

**MUNGARI GOLD MINE
CELL 3 AND CELL 4 SITE INVESTIGATION**



Plate 249: Test Pit TP-50



Plate 250: Test Pit TP-50

**MUNGARI GOLD MINE
CELL 3 AND CELL 4 SITE INVESTIGATION**



Plate 251: Test Pit TP-50



Plate 252: Test Pit TP-50

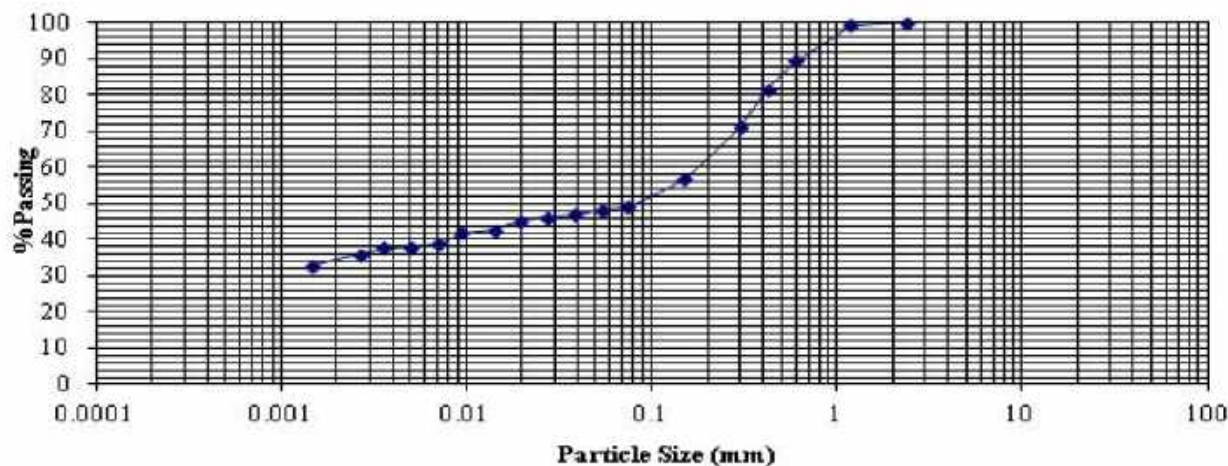
APPENDIX C
Laboratory Testing Reports

Client: Knight Piesold Pty Ltd
Project: Mungari TSF Cell 3 SI
Location: Mungari
SGS Job Number: 17-01-680
Lab: Perth Laboratory

Client Job No:
Order No:
Tested Date: 27/04/2017
Sample No: 17-MT-2613
Sample ID: TP05 2.5 to 2.9 17-KG-654

PARTICLE SIZE DISTRIBUTION - SIEVING AND HYDROMETER ANALYSIS

AS1289.3.6.1 & AS1289.3.6.3



SIEVING (AS1289.3.6.1)		HYDROMETER (AS1289.3.6.3)	
Sieve Size (mm)	Passing %	Particle Diameter (mm)	Finer %
53.0		0.0548	48
37.5		0.0388	47
19.0		0.0275	46
9.5		0.0194	45
4.75		0.0143	43
2.36	100	0.0095	42
1.18	99	0.0072	39
0.600	90	0.0051	38
0.425	82	0.0036	38
0.300	71	0.0027	36
0.150	57	0.0015	33
0.075	49		

Method of Dispersion : Mechanical ; Hydrometer Used : Glass, -5 to 60g/l soil Colloids

Loss after Pretreatment: No Pretreatment

Note: Sample supplied by client.

Date: 4/05/2017



Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
Accreditation No.: 2418

Accredited for compliance with ISO/IEC 17025 - Testing

Site No.: 2411
Cert No.: 17-MT-2613-S303
Form No PF-(AU)-[IND(MTE)]-TE-S303.LCER/B/19.08.09



TEST CERTIFICATE

SGS Australia Pty Ltd
Perth Laboratory
112 Mulgool Road
Malaga WA 6090

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Client:	Knight Piesold Pty Ltd	Client Job No:	
Project:	Mungari TSF Cell 3 SI	Order No:	
Location:	Mungari	Tested Date:	24/04/2017
SGS Job Number:	17-01-680	Sample No:	17-MT-2613
Lab:	Perth Laboratory	Sample ID:	TP05 2.5 to 2.9 17-KG-654

Determination of Emerson Class Number

AS1289.3.8.1

Soil Description

Red Sandy Clay

Type of water used:

De Ionised

Temperature of water (C):

22

Emerson Class Number:

5

Note: Sample supplied by client.

Date: 24/04/2017



Accredited for compliance with ISO/IEC 17025 - Testing

Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
Accreditation No.: 2418

Site No.: 2411
Cert No.: 17-MT-2613-S318
Form No.



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Client:	Knight Piesold Pty Ltd	Client Job No:	
Project:	Mungari TSF Cell 3 SI	Order No:	
Location:	Mungari	Tested Date:	28/04/2017
SGS Job Number:	17-01-680	Sample No:	17-MT-2613
Lab:	Perth Laboratory	Sample ID:	TP05 2.5 to 2.9 17-KG-654

FINE PARTICLE DENSITY

AS1289.3.5.1

FINE FRACTION

SOIL APPARENT

PARTICLE DENSITY (g/cc)

2.50

at temperature

25 ° C

Note: Sample supplied by client.

Date: 1/05/2017



Accredited for compliance with ISO/IEC 17025 - Testing

Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
Accreditation No.: 2418

Site No.: 2411
Cert No.: 17-MT-2613-S415
Form No. PF-(AU)-[IND(MTE)]-TE-S415.LCER/A/01.01.2009

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Client:	Knight Piesold Pty Ltd	Client Job No:	
Project:	Mungari TSF Cell 3 SI	Order No:	
Location:	Mungari	Tested Date:	27/04/2017
SGS Job Number:	17-01-680	Sample No:	17-MT-2613
Lab:	Perth Laboratory	Sample ID:	TP05 2.5 to 2.9 17-KG-654

PERMEABILITY: FALLING HEAD

AS1289.6.7.2 Remoulded sample

MDD:	Max Dry Density (t/m ³):
Max. Dry Density :	1.70 t/m ³
Optimum Moisture Content	19.0 %
Dry Density	1.62 t/m ³
Dry Density Ratio :	95.3 %
Moisture Content:	19.1 %
Moisture Ratio:	100.5 %
Surcharge (kPa):	0.0
Hydraulic Head:	1,622 mm
Hydraulic Gradient:	16
Sieve Size (mm):	4.75
Percentage Retained:	0
COEFFICIENT OF PERMEABILITY	
m/sec at 20 ° C	1.E-10

Note: Sample supplied by client.

Date: 9/05/2017

Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004

Site No.: 2411
Cert No.: 17-MT-2613-S800
Form No.

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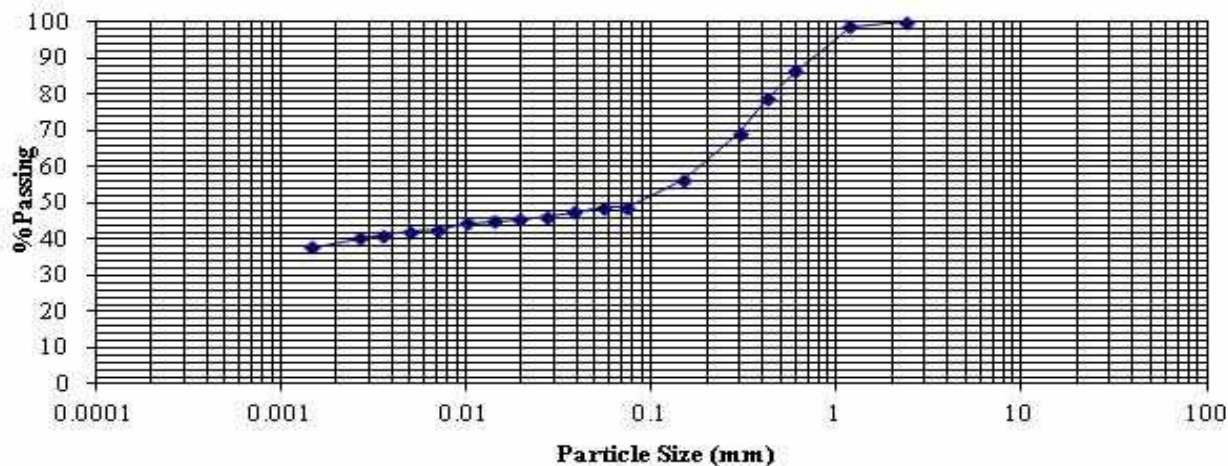
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Client: Knight Piesold Pty Ltd
Project: Mungari TSF Cell 3 SI
Location: Mungari
SGS Job Number: 17-01-680
Lab: Perth LaboratoryClient Job No:
Order No:
Tested Date: 27/04/2017
Sample No: 17-MT-2614
Sample ID: TP11 2.0 to 2.7 17-KG-656

PARTICLE SIZE DISTRIBUTION - SIEVING AND HYDROMETER ANALYSIS

AS1289.3.6.1 & AS1289.3.6.3



SIEVING (AS1289.3.6.1)

Sieve Size (mm)	Passing %
53.0	
37.5	
19.0	
9.5	
4.75	
2.36	100
1.18	99
0.600	87
0.425	79
0.300	69
0.150	56
0.075	49

HYDROMETER (AS1289.3.6.3)

Particle Diameter (mm)	Finer %
0.0549	49
0.0389	48
0.0275	46
0.0195	45
0.0143	45
0.0101	44
0.0071	43
0.0050	42
0.0036	41
0.0027	40
0.0015	38

Method of Dispersion : Mechanical ; Hydrometer Used : Glass, -5 to 60g/l soil Colloids

Loss after Pretreatment: No Pretreatment

Note: Sample supplied by client.

Date: 4/05/2017

Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
Accreditation No.: 2418

Accredited for compliance with ISO/IEC 17025 - Testing

Site No.: 2411
Cert No.: 17-MT-2614-S303
Form No.PF-(AU)-[IND(MTE)]-TE-S303.LCER/B/19.08.09

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Client: Knight Piesold Pty Ltd
Project: Mungari TSF Cell 3 SI
Location: Mungari
SGS Job Number: 17-01-680
Lab: Perth Laboratory

Client Job No:
Order No:
Tested Date: 24/04/2017
Sample No: 17-MT-2614
Sample ID: TP11 2.0 to 2.7 17-KG-656

Determination of Emerson Class Number

AS1289.3.8.1

Soil Description

Red Sandy Clay

Type of water used:

De Ionised

Temperature of water (C):

22

Emerson Class Number:

5

Note: Sample supplied by client.

Date: 24/04/2017

Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
Accreditation No.: 2418

Accredited for compliance with ISO/IEC 17025 - Testing

Site No.: 2411
Cert No.: 17-MT-2614-S318
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Client:	Knight Piesold Pty Ltd	Client Job No:	
Project:	Mungari TSF Cell 3 SI	Order No:	
Location:	Mungari	Tested Date:	28/04/2017
SGS Job Number:	17-01-680	Sample No:	17-MT-2614
Lab:	Perth Laboratory	Sample ID:	TP11 2.0 to 2.7 17-KG-656

FINE PARTICLE DENSITY

AS1289.3.5.1

FINE FRACTION

SOIL APPARENT

PARTICLE DENSITY (g/cc)

2.49

at temperature

25 ° C

Note: Sample supplied by client.

Date: 1/05/2017



Accredited for compliance with ISO/IEC 17025 - Testing

Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004

Accreditation No.: 2418

Site No.: 2411

Cert No.: 17-MT-2614-S415

Form No. PF-(AU)-[IND(MTE)]-TE-S415.LCER/A/01.01.2009



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Client:	Knight Piesold Pty Ltd	Client Job No:	
Project:	Mungari TSF Cell 3 SI	Order No:	
Location:	Mungari	Tested Date:	28/04/2017
SGS Job Number:	17-01-680	Sample No:	17-MT-2614
Lab:	Perth Laboratory	Sample ID:	TP11 2.0 to 2.7 17-KG-656

PERMEABILITY: FALLING HEAD

AS1289.6.7.2 Remoulded sample

MDD:	Max Dry Density (t/m ³):
Max. Dry Density :	1.77 t/m ³
Optimum Moisture Content	19.0 %
Dry Density	1.67 t/m ³
Dry Density Ratio :	94.2 %
Moisture Content:	19.9 %
Moisture Ratio:	104.5 %
Surcharge (kPa):	0.0
Hydraulic Head:	1,612 mm
Hydraulic Gradient:	16
Sieve Size (mm):	4.75
Percentage Retained:	0

COEFFICIENT OF PERMEABILITY
m/sec at 20 ° C

4.E-11

Note: Sample supplied by client.

Date: 9/05/2017

Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004

Site No.: 2411
Cert No.: 17-MT-2614-S800
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Client:	Knight Piesold Pty Ltd	Client Job No:	
Project:	Mungari TSF Cell 3 SI	Order No:	
Location:	Mungari	Tested Date:	27/04/2017
SGS Job Number:	17-01-680	Sample No:	17-MT-2615
Lab:	Perth Laboratory	Sample ID:	TP12 0.5 to 1.0 17-KG-657

PERMEABILITY: FALLING HEAD

AS1289.6.7.2 Remoulded sample

MDD:	Max Dry Density (t/m ³):
Max. Dry Density :	1.72 t/m ³
Optimum Moisture Content	18.5 %
Dry Density	1.64 t/m ³
Dry Density Ratio :	95.6 %
Moisture Content:	19.6 %
Moisture Ratio:	106.0 %
Surcharge (kPa):	0.0
Hydraulic Head:	1,538 mm
Hydraulic Gradient:	15
Sieve Size (mm):	4.75
Percentage Retained:	3

COEFFICIENT OF PERMEABILITY
m/sec at 20 ° C

5.E-08

Note: Sample supplied by client.

Date: 2/05/2017

Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004

Site No.: 2411
Cert No.: 17-MT-2615-S800
Form No.



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Client:	Knight Piesold Pty Ltd	Client Job No:	
Project:	Mungari TSF Cell 3 SI	Order No:	
Location:	Mungari	Tested Date:	28/04/2017
SGS Job Number:	17-01-680	Sample No:	17-MT-2616
Lab:	Perth Laboratory	Sample ID:	TP16 0.5 to 1.0 17-KG-659

PERMEABILITY: FALLING HEAD

AS1289.6.7.2 Remoulded sample

MDD:	Max Mod. Dry Density (t/m ³):
Max. Dry Density :	1.74 t/m ³
Optimum Moisture Content	16.5 %
Dry Density	1.65 t/m ³
Dry Density Ratio :	94.8 %
Moisture Content:	16.5 %
Moisture Ratio:	100.5 %
Surcharge (kPa):	0.0
Hydraulic Head:	1,580 mm
Hydraulic Gradient:	16
Sieve Size (mm):	4.75
Percentage Retained:	6

COEFFICIENT OF PERMEABILITY
m/sec at 20 ° C

4.E-08

Note: Sample supplied by client.

Date: 2/05/2017

Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004

Site No.: 2411
Cert No.: 17-MT-2616-S800
Form No.



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Client:	Knight Piesold Pty Ltd	Client Job No:	
Project:	Mungari TSF Cell 3 SI	Order No:	
Location:	Mungari	Tested Date:	28/04/2017
SGS Job Number:	17-01-680	Sample No:	17-MT-2617
Lab:	Perth Laboratory	Sample ID:	TP27 0.5 to 1.0 17-KG-661

PERMEABILITY: FALLING HEAD

AS1289.6.7.2 Remoulded sample

MDD:	Max Mod. Dry Density (t/m ³):
Max. Dry Density :	1.78 t/m ³
Optimum Moisture Content	15.0 %
Dry Density	1.69 t/m ³
Dry Density Ratio :	94.9 %
Moisture Content:	15.0 %
Moisture Ratio:	99.5 %
Surcharge (kPa):	0.0
Hydraulic Head:	1,597 mm
Hydraulic Gradient:	16
Sieve Size (mm):	4.75
Percentage Retained:	2

COEFFICIENT OF PERMEABILITY
m/sec at 20 ° C

3.E-09

Note: Sample supplied by client.

Date: 2/05/2017

Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004

Site No.: 2411
Cert No.: 17-MT-2617-S800
Form No.

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Client:	Knight Piesold Pty Ltd	Client Job No:	
Project:	Mungari TSF Cell 3 SI	Order No:	
Location:	Mungari	Tested Date:	28/04/2017
SGS Job Number:	17-01-680	Sample No:	17-MT-2618
Lab:	Perth Laboratory	Sample ID:	TP35 0.5 to 1.0 17-KG-883

PERMEABILITY: FALLING HEAD

AS1289.6.7.2 Remoulded sample

MDD:	Max Mod. Dry Density (t/m ³):
Max. Dry Density :	1.91 t/m ³
Optimum Moisture Content	11.0 %
Dry Density	1.81 t/m ³
Dry Density Ratio :	94.7 %
Moisture Content:	10.9 %
Moisture Ratio:	99.0 %
Surcharge (kPa):	0.0
Hydraulic Head:	1,599 mm
Hydraulic Gradient:	16
Sieve Size (mm):	4.75
Percentage Retained:	1

COEFFICIENT OF PERMEABILITY
m/sec at 20 ° C

2.E-07

Note: Sample supplied by client.

Date: 2/05/2017

Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004

Site No.: 2411
Cert No.: 17-MT-2618-S800
Form No.

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Client: Knight Piesold Pty Ltd
 Project: Mungari TSF Cell3 SI
 Location: Mungari
 SGS Job Number: 17-03-221
 Lab: Kalgoorlie Soils Laboratory

Client Job No:
 Order No:
 Tested Date: 19/04/2017
 Sample No: 17-KG-654
 Sample ID: TP05 2.5 to 2.9

Atterberg Limits (1 Point Casagrande) with Linear Shrinkage

AS 1289.3.1.2(Liquid Limit), 3.2.1(Liquid Limit), 3.3.1(Plasticity Index), 3.4.1(Linear Shrinkage)

Liquid Limit (%):	27
Plastic Limit (%):	16
Plastic Index (%):	11
Linear Shrinkage (%):	5.5
Nature of shrinkage:	Flat
Length of Mould (mm):	250
History of Sample:	Air Dried
Method of Preparation:	Dry Sieved

Note: Sample supplied by client.

Date: 20/04/2017



Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
 Accreditation No.: 2418

Accredited for compliance with ISO/IEC 17025 - Testing

Site No.: 5360
 Cert No.: 17-KG-654-S312
 Form No. PF-AU-INDCMT-TE-S312 V2.0
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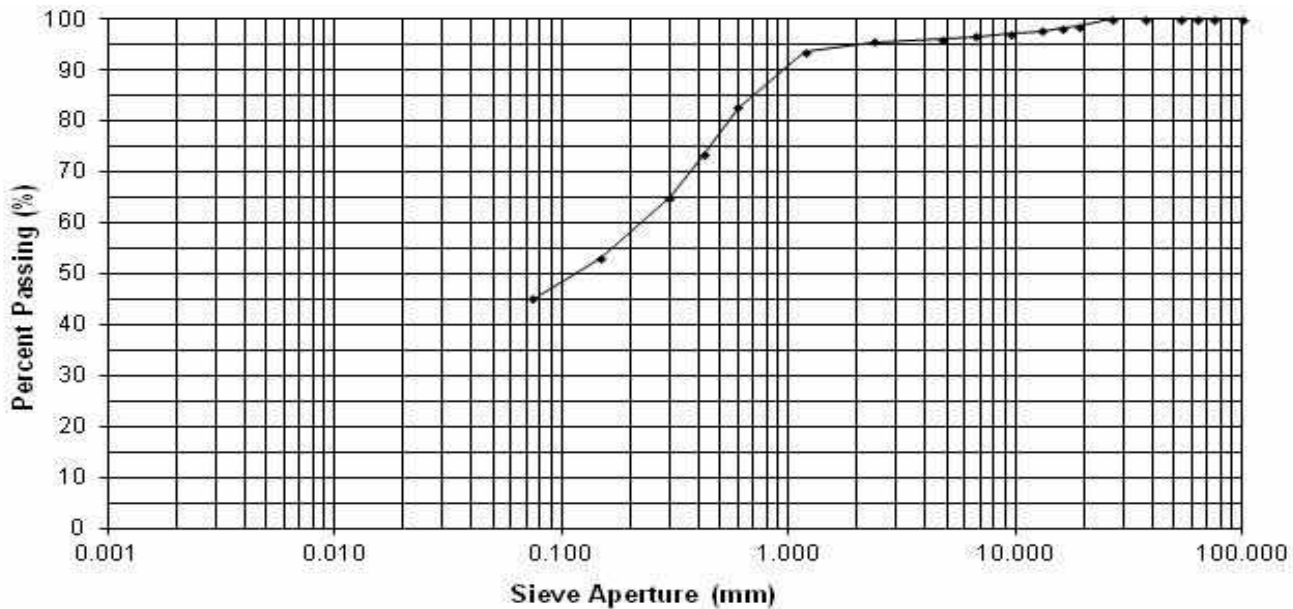
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Client: Knight Piesold Pty Ltd
Project: Mungari TSF Cell3 SI
Location: Mungari
SGS Job Number: 17-03-221
Lab: Kalgoorlie Soils Laboratory

Client Job No:
Order No:
Tested Date: 14/04/2017
Sample No: 17-KG-655
Sample ID: TP07 2.0 to 2.3

Particle Size Distribution of a Soil

AS1289.3.6.1



Sieve Size (mm)	% Passing	Sieve Size (mm)	% Passing
100	100	9.5	97
75	100	6.7	97
63	100	4.75	96
53	100	2.36	96
37.5	100	1.18	94
26.5	100	0.6	83
19.0	99	0.425	73
16.0	98	0.300	65
13.2	98	0.150	53
		0.075	45

Note: Sample supplied by client.

Date: 20/04/2017

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Client: Knight Piesold Pty Ltd
 Project: Mungari TSF Cell3 SI
 Location: Mungari
 SGS Job Number: 17-03-221
 Lab: Kalgoorlie Soils Laboratory

Client Job No:
 Order No:
 Tested Date: 18/04/2017
 Sample No: 17-KG-655
 Sample ID: TP07 2.0 to 2.3

Atterberg Limits (1 Point Casagrande) with Linear Shrinkage

AS 1289.3.1.2(Liquid Limit), 3.2.1(Liquid Limit), 3.3.1(Plasticity Index), 3.4.1(Linear Shrinkage)

Liquid Limit (%):	73
Plastic Limit (%):	26
Plastic Index (%):	47
Linear Shrinkage (%):	17.0
Nature of shrinkage:	Cracked
Length of Mould (mm):	250
History of Sample:	Air Dried
Method of Preparation:	Dry Sieved

Note: Sample supplied by client.

Date: 20/04/2017



Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
 Accreditation No.: 2418

Accredited for compliance with ISO/IEC 17025 - Testing

Site No.: 5360
 Cert No.: 17-KG-655-S312
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Client: Knight Piesold Pty Ltd
 Project: Mungari TSF Cell3 SI
 Location: Mungari
 SGS Job Number: 17-03-221
 Lab: Kalgoorlie Soils Laboratory

Client Job No:
 Order No:
 Tested Date: 18/04/2017
 Sample No: 17-KG-656
 Sample ID: TP11 2.0 to 2.7

Atterberg Limits (1 Point Casagrande) with Linear Shrinkage

AS 1289.3.1.2(Liquid Limit), 3.2.1(Liquid Limit), 3.3.1(Plasticity Index), 3.4.1(Linear Shrinkage)

Liquid Limit (%):	59
Plastic Limit (%):	21
Plastic Index (%):	38
Linear Shrinkage (%):	13.5
Nature of shrinkage:	Curled
Length of Mould (mm):	254
History of Sample:	Air Dried
Method of Preparation:	Dry Sieved

Note: Sample supplied by client.

Date: 20/04/2017



Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
 Accreditation No.: 2418

Accredited for compliance with ISO/IEC 17025 - Testing

Site No.: 5360
 Cert No.: 17-KG-656-S312
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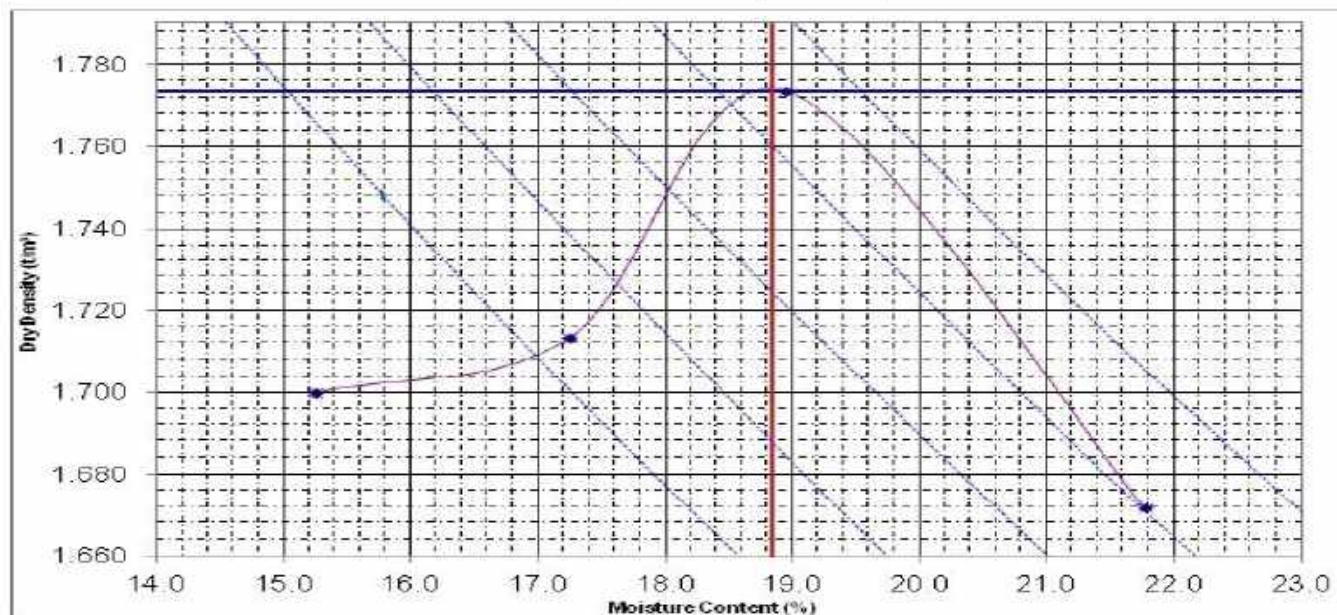
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Client: Knight Piesold Pty Ltd
 Project: Mungari TSF Cell3 SI
 Location: Mungari
 SGS Job Number: 17-03-221
 Lab: Kalgoorlie Soils Laboratory

Client Job No:
 Order No:
 Tested Date: 6/04/2017
 Sample No: 17-KG-656
 Sample ID: TP11 2.0 to 2.7

DRY DENSITY / MOISTURE RELATIONSHIP OF A SOIL

AS1289.5.2.1 (Modified Compactive Effort)



Sample Description:	Clay
Modified MDD (t/m³)	1.77
Modified OMC (%)	19.0
Oversize Sieve (mm)	19.0
Percent Wet Oversize (%)	0
Moisture Content Method	AS1289.2.1.1

Date: 20/04/2017

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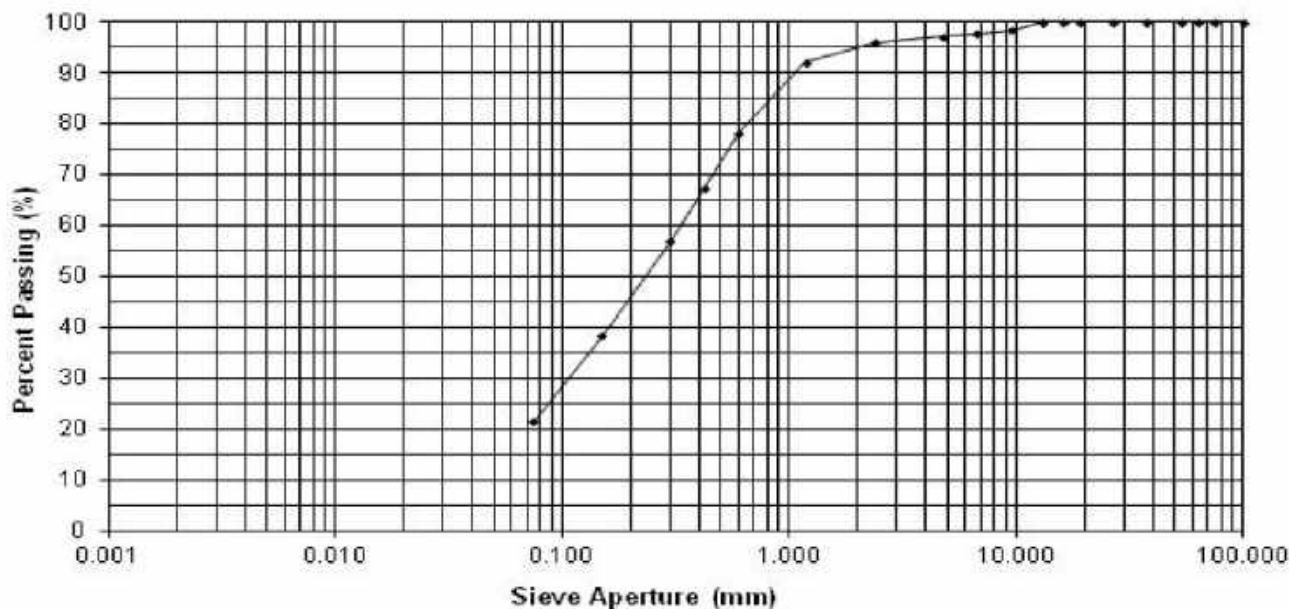
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Client: Knight Piesold Pty Ltd
 Project: Mungari TSF Cell3 SI
 Location: Mungari
 SGS Job Number: 17-03-221
 Lab: Kalgoorlie Soils Laboratory

Client Job No:
 Order No:
 Tested Date: 14/04/2017
 Sample No: 17-KG-657
 Sample ID: TP12 0.5 to 1.0

Particle Size Distribution of a Soil

AS1289.3.6.1



Sieve Size (mm)	% Passing	Sieve Size (mm)	% Passing
100	100	9.5	98
75	100	6.7	98
63	100	4.75	97
53	100	2.36	96
37.5	100	1.18	92
26.5	100	0.6	78
19.0	100	0.425	67
16.0	100	0.300	57
13.2	100	0.150	38
		0.075	21

Note: Sample supplied by client.
 Moisture mass less than 300 grams

Date: 20/04/2017



Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
 Accreditation No.: 2418

Accredited for compliance with ISO/IEC 17025 - Testing

Site No.: 5360
 Cert No.: 17-KG-657-S301
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Client: Knight Piesold Pty Ltd
 Project: Mungari TSF Cell3 SI
 Location: Mungari
 SGS Job Number: 17-03-221
 Lab: Kalgoorlie Soils Laboratory

Client Job No:
 Order No:
 Tested Date: 18/04/2017
 Sample No: 17-KG-657
 Sample ID: TP12 0.5 to 1.0

Atterberg Limits (1 Point Casagrande) with Linear Shrinkage

AS 1289.3.1.2(Liquid Limit), 3.2.1(Liquid Limit), 3.3.1(Plasticity Index), 3.4.1(Linear Shrinkage)

Liquid Limit (%):	42
Plastic Limit (%):	25
Plastic Index (%):	17
Linear Shrinkage (%):	9.0
Nature of shrinkage:	Cracked
Length of Mould (mm):	250
History of Sample:	Air Dried
Method of Preparation:	Dry Sieved

Note: Sample supplied by client.

