

Historical Ground  
Investigation  
Information  
Northern Link Road  
August 2003

# DRILLHOLE No. BH1

Client : Defence Estates	Ground Level m (A.O.D.) : 41.85	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas CAN No. MD0990066A	Hole Depth m : 10.0	Co-ordinates : E299492.82 N169219.84
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 28.1.03	Base of Exploratory Hole m (A.O.D.) : 31.85	Sheet No : 1 of 3

Depth (metres)	Elevation	Geological Description (BS6930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
1	40.35	<b>Driller's Description</b> Limestone and clayey soil							
2		<b>Glacial Drift</b> Firm greyish orange brown silty CLAY with much fine to coarse angular gravel, becoming coarser with depth			1	73	4	0	1.50m - 3.50m Broken Core
3	38.5	<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE			2	81	31	31	3.68 B,MW,C,R,S 3.81 B,MW,C,R,S 3.81-3.94 J,M,N,R,C,S
4		<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fresh crystalline LIMESTONE							4.02 B,MW,C,R,S 4.19 B,MW,C,R,S 4.62 B,MW,C,R,S
5	36.98	<b>Jurassic Bedrock</b> Very weak dark grey laminated fresh fine grained							4.83m - 4.90m Broken Core

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 1.5	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (I40) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH1

Client : Defence Estates	Ground Level m (A.O.D.) : 41.85	Hole Type : Open Hole/Cored
Project : RAF St. Athan, Extension Areas	Hole Depth m : 10.0	Co-ordinates : E299492 82 N189218 84
Location : CAN No. MD0990086A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 28.1.03	Base of Exploratory Hole m (A.O.D.) : 31.85	Sheet No : 2 of 3

Depth (metres)	Elevation	Geological Description (BS6930:1989)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline Limestone	Limestone	[Well Diagram]	3	57	25	20	5.85 B,MW,C,R,5 6.00 B,MW,C,R,5 6.21-6.23 B,MW,C,R,5
	35.64	<b>Jurassic Bedrock</b> Very weak dark grey laminated fresh fine grained MUDSTONE	Mudstone	[Well Diagram]					6.45 B,MW,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline Limestone	Limestone	[Well Diagram]	4	75	48	43	6.65 B,MW,C,R,5 6.66-6.86 J,MW,R,C,70
	34.55	<b>Jurassic Bedrock</b> Very weak dark grey laminated fresh fine grained MUDSTONE	Mudstone	[Well Diagram]					7.48 B,MW,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline Limestone	Limestone	[Well Diagram]	5	83	56	56	7.76 B,MW,C,R,5
	33.05	<b>Jurassic Bedrock</b> Very weak dark grey laminated fine grained fresh MUDSTONE	Mudstone	[Well Diagram]					8.00 B,MW,C,R,5 8.10 - 8.20 Broken Core
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline Limestone, with some calcite veining	Limestone	[Well Diagram]	6	99	73	39	8.48 B,MW,C,R,5 8.55 B,MW,C,R,5
	32.75	<b>Jurassic Bedrock</b> Moderately strong dark grey laminated fresh fine grained MUDSTONE	Mudstone	[Well Diagram]					8.71 B,MW,C,R,5 8.76 B,MW,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline Limestone	Limestone	[Well Diagram]					8.90 B,MW,C,R,5 8.96 B,MW,C,R,5
	32.55								
		<b>Jurassic Bedrock</b> Moderately weak dark grey fine grained fresh MUDSTONE	Mudstone	[Well Diagram]	7	99	97	91	9.70 B,MW,C,R,5 9.74 B,MW,C,R,5 9.85 B,MW,C,R,5
	32.15								
		<b>Limestone</b>	Limestone	[Well Diagram]					
	31.84								

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b>
Drill Type : Rotary air flush	Casing depth (m) : 1.5	01656 749 149 TEL
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	01656 749 096 FAX
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH1

Client : Defence Estates

Ground Level m (A.O.D.) : 41.85

Hole Type : Open Hole/Cored

Project : RAF St. Athan, Extension Areas  
: CAN No. M00990088A

Hole Depth m : 10.0

Co-ordinates : E299492 82 N169219.84

Location :

Well Height m (A.O.D.) :

Logged By : AWJ

Date : 28.1.03

Base of Exploratory Hole m (A.O.D.) : 31.85

Sheet No. 3 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1998)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/ Remarks
	37.84	Moderately weak dark grey fine grained fresh MUDSTONE							
11									
12									
13									
14									
15									

Contractor : Apex Drilling  
Drill Type : Rotary air flush  
Bit Type : P.C.O.  
Rig Type : Gryphon

Hole Diameter (mm) : 105  
Casing depth (m) : 1.5  
Core Diameter (mm) : 76mm (HO) 412  
Drilled By : MJ

**APEX DRILLING SERVICES LTD.**  
01656 749 149 TEL.  
01656 749 096 FAX

# DRILLHOLE No. BH2

Client : Defence Estates	Ground Level m (A.O.D.) : 42.11	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas : CAN No. MD 090066A	Hole Depth m : 10.0	Co-ordinates : E299446.78 N169293.61
Location :	Well Height m (A.O.D.) :	Logged By : Apex Drilling
Date : 29.1.03	Base of Exploratory Hole m (A.O.D.) : 32.11	Sheet No : 1 of 2

Depth (metres)	Elevation	Geological Description (BS8930:1988)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
	40.1	<b>Driller's Description</b> Limestone and clayey soil							0.80m - 2.90m Broken Core
1		<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fresh crystalline LIMESTONE, with calcite veining between 3.35 - 4.00m	[Blocky limestone pattern]	[Well detail pattern]	1	67	5	0	
2	2				71	10	0		
3	3				79	31	23	3.12 B,MW,C,R,5 3.17m - 3.32m Broken Core 3.44 B,MW,C,R,5 3.58 B,MW,C,R,5 3.73 B,MW,C,R,5 3.87 B,MW,C,R,10	
4	37	<b>Jurassic Bedrock</b> Strong dark grey and grey medium bedded fresh crystalline LIMESTONE, with some white calcite veining	[Blocky limestone pattern]	[Well detail pattern]					4.26 B,MW,C,R,5 4.52 B,MW,C,R,5 4.69 B,MW,C,R,5 4.70 - 5.00 J,MN,SS,Sm,BS 5.08 B,MW,C,R,5
5						69	49	45	

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 1.5	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (IHO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH2

ent : Defence Estates	Ground Level m (A.O.D.) : 42.11	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas	Hole Depth m : 10.0	Co-ordinates : E299446.78 N169283.81
Location : CAN No. MD 0600066A	Well Height m (A.O.D.) :	Logged By : Apex Drilling
Date : 29.103	Base of Exploratory Hole m (A.O.D.) : 32.11	Sheet No : 2 of 2

Depth (metres)	Elevation	Geological Description (BS5930:1989)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks		
	35.5				4				5.17 B,MN,SS,R,5 5.35 B,MN,SS,R,5 5.80 B,MW,C,R,5 5.80m - 6.15m Broken Core		
	35.15	<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE									6.20 J,MN,SS,Sm,85 6.35 B,MW,C,R,5 6.37 B,MW,C,R,5 6.80 B,MW,C,R,5 7.00 B,MW,C,R,5 7.10 B,MW,C,R,5 7.14 B,MW,C,R,5 7.30 B,MW,C,R,5
		<b>Jurassic Bedrock</b> Strong to very strong dark grey and grey medium bedded fresh crystalline LIMESTONE, with some white calcite veining					5	85	53	51	7.66 B,MW,C,R,5 7.83 B,MW,C,R,5
		<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE									8.50 B,MW,C,R,5 8.50m - 8.85m Broken Core 8.83 B,MW,C,R,5
		<b>Jurassic Bedrock</b> Strong dark grey and grey medium bedded fresh crystalline LIMESTONE, with some white calcite veining					8	92	87	87	8.50 B,MW,C,R,5 8.50m - 8.85m Broken Core 8.83 B,MW,C,R,5
7											8.50 B,MW,C,R,5 8.51 - 8.57 J,N,Sm,85 8.57 B,MW,C,R,5
							8	92	87	87	8.50 B,MW,C,R,5 8.51 - 8.57 J,N,Sm,85 8.57 B,MW,C,R,5
											8.50 B,MW,C,R,5 8.51 - 8.57 J,N,Sm,85 8.57 B,MW,C,R,5
							7	88	83	83	8.50 B,MW,C,R,5 8.51 - 8.57 J,N,Sm,85 8.57 B,MW,C,R,5
10	31										10.00 B,MW,C,R,5

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 1.5	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (H0) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH3

Unit : Defence Estates Project : RAF Slathen, Extension Areas Location : CAN No. MD0990068A Date : 30.01.03	Ground Level m (A.O.D.) : 43.25 Hole Depth m : 10.0 Well Height m (A.O.D.) : Base of Exploratory Hole m (A.O.D.) : 33.25	Hole Type : Open Hole/Cored Co-ordinates : Logged By : AWJ Sheet No : 1 of 3
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Depth (metres)	Elevation	Geological Description (BS6830:1989)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
		<b>Driller's Description</b> Limestone and clayey soil							
	40								
	38.4	<b>Glacial Drift</b> Firm greyish brown very silty clay with much fine to coarse angular gravel			1	100	-	-	
	39	<b>Glacial Drift</b> Firm orange brown very silty clay with some fine to coarse angular gravel							
2		<b>Drift / Weathered Bedrock</b> Firm greyish brown very silty clay with much fine to coarse angular gravel			2	100	-	-	
	36.4								2.6m - 3.6m Broken Core
3		<b>Jurassic Bedrock</b> Weak to moderately strong grey slightly weathered slightly to moderately weathered LIMESTONE / MUDSTONE, examined as rock fragments			3	70	0	0	
	37.4								
	37.1	<b>Jurassic Bedrock</b> Very weak dery grey laminated slightly weathered fine grained MUDSTONE			4	53	20	0	3.88 B,W,C,R,5
4	36.57	<b>Jurassic Bedrock</b> Moderately strong to strong grey slightly weathered fresh crystalline LIMESTONE							4.4 B,W,C,R,5
	36.47	<b>Jurassic Bedrock</b> Very weak dery grey laminated slightly weathered fine grained MUDSTONE							4.53 B,W,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded crystalline fresh LIMESTONE				44	22	22	

Contractor : Apex Drilling Drill Type : Rotary air flush Bit Type : P.C.D. Rig Type : Gryphon	Hole Diameter (mm) : 105 Casing depth (m) : 0 Core Diameter (mm) : 76mm (+0) 412 Drilled By : MJ	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 749 096 FAX
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# DRILLHOLE No. BH3

Item : Defence Estates	Ground Level m (A.O.D.) : 43.25	Hole Type : Open Hole/Cored
Project : RAF St. Alban, Extension Area	Hole Depth m : 10.0	Co-ordinates :
Location : CAN No. MD0990068A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 30.01.03	Base of Exploratory Hole m (A.O.D.) : 33.25	Sheet No : 2 of 3

Depth (metres)	Elevation	Geological Description (BS6930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
	35.8	<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE	[Brick pattern]	[Vertical lines]	5				5.4 B,W,C,R,5
	35.3								5.8 B,W,C,R,5
	35	<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded crystalline fresh LIMESTONE	[Brick pattern]	[Vertical lines]	6	78	40	31	6.0 B,W,C,R,5
	34.8	<b>Jurassic Bedrock</b> Weak dark grey laminated slightly weathered fine grained MUDSTONE							6.06 B,W,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fine grained fresh crystalline LIMESTONE	[Brick pattern]	[Vertical lines]	7	75	51	43	6.2 B,W,C,R,5
	34.1	<b>Jurassic Bedrock</b> Weak grey laminated fresh fine grained MUDSTONE							6.3 B,W,C,R,5
7	34	<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fine grained fresh crystalline LIMESTONE	[Brick pattern]	[Vertical lines]	8	86	62	56	6.5 B,W,C,R,5
	33.46	<b>Jurassic Bedrock</b> Very weak dark grey laminated fresh fine grained MUDSTONE							7.0 B,W,C,R,5
	33.04	<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Brick pattern]	[Vertical lines]	8	86	62	56	7.2 B,W,C,R,5
		<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE							7.5 B,W,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Brick pattern]	[Vertical lines]	8	86	62	56	7.84 B,W,C,R,5
		<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE							7.9 B,W,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Brick pattern]	[Vertical lines]	8	86	62	56	8.13 B,W,C,R,5
		<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE							8.14-8.35 J,MW,SS,R,85
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Brick pattern]	[Vertical lines]	8	86	62	56	8.5 B,W,C,R,5
		<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE							8.7 B,W,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Brick pattern]	[Vertical lines]	8	86	62	56	8.75 B,W,C,R,5
		<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE							8.83 B,W,C,R,5
	31.78	<b>Jurassic Bedrock</b> Weak dark grey fine grained MUDSTONE	[Brick pattern]	[Vertical lines]	8	86	62	56	8.99 B,W,C,R,5
	31.54	<b>LIMESTONE</b>							9.22 B,W,C,R,5
		<b>Jurassic Bedrock</b> Weak dark grey fine grained MUDSTONE	[Brick pattern]	[Vertical lines]	8	86	62	56	8.5 B,W,C,R,5
		<b>LIMESTONE</b>							9.8 B,W,C,R,5
10	31.03 30.99	<b>LIMESTONE</b>	[Brick pattern]	[Vertical lines]	8	86	62	56	9.85 B,W,C,R,5

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 78mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	



# DRILLHOLE No. BH3

Client : Defence Estates	Ground Level m (A.O.D.) : 43.25	Hole Type : Open Hole/Cored
Project : RAF St. Athan, Extension Areas	Hole Depth m : 10.0	Co ordinates :
Location : CAN No. MD0990066A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 30.01.03	Base of Exploratory Hole m (A.O.D.) : 33.25	Sheet No : 3 of 3

Depth (metres)	Elevation	Geological Description (BS6830:1998)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
	30.39	Weak dary grey fine grained MUDSTONE							
12									
13									
14									
15									

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH4

Client : Defence Estates	Ground Level m (A.O.D.) : 44.53	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas	Hole Depth m : 10.0	Co-ordinates : F299551.24 N169605.80
Location : CAN No. MD0990068A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 30.01.03	Base of Exploratory Hole m (A.O.D.) : 34.53	Sheet No : 1 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
	44.23	Driller's Description Topsoil							
	43.53	Driller's Description Boulder Clay							
	43.23	Glacial Drift Firm reddish orange brown very silty CLAY with much fine to coarse angular gravel							
	42.93	Glacial Drift Firm yellowish brown very silty CLAY with much fine to coarse angular gravel							
2	42.43	Glacial Drift Firm greyish brown very silty CLAY with much fine to coarse angular gravel							
									2.15 B,W,C,R,5 2.16 B,W,C,R,5 2.30 B,W,C,R,5  2.50 B,W,C,R,5  2.77 B,W,C,R,5 2.90m - 3.35m Broken Core  3.35 - 3.80 J,MN,C,Sm,85  3.80 B,W,C,R,5  3.95 B,W,C,R,5 4.08 B,W,C,R,5
3					1	87	41	35	
4					2	70	65	63	4.27 - 4.29 B,W,IC,R,5 4.34 B,W,C,R,5 4.60 B,W,C,R,5 4.80 B,W,C,R,5 4.81 - 5.02 J,MW,SS,R,85
5									

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH4

Client : Defence Estates	Ground Level m (A.O.D.) : 44.53	Hole Type : Open Hole/Cored
Project : RAF Slough, Extension Areas	Hole Depth m : 10.0	Co-ordinates : E289551.24 N188805.60
Location : CAN No. MD0990066A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 30.01.03	Base of Exploratory Hole m (A.O.D.) : 34.53	Sheet No : 2 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
			[Brick pattern]	[Dotted pattern]	3	80	29	29	5.02m - 5.25m Broken Core
									5.50 B,W,C,R,5
									5.83 B,W,C,R,5
									5.98 B,W,C,R,5
					4	89	69	69	6.27 B,W,C,R,5
									6.43 B,W,C,R,5
									6.67 B,W,C,R,5
									6.88 B,W,C,R,5
									7.44 B,W,C,R,5
									7.70 B,W,C,R,5
					5	91	77	78	7.86 B,W,C,R,5
									8.08 B,W,C,R,5
									8.35 B,W,C,R,5
									8.50 B,W,C,R,5
									8.60 B,W,C,R,5
									9.02 B,W,C,R,5
									9.10 B,W,C,R,5
					6	98	88	54	9.20 B,W,C,R,5
									9.35 B,W,C,R,5
									9.50 B,W,C,R,5
									9.50 - 9.85 J,MW,Cm,MS,Sm,80
									9.80 B,W,C,R,5
7		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE							
	36.03	<b>Jurassic Bedrock</b> Moderately weak very dark grey laminated fine grained fresh MUDSTONE							
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE							
9		<b>Jurassic Bedrock</b> Moderately weak very dark grey laminated fine grained fresh MUDSTONE							
	35	<b>Jurassic Bedrock</b> Moderately weak very dark grey laminated fine grained fresh MUDSTONE							
10	34.52	<b>Jurassic Bedrock</b> Strong greenish grey thinly to medium bedded fresh							

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 719 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH4

Client : Defence Estates	Ground Level m (A.O.D.) : 44.53	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas : CAN No. MD0990066A	Hole Depth m : 10.0	Coordinates : E299551.24 N180005.80
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 30.01.03	Base of Exploratory Hole m (A.O.D.) : 34.53	Sheet No. : 3 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/ Remarks
34.52									
12									
13									
14									
15									

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH5



Client : Defence Estates	Ground Level m (A.O.D.) : 45.72	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Area	Hole Depth m : 10.0	Co-ordinates : E299749.08 N160018.62
Location : CAN No. MD0090066A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 30/31.01.03	Base of Exploratory Hole m (A.O.D.) : 35.72	Sheet No : 1 of 3

Depth (metres)	Elevation	Geological Description (BS6930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
		<b>Driller's Description</b> Limestone and clayey soil							
	44.92								0.8m - 1.0m Broken Core
					1	92	28	28	1.25 J,MW,C,I,F,R,75
		<b>Jurassic Bedrock</b> Strong grey and dark grey thinly to medium bedded fresh crystalline LIMESTONE							1.30 B,W,C,R,5
									1.70 B,W,C,R,5
									2.00 B,W,C,R,5
									2.14 B,W,C,R,5
									2.25 B,W,C,R,5
									2.51 B,W,C,R,5
	43.19				2	97	53	53	2.53 B,W,C,R,5
		<b>Jurassic Bedrock</b> Very weak greyish orange brown laminated medium weathered fine grained MUDSTONE							2.57 B,W,C,R,5
									2.80 J,MN,C,S,m,80
									2.60 B,MW,C,R,10
									3.07 B,W,C,R,5
		<b>Jurassic Bedrock</b> Strong grey and dark grey thinly to medium bedded fresh crystalline LIMESTONE							3.30 B,W,C,R,5
									3.48 B,W,C,R,5
									3.58 B,W,C,R,5
					3	83	47	47	4.00 B,W,C,R,5
	41.45								4.21 B,W,C,R,5
		<b>Jurassic Bedrock</b> Very weak greyish brown laminated fresh fine grained MUDSTONE							4.27 B,W,C,R,5
									4.32 B,W,C,R,5
	40.92								4.50 B,W,C,R,5
									4.70 B,W,C,R,5

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH5

Client : Defence Estates	Ground Level m (A.O.D.) : 45.72	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas	Hole Depth m : 10.0	Co-ordinates : E299749.08 N169618.82
Location : CAN No. MD0990066A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 30/31.01.03	Date of Exploratory Hole m (A.O.D.) : 35.72	Sheet No 2 of 3

Depth (metres)	Elevation	Geological Description (BS6830:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks		
		<b>Jurassic Bedrock</b> Strong grey and dark grey thinly to medium bedded fresh crystalline LIMESTONE			4	93	38	28	4.83 B,W,C,R,5 4.93m - 5.13m Broken Core 5.40 B,W,C,R,5 5.54 B,W,C,R,5 5.69 B,W,C,R,5 5.80m - 6.0m Broken Core 6.13 B,W,C,R,5 6.39 B,W,C,R,5 6.48 B,W,C,R,5 6.70 B,W,C,R,5 7.15 B,W,C,R,5 7.40 B,W,C,R,5 7.48 B,W,C,R,5 7.72 B,W,C,R,5 8.14 B,W,C,R,5 8.38 B,W,C,R,5 8.50 B,W,C,R,5		
7					5	70	54	48			9.00 B,W,C,R,5 9.15 B,W,C,R,5
8					6	95	75	73			9.75 B,W,C,R,5
9	36.54				<b>Jurassic Bedrock</b> Very weak greyish brown laminated fresh fine grained MUDSTONE	7	98	45	45		
10	36.28				<b>Jurassic Bedrock</b> Strong grey and dark grey thinly to medium bedded fresh crystalline LIMESTONE						
	35.71				<b>Jurassic Bedrock</b> Strong grey and dark grey thinly to medium bedded fresh crystalline LIMESTONE						

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH5

Client : Defence Estates	Ground Level m (A.O.D.) : 45.72	Hole Type : Open Hole/Cored
Project : RAF SLATHAN, Extension Areas	Hole Depth m : 10.0	Co-ordinates : E299749.06 N169618.82
Location : CAN No. MD0990086A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 30/31 01.03	Base of Exploratory Hole m (A.O.D.) : 35.77	Sheet No : 3 of 3

Depth (metres)	Elevation	Geological Description (BS6930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
	35.71	<b>Jurassic Bedrock</b> Strong grey and dark grey thinly to medium bedded fresh crystalline LIMESTONE							
12									
13									
14									
15									

Contractor : Apex Drilling	Hole Diameter (mm) : 105	APEX DRILLING SERVICES LTD.
Drill Type : Rotary air flush	Casing depth (m) : 0	01656 749 149 TEL.
BH Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	01656 749 096 FAX
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH6

Item : Defence Estates Project : RAF St Athun, Extension Areas : CAN No. MD0890066A Location : Date : 31.01.03	Ground Level m (A.O.D.) : 46.78 Hole Depth m : 10.0 Well Height m (A.O.D.) : Base of Exploratory Hole m (A.O.D.) : 36.78	Hole Type : Open Hole/Cored Co-ordinates : E299749.78 N168860.67 Logged By : AWJ Sheet No : 1 of 2
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Depth (metres)	Elevation	Geological Description (BS6930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
		<b>Driller's Description</b> Limestone and clayey soil							
	45.78								
		<b>Glacial Drift</b> Firm orange brown very silty CLAY with some to much fine to medium angular gravel							
	45.28								
2		<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fine grained fresh crystalline LIMESTONE			1	80	49	49	2.55 B,W,C,R,5 2.70 B,W,C,R,5 2.87 B,W,C,R,5 3.00 B,W,C,R,5
3	43.78 43.88	Firm orange brown very silty CLAY							3.37m - 3.54m Broken Core
4		<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fine grained fresh crystalline LIMESTONE			2	73	51	45	3.70 B,W,C,R,5 3.86 B,W,C,R,5
	42.28 42.18	Firm orange brown very silty CLAY with some fine to medium angular gravel							4.50 B,W,C,R,5
5									

Contractor : Apex Drilling Drill Type : Rotary air flush Bit Type : P.C.D. Rig Type : Gryphon	Hole Diameter (mm) : 105 Casing depth (m) : 0 Core Diameter (mm) : 76mm (HO) 412 Drilled By : MJ	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 119 TEL. 01656 749 096 FAX
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# DRILLHOLE No. BH6

Vent : Defence Estates	Ground Level m (A.O.D.) : 40.78	Hole Type : Open Hole/Cored
Project : RAF St. Athan, Extension Areas	Hole Depth m : 10.0	Co-ordinates : E299749.78 N169960.67
Location : CAN No. MD0990068A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 31.01.03	Base of Exploratory Hole m (A.O.D.) : 38.78	Sheet No : 2 of 2

Depth (metres)	Elevation	Geological Description (BS6930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Good Core Rec. %	RQD %	Discontinuities/Remarks
	41.38	<b>Jurassic Bedrock</b> Very weak greyish brown laminated slightly weathered fine grained MUDSTONE	[Brick pattern]	[Vertical line with dots]	3	85	77	62	5.40 - 5.42 B,W,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE, with shell fragments							5.70 B,W,C,R,5
									5.80 B,W,C,R,5
									6.00m - 6.50m Broken Core
									6.50 - 6.80 J,MW,C,Sm,75
					4	92	48	35	6.51 B,W,C,R,5
7	39.62	<b>Jurassic Bedrock</b> Weak greyish brown laminated fresh fine grained MUDSTONE							6.69 B,W,C,R,5
									7.02 B,W,C,R,5
									7.15 B,W,C,R,5
	39.05	<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fresh crystalline LIMESTONE							7.16-7.2 B,W,C,R,5
									7.50 B,W,C,R,5
8		<b>Jurassic Bedrock</b> Very weak dark grey laminated fresh fine grained MUDSTONE							7.68 B,W,C,R,5
									7.73 B,W,C,R,5
	38.38	<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fresh crystalline LIMESTONE			5	88	62	55	8.42 B,W,C,R,5
									8.65 B,W,C,R,5
		<b>Jurassic Bedrock</b> Very weak dark grey laminated fresh fine grained MUDSTONE							8.77 B,W,C,R,5
9		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE							8.78-9 J,N,C,Sm,85
									9.16 B,W,C,R,5
									9.40 B,W,C,R,5
					6	98	62	62	9.66 B,W,C,R,5
10	36.78								9.69 - 9.76 J,MW,SS,R,85

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH7

Client : Defence Estates	Ground Level m (A.O.D.) : 49.11	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas	Hole Depth m : 10.0	Co-ordinates : E299744.06 N169975.07
Location : CAN No. M00990068A	Well Height m (A.O.D.) : 39.11	Logged By : AWJ
Date : 31.01.03	Base of Exploratory Hole m (A.O.D.) :	Sheet No : 1 of 2

Depth (metres)	Elevation	Geological Description (B85930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
	-0.3	<b>Driller's Description</b> Limestone and clayey soil							0.30m - 0.82m Broken Core 0.57m - 1.02m Broken Core
1		<b>Drift / Weathered Bedrock</b> Moderately strong to strong grey stained orange in places thinly to medium bedded slightly weathered Limestone, with many large pockets of soft orange brown silty clay				80	31	22	1.49 B,W,C,R,5 1.57 B,W,C,R,5
2	-1.8 -1.95	<b>Drift / Weathered Bedrock</b> Soft orange brown very silty CLAY			2	83	25	16	1.80 - 1.95 B,W,C,R,5 2.07 B,W,C,R,5 2.54 B,W,C,R,5
3	-3.01	<b>Jurassic Bedrock</b> Moderately strong grey thinly to medium bedded slightly weathered crystalline Limestone							2.86 B,W,C,R,5
		<b>Jurassic Bedrock</b> Weak greyish brown laminated fresh fine grained MUDSTONE			3	76	49	35	
4		<b>Jurassic Bedrock</b> Moderately strong becoming strong grey thinly to medium bedded slightly weathered becoming fresh crystalline Limestone							
5	-4.67 -4.89	<b>Jurassic Bedrock</b> Moderately weak brownish grey laminated slightly weathered fine grained MUDSTONE							

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH7

Client : Defence Estates	Ground Level m (A.O.D.) : 49.11	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas : CAN No. MD0990066A	Hole Depth m : 10.0	Co-ordinates : F299744.08 N168975.07
Location :	Well Height m (A.O.D.) : 39.11	Logged By : AWJ
Date : 31.01.03	Base of Exploratory Hole m (A.O.D.) :	Sheet No : 2 of 2

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/ Remarks
			[Brick Pattern]	[Hatched Pattern]	4	95	59	55	5.47 - 5.50 B,W,IC,R,5
7		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Brick Pattern]	[Hatched Pattern]	5	98	57	48	6.5 B,W,C,R,5 6.65 B,W,C,R,5 6.75 B,W,C,R,5 6.80m - 7.40m Broken Core 7.45 B,W,C,R,5 7.51 B,W,C,R,5 7.55 B,W,C,R,5 7.98 B,W,C,R,5
8			[Brick Pattern]	[Hatched Pattern]	6	95	71	52	8.14 B,W,C,R,5 8.31 B,W,C,R,5 8.77 B,W,C,R,5 8.95 B,W,C,R,5 9.17 B,W,C,R,5
9			[Brick Pattern]	[Hatched Pattern]	7	95	74	65	9.48 B,W,C,R,5 9.67 B,W,C,R,5
10	-10		[Brick Pattern]	[Hatched Pattern]					

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b>
Drill Type : Rotary air flush	Casing depth (m) : 0	01656 719 149 TEL
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	01656 719 096 FAX
Rig Type : Gyphon	Drilled By : MJ	

# DRILLHOLE No. BH8

Client : Defence Estates	Ground Level m (A.O.D.) : 47.21	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas	Hole Depth m : 10.0	Co-ordinates : E299588 95 N189861.35
Location : CAN No. MD0990068A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 03.2.03	Base of Exploratory Hole m (A.O.D.) : 37.21	Sheet No : 1 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1989)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
		<b>Driller's Description</b> Limestone and clayey soil							
	-1								1.26 B,W,C,R,5
									1.43 B,W,C,R,5
2					1	54	32	32	
									2.30 - 2.50 J,MW,SS,R,85
									2.60 B,W,C,R,5
									2.94 B,W,C,R,5
3		<b>Jurassic Bedrock</b> Moderately strong becoming strong grey thinly to medium bedded slightly weathered becoming fresh crystalline LIMESTONE			2	90	54	52	
									3.02 B,W,C,R,5
									3.23 B,W,C,R,5
									3.44 B,W,C,R,5
									3.57 B,W,C,R,5
									3.78 B,W,C,R,5
4									3.79 - 4.00 J,MN,C,Sm,85
									4.25 B,W,C,C,R,5
									4.38 B,W,C,R,5
									4.60 B,W,C,R,5
	-4.8					95	51	48	
5		<b>Jurassic Bedrock</b> Weak brown laminated slightly weathered fine grained MUDSTONE							4.79 B,W,C,R,5
									4.80 - 4.87 B,W,C,C,R,5

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH8

Unit : Defence Estates Project : RAF St Athan, Extension Areas : CAN No. MD0990068A Location : Date : 03.2.03	Ground Level m (A.O.D.) : 47.21 Hole Depth m : 10.0 Well Height m (A.O.D.) : Base of Exploratory Hole m (A.O.D.) : 37.21	Hole Type : Open Hole/Cored Co-ordinates : E299588 95 N169881 36 Logged By : AWJ Sheet No : 2 of 3
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Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
		<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Limestone pattern]	[Well detail]	3				5.10 B,W,C,R,5
	-5.5								5.23 B,W,C,R,5
	-5.6	Soft to firm greyish brown very silty CLAY							5.73 B,W,C,R,5
		<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Limestone pattern]	[Well detail]	4	81	25	19	6.37-6.50 J,MN,C,Sm,65
									6.68 B,W,C,R,5
7									7.00 B,W,C,R,5
									7.30 B,W,C,R,5
	-7.4	<b>Jurassic Bedrock</b> Moderately weak very dark grey laminated fresh fine grained MUDSTONE							7.40 - 7.45 B,W,C,R,5
		<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Limestone pattern]	[Well detail]	5	84	70	59	7.80 B,W,C,R,5
8	-8								7.90 B,W,C,R,5
	-8.31	<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE							8.12 B,W,R,5
		<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Limestone pattern]	[Well detail]	6	97	18	13	8.30 - 8.32 B,W,C,R,5
									8.50m - 8.90m Broken Core
									9.0 B,W,C,R,5
									9.07 B,W,C,R,5
	-9.6	<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE	[Limestone pattern]	[Well detail]					9.08 - 9.55 J,N,SS,Sm,86
	-10.01	<b>Jurassic Bedrock</b>							9.60 - 9.65 B,W,C,R,5
10									9.85 B,W,C,R,5

Contractor : Apex Drilling Drill Type : Rotary air flush Bit Type : P.C.D. Rig Type : Gryphon	Hole Diameter (mm) : 105 Casing depth (m) : 0 Core Diameter (mm) : 76mm (HO) 412 Drilled By : MJ	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
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# DRILLHOLE No. BH8

Client : Defence Estates	Ground Level m (A.O.D.) : 47.21	Hole Type : Open Hole/Cored
Project : RAF Sl. Athan, Extension Areas	Hole Depth m : 10.0	Co-ordinates : E299588.95 N189881.35
Location : CAN No. MD0990086A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 03.2.03	Base of Exploratory Hole m (A.O.D.) : 37.21	Sheet No : 3 of 3

Depth (metres)	Elevation	Geological Description (B35930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
	-15.01	<p><b>Jurassic Bedrock</b></p> <p>Moderately strong to strong grey thinly to medium bedded fresh crystalline LIMESTONE</p>							
12									
13									
14									
15									

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH9

Client : Defence Estates	Ground Level m (A.O.D.) : 46.54	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas	Hole Depth m : 10.0	Co-ordinates : E 280407 15 N 169718 95
Location : CAN No. MD0990066A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 03/04/02.03	Base of Exploratory Hole m (A.O.D.) : 36.54	Sheet No : 1 of 2

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
		<b>Driller's Description</b> Limestone and clayey soil							
45.74									
45.44		<b>Glacial Drift</b> Firm orange brown very silty CLAY with much fine to coarse angular gravel							1.10m - 2.50m Broken Core
2					1	57	0	0	
									2.50 - 2.54 B,W,I,C,F,R,5
3		<b>Jurassic Bedrock</b> Moderately strong becoming strong grey slightly weathered crystalline LIMESTONE, with some calcite veining			2	87	87	64	2.88 B,MW,C,R,5
									3.50 B,MW,C,R,5
4									4.02 B,MW,C,R,5
42.04									4.50 B,MN,C,R,5
		Firm orange brown very silty CLAY with much fine to coarse angular gravel							5.07 B,MW,C,R,5
5									

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH9

Client : Defence Estates	Ground Level m (A.O.D.) : 46.54	Hole Type : Open Hole/Cored
Project : RAF St.Athan, Extension Areas	Hole Depth m : 10.0	Co-ordinates : E 288467.15 N 189718.95
Location : CAN No. MD0990086A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 03/04.02.03	Base of Exploratory Hole m (A.O.D.) : 36.54	Sheet No : 2 of 2

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/ Remarks
					3	77	68	57	5.30 B,MW,C,R,5
					5.60 B,MW,C,R,5				
					5.80 B,MW,C,R,5				
					6.04 B,MW,C,R,5				
					6.20 B,MW,C,R,5				
					6.55 B,MW,C,R,5				
					6.58 B,MW,C,R,5				
					6.85 Broken Core				
7		<b>Jurassic Bedrock</b> Strong gray thinly to medium bedded fresh crystalline LIMESTONE			7.40 - 8.04 J,MN,SS,Sm,85				
					No. of joints stained orange				
			8.15 B,MW,C,R,5						
			8.30 B,MW,C,R,5						
			8.45 B,MW,C,R,5						
			8.74 B,MW,C,R,5						
			8.80 B,MW,C,R,5						
			8.88 J,MN,SS,St,30						
9			9.05 B,MW,C,R,5						
			9.18 B,MW,C,R,5						
			9.80 B,MW,C,R,5						
10	36.54		9.98-10 B,W,I,C,F,R,5						

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : M.J	



# DRILLHOLE No. BH10

Client : Defence Estates

Ground Level m (A.O.D.) : 42.03

Hole Type : Open Hole/Cored

Project : RAF St. Athen, Extension Areas  
CAN No. MD0990068A

Hole Depth m : 10.0

Co-ordinates : E 299222.64 N 169251.31

Location :

Well Height m (A.O.D.) :

Logged By : AWJ

Date : 28.1.03

Base of Exploratory Hole m (A.O.D.) : 37.03

Sheet No : 1 of 2

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Boiled Core Rec. %	RQD %	Discontinuities/Remarks
41.63		<b>Driller's Description</b> Topsoil							
41.33		<b>Driller's Description</b> Boulder Clay							0.70m - 1.70m Broken Core
2		<b>Drift / Weathered Bedrock</b> Strong grey stained orange in places slightly weathered crystalline LIMESTONE, with much soft orange brown silty clay to 1.2m			1	55	0	0	1.85 B,W,SS,C,R,5 1.95-2.2 J,W,Cm,MS,75
3					2	63	11	11	3.2 B,W,IC,S,R,5
38.23		<b>Jurassic Bedrock</b> Very weak greyish orange brown highly weathered very sandy medium grained SILTSTONE			3	81	68	57	4.31 B,W,SS,C,R,5 4.38 B,W,SS,C,R,5 4.5 B,W,SS,C,R,5
5									

Contractor : Apex Drilling

Drill Type : Rotary air flush

Bit Type : P.C.D.

