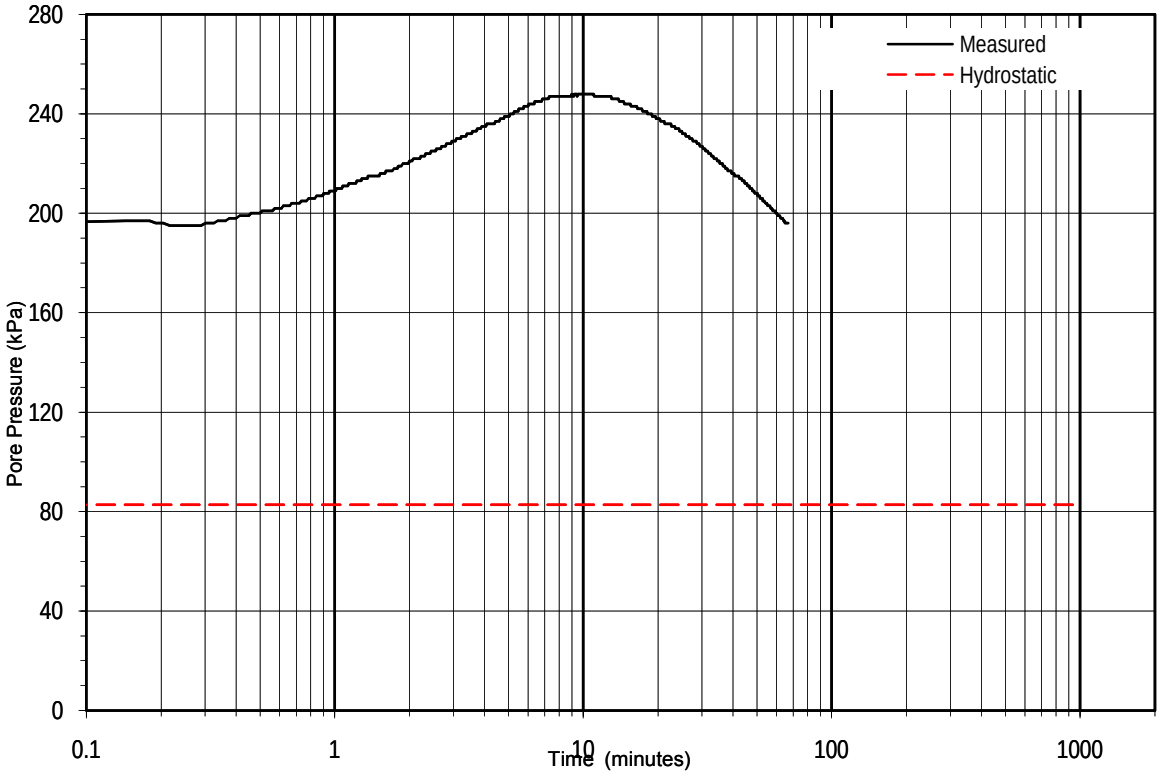
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **SAND?**

Static pore pressure, u_o		**-10**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**25**	kPa	(measured from test data)
Final pore pressure at end of test		**1**	kPa	(measured from test data)
Test duration		**0**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**0**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**N.A.**	m^2/year	
	to	**N.A.**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**N.A.** x 10^{-6}	cm/s	
	to	**N.A.** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT14 PPDT at 4m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



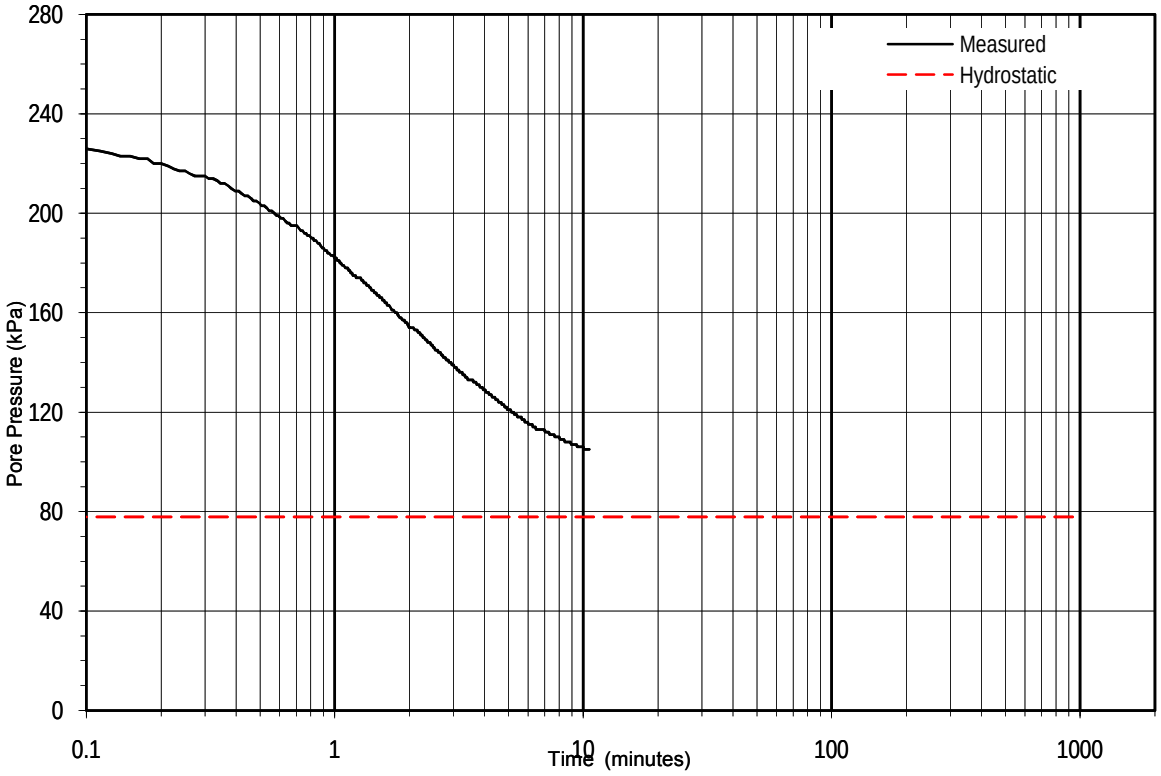
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**83**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**248**	kPa	(measured from test data)
Final pore pressure at end of test		**196**	kPa	(measured from test data)
Test duration		**67**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**87**	min	(extrapolated from test data)
Horizontal coefficient of consolidation, c_H		**2**	m^2/year	
	to	**3**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**0.3** x 10^{-6}	cm/s	
	to	**0.4** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT14 PPDT at 13.44m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



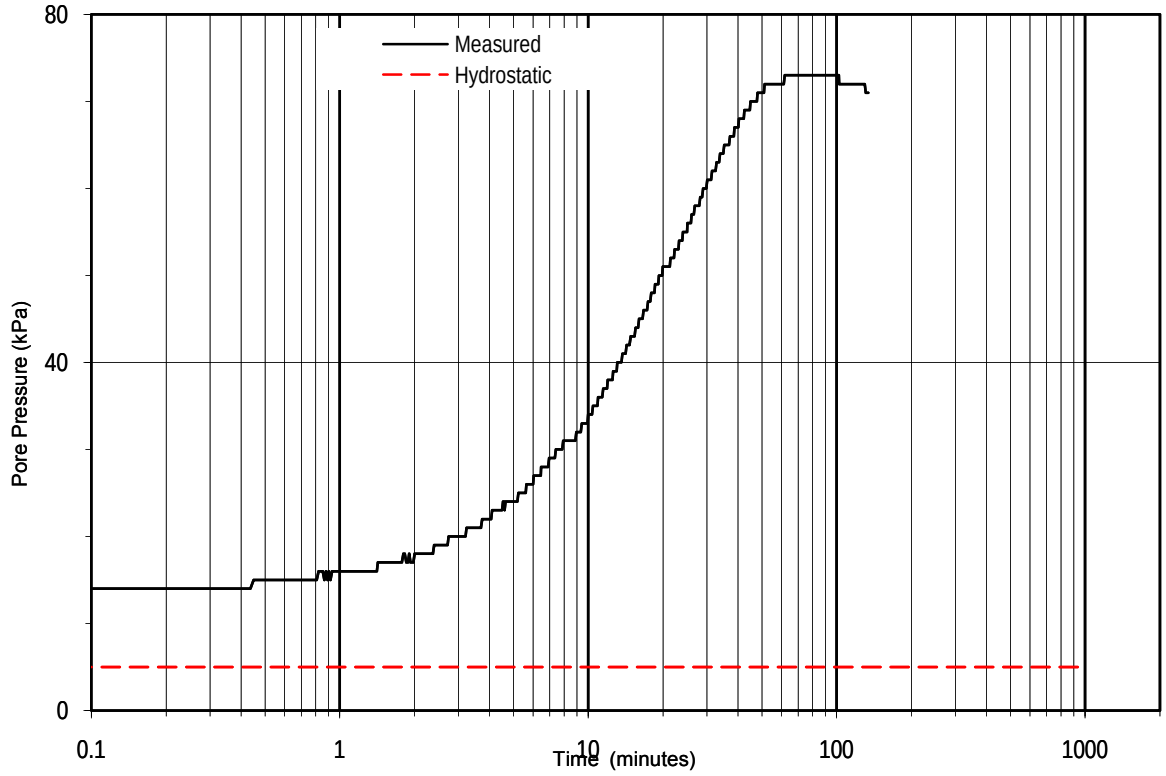
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **Sandy Clay/Clayey Sand?**

Static pore pressure, u_o		**78**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**231**	kPa	(measured from test data)
Final pore pressure at end of test		**105**	kPa	(measured from test data)
Test duration		**11**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**2**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**98**	m^2/year	
	to	**139**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**12.9** x **10^{-6}**	cm/s	
	to	**17.9** x **10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT15 PPDT at 15.04m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