Date: 20/04/2017



Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
 Accreditation No.: 2418

Accredited for compliance with ISO/IEC 17025 - Testing

Site No.: 5360
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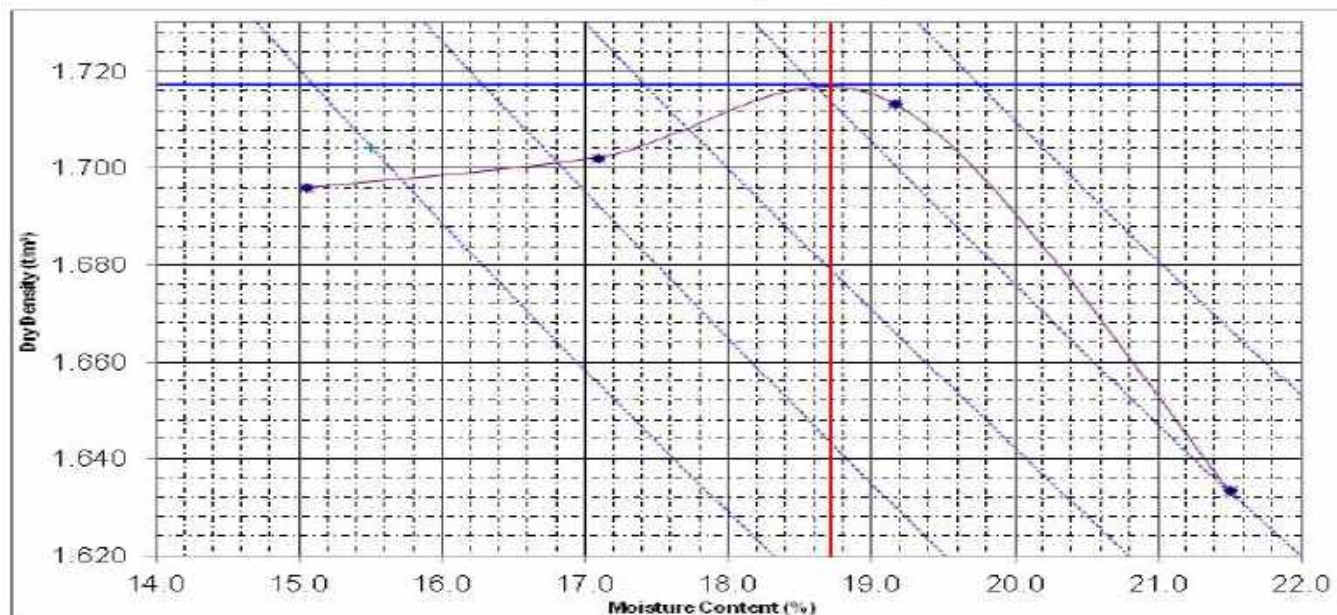
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Client: Knight Piesold Pty Ltd
 Project: Mungari TSF Cell3 SI
 Location: Mungari
 SGS Job Number: 17-03-221
 Lab: Kalgoorlie Soils Laboratory

Client Job No:
 Order No:
 Tested Date: 6/04/2017
 Sample No: 17-KG-657
 Sample ID: TP12 0.5 to 1.0

DRY DENSITY / MOISTURE RELATIONSHIP OF A SOIL

AS1289.5.2.1 (Modified Compactive Effort)



Sample Description:	Clay
Modified MDD (t/m³)	1.72
Modified OMC (%)	18.5
Oversize Sieve (mm)	19.0
Percent Wet Oversize (%)	0
Moisture Content Method	AS1289.2.1.1

Date: 20/04/2017



Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
 Accreditation No.: 2418

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Site No.: 5360
 Cert No.: 17-KG-657-S441
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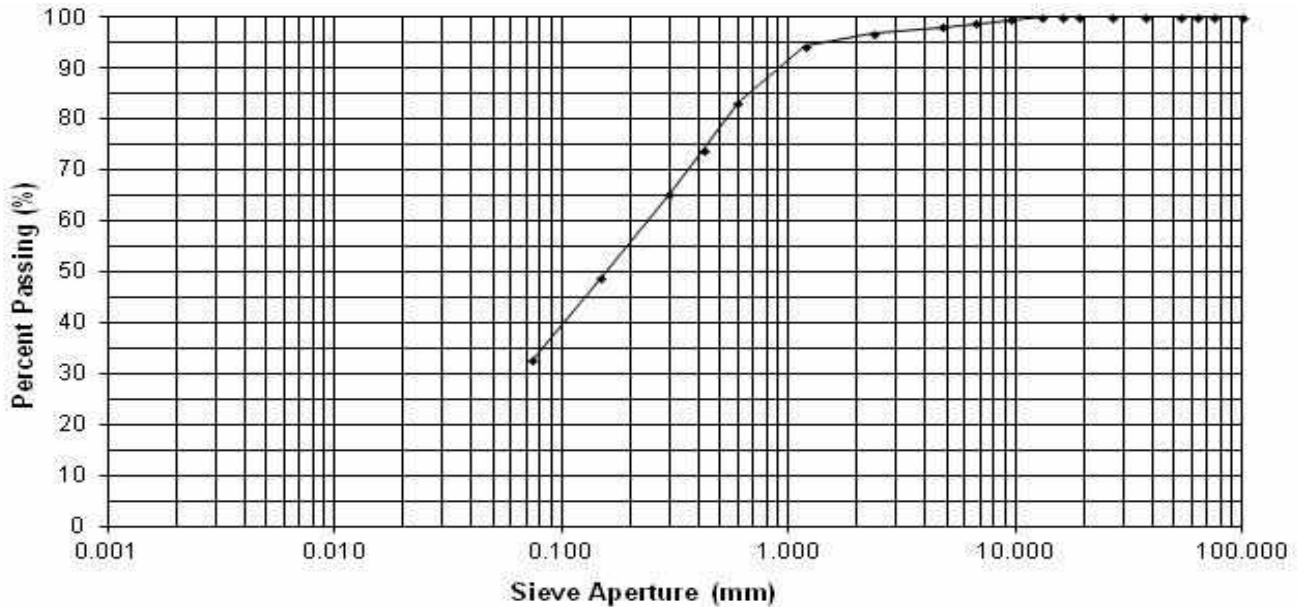
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Client: Knight Piesold Pty Ltd
Project: Mungari TSF Cell3 SI
Location: Mungari
SGS Job Number: 17-03-221
Lab: Kalgoorlie Soils Laboratory

Client Job No:
Order No:
Tested Date: 14/04/2017
Sample No: 17-KG-658
Sample ID: TP120.5 to 1.0
Reconstituted Material
From MMDD

Particle Size Distribution of a Soil

AS1289.3.6.1



Sieve Size (mm)	% Passing	Sieve Size (mm)	% Passing
100	100	9.5	99
75	100	6.7	99
63	100	4.75	98
53	100	2.36	97
37.5	100	1.18	94
26.5	100	0.6	83
19.0	100	0.425	74
16.0	100	0.300	65
13.2	100	0.150	49
		0.075	33

Note: Sample supplied by client.

Date: 20/04/2017

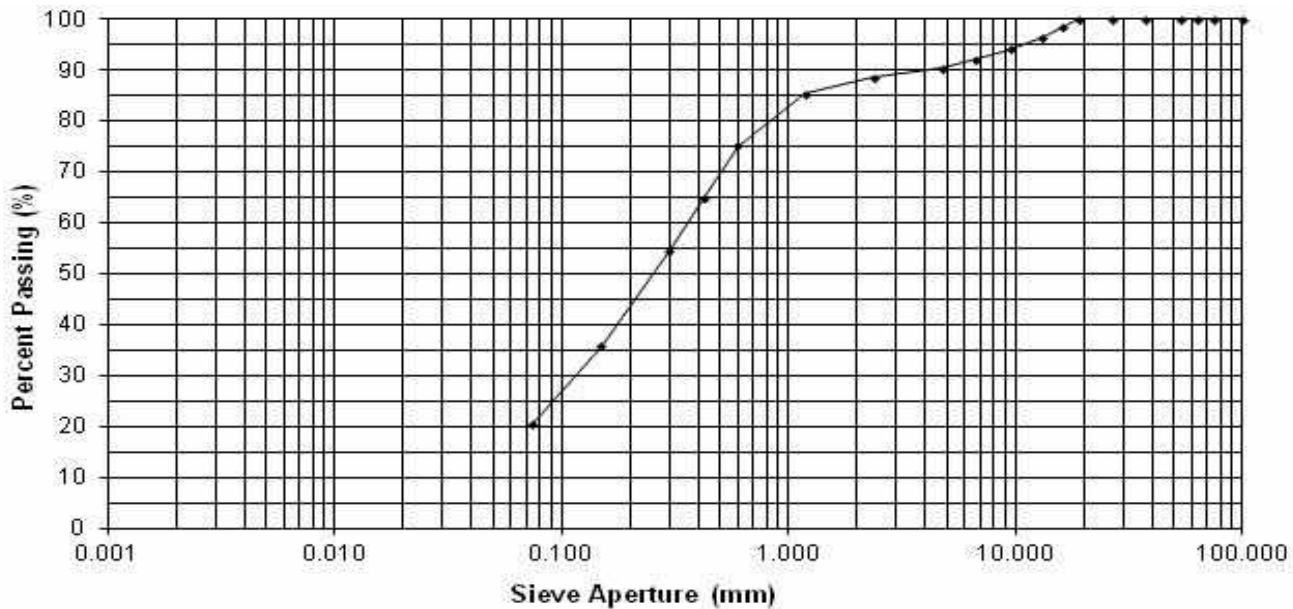
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Client: Knight Piesold Pty Ltd
Project: Mungari TSF Cell3 SI
Location: Mungari
SGS Job Number: 17-03-221
Lab: Kalgoorlie Soils Laboratory

Client Job No:
Order No:
Tested Date: 14/04/2017
Sample No: 17-KG-659
Sample ID: TP16 0.5 to 1.0

Particle Size Distribution of a Soil

AS1289.3.6.1



Sieve Size (mm)	% Passing	Sieve Size (mm)	% Passing
100	100	9.5	94
75	100	6.7	92
63	100	4.75	90
53	100	2.36	89
37.5	100	1.18	85
26.5	100	0.6	75
19.0	100	0.425	65
16.0	98	0.300	54
13.2	97	0.150	36
		0.075	21

Note: Sample supplied by client.

Date: 20/04/2017

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Client: Knight Piesold Pty Ltd
 Project: Mungari TSF Cell3 SI
 Location: Mungari
 SGS Job Number: 17-03-221
 Lab: Kalgoorlie Soils Laboratory

Client Job No:
 Order No:
 Tested Date: 18/04/2017
 Sample No: 17-KG-659
 Sample ID: TP16 0.5 to 1.0

Atterberg Limits (1 Point Casagrande) with Linear Shrinkage

AS 1289.3.1.2(Liquid Limit), 3.2.1(Liquid Limit), 3.3.1(Plasticity Index), 3.4.1(Linear Shrinkage)

Liquid Limit (%):	44
Plastic Limit (%):	23
Plastic Index (%):	21
Linear Shrinkage (%):	8.5
Nature of shrinkage:	Cracked
Length of Mould (mm):	250
History of Sample:	Air Dried
Method of Preparation:	Dry Sieved

Note: Sample supplied by client.

Date: 20/04/2017



Accredited for compliance with ISO/IEC 17025 - Testing

Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
Accreditation No.: 2418Site No.: 5360
Cert No.: 17-KG-659-S312
Form No. PF-AU-INDCMT-TE-S312 V2.0
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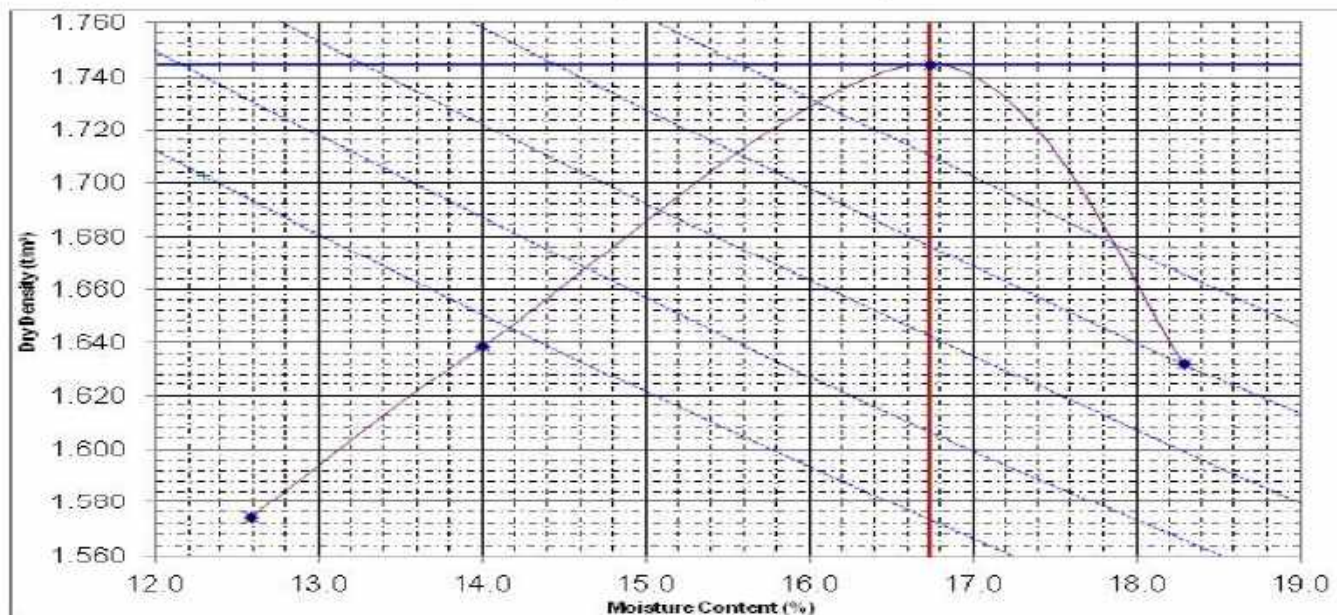
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Client: Knight Piesold Pty Ltd
 Project: Mungari TSF Cell3 SI
 Location: Mungari
 SGS Job Number: 17-03-221
 Lab: Kalgoorlie Soils Laboratory

Client Job No:
 Order No:
 Tested Date: 6/04/2017
 Sample No: 17-KG-659
 Sample ID: TP16 0.5 to 1.0

DRY DENSITY / MOISTURE RELATIONSHIP OF A SOIL

AS1289.5.2.1 (Modified Compactive Effort)



Sample Description:	Fine Clay
Modified MDD (t/m ³)	1.74
Modified OMC (%)	16.5
Oversize Sieve (mm)	19.0
Percent Wet Oversize (%)	0
Moisture Content Method	AS1289.2.1.1

Date: 20/04/2017



Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
 Accreditation No.: 2418

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Site No.: 5360
 Cert No.: 17-KG-659-S441
 Form No. PF-AU-INDCMT-TE-S441 V5.0
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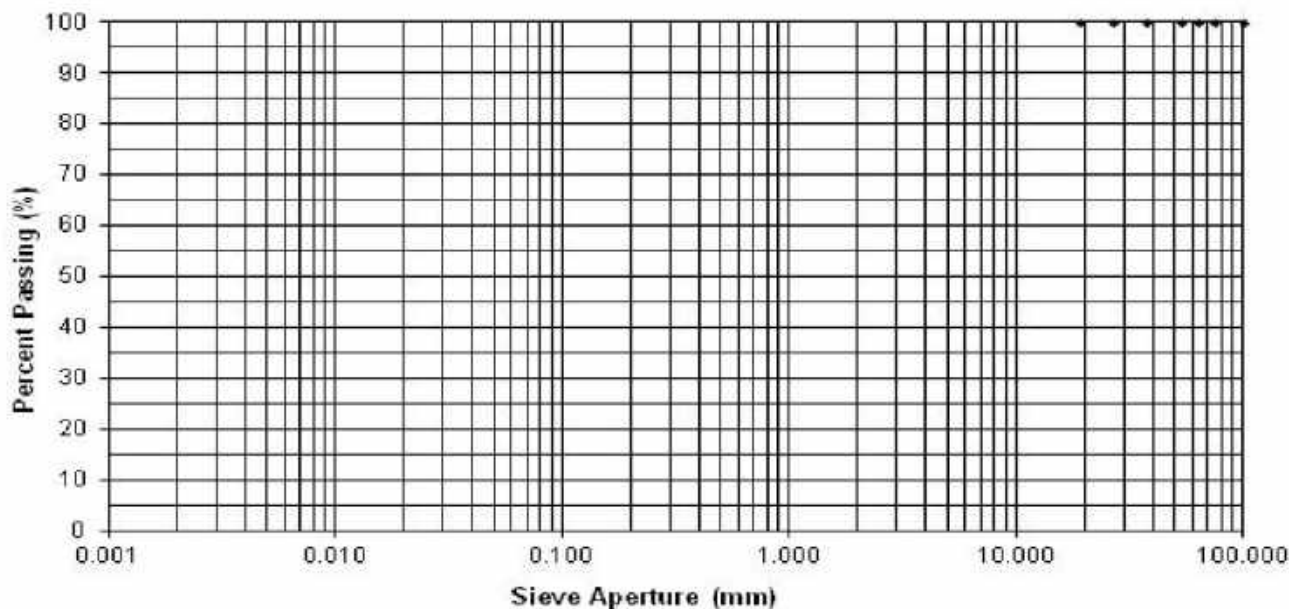
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Client: Knight Piesold Pty Ltd
 Project: Mungari TSF Cell3 SI
 Location: Mungari
 SGS Job Number: 17-03-221
 Lab: Kalgoorlie Soils Laboratory

Client Job No:
 Order No:
 Tested Date: 14/04/2017
 Sample No: 17-KG-660
 Sample ID: TP16 0.5 to 1.0
 Reconstituted Material
 From MMDD

Particle Size Distribution of a Soil

AS1289.3.6.1



Sieve Size (mm)	% Passing	Sieve Size (mm)	% Passing
100	100	9.5	
75	100	6.7	
63	100	4.75	
53	100	2.36	
37.5	100	1.18	
26.5	100	0.6	
19.0	100	0.425	
16.0		0.300	
13.2		0.150	
		0.075	

Note: Sample supplied by client.

Date: 20/04/2017



Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
 Accreditation No.: 2418

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Site No.: 5360
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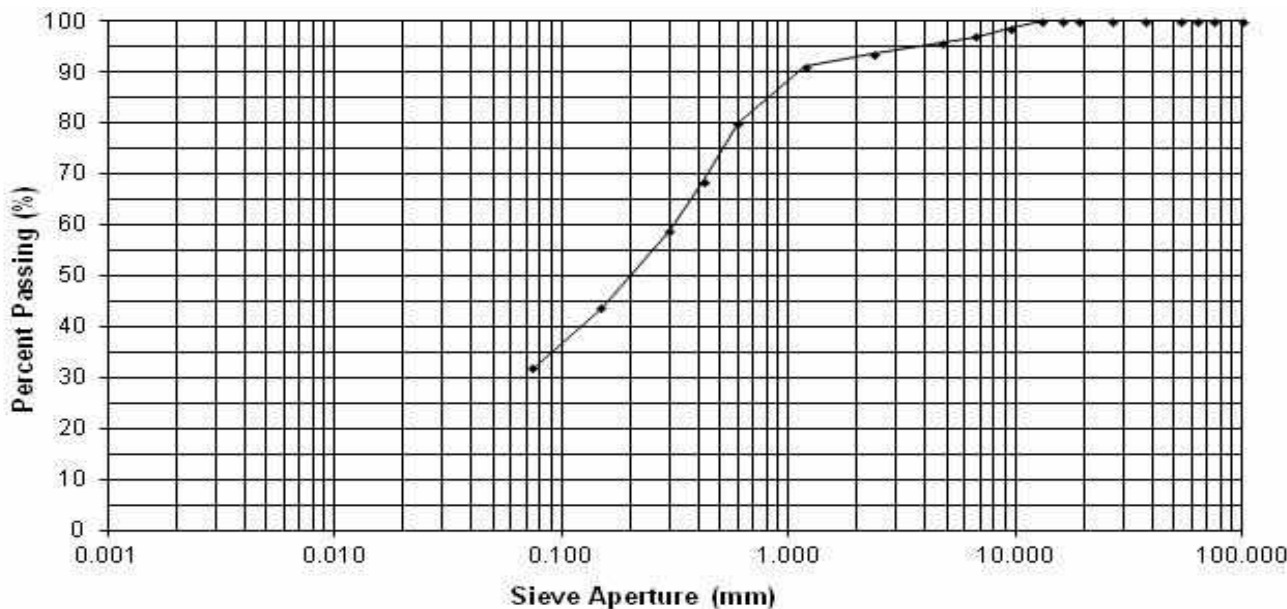
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Client: Knight Piesold Pty Ltd
Project: Mungari TSF Cell3 SI
Location: Mungari
SGS Job Number: 17-03-221
Lab: Kalgoorlie Soils Laboratory

Client Job No:
Order No:
Tested Date: 14/04/2017
Sample No: 17-KG-661
Sample ID: TP27 0.5 to 1.0

Particle Size Distribution of a Soil

AS1289.3.6.1



Sieve Size (mm)	% Passing	Sieve Size (mm)	% Passing
100	100	9.5	99
75	100	6.7	97
63	100	4.75	96
53	100	2.36	94
37.5	100	1.18	91
26.5	100	0.6	80
19.0	100	0.425	69
16.0	100	0.300	59
13.2	100	0.150	44
		0.075	32

Note: Sample supplied by client.

Date: 20/04/2017



TEST CERTIFICATE

SGS Australia Pty Ltd
Kalgoorlie Soils Laboratory
Rear of 17 Stockyard Way
West Kalgoorlie WA 6430

AU.IND.Admin@sgs.com
ABN: 44 000 964 278
ph: +61 (0)8 9091 4718
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Client:	Knight Piesold Pty Ltd	Client Job No:	
Project:	Mungari TSF Cell3 SI	Order No:	
Location:	Mungari	Tested Date:	18/04/2017
SGS Job Number:	17-03-221	Sample No:	17-KG-661
Lab:	Kalgoorlie Soils Laboratory	Sample ID:	TP27 0.5 to 1.0

Atterberg Limits (1 Point Casagrande) with Linear Shrinkage

AS 1289.3.1.2(Liquid Limit), 3.2.1(Liquid Limit), 3.3.1(Plasticity Index), 3.4.1(Linear Shrinkage)

Liquid Limit (%):	37
Plastic Limit (%):	18
Plastic Index (%):	19
Linear Shrinkage (%):	8.0
Nature of shrinkage:	Cracked
Length of Mould (mm):	250
History of Sample:	Air Dried
Method of Preparation:	Dry Sieved

Note: Sample supplied by client.

Date: 20/04/2017



Accredited for compliance with ISO/IEC 17025 - Testing

Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
Accreditation No.: 2418

Site No.: 5360
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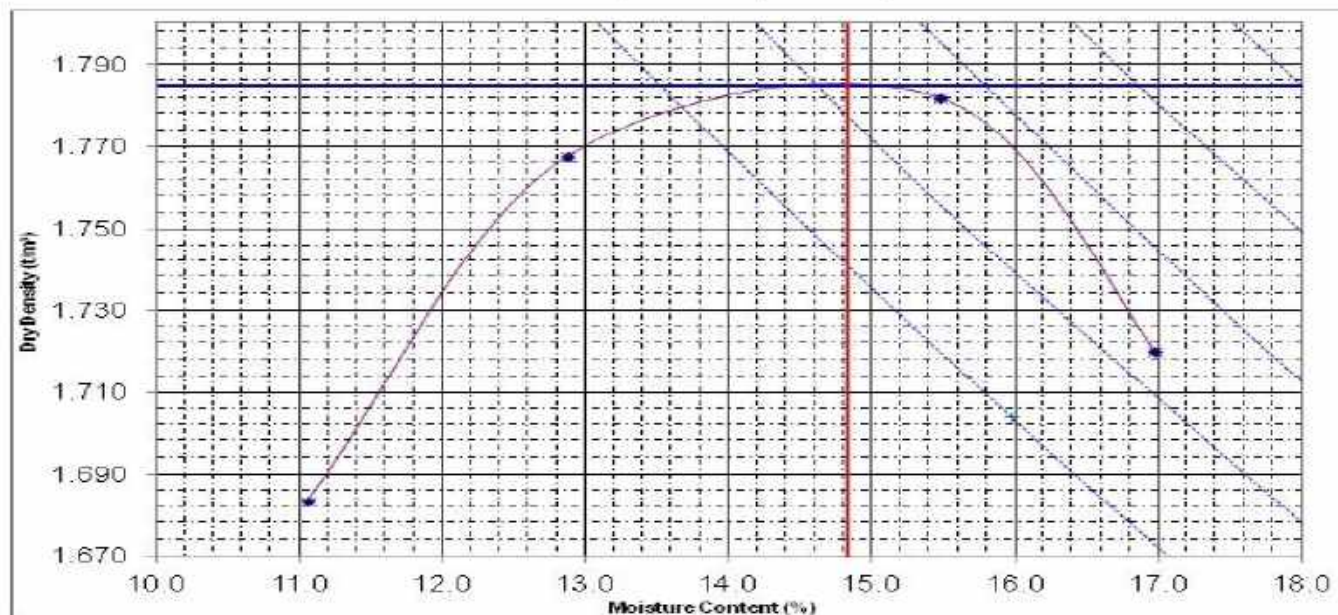
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Client: Knight Piesold Pty Ltd
 Project: Mungari TSF Cell3 SI
 Location: Mungari
 SGS Job Number: 17-03-221
 Lab: Kalgoorlie Soils Laboratory

Client Job No:
 Order No:
 Tested Date: 6/04/2017
 Sample No: 17-KG-661
 Sample ID: TP27 0.5 to 1.0

DRY DENSITY / MOISTURE RELATIONSHIP OF A SOIL

AS1289.5.2.1 (Modified Compactive Effort)



Sample Description:	Fine Clay
Modified MDD (t/m ³)	1.78
Modified OMC (%)	15.0
Oversize Sieve (mm)	19.0
Percent Wet Oversize (%)	0
Moisture Content Method	AS1289.2.1.1

Date: 20/04/2017



Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
 Accreditation No.: 2418

Accredited for compliance with ISO/IEC 17025 - Testing

Site No.: 5360
 Cert No.: 17-KG-661-S441
 Form No. PF-AU-INDCMT-TE-S441 v5.0
 Page 1 of 1

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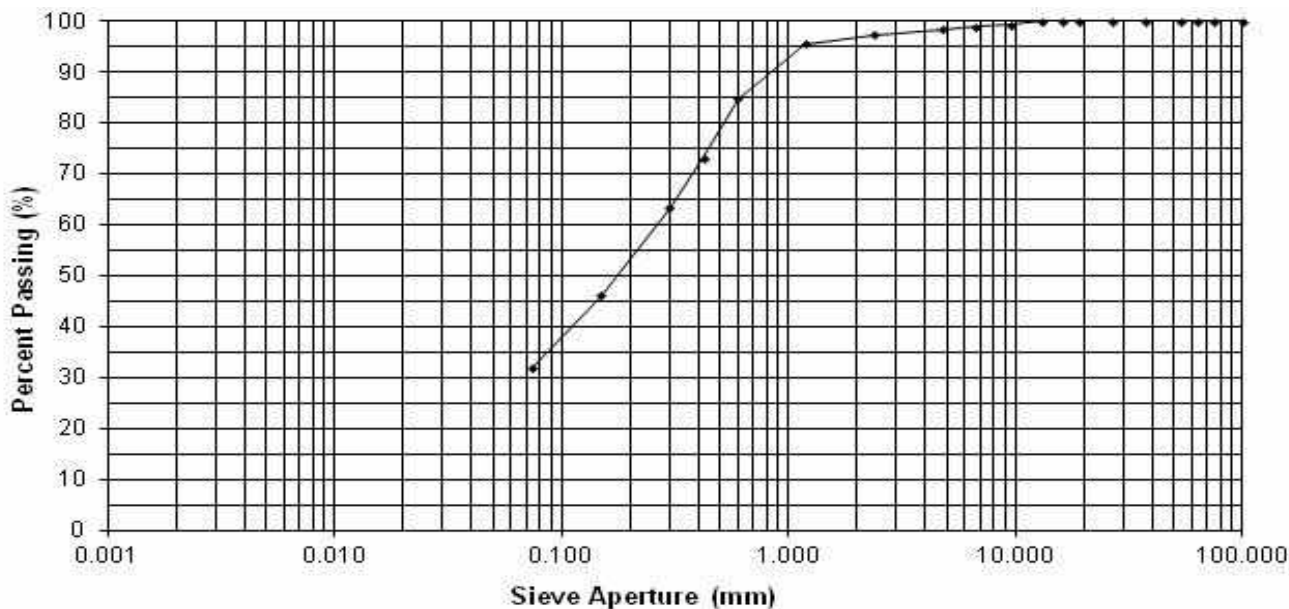
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Client: Knight Piesold Pty Ltd
Project: Mungari TSF Cell3 SI
Location: Mungari
SGS Job Number: 17-03-221
Lab: Kalgoorlie Soils LaboratoryClient Job No:
Order No:
Tested Date: 14/04/2017
Sample No: 17-KG-662
Sample ID: TP27 0.5 to 1.0
Reconstituted Material
From MMDD

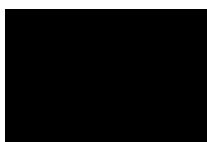
Particle Size Distribution of a Soil

AS1289.3.6.1



Sieve Size (mm)	% Passing	Sieve Size (mm)	% Passing
100	100	9.5	99
75	100	6.7	99
63	100	4.75	98
53	100	2.36	97
37.5	100	1.18	96
26.5	100	0.6	85
19.0	100	0.425	73
16.0	100	0.300	63
13.2	100	0.150	46
		0.075	32

Note: Sample supplied by client.