Rig Type : Gryphon

Hole Diameter (mm) : 105

Casing depth (m) : 1.5

Core Diameter (mm) : 78mm (HO) 412

Drilled By : MJ

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# DRILLHOLE No. BH10


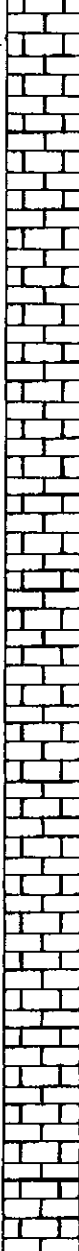

Client : Defence Estates	Ground Level m (A.O.D.) : 42.03	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas : CAN No. MD0990066A	Hole Depth m : 10.0	Co-ordinates : E 299222.64 N 189251.31
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 28.1.03	Base of Exploratory Hole m (A.O.D.) : 32.03	Sheet No : 2 of 2

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
			[Brick pattern]	[Hatched pattern]	4	69	37	37	
		<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fresh crystalline LIMESTONE							6.71m - 8.01m Broken Core
					5	90	34	23	6.3 B,W,C,R,5 6.45m - 7.00m Broken Core
	35.58	<b>Jurassic Bedrock</b> Very weak greyish brown laminated fine grained highly weathered MUDSTONE							7.35 B,W,C,R,5 7.40 B,W,C,R,5 7.75 B,W,C,R,5
	7				6	85	63	54	6.24 B,W,C,R,5 6.26 B,W,C,R,5 6.50 - 6.59 J,W,SS,R,75 6.7 B,W,C,R,5 6.9 B,W,C,R,5
		<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fresh crystalline LIMESTONE							8.35 - 9.37 B,W,C,R,5 9.45 B,W,C,R,5
					7	91	71	61	9.93 B,W,C,R,5
	32.68	<b>Jurassic Bedrock</b> Moderately weak to moderately strong dark grey laminated fresh fine grained MUDSTONE							
		<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fresh crystalline LIMESTONE							
10	31.98								

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 1.5	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH11

Client : Defence Estates	Ground Level m (A.O.D.) : 48.39	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas CAN No. MD0990066A	Hole Depth m : 10.0	Co-ordinates : E 299170.58 N 168090.64
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 8.2.03	Base of Exploratory Hole m (A.O.D.) : 38.39	Sheet No : 1 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
	46.09	<b>Driller's Description</b> Limestone and clayey soil							0.30m - 0.46m Broken Core
	47.93	<b>Jurassic Bedrock</b> Moderately strong grey thinly to medium bedded slightly weathered crystalline LIMESTONE			1	58	6	0	0.50 B,W,C,R,5 0.57m - 1.20m Broken Core
2					2	65	16	9	1.39 B,W,C,R,5 1.54m - 1.74m Broken Core 1.75 - 1.94 J,N,C,Sm,75 1.95m - 2.70m Broken Core
3		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE			3	78	41	35	2.70 B,C,R,5 2.93 - 4.04 J,N,SS,St,45 3.05 B,N,C,R,5 3.73 B,W,C,R,5 3.8 B,W,SS,C,R,5 3.80m - 4.20m Broken Core 4.20 B,W,SS,R,5 4.40 B,W,SS,R,5 4.60 B,W,SS,R,5 4.70 - 4.72 B,VW,SS,R,5 4.85 J,N,SS,Sm,80
4									
5									

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 1.5	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH11

Client: Defence Estates  
 Project: RAF St Athan, Extension Area  
 Location: CAN No. MD0990066A  
 Date: 02.03

Ground Level m (A.O.D.): 46.39  
 Hole Depth m: 10.0  
 Well Height m (A.O.D.):  
 Base of Exploratory Hole m (A.O.D.): 38.39

Hole Type: Open Hole/Cored  
 Co-ordinates: E 799170.58 N 168090.84  
 Logged By: AWJ  
 Sheet No: 2 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
					4	75	33	33	
									5.80 B,W,C,R,5
									5.96m - 6.31m Broken Core
									6.32 J,W,C,R,30
	41.95	<b>Jurassic Bedrock</b> Moderately strong to moderately weak very dark grey laminated fresh medium grained MUDSTONE			5	75	46	35	6.42 B,W,C,R,5
									6.46 B,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE							7.00 B,W,C,R,5
									7.33 B,W,C,R,5
									7.40 B,W,C,R,5
	40.81	<b>Jurassic Bedrock</b> Moderately strong to moderately weak very dark grey laminated fresh medium grained MUDSTONE			6	85	85	48	7.58 - 7.68 B,W,C,R,5
									7.94 B,W,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE							7.98 B,W,C,R,5
	39.85	<b>Jurassic Bedrock</b> Moderately strong to moderately weak very dark grey laminated fresh medium grained MUDSTONE							8.44 - 8.47 B,W,C,R,5
									8.64 B,W,C,R,5
									8.81 B,W,C,R,5
									8.86 B,W,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE			7	98	71	51	9.08 B,W,C,R,5
									9.20 B,W,C,R,5
									9.33 B,W,C,R,5
									9.44 B,W,C,R,5
	38.46 38.38								9.84 B,W,C,R,5

Contractor: Apex Drilling  
 Drill Type: Rotary air flush  
 Bit Type: P.C.D.  
 Rig Type: Gryphon

Hole Diameter (mm): 105  
 Casing depth (m): 1.5  
 Core Diameter (mm): 76mm (HO) 412  
 Drilled By: MJ

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# DRILLHOLE No. BH11

nl : Defence Estates Project : RAF SCAthen, Extension Areas : CAN No. MD0890068A Location : Date : 6.2.03	Ground Level m (A.O.D.) : 46.39 Hole Depth m : 10.0 Well Height m (A.O.D.) : Base of Exploratory Hole m (A.O.D.) : 38.39	Hole Type : Open Hole/Corod Co-ordinates : E 299170.58 N 168090.84 Logged By : AWJ Sheet No : 3 of 3
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Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
36	38	<b>Jurassic Bedrock</b> Very weak very dark grey laminated fresh fresh medium grained MUDSTONE							
11									
12									
13									
14									
15									

Contractor : Apex Drilling Drill Type : Rotary air flush Bit Type : P.C.D. Rig Type : Gryphon	Hole Diameter (mm) : 105 Casing depth (m) : 1.5 Core Diameter (mm) : 76mm (HO) 412 Drilled By : MJ	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 749 096 FAX
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# DRILLHOLE No. BH12



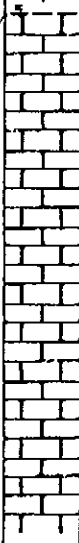



Client : Defence Estates	Ground Level m (A.O.D.) : 47.53	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas	Hole Depth m : 10.0	Co-ordinates : E 299285.19 N 187970.18
Location : CAN No. MD09B0066A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 08.02.03	Base of Exploratory Hole m (A.O.D.) : 37.53	Sheet No : 1 of 2

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
		<b>Driller's Description</b> Limestone and clayey soil							
47.03	46.93	<b>Drift / Weathered Bedrock</b> Strong grey fine grained fresh medium thinly bedded LIMESTONE							0.50m - 4.15m Broken Core
46.75		<b>Drift / Weathered Bedrock</b> Soft to firm orange brown silty CLAY, with some angular gravel			1	65	0	0	
2					2	33	0	0	
3		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE							
4					3	41	18	11	4.19 B,W,C,S,5
	43.03								4.56 B,MW,C,R,5
5									4.81 B,MW,C,R,5 4.92 B,MW,C,R,5 4.92 - 5.13 J,N,C,Sm,80

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 75mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH12

Client : Defence Estates	Ground Level m (A.O.D.) : 47.53	Hole Type : Open Hole/Cored
Project : RAF St. Athan, Extension Areas	Hole Depth m : 10.0	Co-ordinates : E 299285.19 N 167970.18
Location : CAN No. MD0900065A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 08.02.03	Base of Exploratory Hole m (A.O.D.) : 37.53	Sheet No : 2 of 2

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
		<b>Jurassic Bedrock</b> Strong dark greenish grey thinly to medium bedded fresh crystalline LIMESTONE							5.14 B,W,C,R,5
					4	66	25	21	5.28 B,W,C,R,5 5.38 B,W,C,R,5
					5	0	0	0	5.80 B,MW,C,R,5 5.88 B,MW,C,R,5 6.13 B,W,C,R,5 6.13 B,MW,C,R,5 6.3 B,MW,C,R,5 6.57 B,W,C,R,5 6.54m - 7.50m Broken Core
7									7.16 B,W,C,R,5
		Firm orange grey brown sandy clayey SILT							7.85 B,MW,C,R,5
8	39.53				8	50	24	20	8.00 - 8.05m B,W,C,R,5 8.25 B,W,C,R,5 8.25 - 8.36 J,N,SS,Sm,80
					9				8.60 B,MW,C,R,5 8.88 B,W,C,R,5 9.00 - 9.28m Broken Core 9.28 J,MN,SS,S,85
									9.45 B,W,C,S,5 9.63 B,MW,C,R,5
10	37.53	<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE			7	74	26	17	

Contractor : Apex Drilling Drill Type : Rotary air flush Bit Type : P.C.D. Rig Type : Gryphon	Hole Diameter (mm) : 105 Casing depth (m) : 0 Core Diameter (mm) : 76mm (HO) 412 Drilled By : MJ	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 749 096 FAX
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# DRILLHOLE No. BH13

Client : Defence Estates	Ground Level m (A.O.D.) : 48.48	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas : CAN No. MD0990066A	Hole Depth m : 10.0	Co-ordinates : E 299054.29 N 168113.87
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 05.02.03	Base of Exploratory Hole m (A.O.D.) : 38.48	Sheet No : 1 of 2

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/ Remarks
	48.18	<b>Driller's Description</b> Limestone and clayey soil			1	70	0	0	
2		<b>Jurassic Bedrock</b> Moderately strong grey and brownish grey thinly to medium bedded slightly weathered crystalline LIMESTONE, with many pockets of orange brown silty clay			2	74	25	10	
3	45.48				3	77	47	32	
4		<b>Jurassic Bedrock</b> Strong grey and brownish grey thinly to medium bedded fresh crystalline LIMESTONE			4	80	58	55	3.22 B,W,C,R,5 3.61 B,W,C,R,5 3.58 B,W,C,R,5 3.84 B,W,C,R,5
5									4.50 B,W,C,R,5 4.70 B,W,C,R,5 4.80 B,W,C,R,5

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air wash	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 78mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	



## DRILLHOLE No. BH13

Site: Dafence Estates	Ground Level m (A.O.D.): 49.48	Hole Type: Open Hole/Cored
Project: RAF St Athan, Extension Areas : CAN No. MD0990066A	Hole Depth m: 10.0	Co-ordinates: E 299054.29 N 186113.07
Location:	Well Height m (A.O.D.):	Logged By: AWJ
Date: 05.02.03	Base of Exploratory Hole m (A.O.D.): 38.48	Sheet No.: 2 of 2

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/ Remarks
					5	74	38	38	5.55m - 5.65m Broken Core
42.51		<b>Jurassic Bedrock</b> Weak brownish grey laminated slightly weathered fine grained MUDSTONE							5.97 - 6.05 B,W,C,R,S
		<b>Jurassic Bedrock</b> Strong grey and brownish grey thinly to medium bedded fresh crystalline LIMESTONE			6	91	49	47	6.25 B,W,C,R,S 6.45 B,W,C,R,S 6.51 B,W,C,R,S 6.87 B,W,C,R,S
41.48		<b>Jurassic Bedrock</b> Weak brownish grey laminated fresh fine grained MUDSTONE							7.00 - 7.06 B,W,C,R,S
		<b>Jurassic Bedrock</b> Strong grey and brownish grey thinly to medium bedded fresh crystalline LIMESTONE							7.38 B,W,C,R,S
40.48		<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE			7	95	76	70	7.80 B,W,C,R,S 8.00 - 8.03 B,W,C,R,S
		<b>Jurassic Bedrock</b> Strong grey and brownish grey thinly to medium bedded fresh crystalline LIMESTONE							8.13 B,W,C,R,S 8.33 B,W,C,R,S 8.53 B,MW,C,R,S 8.72 B,MW,C,R,S 8.98 B,MW,C,R,S
39.29		<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE			8	99	78	64	9.18 B,MW,C,R,S 9.28 B,MW,C,R,S
		<b>Jurassic Bedrock</b> Strong grey and brownish grey thinly to medium bedded fresh crystalline LIMESTONE							9.42 B,MW,C,R,S 9.62 B,MW,C,R,S 9.74 B,MW,C,R,S
38.48									

Contractor: Apex Drilling  
Drill Type: Rotary air flush  
Bit Type: P.C.D.  
Rig Type: Gryphon

Hole Diameter (mm): 105  
Casing depth (m): 0  
Core Diameter (mm): 76mm (HO) 412  
Drilled By: MJ

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# DRILLHOLE No. BH14

Client: Defence Estates

Ground Level m (A.O.D.): 47.20

Hole Type: Open Hole/Corrod

Project: RAF St Athan, Extension Areas  
: CAN No. MD099066A

Hole Depth m: 10.0

Co.ordinates: E 299162.05 N 167988.76

Location:

Well Height m (A.O.D.):

Logged By: AWJ

Date: 04/05.02.03

Base of Exploratory Hole m (A.O.D.): 37.20

Sheet No: 1 of 2

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/ Remarks
	46.9	<b>Driller's Description</b> Topsoil							
1	46.2	<b>Driller's Description</b> Boulder Clay							1.00m - 1.40m Broken Core
2		<b>Jurassic Bedrock</b> Moderately strong grey thinly to medium bedded slightly weathered crystalline LIMESTONE			1	93	46	46	1.70m - 1.90m Broken Core
	44.7	<b>Jurassic Bedrock</b> Very weak grey brown laminated fresh MUDSTONE							2.30 B,W,C,R,5
		<b>Jurassic Bedrock</b> Moderately strong grey thinly to medium bedded slightly weathered crystalline LIMESTONE							2.50 - 2.52 B,W,C,R,5
3	44.1	<b>Jurassic Bedrock</b> Very weak grey brown laminated fresh MUDSTONE			2	91	58	45	2.65 B,W,C,R,5
									2.90 B,W,C,R,5
4									3.10 - 3.15 B,W,C,R,5
									3.90 B,W,C,R,5
									3.84 B,W,C,R,5
									4.07 B,W,C,R,5
									4.09 B,W,C,R,5
									4.29 - 4.31 B,W,C,R,5
									4.57 B,W,C,R,5
5									

Contractor: Apex Drilling

Drill Type: Rotary air flush

Bit Type: P.C.D.

Rig Type: Gryphon

Hole Diameter (mm): 105

Casing depth (m): 0

Core Diameter (mm): 75mm (HO) 412

Drilled By: MJ

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# DRILLHOLE No. BH14

Client: Defence Estates	Ground Level m (A.O.D.): 47.20	Hole Type: Open Hole/Cored
Project: RAF Station, Extension Areas	Hole Depth m: 100	Co-ordinates: E 299162.05 N 167988.76
Location: CAN No. MD0990086A	Well Height m (A.O.D.):	Logged By: AWJ
Date: 04/05/02.03	Base of Exploratory Hole m (A.O.D.): 37.70	Sheet No: 2 of 2

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
			[Brick Pattern]	[Dotted Pattern]	3	82	43	35	5.20 B,W,C,R,5
			[Brick Pattern]	[Dotted Pattern]					5.70 B,W,C,R,5
			[Brick Pattern]	[Dotted Pattern]					5.73 B,W,C,R,5
			[Brick Pattern]	[Dotted Pattern]					6.03 B,W,C,R,5
			[Brick Pattern]	[Dotted Pattern]	4	78	71	70	6.30 B,W,C,R,5
			[Brick Pattern]	[Dotted Pattern]					6.48 B,W,C,R,5
			[Brick Pattern]	[Dotted Pattern]					6.66 B,W,C,R,5
		<b>Jurassic Bedrock</b> Moderately strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Brick Pattern]	[Dotted Pattern]					7.33 B,W,C,R,5
			[Brick Pattern]	[Dotted Pattern]					7.47 B,W,C,R,5
			[Brick Pattern]	[Dotted Pattern]					7.57 B,W,C,R,5
			[Brick Pattern]	[Dotted Pattern]	5	95	92	87	
			[Brick Pattern]	[Dotted Pattern]					8.30 B,W,C,R,5
			[Brick Pattern]	[Dotted Pattern]					8.60 B,W,C,R,5
			[Brick Pattern]	[Dotted Pattern]					8.78 B,W,C,R,5
			[Brick Pattern]	[Dotted Pattern]					9.03 - 9.09 B,W,C,R,5
	38.17	<b>Jurassic Bedrock</b> Moderately weak to moderately strong very dark grey laminated fresh fine grained MUDSTONE	[Brick Pattern]	[Dotted Pattern]	6	99	85	72	9.30 B,W,C,R,5
		<b>Jurassic Bedrock</b> Moderately strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Brick Pattern]	[Dotted Pattern]					9.47 B,W,C,R,5
			[Brick Pattern]	[Dotted Pattern]					9.52 B,W,C,R,5
			[Brick Pattern]	[Dotted Pattern]					9.92 B,W,C,R,5
10	37.2		[Brick Pattern]	[Dotted Pattern]					

Contractor: Apex Drilling  
 Drill Type: Rotary Air Wash  
 Bit Type: P.C.D.  
 Rig Type: Gryphon

Hole Diameter (mm): 105  
 Casing depth (m): 0  
 Core Diameter (mm): 76mm (HO) 412  
 Drilled By: MJ

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# DRILLHOLE No. BH15



Client : Defence Estates	Ground Level m (A.O.D.) : 47.86	Hole Type : Open Hole/Cored
Project : RAF Station, Extension Areas	Hole Depth m : 10.0	Co-ordinates : E 299289 08 N 167884.38
Location : CAN No. MD0990086A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 04.02.03	Base of Exploratory Hole m (A.O.D.) : 37.96	Sheet No : 1 of 2

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
		<b>Drillers Description</b>							
47.56									0.40m - 1.50m Broken Core
		<b>Weathered Bedrock</b> Moderately strong grey stained orange LIMESTONE, examined as angular gravel			1	64	9	9	
46.88									1.65m - 2.05m Broken Core
		<b>Jurassic Bedrock</b> Moderately strong grey thinly to medium bedded slightly weathered crystalline LIMESTONE			2	82	43	41	2.23 B,W,C,R,5
45.53									2.43 - 2.46 B,W,C,R,5
		<b>Jurassic Bedrock</b> Very weak greyish orange brown laminated moderately weathered fine grained MUDSTONE							2.73 B,W,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE							3.20 B,W,C,R,5
44.13									3.63 B,W,C,R,5
		<b>Jurassic Bedrock</b> Moderately weak to weak greyish brown laminated slightly weathered fine grained MUDSTONE			3	88	75	69	3.57 B,W,C,R,5
									3.64 J,W,SS,St,85
									3.83 - 3.89 B,W,C,R,5
									4.09 B,W,C,R,5
									4.50 B,W,C,R,5
									4.57 B,W,C,R,5
5									5.01 B,W,C,R,5

Contractor : Apex Drilling	Hole Diameter (mm) : 105	APEX DRILLING SERVICES LTD. 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 78mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH15

Client: Defence Estates	Ground Level m (A.O.D.): 47.06	Hole Type: Open Hole/Cored
Project: RAF St Athan, Extension Area	Hole Depth m: 10.0	Coordinates: E 289289.06 N 167884.38
Location: CAN No. M00890066A	Well Height m (A.O.D.):	Logged By: AWJ
Date: 04.02.03	Base of Exploratory Hole m (A.O.D.): 37.88	Sheet No: 2 of 2

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE			4	94	79	67	5.40 B,W,C,R,5
					5.62 B,W,C,R,5				
					5.89 B,W,C,R,5				
					6.00 B,W,C,R,5				
					6.08-6.34 J,N,SS,Sm,88				
7					6.80 6.83 B,W,C,R,5				
					6.86 B,W,C,R,5				
					7.22 B,W,C,R,5				
					7.32 B,W,C,R,5				
					7.65 B,W,SS,R,5				
					7.85 B,W,SS,R,5				
					7.97 B,W,C,R,5				
8					6.37 B,W,C,R,5				
					6.80 J,MW,SS,Sm,45				
9		8.00m - 9.40m Broken Core							
		8.53 B,W,C,R,5							
		8.84 B,W,C,R,5							
10	37.88				7	84	57	48	

Contractor: Apex Drilling	Hole Diameter (mm): 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 749 096 FAX
Drill Type: Rotary air flush	Casing depth (m): 0	
Bit Type: P.C.D.	Core Diameter (mm): 76mm (HO) 412	
Rig Type: Gryphon	Drilled By: MJ	

# DRILLHOLE No. BH16

Unit : Defence Estates	Ground Level m (A.O.D.) : 45.31	Hole Type : Open Hole/Cored
Project : RAF Slithan, Extension Areas	Hole Depth m : 10.0	Co-ordinates : E 300170.00 N 109748.75
Location : CAN No. MD0990068A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 07.02.03	Base of Exploratory Hole m (A.O.D.) : 35.31	Sheet No : 1 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
44.31		<b>Driller's Description</b> Limestone and clayey soil							
2					1	62	33	20	1.48 B,W,C,R,S 1.65 B,W,C,R,S 1.77 B,W,C,R,S
									2.08 B,W,C,R,S
									2.42m - 3.30m Broken Core
3		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE, with some white calcite veining			2	81	25	15	
									3.71 J,W,C,Sm,85
4					3	91	37	37	3.80 B,W,C,R,S
									4.00 B,W,C,R,S 4.11 B,W,C,R,S
									4.30 - 4.58 J,N,SS,Sm,85
									4.59 B,W,C,R,S
5									4.82 B,W,C,R,S 4.83 - 5.02 J,N,C,Sm,85

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (H10) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH16

Client : Defence Estates	Ground Level m (A.O.D.) : 45.31	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas : CAN No. MD09B0086A	Hole Depth m : 10.0	Coordinates : E 300170.90 N 168748.75
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 07.02.03	Base of Exploratory Hole m (A.O.D.) : 35.31	Sheet No. 2 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
			[Brick pattern]	[Well diagram]	4	72	23	13	5.37 B,W,C,R,5 5.42 B,W,C,R,5
			[Brick pattern]	[Well diagram]	5	75	36	35	6.63 B,W,C,R,5 6.70 B,W,C,R,5 6.81 B,W,C,R,5 7.07 B,W,C,R,5 7.23 B,W,C,R,5 7.46 B,W,C,R,5 7.55 - 7.85 B,W,C,R,5
7			[Brick pattern]	[Well diagram]	6	74	40	20	7.80 B,W,C,R,5
			[Brick pattern]	[Well diagram]	7	95	78	88	
9	36.36 36.19	<p><b>Jurassic Bedrock</b> Moderately weak dark grey laminated fresh fine grained MUDSTONE</p> <p><b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE</p> <p><b>Jurassic Bedrock</b> Very weak greyish orange brown laminated highly weathered fine grained MUDSTONE</p>	[Brick pattern]	[Well diagram]					
10	35.3	<p><b>Jurassic Bedrock</b></p>	[Brick pattern]	[Well diagram]					

Contractor : Apex Drilling	Hole Diameter (mm) : 105	APEX DRILLING SERVICES LTD.
Drill Type : Rotary air flush	Casing depth (m) : 0	01656 749 119 TEL
Bit Type : P.C.D.	Core Diameter (mm) : 78mm (HO) 412	01656 749 096 FAX
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH17

Vent : Defence Estates	Ground Level m (A.O.D.) : 41.65	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas : CAN No. MD0990088A	Hole Depth m : 12.00	Co-ordinates : E 288334.21 N 188838.55
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 11/12.02.03	Base of Exploratory Hole m (A.O.D.) : 31.65	Sheet No : 1 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
	41.45	<b>Driller's Description</b> Limestone and clayey soil	[Brick Pattern]	[Well Diagram]	1	80	15	15	0.50m - 1.77m Broken Core
2		<b>Jurassic Bedrock</b> Strong grey stained orange in places thinly to medium bedded slightly weathered becoming fresh crystalline LIMESTONE	[Brick Pattern]	[Well Diagram]	2	73	29	24	1.77 B,MW,C,R,5 2.03 B,MW,C,R,5 2.12 B,MW,C,R,5 2.21 B,MW,C,R,5 2.40 B,MW,C,R,5
3			[Brick Pattern]	[Well Diagram]					2.60 - 2.85 J,MW,SS,R,45 3.00 - 3.02 B,MW,C,S,R,5 3.22 B,MW,SS,C,R,5 3.29 B,MW,SS,C,R,5 3.38 B,MW,SS,C,R,5
4	37.65		[Brick Pattern]	[Well Diagram]	3	86	55	38	3.83 B,MW,C,R,5 3.85 B,MW,C,R,5 4.19 - 4.21 B,MW,IC,F,R,5 4.21 B,MW,C,R,5 4.21-4.47 J,MW,SS,R,45 4.50 B,MW,C,R,5 4.65 B,MW,C,R,5
5			[Brick Pattern]	[Well Diagram]					

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 119 TEL 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	



# DRILLHOLE No. BH17

Client : Defence Estates	Ground Level m (A.O.D.) : 41.65	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas : CAN No. MD0990088A	Hole Depth m : 12.00	Co-ordinates : E 298334.21 N 169836.55
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 11/12.02.03	Rise of Exploratory Hole m (A.O.D.) : 31.65	Sheet No : 2 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
									5.10 - 5.54 J,SS,R,80
				4	79	36	36	5.55 B,MW,C,R,5	
								5.87 B,MW,C,R,5	
								6.00 B,MW,C,R,5	
								6.43 B,MW,C,R,5	
								6.44 - 6.55 J,SS,C,R,80	
				5	95	77	77	6.78 B,MW,C,R,5	
7		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE							7.17 - 7.19 B,W,IC,F,R,5
									7.50 B,W,C,W,R,5
									8.15 B,W,C,R,5
					6	79	60	58	8.30 - 8.32 B,W,R,5
									8.35 B,MW,C,R,5
								8.98 B,MW,C,R,5	
							9.26 B,MW,C,R,5		
							9.50 B,MW,C,R,5		
							Snapped Core @ 9.66		
							Snapped Core @ 9.82		
10									

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 75mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH17

Client : Defence Estates	Ground Level m (A.O.D.) : 41.85	Hole Type : Open Hole/Cored
Project : RAF St.Athen, Extension Areas : CAN No. MD0990068A	Hole Depth m : 12.00	Co-ordinates : E 288334.21 N 188836.55
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 11/12.02.03	Base of Exploratory Hole m (A.O.D.) : 31.65	Sheet No : 3 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/ Remarks
			█		7	97	87	87	10.16 B,MW,C,R,5 10.28 B,MW,C,R,5 10.30 B,MW,C,R,5
			█		8	98	71	81	10.83 B,MW,C,R,5 11.03 B,MW,C,R,5 11.10 B,MW,C,R,5 11.10 11.27 J,MW,SS,R,60 11.40 B,MW,C,R,5 11.51 B,MW,C,R,5
12	29.85		█						12.00 B,MW,C,R,5
13									
14									
15									

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH18

Client : Defence Estates	Ground Level m (A.O.D.) : 44.19	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas	Hole Depth m : 12.00	Co-ordinates : E 298288.39 N 168886.83
Location : CAN No. MD0990066A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 12.02.03	Base of Exploratory Hole m (A.O.D.) : 32.19	Sheet No : 1 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Driller's Description	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
43.89			Limestone and clayey soil							
43.19		<b>Jurassic Bedrock</b> Moderately strong to strong grey stained orange in places slightly weathered crystalline LIMESTONE				1	70	0	0	0.50m - 3.0m Broken Core
2						2	70	0	0	
3										3.25 B,W,C,R,5 3.25m - 3.65m Broken Core
4						3	91	55	47	
4										4.00 B,W,C,R,5
4										4.45 B,W,C,R,5 4.50 B,W,C,R,5
4										4.75 B,W,C,R,5 4.89 B,W,C,R,5
5										5.01 B,W,C,R,5

Contractor : Apex Drilling  
 Drill Type : Rotary air flush  
 Bit Type : P.C.D.  
 Rig Type : Gryphen

Hole Diameter (mm) : 105  
 Casing depth (m) : 1.5  
 Core Diameter (mm) : 76mm (HO) 412  
 Drilled By : MJ

**APEX DRILLING SERVICES LTD.**  
 01656 749 149 TEL  
 01656 749 096 FAX

# DRILLHOLE No. BH18

Client : Defence Estates	Ground Level m (A.O.D.) : 44.19	Hole Type : Open Hole/Cored
Project : RAF St. Athan, Extension Areas CAN No. MD0890088A	Hole Depth m : 12.00	Co-ordinates : E 290200.39 N 168888.83
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 12.02.03	Base of Exploratory Hole m (A.O.D.) : 32.19	Sheet No : 2 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks			
							4	91	75	77	5.33 B,W,C,R,5 5.51 B,W,C,R,5	
											5.95 B,W,C,R,5	
											6.21 B,W,C,R,5 6.22 - 6.37 J,N,Sm,85	
7		<b>Jurassic Bedrock</b> Moderately strong to strong grey thin to medium bedded fresh crystalline LIMESTONE					5	78	67	67	6.87 B,W,C,R,5	
												7.34 B,W,C,R,5
												7.50 - 7.58 J,N,Sm,85
												7.95 B,W,C,R,5
8								6	97	80	73	
												8.50 B,W,C,R,5
											8.82 B,W,C,R,5	
9											9.10 B,MW,C,R,5	
									9.30 B,MW,C,R,5			
									9.64 B,MW,C,R,5			
10									9.94 B,MW,C,R,5			

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 119 TEL 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 1.5	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH18


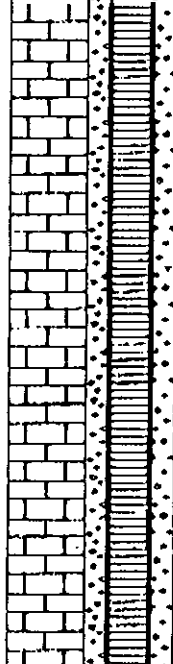
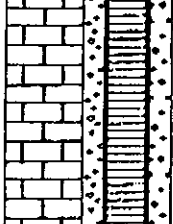
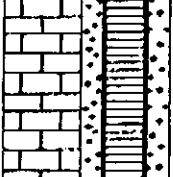
Client : Defence Estates	Ground Level m (A.O.D.) : 44.19	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas : CAN No MD0990088A	Hole Depth m : 12.00	Co-ordinates : E 298200 39 N 168880 83
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 12.02.03	Base of Exploratory Hole m (A.O.D.) : 32.19	Sheet No : 3 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
12	32.19		[Brick Pattern]		7	98	75	63	10.10 B,MW,C,R,5  10.50 B,MW,C,R,5 10.56 B,MW,C,R,5  10.81 B,MW,C,R,5 11.05 B,MW,C,R,5 11.06 - 11.08 J,MN,SS,R,85  11.50 B,MW,C,R,5 11.57 B,MW,C,R,5 11.78 B,MW,C,R,5 11.79 - 12.00 J,MW,SS,R,85
13									
14									
15									

Contractor : Apex Drilling	Hole Diameter (mm) : 105	APEX DRILLING SERVICES LTD.
Drill Type : Rotary air flush	Casing depth (m) : 1.5	01656 749 149 TEL.
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HU) 412	01656 749 096 FAX
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH19

Client : Defence Estates	Ground Level m (A.O.D.) : 45.75	Hole Type : Open Hole/Cased
Project : RAF St Albans, Extension Areas	Hole Depth m : 12.0	Co-ordinates : E 298236.08 N 168939.69
CAN No. MD0990066A	Well Height m (A.O.D.) :	Logged By : AWJ
Location :	Base of Exploratory Hole m (A.O.D.) : 33.75	Sheet No : 1 of 3
Date : 12/13 02.03		

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
	45.25	Limestone and clayey soil							0.50m - 1.50m Broken Core
	44.75	<b>Glacial Drift</b> Soft orange brown silty clay with some to much fine to medium angular gravel			1	80	8	0	1.50 - 1.80 B,W,C,R,5 1.75 B,W,C,R,5 1.89 B,W,C,R,5 2.0-2.17 J,MW,N,R,85 2.18 B,W,C,R,5
2					2	78	39	39	2.84 B,W,C,R,5 2.85 J,MW,R,85 3.0 3.48 J,MW,R,85
3					3	58	48	36	3.3 B,W,C,R,5
4									
5									

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH19

Client : Defence Estates	Ground Level m (A.O.D.) : 45.75	Hole Type : Open Hole/Cored
Project : RAF St. Athan, Extension Areas : CAN No. MD0990086A	Hole Depth m : 12.0	Co-ordinates : E 298236.08 N 168939.69
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 12/13.02.03	Base of Exploratory Hole m (A.O.U.) : 33.75	Sheet No : 2 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
4					4	92	74	71	
5					5	77	65	62	8.80 B,W,C,R,5
7					7.02 B,W,C,R,5				
					7.22 B,W,C,R,5				
					7.50 B,W,C,R,5				
8					7.82 B,W,C,R,5				
					7.87 B,W,C,R,5				
					8.07 B,W,C,R,5				
					8.39 B,W,C,R,5				
					8.52 B,W,C,R,5				
9			8.76 B,N,SS,Sm,5						
			8.80 B,N,SS,Sm,5						
			9.0 B,W,C,R,5						
			9.28 B,W,C,R,5						
			9.38 B,W,C,R,5						
			9.68 B,W,C,R,5						
10			9.82 B,W,C,R,5						

**Jurassic Bedrock**  
Strong gray thinly to medium bedded fresh crystalline LIMESTONE

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (IIO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH19

Client : Defence Estates	Ground Level m (A.O.D) : 45.75	Hole Type : Open Hole/Corad
Project : RAF St. Athan, Extension Areas : CAN No. MD0990066A	Hole Depth m : 12.0	Co ordinates : E 298235.08 N 169938.69
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 12/13.02.03	Base of Exploratory Hole m (A.O.D) : 33.75	Sheet No : 3 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/ Remarks
	35.15	<b>Jurassic Bedrock</b> Moderately weak dark grey laminated fresh fine grained MUDSTONE	[Brick pattern]		7	91	81	85	10.16 B,W,C,R,5 10.22 B,W,C,R,5
	34.58	<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Brick pattern]		8	91	55	45	10.5 B,W,C,R,5
	33.75	<b>Jurassic Bedrock</b> Moderately weak dark grey laminated fresh fine grained MUDSTONE	[Brick pattern]						
12		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Brick pattern]						
13									
14									
15									

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 75mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	



# DRILLHOLE No. BH20

Client : Defence Estates	Ground Level m (A.O.D.) : 48.63	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas	Hole Depth m : 12.0	Co ordinates : E 798263.27 N 169008.47
Location : CAN No. MD0990069A	Well Height m (A O D) :	Logged By : AWJ
Date : 13.02.03	Base of Exploratory Hole m (A O D.) : 34.61	Sheet No : 1 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks		
40.13		<b>Driller's Description</b> Limestone and clayey soil			1	51	17	10	0.50m - 1.60m Broken Core		
2		<b>Jurassic Bedrock</b> Strong grey stained orange in places thinly to medium bedded slightly weathered becoming fresh crystalline LIMESTONE	[Diagrammatic representation of Jurassic Bedrock]	[Diagrammatic representation of Well Detail]	2	82	58	58	1.90 B,W,C,R,5 2.19 B,W,C,R,5		
3										2.65 B,W,C,R,5 2.70 B,W,C,R,5 2.90 B,W,C,R,5 3.19 B,W,C,R,5 3.33 B,W,R,5 3.36 B,W,C,R,5	
4											3.80 B,W,C,R,5 3.90 - 4.00 J,MW,SS,R,85 4.00 B,W,C,R,5 4.25 B,W,C,R,5 4.35 B,W,C,R,5
5											4.80 B,W,C,R,5 4.86 B,W,C,R,5
								3	93	54	54

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH20

Client : Defence Estates

Ground Level m (A.O.D.) : 46.63

Hole Type : Open Hole/Cored

Project : RAF St Athan, Extension Areas  
CAN No. MD0890086A

Hole Depth m : 12.0

Co ordinates : E 288263.27 N 168008.47

Location :

Well Height m (A.O.D.) :

Logged By : AWJ

Date : 13.02.03

Base of Exploratory Hole m (A.O.D.) : 34.63

Sheet No : 2 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/ Remarks
									5.18 B,W,C,R,5
									5.36 B,W,C,R,5
					4	78	68	65	
	40.51	<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE							6.00 B,W,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE			5	92		65	6.12 - 6.18 B,W,C,R,5
7	39.54	<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE							6.78 B,W,C,R,5
									6.82 B,W,C,R,5
									7.09 - 7.13 B,W,C,R,5
									7.25 B,W,C,R,5
									7.58 B,W,C,R,5
									7.70 B,W,C,R,5
8		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE			6	82	45	43	7.71 - 7.74 J,MW,SS,R,85
									7.75 B,W,C,R,5
									7.85 B,W,C,R,5
									8.34 - 8.38 B,W,C,F,R,5
									8.50 - 8.53 J,MW,SS,R,45
									8.80 B,W,C,R,5
9	37.5	<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE							8.87 B,W,C,R,5
	37.38								9.00 B,W,C,R,5
									9.13 - 9.25 B,W,C,R,5
10									

Contractor : Apex Drilling

Drill Type : Rotary air flush

Bit Type : P.C.D.

Rig Type : Gryphon

Hole Diameter (mm) : 105

Casing depth (m) : 0

Core Diameter (mm) : 78mm (HIO) 412

Drilled By : MJ

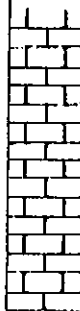
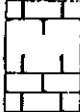

APEX DRILLING SERVICES LTD.

01656 749 449 TEL

01656 749 096 FAX

# DRILLHOLE No. BH20

Client : Defence Estates	Ground Level m (A.O.D.) : 46.83	Hole Type : Open Hole/Core
Project : RAF St. Athans, Extension Areas : CAN No. MD09B0066A	Hole Depth m : 12.0	Co-ordinates : E. 298283.27 N 169008.47
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 13.02.03	Base of Exploratory Hole m (A.O.D.) : 34.83	Sheet No. 3 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks						
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE			7	46	34	34	10.20 B,W,C,R,S 10.45 B,W,C,R,S 10.65 B,W,C,R,S 10.83 B,W,C,R,S 11.00 B,W,C,R,S						
	35.33				<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE			8	93	67	37	11.30 B,W,C,R,S 11.37 B,W,C,R,S 11.45 B,W,C,R,S			
	34.83							<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE							11.70 B,W,C,R,S 11.80 B,W,C,R,S 11.90 B,W,C,R,S
12															
13															
14															
15															

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : M.J.	