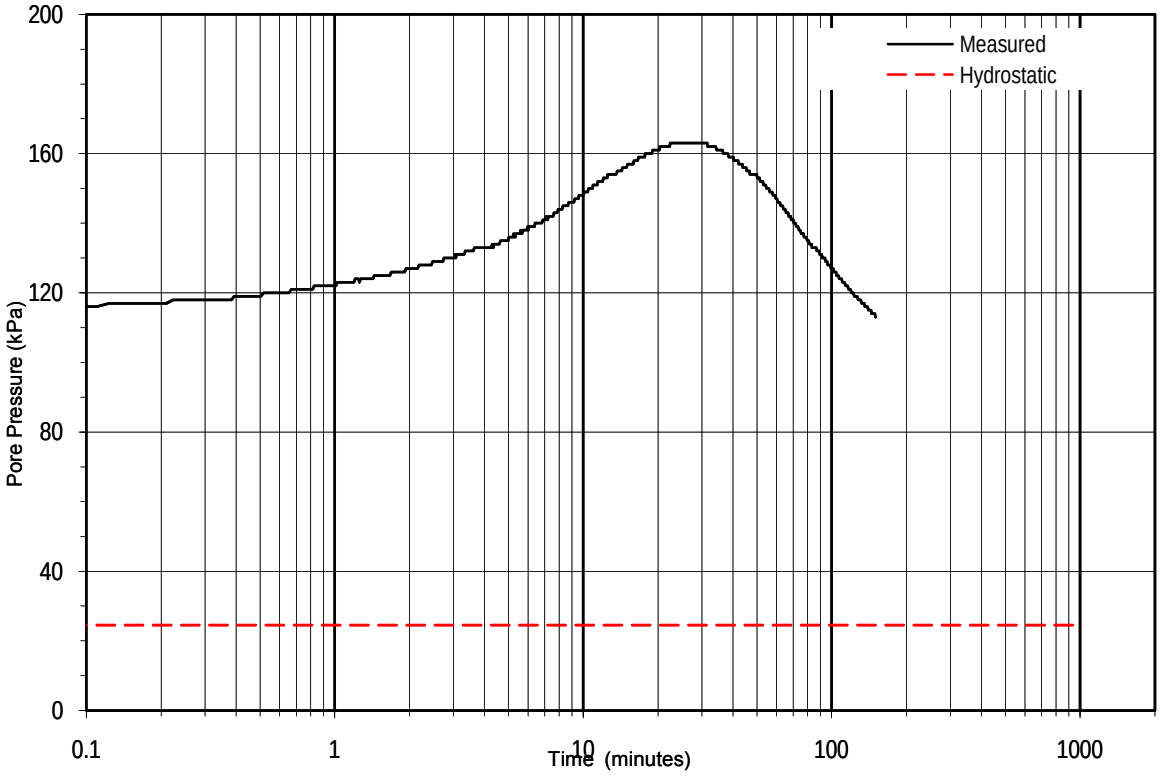
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**5**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**34**	kPa	(measured from test data)
Final pore pressure at end of test		**71**	kPa	(measured from test data)
Test duration		**134**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**1111**	min	(extrapolated from test data)
Horizontal coefficient of consolidation, c_H		0	m^2/year	
	to	0	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		0.0 x 10^{-6}	cm/s	
	to	0.0 x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT16 PPDT at 4.01m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



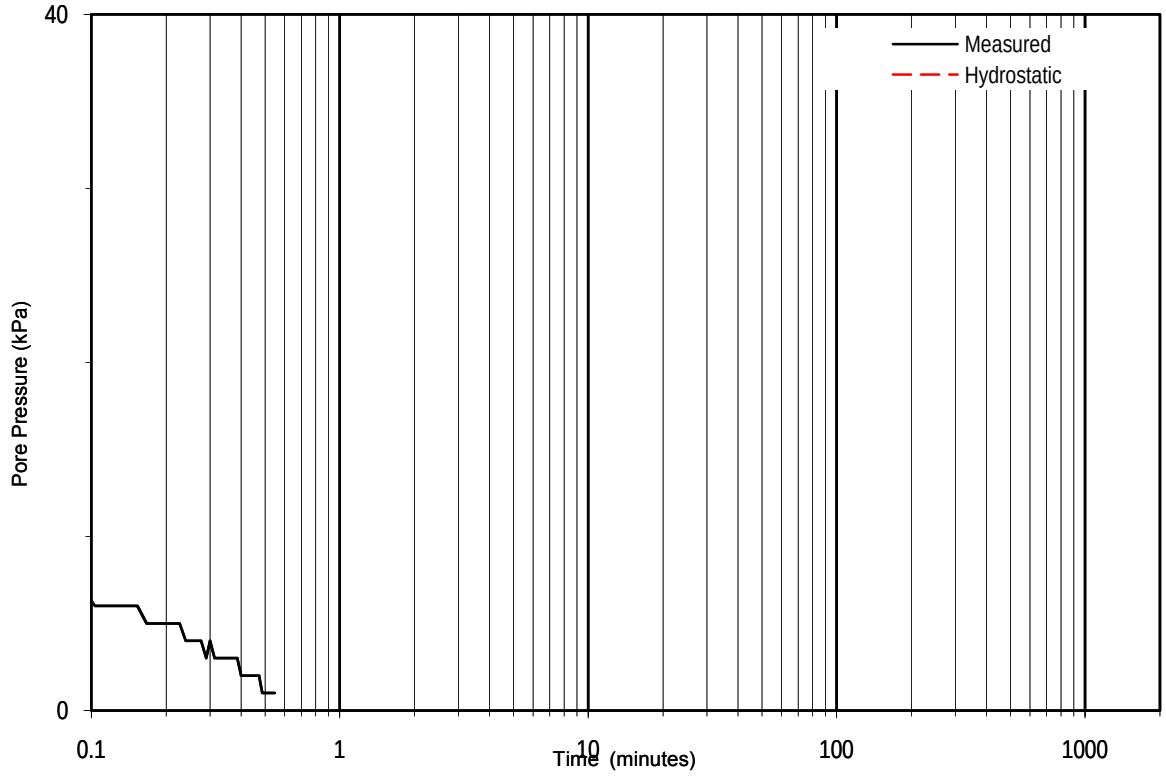
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**25**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**148**	kPa	(measured from test data)
Final pore pressure at end of test		**113**	kPa	(measured from test data)
Test duration		**150**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**112**	min	(extrapolated from test data)
Horizontal coefficient of consolidation, c_H		**2**	m^2/year	
	to	**3**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**0.2** x 10^{-6}	cm/s	
	to	**0.3** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT16 PPDT at 6m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



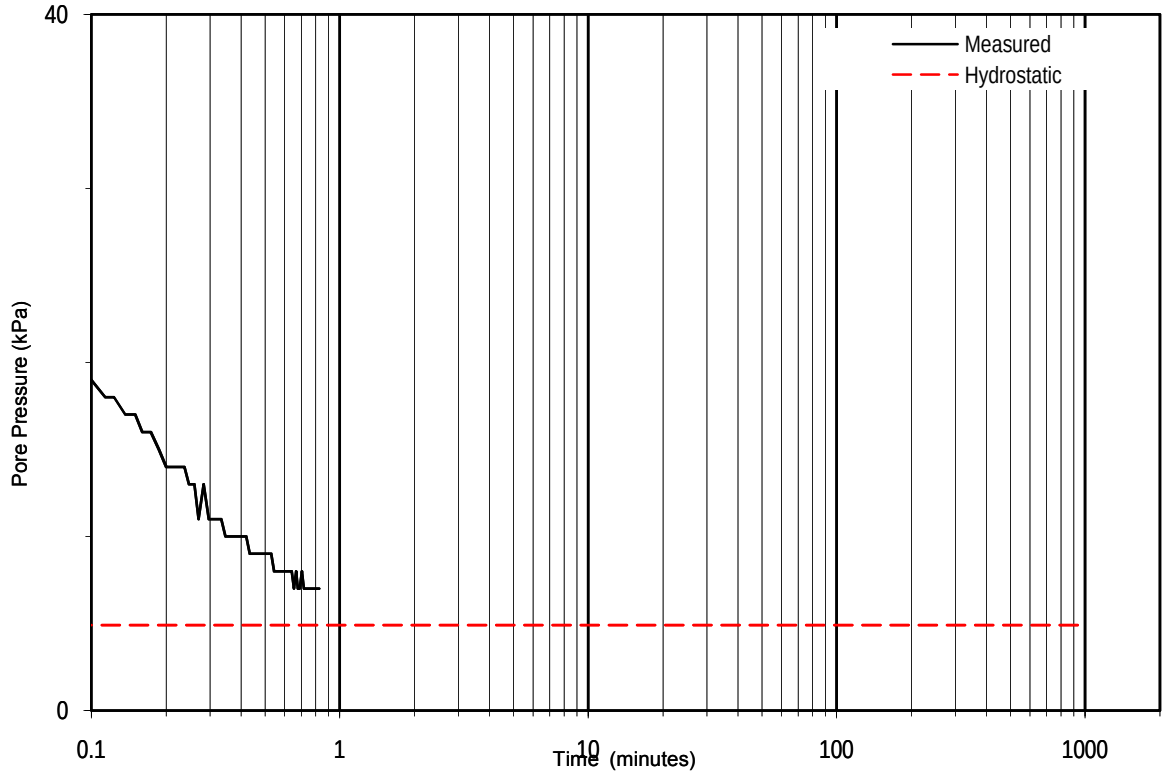
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **SAND?**

Static pore pressure, u_o		**-10**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**8**	kPa	(measured from test data)
Final pore pressure at end of test		**1**	kPa	(measured from test data)
Test duration		**1**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**1**	min	(extrapolated from test data)
Horizontal coefficient of consolidation, c_H		**N.A.**	m^2/year	
	to	**N.A.**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**N.A.** x 10^{-6}	cm/s	
	to	**N.A.** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT17 PPDT at 2.5m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



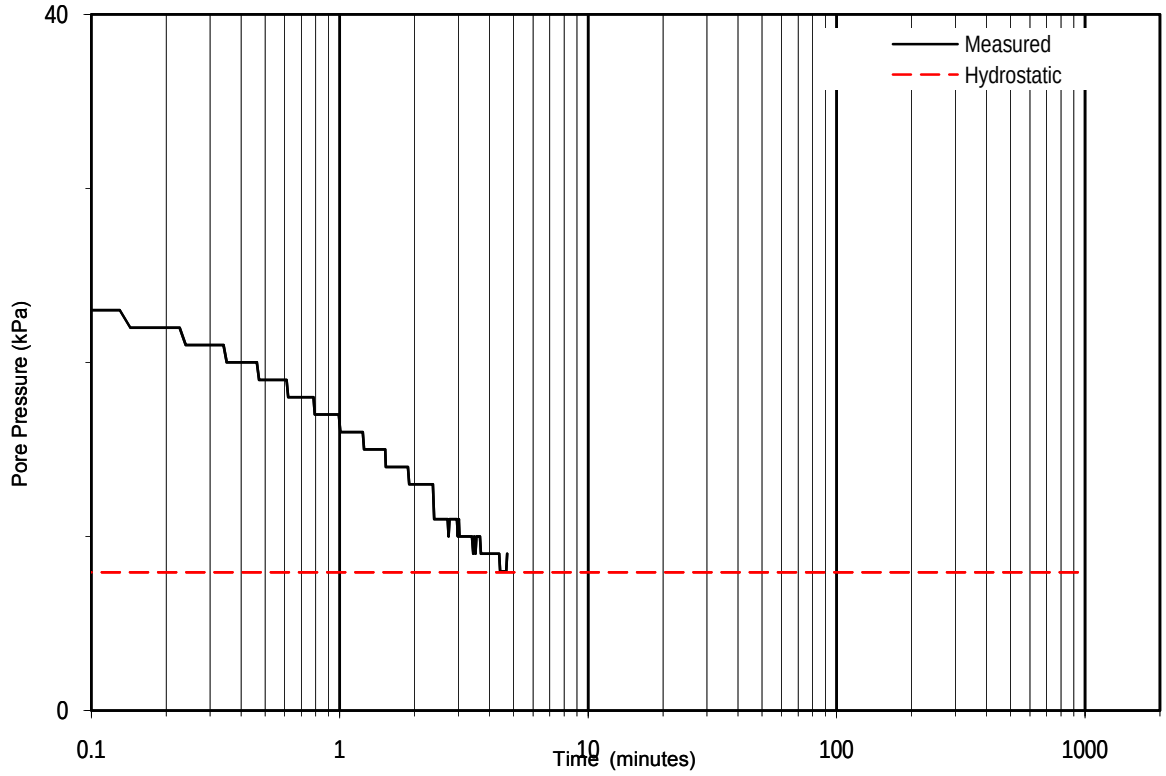
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **SAND?**