Authorised
Signatory:

(Shane Gray)

Date: 20/04/2017



Accredited for compliance with ISO/IEC 17025 - Testing

Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
Accreditation No.: 2418Site No.: 5360
Cert No.: 17-KG-662-S301
Form No. PF-AU-INDCMT-TE-S301 V4.0
Page 1 of 1

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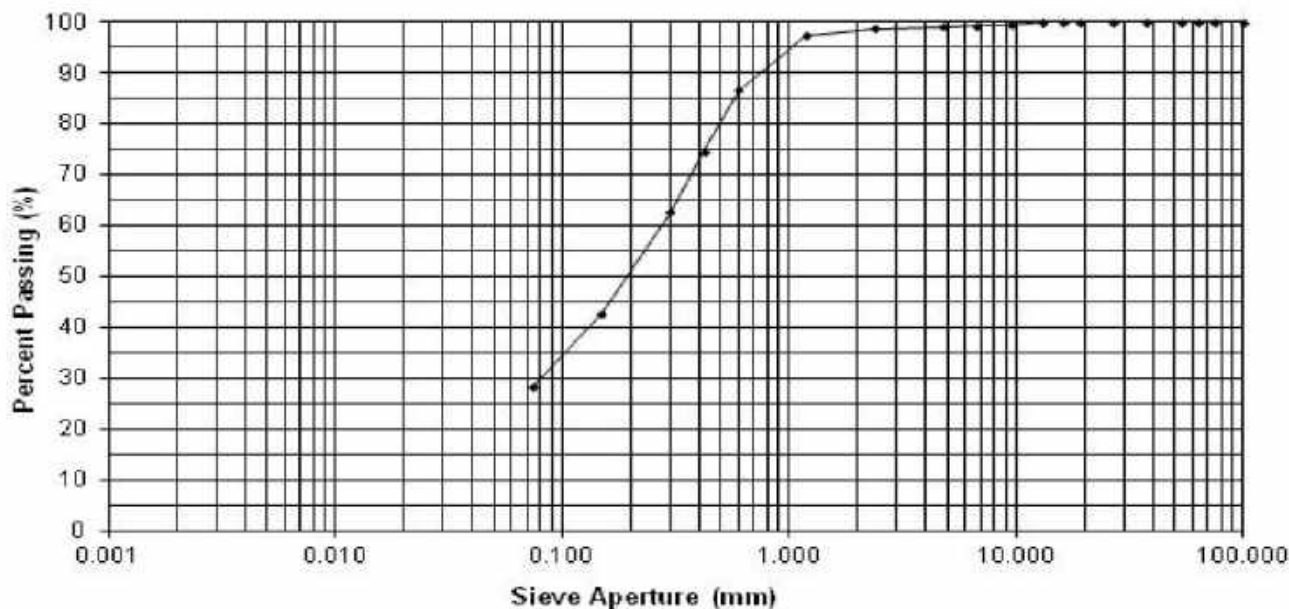
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Client: Knight Piesold Pty Ltd
 Project: Mungari TSF Cell3 SI
 Location: Mungari
 SGS Job Number: 17-03-221
 Lab: Kalgoorlie Soils Laboratory

Client Job No:
 Order No:
 Tested Date: 14/04/2017
 Sample No: 17-KG-663
 Sample ID: TP35 0.5 to 1.0

Particle Size Distribution of a Soil

AS1289.3.6.1



Sieve Size (mm)	% Passing	Sieve Size (mm)	% Passing
100	100	9.5	100
75	100	6.7	99
63	100	4.75	99
53	100	2.36	99
37.5	100	1.18	97
26.5	100	0.6	87
19.0	100	0.425	75
16.0	100	0.300	63
13.2	100	0.150	43
		0.075	28

Note: Sample supplied by client.

Date: 20/04/2017

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Client: Knight Piesold Pty Ltd
 Project: Mungari TSF Cell3 SI
 Location: Mungari
 SGS Job Number: 17-03-221
 Lab: Kalgoorlie Soils Laboratory

Client Job No:
 Order No:
 Tested Date: 18/04/2017
 Sample No: 17-KG-663
 Sample ID: TP35 0.5 to 1.0

Atterberg Limits (1 Point Casagrande) with Linear Shrinkage

AS 1289.3.1.2(Liquid Limit), 3.2.1(Liquid Limit), 3.3.1(Plasticity Index), 3.4.1(Linear Shrinkage)

Liquid Limit (%):	29
Plastic Limit (%):	15
Plastic Index (%):	14
Linear Shrinkage (%):	6.0
Nature of shrinkage:	Cracked
Length of Mould (mm):	254
History of Sample:	Air Dried
Method of Preparation:	Dry Sieved

Note: Sample supplied by client.

Date: 20/04/2017



Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
 Accreditation No.: 2418

Accredited for compliance with ISO/IEC 17025 - Testing

Site No.: 5360
 Cert No.: 17-KG-663-S312
 Form No. PF-AU-INDCMT-TE-S312 V2.0
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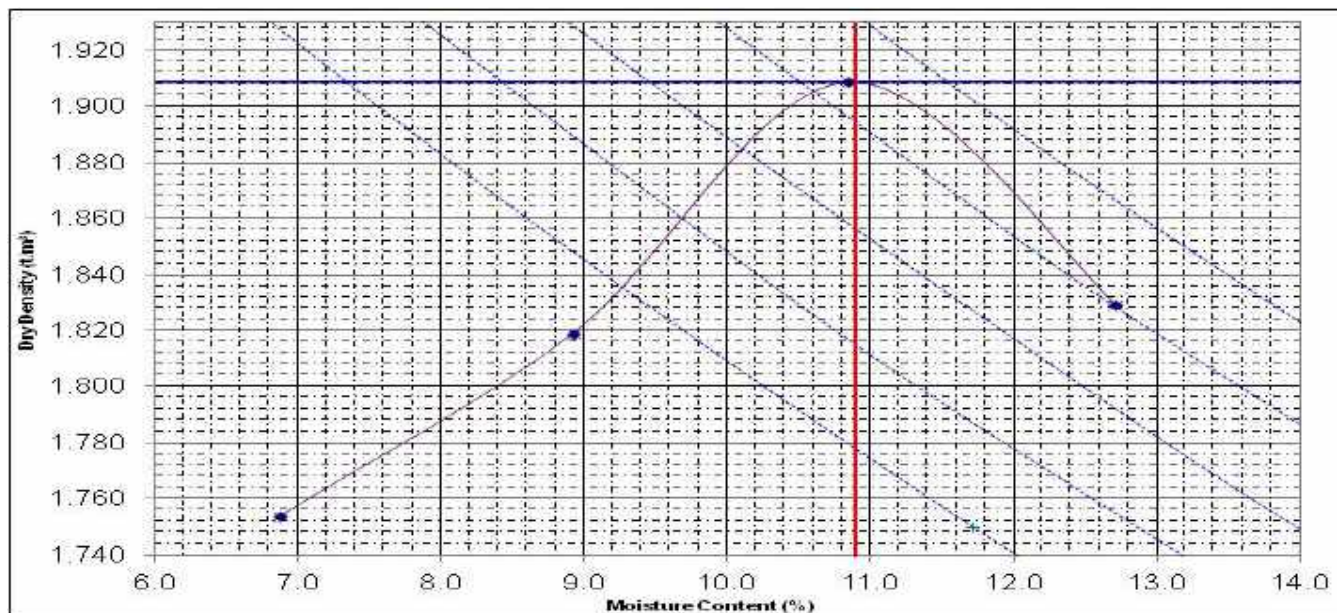
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Client: Knight Piesold Pty Ltd
Project: Mungari TSF Cell3 SI
Location: Mungari
SGS Job Number: 17-03-221
Lab: Kalgoorlie Soils Laboratory

Client Job No:
Order No:
Tested Date: 6/04/2017
Sample No: 17-KG-663
Sample ID: TP35 0.5 to 1.0

DRY DENSITY / MOISTURE RELATIONSHIP OF A SOIL

AS1289.5.2.1 (Modified Compactive Effort)



Sample Description:	Fine Clay
Modified MDD (t/m ³)	1.91
Modified OMC (%)	11.0
Oversize Sieve (mm)	19.0
Percent Wet Oversize (%)	0
Moisture Content Method	AS1289.2.1.1

Date: 20/04/2017

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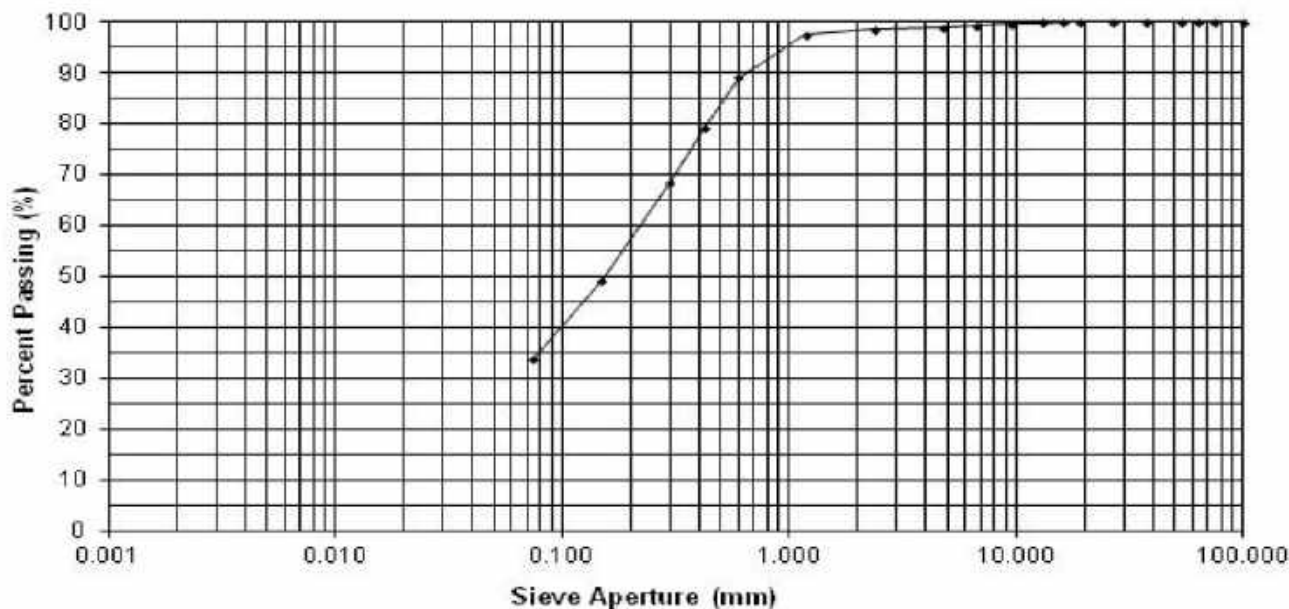
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Client:	Knight Piesold Pty Ltd
Project:	Mungari TSF Cell13 SI
Location:	Mungari
SGS Job Number:	17-03-221
Lab:	Kalgoorlie Soils Laboratory

Client Job No:
Order No:
Tested Date: 14/04/2017
Sample No: 17-KG-664
Sample ID: TP35 0.5 to 1.0
Reconstituted Material
From MMDD

Particle Size Distribution of a Soil

AS1289361



Sieve Size (mm)	% Passing	Sieve Size (mm)	% Passing
100	100	9.5	100
75	100	6.7	99
63	100	4.75	99
53	100	2.36	99
37.5	100	1.18	98
26.5	100	0.6	89
19.0	100	0.425	79
16.0	100	0.300	69
13.2	100	0.150	49
		0.075	34

Note: Sample supplied by client.

Date: 20/04/2017



Accredited for compliance with ISO/IEC 17025 - Testing

Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
Accreditation No.: 2418

Site No.: 5360
Cert No.: 17-KG-664-S301
Form No. PF-AU-INDCMT-TE-S301 V4.0

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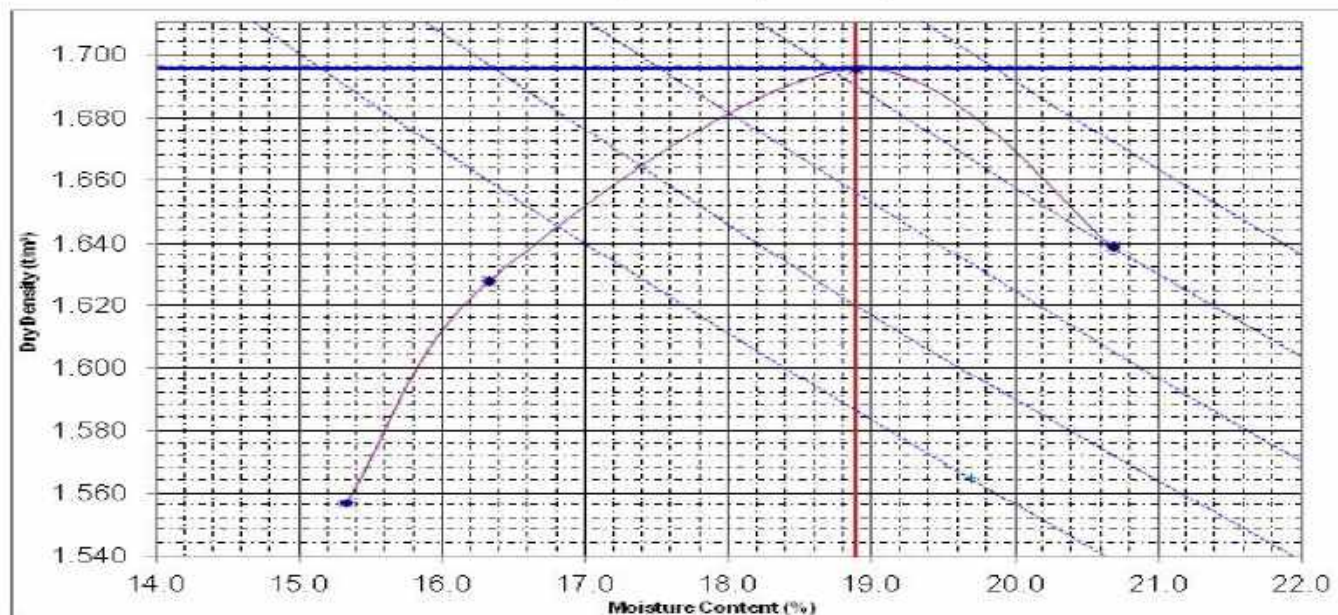
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Client: Knight Piesold Pty Ltd
 Project: Mungari TSF Cell3 SI
 Location: Mungari
 SGS Job Number: 17-03-221
 Lab: Kalgoorlie Soils Laboratory

Client Job No:
 Order No:
 Tested Date: 18/04/2017
 Sample No: 17-KG-870
 Sample ID: TP4 2.5-2.8

DRY DENSITY / MOISTURE RELATIONSHIP OF A SOIL

AS1289.5.2.1 (Modified Compactive Effort)



Sample Description:	Sandy Clay
Modified MDD (t/m ³)	1.7
Modified OMC (%)	19.0
Oversize Sieve (mm)	19.0
Percent Wet Oversize (%)	0
Moisture Content Method	AS1289.2.1.1

Date: 20/04/2017



Client Address: Level 1, 184 Adelaide Terrace East Perth WA 6004
 Accreditation No.: 2418

Accredited for compliance with ISO/IEC 17025 - Testing

Site No.: 5360
 Cert No.: 17-KG-870-S441
 Form No. PF-AU-INDCMT-TE-S441 v5.0
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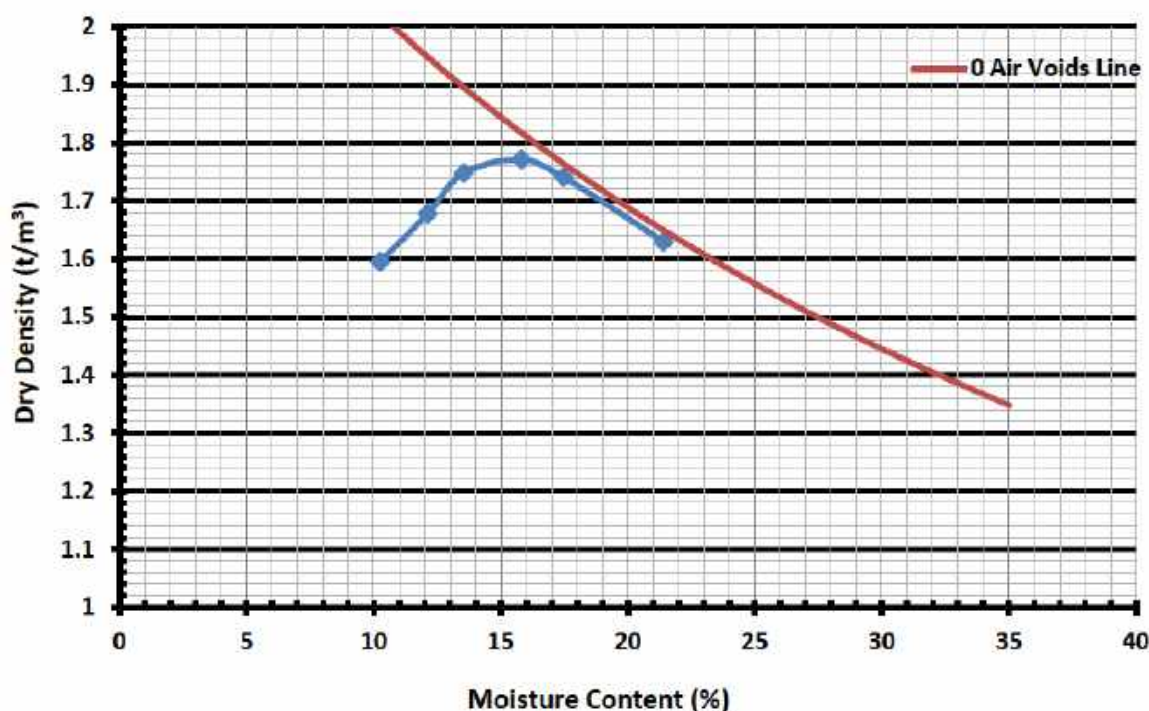
MOISTURE DENSITY RELATIONSHIP REPORT

Test Method: AS1289.5.1.1

Client:	Knight Piesold	Date Tested:	09/05/2020
Project:	Mungari TSF Cell 4	Lab:	EPLAB
Sample No:	TP36	Job Number:	KP
Lab ID:	TP36_1.00_1.50_MMDD		
Depth(m):	1.00 - 1.50	Room Temperature at Test:	20°C
Checked by:	Phil	Sample Description:	Tested in Mould A
Moisture Content (%):	-	Wet Density (t/m ³):	-
		Dry Density (t/m ³):	-

Results

Maximum Size (mm):	19.00	Maximum Dry Density (t/m ³):	1.780
Oversize dry (%):	0.00	Optimum Moisture Content (%):	16.00



Notes: * Particle density 2.55 t/m³

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signatu

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



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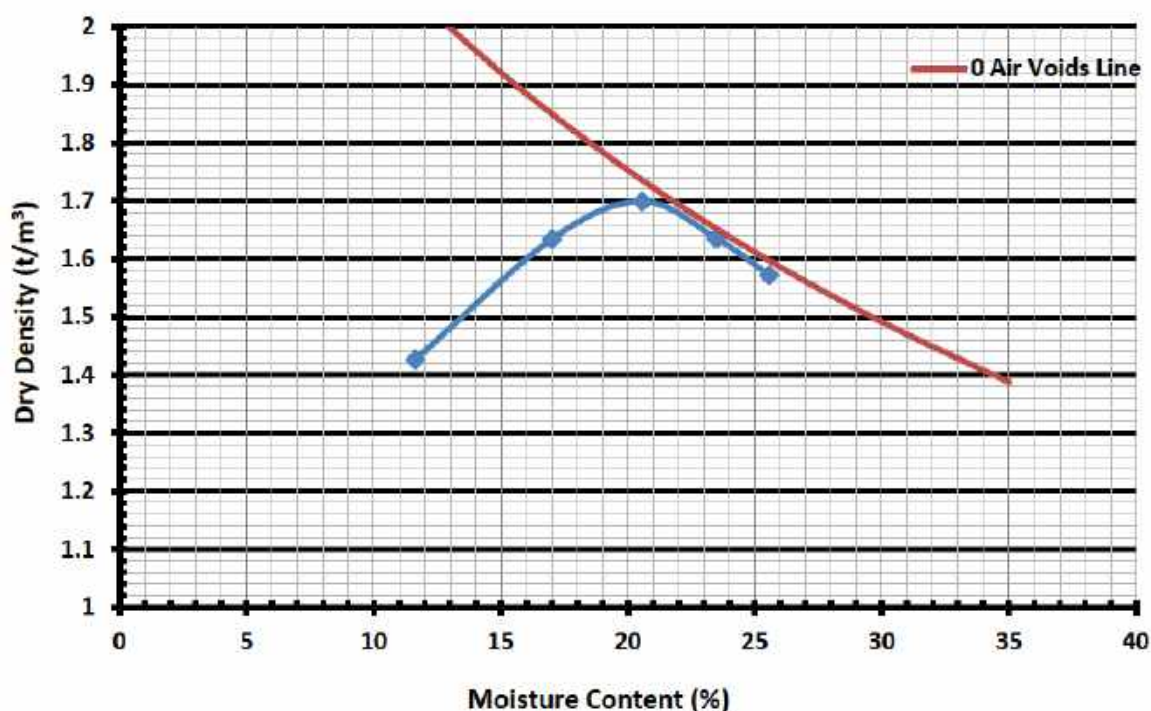
MOISTURE DENSITY RELATIONSHIP REPORT

Test Method: AS1289.5.1.1

Client:	Knight Piesold	Date Tested:	09/05/2020
Project:	Mungari TSF Cell 4	Lab:	EPLAB
Sample No:	TP36	Job Number:	KP
Lab ID:	TP36_3.80_4.00_MMDD		
Depth(m):	3.80 - 4.00	Room Temperature at Test:	20°C
Checked by:	Phil	Sample Description:	Tested in Mould A
Moisture Content (%):	-	Wet Density (t/m ³):	-
		Dry Density (t/m ³):	-

Results

Maximum Size (mm):	19.00	Maximum Dry Density (t/m ³):	1.700
Oversize dry (%):	0.00	Optimum Moisture Content (%):	20.50



Notes: * Particle density 2.7 t/m³

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signature:

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



Test Method: BS1377 AS1289.2.1.1 7.1.1 3.1.1 3.2.1 3.4.1

Client:	Knight Piesold	Date Tested:	13/05/2020
Project:	Mungari TSF Cell 4	Lab:	EPLab
Sample No:	TP36	Job Number:	KP
Lab ID:	TP36_3.80_4.00_ATT		
Depth(m):	3.80 - 4.00	Room Temperature at Test:	19°C

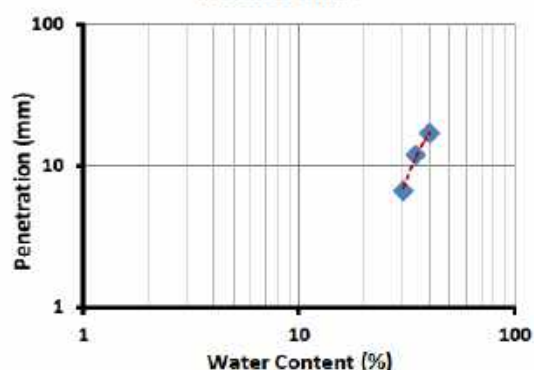
Tested by:	Phil	Sample Description:	-
Moisture Content (%):	-	Wet Density (t/m³):	-
		Dry Density (t/m³):	-

Liquid Limit (%): 40.07
Plastic Limit (%): 25.73

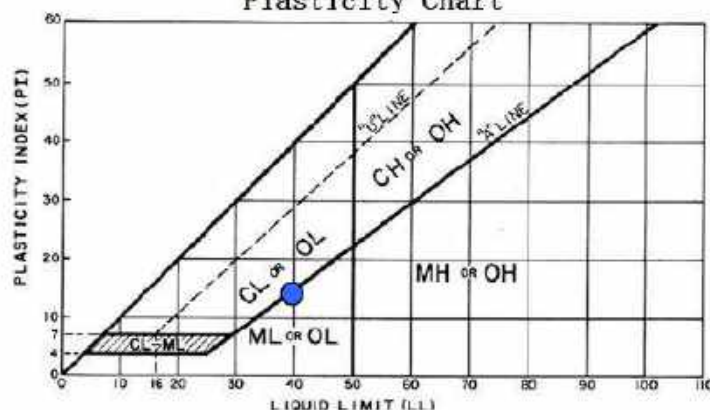
Plasticity Index (%): 14.34
Liquidity Index (%): -

Shrinkage Limit (%): 20.37
Linear Shrinkage(%): 11.20

Results Chart



Plasticity Chart



Notes: The sample/s were tested oven dried, dry sieved and in a 125-250mm mould.

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signature

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



Test Method: AS 1289 3.6.1

Tested by:	Kohei	2.36mm Particle Density (t/m ³):	-
Checked by:	Phil		

PSD Graph

Particle Size (mm)	Passing (%)
0.075	33
0.15	45
0.3	65
0.6	85
1.2	87
2.5	87
5.0	90
7.5	95
15	100
30	100
60	100
120	100

Authorized Signature:

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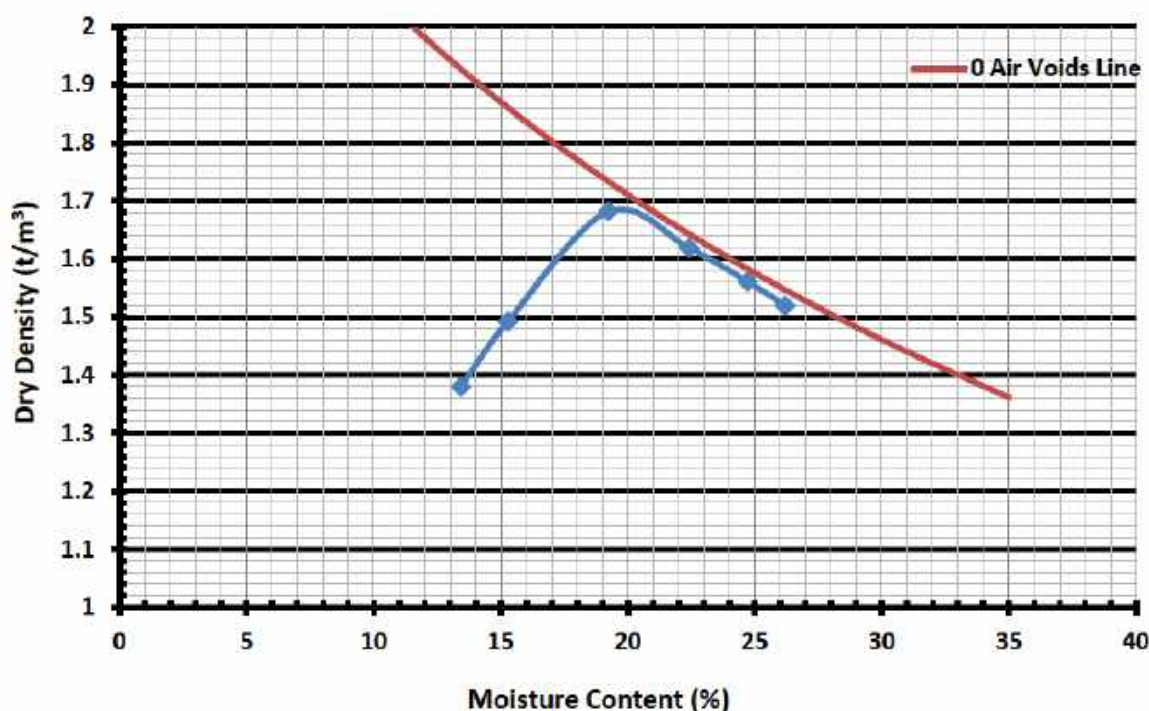
MOISTURE DENSITY RELATIONSHIP REPORT

Test Method: AS1289.5.1.1

Client:	Knight Piesold	Date Tested:	09/05/2020
Project:	Mungari TSF Cell 4	Lab:	EPLAB
Sample No:	TP39	Job Number:	KP
Lab ID:	TP39_3.50_3.80_MMDD		
Depth(m):	3.50 - 3.80	Room Temperature at Test:	20°C
Checked by:	Phil	Sample Description:	Tested in Mould A
Moisture Content (%):	-	Wet Density (t/m ³):	-
		Dry Density (t/m ³):	-

Results

Maximum Size (mm):	19.00	Maximum Dry Density (t/m ³):	1.690
Oversize dry (%):	0.00	Optimum Moisture Content (%):	20.00



Notes: * Particle density 2.6 t/m³

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signat

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



Test Method: BS1377 AS1289.2.1.1 7.1.1 3.1.1 3.2.1 3.4.1

Client:	Knight Piesold	Date Tested:	13/05/2020
Project:	Mungari TSF Cell 4	Lab:	EPLab
Sample No:	TP39	Job Number:	KP
Lab ID:	TP39_3.50_3.80_ATT		
Depth(m):	3.50 - 3.80	Room Temperature at Test:	19°C

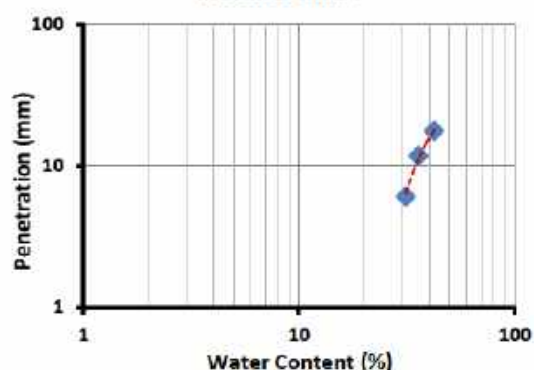
Tested by:	Phil	Sample Description:	-
Moisture Content (%):	-	Wet Density (t/m³):	-
		Dry Density (t/m³):	-

Liquid Limit (%): 41.40
Plastic Limit (%): 27.08

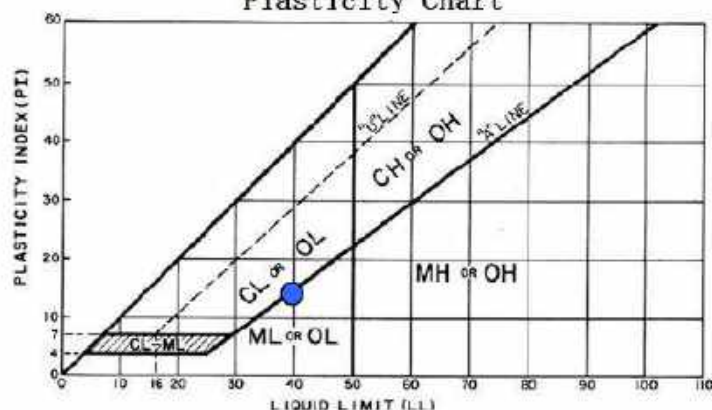
Plasticity Index (%): 14.33
Liquidity Index (%): -

Shrinkage Limit (%): 21.41
Linear Shrinkage(%): 11.75

Results Chart



Plasticity Chart



Notes: The sample/s were tested oven dried, dry sieved and in a 125-250mm mould.