# DRILLHOLE No. BH21

Client : Defence Estates	Ground Level m (A.O.D.) : 48.85	Hole Type : Open Hole/Cored
Project : RAF St. Athan, Extension Areas : CAN No. MD0990066A	Hole Depth m : 12.0	Co-ordinates : E 298198 74 N 188982 80
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 13/14.02.03	Base of Exploratory Hole m (A.O.D.) : 34.85	Sheet No : 1 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
	48.35	<b>Driller's Description</b> Limestone and clayey soil			1	50	0	0	0.50m - 1.90m Broken Core
2					2	67	28	21	2.10 B,W,C,R,5 2.27 B,W,C,R,5 2.39 B,W,C,R,5 2.40 - 2.48 J,MN,Sm,85
3		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded slightly weathered becoming fresh crystalline LIMESTONE			3	93	59	59	2.80 B,W,C,R,5 3.30m - 3.80m Broken Core
4									4.04 B,W,C,R,5 4.30 B,W,C,R,5 4.80 B,W,C,R,5 4.78 B,W,C,R,5
5									5.07 B,W,C,R,5

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (IIO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH21

Client : Defence Estates	Ground Level m (A.O.D.) : 45.85	Hole Type : Open Hole/Cored
Project : RAF St. Athan, Extension Areas CAN No. MD099006A	Hole Depth m : 12.0	Co-ordinates : E 298198.74 N 168902.00
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 13/14.02 03	Base of Exploratory Hole m (A.O.D.) : 34.85	Sheet No : 2 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
			[Strata Type Diagram]	[Well Detail Diagram]					
					4	96	72	68	5.40 B,W,C,R,5 5.42 - 5.66 J,MN,SS,R,85
									5.70 B,W,C,R,5 5.73 B,W,C,R,5
									6.10 B,W,C,R,5 6.26 B,W,C,R,5 6.38 B,W,C,R,5 6.38 B,W,C,R,5 6.42 B,W,C,R,5 6.60 B,W,C,R,5 6.75 B,W,C,R,5
7					5	89	67	53	7.10 B,W,C,R,5  7.41 B,W,C,R,5  7.86 B,W,C,R,5
									7.93 B,W,C,R,5 8.03 B,W,C,R,5 8.17 B,W,C,R,5 8.28 B,W,C,R,5 8.37 B,W,C,R,5 8.48 B,W,C,R,5
					6	85	79	58	8.67 B,W,C,R,5
									9.00 B,W,C,R,5
	37.88	<b>Jurassic Bedrock</b> Weak dark grey laminated fine grained fresh MUDSTONE							9.45 B,W,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE							9.85 B,W,C,R,5
	37.05	<b>Jurassic Bedrock</b> Weak dark grey laminated fine grained fresh MUDSTONE							9.8 - 9.83 B,W,C,R,5
10									

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH21

ent : Defence Estates	Ground Level m (A.O.D.) : 46.85	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas	Hole Depth m : 12.0	Co-ordinates : E 290198.74 N 188982.80
Location : CAN No. MD0990086A	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 13/14 02 03	Base of Exploratory Hole m (A.O.D.) : 34.85	Sheet No. 3 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/ Remarks
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Brick pattern]		7	97	72	65	10.20 B,W,C,R,S
	39.2	<b>Jurassic Bedrock</b> Weak dark grey laminated fine grained fresh MUDSTONE	[Brick pattern]						10.65 10.88 B,W,C,R,S
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Brick pattern]		8	92	71	64	10.85 B,W,C,R,S
	35.15	<b>Jurassic Bedrock</b> Weak dark grey laminated fine grained fresh MUDSTONE	[Brick pattern]						11.20 B,W,C,R,S
	34.85	<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Brick pattern]						11.55 B,W,C,R,S
12		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE	[Brick pattern]						11.7 11.72 B,W,C,R,S
			[Brick pattern]						11.85 B,W,C,R,S
13			[Brick pattern]						
14			[Brick pattern]						
15			[Brick pattern]						

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b>
Drill Type : Rotary air flush	Casing depth (m) : 0	01656 749 149 TEL
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	01656 749 096 FAX
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH22

39.12  
37.02  
2.12

Client : Defence Estates	Ground Level m (A.O.D.) : 39.12	Hole Type : Open Hole/Cored
Project : RAF SLAthen, Extension Areas : CAN No. M00990088A	Hole Depth m : 12.0	Co-ordinates : E 298550.18 N 169014.19
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 10/11/02.03	Base of Exploratory Hole m (A.O.D.) : 27.12	Sheet No : 1 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
	38.92								
		<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fresh crystalline LIMESTONE			1	41	13	10	1.32 B,W,C,R,S 1.58m - 1.65m Broken Core
2					2	38	16	9	
3	35.92	Firm orange brown very sandy silty CLAY							3.00m - 4.30m Broken Core
		<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fresh crystalline LIMESTONE, with calcite veining			3	71	6	0	
4	34.82	Firm orange brown very sandy silty CLAY							4.39 B,W,C,R,S
		<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fresh crystalline LIMESTONE							4.72 B,W,C,R,S 4.82 B,W,C,R,S 4.91 B,W,C,R,S
5									

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
BIT Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH22

Client : Defence Estates	Ground Level m (A.O.D.) : 39.12	Hole Type : Open Hole/Cored
Project : RA- St. Athan, Extension Areas : CAN No. MD0990065A	Hole Depth m : 12.0	Co-ordinates : E 298550.10 N 169014.19
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 10/11.02.03	Base of Exploratory Hole m (A.O.D.) : 27.12	Sheet No : 2 of 3


Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
	34.02	<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE	[Brick pattern]	[Well detail]	4	73	49	31	5.10 - 5.17 B,W,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE							5.40 B,W,C,R,5
	32.82	<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE	[Brick pattern]	[Well detail]	5	86	58	50	6.00m - 6.30m Broken Core
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE							6.35 B,W,C,R,5
7	31.98	<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE	[Brick pattern]	[Well detail]	8	93	53	38	6.90 B,W,C,R,5
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE							7.10 - 7.16 B,W,C,R,5
8			[Brick pattern]	[Well detail]					7.62 B,W,C,R,15
									7.74 B,W,C,R,5
			[Brick pattern]	[Well detail]					8.08 B,W,C,R,5
									8.19 B,W,C,R,5
			[Brick pattern]	[Well detail]					8.31 B,W,C,R,5
									8.51 B,W,C,R,5
9			[Brick pattern]	[Well detail]					8.80 - 9.00 Broken Core
									9.12 B,W,C,R,5
			[Brick pattern]	[Well detail]					9.18 B,W,C,R,5
									9.40 B,W,C,R,5
			[Brick pattern]	[Well detail]					9.65 B,W,C,R,5
									9.85 B,W,C,R,5
10			[Brick pattern]	[Well detail]					

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL. 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 0	
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	
Rig Type : Gryphon	Drilled By : MJ	



# DRILLHOLE No. BH22

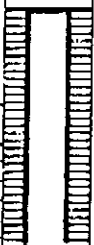

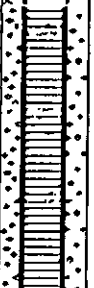

Unit : Defence Estates	Ground Level m (A.O.D.) : 39.12	Hole Type : Open Hole/Cored
Project : RAF St Athan, Extension Areas : CAN No. MD0990066A	Hole Depth m : 12.0	Co-ordinates : E 290550.19 N 169014.19
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 10/11/02.03	Date of Exploratory Hole m (A.O.D.) : 27.12	Sheet No : 3 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/ Remarks
					7	79	61	42	
					8	87	73	67	
	27.52	<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE							10.74 B,W,C,R,S
	27.12	<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE							10.92 B,W,C,R,S
12									11.60 B,W,C,R,S
13									11.90 B,W,C,R,S
14									
15									

Contractor : Apex Drilling	Hole Diameter (mm) : 105	APEX DRILLING SERVICES LTD.
Drill Type : Rotary air flush	Casing depth (m) : 0	01656 749 149 TEL.
Bit Type : P.C.D.	Core Diameter (mm) : 76mm (HO) 412	01656 749 096 FAX
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH23



Client : Defence Estates	Ground Level m (A.O.D.) : 40.33	Hole Type : Open Hole/Cornd
Project : RAF St.Athan, Extension Areas : CAN No. MD090068A	Hole Depth m : 12.0	Co-ordinates : E 298516 71 N 108999 99
Location :	Well Height m (A.O.D.) :	Logged By : AWJ
Date : 11.02.03	Base of Exploratory Hole m (A.O.D.) : 28.33	Sheet No : 1 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/ Remarks
	40.03	<b>Driller's Description</b> Limestone and clayey soil			1	73	6	0	0.30 - 0.80 J,MN,SS,Sm,85
2		<b>Jurassic Bedrock</b> Moderately strong to strong grey thinly to medium bedded fresh crystalline LIMESTONE			2	55	23	10	1.68 B,W,C,R,5 1.82 B,W,C,R,5 1.94 B,W,C,R,5 1.95m - 3.00m Broken Core
3					3	85	84	70	3.15 B,W,C,R,5 3.23 B,W,C,R,5 3.52 B,W,C,R,5
4					4				3.90 B,W,C,R,5 4.02 B,W,C,R,5 4.27 B,W,C,R,5 4.5 B,W,C,R,5 4.59 B,W,C,R,5
5	35.42	<b>Jurassic Bedrock</b>			5				4.90 B,W,C,R,5 4.91 - 4.98 B,W,C,R,5

Contractor : Apex Drilling	Hole Diameter (mm) : 105	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 749 096 FAX
Drill Type : Rotary air flush	Casing depth (m) : 15	
Bit Type : P.C.D.	Core Diameter (mm) : 78mm (HO) 41Z	
Rig Type : Gryphon	Drilled By : MJ	

# DRILLHOLE No. BH23


Client : Defence Estates	Ground Level m (A O D) : 40.33	Hole Type : Open Hole/Cored
Project : RAF St. Albans, Extension Areas : CAN No. MD0990065A	Hole Depth m : 12.0	Co-ordinates : E 298516.71 N 168990.99
Location :	Well Height m (A O D) :	Logged By : AWJ
Date : 11.02.03	Base of Exploratory Hole m (A O D) : 28.33	Sheet No. : 2 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
		<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE			4	97	77	62	5.16 B,W,C,R,S
					5	87	71	51	5.92 B,W,C,R,S 5.6 B,W,C,R,S 5.73 B,W,C,R,S
					6	97	97	67	6.00 B,W,C,R,S 6.28 B,W,C,R,S 6.33 B,W,C,R,S
7					7	87	71	51	6.83 B,W,C,R,S 6.96 B,W,C,R,S
					8	97	97	67	7.17 B,W,C,R,S 7.21 B,W,R,S
					9	87	71	51	7.44 B,W,C,R,S 7.48 B,W,C,R,S
					10	97	97	67	7.77 B,W,C,R,S 7.82 B,W,C,R,S
					11	97	97	67	8.09 B,W,C,R,S
					12	97	97	67	8.3 B,W,C,R,S
					13	97	97	67	8.54 B,W,C,R,S 8.60 B,W,C,R,S 8.70 B,W,C,R,S 8.80 B,W,C,R,S 8.94 B,W,C,R,S
					14	97	97	67	9.17 B,W,C,R,S 9.38 B,W,C,R,S

Contractor : Apex Drilling Drill Type : Rotary air flush Bit Type : P.C.D. Rig Type : Gryphon	Hole Diameter (mm) : 105 Casing depth (m) : 1.5 Core Diameter (mm) : 76mm (HO) 412 Drilled By : MJ	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 749 096 FAX
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# DRILLHOLE No. BH23

Unit : Defence Estates Project : RAF St Athan, Extension Areas : CAN No. MD0800066A Location : Date : 11.02.03	Ground Level m (A.O.D.) : 40.33 Hole Depth m : 12.0 Well Height m (A.O.D.) : Base of Exploratory Hole m (A.O.D.) : 28.33	Hole Type : Open Hole/Cored Co-ordinates : E 290516 71 N 188999.00 Logged By : AWJ Sheet No : 3 of 3
--	---	---

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks	
12	28.33	<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE			7	89	78	78	11.07 B,W,C,R,S	
						8	94	88	80	11.32 B,W,C,R,S 11.37 H,W,C,R,S
										11.91 B,W,C,R,S
13										
14										
15										

Contractor : Apex Drilling Drill Type : Rotary air flush Bit Type : P.C.D. Rig Type : Gryphon	Hole Diameter (mm) : 105 Casing depth (m) : 1.5 Core Diameter (mm) : 76mm (HO) 412 Drilled By : MJ	<b>APEX DRILLING SERVICES LTD.</b> 01656 749 149 TEL 01656 749 096 FAX
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# DRILLHOLE No. BH24

Client : Defence Estates  
 Project : RAF St Athan, Extension Areas  
 Location : CAN No. MDD990086A  
 Date : 10.02.03

Ground Level m (A.O.D.) : 40.28  
 Hole Depth m : 12.0  
 Well Height m (A.O.D.) :  
 Base of Exploratory Hole m (A.O.D.) : 28.28

Hole Type : Open Hole/Cored  
 Co ordinates : E 291654.54 N 189036.97  
 Logged By : AWJ  
 Sheet No : 2 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
34.83		<b>Jurassic Bedrock</b> Weak very dark grey laminated fresh fine grained MUDSTONE	[Brick pattern]	[Dotted pattern]	4	87	40	28	5.20 H,W,C,R,5
	<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE	5.28 B,W,C,R,5							
33.97		<b>Jurassic Bedrock</b> Weak dark grey laminated fresh fine grained MUDSTONE	[Brick pattern]	[Dotted pattern]	5	52	52	38	5.30 B,W,C,R,5
	<b>Jurassic Bedrock</b> Strong grey thinly to medium bedded fresh crystalline LIMESTONE	5.35 - 5.40 B,W,C,R,5							
7			[Brick pattern]	[Dotted pattern]	6	100	100	43	5.58 B,W,C,R,5
									5.80 B,W,C,R,5
8			[Brick pattern]	[Dotted pattern]	7	82	74	61	6.05 B,W,C,R,5
									6.23 B,W,C,R,5
8			[Brick pattern]	[Dotted pattern]	7	82	74	61	6.40 B,W,C,R,5
									7.00 B,W,C,R,5
8			[Brick pattern]	[Dotted pattern]	7	82	74	61	7.08 B,W,C,R,5
									7.35 J,W,SS,R,35
8			[Brick pattern]	[Dotted pattern]	7	82	74	61	7.43 B,W,C,R,5
									7.60 B,W,C,R,5
8			[Brick pattern]	[Dotted pattern]	7	82	74	61	7.76 B,W,C,R,5
									7.82 B,W,C,R,5
8			[Brick pattern]	[Dotted pattern]	7	82	74	61	8.05 B,W,C,R,5
									8.37 B,W,C,R,5
8			[Brick pattern]	[Dotted pattern]	7	82	74	61	8.70 B,W,C,R,5
									8.85 B,W,C,R,5
8			[Brick pattern]	[Dotted pattern]	7	82	74	61	9.00 B,W,C,R,5
									9.12 B,W,C,R,5
8			[Brick pattern]	[Dotted pattern]	7	82	74	61	9.46 B,W,C,R,5
									10.0 B,W,C,R,5

Contractor : Apex Drilling  
 Drill Type : Rotary air flush  
 Bit Type : P.C.D.  
 Rig Type : Gryphon

Hole Diameter (mm) : 105  
 Casing depth (m) : 0  
 Core Diameter (mm) : 75mm (HO) 412  
 Drilled By : MJ

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# DRILLHOLE No. BH24

Client: Defence Estates	Ground Level m (A O D) : 40.28	Hole Type: Open Hole/Cored
Project: RAF St. Athan, Extension Areas	Hole Depth m : 12.0	Co-ordinates: E: 298554.54 N: 160036.97
Location: CAN No. MD0990068A	Well Height m (A O D):	Logged By: AWJ
Date: 10.02.03	Base of Exploratory Hole m (A O D.): 28.28	Sheet No: 3 of 3

Depth (metres)	Elevation	Geological Description (BS5930:1999)	Strata Type	Well Detail	Core Run Depth (m)	Total Core Rec. %	Solid Core Rec. %	RQD %	Discontinuities/Remarks
12	28.28				0	82	48	43	10.35 B,W,C,R,5 10.44 B,W,C,R,5
					9	98	88	81	11.15 B,W,C,R,5 11.22 B,W,C,R,5 11.48 B,W,C,R,5
13									
14									
5									

Contractor: Apex Drilling  
 Drill Type: Rotary air flush  
 Bit Type: P.C.D  
 Rig Type: Gryphon

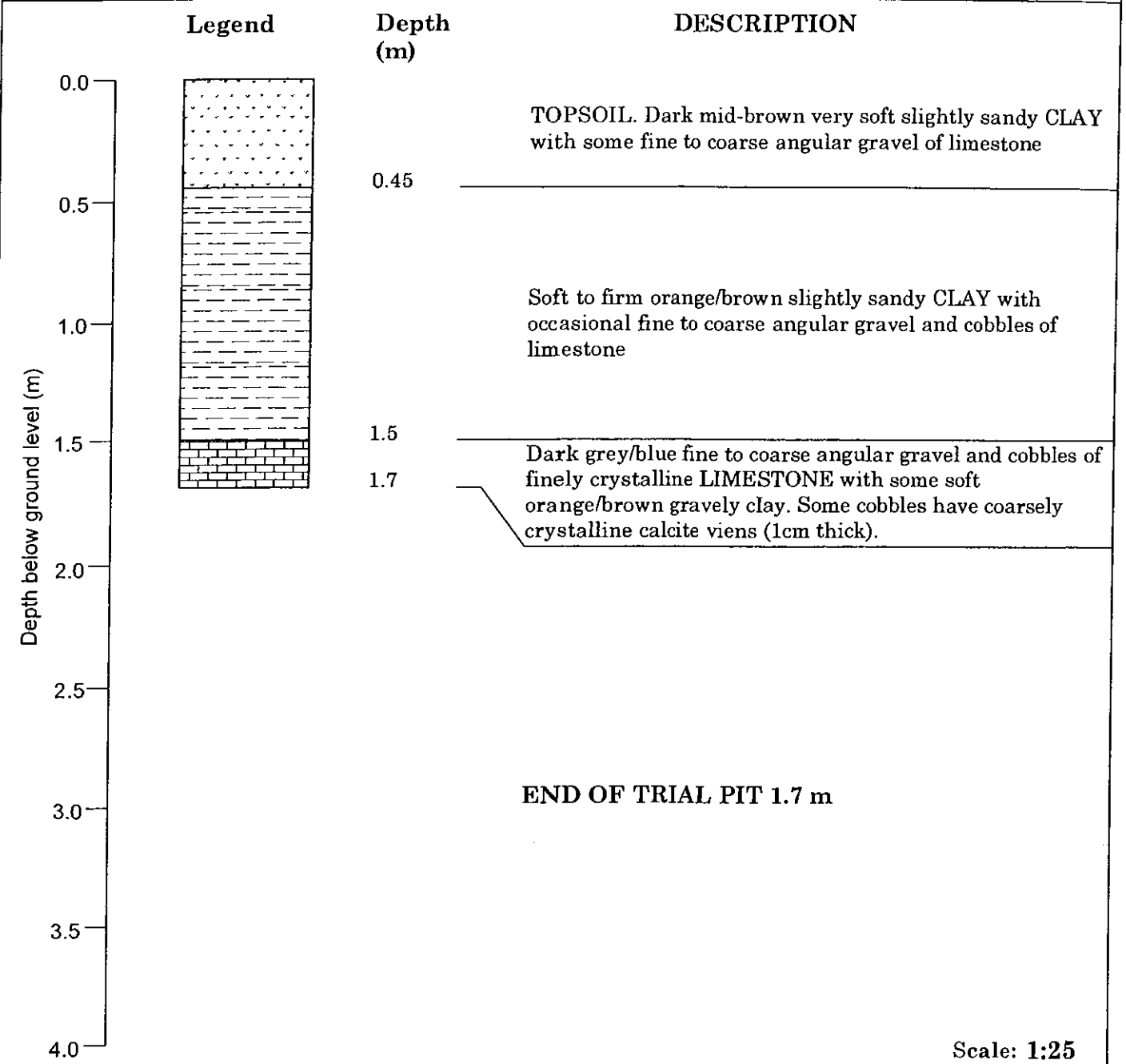
Hole Diameter (mm): 105  
 Casing depth (m): 0  
 Core Diameter (mm): 76mm (HCO) 412  
 Drilled By: MJ

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 01656 749 096 FAX

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP1</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>

**Project:** RAF St Athan Extension Areas      **Excavation Method:** JCB Backactor

**Location:** RAF St Athan      **Weather:** Sunshine and Showers



**Remarks:**

<b>Water:</b> N/A
<b>Stability:</b> N/A
<b>Time trench open:</b>

<b>Sample:</b>	1	2	3			<b>Logged by:</b> DRC
<b>Depth:</b>	0.2	0.5	1.5			
<b>Type:</b>						<b>Date:</b> 29.01.03
<b>Test: Shear Vane (N)</b>	4.8, 5.2, 5.2	7.8, 6.8, 6.8	-			



**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D.  
approx.

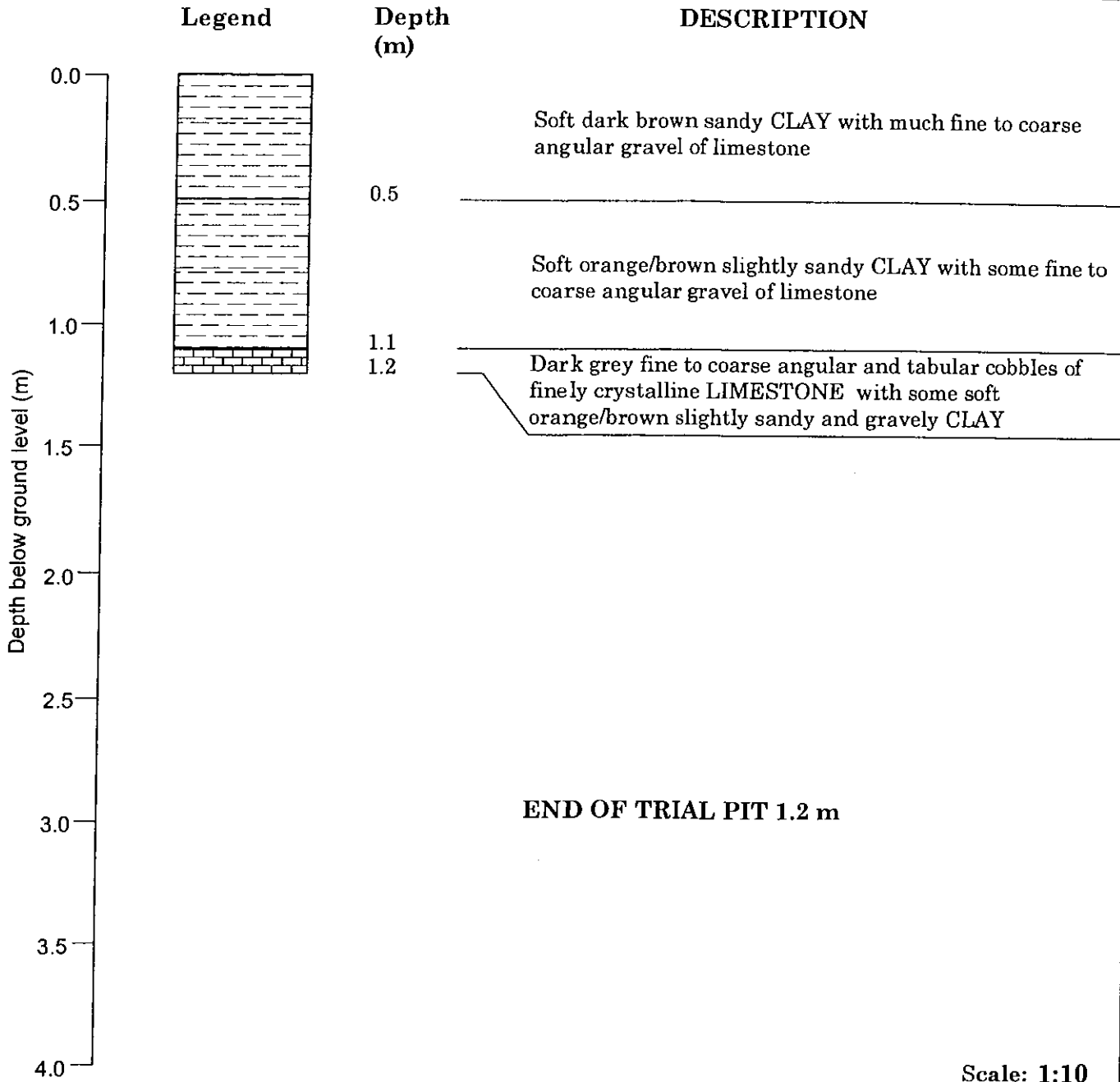
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**Remarks:**

**Water:** N/A

**Stability:** N/A

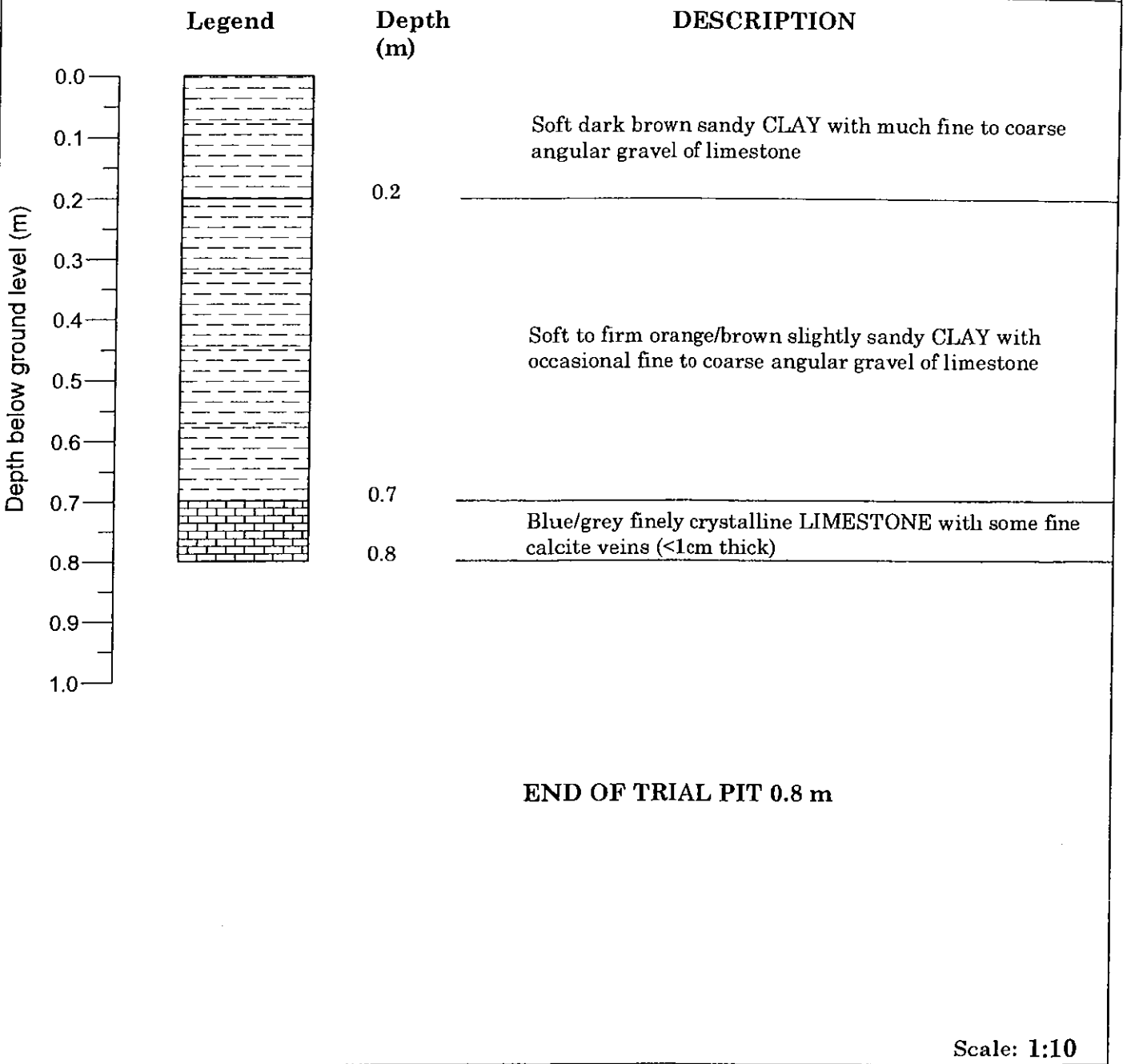
**Time trench open:**

<b>Sample:</b>	1	2			<b>Logged by:</b> DRC
<b>Depth:</b>	0.5	1.0			
<b>Type:</b>					
<b>Test: Shear Vane (N)</b>	7.6, 7.8, 8.1	5.2, 5.8, 6.0			<b>Date:</b> 29.01.03

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 3</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>

**Project:** RAF St Athan Extension Areas      **Excavation Method:** JCB Backactor

**Location:** RAF St Athan      **Weather:** Sunshine and Showers



<b>Remarks:</b>	<b>Water:</b> N/A
	<b>Stability:</b> N/A
	<b>Time trench open:</b>

<b>Sample:</b>	1	2			<b>Logged by:</b> DRC
<b>Depth:</b>	0.3	0.6			
<b>Type:</b>					<b>Date:</b> 29.01.03
<b>Test: Shear Vane (N)</b>	6.0, 6.2, 6.8	5.2, 5.2, 6.4			

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D.  
approx.

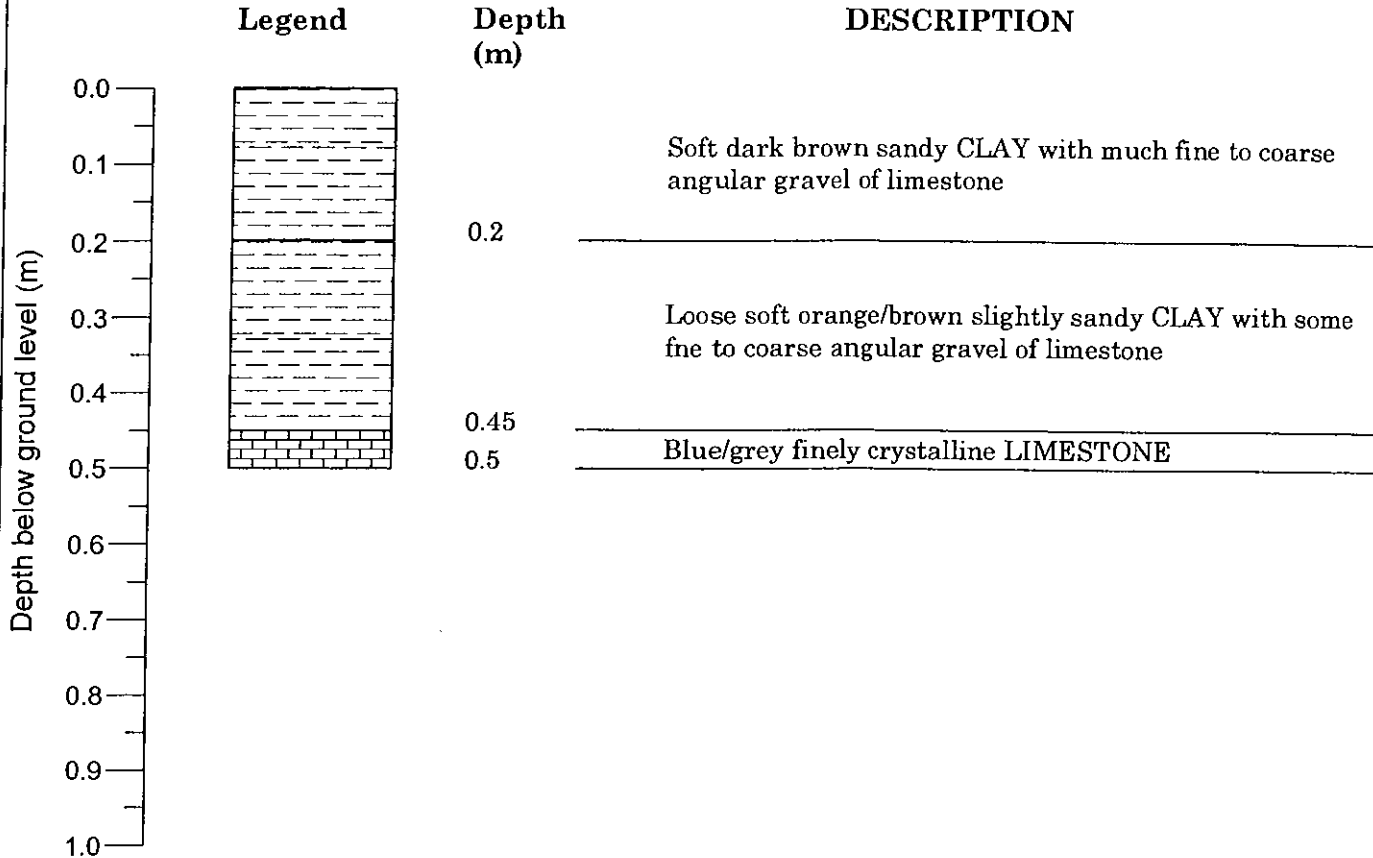
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**END OF TRIAL PIT 0.5 m**

**Scale: 1:10**

**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

**Sample:**

1

**Depth:**

0.3

**Type:**

**Test: Shear Vane (N)**

5.0, 4.0, 4.3

**Logged by:** DRC

**Date:** 29.01.03

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D.  
approx.

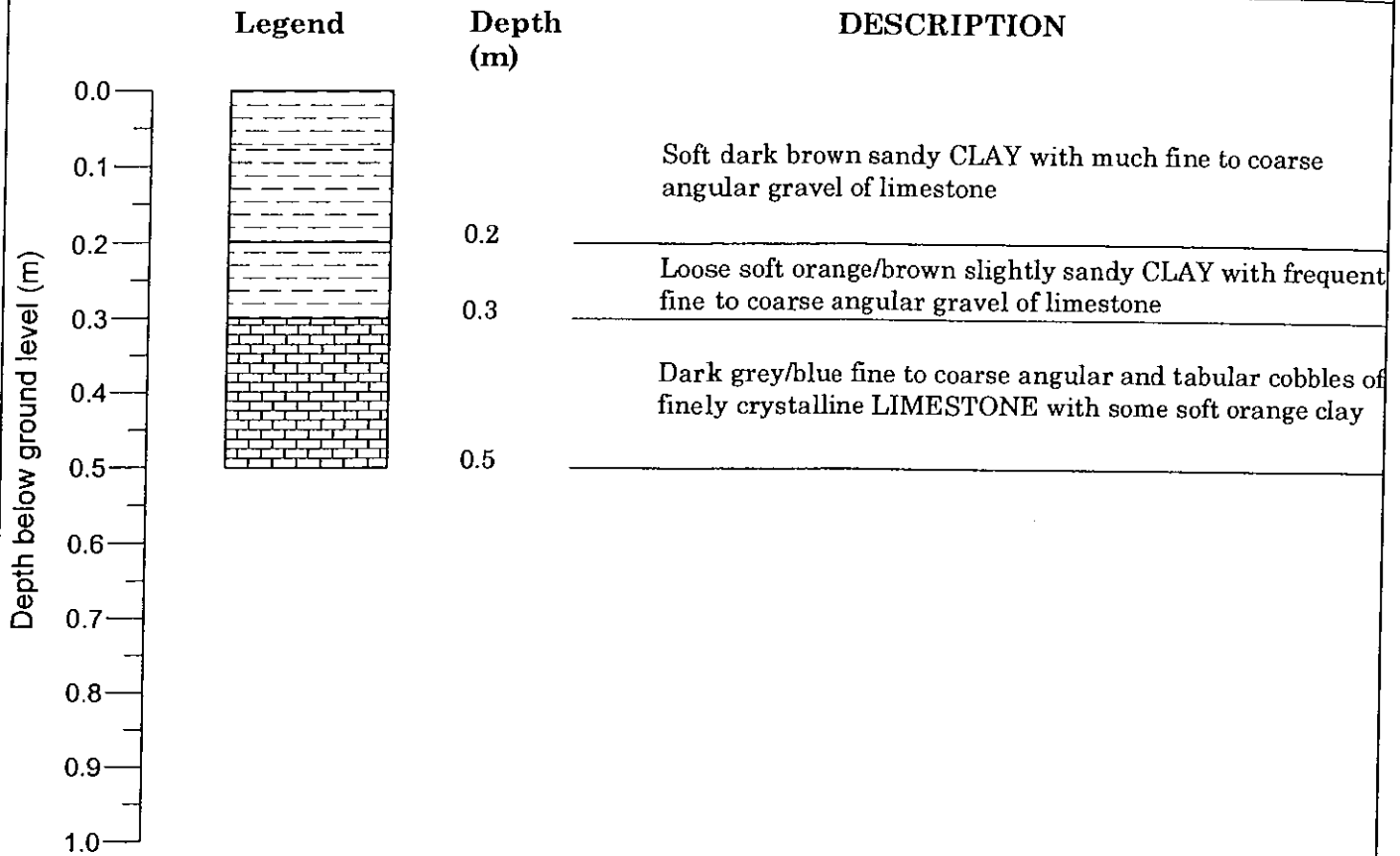
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**END OF TRIAL PIT 0.5 m**

**Scale: 1:10**

**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

**Sample:**

1

**Depth:**

0.2

**Type:**

**Test: Shear Vane (N)**

3.9, 4.0, 4.0

**Logged by:** DRC

**Date:** 29.01.03

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D.  
approx.