Static pore pressure, u_o		**5**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**22**	kPa	(measured from test data)
Final pore pressure at end of test		**7**	kPa	(measured from test data)
Test duration		**1**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**0**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**N.A.**	m^2/year	
	to	**N.A.**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**N.A.** x 10^{-6}	cm/s	
	to	**N.A.** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT18 PPDT at 2.5m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



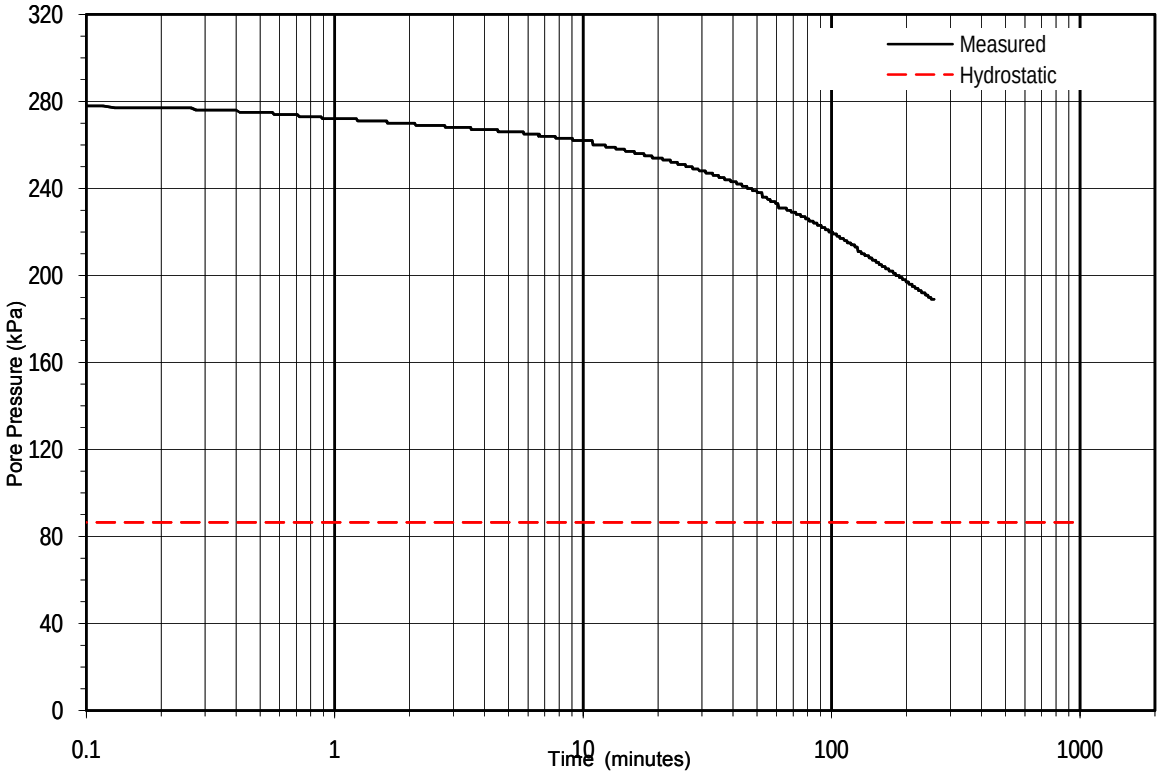
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **Clayey Sand/Sandy Clay?**

Static pore pressure, u_o		**8**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**23**	kPa	(measured from test data)
Final pore pressure at end of test		**9**	kPa	(measured from test data)
Test duration		**5**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**1**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**142**	m^2/year	
	to	**202**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**18.7** x **10^{-6}**	cm/s	
	to	**25.9** x **10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT19 PPDT at 4.01m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



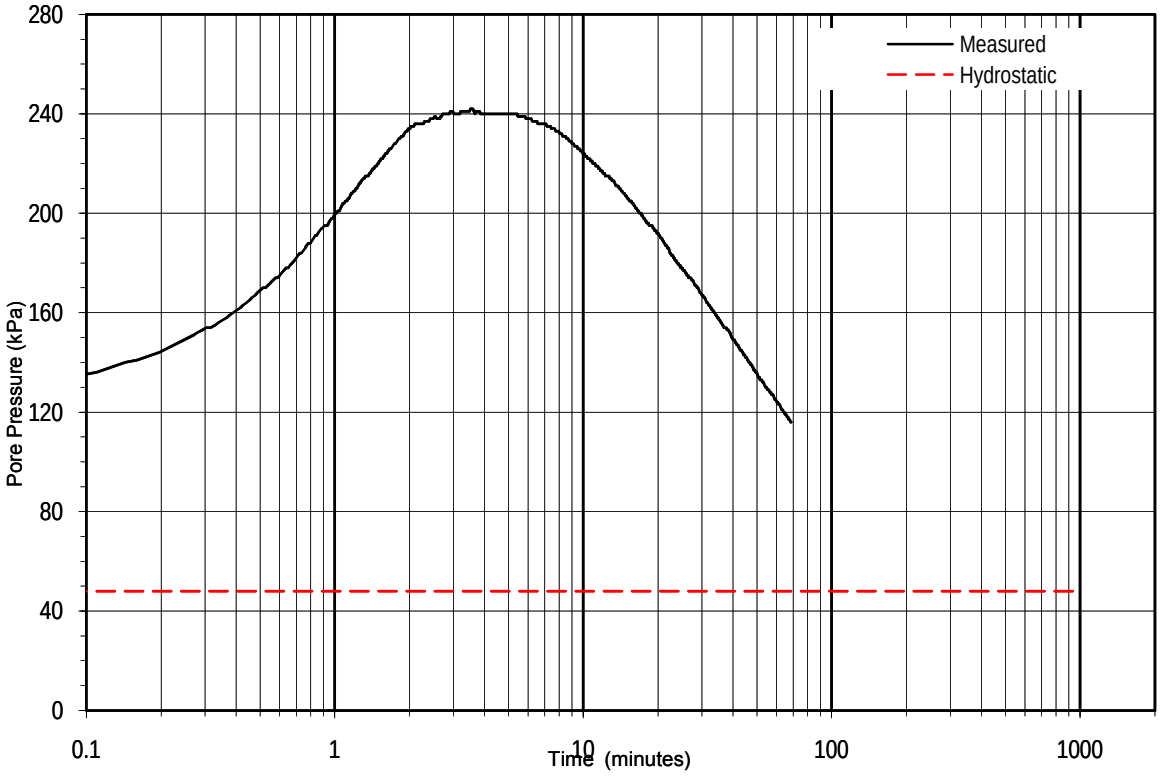
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**86**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**278**	kPa	(measured from test data)
Final pore pressure at end of test		**189**	kPa	(measured from test data)
Test duration		**258**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**351**	min	(extrapolated from test data)
Horizontal coefficient of consolidation, c_H		**1**	m^2/year	
	to	**1**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**0.1 x 10^{-6}**	cm/s	
	to	**0.1 x 10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT19 PPDT at 12.01m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



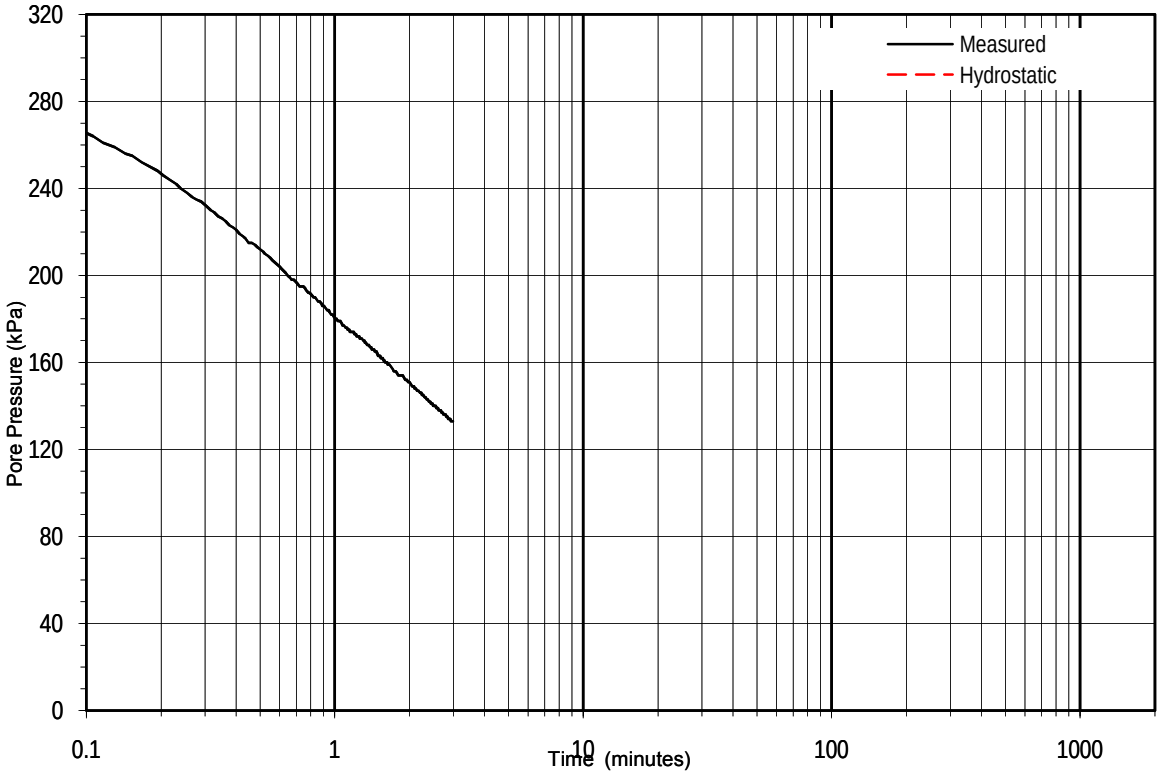
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**48**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**242**	kPa	(measured from test data)
Final pore pressure at end of test		**116**	kPa	(measured from test data)
Test duration		**69**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**43**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**5**	m^2/year	
	to	**7**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**0.6 x 10^{-6}**	cm/s	
	to	**0.9 x 10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT20 PPDT at 12m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