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signatur

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



Test Method: AS 1289 3.6.1

Tested by:	Kohei	2.36mm Particle Density (t/m ³):	-
Checked by:	Phil		

PSD Graph

Particle Size (mm)	Passing (%)
0.075	47
0.15	58
0.3	72
0.6	88
1.18	94
2.5	94
5.0	94
10.0	98
25.0	100

Authorized Signature:

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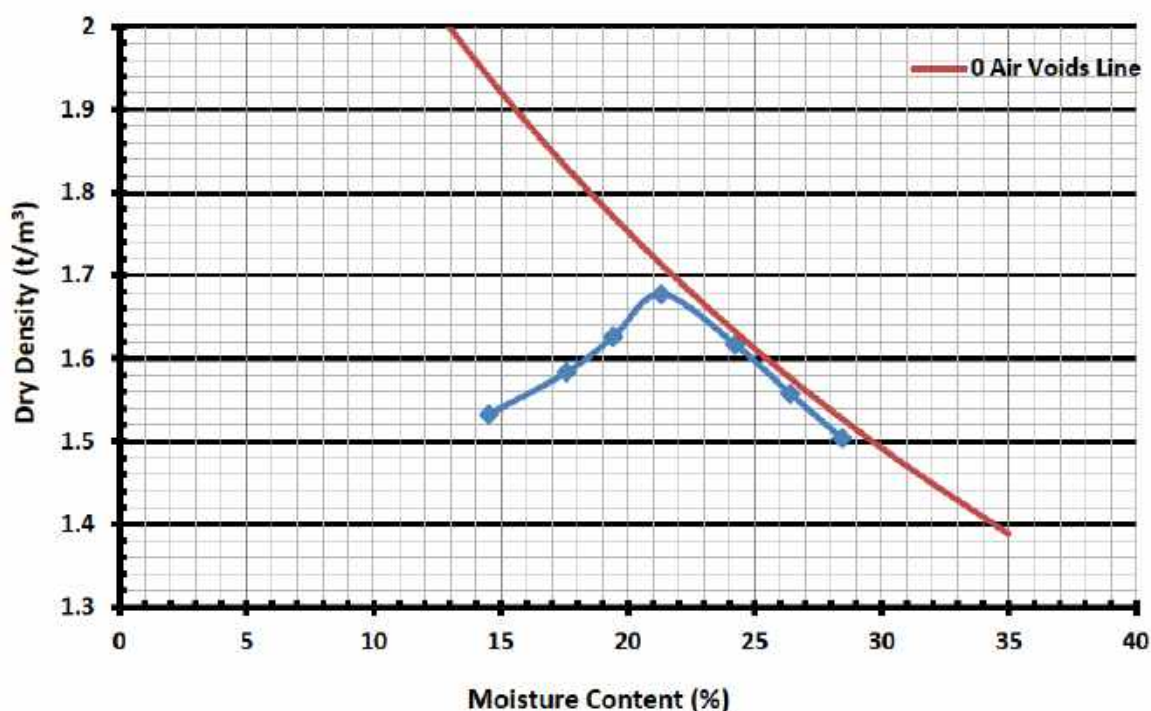
MOISTURE DENSITY RELATIONSHIP REPORT

Test Method: AS1289.5.1.1

Client:	Knight Piesold	Date Tested:	09/05/2020
Project:	Mungari TSF Cell 4	Lab:	EPLAB
Sample No:	TP40	Job Number:	KP
Lab ID:	TP40_3.30_3.90_MMDD		
Depth(m):	3.30 - 3.90	Room Temperature at Test:	20°C
Checked by:	Phil	Sample Description:	Tested in Mould A
Moisture Content (%):	-	Wet Density (t/m ³):	-
		Dry Density (t/m ³):	-

Results

Maximum Size (mm):	19.00	Maximum Dry Density (t/m ³):	1.680
Oversize dry (%):	0.00	Optimum Moisture Content (%):	21.50



Notes: * Particle density 2.7 t/m³

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signature

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



Test Method: BS1377 AS1289.2.1.1 7.1.1 3.1.1 3.2.1 3.4.1

Client:	Knight Piesold	Date Tested:	13/05/2020
Project:	Mungari TSF Cell 4	Lab:	EPLab
Sample No:	TP40	Job Number:	KP
Lab ID:	TP40_3.30_3.90_ATT		
Depth(m):	3.30 - 3.90	Room Temperature at Test:	19°C

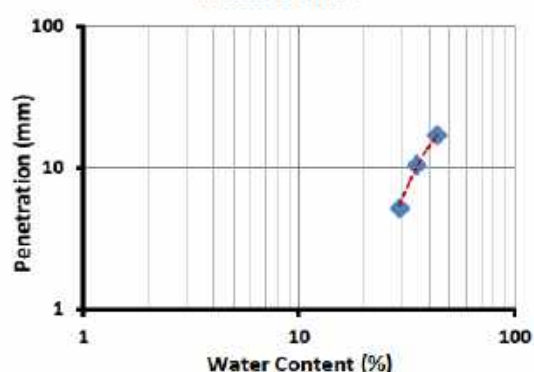
Tested by:	Phil	Sample Description:	-
Moisture Content (%):	-	Wet Density (t/m ³):	-
		Dry Density (t/m ³):	-

Liquid Limit (%): 43.54
Plastic Limit (%): 25.24

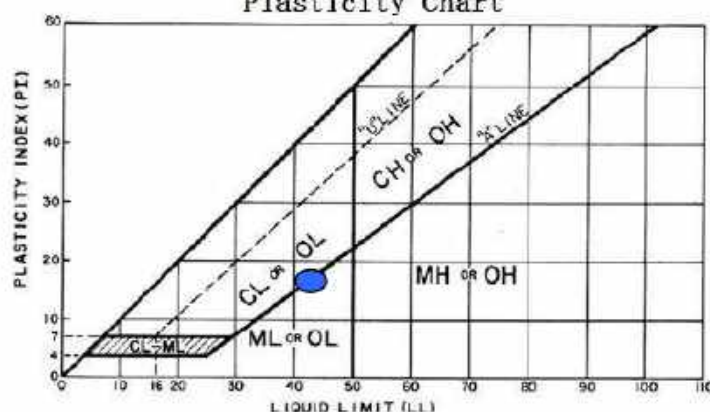
Plasticity Index (%): 18.29
Liquidity Index (%): -

Shrinkage Limit (%): 18.96
Linear Shrinkage(%): 11.05

Results Chart



Plasticity Chart



Notes: The sample/s were tested oven dried, dry sieved and in a 125-250mm mould.

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signature:

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



Test Method: AS 1289 3.6.1

Tested by:	Kohei	2.36mm Particle Density (t/m ³):	-
Checked by:	Phil		

PSD Graph

Particle Size (mm)	Passing (%)
0.075	33
0.15	45
0.3	60
0.6	75
1.0	80
2.0	85
4.0	87
7.5	89
15	100
30	100
60	100
125	100

Authorized Signature:

Integrity Precision Innovation



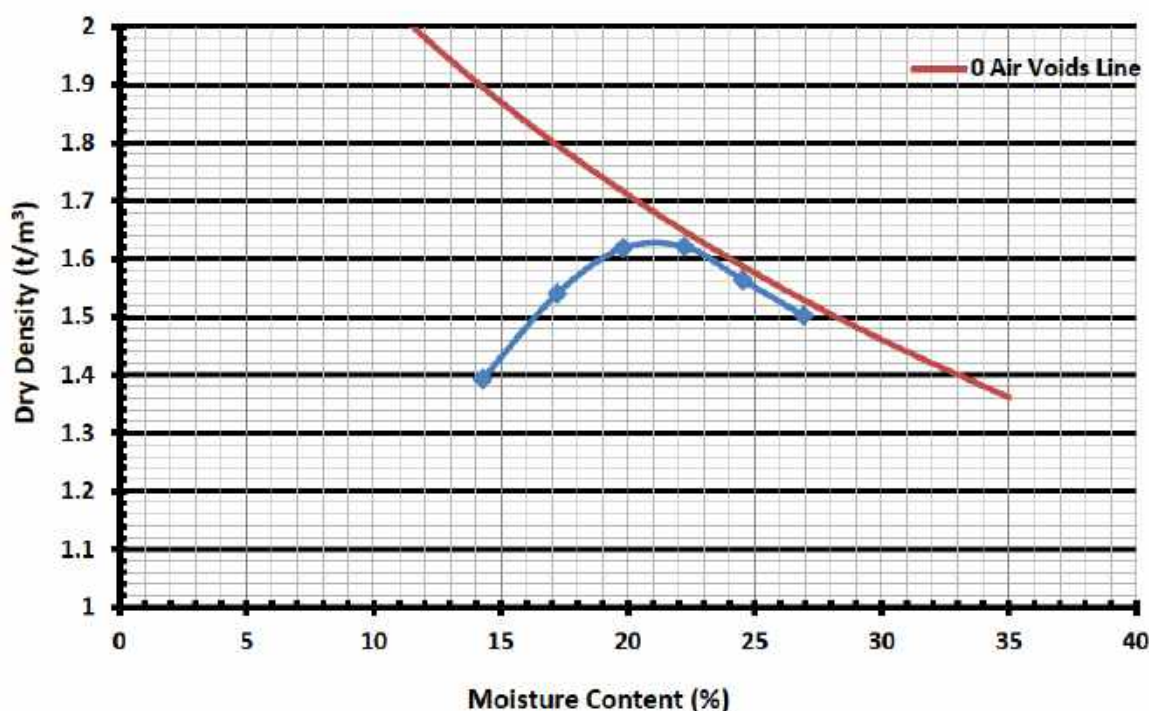
MOISTURE DENSITY RELATIONSHIP REPORT

Test Method: AS1289.5.1.1

Client:	Knight Piesold	Date Tested:	09/05/2020
Project:	Mungari TSF Cell 4	Lab:	EPLAB
Sample No:	TP42	Job Number:	KP
Lab ID:	TP42_3.50_3.90_MMDD		
Depth(m):	3.50 - 3.90	Room Temperature at Test:	20°C
Checked by:	Phil	Sample Description:	Tested in Mould A
Moisture Content (%):	-	Wet Density (t/m ³):	-
		Dry Density (t/m ³):	-

Results

Maximum Size (mm):	19.00	Maximum Dry Density (t/m ³):	1.630
Oversize dry (%):	0.00	Optimum Moisture Content (%):	21.00



Notes: * Particle density 2.6 t/m³

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signature

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



E-PRECISION LABORATORY

ATTERBERG LIMITS TEST REPORT

Test Method: BS1377 AS1289.2.1.1 7.1.1 3.1.1 3.2.1 3.4.1

Client:	Knight Piesold	Date Tested:	13/05/2020
Project:	Mungari TSF Cell 4	Lab:	EPLab
Sample No:	TP42	Job Number:	KP
Lab ID:	TP42_3.50_3.90_ATT		
Depth(m):	3.50 - 3.90	Room Temperature at Test:	19°C

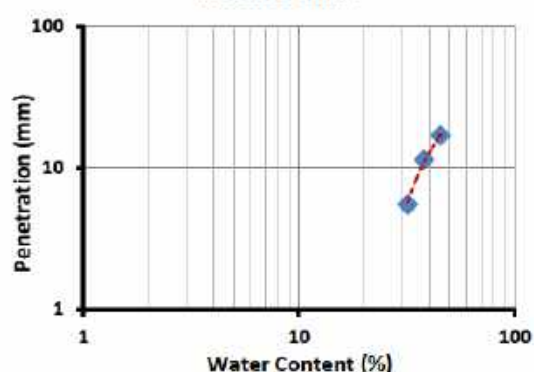
Tested by:	Phil	Sample Description:	-
Moisture Content (%):	-	Wet Density (t/m ³):	-
		Dry Density (t/m ³):	-

Liquid Limit (%): 45.12
Plastic Limit (%): 27.58

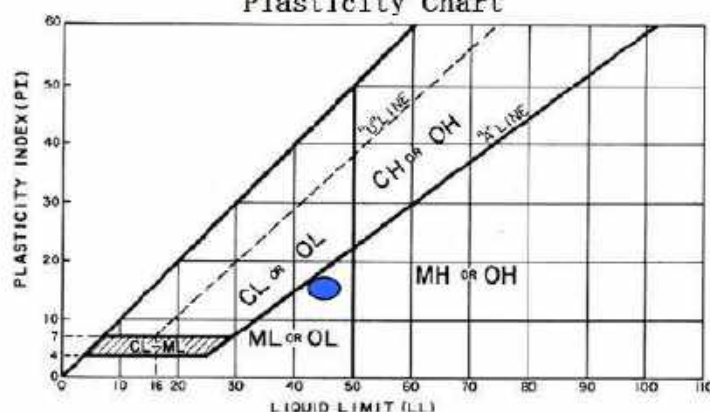
Plasticity Index (%): 17.54
Liquidity Index (%): -

Shrinkage Limit (%): 20.85
Linear Shrinkage(%): 14.38

Results Chart



Plasticity Chart



Notes: The sample/s were tested oven dried, dry sieved and in a 125-250mm mould.

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signature

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87

Test Method: AS 1289 3.6.1

Tested by:	Kohei	2.36mm Particle Density (t/m ³):	-
Checked by:	Phil		

PSD Graph

Particle Size (mm)	Passing (%)
0.075	36
0.15	48
0.3	62
0.6	75
1.18	82
2.5	88
5.0	92
10.0	94
25.0	100

Authorized Signature:

Integrity Precision Innovation

Test Method: AS 1289 3.6.1

Tested by:	Kohei	2.36mm Particle Density (t/m ³):	-
Checked by:	Phil		

The PSD Graph shows the percentage of material passing through various sieve sizes. The x-axis represents Particle Size in millimeters (mm) on a logarithmic scale from 0.001 to 1000. The y-axis represents the percentage of material passing, ranging from 0.0 to 100.0. The curve starts at approximately 50% passing for a 0.075 mm sieve and reaches 100% passing at approximately 25 mm.

Particle Size (mm)	Passing (%)
0.075	50.0
0.15	60.0
0.3	70.0
0.6	85.0
1.18	94.0
2.5	95.0
5.0	96.0
10.0	98.0
25.0	100.0
1000	100.0

Authorized Signature:

Integrity Precision Innovation

Test Method: AS 1289 3.6.1

Tested by:	Kohei	2.36mm Particle Density (t/m ³):	-
Checked by:	Phil		

PSD Graph

Particle Size (mm)	Passing (%)
0.075	47
0.15	62
0.3	72
0.6	88
1.2	97
2.5	99
5.0	100
75	100

Authorized Signature:

Integrity Precision Innovation



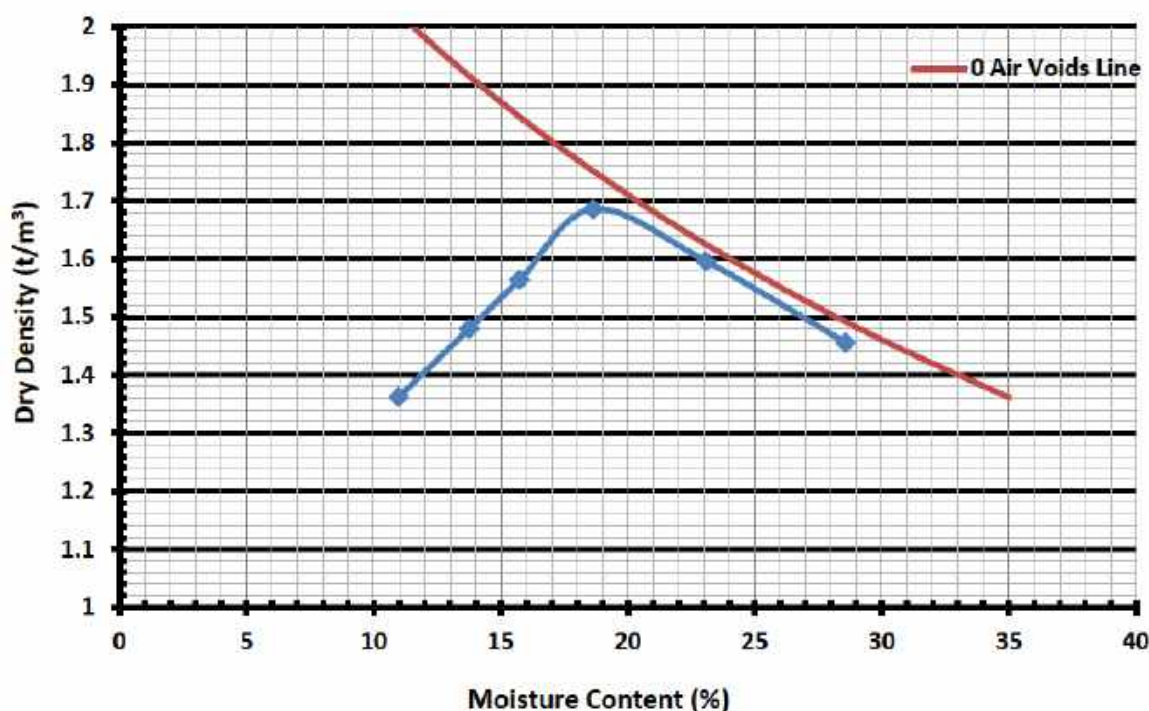
MOISTURE DENSITY RELATIONSHIP REPORT

Test Method: AS1289.5.1.1

Client:	Knight Piesold	Date Tested:	09/05/2020
Project:	Mungari TSF Cell 4	Lab:	EPLAB
Sample No:	TP47	Job Number:	KP
Lab ID:	TP47_0.80_1.30_MMDD		
Depth(m):	0.80 - 1.30	Room Temperature at Test:	20°C
Checked by:	Phil	Sample Description:	Tested in Mould A
Moisture Content (%):	-	Wet Density (t/m ³):	-
		Dry Density (t/m ³):	-

Results

Maximum Size (mm):	19.00	Maximum Dry Density (t/m ³):	1.680
Oversize dry (%):	0.00	Optimum Moisture Content (%):	18.50



Notes: * Particle density 2.6 t/m³

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signatu

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



ATTERBERG LIMITS TEST REPORT

Test Method: BS1377 AS1289.2.1.1 7.1.1 3.1.1 3.2.1 3.4.1

Client:	Knight Piesold	Date Tested:	13/05/2020
Project:	Mungari TSF Cell 4	Lab:	EPLab
Sample No:	TP47	Job Number:	KP
Lab ID:	TP47_0.80_1.30_ATT		
Depth(m):	0.80 - 1.30	Room Temperature at Test:	19°C

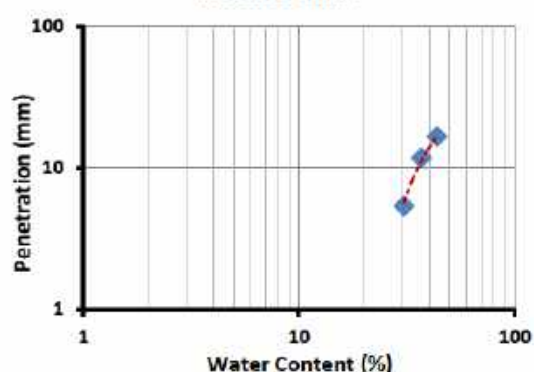
Tested by:	Phil	Sample Description:	-
Moisture Content (%):	-	Wet Density (t/m ³):	-
		Dry Density (t/m ³):	-

Liquid Limit (%): 43.72
Plastic Limit (%): 26.32

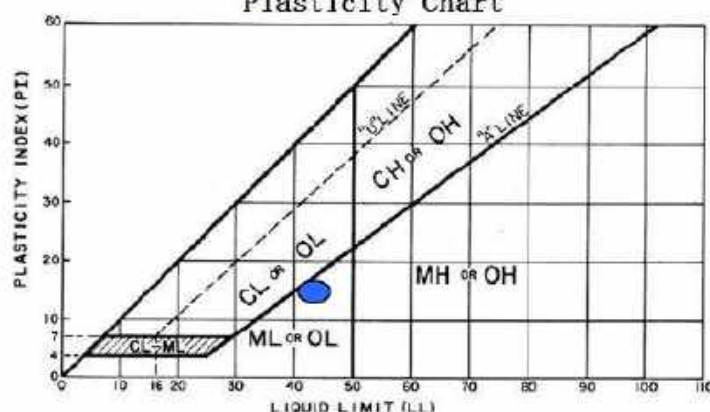
Plasticity Index (%): 17.40
Liquidity Index (%): -

Shrinkage Limit (%): 19.97
Linear Shrinkage(%): 10.12

Results Chart



Plasticity Chart



Notes: The sample/s were tested oven dried, dry sieved and in a 125-250mm mould.

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signat

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



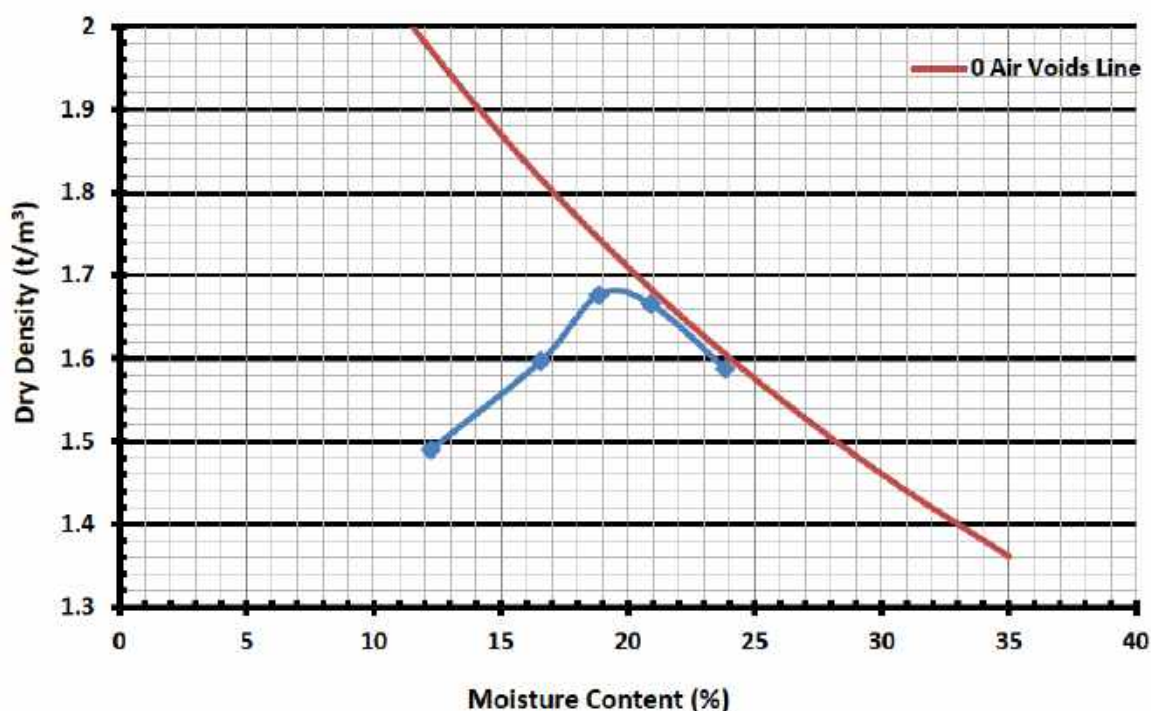
MOISTURE DENSITY RELATIONSHIP REPORT

Test Method: AS1289.5.1.1

Client:	Knight Piesold	Date Tested:	09/05/2020
Project:	Mungari TSF Cell 4	Lab:	EPLAB
Sample No:	TP47	Job Number:	KP
Lab ID:	TP47_3.50_4.00_MMDD		
Depth(m):	3.50 - 4.00	Room Temperature at Test:	20°C
Checked by:	Phil	Sample Description:	Tested in Mould A
Moisture Content (%):	-	Wet Density (t/m ³):	-
		Dry Density (t/m ³):	-

Results

Maximum Size (mm):	19.00	Maximum Dry Density (t/m ³):	1.680
Oversize dry (%):	0.00	Optimum Moisture Content (%):	19.50



Notes: * Particle density 2.7 t/m³

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signat

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Test Method: BS1377 AS1289.2.1.1 7.1.1 3.1.1 3.2.1 3.4.1

Client:	Knight Piesold	Date Tested:	13/05/2020
Project:	Mungari TSF Cell 4	Lab:	EPLab
Sample No:	TP47	Job Number:	KP
Lab ID:	TP47_3.50_4.00_ATT		
Depth(m):	3.50 - 4.00	Room Temperature at Test:	19°C

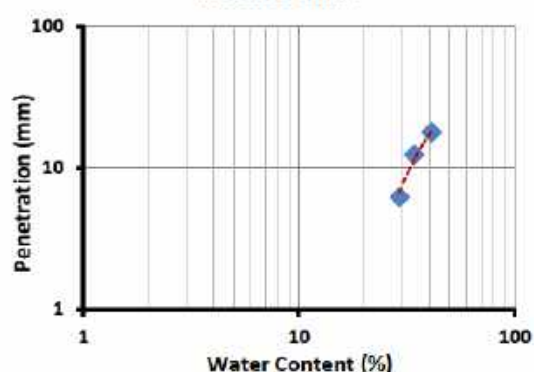
Tested by:	Phil	Sample Description:	-
Moisture Content (%):	-	Wet Density (t/m³):	-
		Dry Density (t/m³):	-

Liquid Limit (%): 39.87
Plastic Limit (%): 24.40

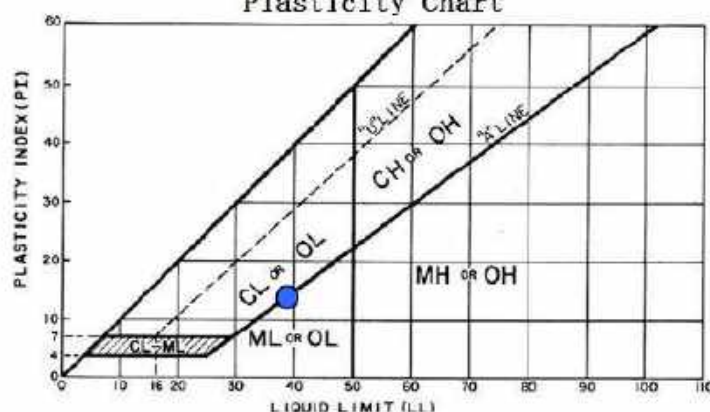
Plasticity Index (%): 15.46
Liquidity Index (%): -

Shrinkage Limit (%): 19.06
Linear Shrinkage(%): 7.34

Results Chart



Plasticity Chart



Notes: The sample/s were tested oven dried, dry sieved and in a 125-250mm mould.

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signatur

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



PARTICLE SIZE DISTRIBUTION TEST REPORT

Test Method: AS 1289 3.6.1

Client:	Knight Ridged	Date Tested:	15/05/2020
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Client:	Knight Presold	Date Tested:	15/05/2020
Project:	Mungari TSF Cell 4	EP Lab Job Number:	KP
Sample No:	TP47	Depth(m):	3.50 - 4.00
Lab_ID:	TP47_3.50_4.00_PSD	Room Temperature at Test:	19°C

Tested by:	Kohei	2.36mm Particle Density (t/m³):	-
Checked by:	Phil		

[illegible]

Notes:

Sample	Stored and Tested the Sample as received	Sample stored at 4°C and tested
1	100%	100%
2	100%	100%
3	100%	100%
4	100%	100%
5	100%	100%
6	100%	100%
7	100%	100%
8	100%	100%
9	100%	100%
10	100%	100%
11	100%	100%
12	100%	100%
13	100%	100%
14	100%	100%
15	100%	100%
16	100%	100%
17	100%	100%
18	100%	100%
19	100%	100%
20	100%	100%
21	100%	100%
22	100%	100%
23	100%	100%
24	100%	100%
25	100%	100%
26	100%	100%
27	100%	100%
28	100%	100%
29	100%	100%
30	100%	100%
31	100%	100%
32	100%	100%
33	100%	100%
34	100%	100%
35	100%	100%
36	100%	100%
37	100%	100%
38	100%	100%
39	100%	100%
40	100%	100%
41	100%	100%
42	100%	100%
43	100%	100%
44	100%	100%
45	100%	100%
46	100%	100%
47	100%	100%
48	100%	100%
49	100%	100%
50	100%	100%
51	100%	100%
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69	100%	100%
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85	100%	100%
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90	100%	100%
91	100%	100%
92	100%	100%
93	100%	100%
94	100%	100%
95	100%	100%
96	100%	100%
97	100%	100%
98	100%	100%
99	100%	100%
100	100%	100%

Samples supplied by the Client Authorized Signature: _____

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



Test Method: BS1377 AS1289.2.1.1 7.1.1 3.1.1 3.2.1 3.4.1

Client:	Knight Piesold	Date Tested:	13/05/2020
Project:	Mungari TSF Cell 4	Lab:	EPLab
Sample No:	TP49	Job Number:	KP
Lab ID:	TP49_3.50_3.90_ATT		
Depth(m):	3.50 - 3.90	Room Temperature at Test:	19°C

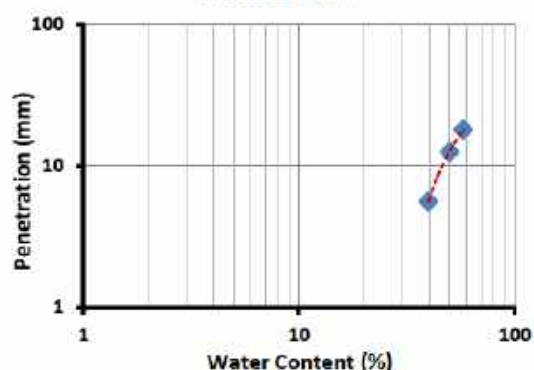
Tested by:	Phil	Sample Description:	-
Moisture Content (%):	-	Wet Density (t/m³):	-
		Dry Density (t/m³):	-

Liquid Limit (%): 56.32
Plastic Limit (%): 34.58

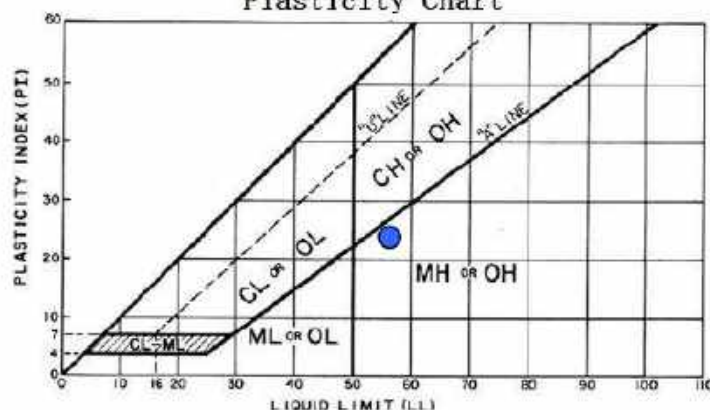
Plasticity Index (%): 21.74
Liquidity Index (%): -

Shrinkage Limit (%): 24.52
Linear Shrinkage(%): 14.33

Results Chart



Plasticity Chart



Notes: The sample/s were tested oven dried, dry sieved and in a 125-250mm mould.