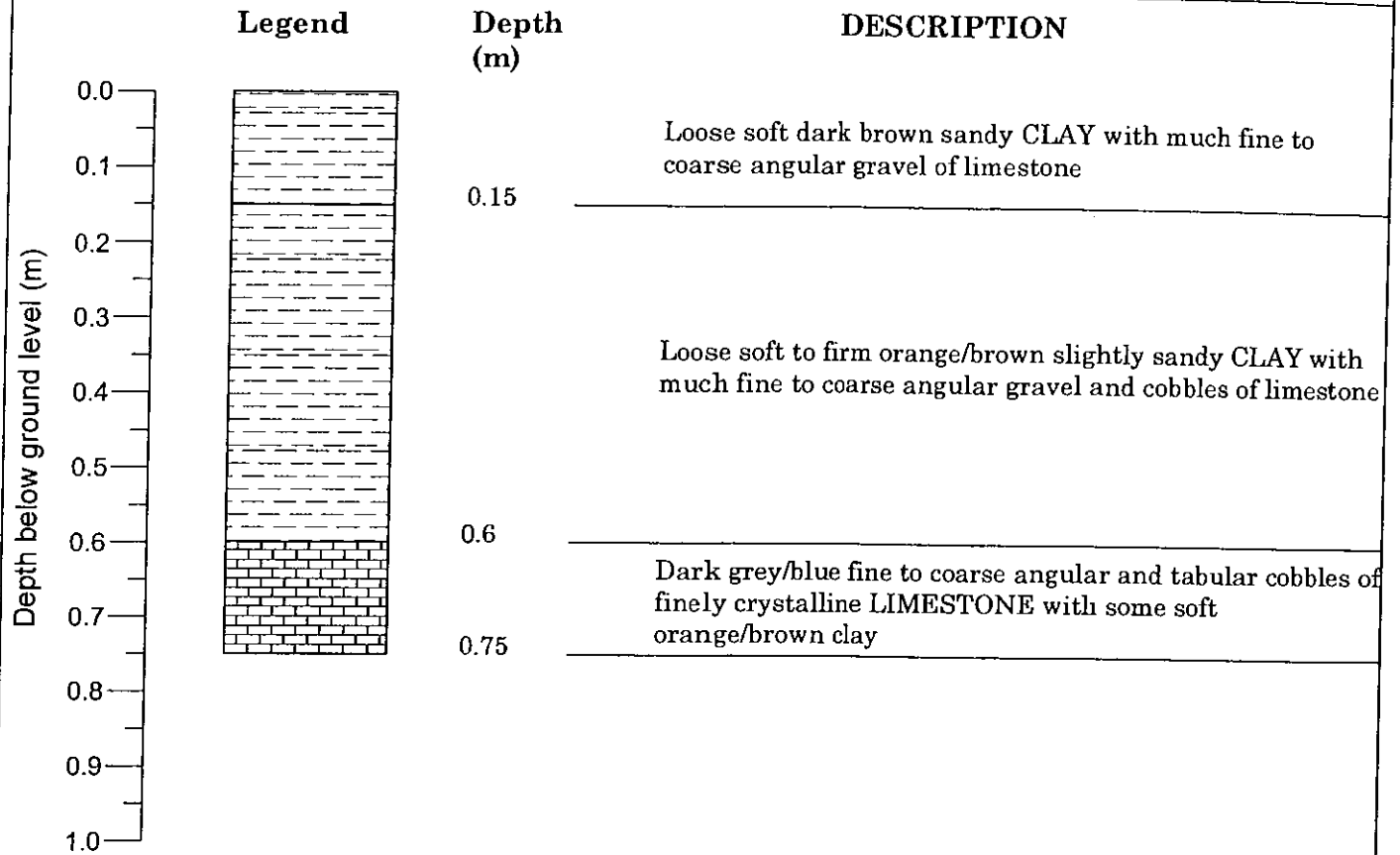
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**END OF TRIAL PIT 0.75 m**

Scale: 1:10

**Remarks:**

**Water:** N/A

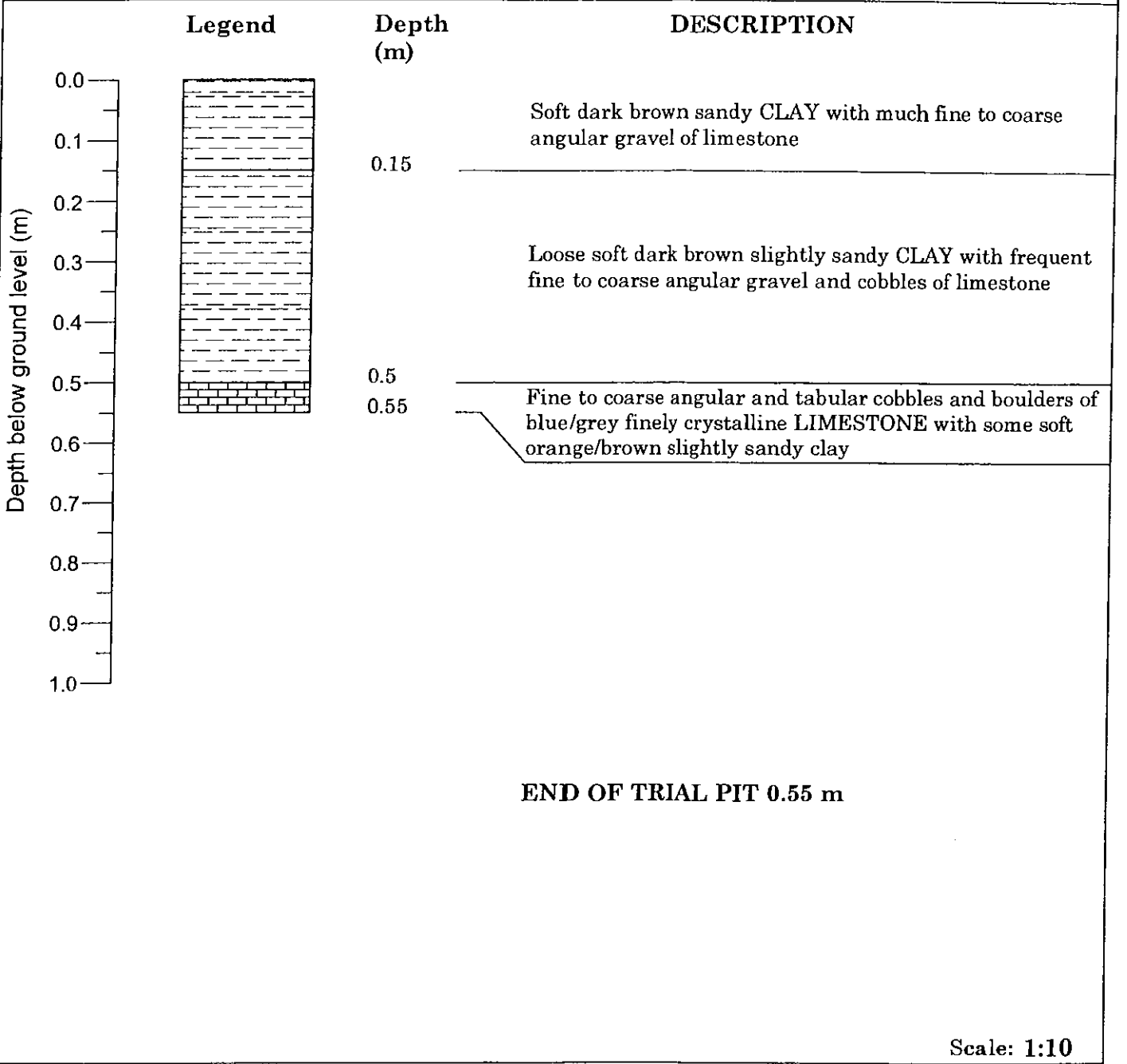
**Stability:** N/A

**Time trench open:**

<b>Sample:</b>	1					<b>Logged by:</b> DRC
<b>Depth:</b>	0.3					
<b>Type:</b>						
<b>Test: Shear Vane (N)</b>	6.6, 7.4, 8.2					<b>Date:</b> 29.01.03

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 7</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>

<b>Project:</b> RAF St Athan Extension Areas	<b>Excavation Method:</b> JCB Backactor
<b>Location:</b> RAF St Athan	<b>Weather:</b> Sunshine and Showers



<b>Remarks:</b>	<b>Water:</b> N/A	
	<b>Stability:</b> N/A	
	<b>Time trench open:</b>	
<b>Sample:</b>	1	<b>Logged by:</b> DRC
<b>Depth:</b>	0.3	
<b>Type:</b>		<b>Date:</b> 29.01.03
<b>Test:</b> Shear Vane (N)	Too gravely	

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D. approx.

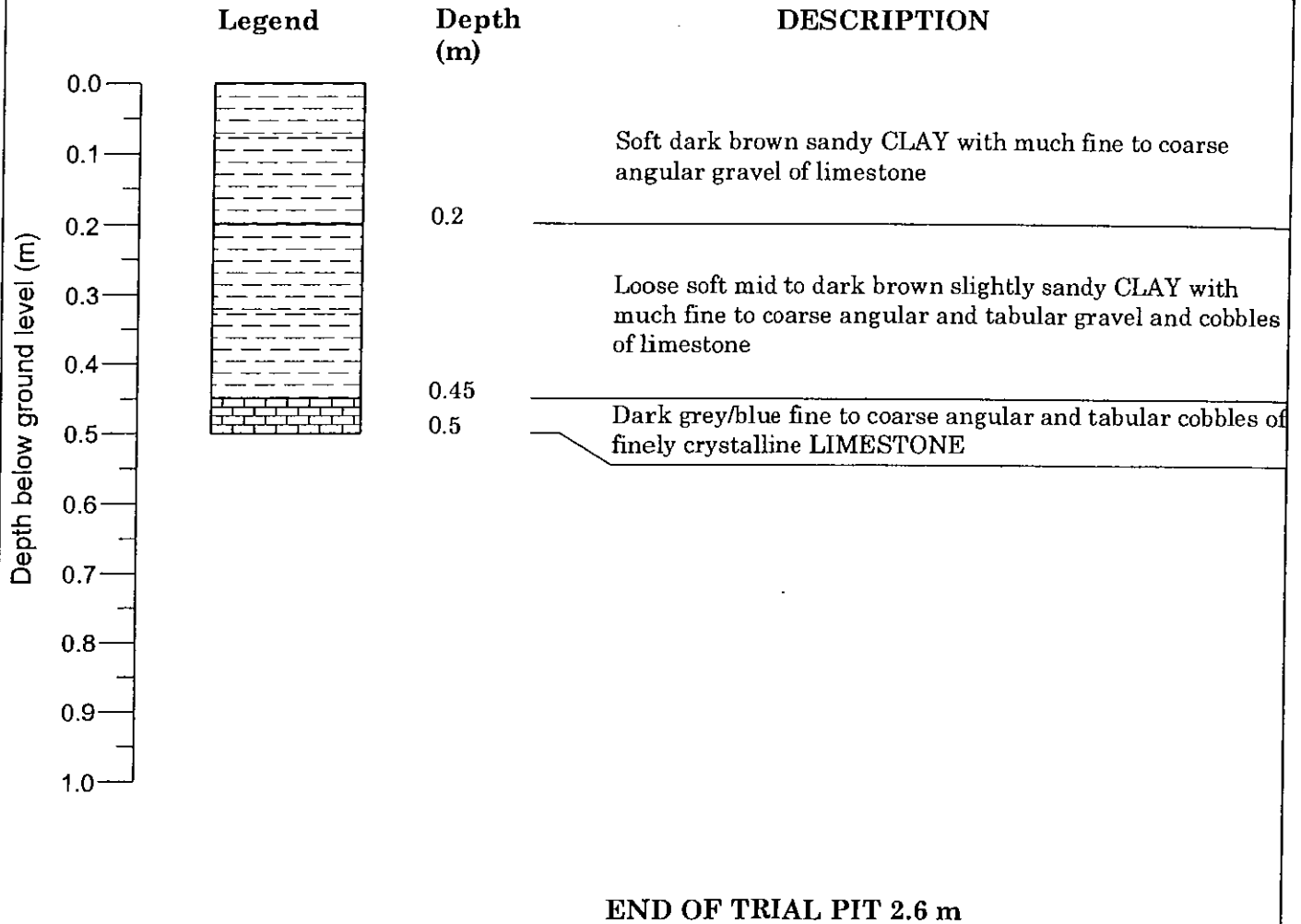
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**Scale: 1:10**

**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

**Sample:**

1

**Depth:**

0.2

**Logged by:** DRC

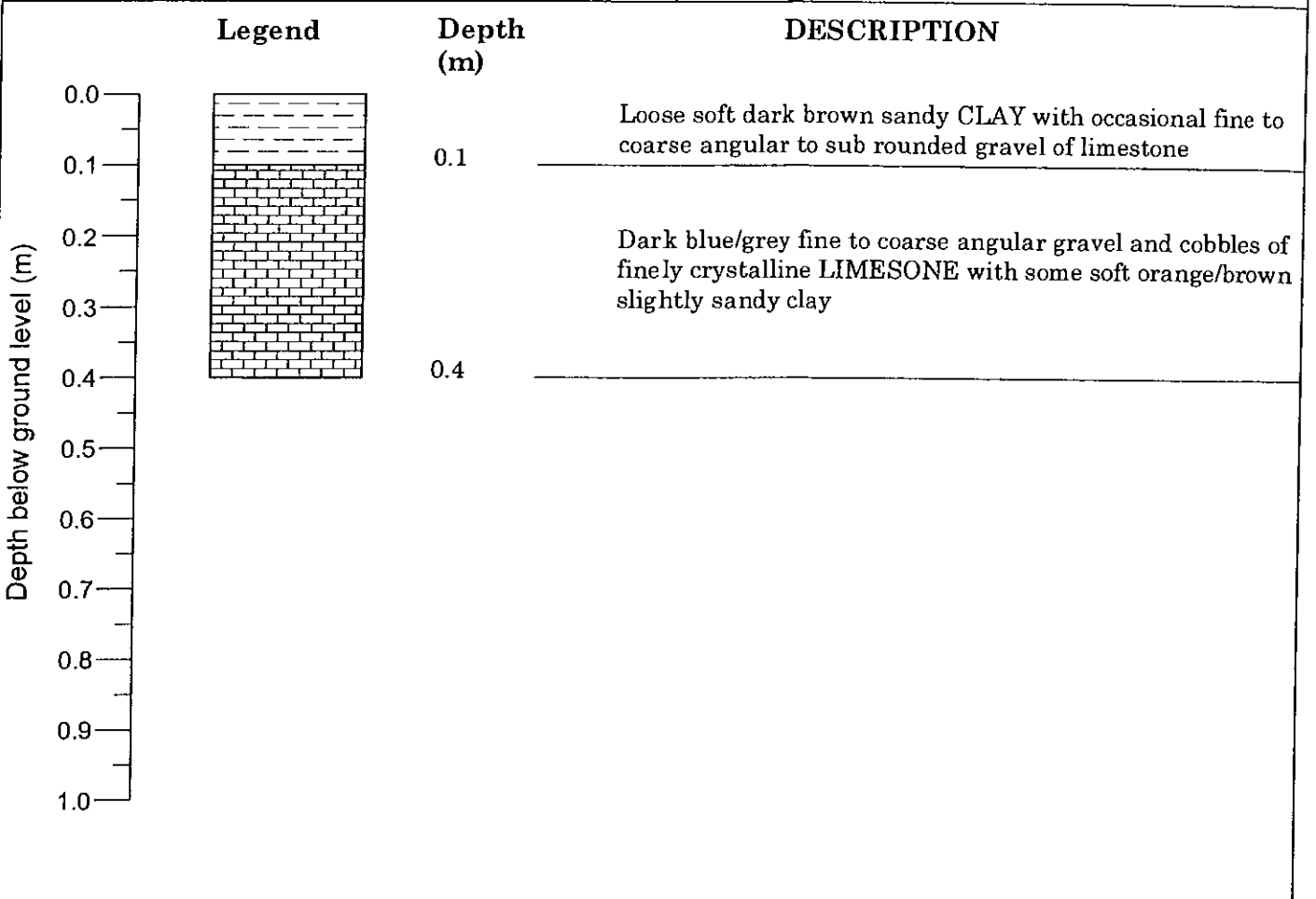
**Type:**

**Test: Shear Vane (N)**

4.2, 4.4, 4.5

**Date:** 29.01.03

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 9</b>
Client: Defence Estates	CA No: MD0990066A	Sheet 1 of 1
	Ground Level -            m A.O.D. <small>approx.</small>	Grid Ref.:
Project: RAF St Athan Extension Areas		Excavation Method: JCB Backactor
Location: RAF St Athan		Weather: Sunshine and Sunny

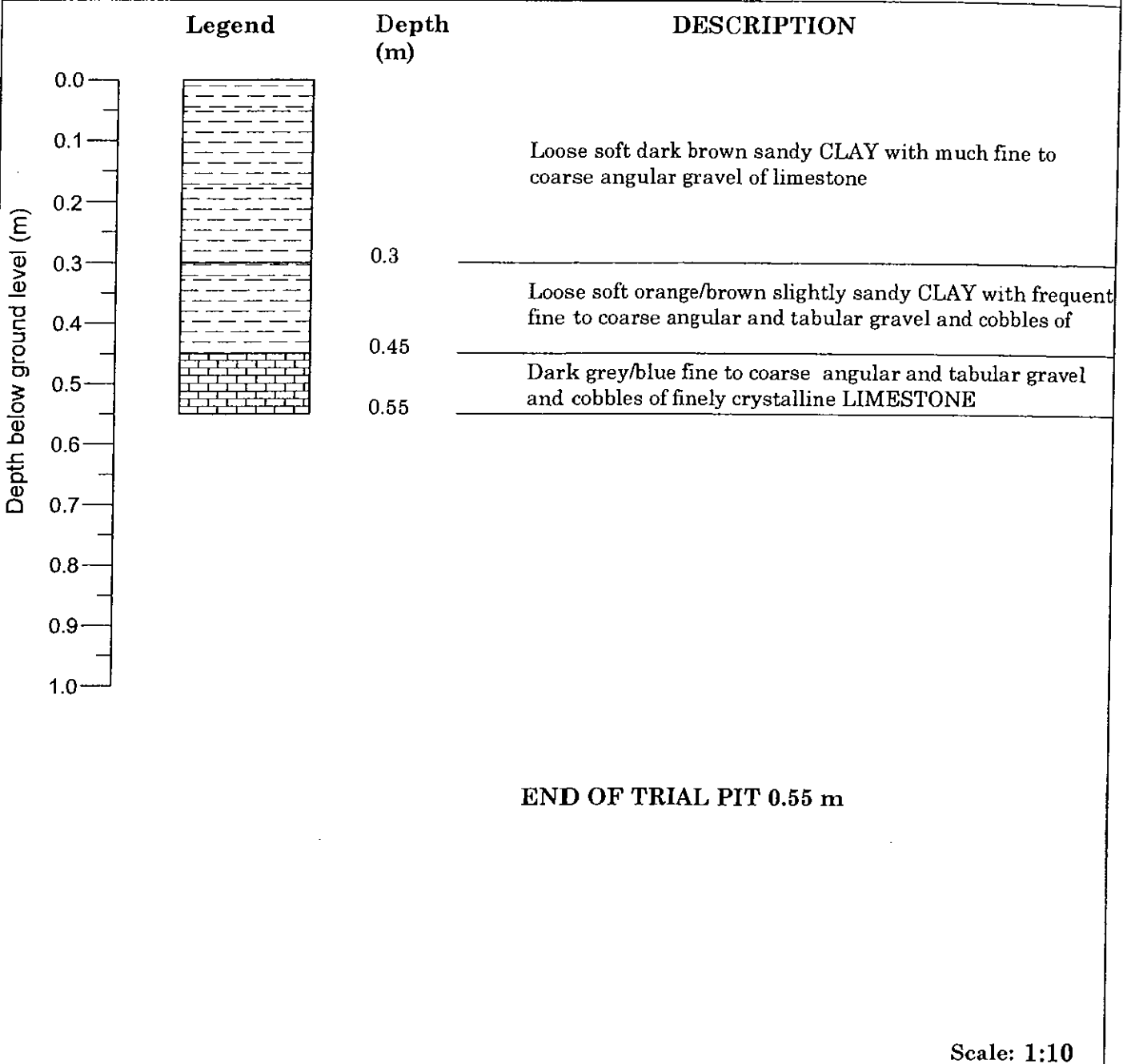


Scale: 1:10

Remarks:		Water: N/A		
		Stability: N/A		
		Time trench open:		
Sample:	1			Logged by: DRC
Depth:	0.1			
Type:				
Test: Shear Vane (N)	4.0, 4.4, 4.8			Date: 29.01.03



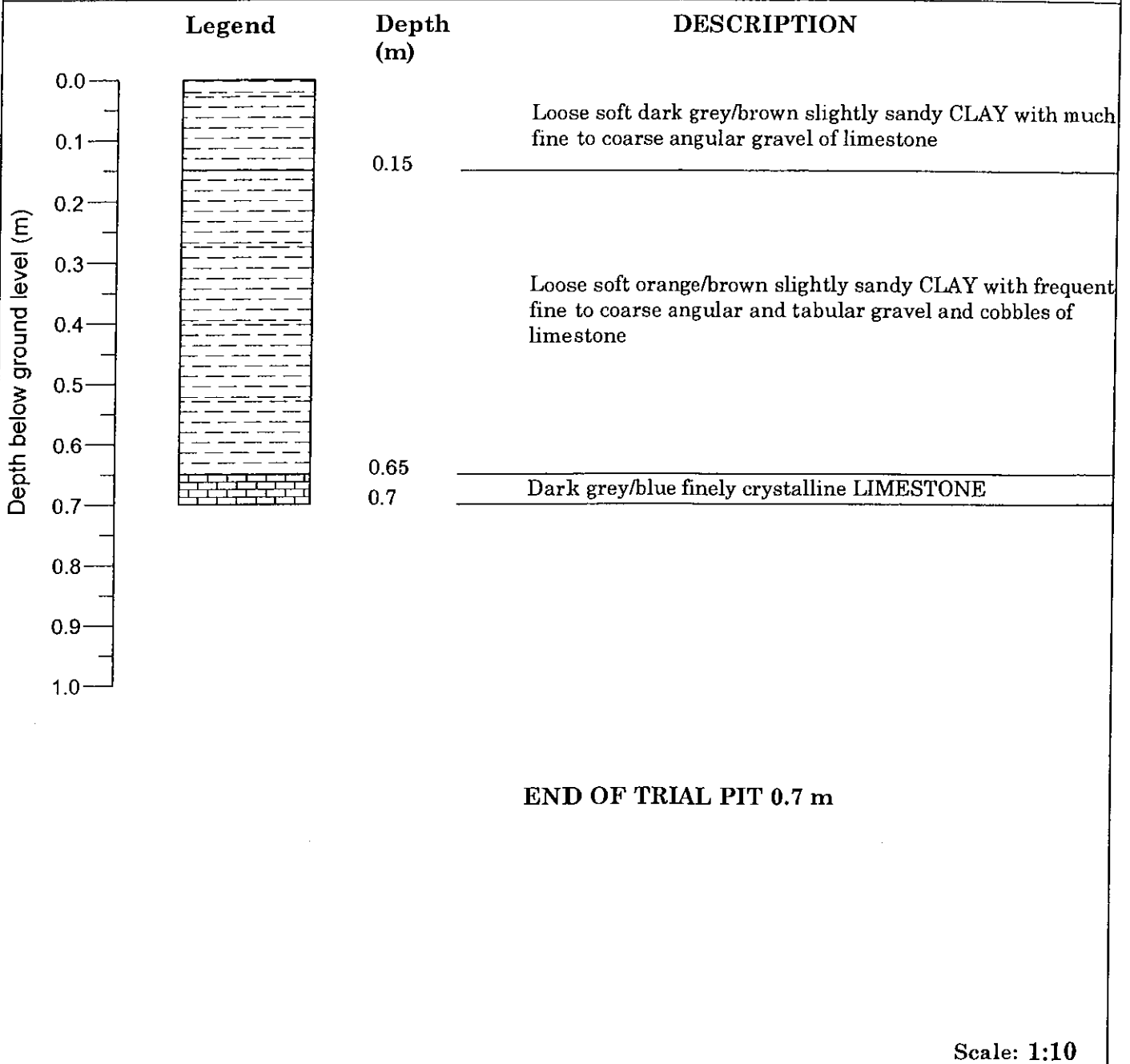
<b>ENVIROS<sup>®</sup></b>	<b>TRIAL PIT LOG</b>	<b>TP 10</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>
<b>Project:</b> RAF St Athan Extension Areas		<b>Excavation Method:</b> JCB Backactor
<b>Location:</b> RAF St Athan		<b>Weather:</b> Sunshine and Showers



<b>Remarks:</b>	<b>Water:</b> N/A				
	<b>Stability:</b> N/A				
	<b>Time trench open:</b>				
<b>Sample:</b>	1				<b>Logged by:</b> DRC
<b>Depth:</b>	0.3				
<b>Type:</b>					
<b>Test: Shear Vane (N)</b>	6.2, 6.2, 6.8				<b>Date:</b> 29.01.03

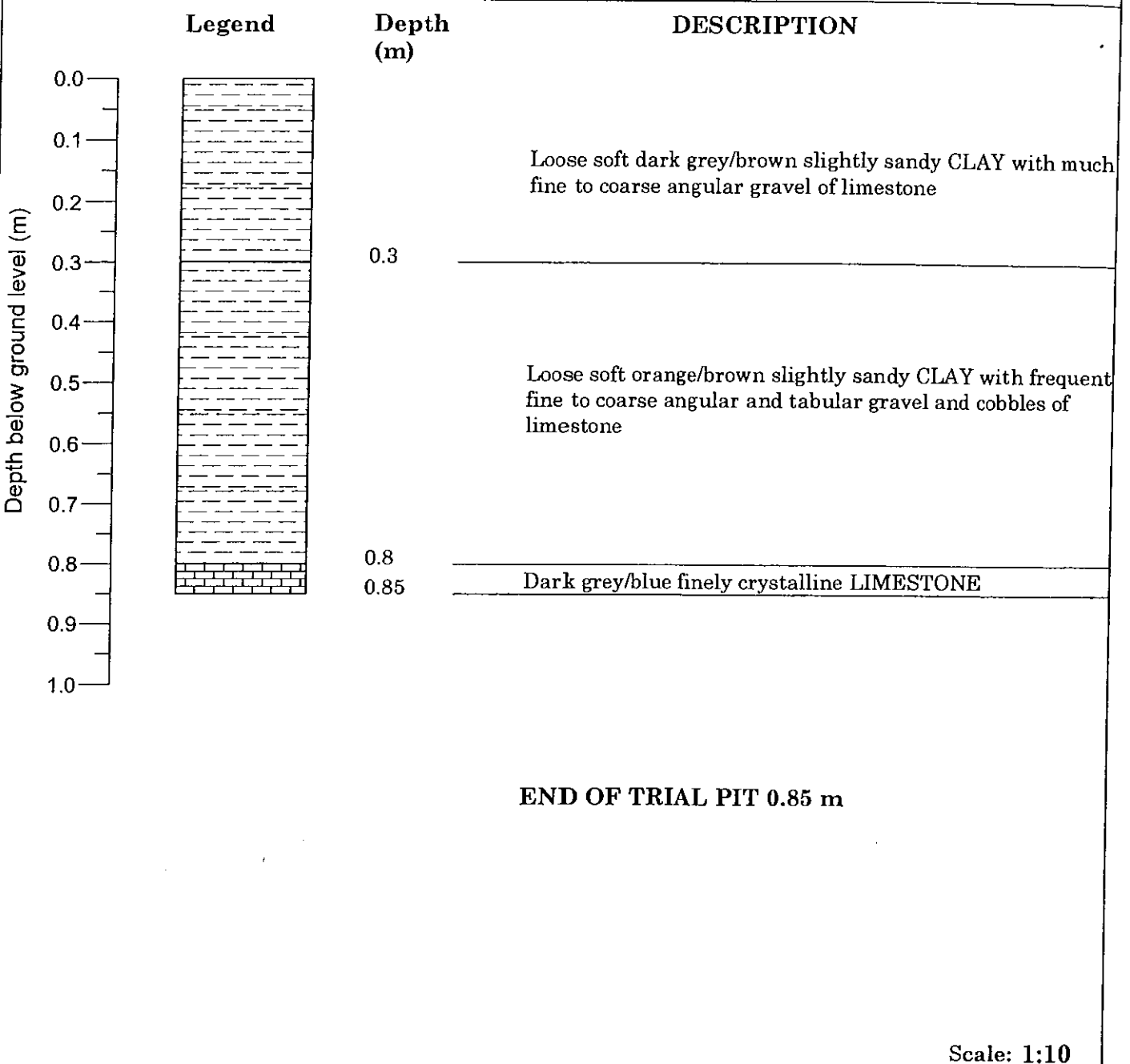
<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 11</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>

<b>Project:</b> RAF St Athan Extension Areas	<b>Excavation Method:</b> JCB Backactor
<b>Location:</b> RAF St Athan	<b>Weather:</b> Sunshine and Showers



<b>Remarks:</b>	<b>Water:</b> N/A				
	<b>Stability:</b> N/A				
	<b>Time trench open:</b>				
<b>Sample:</b>	1				<b>Logged by:</b> DRC
<b>Depth:</b>	0.3				
<b>Type:</b>					
<b>Test: Shear Vane (N)</b>	5.4, 7.2, 6.4				<b>Date:</b> 29.01.03

<b>ENVIROS<sup>®</sup></b>	<b>TRIAL PIT LOG</b>	<b>TP 12</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>
<b>Project:</b> RAF St Athan Extension Areas		<b>Excavation Method:</b> JCB Backactor
<b>Location:</b> RAF St Athan		<b>Weather:</b> Sunshine and Showers



<b>Remarks:</b>	<b>Water:</b> N/A	
	<b>Stability:</b> N/A	
	<b>Time trench open:</b>	
<b>Sample:</b>	1	<b>Logged by:</b> DRC
<b>Depth:</b>	0.4	
<b>Type:</b>		<b>Date:</b> 29.01.03
<b>Test: Shear Vane (N)</b>	6.0, 6.4, 6.5	

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D.  
approx.

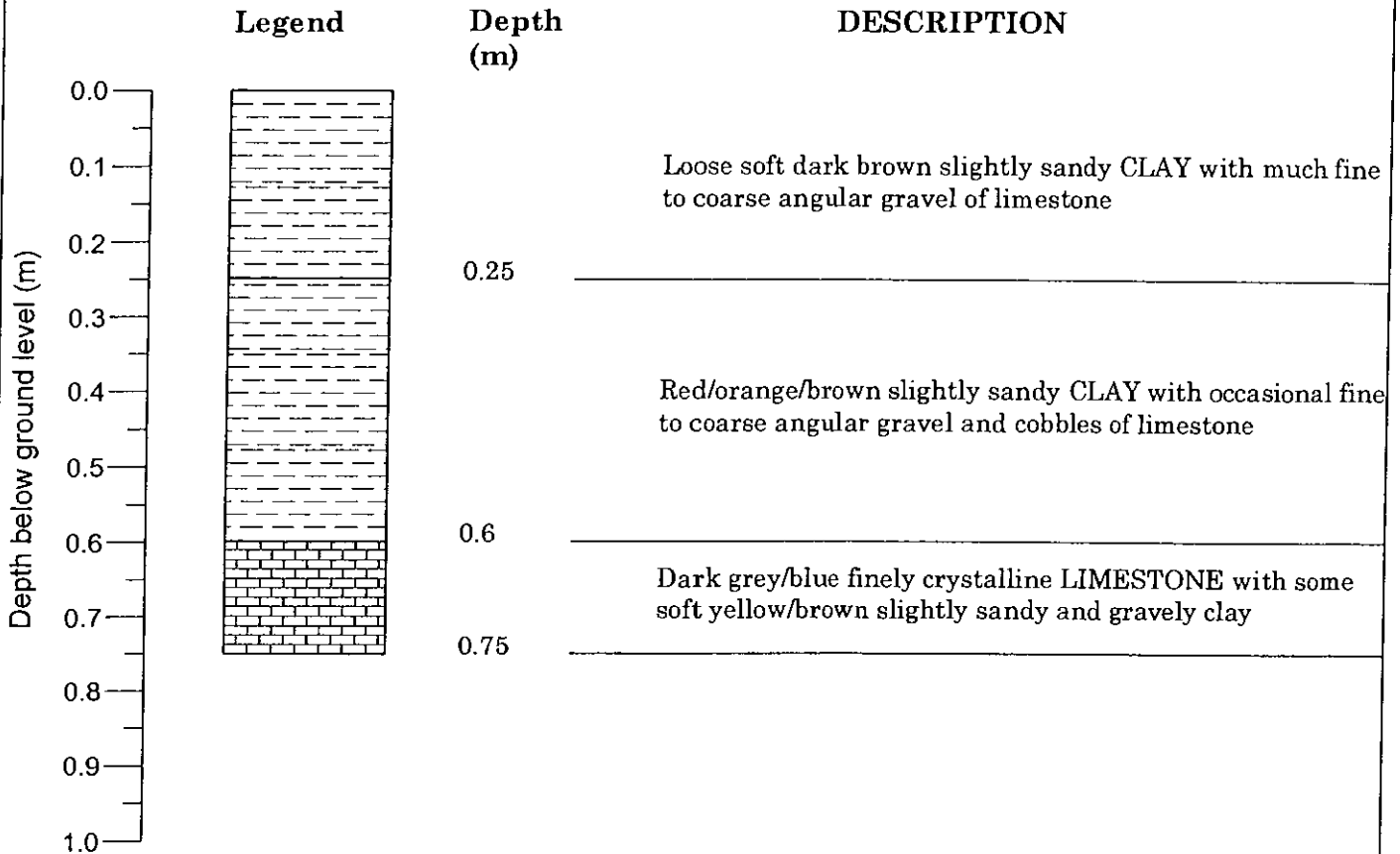
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**END OF TRIAL PIT 0.75 m**

**Scale: 1:10**

**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

**Sample:**

1

**Depth:**

0.4

**Type:**

**Logged by:** DRC

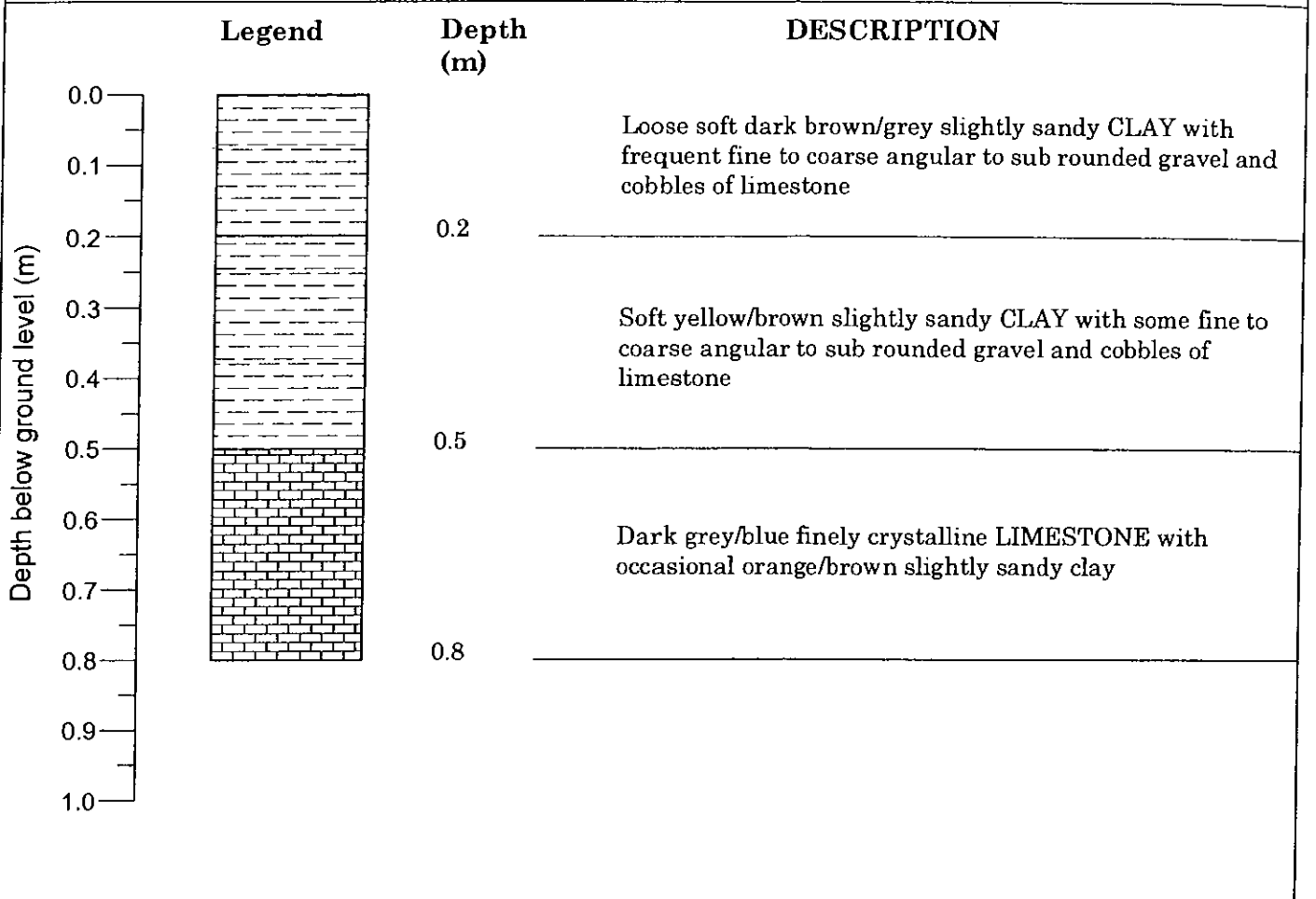
**Test: Shear Vane (N)**

4.8, 5.4, 6.9

**Date:** 29.01.03

<b>ENVIROS</b> <sup>®</sup>	<b>TRIAL PIT LOG</b>	<b>TP 16</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>

<b>Project:</b> RAF St Athan Extension Areas	<b>Excavation Method:</b> JCB Backactor
<b>Location:</b> RAF St Athan	<b>Weather:</b> Sunshine and Showers



END OF TRIAL PIT 0.8 m

Scale: 1:10

<b>Remarks:</b>	<b>Water:</b> N/A
	<b>Stability:</b> N/A
	<b>Time trench open:</b>

<b>Sample:</b>	S1				<b>Logged by:</b> DRC
<b>Depth:</b>	0.4				
<b>Type:</b>					<b>Date:</b> 29.01.03
<b>Test: Shear Vane (N)</b>	8.6, 7.8, 7.8				

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -**                      m A.O.D.  
approx.