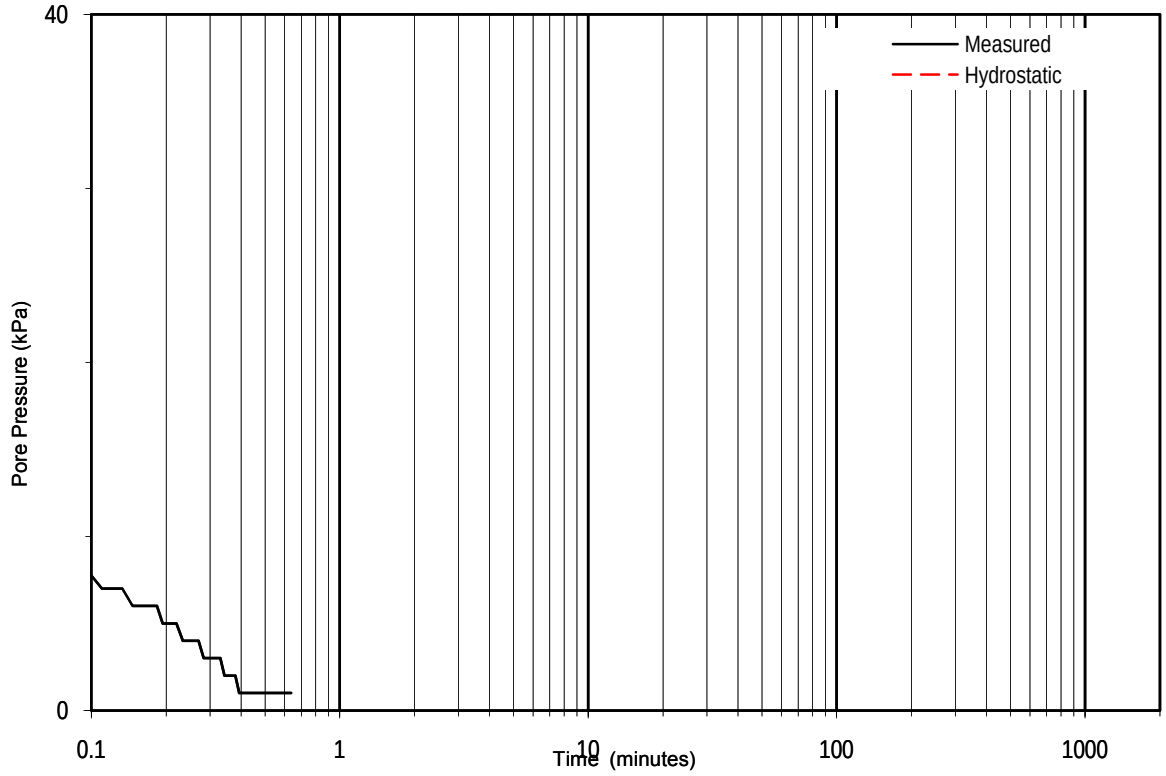
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **Clayey Sand/Sandy Clay?**

Static pore pressure, u_o		**-30**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**288**	kPa	(measured from test data)
Final pore pressure at end of test		**133**	kPa	(measured from test data)
Test duration		**3**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**2**	min	(extrapolated from test data)
Horizontal coefficient of consolidation, c_H		**105**	m^2/year	
	to	**149**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**13.7** x **10^{-6}**	cm/s	
	to	**19.0** x **10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT21 PPDT at 10.05m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



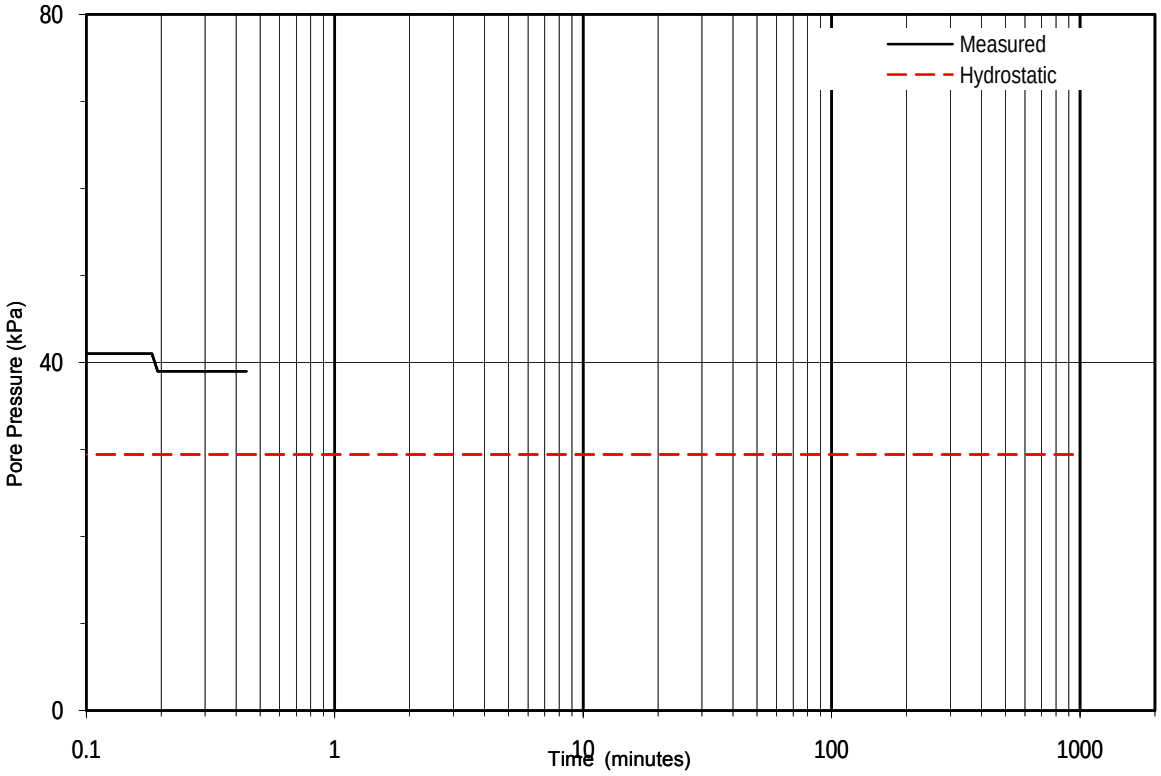
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**-40**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**10**	kPa	(measured from test data)
Final pore pressure at end of test		**1**	kPa	(measured from test data)
Test duration		**0**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**1161**	min	(extrapolated from test data)
Horizontal coefficient of consolidation, c_H		**0**	m^2/year	
	to	**0**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**0.0** x 10^{-6}	cm/s	
	to	**0.0** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT22 PPDT at 3m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



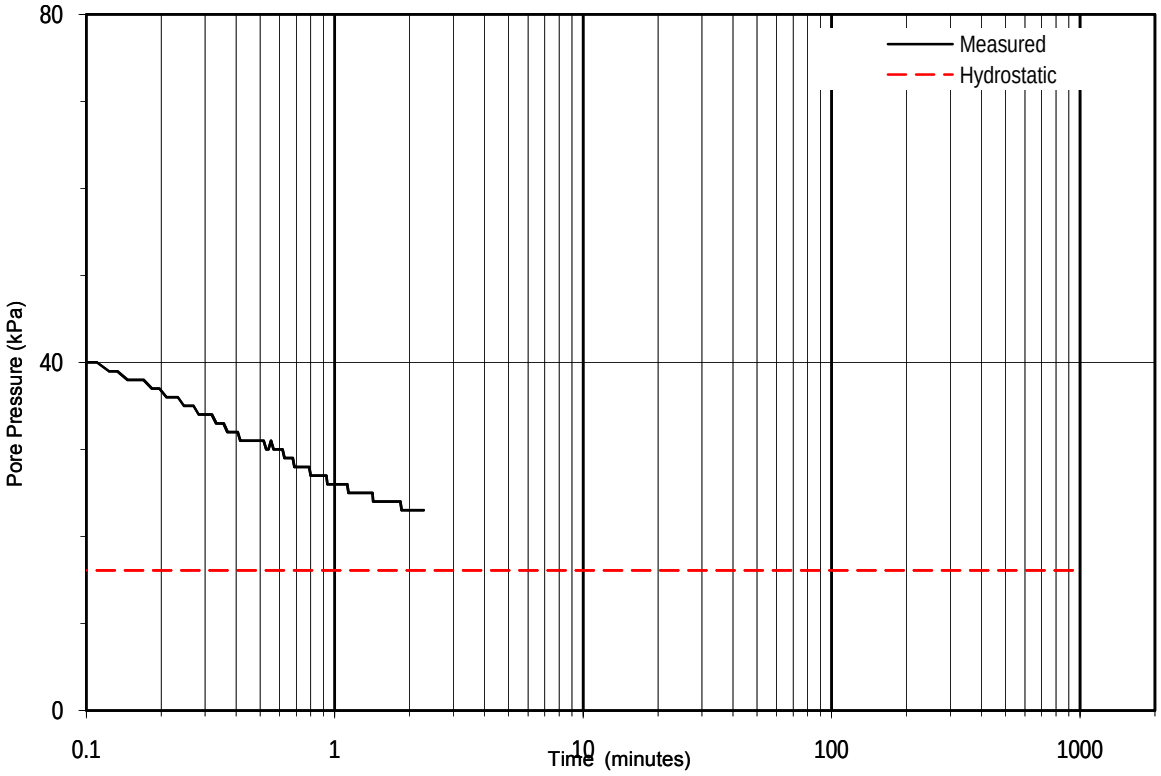
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: SAND

Static pore pressure, u_o		**29**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**41**	kPa	(measured from test data)
Final pore pressure at end of test		**39**	kPa	(measured from test data)
Test duration		**0**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**1**	min	(extrapolated from test data)
Horizontal coefficient of consolidation, c_H		**N.A.**	m^2/year	
	to	**N.A.**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**N.A.** x 10^{-6}	cm/s	
	to	**N.A.** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT23 PPDT at 6m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