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signatur

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Test Method: AS 1289 3.6.1

Tested by:	Kohei	2.36mm Particle Density (t/m ³):	-
Checked by:	Phil		

The graph is a semi-log plot of Particle Size Distribution (PSD). The x-axis represents Particle Size in millimeters (mm) on a logarithmic scale from 0.001 to 1000. The y-axis represents the percentage of material passing through the sieve, ranging from 0.0 to 100.0. A blue curve shows the distribution, starting at about 42% passing for a 0.075 mm sieve and reaching 100% passing at a 10 mm sieve.

Particle Size (mm)	Passing (%)
0.075	42
0.15	50
0.3	58
0.6	70
1.2	85
2.5	95
5.0	98
10.0	100
100.0	100
1000.0	100

Authorized Signature

Integrity Precision Innovation



E-PRECISION LABORATORY

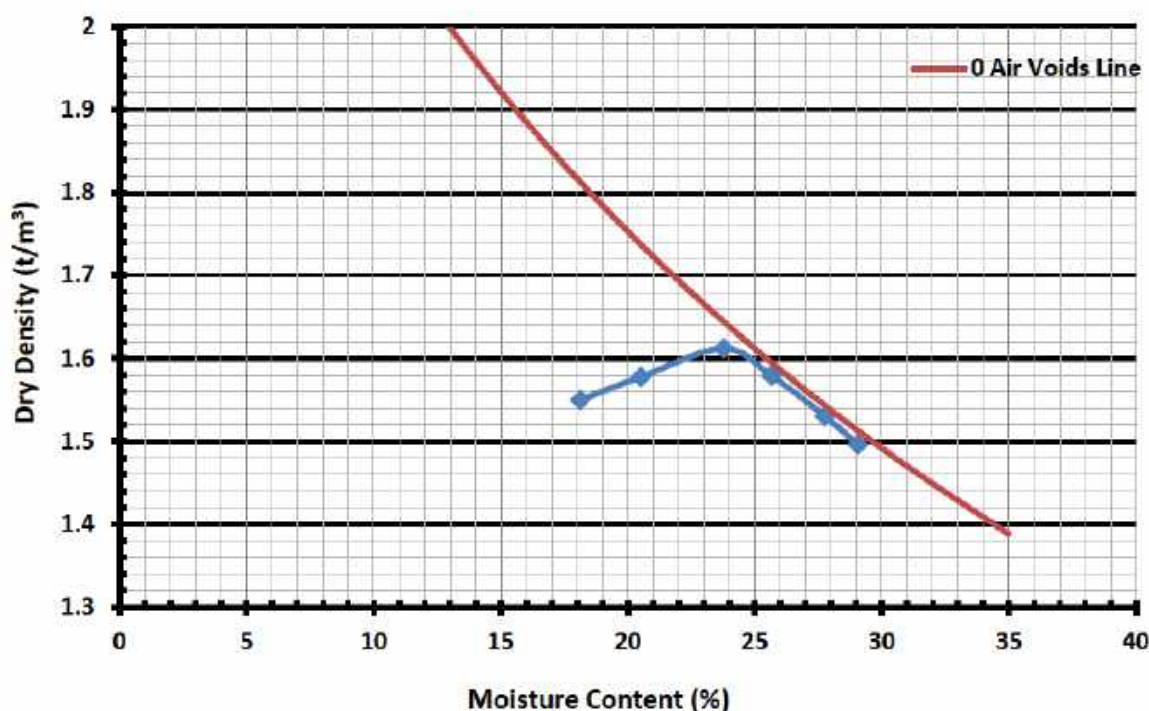
MOISTURE DENSITY RELATIONSHIP REPORT

Test Method: AS1289.5.1.1

Client:	Knight Piesold	Date Tested:	09/05/2020
Project:	Mungari TSF Cell 4	Lab:	EPLAB
Sample No:	TP50	Job Number:	KP
Lab ID:	TP50_3.00_3.50_MMDD		
Depth(m):	3.00 - 3.50	Room Temperature at Test:	20°C
Checked by:	Phil	Sample Description:	Tested in Mould A
Moisture Content (%):	-	Wet Density (t/m ³):	-
		Dry Density (t/m ³):	-

Results

Maximum Size (mm):	19.00	Maximum Dry Density (t/m ³):	1.610
Oversize dry (%):	0.00	Optimum Moisture Content (%):	24.00



Notes: * Particle density 2.7 t/m³

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signatur

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



ATTERBERG LIMITS TEST REPORT

Test Method: BS1377 AS1289.2.1.1 7.1.1 3.1.1 3.2.1 3.4.1

Client:	Knight Piesold	Date Tested:	13/05/2020
Project:	Mungari TSF Cell 4	Lab:	EPLab
Sample No:	TP50	Job Number:	KP
Lab ID:	TP50_3.00_3.50_ATT		
Depth(m):	3.00 - 3.50	Room Temperature at Test:	19°C

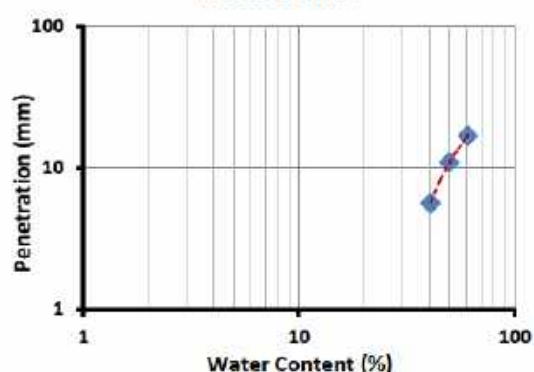
Tested by:	Phil	Sample Description:	-
Moisture Content (%):	-	Wet Density (t/m ³):	-
		Dry Density (t/m ³):	-

Liquid Limit (%): 60.78
Plastic Limit (%): 34.32

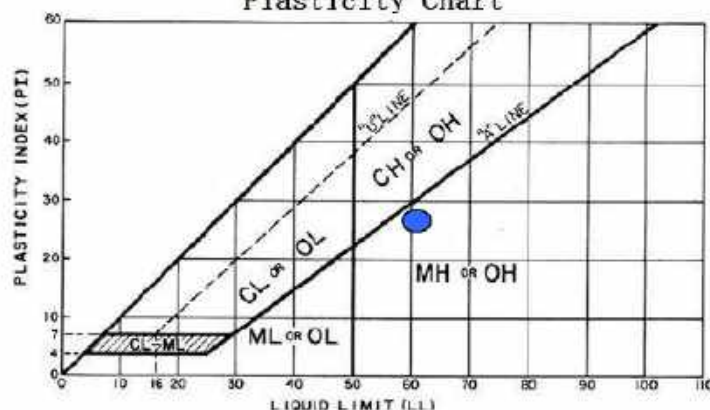
Plasticity Index (%): 26.46
Liquidity Index (%): -

Shrinkage Limit (%): 22.96
Linear Shrinkage(%): 13.51

Results Chart



Plasticity Chart



Notes: The sample/s were tested oven dried, dry sieved and in a 125-250mm mould.

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signature

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly state
Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



FALLING HEAD PERMEABILITY TEST REPORT

Test Method: AS1289 6.7.2

Client: Knight Piesold Date Tested: 12/05/2020
Project: Mungari TSF Cell 4 Date Reported: 19/05/2020
Lab: EPLAB EP Lab Job Number: KP
Tested by: Phil
Checked by: Phil

Lab ID:	MUG_01_FH	MUG_02_FH	MUG_03_FH	MUG_04_FH
Client ID:	TP36	TP36	TP39	TP40
Depth (m):	1.00 - 1.50	3.80 - 4.00	3.50 - 3.80	3.30 - 3.90
Sample Conditions:	Remolded 98% SMDD	Remolded 98% SMDD	Remolded 98% SMDD	Remolded 98% SMDD
Surcharge Pressure (kPa):	12.5	12.5	12.5	12.5
Initial Bulk Density (t/m ³):	2.00	2.00	1.98	2.01
Initial Moisture Content (%):	16.13	20.59	20.12	21.77
Dry Density (t/m ³):	1.72	1.66	1.65	1.65
Saturation (Skempton's B):	0.98	1.00	1.00	1.00
K ₂₀ (m/s):	3.459 E ⁻⁸	8.541 E ⁻⁸	10.646 E ⁻⁸	7.494 E ⁻⁸

Notes:

Stored and Tested the Sample as received
Samples supplied by the Client

Authorised Signatory (Geotech

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



E-PRECISION LABORATORY

FALLING HEAD PERMEABILITY TEST REPORT

Test Method: AS1289 6.7.2

Client:	Knight Piesold	Date Tested:	12/05/2020
Project:	Mungari TSF Cell 4	Date Reported:	19/05/2020
Lab:	EPLAB	EP Lab Job Number:	KP

Tested by: Phil

Checked by: Phil

Lab ID:	MUG_05_FH	MUG_06_FH	MUG_07_FH	MUG_08_FH
Client ID:	TP42	TP47	TP47	TP50
Depth (m):	3.50 - 3.90	0.80 - 1.30	3.50 - 4.00	3.00 - 3.50
Sample Conditions:	Remolded 98% SMDD	Remolded 98% SMDD	Remolded 98% SMDD	Remolded 98% SMDD
Surcharge Pressure (kPa):	12.5	12.5	12.5	12.5
Initial Bulk Density (t/m ³):	1.93	1.95	1.96	1.95
Initial Moisture Content (%):	21.47	18.44	19.66	24.19
Dry Density (t/m ³):	1.59	1.65	1.64	1.57
Saturation (Skempton's B):	0.99	0.98	0.99	0.99
K ₂₀ (m/s):	8.247 E ⁻⁸	3.465 E ⁻⁸	5.595 E ⁻⁸	5.196 E ⁻⁸

Notes:

Stored and Tested the Sample as received

Samples supplied by the Client

Authorised Signatory (Geotechnical Engineer):

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87

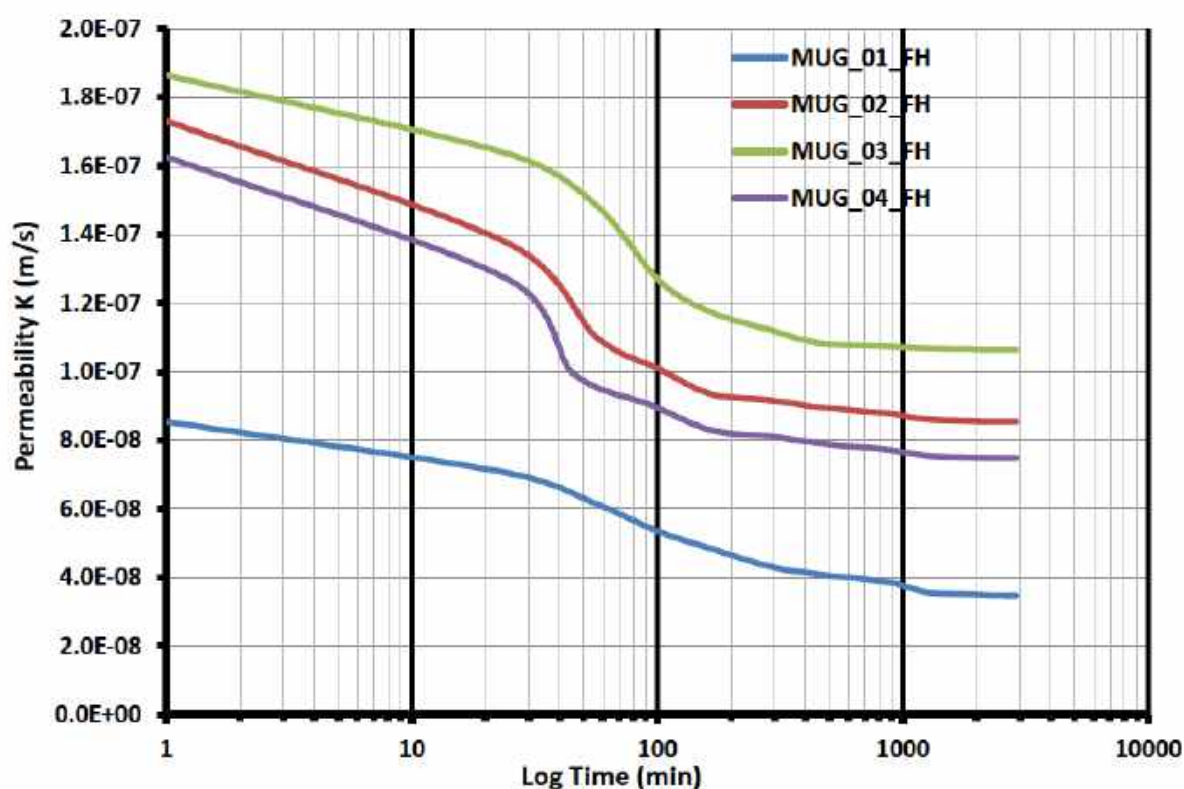


E-PRECISION LABORATORY

FALLING HEAD PERMEABILITY TEST REPORT

Test Method: AS1289 6.7.2

Client:	Knight Piesold	Date Tested:	12/05/2020
Project:	Mungari TSF Cell 4	Date Reported:	19/05/2020
Lab:	EPLAB	EP Lab Job Number:	KP



Notes:

Stored and Tested the Sample as received
Samples supplied by the Client

Authorised Signatory (Geotechnical Engineer)

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87

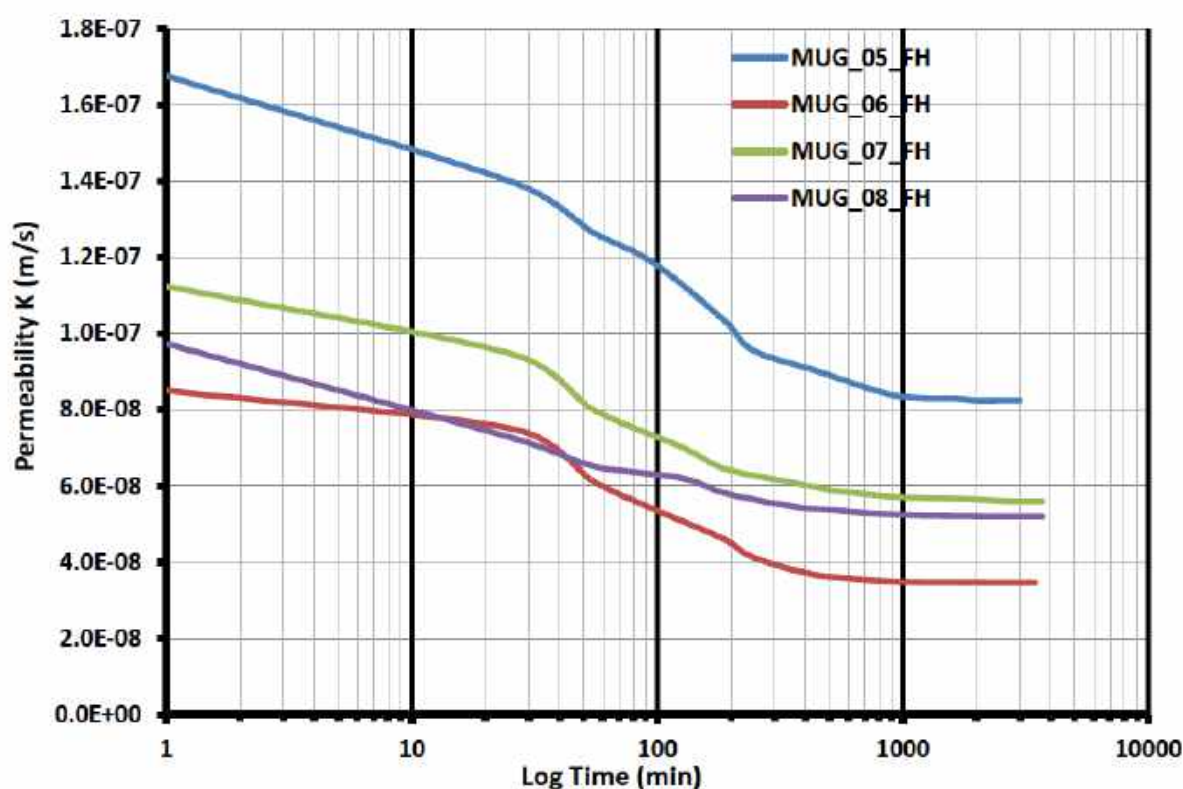


E-PRECISION LABORATORY

FALLING HEAD PERMEABILITY TEST REPORT

Test Method: AS1289 6.7.2

Client:	Knight Piesold	Date Tested:	12/05/2020
Project:	Mungari TSF Cell 4	Date Reported:	19/05/2020
Lab:	EPLAB	EP Lab Job Number:	KP



Notes:

Stored and Tested the Sample as received
Samples supplied by the Client

Authorised Signatory (Geotechnical Engineer)

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



STATS WA Pty Ltd
Unit 1/24 Baile Road
Canning Vale WA 6155
PH: +61 (08) 9455 3654
ABN: 90 016 537 577
www.statswa.com.au

Test Certificate

Emerson Class Report

Client :	E-Precision Laboratory	Report Number:	PE-101055 - 1/1
Address :	Unit 3/34 Sphinx Way, Bibra Lake, WA, 6163	Report Date :	13/04/2017
Project Name :	Mungari Gold Project	Order Number :	
Project Number :	PE-101055	Test Method :	AS1289.3.8.1
Location:	Mungari	Page 1 of 1	

Sample Number :	S17-260	S17-261	S17-262	
Test Number :	1	2	3	
Sampling Method :	As Received	As Received	As Received	
Date Sampled :	7/04/2017	7/04/2017	7/04/2017	
Date Tested :	11/04/2017	11/04/2017	11/04/2017	
Material Type :	Soil Sample	Soil Sample	Soil Sample	
Material Source :	Bore Hole	Bore Hole	Bore Hole	
Lot Number :				
Sample Location :	BH01 - (3.50-4.00m)	BH03 - (4.45-4.95m)	BH02 - (7.00-7.50m)	
Primary Water Type :	Distilled Water	Distilled Water	Distilled Water	
Primary Soil Description :	Clayey SAND	Silty SAND	Sandy CLAY	
Primary Temperature :	25	25	25	
Primary Emerson Class Number :	Class 6	Class 6	Class 4	
Secondary Water Type :				
Secondary Soil Description :				
Secondary Temperature :				
Secondary Emerson Class Number :				
Remarks :				



Accredited for compliance with ISO/IEC 17025 - Testing.



STATS WA PTY LTD

TEST CERTIFICATE

CLIENT:	E-Precision	PROJECT NUMBER:	PE-101055
ADDRESS:	Unit 3/34 Sphinx Way, Bibra Lake , WA6163	REPORT NUMBER:	PE-101055 - 2/1
PROJECT:	Mungari Gold Project	REPORT DATE:	13/04/2017
LOCATION:	Mungari	ORDER NUMBER:	

Calcium Carbonate Content WA915.1

Sample Number:	S17-	262			
Sample Identification:		BH02			
Sample Depth:		7-7.5m			
Description:		Sandy CLAY			
Date Sampled:		Apr-17			
Date Tested:		11/04/2017			
Test Number:		3			
Calcium Carbonate Content: %		9.4			
Remarks: Sample Supplied by client.					



E-PRECISION LABORATORY

EMERSON CLASS REPORT

Test Method: AS1289.3.8.1

Client: Knight Piesold
Project: Mungari TSF Cell 4

Date Tested: 16/05/2020
Lab: EPLAB

Test Results

Sample ID	Depth (m)		Class Number
TP36	1.00	1.50	5
TP39	0.80	1.30	5
TP40	3.30	3.90	2
TP44	0.50	1.00	5
TP45	0.50	1.00	5
TP47	0.80	1.30	5
TP49	3.50	3.90	2
TP50	3.00	3.50	5

Notes: tested using distilled water @ 19deg

Samples tested as supplied by client

Samples supplied by the Client

Auth

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87



E-PRECISION LABORATORY

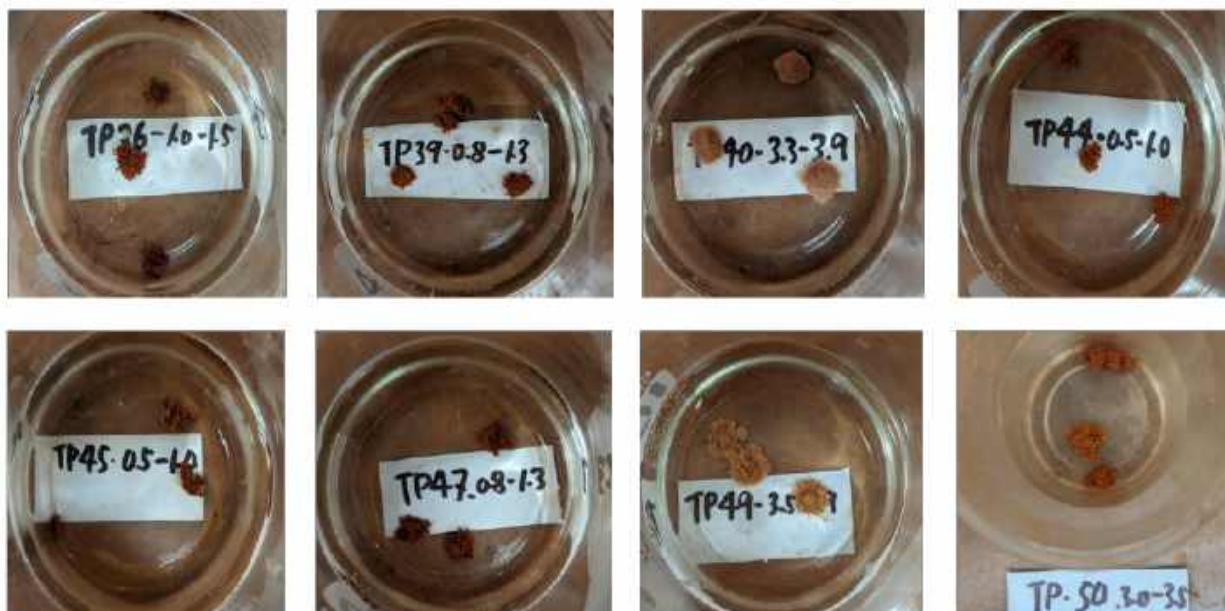
EMERSON CLASS REPORT

Test Method: AS1289.3.8.1

Client: Knight Piesold
Project: Mungari TSF Cell 4

Date Tested: 16/05/2020
Lab: EPLAB

Photo of Results



Notes: tested using distilled water @ 19deg

Samples tested as supplied by client

Samples supplied by the Client

Authorised Signature:

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87

APPENDIX B2
Foundation Soil Testwork

FACTUAL REPORT

Client Details:

Name: EVOLUTION MINING
PO No.: 208614 & 208893
Project: Mungari Gold Operations

GTI Perth Details:

Reference No: C27-P01-T01 & C27-P01-T02
Job No.: 21-015 & 21-016
Address: 16 Glory Road, Gnangara, WA 6077

MUNGARI GOLD OPERATIONS PROJECT – LABORATORY TESTS

GTI Perth was contracted by Evolution Mining to provide laboratory support services for the Mungari Gold Operations project. The test specifications were provided by Knight Piésold.

Two blocks of soil samples for the North Wall locations, ID number KP-EVO-15 and KP-EVO-20 and two block samples for the South Wall locations, ID number KP-EVO-29 and KP-EVO-30, were provided to GTI Perth laboratory on 14th January 2021 and 21st January 2021, respectively. The samples are approximately 150 mm in diameter and 150 mm in length. Sub-samples of 60 mm diameter were taken from the samples. The following tests were performed as instructed by Mr Jim Lou of Knight Piésold:

- 4 x Consolidation (Oedometer) test, one test on each block sample;
- 8 x Static Simple Shear tests, 2 tests on each block sample.

TEST RESULTS

1. CONSOLIDATION TEST

One-dimensional consolidation (oedometer) tests were performed by using a motorised load controlled oedometer machine and following the test method as described in the Australian Standard (AS 1289 6.6.1). The test comprised multi-stage loading from a specified initial vertical stress (σ'_{v-ini}) to an intermediate stress (σ'_{v-int}) followed by unloading stages back to σ'_{v-ini} before reloading to maximum vertical stress (σ'_{v-max}). The sample was then unloaded back to σ'_{v-ini} before removing it from the machine. The loading pattern for each test is shown in **Figure A to Figure A**.

The results of the oedometer test are presented in **Figure A to Figure A**, 3 pages per test:

- On Page 1, the results are shown in tabulated form, including the details of the loading and unloading stages, the applied stress for each stage, and the results in terms of:

- o void ratio (e),
- o coefficient of consolidation (c_v) for the loading stages; estimated using the square root time method,
- o coefficient of volume compressibility (m_v) for all stages:

$$m_v = \frac{\Delta H}{\Delta \sigma} \frac{1}{H} \quad (1)$$

where ΔH is the change in sample height for the stage, $\Delta \sigma$ is the increase in applied vertical stress for the stage and H is the height of the sample at the start of the stage.

- o coefficient of permeability (k) for the loading stages:

$$k = \frac{c_v \cdot m_v}{\gamma_w} \quad (2)$$

where γ_w is the unit weight of water.

- On Page 2, plot of void ratio (e) versus applied vertical stress (σ'_v) for each stage is presented. Slopes for determining the compression index (C_c) and swelling indices (C_{s-Int} and C_{s-Max}) are shown on the plot and the obtained values are provided in the table below the plot.
- On Page 3, plot of sample height (H) versus the square root of time for each loading stage is provided.

. SIMPLE SHEAR TEST

The static simple shear tests were performed using GTI Perth dynamic simple shear machine (Figure) and following GTI Perth test procedure GTI-ADT-P06. The test procedure is summarised below.

. Sample preparation

Sub sample is taken from the block sample by pushing a sharp-edged cutting ring of 60 mm diameter and 30 mm height. The sample is then trimmed flush with the ring by removing any excess material on the top and bottom of the ring. The trimmings are used to measure the initial moisture content and the wet density (bulk density) is determined from the weight and dimensions of the sample.

The trimmed sample is extruded from the cutting ring and placed between the top and bottom caps of the machine. A flexible membrane is placed around the sample and sealed using "O-rings". The sample, caps and membrane are then transferred to the machine and placed on top of the base carriage. The bottom cap is then bolted to the base carriage and the vertical loading ram is lowered and connected to the top cap.

Drainage lines are connected to the caps before closing the cell and filling it with water. A confining pressure of maximum 10 kPa is applied to the cell in order to maintain the membrane in contact with the sample.

. Saturation

During saturation of the sample, the cell pressure and back pressure were ramped up in parallel, until a back pressure of 400 kPa were reached with a difference between them maintained constant at 10 kPa. These conditions were maintained for a period of time (no less than 1 hour) to allow saturation to continue. A B-value test was then carried out, which

consisted of closing the drainage valves and increasing the cell pressure to maximum 430 kPa ($\Delta\sigma_h = 20$ kPa). During that time, the pore pressure change (Δu) was recorded. B value, calculated as the ratio between Δu and $\Delta\sigma_h$, greater than 0.90 was achieved for all the simple shear tests.

. Consolidation

All samples were consolidated anisotropically, to a specified effective vertical stress (σ'_{vc}) and effective horizontal stress (σ'_{hc}). Values of σ'_{vc} ranging from 200 kPa to 600 kPa were used for the tests with a stress ratio $K_o = \sigma'_{hc}/\sigma'_{vc}$ of 0.7. The consolidation of the sample was carried out by ramping the cell pressure (σ'_{hc}) and vertical stress (σ'_{vc}) to the specified values, targeting the K_o path with the drainage valves open. After ramping, sufficient time was allowed for the sample to fully consolidate.

. Shearin

The undrained simple shear tests were carried out by maintaining a constant sample height and constant total vertical stress (σ_v) throughout the loading stage. This is generally achieved by locking the vertical loading ram into fixed position in order to maintain a constant sample height while adjusting the cell pressure to maintain constant total vertical stress.

All the static tests performed using the dynamic simple shear machine tests were undertaken at horizontal displacement rate of 0.1 mm/min, corresponding to strain rate of about 0.5 %/min. All static tests were terminated after reaching a final shear strain (γ_{max}) greater than 30%.

The undrained shear stress (τ_{xy}) is interpreted from the simple shear test assuming that a complimentary stress acts on the vertical boundaries of the sample. Joer et al. (2010) proposed an alternative interpretation, where the shear stress (τ_{fail}) is calculated along a discrete diagonal shear plane. **Figure 1** shows a sketch of the boundary conditions and the normal (σ'_n) and shear stress (τ_{fail}) acting on the failure plane. Note that the failure plane is assumed to develop from the top to bottom of the sample and can be confirmed from scrutinising the sample geometry after testing.

. Test Results

The simple shear test results are presented in **Figure 1 to Figure 4** and are summarised in **Table 1**.