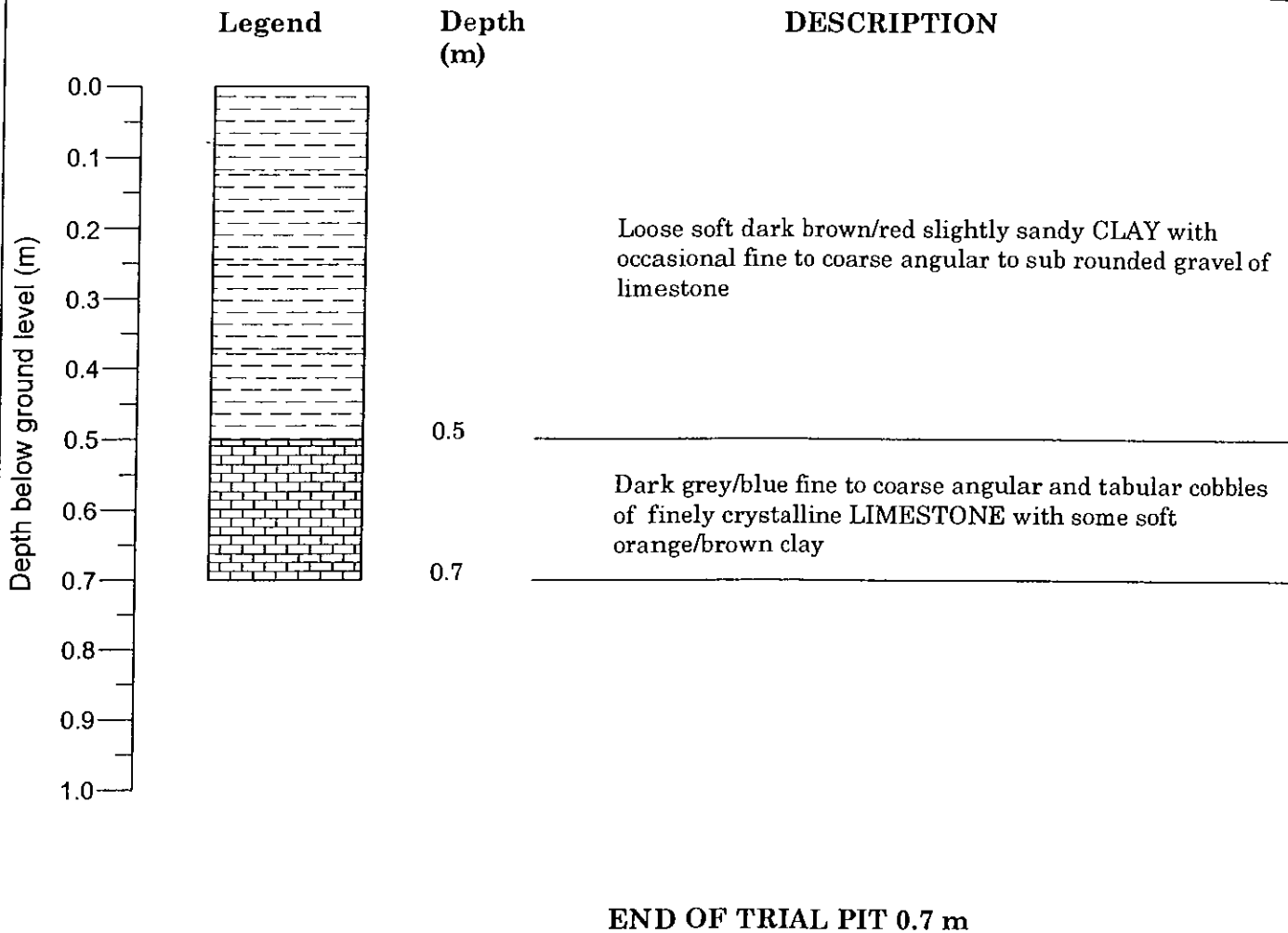
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**Scale: 1:10**

**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

**Sample:**

1

**Depth:**

0.3

**Type:**

**Test: Shear Vane (N)**

4.3, 5.8, 5.6, 6.4

**Logged by:** DRC

**Date:** 29.01.03

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D. approx.

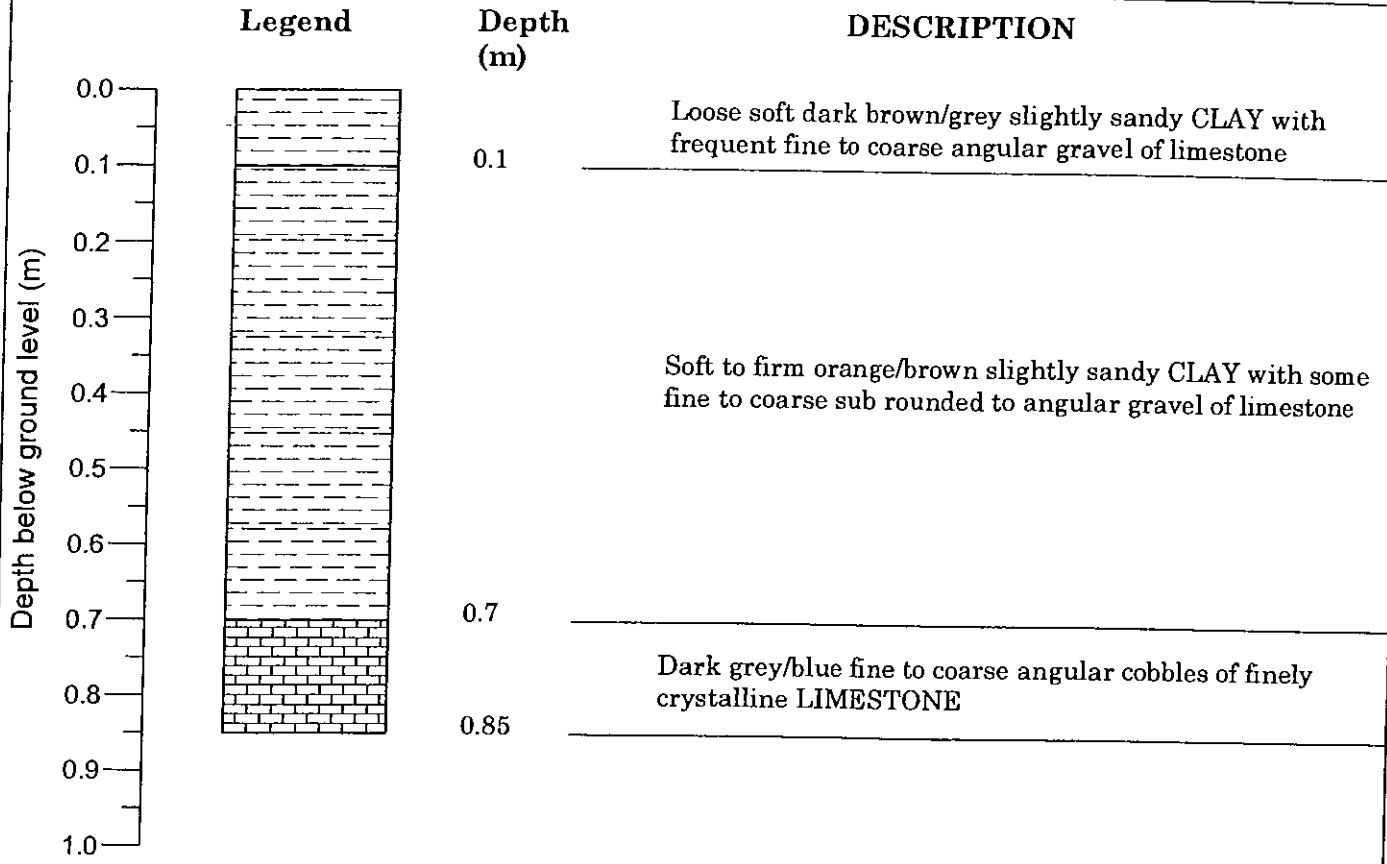
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**END OF TRIAL PIT 0.85 m**

**Scale: 1:10**

**Remarks:**

**Water:** N/A

**Stability:** N/A

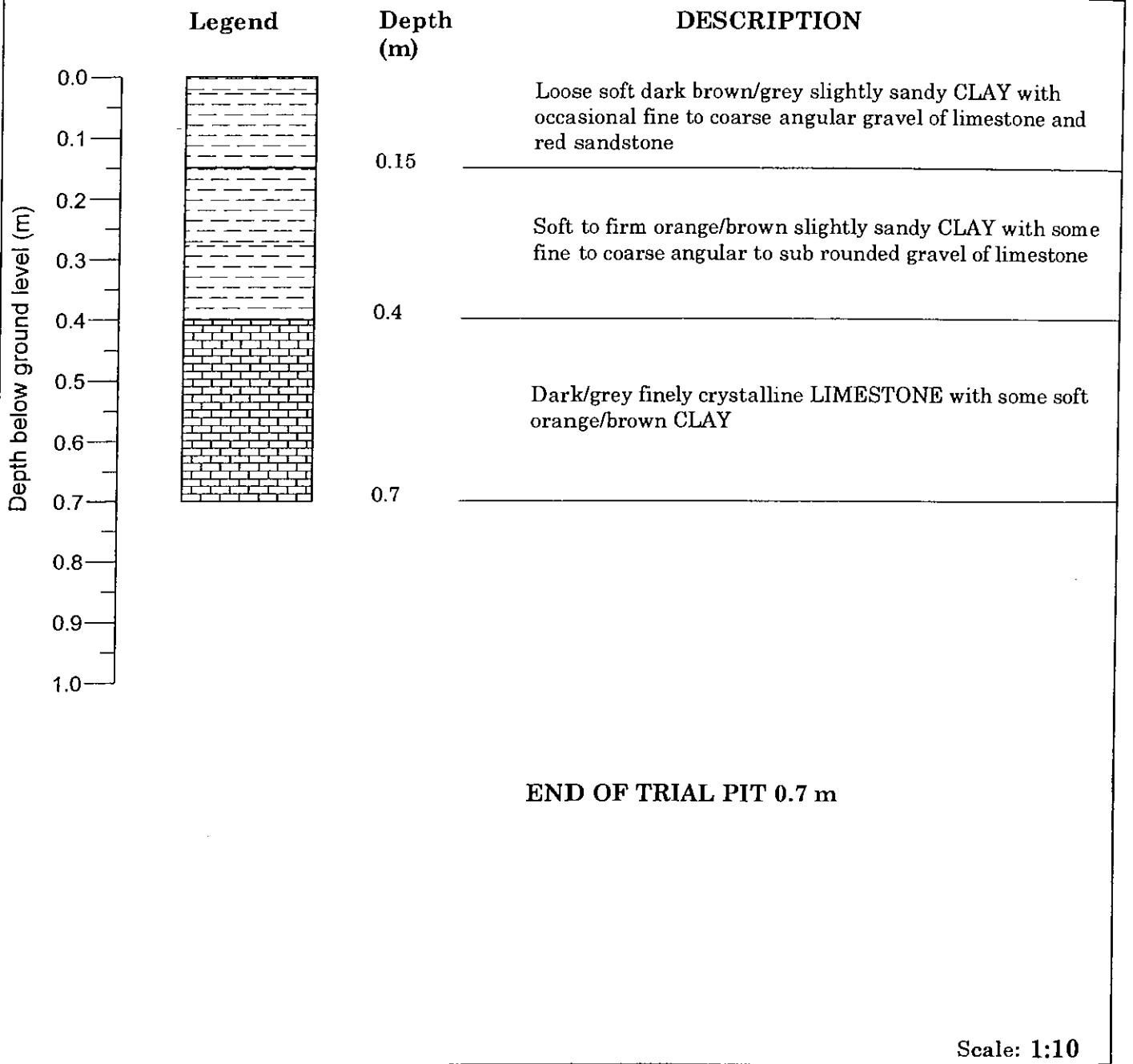
**Time trench open:**

<b>Sample:</b>	S1					<b>Logged by:</b> DRC
<b>Depth:</b>	0.4					
<b>Type:</b>						
<b>Test: Shear Vane (N)</b>	6.0, 6.3, 6.2					<b>Date:</b> 29.01.03

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 19</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>

**Project:** RAF St Athan Extension Areas                      **Excavation Method:** JCB Backactor

**Location:** RAF St Athan    **Weather:** Sunshine and Showers



**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

<b>Sample:</b>	S1				<b>Logged by:</b> DRC
<b>Depth:</b>	0.3				
<b>Type:</b>					
<b>Test: Shear Vane (N)</b>	6.6, 8.2, 6.6				<b>Date:</b> 29.01.03



**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D.  
approx.

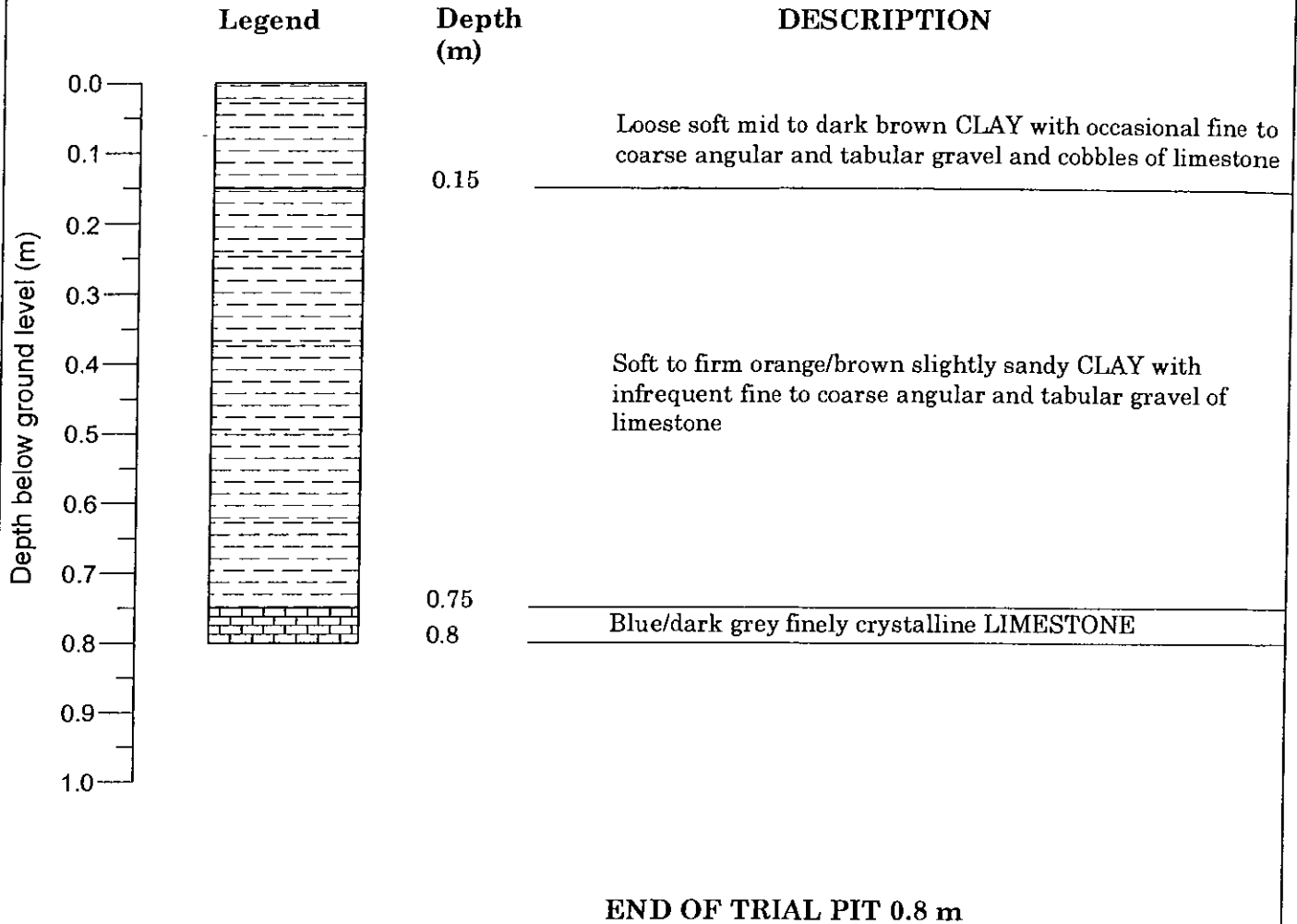
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**Scale: 1:10**

**Remarks:**

**Water:** N/A

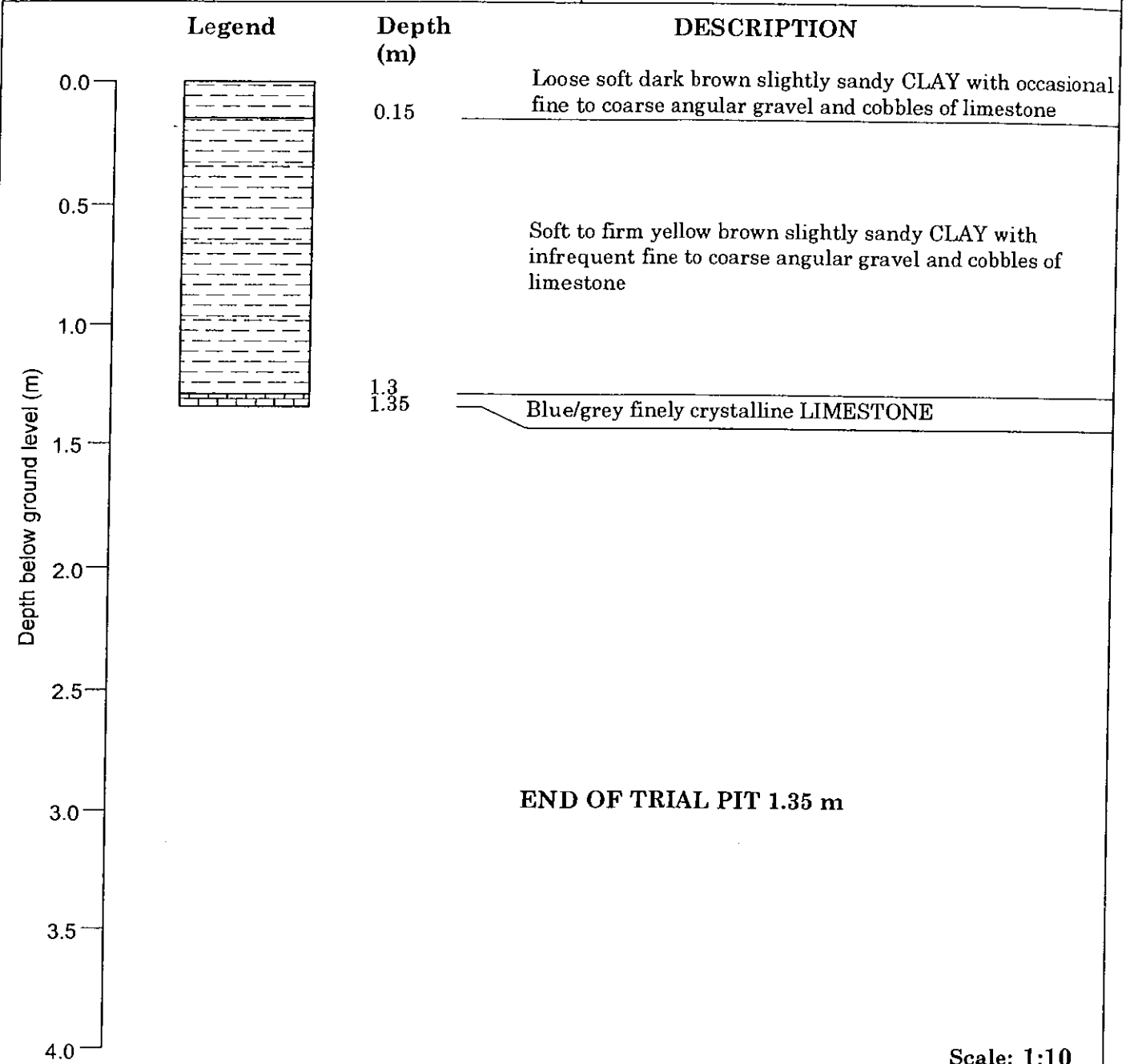
**Stability:** N/A

**Time trench open:**

<b>Sample:</b>	S1	S2			<b>Logged by:</b> DRC
<b>Depth:</b>	0.5	0.7			
<b>Type:</b>					<b>Date:</b> 29.01.03
<b>Test: Shear Vane (N)</b>	9.8,10.6,11.0	8.9, 9.4, 8.8			

<b>ENVIROS<sup>®</sup></b>	<b>TRIAL PIT LOG</b>	<b>TP 21</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>

<b>Project:</b> RAF St Athan Extension Areas	<b>Excavation Method:</b> JCB Backactor
<b>Location:</b> RAF St Athan	<b>Weather:</b> Sunshine and Showers

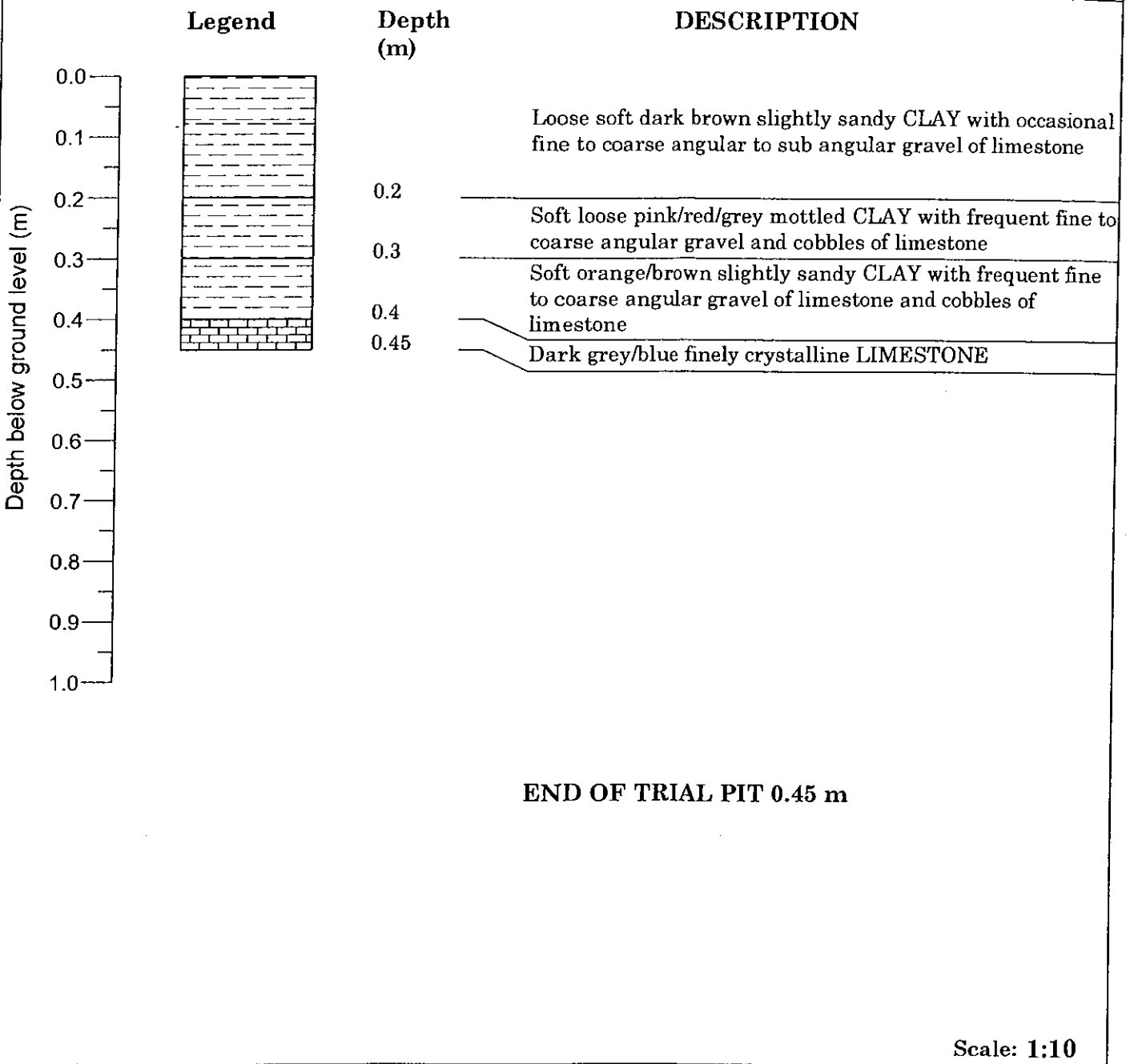


<b>Remarks:</b>	<b>Water:</b> N/A
	<b>Stability:</b> N/A
	<b>Time trench open:</b>

<b>Sample:</b>	S1	S2		<b>Logged by:</b> DRC
<b>Depth:</b>	0.4	1.0		
<b>Type:</b>				
<b>Test: Shear Vane (N)</b>	5.5, 11.4, 7.1, 12, 11.8	3.4, 6.8, 6.6		<b>Date:</b> 29.01.03

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 22</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>

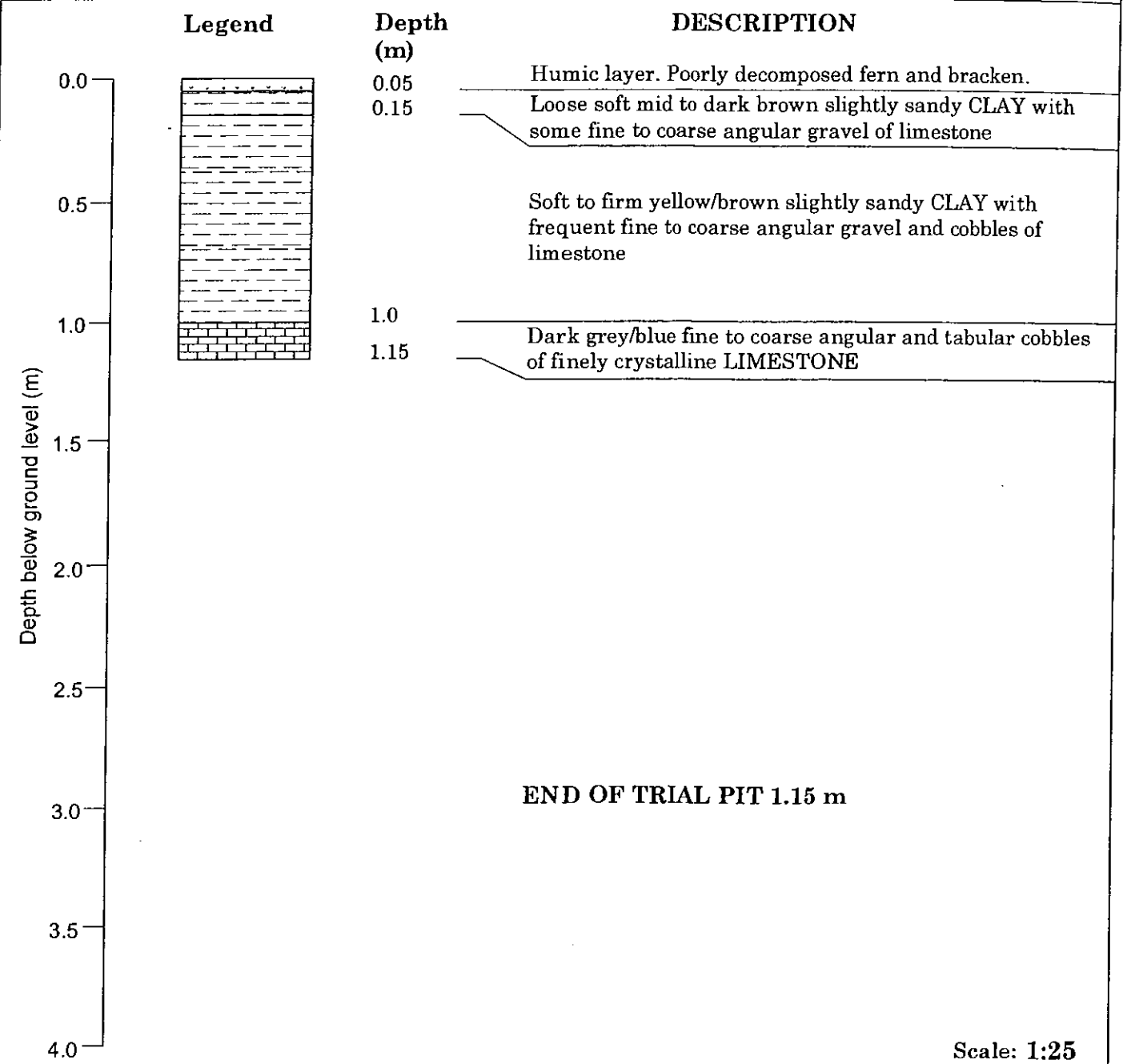
<b>Project:</b> RAF St Athan Extension Areas	<b>Excavation Method:</b> JCB Backactor
<b>Location:</b> RAF St Athan	<b>Weather:</b> Sunshine and Showers



<b>Remarks:</b>	<b>Water:</b> N/A
	<b>Stability:</b> N/A
	<b>Time trench open:</b>

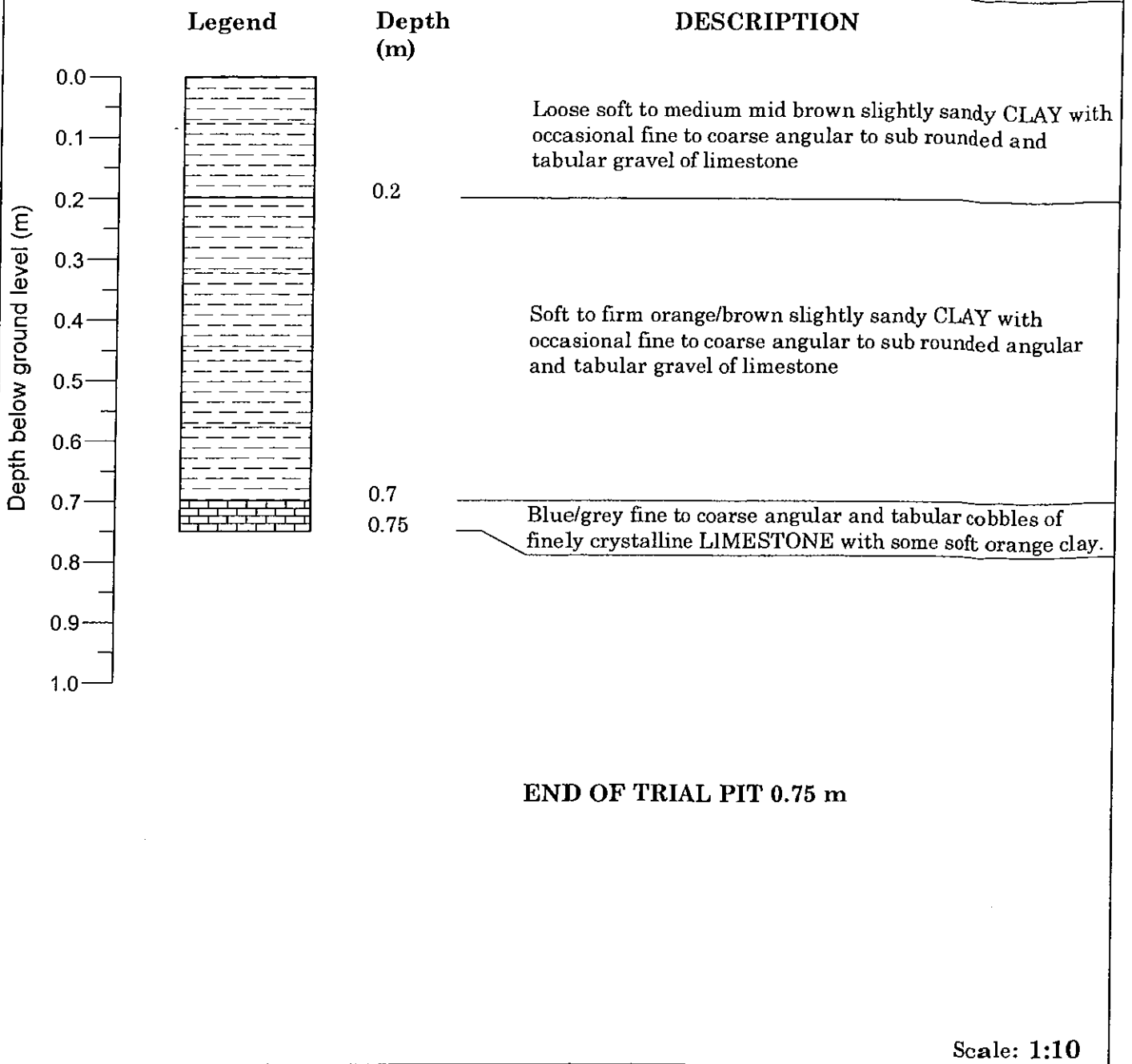
<b>Sample:</b>	1				<b>Logged by:</b> DRC
<b>Depth:</b>	0.3				
<b>Type:</b>					
<b>Test:</b> Shear Vane (N)	Too Gravelly				<b>Date:</b> 29.01.03

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 23</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>
<b>Project:</b> RAF St Athan Extension Areas		<b>Excavation Method:</b> JCB Backactor
<b>Location:</b> RAF St Athan		<b>Weather:</b> Sunshine and Showers



<b>Remarks:</b>		<b>Water:</b> N/A		
		<b>Stability:</b> N/A		
		<b>Time trench open:</b>		
<b>Sample:</b>	S1			<b>Logged by:</b> DRC
<b>Depth:</b>	0.5			
<b>Type:</b>				
<b>Test: Shear Vane (N)</b>	6.8, 6.4, 6.6			<b>Date:</b> 29.01.03

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 24</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>
<b>Project:</b> RAF St Athan Extension Areas		<b>Excavation Method:</b> JCB Backactor
<b>Location:</b> RAF St Athan		<b>Weather:</b> Sunshine and Showers



<b>Remarks:</b>	<b>Water:</b> N/A
	<b>Stability:</b> N/A
	<b>Time trench open:</b>

<b>Sample:</b>	S1				<b>Logged by:</b> DRC
<b>Depth:</b>	0.4	0.2			
<b>Type:</b>					<b>Date:</b> 29.01.03
<b>Test: Shear Vane (N)</b>	7.0, 7.0, 7.2	5.8, 6.4, 6.6			

<b>ENVIROS</b> ®	<b>TRIAL PIT LOG</b>	<b>TP 25</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>

<b>Project:</b> RAF St Athan Extension Areas	<b>Excavation Method:</b> JCB Backactor
<b>Location:</b> RAF St Athan	<b>Weather:</b> Sunshine and Showers

Legend	Depth (m)	DESCRIPTION
		Loose dark brown slightly sandy CLAY with frequent fine to coarse angular to sub rounded gravel of limestone and some red sandstone
	0.15	
		Soft to firm red/brown slightly sandy CLAY with occasional fine to coarse angular to sub rounded gravel of limestone
	0.3	
		Soft to firm yellow/orange/brown mottled slightly sandy CLAY with some occasional fine to coarse angular to sub rounded gravel of limestone
	0.85	
	0.9	Dark grey/blue finely crystalline LIMESTONE