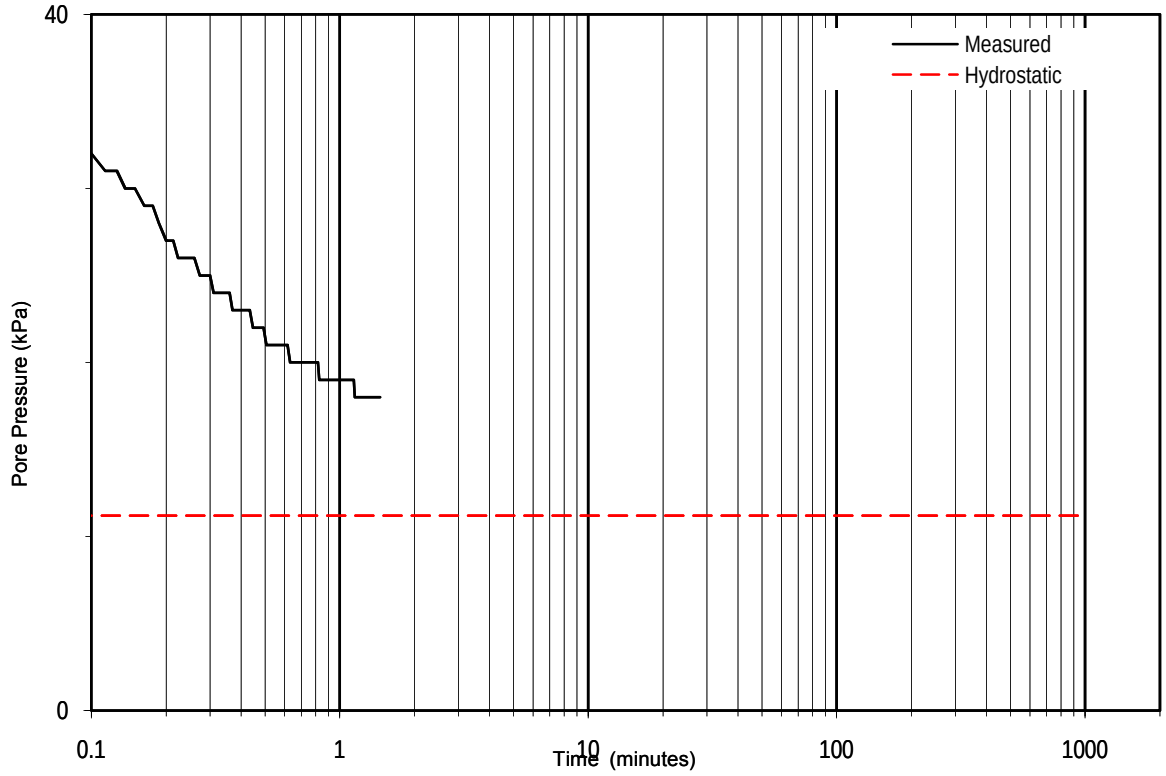
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: SAND

Static pore pressure, u_o		**16**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**44**	kPa	(measured from test data)
Final pore pressure at end of test		**23**	kPa	(measured from test data)
Test duration		**2**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**1**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**N.A.**	m^2/year	
	to	**N.A.**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**N.A.** x 10^{-6}	cm/s	
	to	**N.A.** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT24 PPDT at 3m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



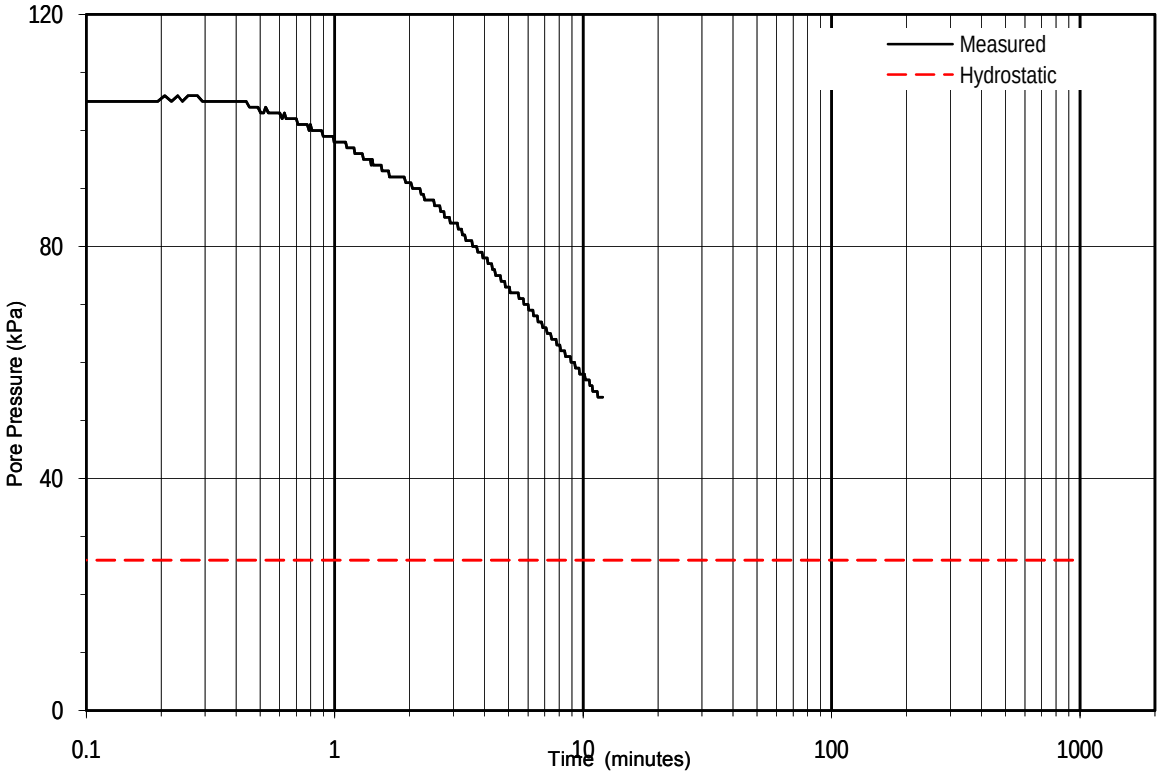
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: SAND

Static pore pressure, u_o		**11**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**38**	kPa	(measured from test data)
Final pore pressure at end of test		**18**	kPa	(measured from test data)
Test duration		**1**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**0**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**N.A.**	m^2/year	
	to	**N.A.**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**N.A.** x 10^{-6}	cm/s	
	to	**N.A.** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT24 PPDT at 2.5m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



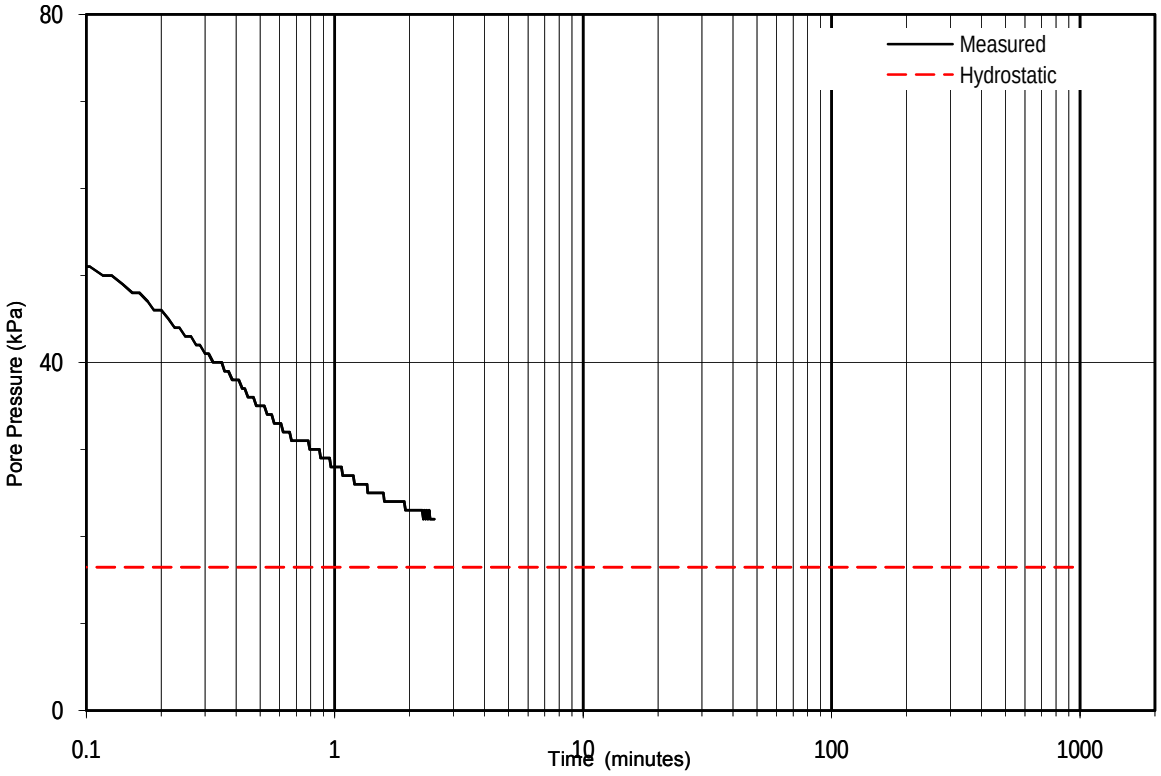
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY/Sandy Clay**

Static pore pressure, u_o		**26**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**106**	kPa	(measured from test data)
Final pore pressure at end of test		**54**	kPa	(measured from test data)
Test duration		**12**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**7**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**29**	m^2/year	
	to	**41**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**3.7** x **10^{-6}**	cm/s	
	to	**5.2** x **10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT24 PPDT at 4m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



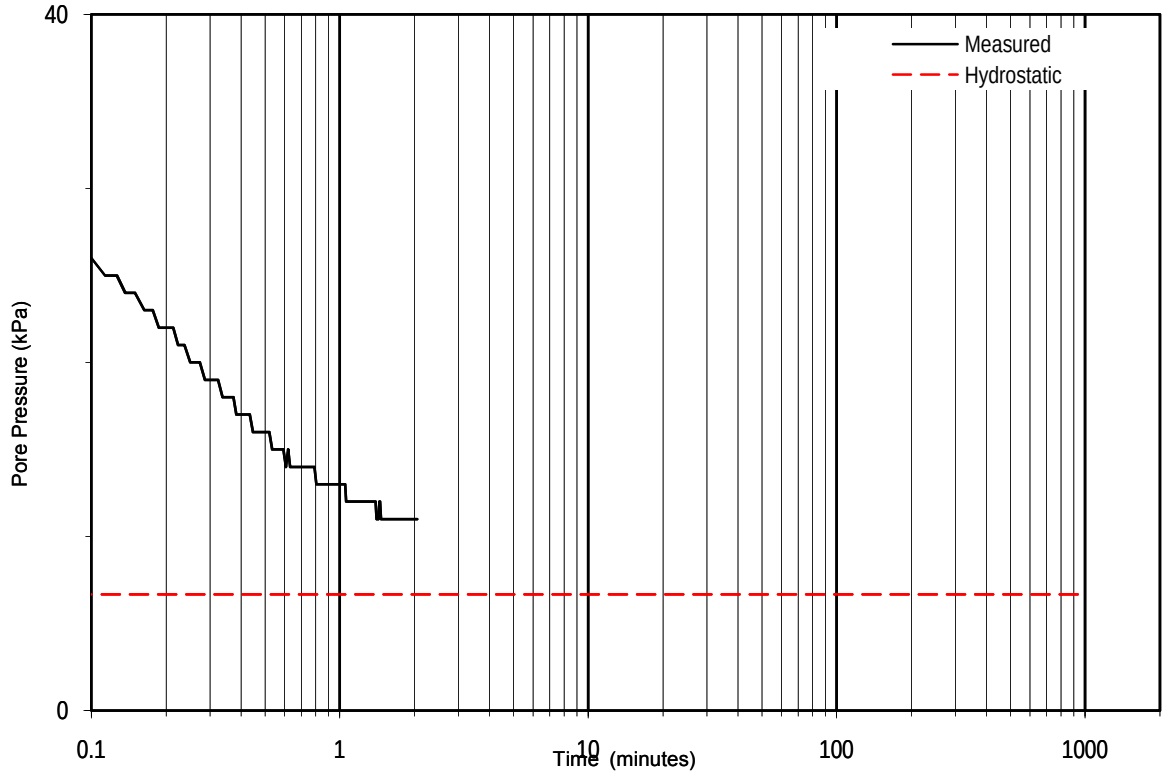
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: SAND