The results of the static simple shear tests are presented across four pages:

- Page 1: The results of the consolidation stage are presented on this page in terms of:
 - o vertical (σ_v) and horizontal (σ_h) stresses versus time,
 - o volumetric (ε_v) and axial (ε_a) strains versus time,
 - o vertical (σ_v) stress versus the horizontal (σ_h); target K_o line is shown on this graph and
 - o ε_v versus mean stress (p).
- Page 2: The results of the shearing stage based on the traditional interpretation are presented on this page in terms of:
 - o shear stress (τ_{xy}) versus shear strain (γ),
 - o total vertical stress (σ_v) and excess pore pressure (Δu) versus γ ,
 - o effective vertical (σ'_v) and horizontal (σ'_h) stresses versus γ and

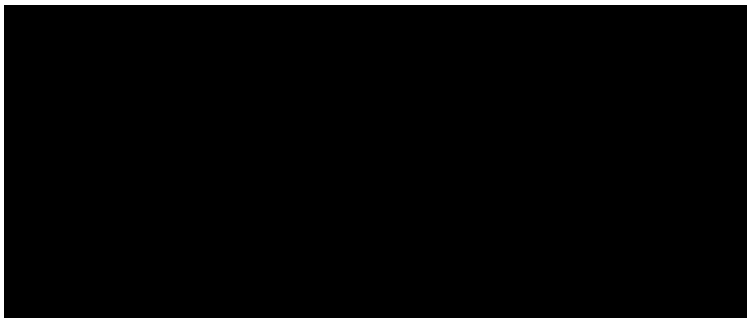
- o stress ratio (τ_{xy}/σ'_v) versus γ .
- Page 3: The results based on both the traditional and Joer et al. (2010) interpretations are presented on this page in terms of:
 - o shear stresses (τ_{xy} and τ_{fail}) versus (γ),
 - o effective vertical (σ'_v) stress and the normal stress (σ'_n) acting on the failure plane (**Figure**) versus γ ,
 - o stress ratio (τ_{xy}/σ'_v) and (τ_{fail}/σ'_n) versus γ and
 - o stress path τ_{xy} versus σ'_v and τ_{fail} versus σ'_n . Note that values of friction angles are shown on these plots and were derived assuming no cohesion (line drawn through the origin of axes).
- Page 4: On this page the photograph of the sample after testing is presented.

This report presents the factual results of tests performed on the “as received” samples. These results should be used in combination with all available data from the site, by competent Geotechnical Engineers, to derive design parameters, with the knowledge of their limitation.

We trust that the tests results provided in this factual report meets your requirements, but should you have any queries then please do not hesitate to contact us.

Yours sincerely

GTI Perth Pty Ltd



AS 1289 6.6.1 (1998), “Soil Strength and Consolidation Tests – Determination of the One-Dimensional Consolidation Properties of a Soil - Standard Method”.

GTI-ADT-P06. “*Determination of Shear Strength - Static Simple Shear Test*”.

Joer, H.A., Erbrich, C.T. and Sharma, S.S. (2010). “*A New Interpretation of the Simple Shear Test*”, 2nd International Symposium Frontiers in Offshore Geotechnics, ISFPG-2010, Perth Australia, pp 353-358.

Table : Static Simple Shear Test

Client:	Evolution Mining
Client Reference:	PO208614 & PO208893
Project:	Mungari Gold Operations

Table : Static Simple Shear Tests Summary Results

Location	Sample No.	Test Name	Depth		ρ	w	ρ_d	Consolidation			Shear in				
											Static Loadin				
			From	To				B value	σ_v	σ_h	Loadin Rates	τ_{ma}	γ_{ma}	τ_{fail}	σ_n
			m	m	/cm		/cm		kPa	kPa	mm/min	kPa		kPa	kPa
North Wall	KP-EVO-15	21-015-SS-01-S	-	-	1.76	18.3	1.49	0.93	400	280	0.1	149.9	16.1	158.9	236.7
North Wall	KP-EVO-15	21-015-SS-02-S	-	-	1.76	17.4	1.50	0.92	200	140	0.1	101.9	15.3	113.2	134.4
North Wall	KP-EVO-20	21-015-SS-03-S	-	-	1.54	9.8	1.41	0.94	600	420	0.1	176.9	32.9	190.1	347.0
North Wall	KP-EVO-20	21-015-SS-04-S	-	-	1.61	9.9	1.46	0.94	300	210	0.1	94.6	31.8	102.7	180.8
South Wall	KP-EVO-29	21-016-SS-01-S	-	-	2.02	11.4	1.81	0.91	400	280	0.1	161.4	33.5	179.9	288.2
South Wall	KP-EVO-29	21-016-SS-02-S	-	-	1.96	12.3	1.74	0.91	200	140	0.1	78.0	31.6	86.0	126.4
South Wall	KP-EVO-30	21-016-SS-03-S	-	-	2.01	16.6	1.72	0.94	600	420	0.1	244.0	31.7	253.4	434.8
South Wall	KP-EVO-30	21-016-SS-04-S	-	-	1.98	16.6	1.70	0.94	300	210	0.1	140.5	31.1	151.2	197.9

Figures

Client:	Evolution Mining
Client Reference:	PO208614 & PO208893
Project:	Mungari Gold Operations

Figure : Dynamic Simple Shear Test Setup

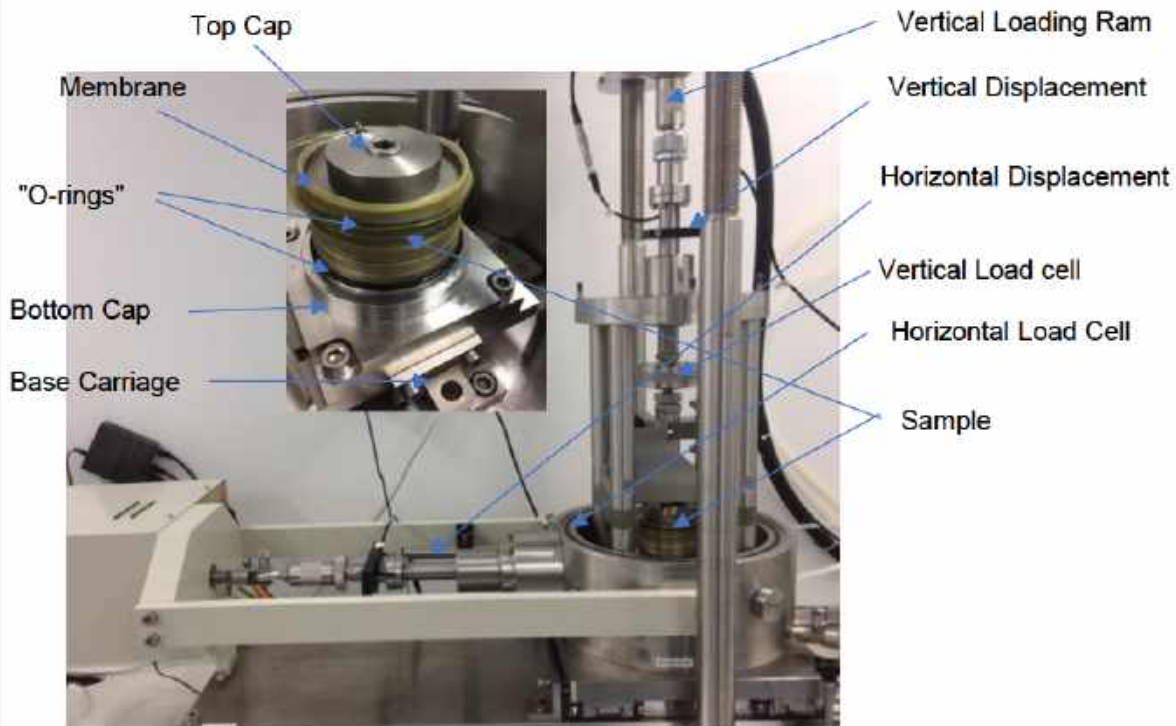
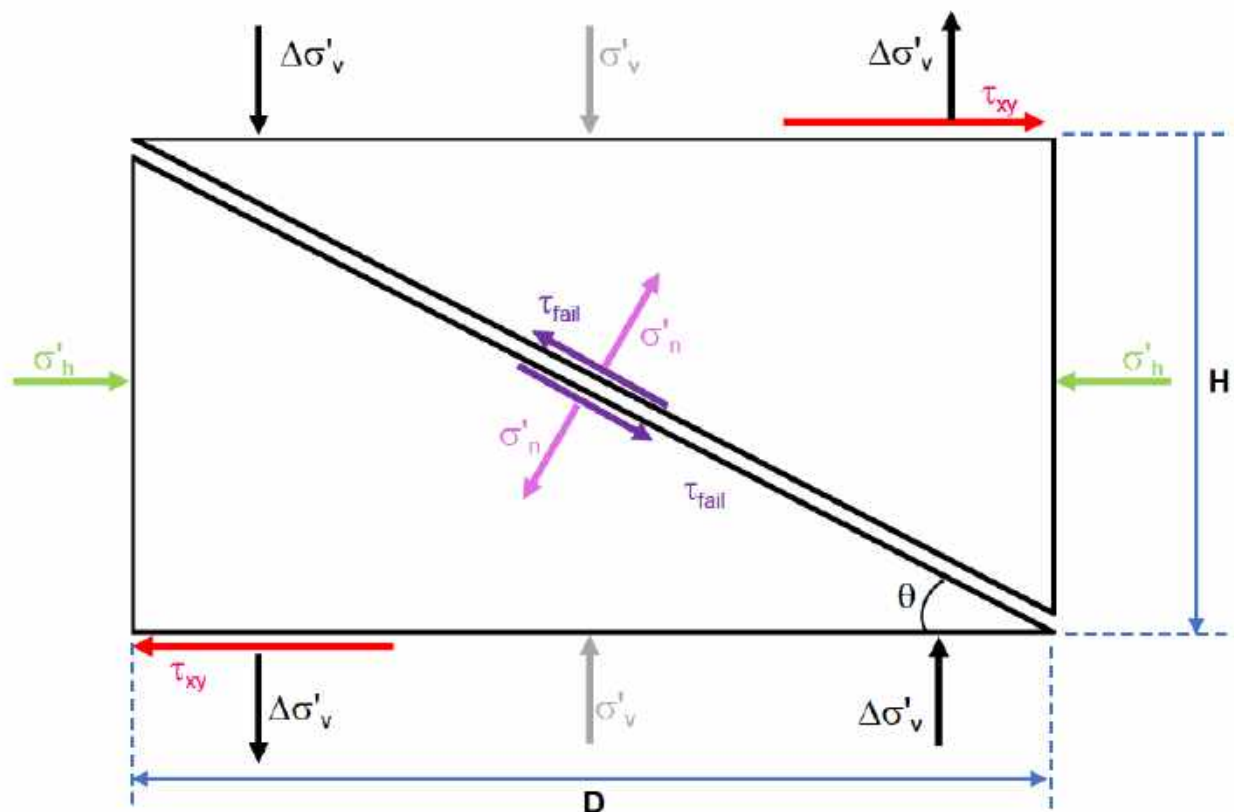


Figure : Simple Shear Tests Alternative Interpretation Joer et al.



Appendix A: Consolidation

GTI Perth Reference:	C27-P01-T01	Test Name:	21-015-OED-01
GTI Perth Job No.:	21-015	Borehole:	-
Client:	Evolution Mining	Sample No.:	KP-EVO-15
Client Reference:	PO208614	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	North Wall	Test Condition:	Inundated at stage 1

Sample Details			
Diameter mm :	60.0	Initial Moisture Content :	18.4*
Initial Height mm :	19.2	Initial Dry Density /cm :	1.42
Final Height mm :	17.2	Initial Degree of Saturation :	52.8
		Final Moisture Content :	25.8
		Final Dry Density /cm :	1.57
		Final Degree of Saturation :	93.9

Notes: *Moisture content from trimmings, may not be representative of the whole sample

Tested :	NC/FL	Checked :	FL
Date:	28/01/2021	Date:	9/02/2021

Stage		Vertical Stress	Void ratio	Coefficient of		
				Consolidation	Compressibility	Permeability
Type	No.	σ_v kPa	e	c_v m / year	m_v m / kN	k m/sec
Loadin	1	6	0.967	Sample Swelling		
	2	11	0.959	7.1	8.69E-04	1.91E-09
	3	21	0.946	44.7	6.48E-04	9.00E-09
	4	41	0.904	15.3	1.06E-03	5.06E-09
	5	81	0.847	23.6	7.59E-04	5.56E-09
	6	161	0.781	14.7	4.46E-04	2.04E-09
	7	321	0.705	13.4	2.66E-04	1.10E-09
Unloadin	8	161	0.707	-	5.93E-06	-
	9	41	0.722	-	7.72E-05	-
	10	6	0.749	-	4.43E-04	-
Reloadin	11	41	0.738	-	1.84E-04	-
	12	161	0.714	-	1.15E-04	-
	13	321	0.694	-	7.31E-05	-
Loadin	14	641	0.635	41.3	1.09E-04	1.39E-09
	15	1281	0.595	5.8	3.83E-05	6.87E-11
Unloadin	16	321	0.596	-	6.14E-07	-
	17	41	0.627	-	7.03E-05	-
	18	6	0.656	-	5.07E-04	-

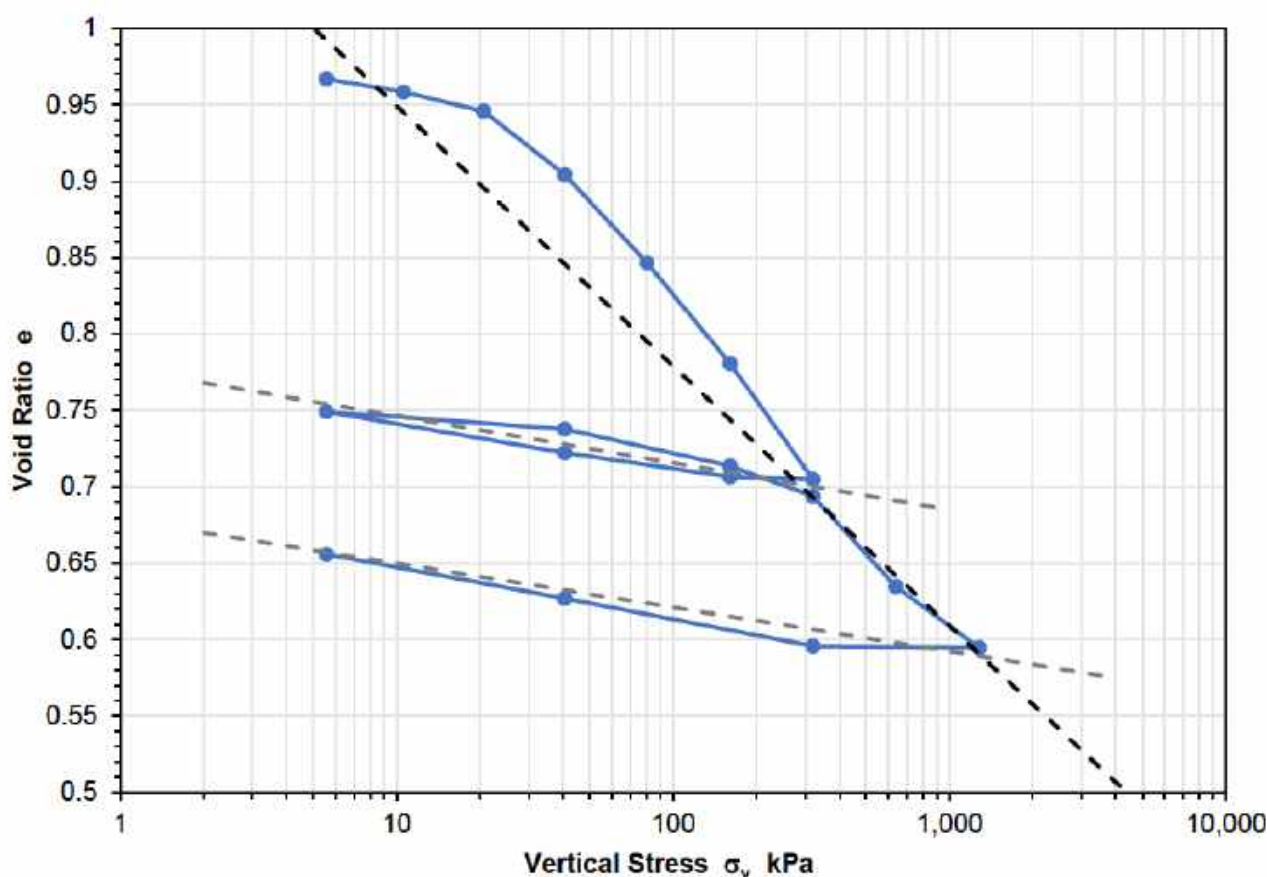
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GTI Perth Jo No.:	21-015	Borehole:	-
Client:	Evolution Mining	Sample No.:	KP-EVO-15
Client Reference:	PO208614	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	North Wall	Test Condition:	Inundated at stage 1

Sample Details

Diameter mm :	60.0	Initial Moisture Content :	18.4*	Final Moisture Content :	25.8
Initial Height mm :	19.2	Initial Dry Density /cm :	1.42	Final Dry Density /cm :	1.57
Final Height mm :	17.2	Initial Degree of Saturation :	52.8	Final Degree of Saturation :	93.9

Notes: *Moisture content from trimmings, may not be representative of the whole sample

Tested :	NC/FL	Checked :	FL
Date:	28/01/2021	Date:	9/02/2021



Interpreted Parameters			
Compression index C_c	0.170		
Swelling index C_{s-int}	0.031	at intermediate unload-reloading stress	
Swelling index C_{s-Max}	0.029	at final loading stage unload-reloading stress	

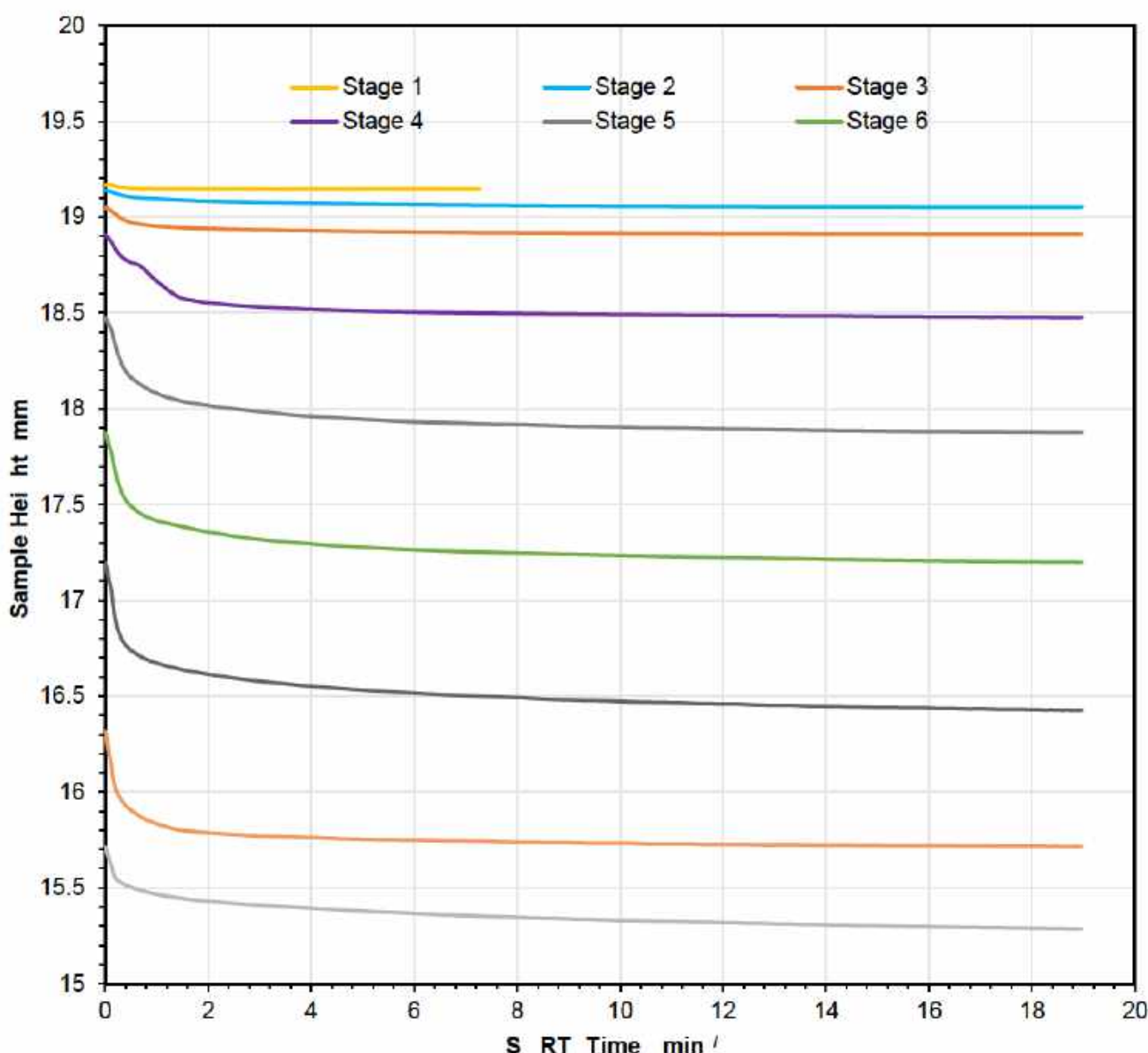
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GTI Perth Jo No.:	21-015	Borehole:	-
Client:	Evolution Mining	Sample No.:	KP-EVO-15
Client Reference:	PO208614	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	North Wall	Test Condition:	Inundated at stage 1

Sample Details

Diameter mm :	60.0	Initial Moisture Content :	18.4*	Final Moisture Content :	25.8
Initial Height mm :	19.2	Initial Dry Density /cm :	1.42	Final Dry Density /cm :	1.57
Final Height mm :	17.2	Initial Degree of Saturation :	52.8	Final Degree of Saturation :	93.9

Notes: *Moisture content from trimmings, may not be representative of the whole sample

Tested :	NC/FL	Checked :	FL
Date:	28/01/2021	Date:	9/02/2021



GTI Perth Reference:	C27-P01-T01	Test Name:	21-015-OED-02
GTI Perth Jo No.:	21-015	Borehole:	-
Client:	Evolution Mining	Sample No.:	KP-EVO-20
Client Reference:	PO208614	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	North Wall	Test Condition:	Inundated at stage 1

Sample Details			
Diameter mm :	60.0	Initial Moisture Content :	11.7* Final Moisture Content : 18.1
Initial Height mm :	19.1	Initial Dry Density /cm :	1.43 Final Dry Density /cm : 1.81
Final Height mm :	15.3	Initial Degree of Saturation :	36.0 Final Degree of Saturation : 96.8

Notes: *Moisture content from trimmings, may not be representative of the whole sample

Tested :	NC/FL	Checked :	FL
Date:	28/01/2021	Date:	9/02/2021

Stage		Vertical Stress	Void ratio	Coefficient of		
				Consolidation	Compressibility	Permeability
Type	No.	σ_v kPa	e	c_v m / year	m_v m / kN	k m/sec
Loadin	1	6	0.871	13.9	5.00E-03	2.16E-08
	2	11	0.841	6.2	3.18E-03	6.12E-09
	3	21	0.776	24.9	3.52E-03	2.72E-08
	4	41	0.702	57.3	2.09E-03	3.73E-08
	5	81	0.621	76.6	1.18E-03	2.82E-08
	6	201	0.522	151.6	5.08E-04	2.39E-08
	7	401	0.464	120.8	1.93E-04	7.23E-09
Unloadin	8	201	0.465	-	4.06E-06	-
	9	51	0.471	-	2.66E-05	-
	10	6	0.487	-	2.49E-04	-
Reloadin	11	51	0.479	-	1.16E-04	-
	12	201	0.468	-	5.23E-05	-
	13	401	0.455	-	4.25E-05	-
Loadin	14	801	0.407	130.6	8.36E-05	3.39E-09
Unloadin	15	201	0.412	-	6.46E-06	-
	16	51	0.421	-	4.21E-05	-
	17	6	0.438	-	2.71E-04	-

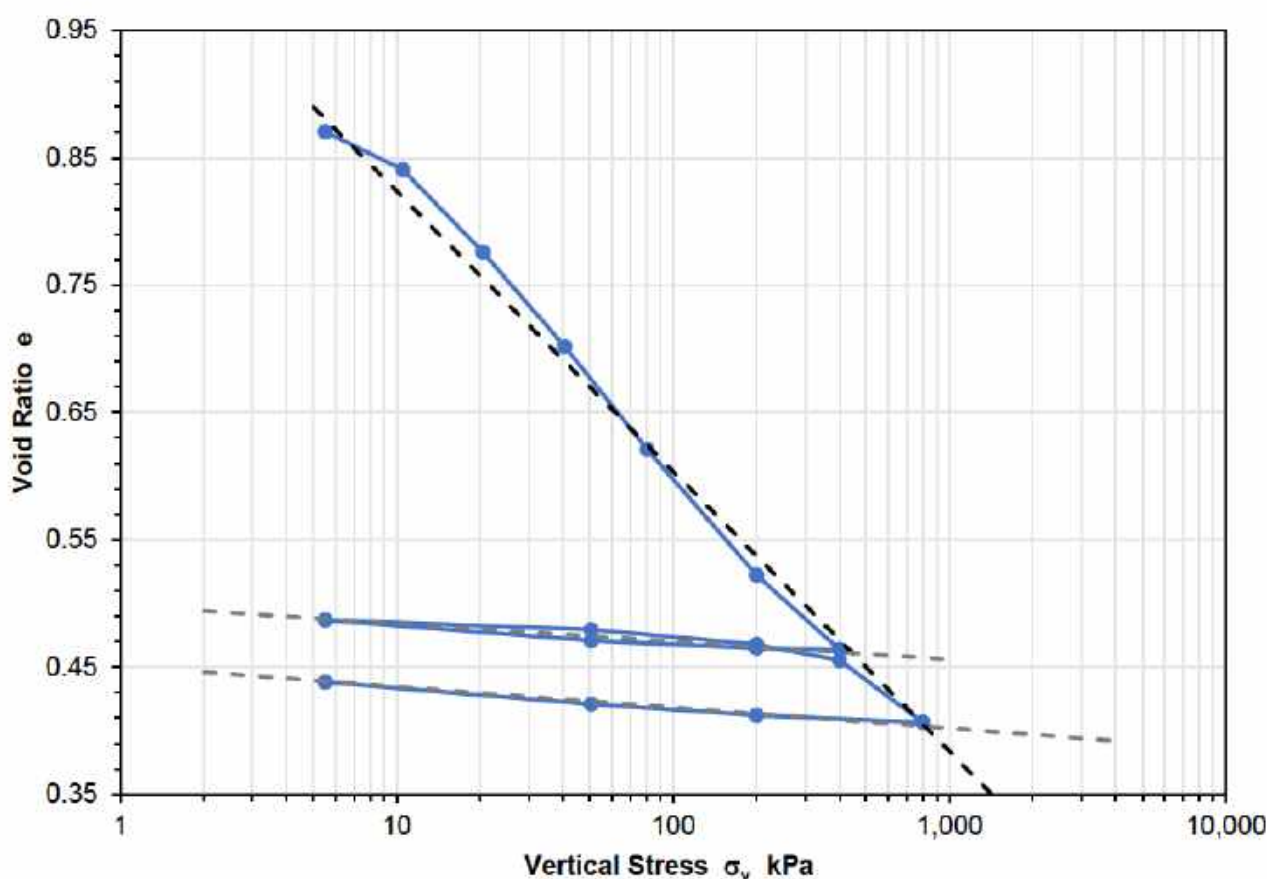
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GTI Perth Jo No.:	21-015	Borehole:	-
Client:	Evolution Mining	Sample No.:	KP-EVO-20
Client Reference:	PO208614	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	North Wall	Test Condition:	Inundated at stage 1

Sample Details

Diameter mm :	60.0	Initial Moisture Content :	11.7*	Final Moisture Content :	18.1
Initial Height mm :	19.1	Initial Dry Density /cm³ :	1.43	Final Dry Density /cm³ :	1.81
Final Height mm :	15.3	Initial Degree of Saturation :	36.0	Final Degree of Saturation :	96.8

Notes: *Moisture content from trimmings, may not be representative of the whole sample

Tested :	NC/FL	Checked :	FL
Date:	28/01/2021	Date:	9/02/2021



Interpreted Parameters			
Compression index C_c	0.220		
Swelling index C_{s-int}	0.014	at intermediate unload-reloading stress	
Swelling index C_{s-Max}	0.016	at final loading stage unload-reloading stress	

Jo No.:	Evolution Mining	Mungari Gold Operations
	Consolidation Oedometer	
	Figure A	Page

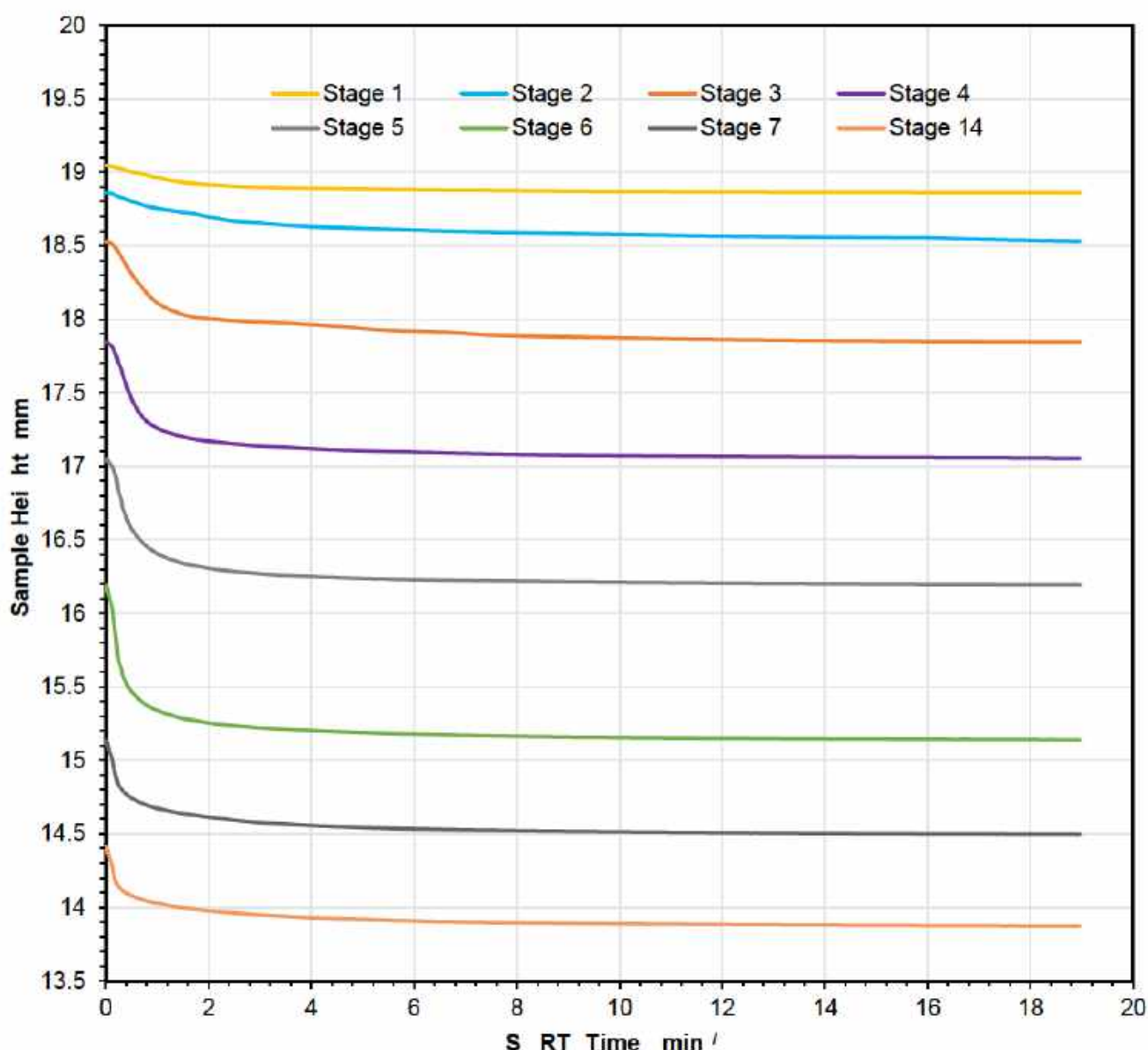
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GTI Perth Jo No.:	21-015	Borehole:	-
Client:	Evolution Mining	Sample No.:	KP-EVO-20
Client Reference:	PO208614	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	North Wall	Test Condition:	Inundated at stage 1