**END OF TRIAL PIT 0.9 m**

**Scale: 1:10**

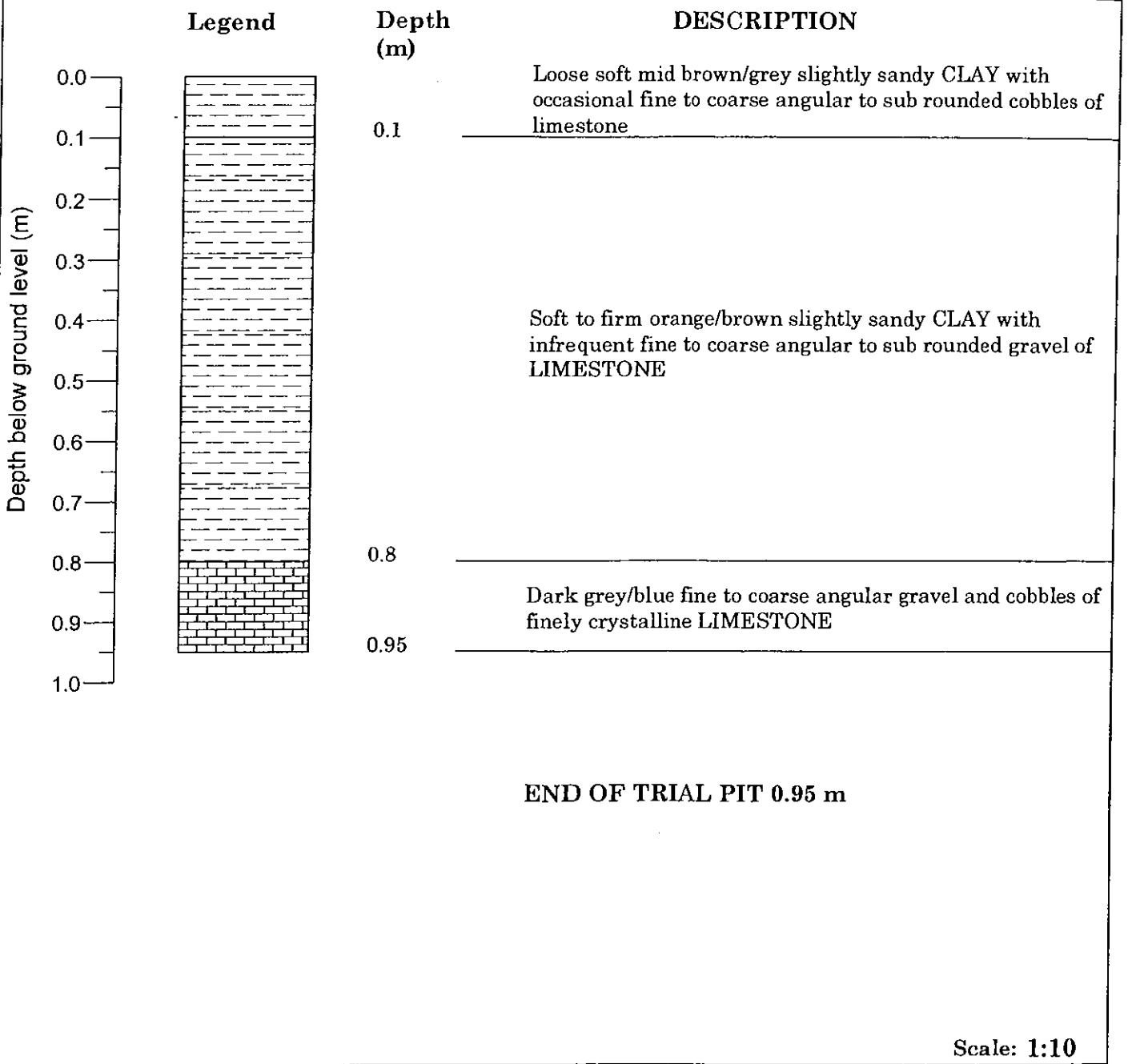
<b>Remarks:</b>	<b>Water:</b> N/A
	<b>Stability:</b> N/A
	<b>Time trench open:</b>

<b>Sample:</b>	S1	S2		<b>Logged by:</b> DRC
<b>Depth:</b>	0.3	0.6		
<b>Type:</b>				<b>Date:</b> 29.01.03
<b>Test: Shear Vane (N)</b>	8.0, 7.3, 7.9	7.4, 7.0, 6.8, 7.2		

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 26</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>

<b>Project:</b> RAF St Athan Extension Areas	<b>Excavation Method:</b> JCB Backactor
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<b>Location:</b> RAF St Athan	<b>Weather:</b> Sunshine and Showers
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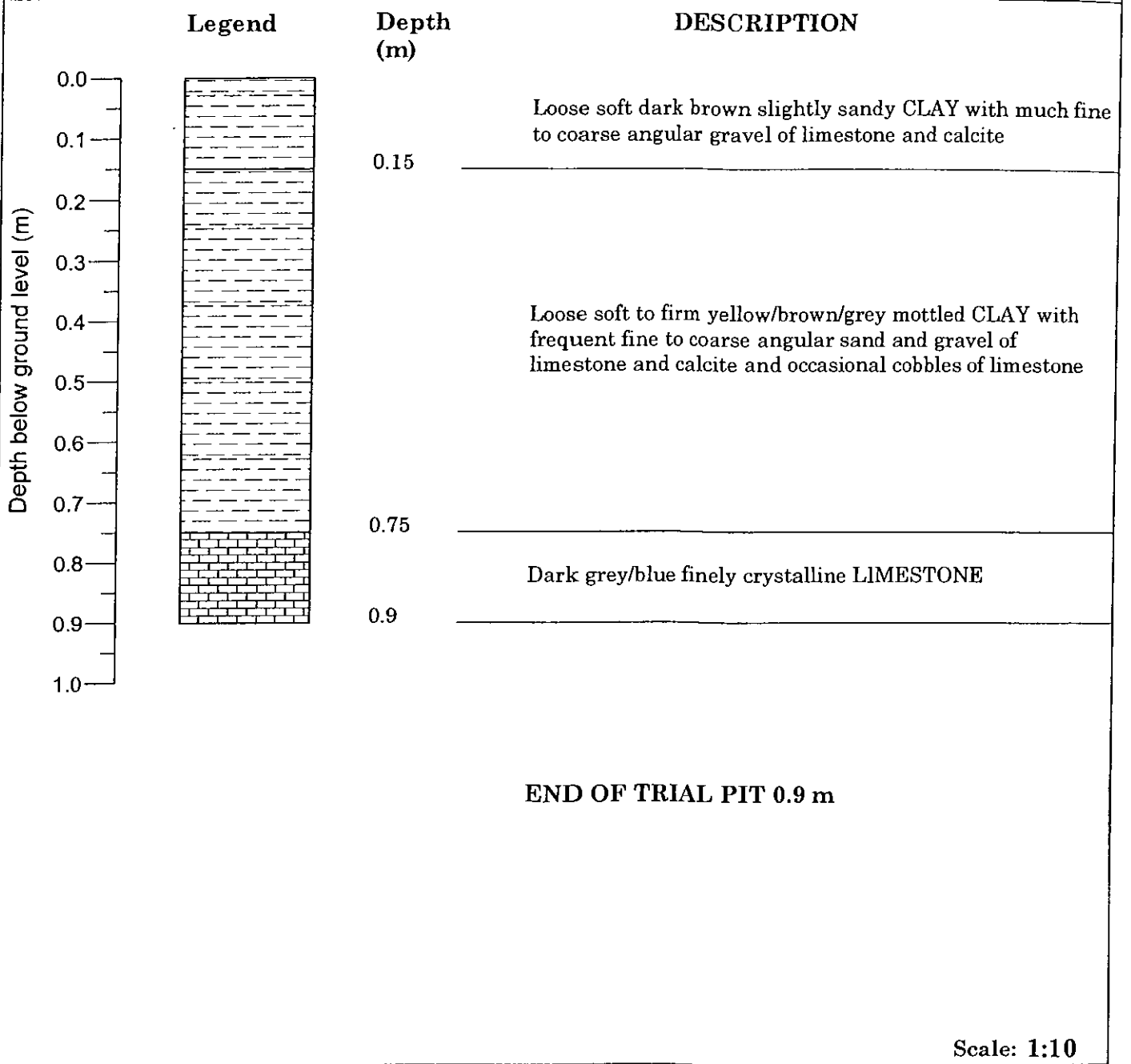
<b>Remarks:</b>	<b>Water:</b> N/A
	<b>Stability:</b> N/A
	<b>Time trench open:</b>

<b>Sample:</b>	1				<b>Logged by:</b> DRC
<b>Depth:</b>	0.5				
<b>Type:</b>		0.3m	0.8m		<b>Date:</b> 29.01.03
<b>Test: Shear Vane (N)</b>		4.2, 6.0, 6.5	8.6, 9.0, 8.6		

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 27</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>

<b>Project:</b> RAF St Athan Extension Areas	<b>Excavation Method:</b> JCB Backactor
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<b>Location:</b> RAF St Athan	<b>Weather:</b> Sunshine and Showers
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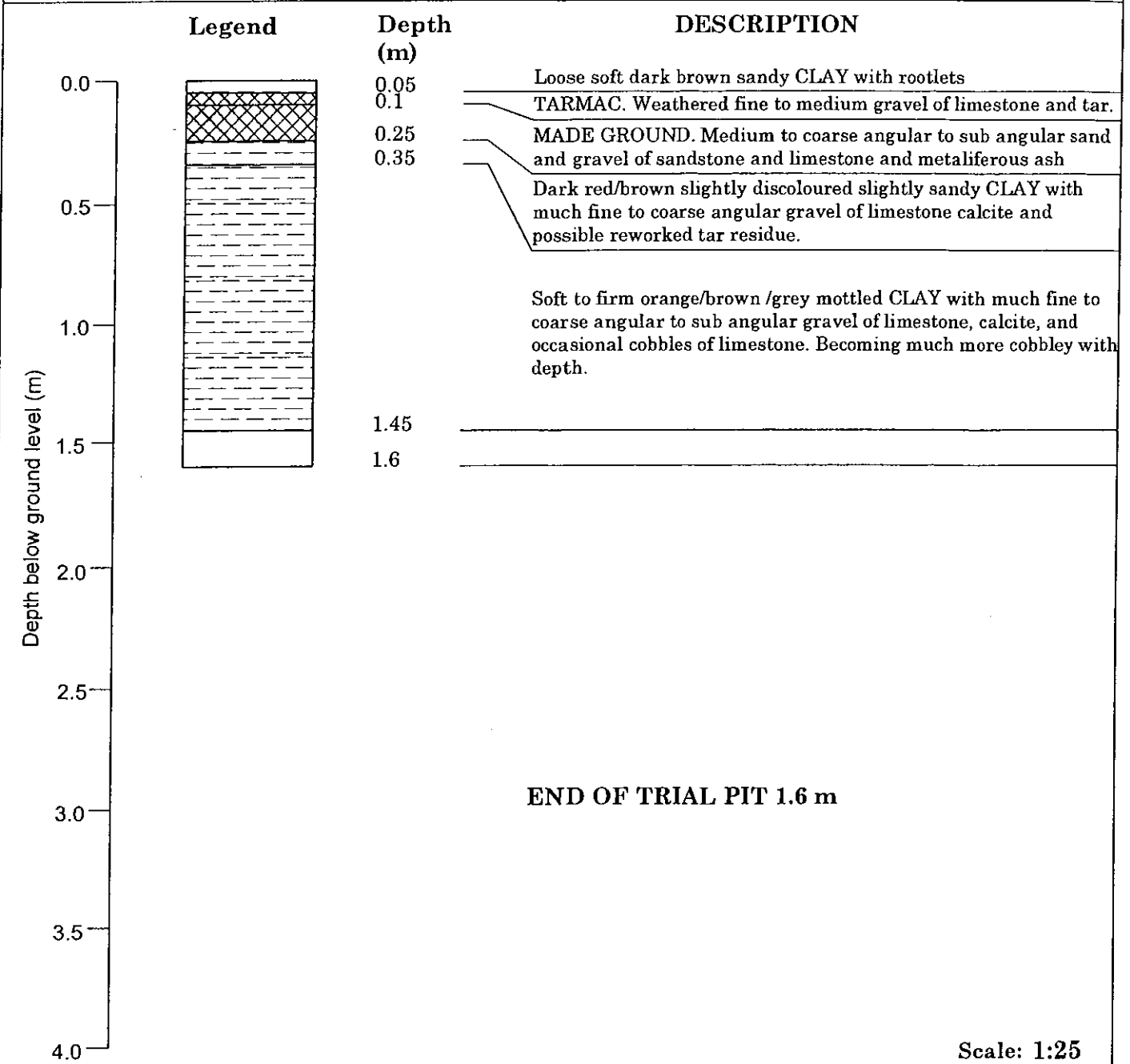
Scale: 1:10

<b>Remarks:</b>	<b>Water:</b> N/A
	<b>Stability:</b> N/A
	<b>Time trench open:</b>

<b>Sample:</b>	S1	C1	C2		<b>Logged by:</b> DRC
<b>Depth:</b>	0.5	0.1	0.5		
<b>Type:</b>					<b>Date:</b> 29.01.03
<b>Test: Shear Vane (N)</b>	Too Gravelly				



<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 28</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>
<b>Project:</b> RAF St Athan Extension Areas	<b>Excavation Method:</b> JCB Backactor	
<b>Location:</b> RAF St Athan	<b>Weather:</b> Sunshine and Showers	

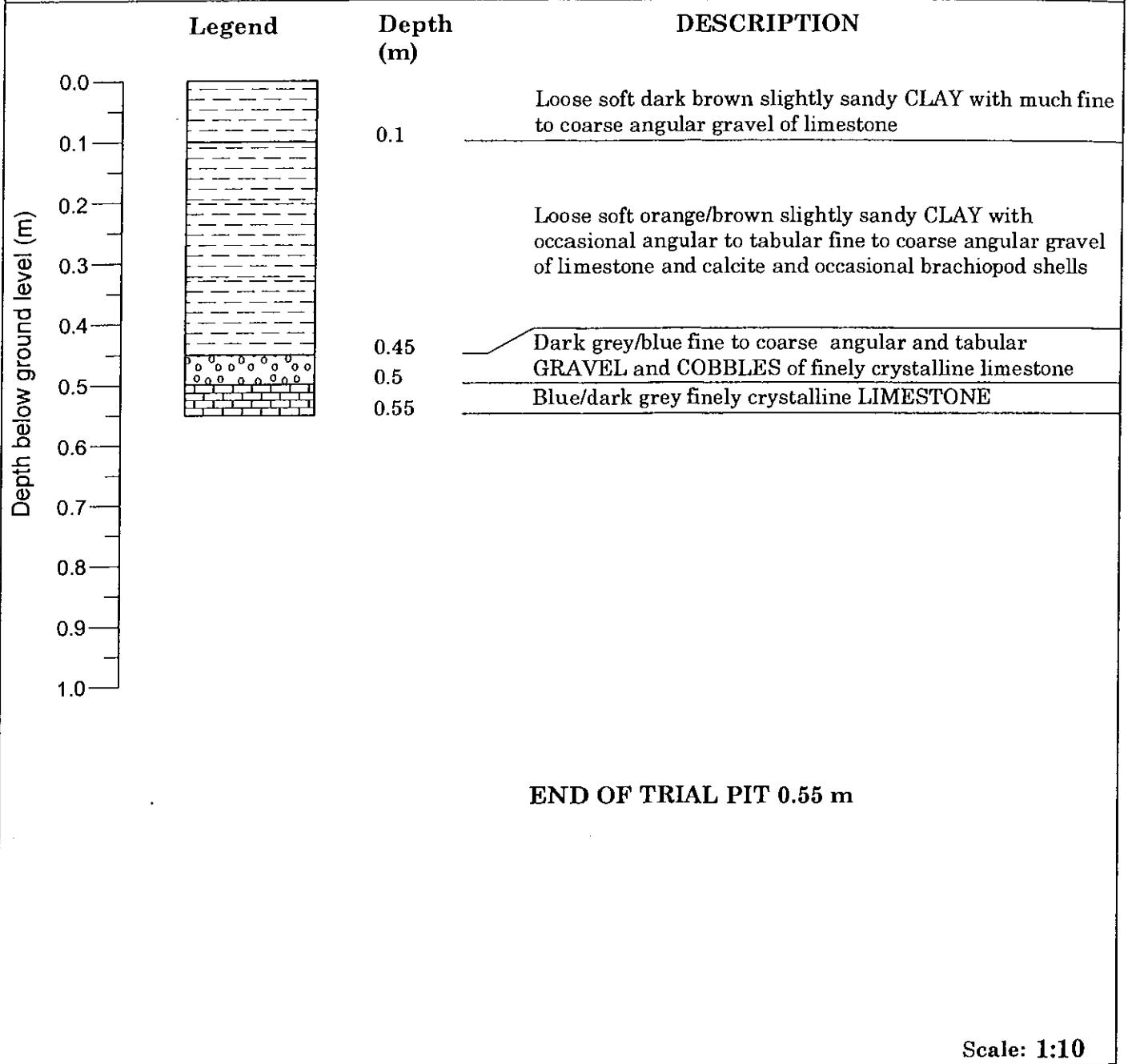


<b>Remarks:</b> Dirty/oily iridescent sheen on perched water					<b>Water:</b> 0.8m perched depth	
					<b>Stability:</b> N/A	
					<b>Time trench open:</b>	
<b>Sample:</b>	S1	S2	C1	C2	<b>Logged by:</b> DRC	
<b>Depth:</b>	0.3	1.0	0.1	0.35		
<b>Type:</b>					<b>Date:</b> 29.01.03	
<b>Test: Shear Vane (N)</b>	5.0, 5.5, 6.0	9.2, 9.2, 9.4				

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 29</b>
Client: Defence Estates	CA No: MD0990066A	Sheet 1 of 1
	Ground Level - m A.O.D. <small>approx.</small>	Grid Ref.:

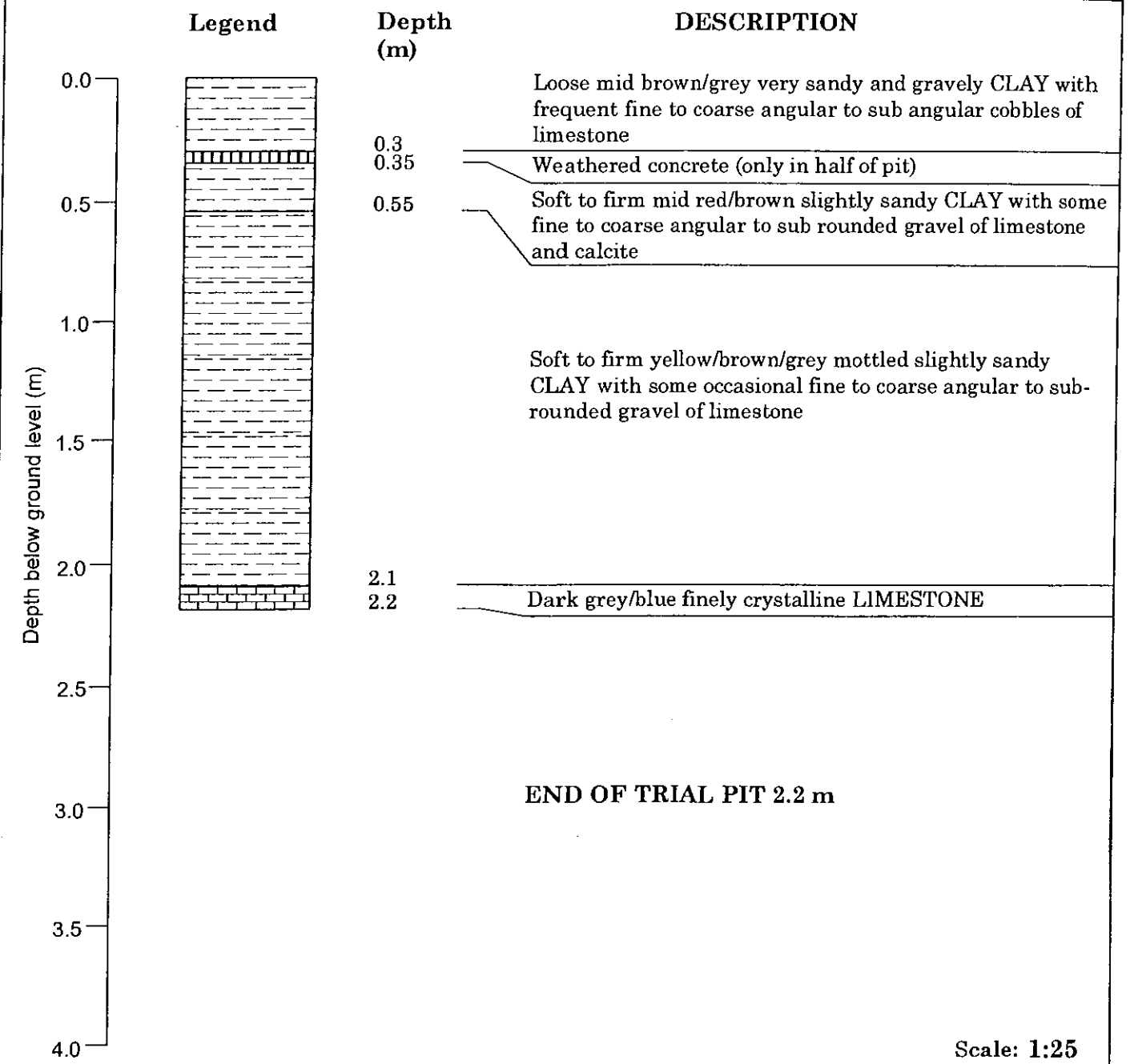
Project: RAF St Athan Extension Areas	Excavation Method: JCB Backactor
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Location: RAF St Athan	Weather: Sunshine and Showers
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Remarks:	Water: N/A			
	Stability: N/A			
	Time trench open:			
Sample:	S1	C1		Logged by: DRC
Depth:	0.4	0.2		
Type:				Date: 29.01.03
Test: Shear Vane (N)	6.2, 6.2, 6.8			

<b>ENVIROS<sup>®</sup></b>	<b>TRIAL PIT LOG</b>	<b>TP 30</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>
<b>Project:</b> RAF St Athan Extension Areas	<b>Excavation Method:</b> JCB Backactor	
<b>Location:</b> RAF St Athan	<b>Weather:</b> Sunshine and Showers	

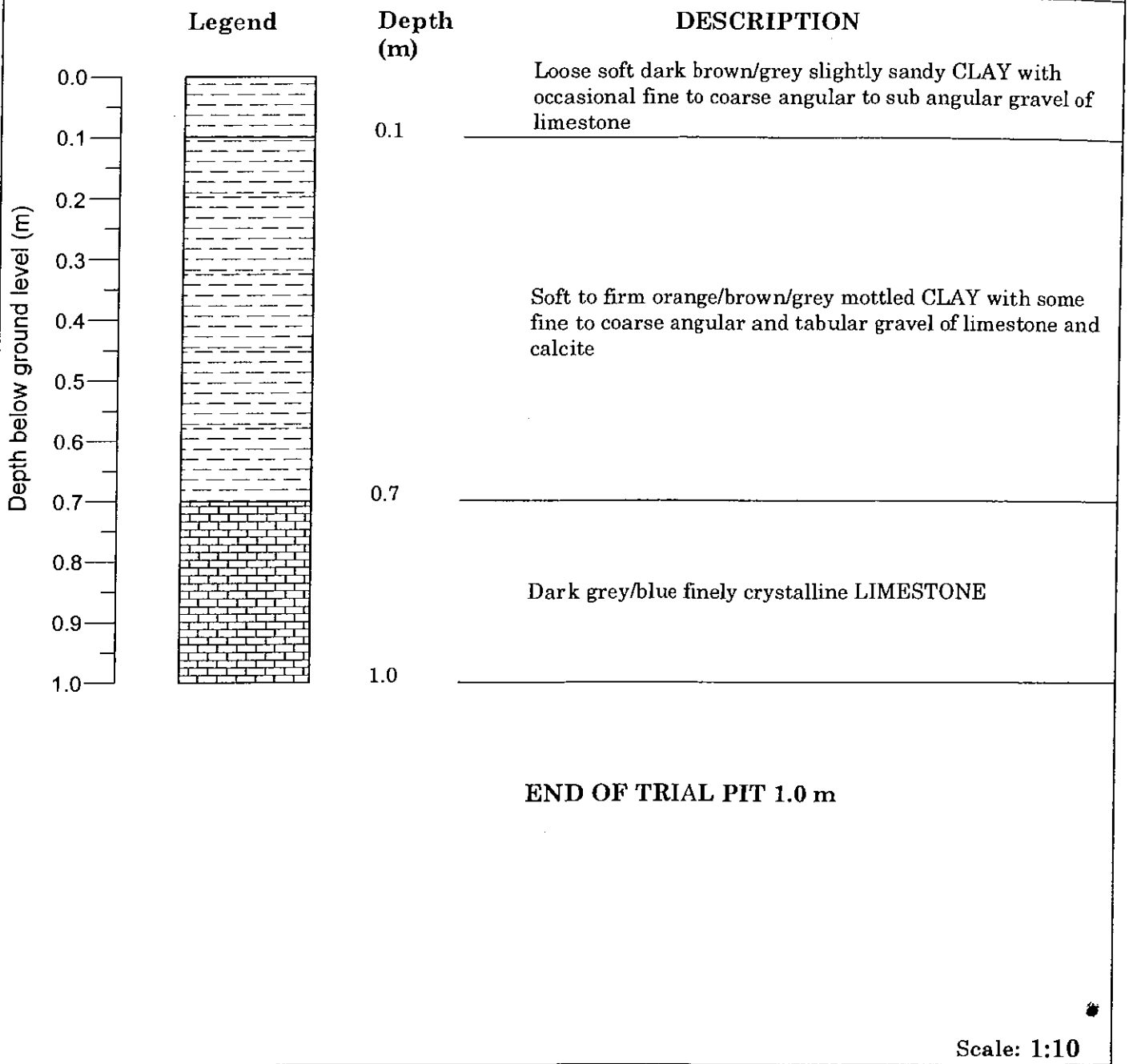


<b>Remarks:</b>	<b>Water:</b> N/A					
	<b>Stability:</b> N/A					
	<b>Time trench open:</b>					
<b>Sample:</b>	S1	S2	S3	C1	C2	<b>Logged by:</b> DRC
<b>Depth:</b>	0.4	0.9	2.0	0.2	0.4	
<b>Type:</b>						<b>Date:</b> 29.01.03
<b>Test: Shear Vane (N)</b>	4.5, 5.4, 5.6	9.2, 8.4, 8.4	9.8, 8.8, 8.8			

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 31</b>
Client: Defence Estates	CA No: MD0990066A	Sheet 1 of 1
	Ground Level - m A.O.D. approx.	Grid Ref.:

Project: RAF St Athan Extension Areas	Excavation Method: JCB Backactor
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Location: RAF St Athan	Weather: Sunshine and Showers
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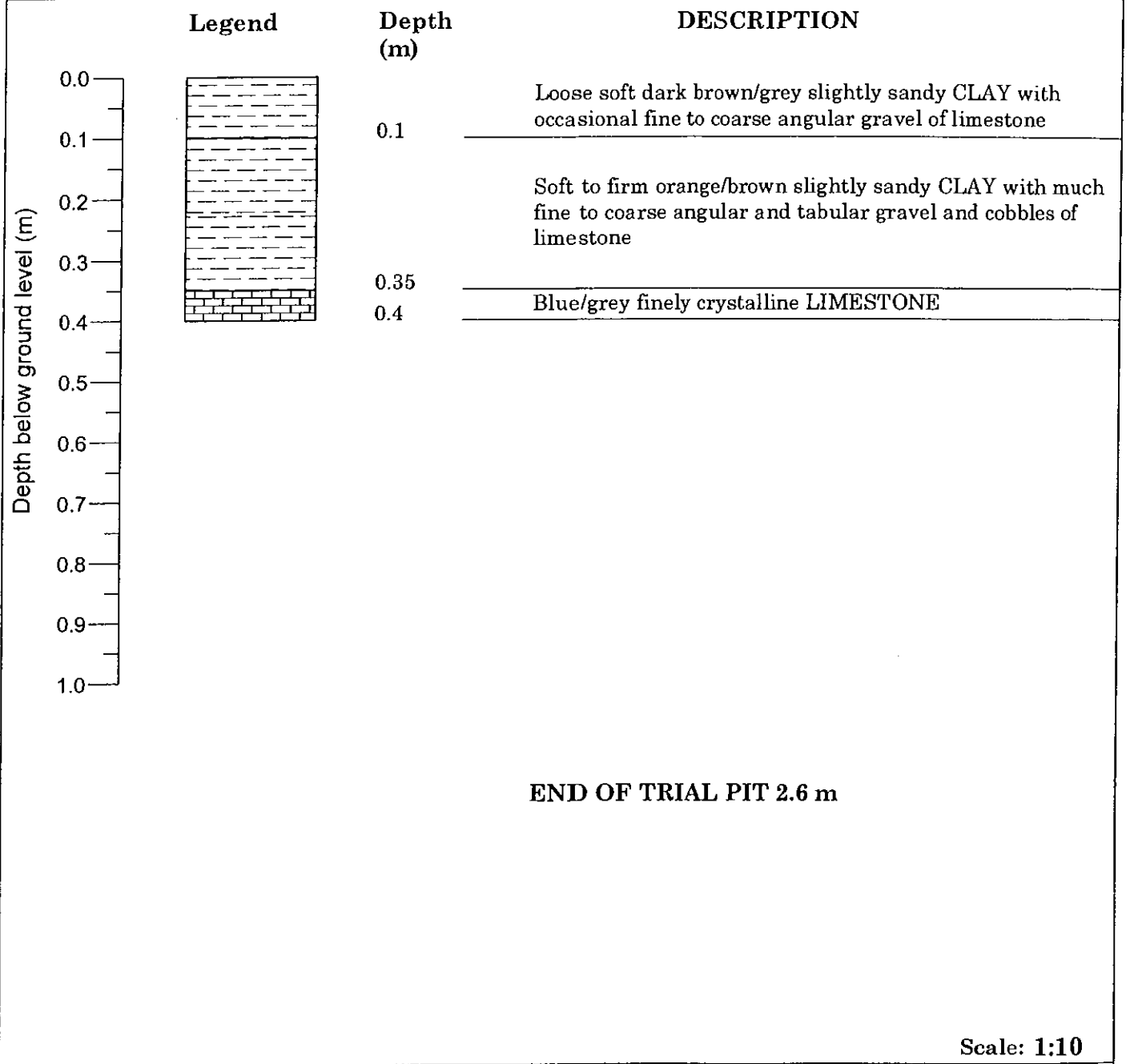
Remarks:	Water: N/A
	Stability: N/A
	Time trench open:

Sample:	1	C1	Logged by: DRC
Depth:	0.4	0.3	
Type:			
Test: Shear Vane (N)	5.4, 7.8, 6.2, 6.4		Date: 29.01.03

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 32</b>
Client: Defence Estates	CA No: MD0990066A	Sheet 1 of 1
	Ground Level - m A.O.D. <sub>approx.</sub>	Grid Ref.:

<b>Project:</b> RAF St Athan Extension Areas	<b>Excavation Method:</b> JCB Backactor
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<b>Location:</b> RAF St Athan	<b>Weather:</b> Sunshine and Showers
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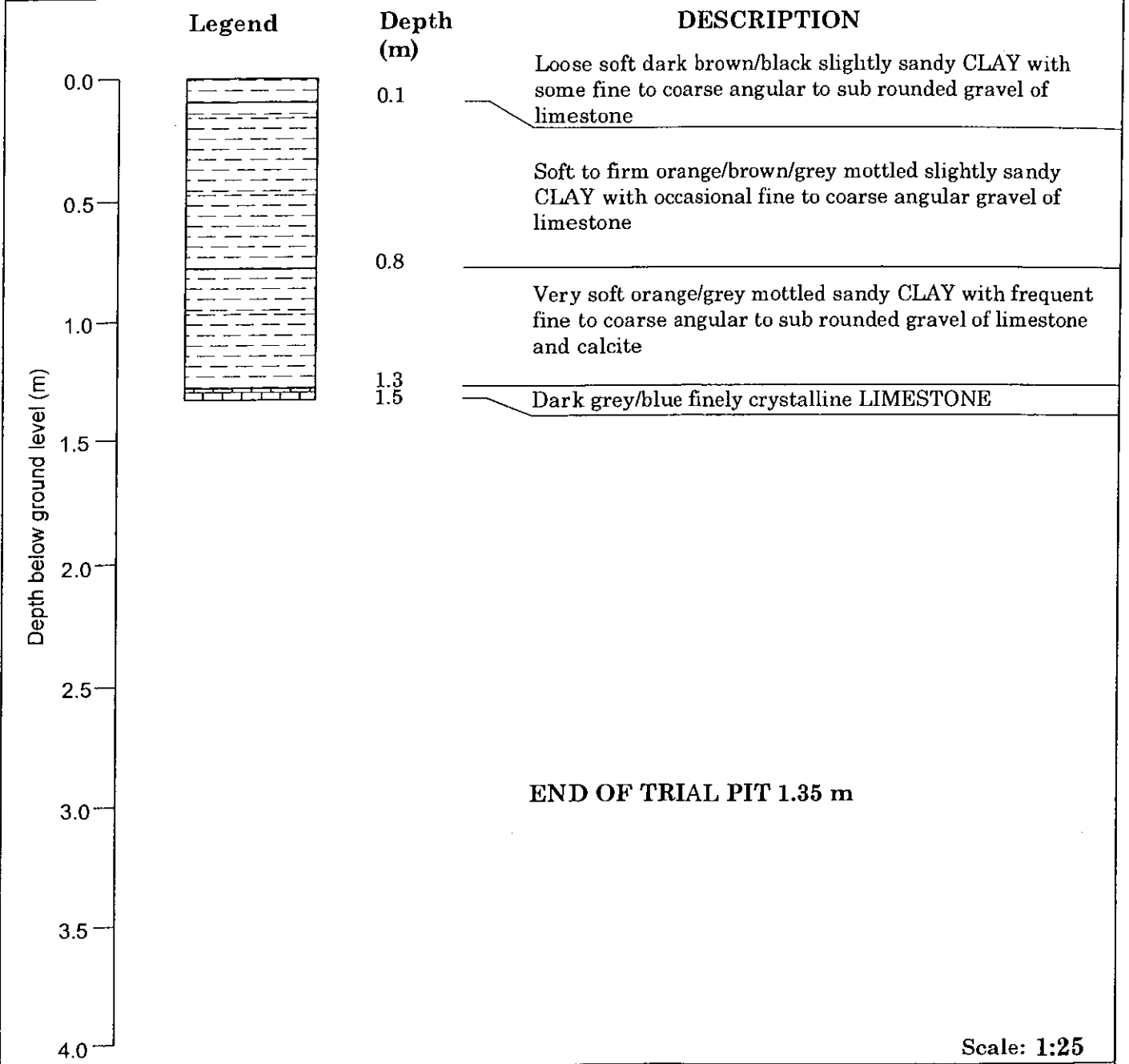


<b>Remarks:</b>	<b>Water:</b> N/A			
	<b>Stability:</b> N/A			
	<b>Time trench open:</b>			
<b>Sample:</b>	S1	C1		<b>Logged by:</b> DRC
<b>Depth:</b>	0.3	0.3		
<b>Type:</b>				<b>Date:</b> 29.01.03
<b>Test: Shear Vane (N)</b>	5.5, 5.6, 6.2			

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 33</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>

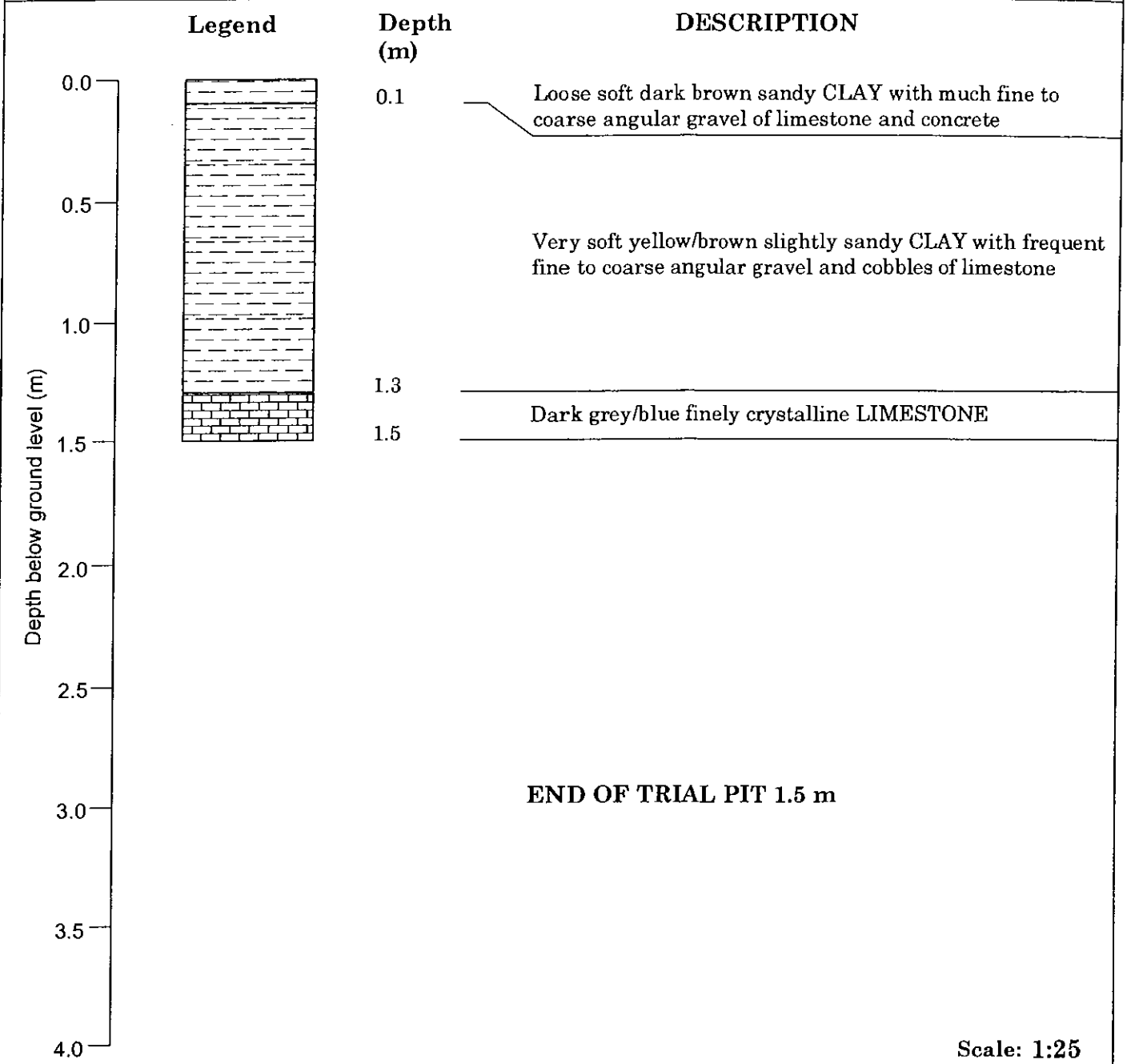
<b>Project:</b> RAF St Athan Extension Areas	<b>Excavation Method:</b> JCB Backactor
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<b>Location:</b> RAF St Athan	<b>Weather:</b> Sunshine and Showers
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<b>Remarks:</b>	<b>Water:</b> Perched at 0.8m - Very Wet				
	<b>Stability:</b> N/A				
	<b>Time trench open:</b>				
<b>Sample:</b>	1	2			<b>Logged by:</b> DRC
<b>Depth:</b>	0.5	1.0			
<b>Type:</b>					
<b>Test: Shear Vane (N)</b>	6.8, 6.2, 7.0	6.2, 6.4, 6.6			<b>Date:</b> 29.01.03