Static pore pressure, u_o		**16**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**56**	kPa	(measured from test data)
Final pore pressure at end of test		**22**	kPa	(measured from test data)
Test duration		**3**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**0**	min	(extrapolated from test data)
Horizontal coefficient of consolidation, c_H		**N.A.**	m^2/year	
	to	**N.A.**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**N.A.** x 10^{-6}	cm/s	
	to	**N.A.** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT25 PPDT at 3.98m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



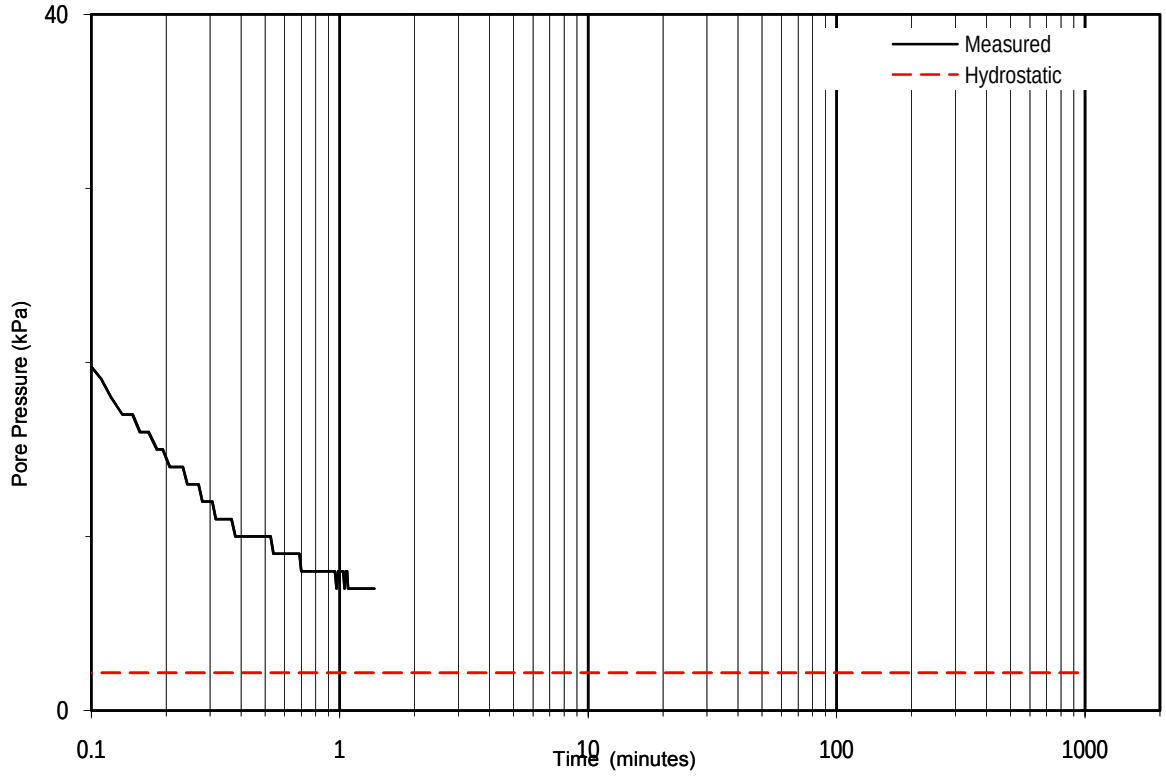
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: SAND

Static pore pressure, u_o		**7**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**30**	kPa	(measured from test data)
Final pore pressure at end of test		**11**	kPa	(measured from test data)
Test duration		**2**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**0**	min	(extrapolated from test data)
Horizontal coefficient of consolidation, c_H		**N.A.**	m^2/year	
	to	**N.A.**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**N.A.** x 10^{-6}	cm/s	
	to	**N.A.** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT25 PPDT at 2.98m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



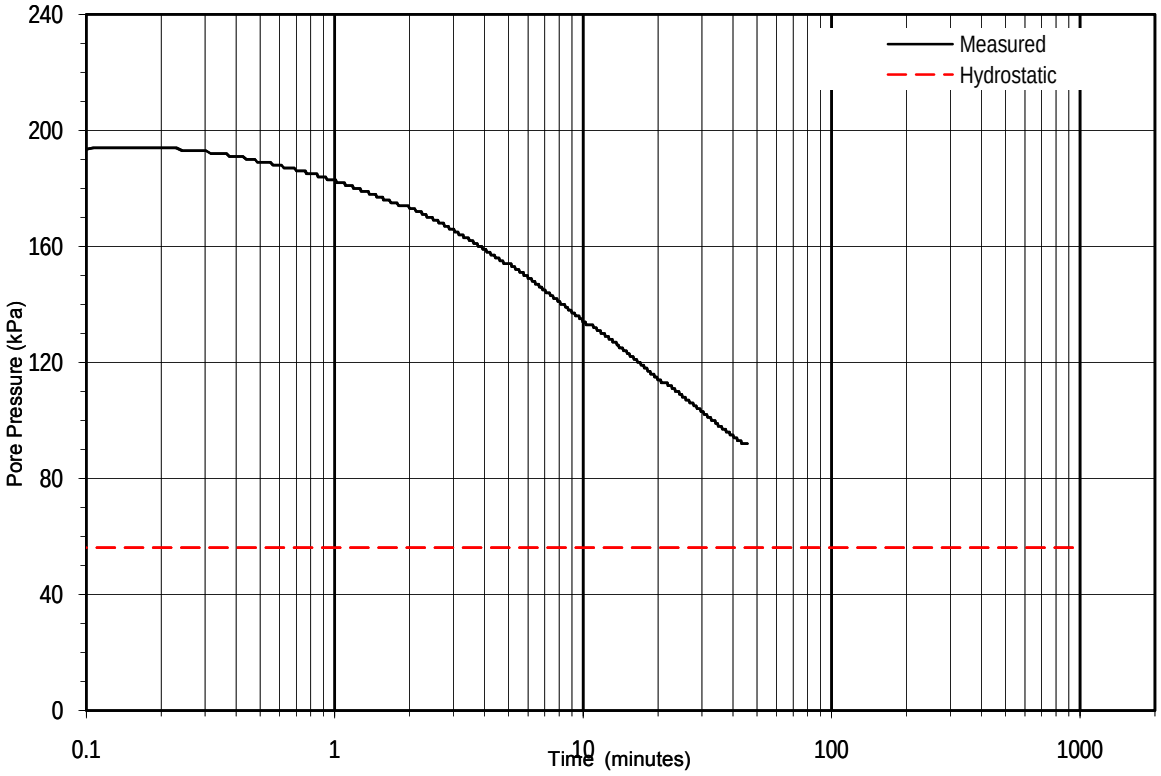
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: SAND

Static pore pressure, u_o		**2**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**25**	kPa	(measured from test data)
Final pore pressure at end of test		**7**	kPa	(measured from test data)
Test duration		**1**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**0**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**N.A.**	m^2/year	
	to	**N.A.**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**N.A.** x 10^{-6}	cm/s	
	to	**N.A.** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT25 PPDT at 2.52m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



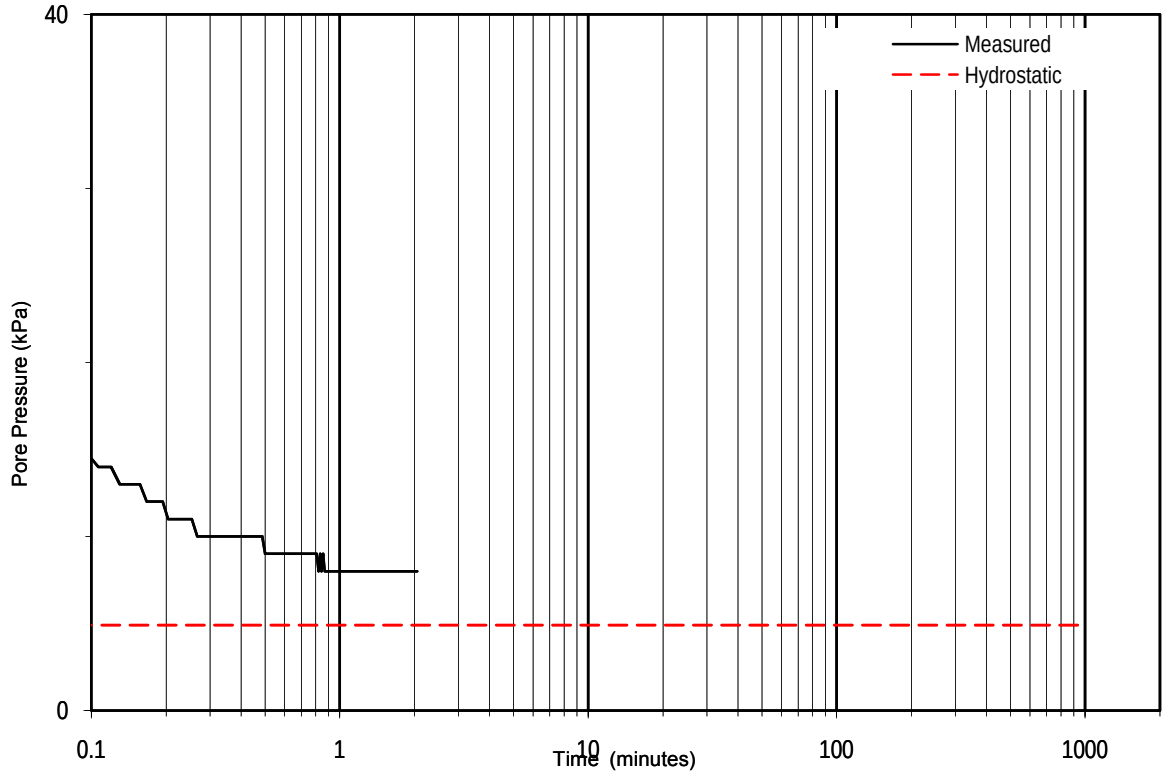
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**56**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**194**	kPa	(measured from test data)
Final pore pressure at end of test		**92**	kPa	(measured from test data)
Test duration		**46**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**14**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**14**	m^2/year	
	to	**20**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**1.8 x 10^{-6}**	cm/s	
	to	**2.6 x 10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT25 PPDT at 8.02m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