Sample Details

Diameter mm :	60.0	Initial Moisture Content :	11.7*	Final Moisture Content :	18.1
Initial Height mm :	19.1	Initial Dry Density /cm :	1.43	Final Dry Density /cm :	1.81
Final Height mm :	15.3	Initial Degree of Saturation :	36.0	Final Degree of Saturation :	96.8

Notes: *Moisture content from trimmings, may not be representative of the whole sample

Tested :	NC/FL	Checked :	FL
Date:	28/01/2021	Date:	9/02/2021



GTI Perth Reference:	C27-P01-T02	Test Name:	21-016-OED-01
GTI Perth Jo No.:	21-016	Borehole:	-
Client:	Evolution Mining	Sample No.:	KP-EVO-29
Client Reference:	PO208893	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	South Wall	Test Condition:	Inundated at stage 1

Sample Details			
Diameter mm :	60.0	Initial Moisture Content :	11.6* Final Moisture Content : 17.2
Initial Height mm :	19.2	Initial Dry Density /cm :	1.81 Final Dry Density /cm : 1.90
Final Height mm :	18.0	Initial Degree of Saturation :	58.9 Final Degree of Saturation : 105.3

Notes: *Moisture content from trimmings, may not be representative of the whole sample

Tested :	NC	Checked :	BB
Date:	8/02/2021	Date:	12/02/2021

Stage		Vertical Stress	Void ratio	Coefficient of		
				Consolidation	Compressibility	Permeability
Type	No.	σ_v kPa	e	c_v m / year	m_v m / kN	k m/sec
Loadin	1	6	#N/A	Sample Swelling		
	2	11	#N/A			
	3	21	#N/A			
	4	41	0.525	30.5	3.50E-04	3.31E-09
	5	81	0.507	51.8	2.81E-04	4.52E-09
	6	161	0.480	62.7	2.32E-04	4.51E-09
	7	321	0.447	77.2	1.39E-04	3.32E-09
Unloadin	8	161	0.450	-	1.60E-05	-
	9	41	0.463	-	6.93E-05	-
	10	6	0.485	-	4.36E-04	-
Reloadin	11	41	0.474	-	2.00E-04	-
	12	161	0.456	-	1.06E-04	-
	13	321	0.441	-	6.28E-05	-
Loadin	14	641	0.409	41.1	6.84E-05	8.72E-10
	15	1281	0.375	56.8	3.87E-05	6.83E-10
Unloadin	16	321	0.380	-	4.17E-06	-
	17	41	0.403	-	6.00E-05	-
	18	6	0.421	-	3.69E-04	-

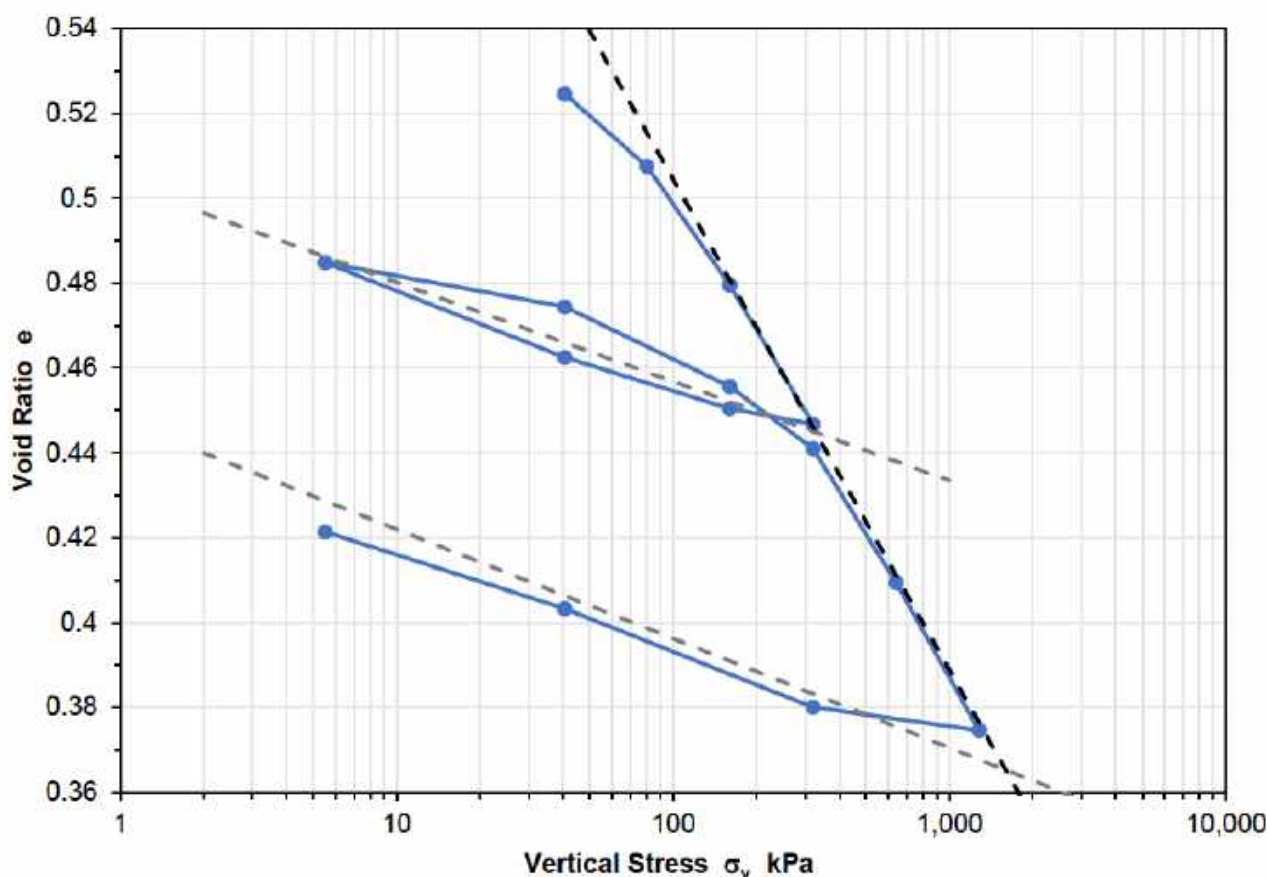
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GTI Perth Jo No.:	21-016	Borehole:	-
Client:	Evolution Mining	Sample No.:	KP-EVO-29
Client Reference:	PO208893	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	South Wall	Test Condition:	Inundated at stage 1

Sample Details

Diameter mm :	60.0	Initial Moisture Content :	11.6*	Final Moisture Content :	17.2
Initial Height mm :	19.2	Initial Dry Density /cm :	1.81	Final Dry Density /cm :	1.90
Final Height mm :	18.0	Initial Degree of Saturation :	58.9	Final Degree of Saturation :	105.3

Notes: *Moisture content from trimmings, may not be representative of the whole sample

Tested :	NC	Checked :	BB
Date:	8/02/2021	Date:	12/02/2021



Interpreted Parameters			
Compression index C_c	0.116		
Swelling index C_{s-int}	0.023	at intermediate unload-reloading stress	
Swelling index C_{s-Max}	0.026	at final loading stage unload-reloading stress	

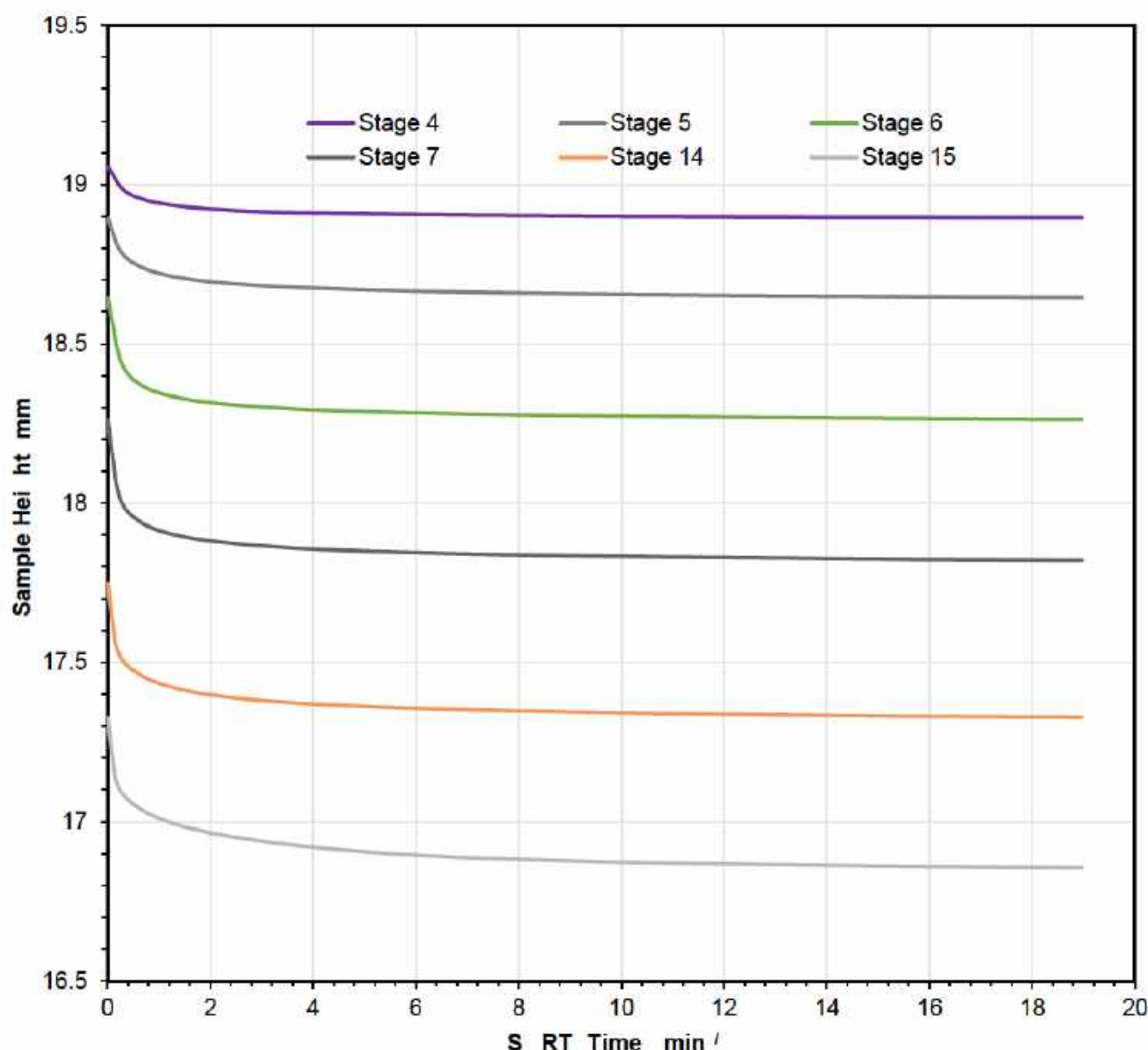
GTI Perth Reference:	C27-P01-T02	Test Name:	21-016-OED-01
GTI Perth Jo No.:	21-016	Borehole:	-
Client:	Evolution Mining	Sample No.:	KP-EVO-29
Client Reference:	PO208893	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	South Wall	Test Condition:	Inundated at stage 1

Sample Details

Diameter mm :	60.0	Initial Moisture Content :	11.6*	Final Moisture Content :	17.2
Initial Height mm :	19.2	Initial Dry Density /cm :	1.81	Final Dry Density /cm :	1.90
Final Height mm :	18.0	Initial Degree of Saturation :	58.9	Final Degree of Saturation :	105.3

Notes: *Moisture content from trimmings, may not be representative of the whole sample

Tested :	NC	Checked :	BB
Date:	8/02/2021	Date:	12/02/2021



GTI Perth Reference:	C27-P01-T02	Test Name:	21-016-OED-02
GTI Perth Jo No.:	21-016	Borehole:	-
Client:	Evolution Mining	Sample No.:	KP-EVO-30
Client Reference:	PO208893	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	South Wall	Test Condition:	Inundated at stage 1

Sample Details			
Diameter mm :	60.0	Initial Moisture Content :	17.0* Final Moisture Content : 20.3
Initial Height mm :	18.9	Initial Dry Density /cm :	1.75 Final Dry Density /cm : 1.78
Final Height mm :	18.5	Initial Degree of Saturation :	80.0 Final Degree of Saturation : 101.8
Notes: *Moisture content from trimmings, may not be representative of the whole sample			

Tested :	NC	Checked :	BB
Date:	8/02/2021	Date:	12/02/2021

Stage		Vertical Stress	Void ratio	Coefficient of		
				Consolidation	Compressibility	Permeability
Type	No.	σ_v kPa	e	c_v m / year	m_v m / kN	k m/sec
Loadin	1	6	#N/A	Sample Swelling		
	2	11	#N/A			
	3	21	0.588			
	4	41	0.581	24.6	2.22E-04	1.70E-09
	5	81	0.565	36.1	2.44E-04	2.74E-09
	6	201	0.532	62.8	1.76E-04	3.44E-09
	7	401	0.503	92.8	9.50E-05	2.74E-09
Unloadin	8	201	0.506	-	8.93E-06	-
	9	51	0.518	-	5.16E-05	-
	10	6	0.532	-	2.06E-04	-
Reloadin	11	51	0.529	-	3.89E-05	-
	12	201	0.513	-	6.98E-05	-
	13	401	0.499	-	4.60E-05	-
Loadin	14	801	0.466	33.9	5.50E-05	5.78E-10
Unloadin	15	201	0.476	-	1.13E-05	-
	16	51	0.490	-	6.14E-05	-
	17	6	0.502	-	1.86E-04	-

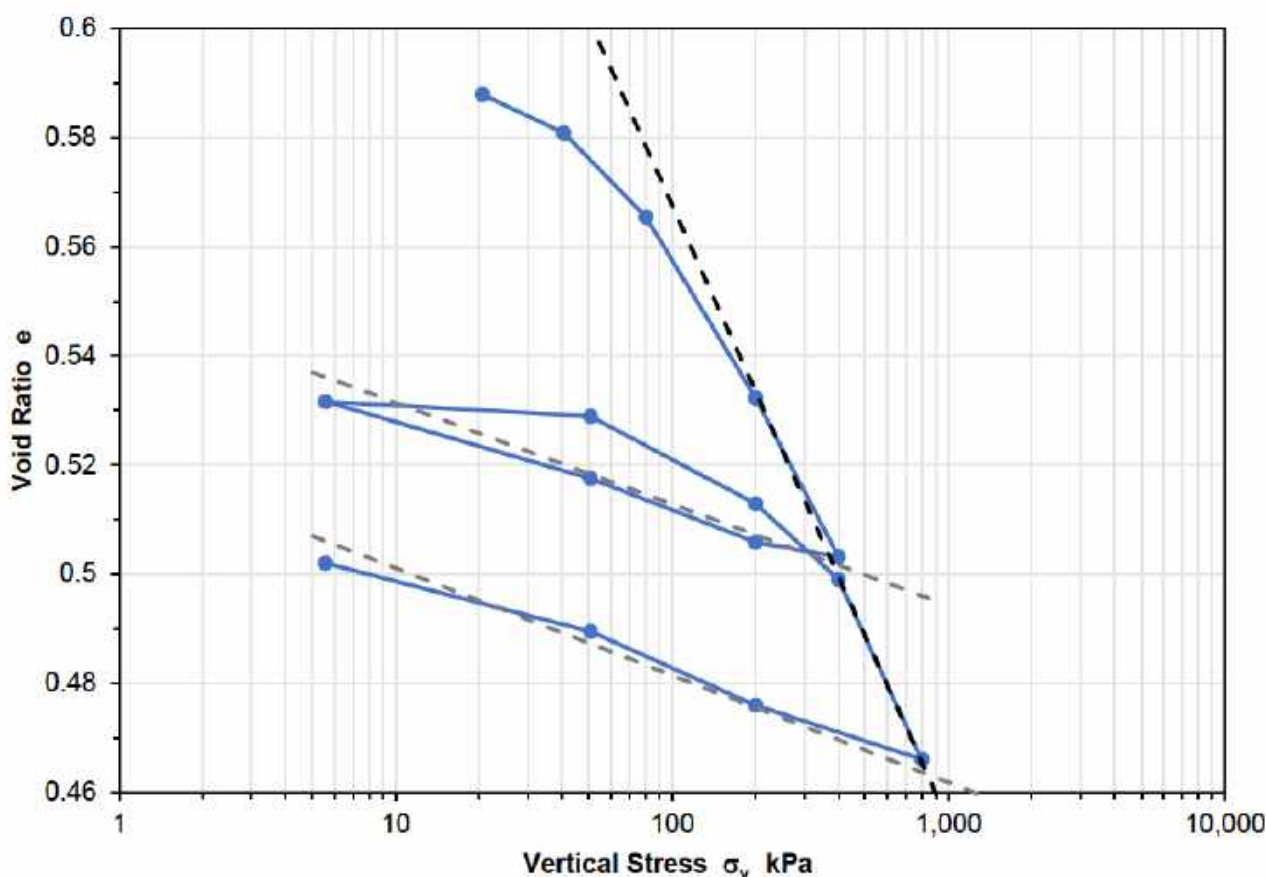
GTI Perth Reference:	C27-P01-T02	Test Name:	21-016-OED-02
GTI Perth Jo No.:	21-016	Borehole:	-
Client:	Evolution Mining	Sample No.:	KP-EVO-30
Client Reference:	PO208893	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	South Wall	Test Condition:	Inundated at stage 1

Sample Details

Diameter mm :	60.0	Initial Moisture Content :	17.0*	Final Moisture Content :	20.3
Initial Height mm :	18.9	Initial Dry Density /cm :	1.75	Final Dry Density /cm :	1.78
Final Height mm :	18.5	Initial Degree of Saturation :	80.0	Final Degree of Saturation :	101.8

Notes: *Moisture content from trimmings, may not be representative of the whole sample

Tested :	NC	Checked :	BB
Date:	8/02/2021	Date:	12/02/2021



Interpreted Parameters			
Compression index C_c	0.113		
Swell index C_{s-int}	0.019	at intermediate unload-reloading stress	
Swell index C_{s-Max}	0.020	at final loading stage unload-reloading stress	

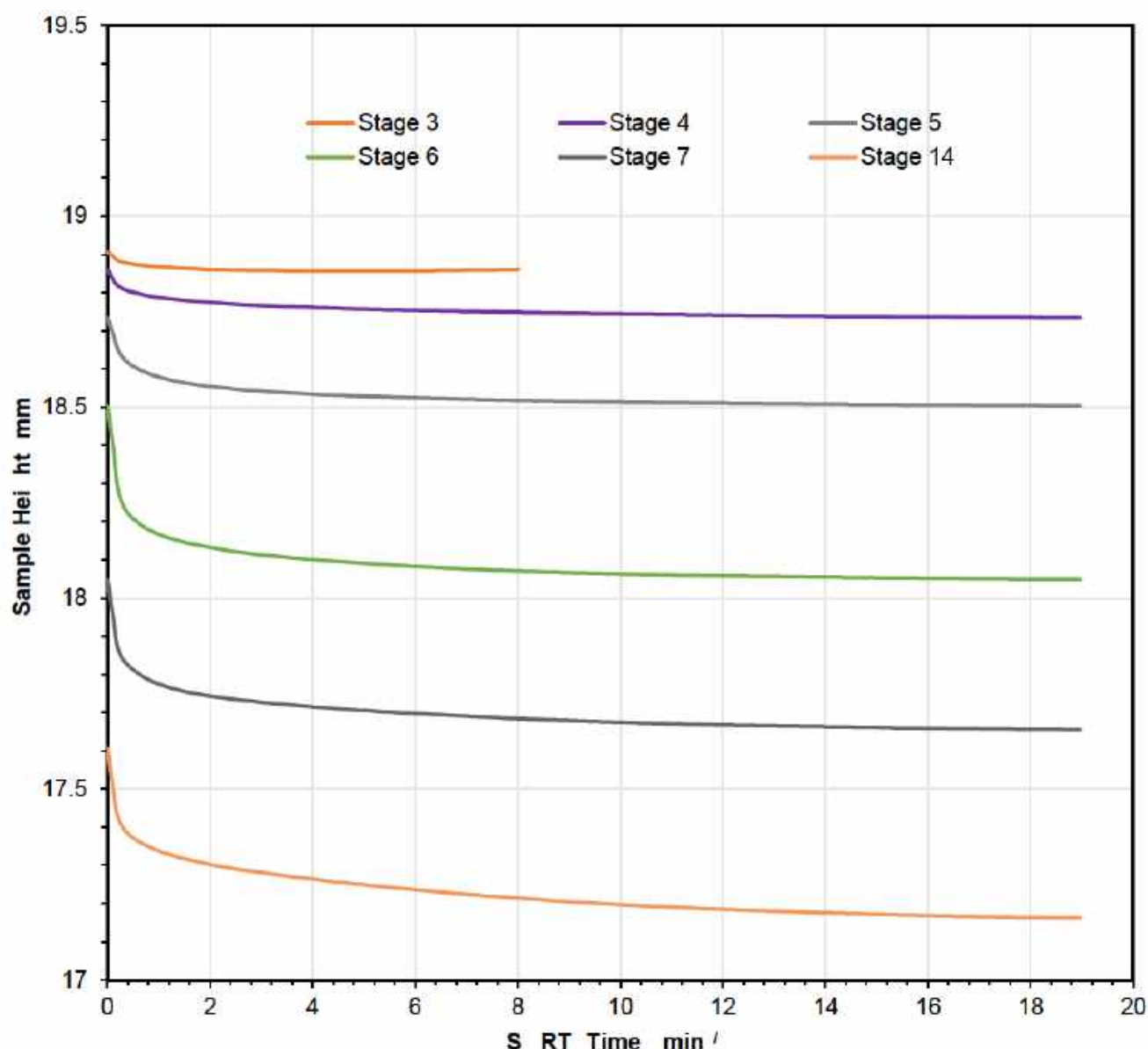
GTI Perth Reference:	C27-P01-T02	Test Name:	21-016-OED-02
GTI Perth Jo No.:	21-016	Borehole:	-
Client:	Evolution Mining	Sample No.:	KP-EVO-30
Client Reference:	PO208893	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	South Wall	Test Condition:	Inundated at stage 1

Sample Details

Diameter mm :	60.0	Initial Moisture Content :	17.0*	Final Moisture Content :	20.3
Initial Height mm :	18.9	Initial Dry Density /cm :	1.75	Final Dry Density /cm :	1.78
Final Height mm :	18.5	Initial Degree of Saturation :	80.0	Final Degree of Saturation :	101.8

Notes: *Moisture content from trimmings, may not be representative of the whole sample

Tested :	NC	Checked :	BB
Date:	8/02/2021	Date:	12/02/2021



Appendix B: Static Simple Shear

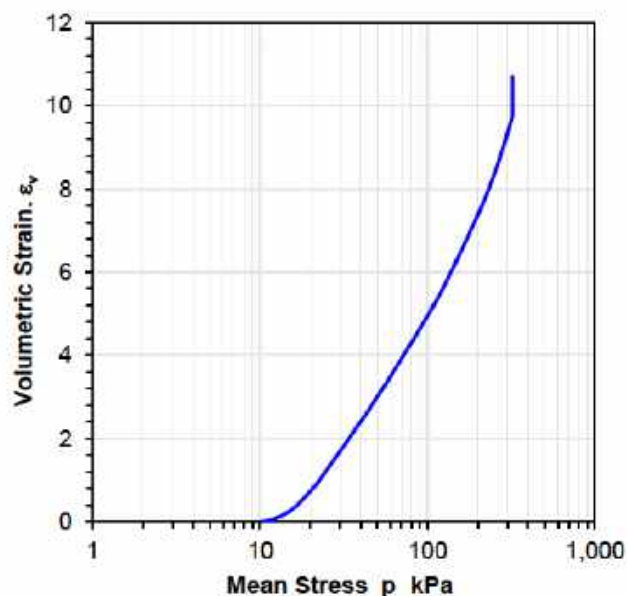
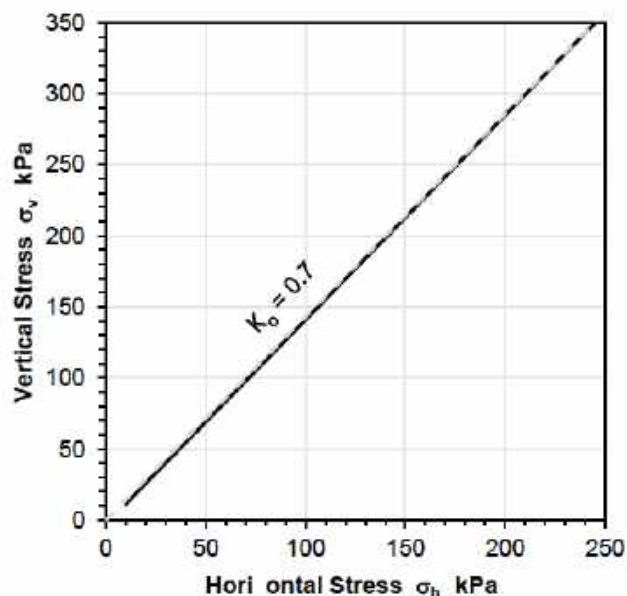
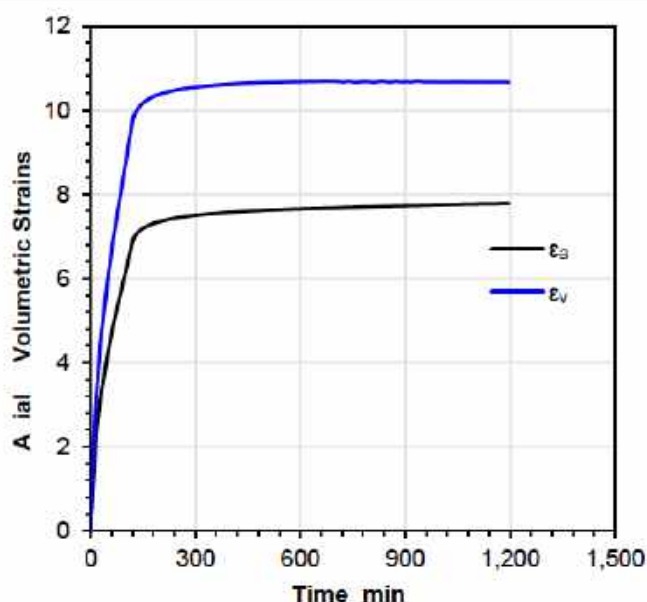
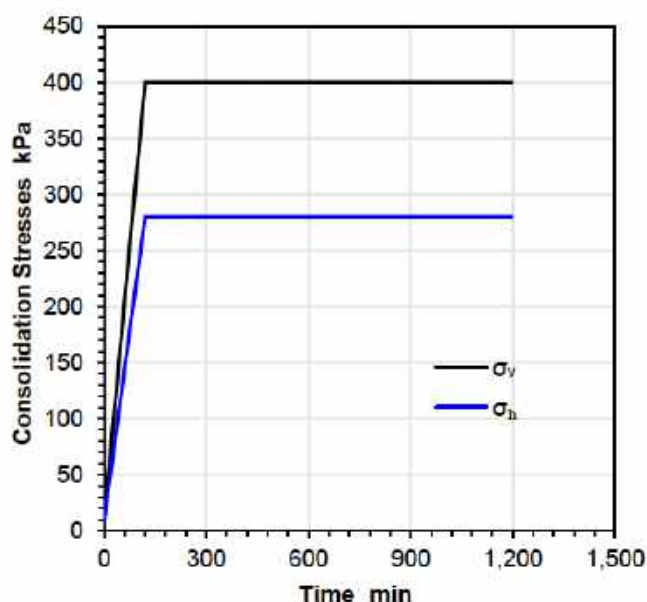
GTI Perth Reference:	C27-P01-T01	Test Name:	21-015-SS-01-S
GTI Perth Jo No.:	21-015	Borehole:	Block Sample
Client:	Evolution Mining	Sample No.:	KP-EVO-15
Client Reference:	PO208614	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	North Wall	Sample Condition:	Natural Moisture Content

Sample Details

Diameter mm :	60.0	Initial Moisture Content :	18.3*	Notes: *Moisture content from trimmings; may not be representative of the whole sample
Height mm :	30.0	Final Moisture Content :	29.5	
Effective Height mm :	21.0	Initial Dry Density /cm :	1.49	

Tested : HE
Date: 31/01/2021

Checked : BB
Date: 10/02/2021



Jo No.:

Evolution Mining Mungari Gold Operations
CAU Static Simple Shear Consolidation State
Figure B Page