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 34</b>
Client: Defence Estates	CA No: MD0990066A	Sheet 1 of 1
	Ground Level - m A.O.D. <sub>approx.</sub>	Grid Ref.:
Project: RAF St Athan Extension Areas		Excavation Method: JCB Backactor
Location: RAF St Athan		Weather: Sunshine and Showers

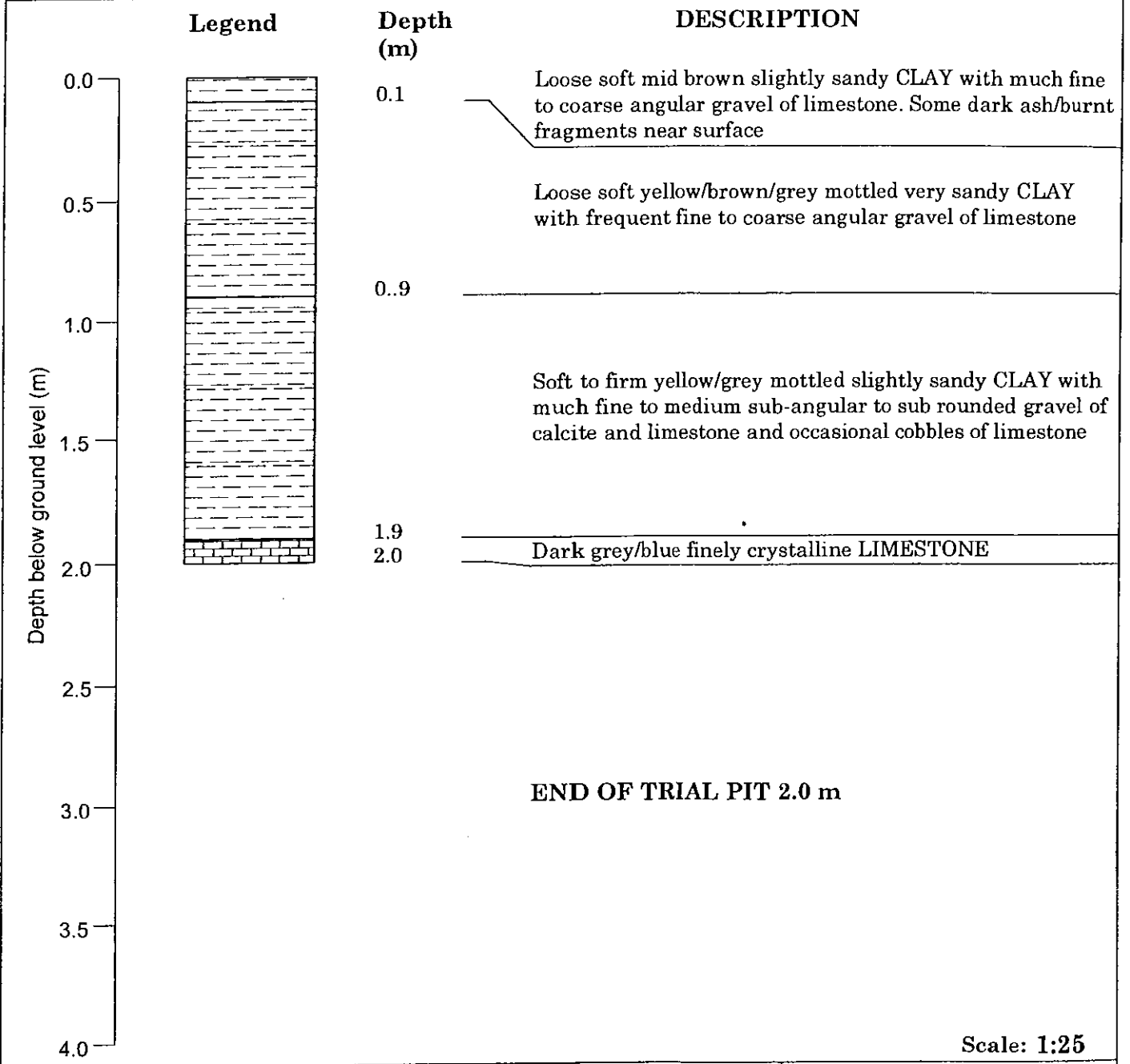


Remarks:	Water: Perched at 0.4m				
	Stability: N/A				
	Time trench open:				
Sample:	S1	S2	C1	C2	Logged by: DRC
Depth:	0.5	1.0	0.1	0.5	
Type:					Date: 29.01.03
Test: Shear Vane (N)	5.4, 5.6, 5.4	-			

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 35</b>
Client: Defence Estates	CA No: MD0990066A	Sheet 1 of 1
	Ground Level - m A.O.D. approx.	Grid Ref.:

Project: RAF St Athan Extension Areas	Excavation Method: JCB Backactor
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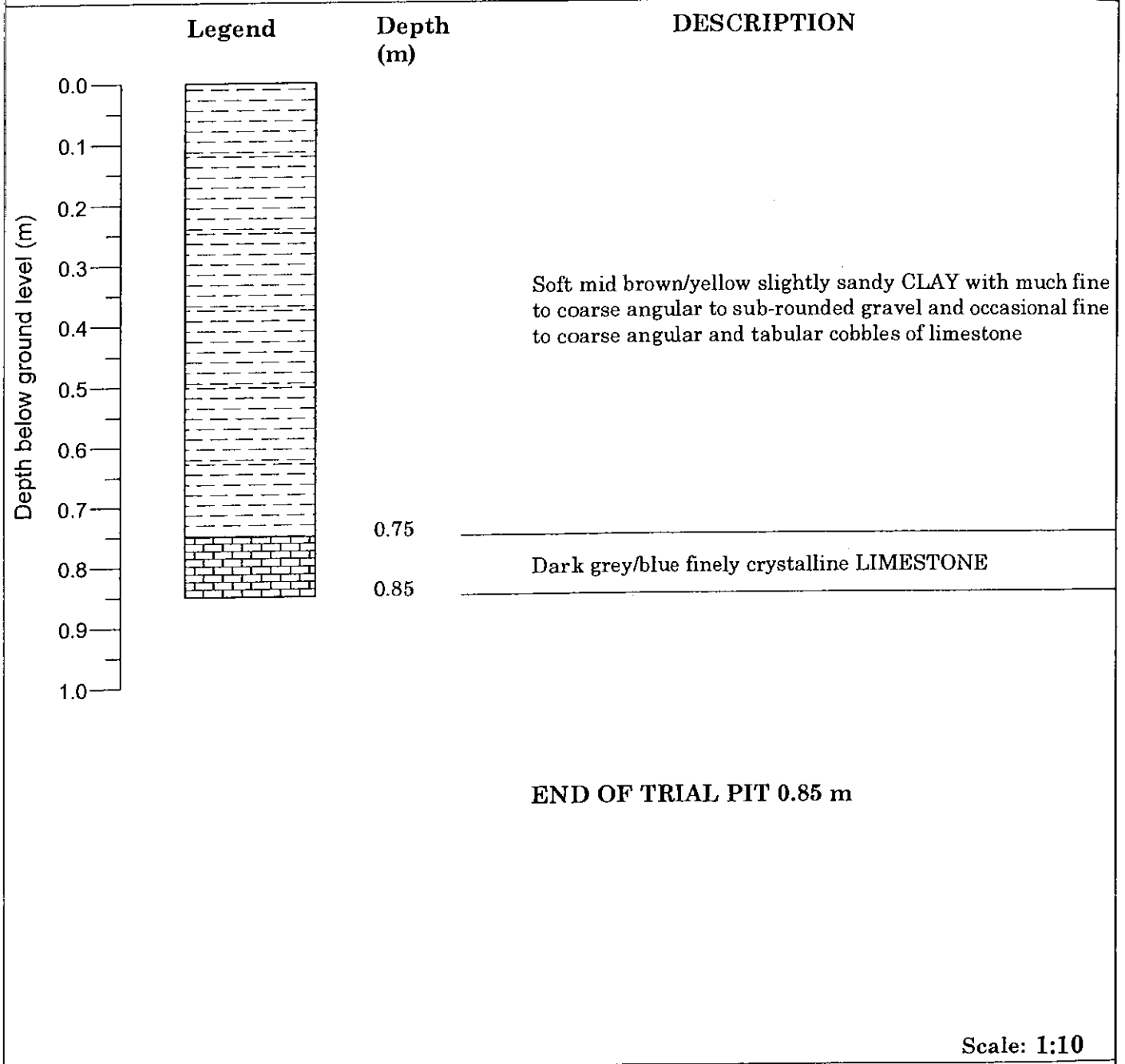
Location: RAF St Athan	Weather: Sunshine and Showers
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Remarks:	Water: N/A					
	Stability: N/A					
	Time trench open:					
Sample:	S1	S2	S3	C1	C2	Logged by: DRC
Depth:	0.4	1.0	1.6	0.1	0.5	
Type:						Date: 29.01.03
Test: Shear Vane (N)	5.8, 5.5, 5.4	Too Gravelly	Too Gravelly			



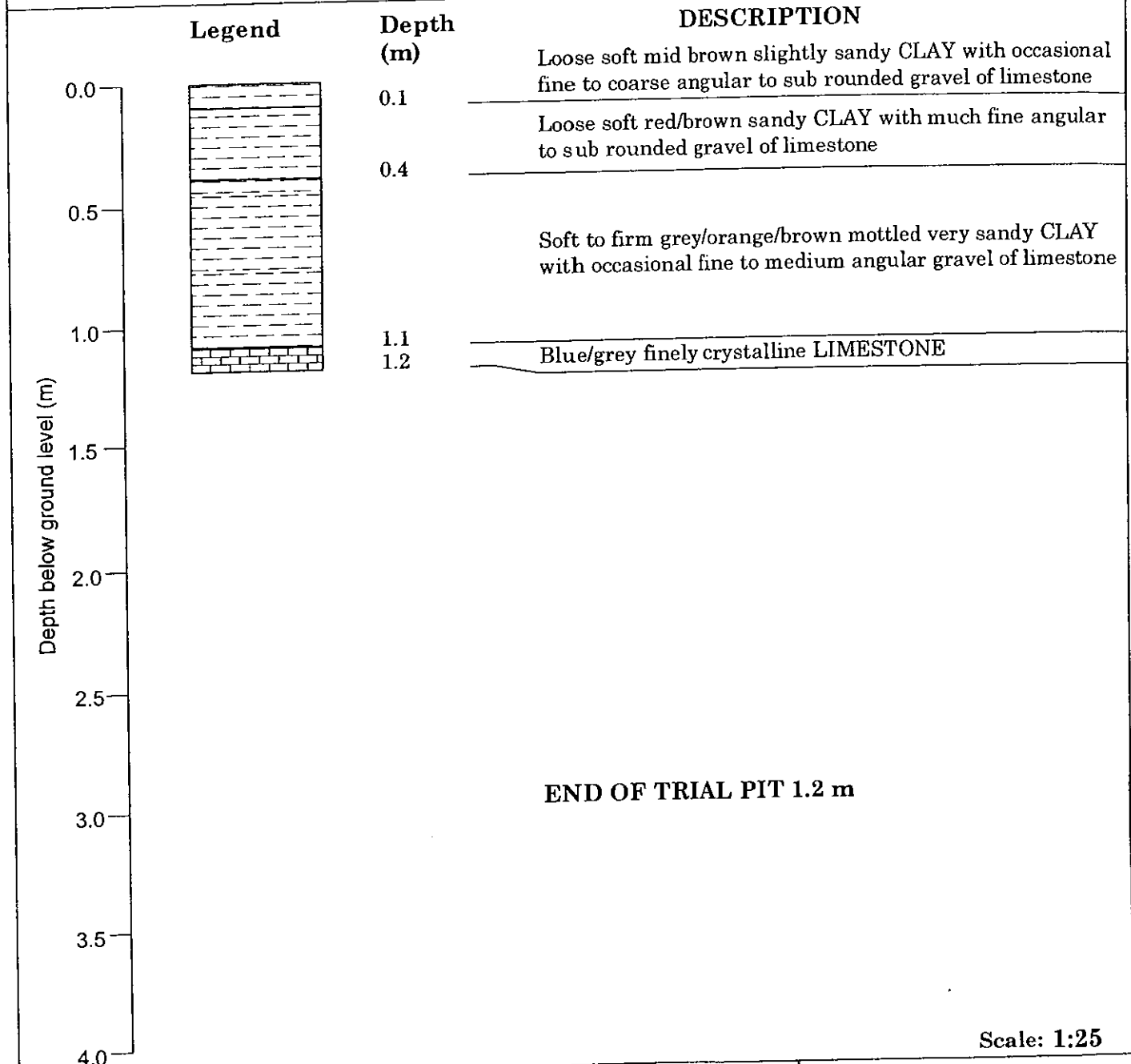
<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 36</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>
<b>Project:</b> RAF St Athan Extension Areas		<b>Excavation Method:</b> JCB Backactor
<b>Location:</b> RAF St Athan		<b>Weather:</b> Sunshine and Showers



<b>Remarks:</b>	<b>Water:</b> N/A			
	<b>Stability:</b> N/A			
	<b>Time trench open:</b>			
<b>Sample:</b>	S1	S2		<b>Logged by:</b> DRC
<b>Depth:</b>	0.2	0.6		
<b>Type:</b>				<b>Date:</b> 29.01.03
<b>Test: Shear Vane (N)</b>	6.5, 7.4, 7.2	7.8, 8.8, 8.5		

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 37</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>

<b>Project:</b> RAF St Athan Extension Areas	<b>Excavation Method:</b> JCB Backactor
<b>Location:</b> RAF St Athan	<b>Weather:</b> Sunshine and Showers



<b>Remarks:</b>	<b>Water:</b> N/A		
	<b>Stability:</b> N/A		
	<b>Time trench open:</b>		
<b>Sample:</b>	S1	S2	<b>Logged by:</b> DRC
<b>Depth:</b>	0.3	0.8	
<b>Type:</b>			<b>Date:</b> 29.01.03
<b>Test: Shear Vane (N)</b>	3.0, 5.3, 5.0, 4.8	7.8, 7.6, 7.6	

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D.  
approx.

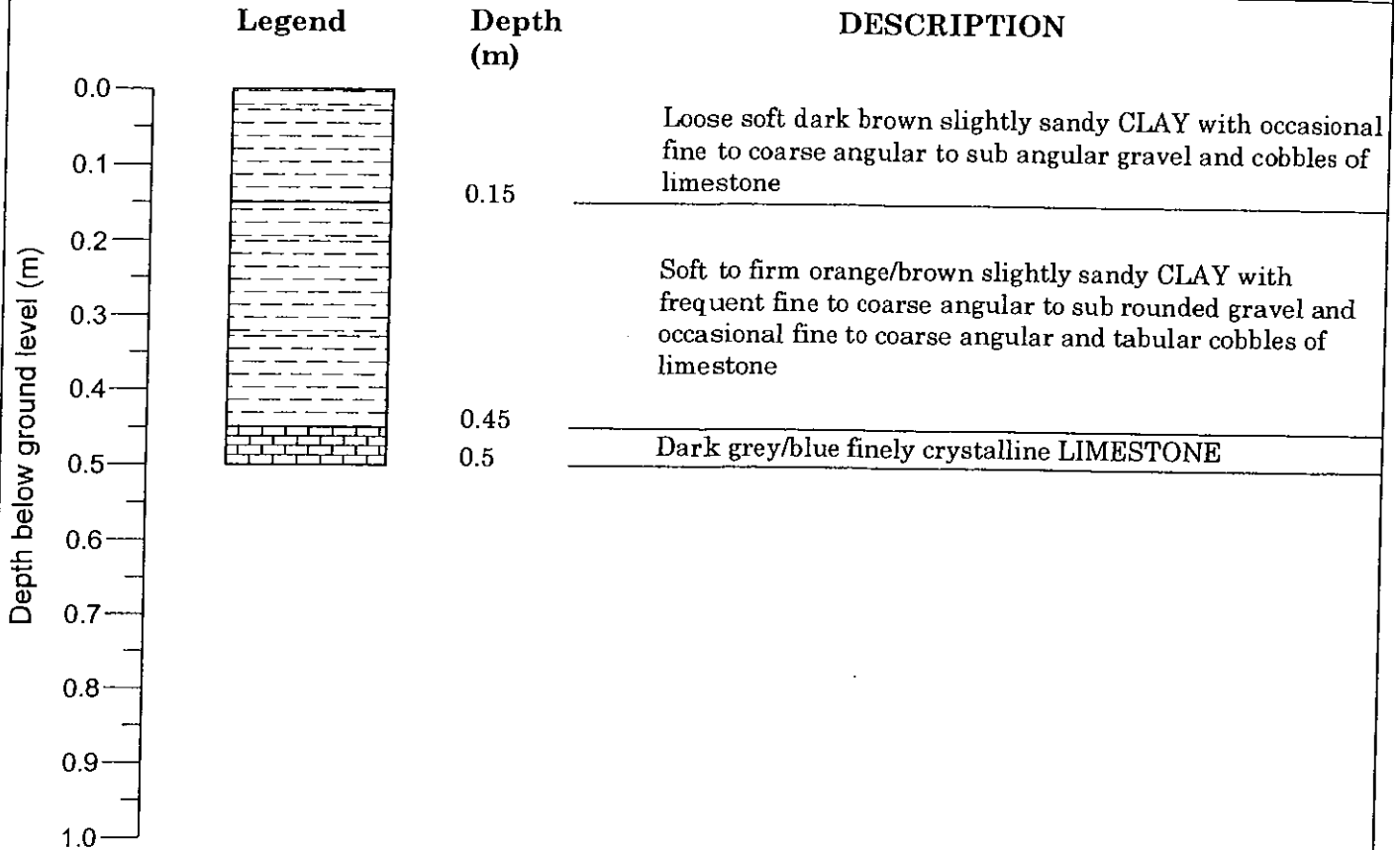
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**END OF TRIAL PIT 0.5 m**

**Scale: 1:10**

**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

<b>Sample:</b>	S1	C1				<b>Logged by:</b> DRC
<b>Depth:</b>	0.4	0.3				
<b>Type:</b>						<b>Date:</b> 29.01.03
<b>Test: Shear Vane (N)</b>	8.9, 9.3, 8.2					

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D.  
approx.

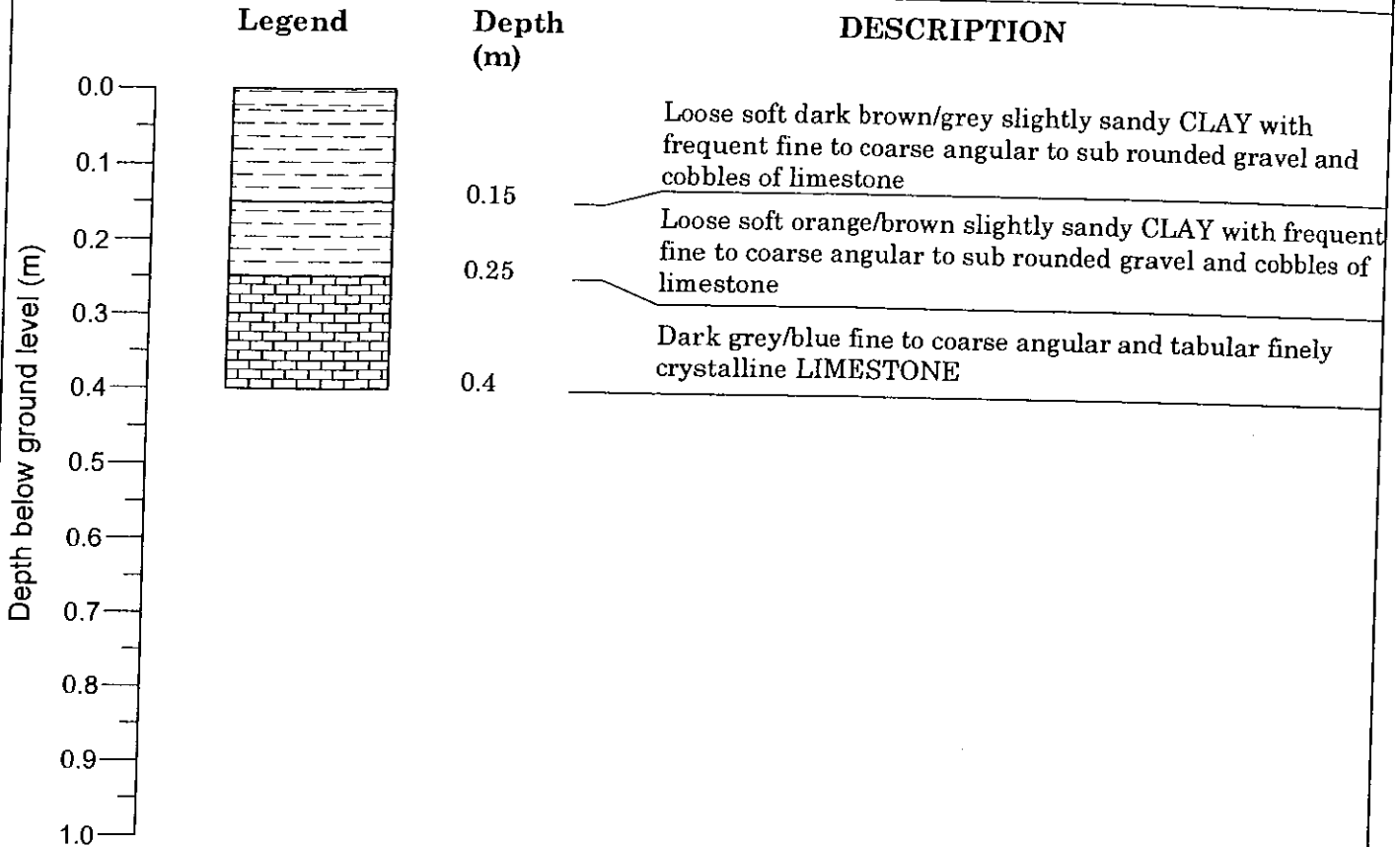
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**END OF TRIAL PIT 0.4 m**

**Scale: 1:10**

**Remarks:**

**Water:** N/A

**Stability:** N/A

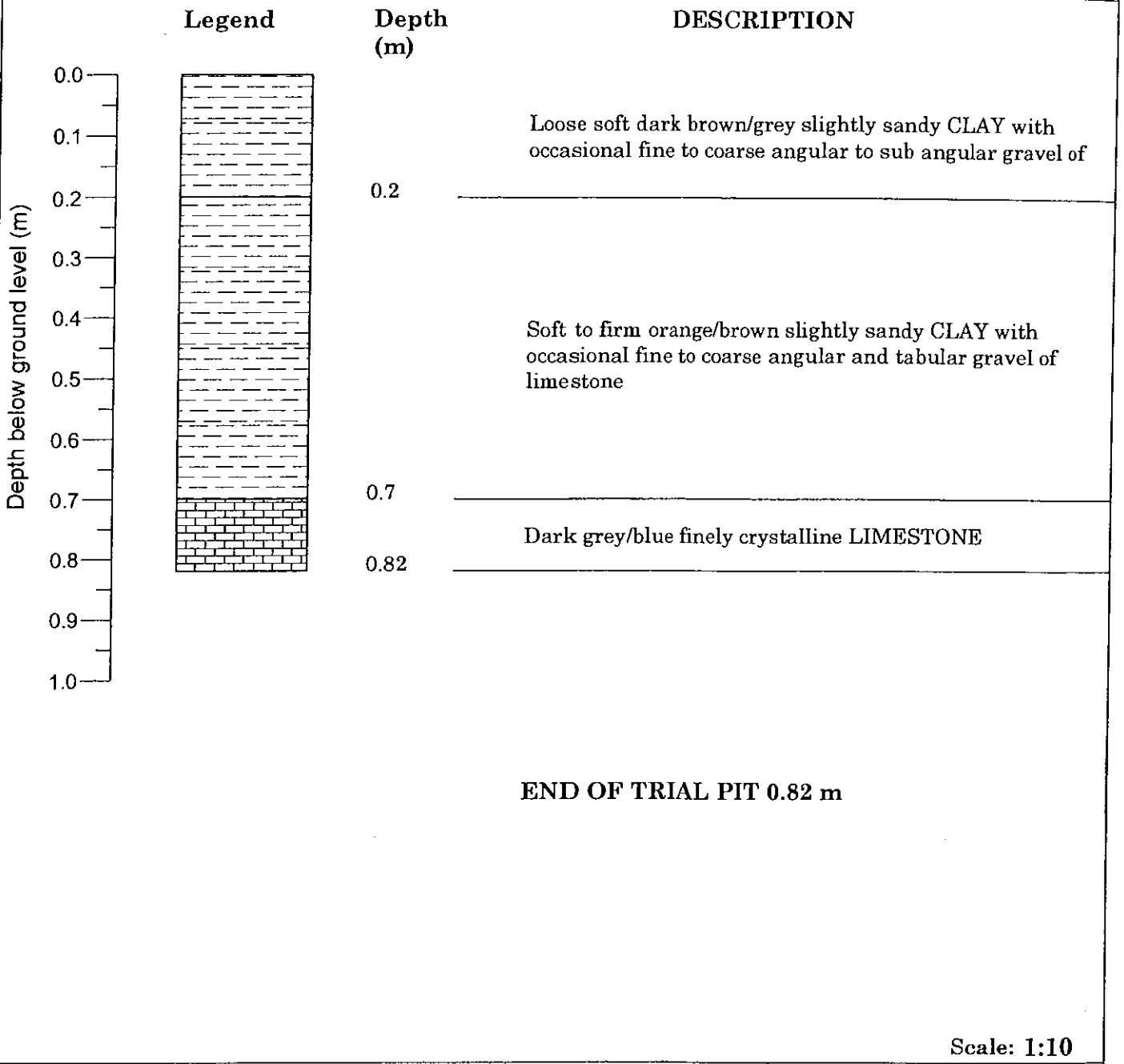
**Time trench open:**

<b>Sample:</b>	S1	C1				
<b>Depth:</b>	0.2	0.3				<b>Logged by:</b> DRC
<b>Type:</b>						
<b>Test: Shear Vane (N)</b>	Too Gravelly					<b>Date:</b> 29.01.03

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>TP 40</b>
Client: Defence Estates	CA No: MD0990066A	Sheet 1 of 1
	Ground Level - m A.O.D. <small>approx.</small>	Grid Ref.:

**Project:** RAF St Athan Extension Areas      **Excavation Method:** JCB Backactor

**Location:** RAF St Athan      **Weather:** Sunshine and Showers



**Remarks:**

<b>Water:</b> N/A
<b>Stability:</b> N/A
<b>Time trench open:</b>

<b>Sample:</b>	S1				<b>Logged by:</b> DRC
<b>Depth:</b>	0.4				
<b>Type:</b>					
<b>Test: Shear Vane (N)</b>	7.7, 7.7, 8.0				<b>Date:</b> 29.01.03

Client: Defence Estates

CA No: MD0990066A

Sheet 1 of 1

Ground Level - m A.O.D. approx.

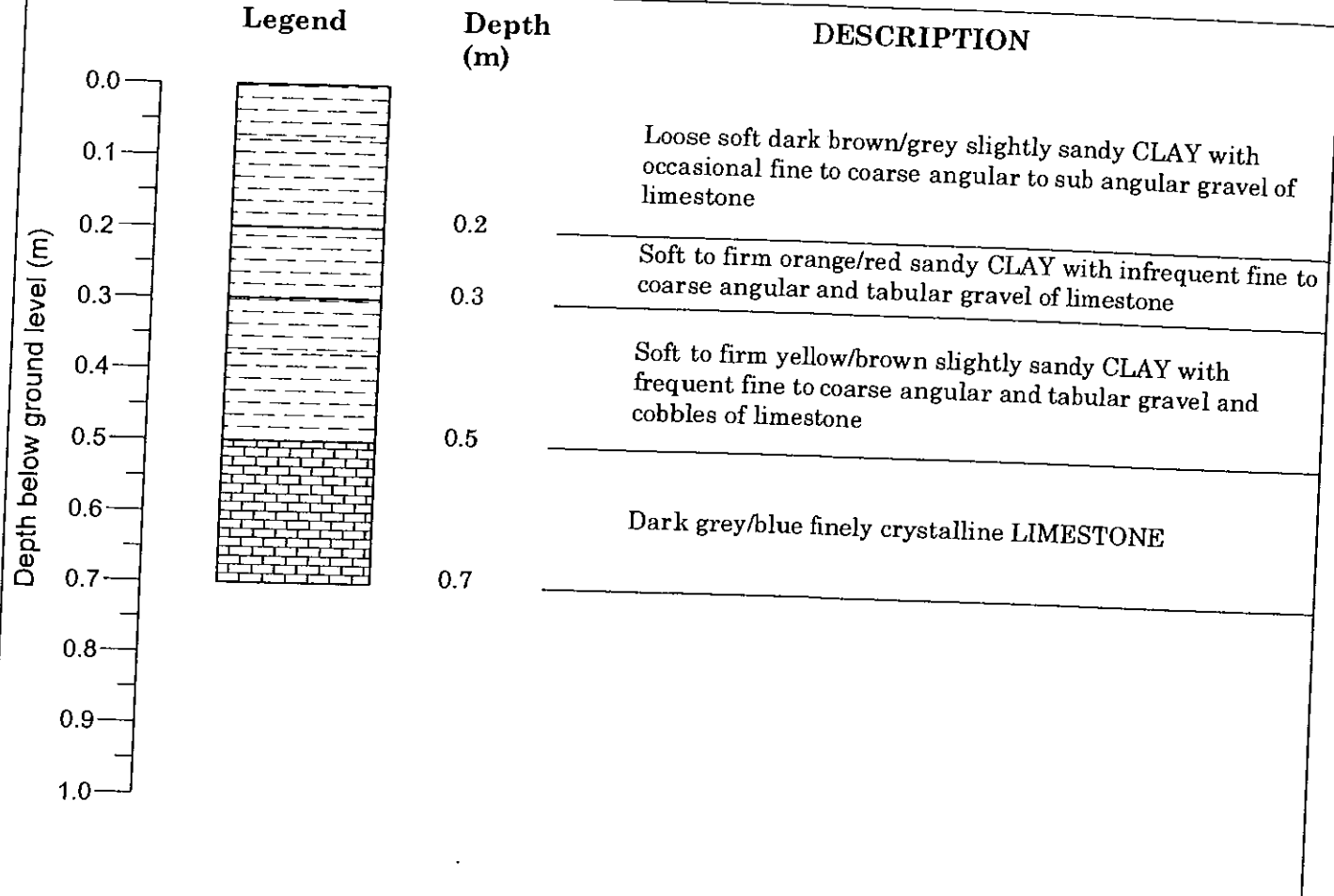
Grid Ref.:

Project: RAF St Athan Extension Areas

Excavation Method: JCB Backactor

Location: RAF St Athan

Weather: Sunshine and Showers



**END OF TRIAL PIT 0.7 m**

Scale: 1:10

Remarks:

Water: N/A

Stability: N/A

Time trench open:

Sample:

S1

Depth:

0.4

Type:

Logged by: DRC

Test: Shear Vane (N)

5.4, 6.2, 7.7, 7.6

Date: 29.01.03

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D.  
approx.

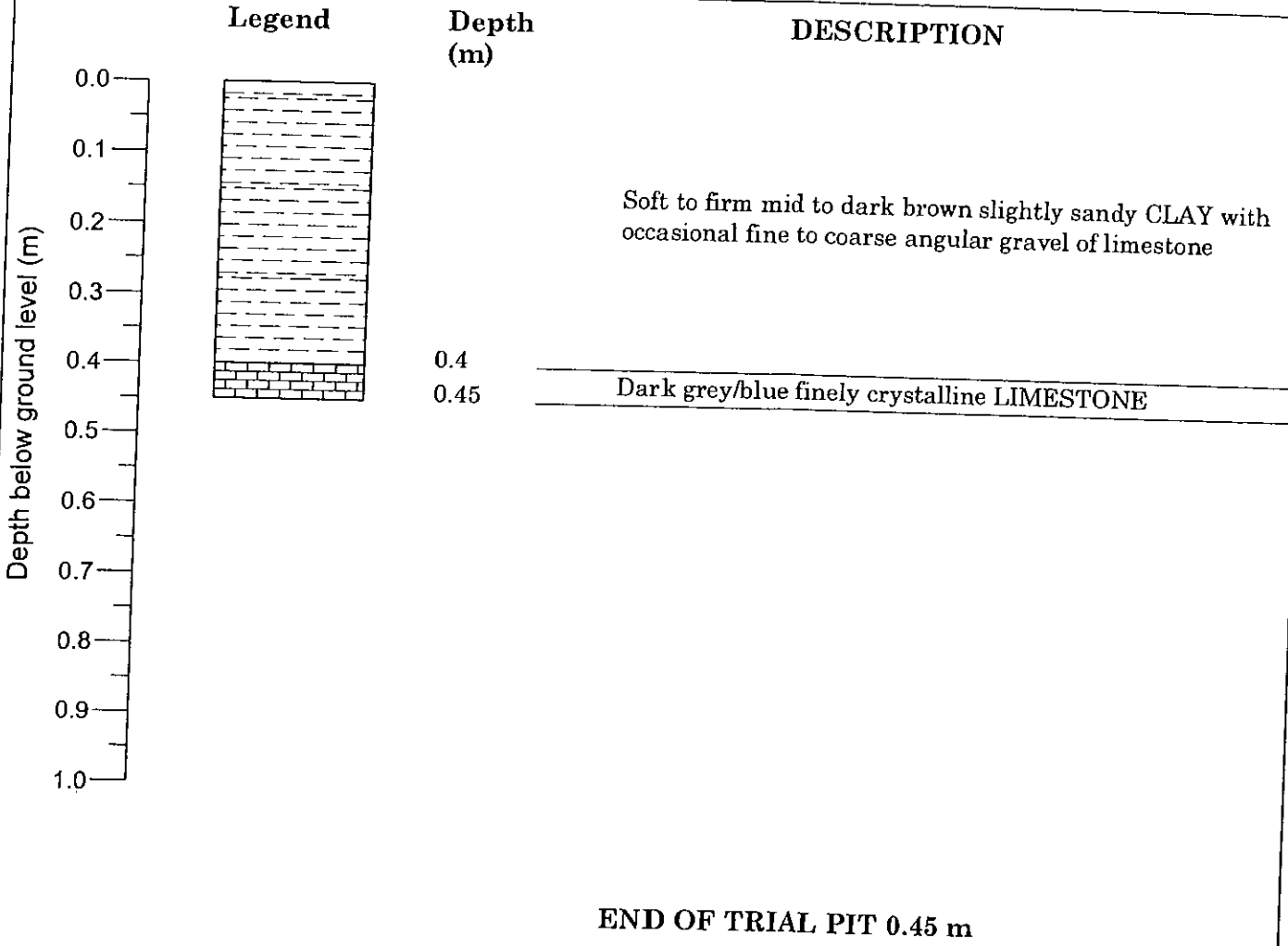
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**Scale: 1:10**

**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

<b>Sample:</b>	1					
<b>Depth:</b>	0.3					<b>Logged by:</b> DRC
<b>Type:</b>						
<b>Test: Shear Vane (N)</b>	4.0, 3.7, 4.7					<b>Date:</b> 29.01.03

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D.  
approx.