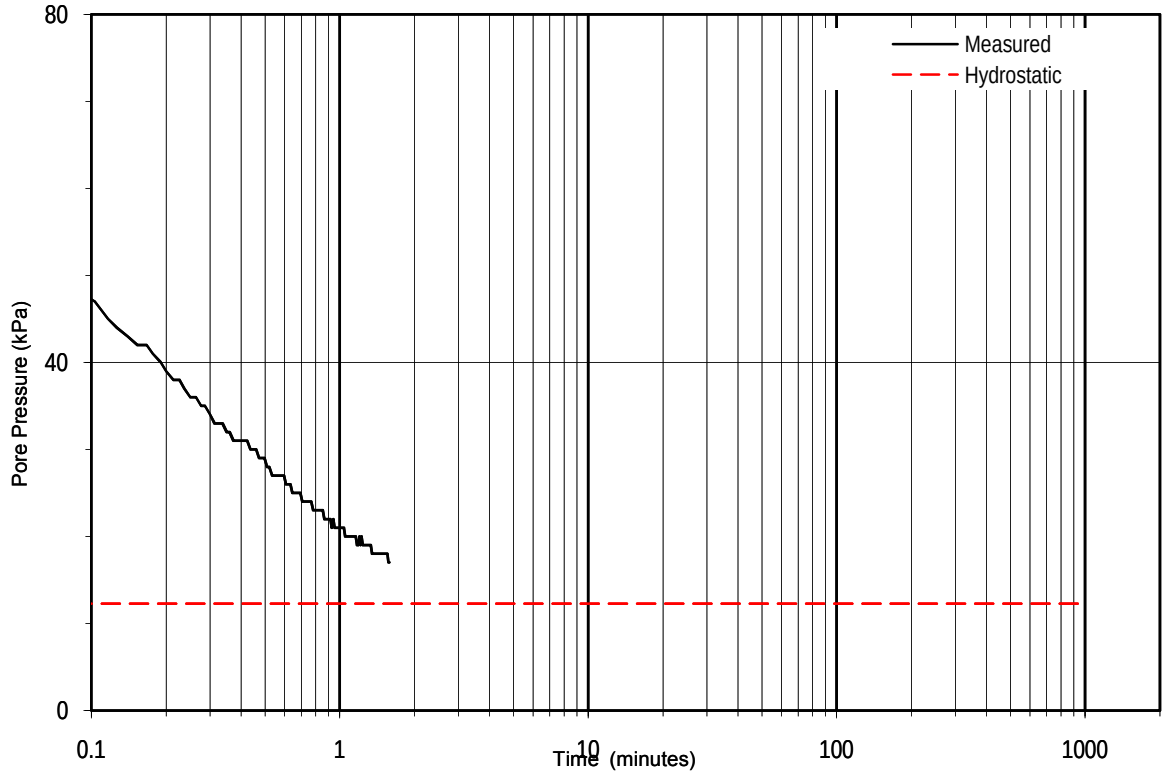
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: SAND

Static pore pressure, u_o		**5**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**19**	kPa	(measured from test data)
Final pore pressure at end of test		**8**	kPa	(measured from test data)
Test duration		**2**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**0**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**N.A.**	m^2/year	
	to	**N.A.**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**N.A.** x 10^{-6}	cm/s	
	to	**N.A.** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT27 PPDT at 1.5m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



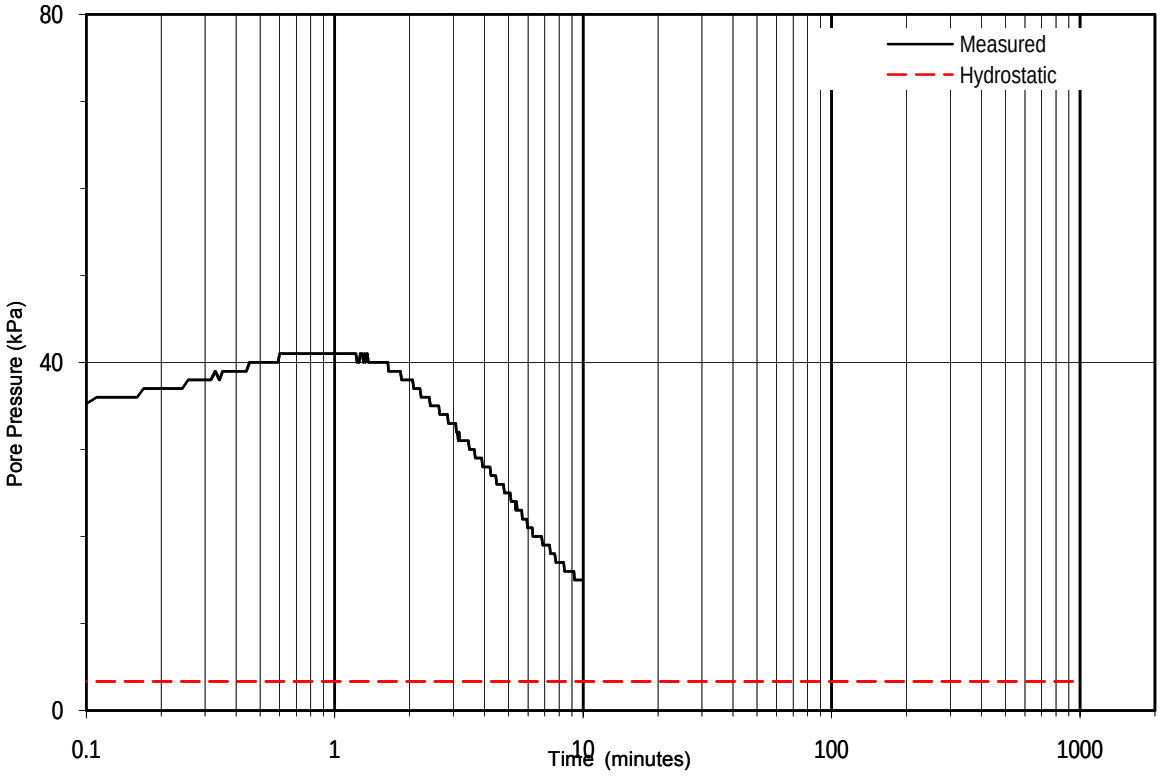
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: SAND

Static pore pressure, u_o		**12**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**54**	kPa	(measured from test data)
Final pore pressure at end of test		**17**	kPa	(measured from test data)
Test duration		**2**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**0**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**N.A.**	m^2/year	
	to	**N.A.**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**N.A.** x 10^{-6}	cm/s	
	to	**N.A.** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT27 PPDT at 2.25m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



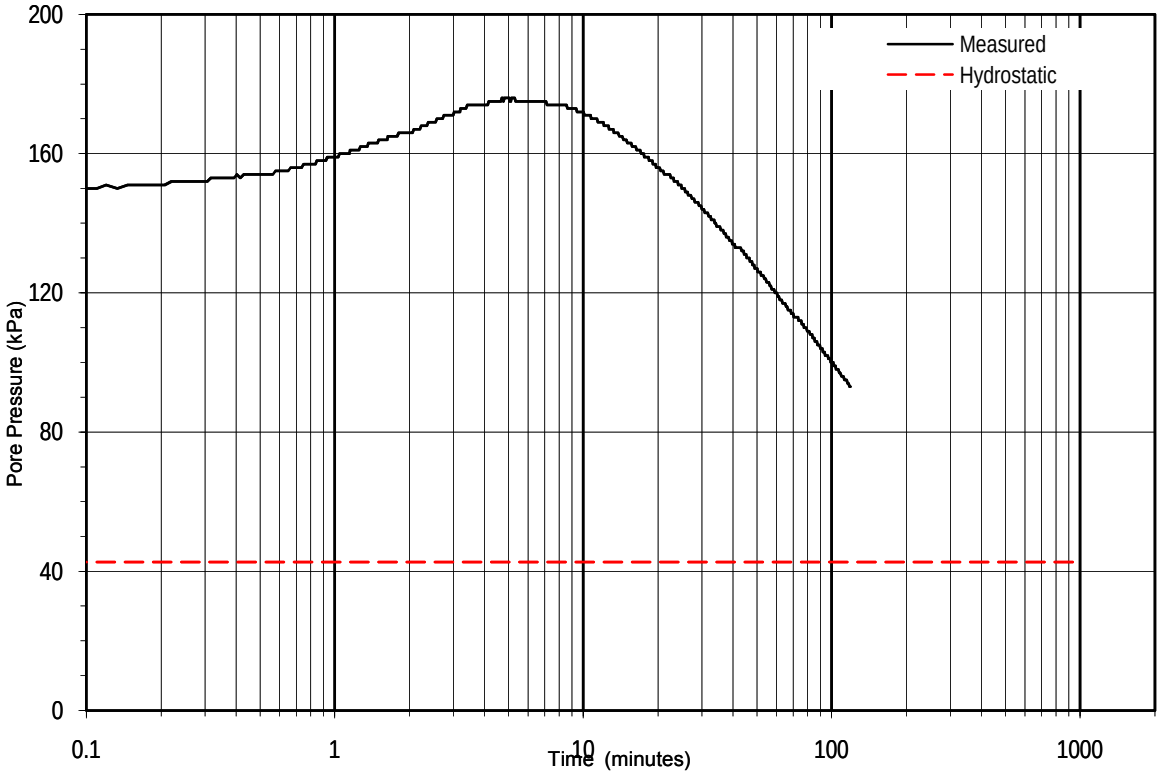
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY/Sandy Clay?**

Static pore pressure, u_o		**3**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**41**	kPa	(measured from test data)
Final pore pressure at end of test		**15**	kPa	(measured from test data)
Test duration		**10**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**6**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**34**	m^2/year	
	to	**49**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**4.5 x 10^{-6}**	cm/s	
	to	**6.3 x 10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT28 PPDT at 1.49m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