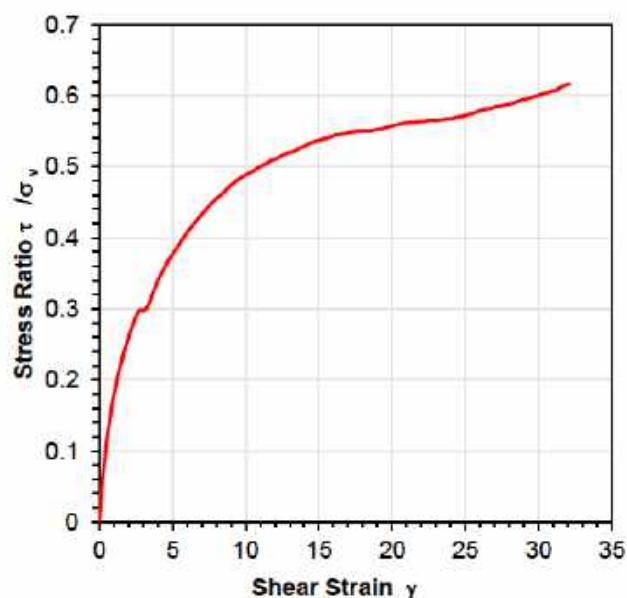
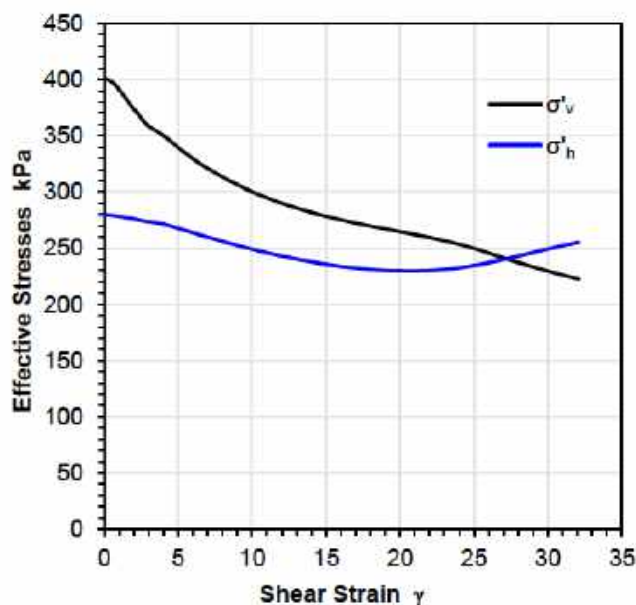
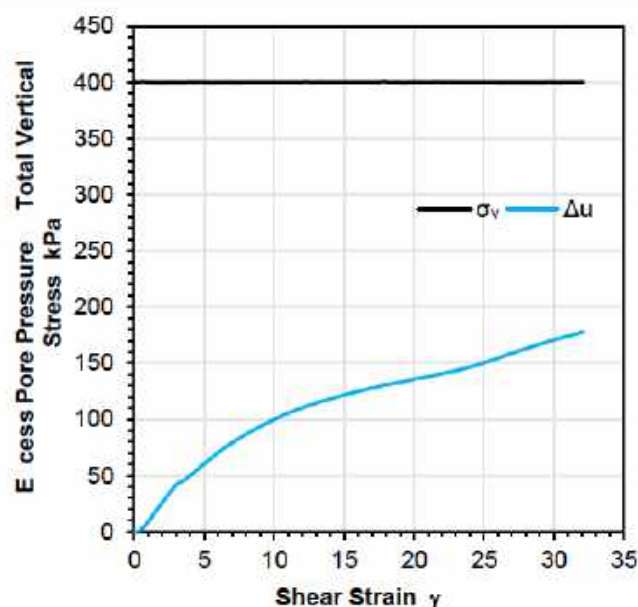
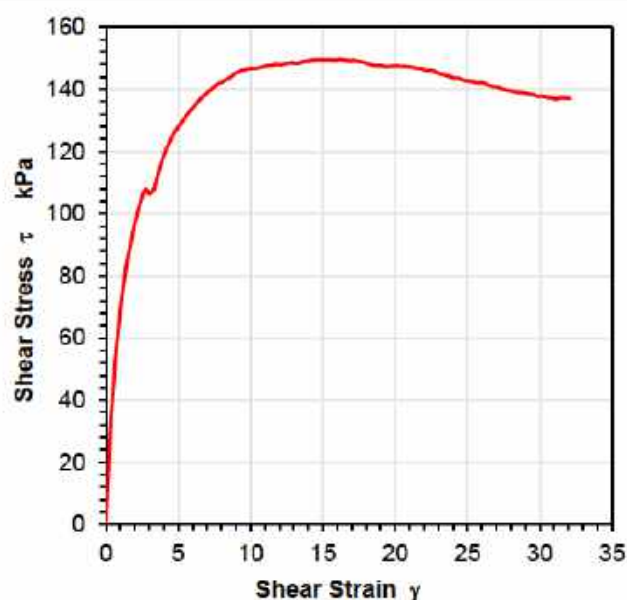
GTI Perth Reference:	C27-P01-T01	Test Name:	21-015-SS-01-S
GTI Perth Jo No.:	21-015	Borehole:	Block Sample
Client:	Evolution Mining	Sample No.:	KP-EVO-15
Client Reference:	PO208614	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	North Wall	Sample Condition:	Natural Moisture Content

Sample Details

Diameter mm :	60.0	Initial Moisture Content :	18.3*	Notes:	*Moisture content from trimmings; may not be representative of the whole sample
Height mm :	30.0	Final Moisture Content :	29.5		
Effective Height mm :	21.0	Initial Dry Density /cm :	1.49		

Tested : HE
Date: 31/01/2021

Checked : BB
Date: 10/02/2021



Jo No.:

Evolution Mining Mungari Gold Operations
CAU Static Simple Shear Shear in State
Figure B Page

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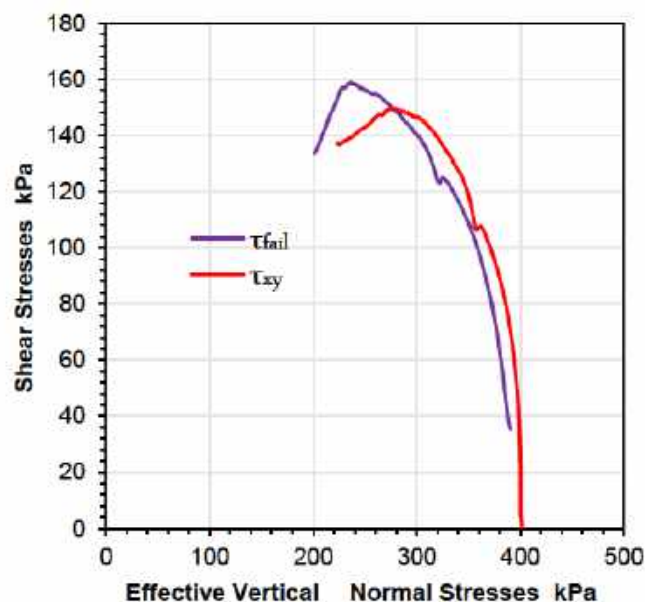
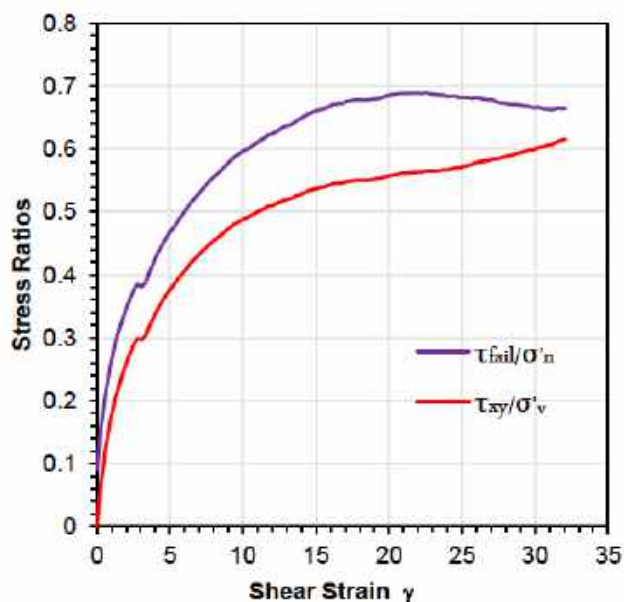
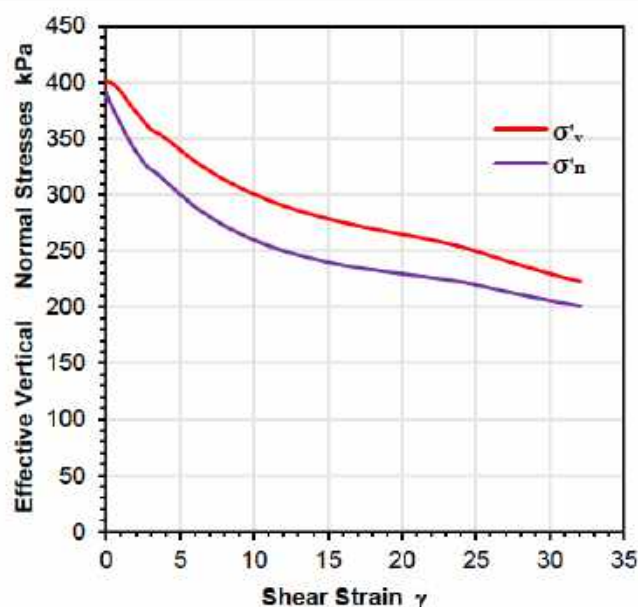
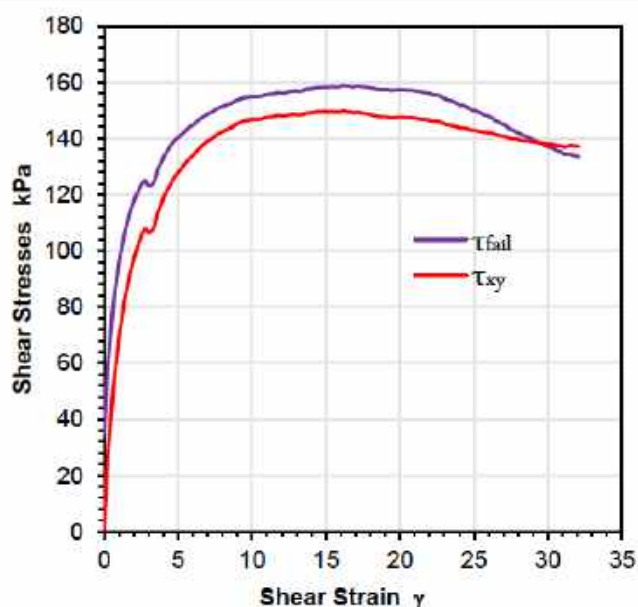
GTI Perth Reference:	C27-P01-T01	Test Name:	21-015-SS-01-S
GTI Perth Jo No.:	21-015	Borehole:	Block Sample
Client:	Evolution Mining	Sample No.:	KP-EVO-15
Client Reference:	PO208614	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	North Wall	Sample Condition:	Natural Moisture Content

Sample Details

Diameter mm :	60.0	Initial Moisture Content :	18.3*	Notes: *Moisture content from trimmings; may not be representative of the whole sample
Height mm :	30.0	Final Moisture Content :	29.5	
Effective Height mm :	21.0	Initial Dry Density /cm :	1.49	

Tested : HE
Date: 31/01/2021

Checked : BB
Date: 10/02/2021



Jo No.:

Evolution Mining Mungari Gold Operations
CAU Static Simple Shear Shear in State
Figure B Page

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GTI Perth Reference:	C27-P01-T01	Test Name:	21-015-SS-01-S
GTI Perth Jo No.:	21-015	Borehole:	Block Sample
Client:	Evolution Mining	Sample No.:	KP-EVO-15
Client Reference:	PO208614	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	North Wall	Sample Condition:	Natural Moisture Content

Sample Details

Diameter mm :	60.0	Initial Moisture Content :	18.3*	Notes: *Moisture content from trimmings; may not be representative of the whole sample
Height mm :	30.0	Final Moisture Content :	29.5	
Effective Height mm :	21.0	Initial Dry Density /cm :	1.49	

Tested :	HE	Checked :	BB
Date:	31/01/2021	Date:	10/02/2021



Jo No.:	Evolution Mining	Mungari Gold Operations
	CAU Static Simple Shear	After Test
	Figure B	Page

T:\C27-P01-T01\21-015\02 Technical\05 Simple Shear\04 Rev 0\21-015-SS-01-S Rev0 .xlsx

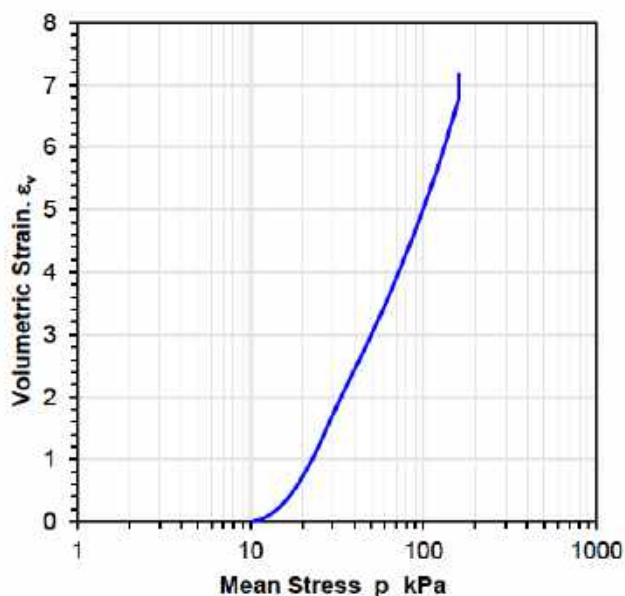
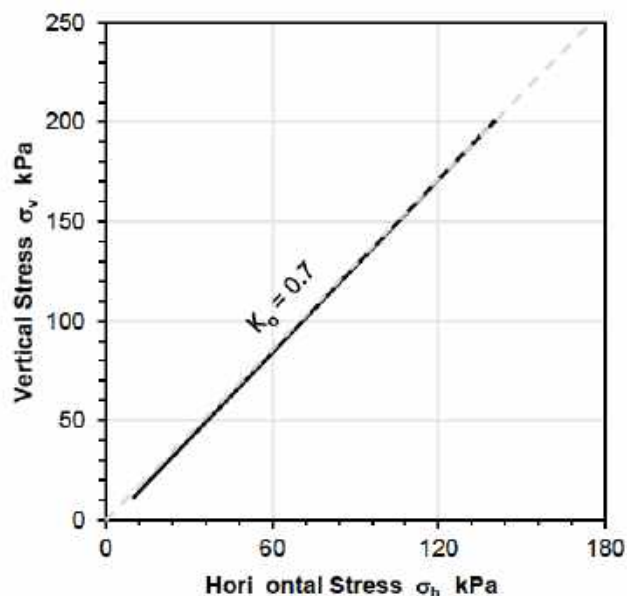
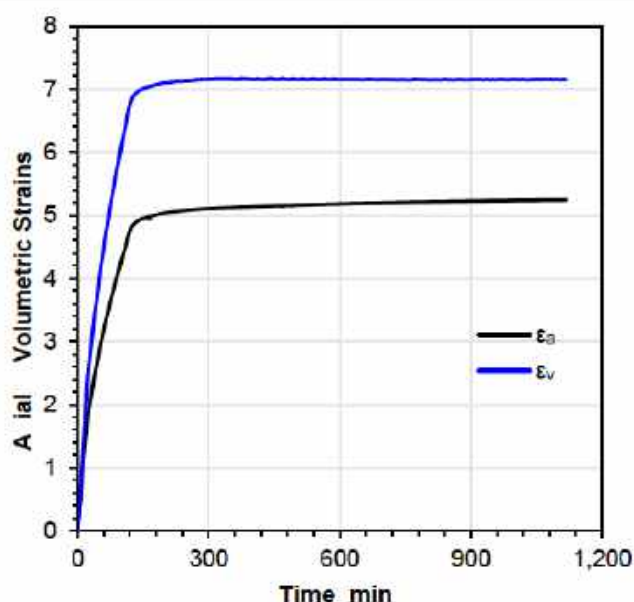
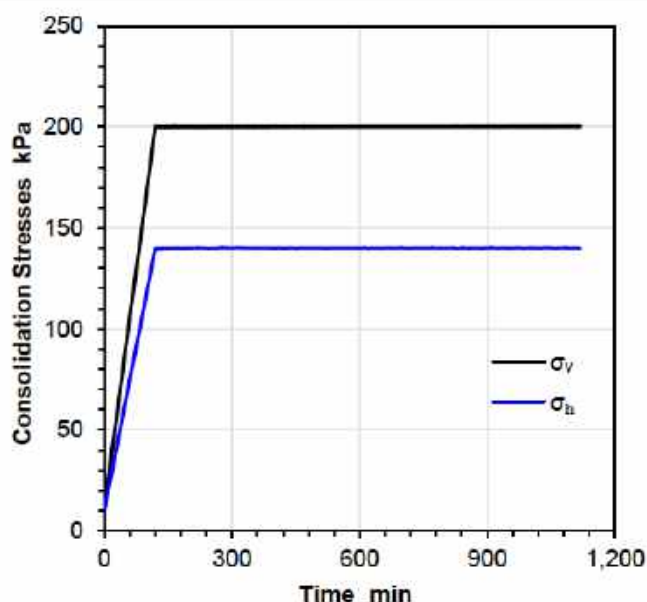
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GTI Perth Jo No.: 21-015	Borehole: Block Sample
Client: Evolution Mining	Sample No.: KP-EVO-15
Client Reference: PO208614	Test Depth: -
Project: Mungari Gold Operations	Sample Status: In-situ
Location: North Wall	Sample Condition: Natural Moisture Content

Sample Details

Diameter mm : 60.0	Initial Moisture Content : 17.4*	Notes: *Moisture content from trimmings; may not be representative of the whole sample
Height mm : 30.0	Final Moisture Content : 29.6	
Effective Height mm : 21.0	Initial Dry Density /cm : 1.50	

Tested : HE
Date: 1/02/2021

Checked : BB
Date: 10/02/2021



Jo No.:

Evolution Mining Mungari Gold Operations
CAU Static Simple Shear Consolidation State
Figure B Page

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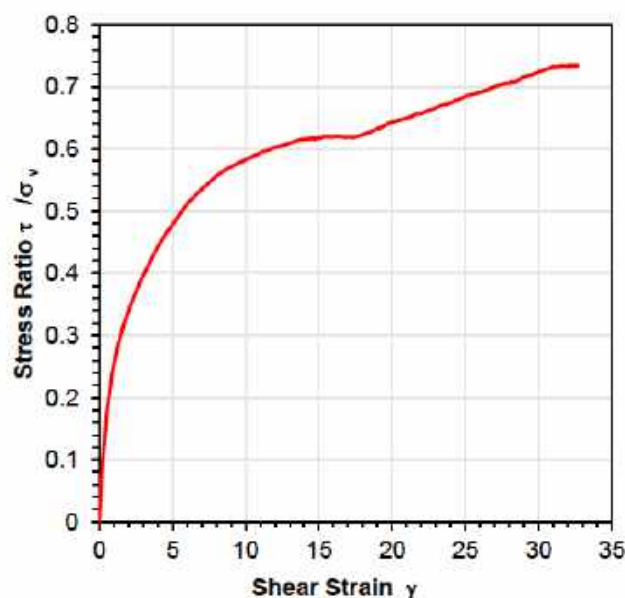
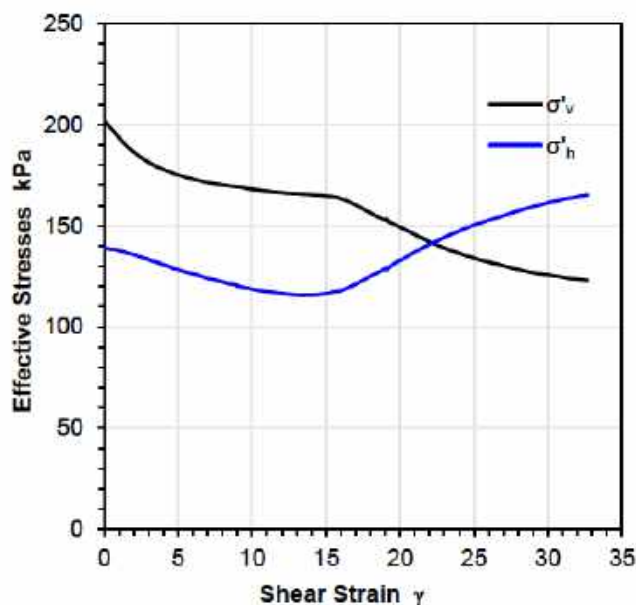
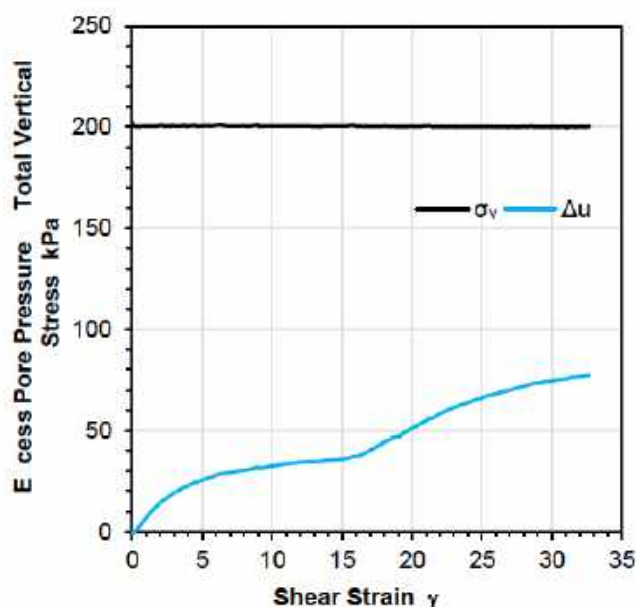
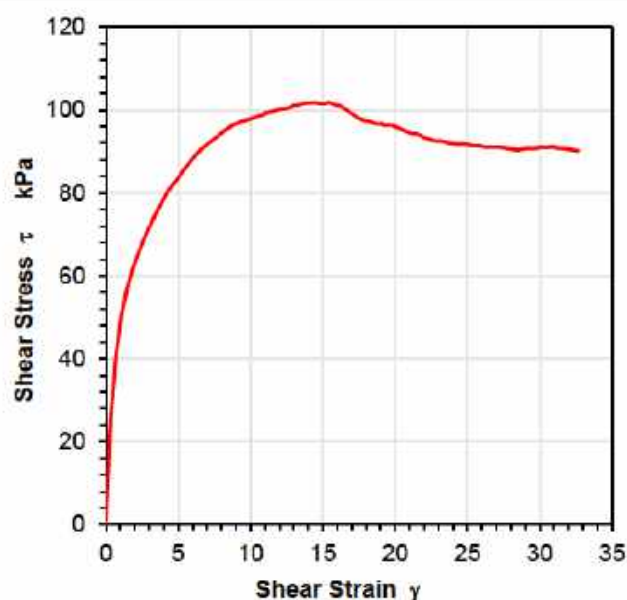
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GTI Perth Jo No.: 21-015	Borehole: Block Sample
Client: Evolution Mining	Sample No.: KP-EVO-15
Client Reference: PO208614	Test Depth: -
Project: Mungari Gold Operations	Sample Status: In-situ
Location: North Wall	Sample Condition: Natural Moisture Content

Sample Details

Diameter mm : 60.0	Initial Moisture Content : 17.4*	Notes: *Moisture content from trimmings; may not be representative of the whole sample
Height mm : 30.0	Final Moisture Content : 29.6	
Effective Height mm : 21.0	Initial Dry Density /cm : 1.50	

Tested : HE
Date: 1/02/2021

Checked : BB
Date: 10/02/2021



Jo No.:

Evolution Mining Mungari Gold Operations
CAU Static Simple Shear Shear in State
Figure B Page

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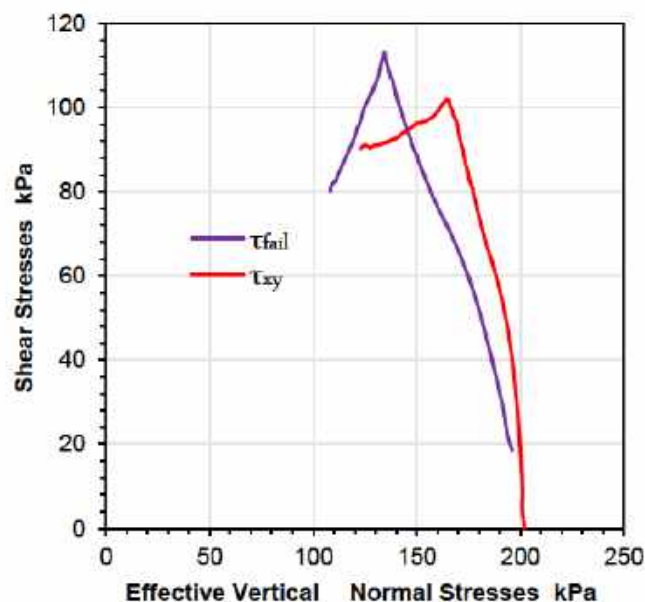
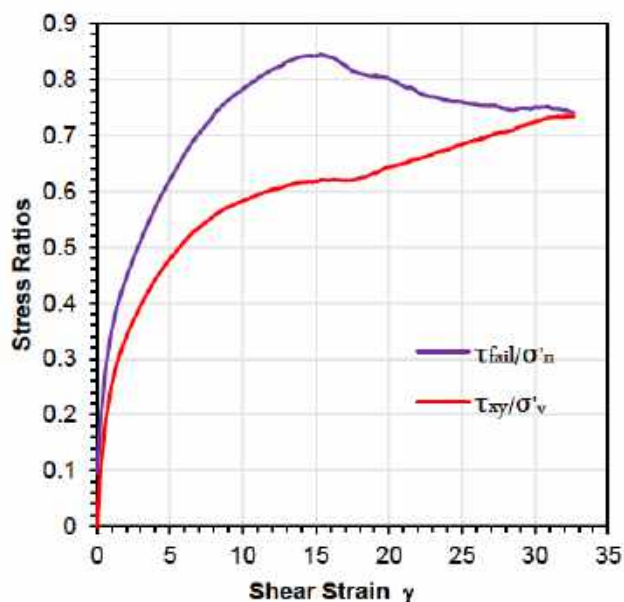
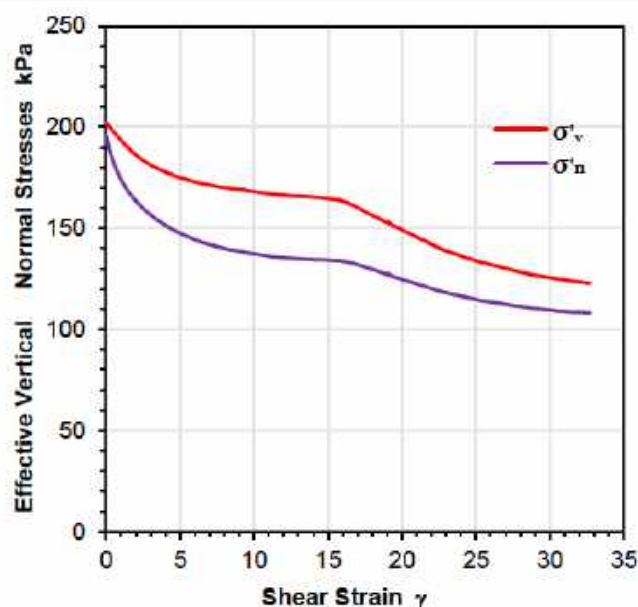
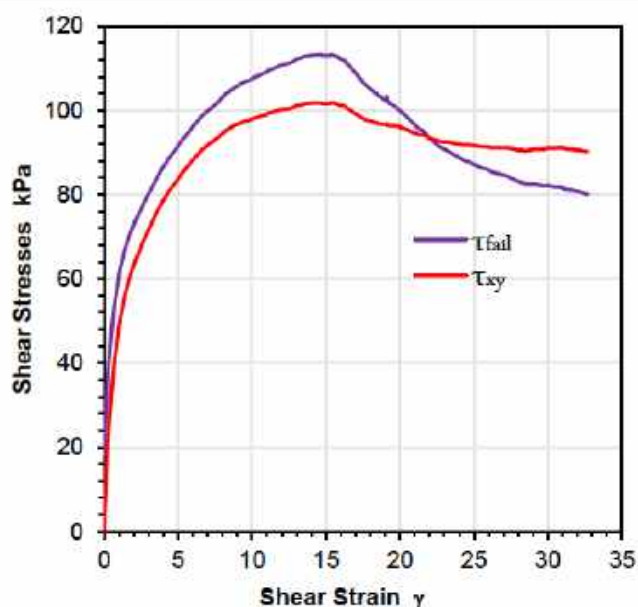
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GTI Perth Jo No.: 21-015	Borehole: Block Sample
Client: Evolution Mining	Sample No.: KP-EVO-15
Client Reference: PO208614	Test Depth: -
Project: Mungari Gold Operations	Sample Status: In-situ
Location: North Wall	Sample Condition: Natural Moisture Content

Sample Details

Diameter mm : 60.0	Initial Moisture Content : 17.4*	Notes: *Moisture content from trimmings; may not be representative of the whole sample
Height mm : 30.0	Final Moisture Content : 29.6	
Effective Height mm : 21.0	Initial Dry Density /cm : 1.50	

Tested : HE
Date: 1/02/2021

Checked : BB
Date: 10/02/2021



Jo No.:

Evolution Mining Mungari Gold Operations
CAU Static Simple Shear Shear in State
Figure B Page

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GTI Perth Reference:	C27-P01-T01	Test Name:	21-015-SS-02-S
GTI Perth Jo No.:	21-015	Borehole:	Block Sample
Client:	Evolution Mining	Sample No.:	KP-EVO-15
Client Reference:	PO208614	Test Depth:	-
Project:	Mungari Gold Operations	Sample Status:	In-situ
Location:	North Wall	Sample Condition:	Natural Moisture Content

Sample Details

Diameter mm :	60.0	Initial Moisture Content :	17.4*	Notes: *Moisture content from trimmings; may not be representative of the whole sample
Height mm :	30.0	Final Moisture Content :	29.6	
Effective Height mm :	21.0	Initial Dry Density /cm :	1.50	

Tested :	HE	Checked :	BB
Date:	1/02/2021	Date:	10/02/2021



Jo No.:	Evolution Mining	Mungari Gold Operations
	CAU Static Simple Shear	After Test
	Figure B	Page

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