CBR DENSITY TEST

Five Elements Laboratories 13/42 Smith St, CAPALABA QLD 4157 - Tel: 07 3348 5533

Client:	Merredin Shire Council
Origin of Sample:	Merredin waste depot
Description of soil:	Yellow sand
Test No:	90009

Sample No.:	1
Date sampled:	6/03/2019
Date of test:	20/03/2019
Notes:	Treated with 20g/l of Polychlor

Sample		
Dry density required ρd =		Kg/m3
Moisture content required w2 =		%
Mass of soil M1 =		g
Mass of water to be added =		g

Testing	
Mass of mould + compacted soil =	9667
Mass of mould = g	4893
Mass of compacted soil =	4774
Mass after stove drying	4476

Moisture content				
	Initial soil W1		Mixed soil W2	
Can No.	8			
Mass can + wet soil (g)	296			
Mass can + dry soil (g)	293			
Mass of moisture (g)	3		298	
Mass of container (g)	14			
Mass of dry soil (g)	279			
Moisture content (%)	1.1%		6.7%	
Bulk density (unsoaked)			2189.9	
Dry density (kg/m3)			2053.2	

Compaction	
No. of layers	5
No. of blows	25
Mass of rammer	4.5kg

Surcharge weights	
Soaking	0

After soaking mass data	
Soak duration (d)	2
Mass mould & soil	9763
Mass water absorbed	394
% water absorbed	8.25%

Swell data		
Time soaking (hrs)	Swell gauge reading (mm)	% Swell
0		
24		
48		
72		
96		
120		
144		

Dry density of soaked soil	
ρds = ρd/(1-(Ax/1000Vm))	
Where:	
ρd = initial dry density	
A = area of the mold	
x = increase in sample height	
Vm = volume of mould in cm3	
ρds =	

Dose rate (g/m3)	2,292

Operator	Date	Signed
Frank Dyrssen	25/3/19	

Notes: Sample was stove dried prior to soaking

CBR PENETRATION TEST

Five Elements Laboratories 13/42 Smith St, CAPALABA QLD 4157 - Tel: 07 3348 5533

Job:	Merredin Shire Council
Origin of Sample:	Merredin waste depot
Description of soil:	Yellow sand
Load ring:	50kN
Surcharge weight during soaking:	0

Test No.:	130008
CBR density test No.	90008
Date of test:	25/03/2019
Notes:	48h soak

Penetration test			
Penetration of plunger (mm)	Load ring deflection (mm)	Force (kN)	CBR
0.0	0.000	0.0	0.0
0.5	0.160		
1.0	0.280		
1.5	0.400		
2.0	0.490		
2.5	0.580		
3.0	0.660		
4.0	0.740		
5.0	0.820		
6.0	0.870		
7.0	0.890		
8.0	0.890	25.5	97.0
9.0			
10.0			
11.0			
12.0			
13.0			

Moisture content		
	CBR Sample	
Can No.		
Mass can + wet soil (g)		
Mass can + dry soil (g)		
Mass of moisture (g)		
Mass of container (g)		
Mass of dry soil (g)		
Moisture content (%)		

Accepted CBR
97

Operator	Date	Signed
Frank Dyrssen	25/3/19	

Notes: Control - Treated with 20g/litre of Polychlor

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Client:	Merredin Shire Council
Origin of Sample:	Merredin waste depot
Description of soil:	Yellow sand
Test No:	90008

Sample No.:	1
Date sampled:	6/03/2019
Date of test:	20/03/2019
Notes:	Control - No treatment

Sample		
Dry density required ρd =		Kg/m3
Moisture content required w2 =		%
Mass of soil M1 =		g
Mass of water to be added =		g

Testing	
Mass of mould + compacted soil =	9831
Mass of mould = g	4878
Mass of compacted soil =	4953
Mass after stove drying	4664

Moisture content	Initial soil W1		Mixed soil W2	
Can No.	8			
Mass can + wet soil (g)	296			
Mass can + dry soil (g)	293			
Mass of moisture (g)	3		289	
Mass of container (g)	14			
Mass of dry soil (g)	279			
Moisture content (%)	1.1%		6.2%	
Bulk density (unsoaked)			2272.0	
Dry density (kg/m3)			2139.4	

Compaction	
No. of layers	5
No. of blows	25
Mass of rammer	4.5kg

Surcharge weights	
Soaking	0

After soaking mass data	
Soak duration (d)	2
Mass mould & soil	9867
Mass water absorbed	325
% water absorbed	6.56%

Swell data		
Time soaking (hrs)	Swell gauge reading (mm)	% Swell
0		
24		
48		
72		
96		
120		
144		

Dry density of soaked soil
ρds = ρd/(1-(Ax/1000Vm))
Where:
ρd = initial dry density
A = area of the mold
x = increase in sample height
Vm = volume of mould in cm3
ρds =

Dose rate (g/m3)	0

Operator	Date	Signed
Frank Dyrssen	25/3/19	

Notes: Sample was stove dried prior to soaking

CBR PENETRATION TEST

Five Elements Laboratories 13/42 Smith St, CAPALABA QLD 4157 - Tel: 07 3348 5533

Job:	Merredin Shire Council
Origin of Sample:	Merredin waste depot
Description of soil:	Yellow sand
Load ring:	50kN
Surcharge weight during soaking:	0

Test No.:	130008
CBR density test No.	90008
Date of test:	25/03/2019
Notes:	48h soak

Penetration test			
Penetration of plunger (mm)	Load ring deflection (mm)	Force (kN)	CBR
0.0	0.000	0.0	0.0
0.5	0.045		
1.0	0.090		
1.5	0.135		
2.0	0.180		
2.5	0.210		
3.0	0.230		
4.0	0.255		
5.0	0.260		
6.0	0.270		
7.0	0.290		
8.0	0.310	8.8	35.0
9.0			
10.0			
11.0			
12.0			
13.0			

Moisture content		
	CBR Sample	
Can No.		
Mass can + wet soil (g)		
Mass can + dry soil (g)		
Mass of moisture (g)		
Mass of container (g)		
Mass of dry soil (g)		
Moisture content (%)		

Accepted CBR
35

Operator	Date	Signed
Frank Dyrssen	25/3/19	

Notes: Control - No treatment