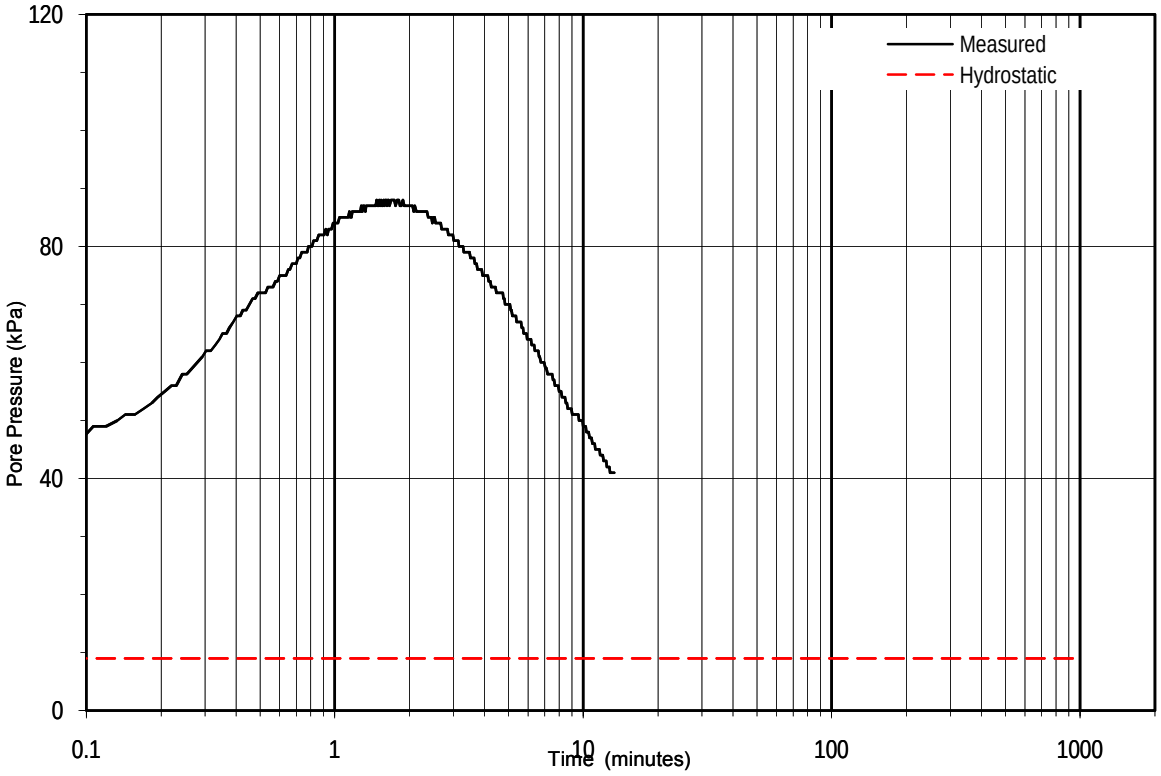
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**43**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**176**	kPa	(measured from test data)
Final pore pressure at end of test		**93**	kPa	(measured from test data)
Test duration		**119**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**80**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**3**	m^2/year	
	to	**4**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**0.3** x 10^{-6}	cm/s	
	to	**0.5** x 10^{-6}	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT28 PPDT at 5.5m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



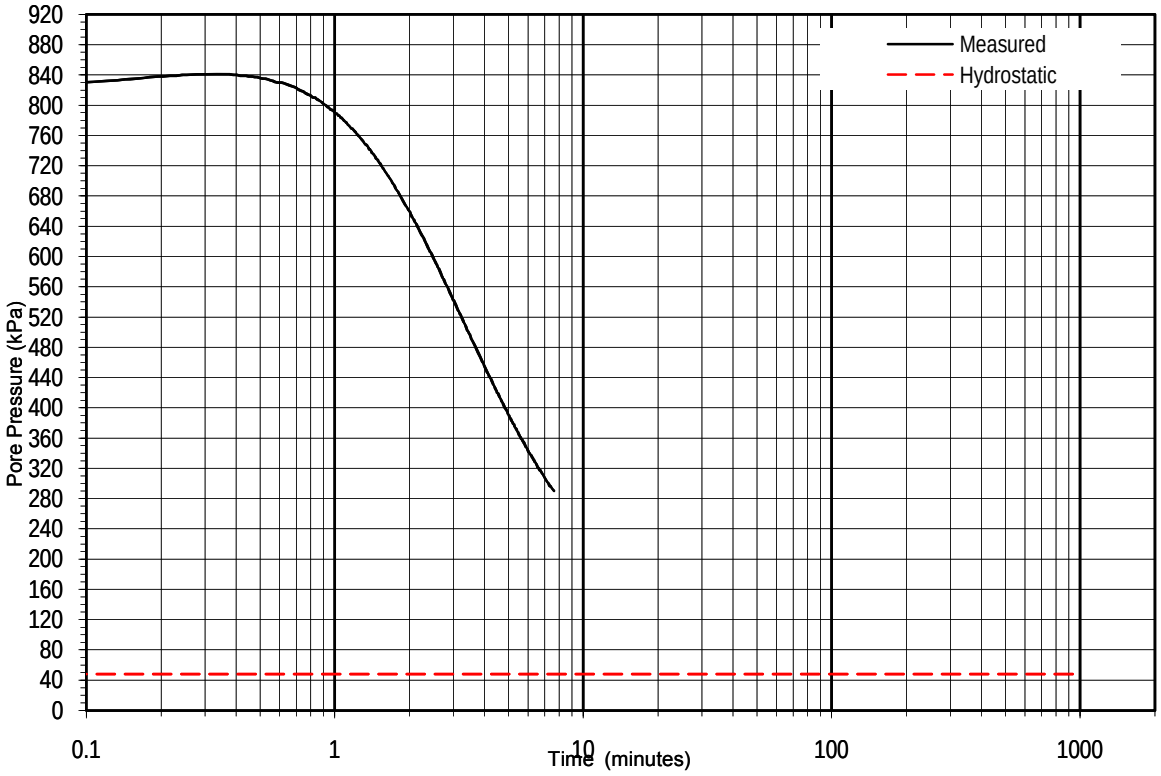
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY**

Static pore pressure, u_o		**9**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**88**	kPa	(measured from test data)
Final pore pressure at end of test		**41**	kPa	(measured from test data)
Test duration		**13**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**11**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**19**	m^2/year	
	to	**27**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**2.5 x 10^{-6}**	cm/s	
	to	**3.4 x 10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT29 PPDT at 1.52m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



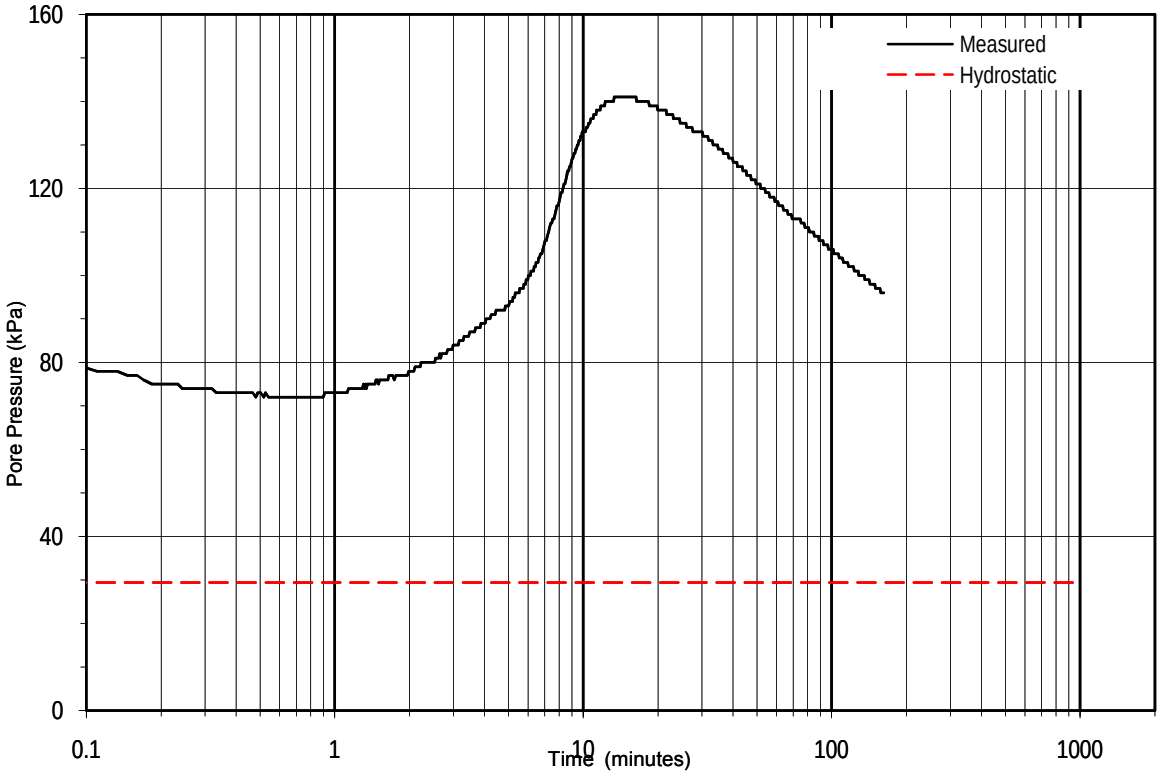
TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **CLAY/Sandy Clay**

Static pore pressure, u_o		**48**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**841**	kPa	(measured from test data)
Final pore pressure at end of test		**290**	kPa	(measured from test data)
Test duration		**8**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**4**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**48**	m^2/year	
	to	**68**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**6.3 x 10^{-6}**	cm/s	
	to	**8.7 x 10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT29 PPDT at 5.5m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			



TEST DATA & INFERRED SOIL PARAMETERS

Inferred soil type: **Clayey Sand/Sandy Clay**

Static pore pressure, u_o		**29**	kPa	(calculated from inferred water level)
Maximum pore pressure, u_i		**133**	kPa	(measured from test data)
Final pore pressure at end of test		**96**	kPa	(measured from test data)
Test duration		**162**	min	(measured from test data)
Time for 50% dissipation of u, t_{50}		**2**	min	(measured from test data)
Horizontal coefficient of consolidation, c_H		**106**	m^2/year	
	to	**151**	m^2/year	(method by Teh, 1988, based on t_{50})
Horizontal hydraulic conductivity, k_H		**13.9** x **10^{-6}**	cm/s	
	to	**19.3** x **10^{-6}**	cm/s	(method by Robertson, 1992, based on t_{50})

Notes:
1. Piezocone pore pressure element is located at the standard u_2 location immediately behind the cone tip.
2. Values of c_H presented above are based on a rigidity index, I_R, of between 20 and 40.
3. Values of k_H presented above are based on a rigidity index, I_R, of between 20 and 40, and a modulus of volume change, m_V, of 0.0042 kPa^{-1}.

drawn	RC	coffey geotechnics SPECIALISTS MANAGING THE EARTH	client:	TRUenergy
approved	SM		project:	TALLAWARRA LANDS
date	7-Jul-10		Location	CPT30 PPDT at 5m
scale	As shown		project no:	ENVIWOLL00250AB
original	A4			

Appendix K
Unit 5A assessment: Shear Strength and OCR

Geotechnical, Contamination and Groundwater Investigation,
Tallawarra Lands, Yallah, NSW