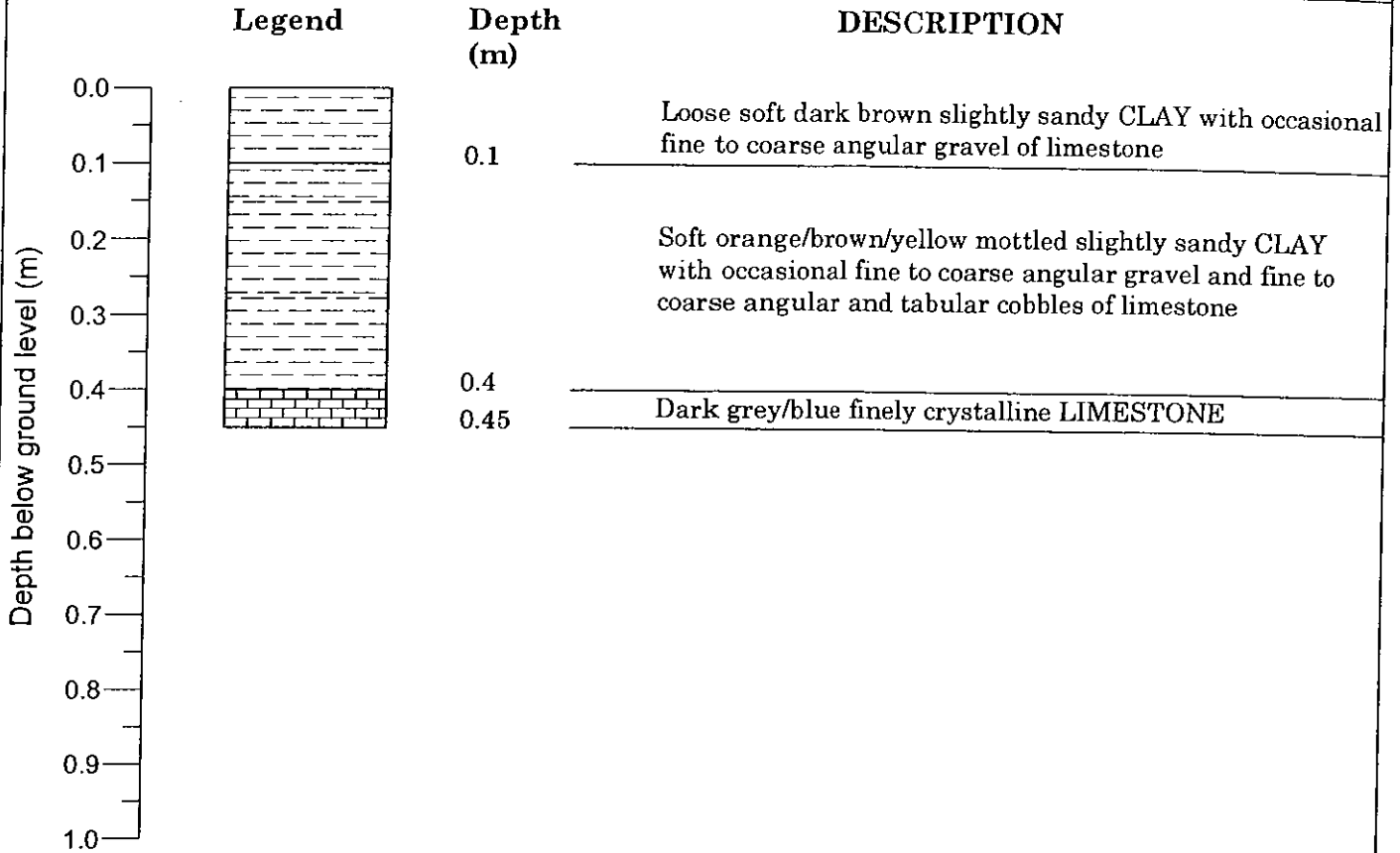
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**END OF TRIAL PIT 0.45 m**

**Scale: 1:10**

**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

<b>Sample:</b>	S1					<b>Logged by:</b> DRC
<b>Depth:</b>	0.3					
<b>Type:</b>						
<b>Test: Shear Vane (N)</b>	5.6, 6.5, 6.3					<b>Date:</b> 29.01.03



**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D.  
approx.

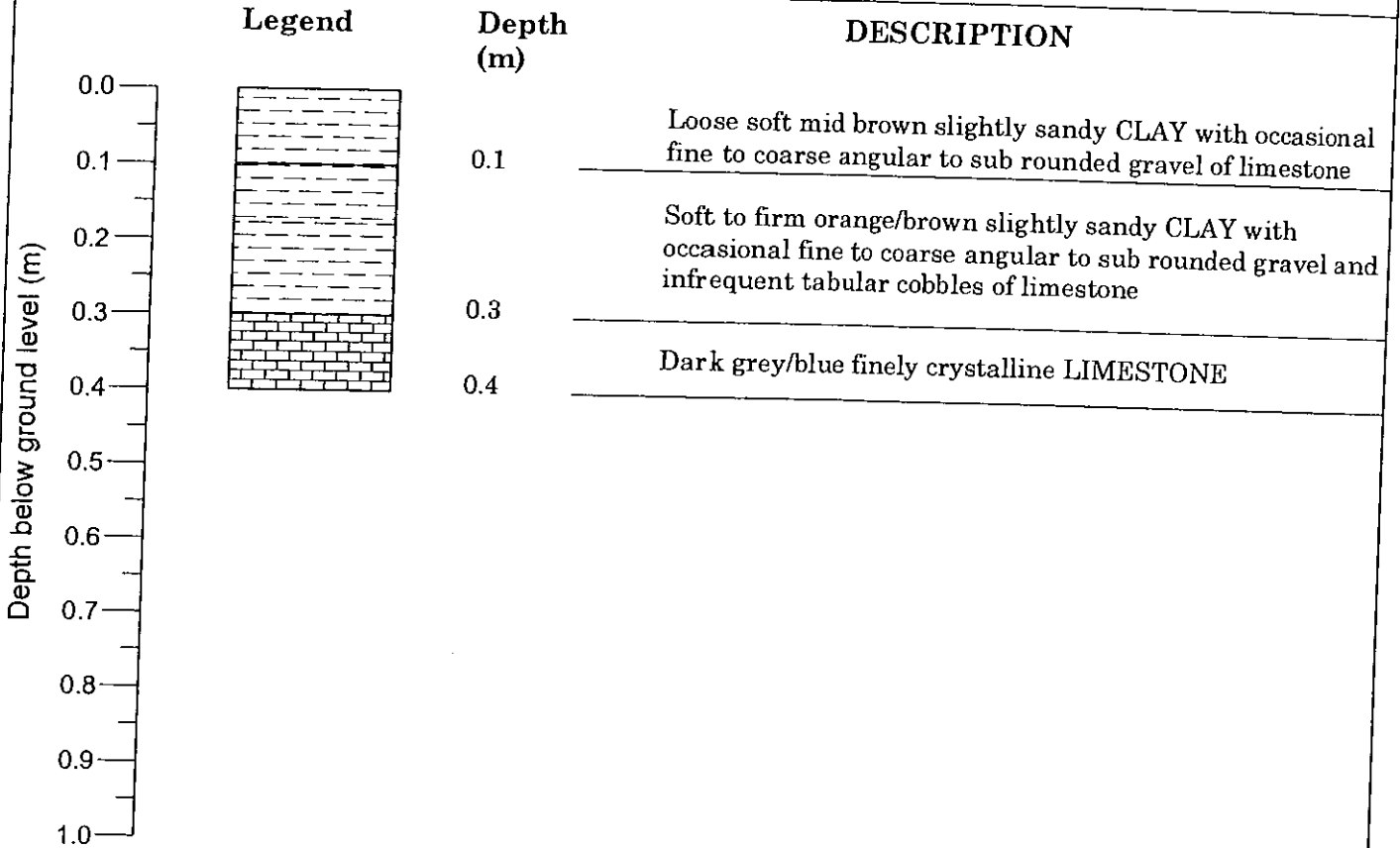
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**END OF TRIAL PIT 0.4 m**

**Scale: 1:10**

**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

<b>Sample:</b>	S1					
<b>Depth:</b>	0.2					<b>Logged by:</b> DRC
<b>Type:</b>						
<b>Test: Shear Vane (N)</b>	7.8, 8.8, 8.0					<b>Date:</b> 29.01.03

Client: Defence Estates

CA No: MD0990066A

Sheet 1 of 1

Ground Level - m A.O.D. approx.

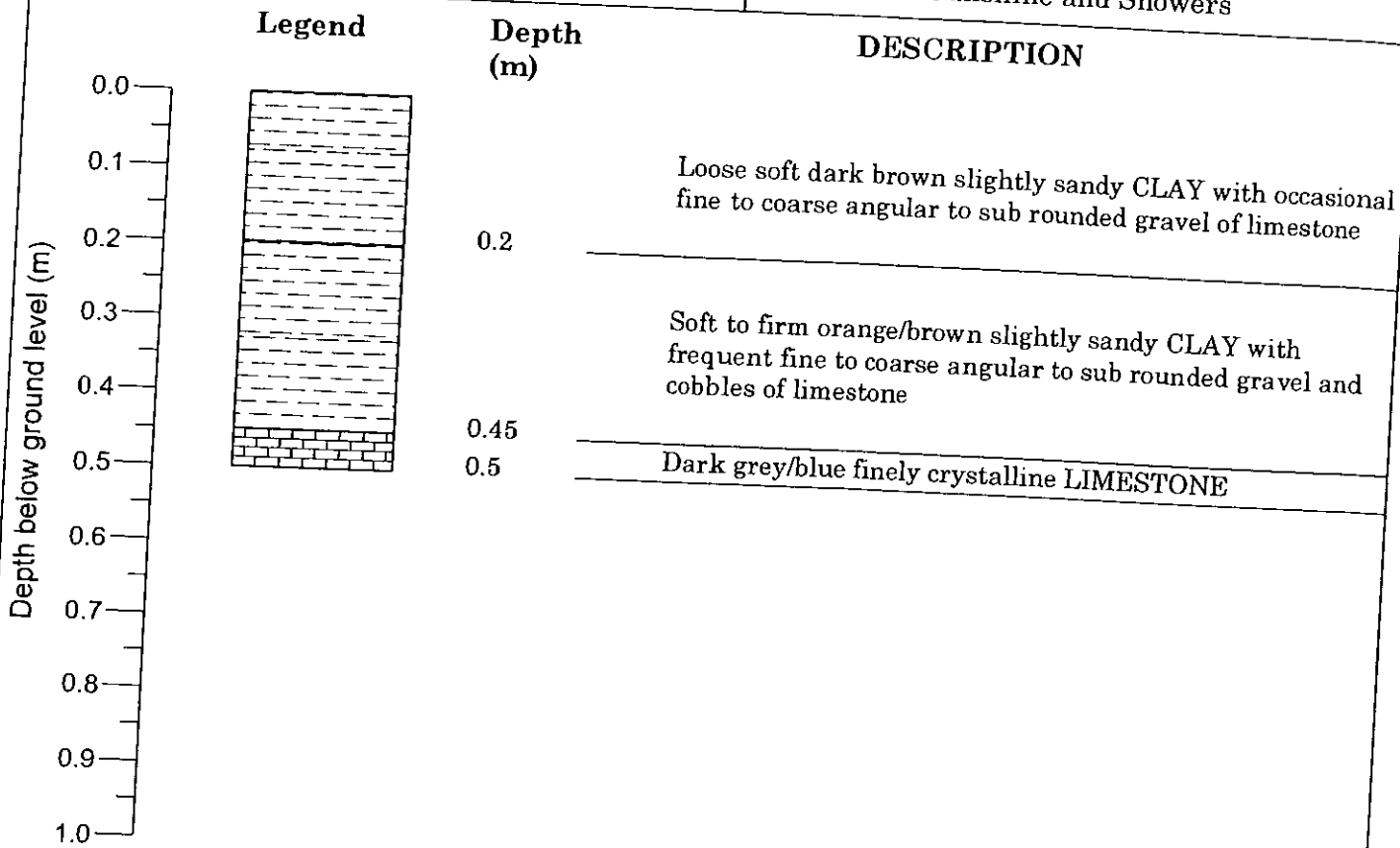
Grid Ref.:

Project: RAF St Athan Extension Areas

Excavation Method: JCB Backactor

Location: RAF St Athan

Weather: Sunshine and Showers



**END OF TRIAL PIT 0.5 m**

Remarks:

Scale: 1:10

Water: N/A

Stability: N/A

Time trench open:

Sample:

S1

Depth:

0.3

Type:

Logged by: DRC

Test: Shear Vane (N)

8.4, 6.2, 9.0, 8.8

Date: 29.01.03

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D. <sub>approx.</sub>

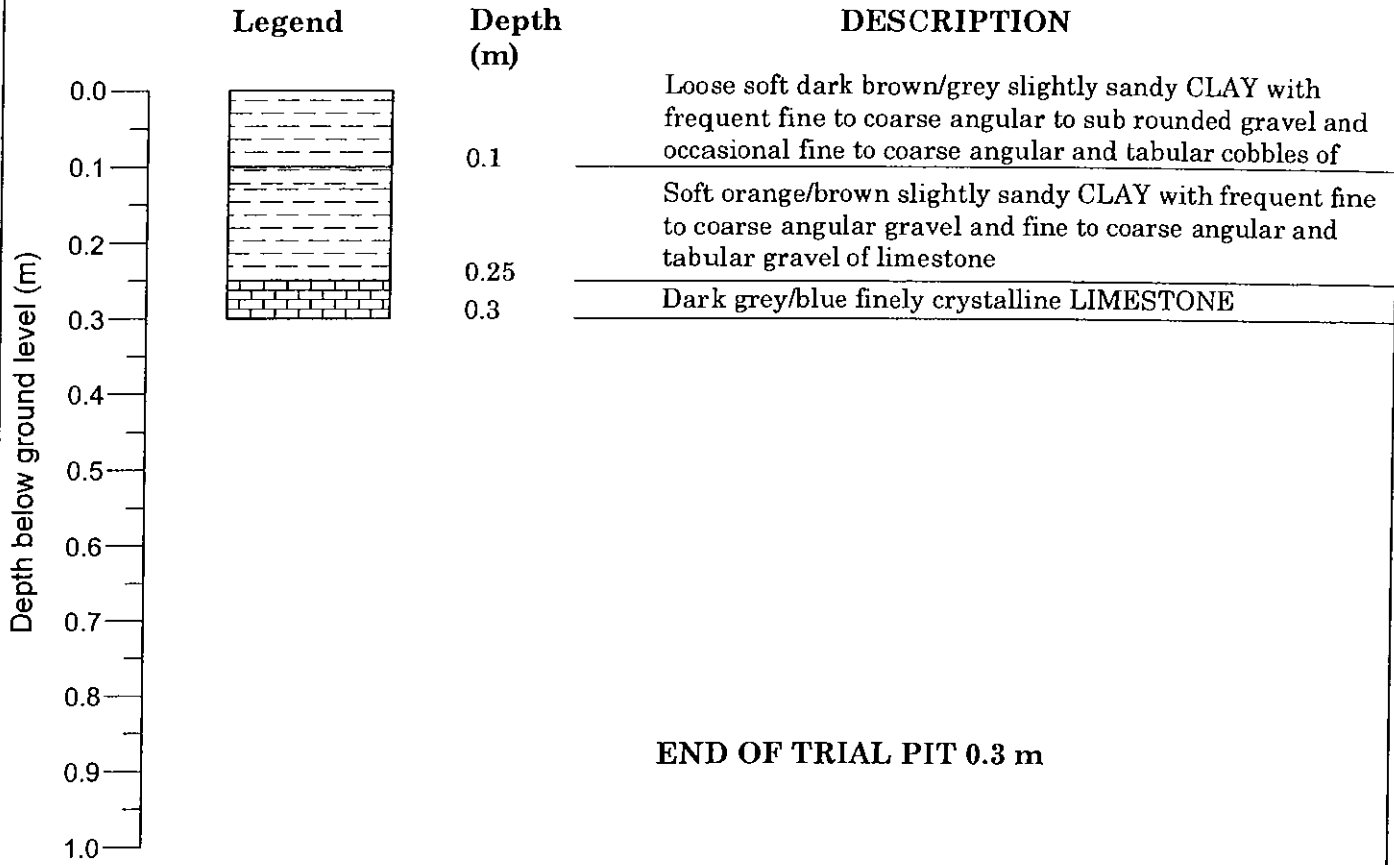
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**END OF TRIAL PIT 0.3 m**

**Scale: 1:10**

**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

<b>Sample:</b>	S1				<b>Logged by:</b> DRC
<b>Depth:</b>	0.2				
<b>Type:</b>					
<b>Test: Shear Vane (N)</b>	5.0, 6.3, 5.2				<b>Date:</b> 29.01.03

Client: Defence Estates

CA No: MD0990066A

Sheet 1 of 1

Ground Level - m A.O.D.  
approx.

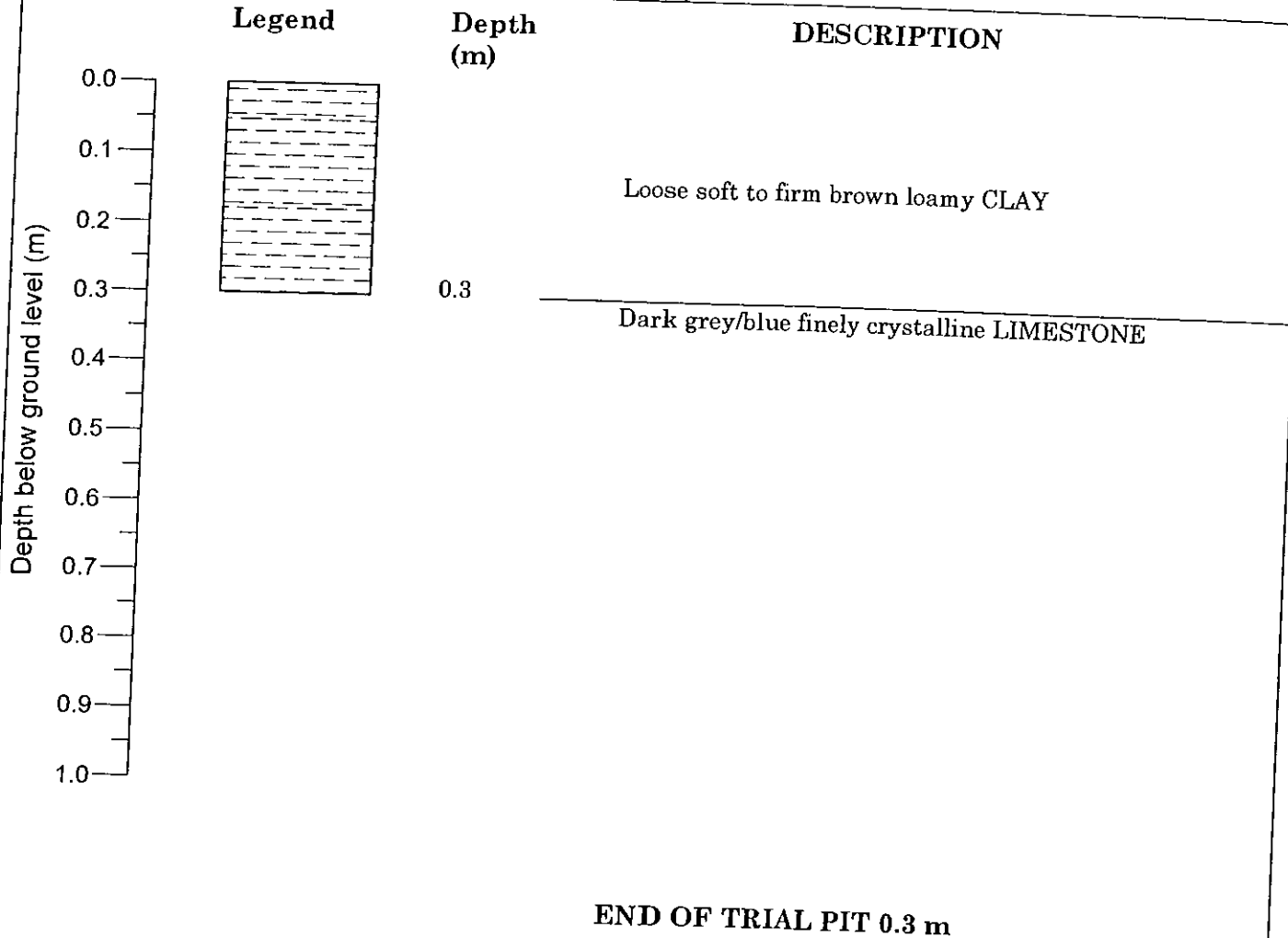
Grid Ref.:

Project: RAF St Athan Extension Areas

Excavation Method: JCB Backactor

Location: RAF St Athan

Weather: Sunshine and Showers



Scale: 1:10

Remarks:

Water: N/A

Stability: N/A

Time trench open:

Sample:

Depth:

Type:

Test: Shear Vane (N)

Too Gravelly

Logged by: AW

Date: 11.02.03

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D.  
approx.

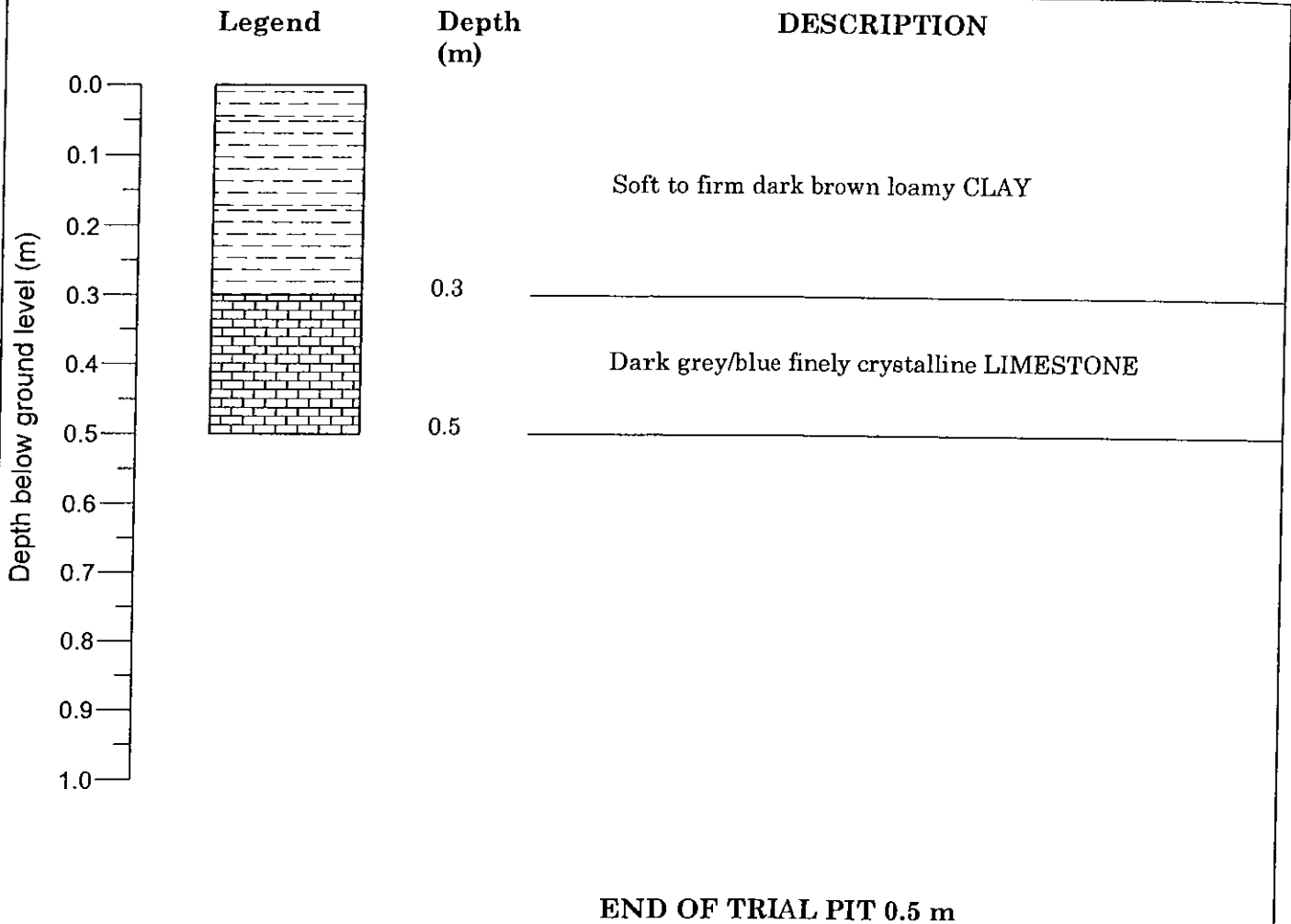
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**Scale: 1:10**

**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

**Sample:**

S1

**Depth:**

0.3

**Type:**

**Test: Shear Vane (N)**

Too Gravelly

**Logged by:** DRC

**Date:** 11.02.03

**ENVIROS****TRIAL PIT LOG****CGCTP 3**

Client: Defence Estates

CA No: MD0990066A

Sheet 1 of 1

Ground Level - 44.17 m A.O.D.  
approx.

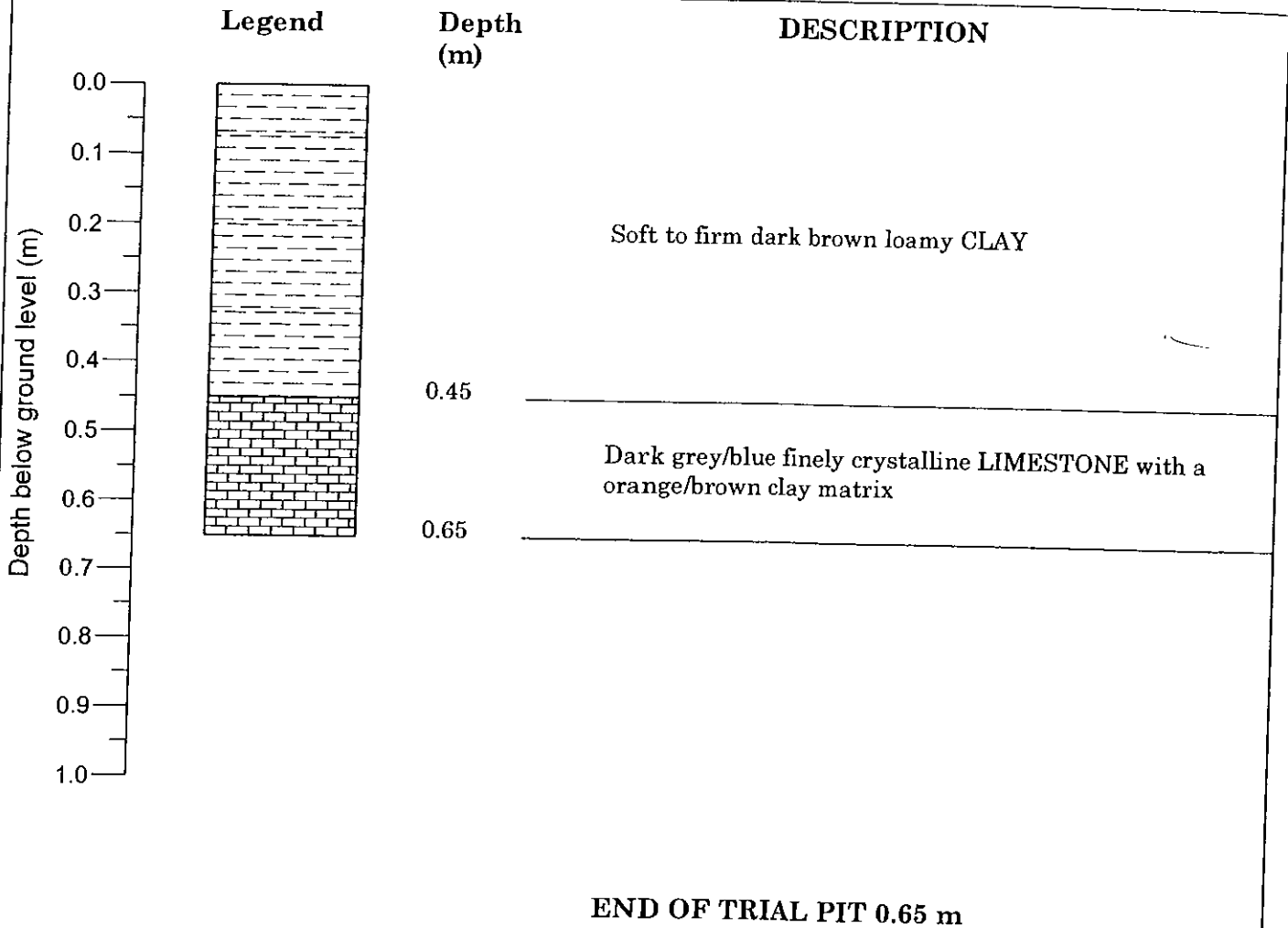
Grid Ref.:

Project: RAF St Athan Extension Areas

Excavation Method: JCB Backactor

Location: RAF St Athan

Weather: Sunshine and Showers



Scale: 1:10

Remarks:

Water: N/A

Stability: N/A

Time trench open:

Sample:

S1

Depth:

0.4

Type:

Logged by: AW

Test: Shear Vane (N)

6.0, 5.2, 4.4

Date: 11.02.03

Client: Defence Estates

CA No: MD0990066A

Sheet 1 of 1

Ground Level - m A.O.D.  
approx.

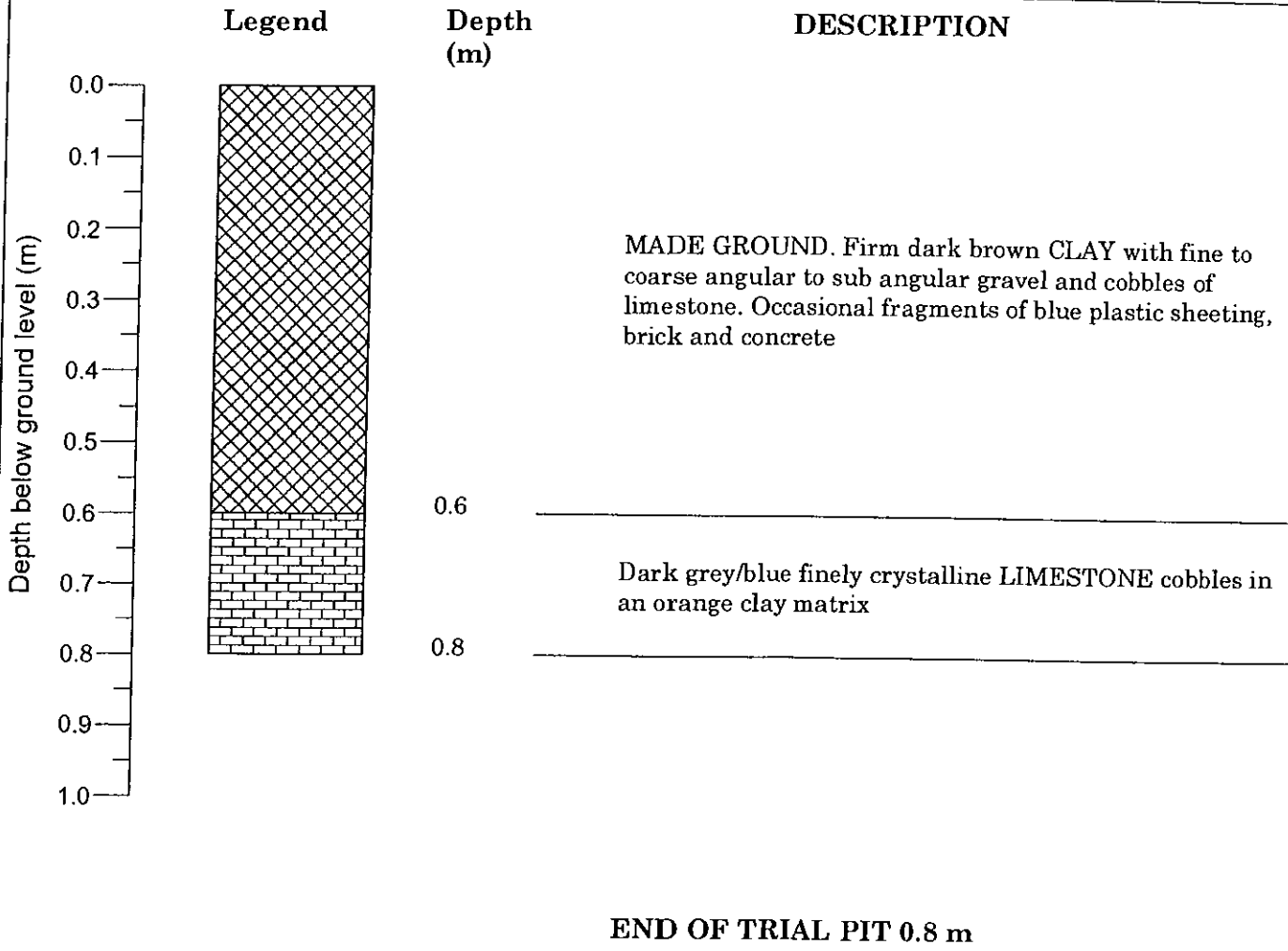
Grid Ref.:

Project: RAF St Athan Extension Areas

Excavation Method: JCB Backactor

Location: RAF St Athan

Weather: Sunshine and Showers



Scale: 1:10

Remarks:

Water: N/A

Stability: N/A

Time trench open:

Sample:

S1

Depth:

0.5

Logged by: AW

Type:

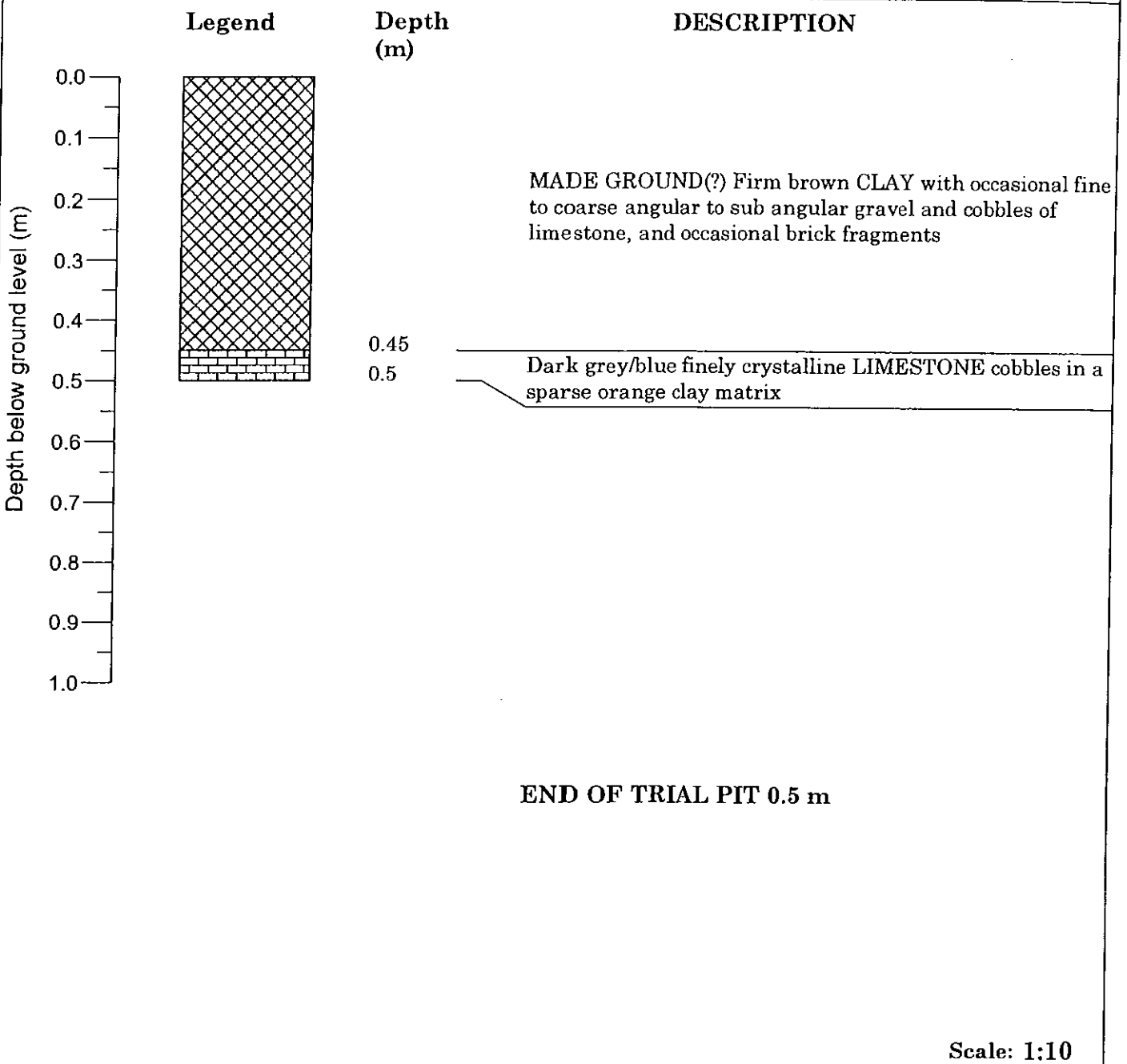
Test: Shear Vane (N)

Too Gravelly

Date: 11.02.03

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>CGCTP 5</b>
<b>Client:</b> Defence Estates	<b>CA No:</b> MD0990066A	<b>Sheet 1 of 1</b>
	<b>Ground Level -</b> m A.O.D. <small>approx.</small>	<b>Grid Ref.:</b>

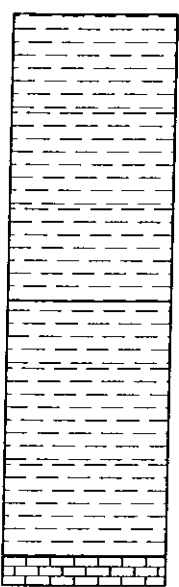
<b>Project:</b> RAF St Athan Extension Areas	<b>Excavation Method:</b> JCB Backactor
<b>Location:</b> RAF St Athan	<b>Weather:</b> Sunshine and Showers



<b>Remarks:</b>	<b>Water:</b> N/A
	<b>Stability:</b> N/A
	<b>Time trench open:</b>

<b>Sample:</b>	S1				<b>Logged by:</b> DRC
<b>Depth:</b>	0.4				
<b>Type:</b>					<b>Date:</b> 29.01.03
<b>Test: Shear Vane (N)</b>	Too Gravelly				



<b>ENVIROS<sup>®</sup></b>		<b>TRIAL PIT LOG</b>			<b>CGCTP 6</b>	
Client: Defence Estates		CA No: MD0990066A			Sheet 1 of 1	
		Ground Level -                      m A.O.D. <small>approx.</small>			Grid Ref.:	
Project: RAF St Athan Extension Areas				Excavation Method: JCB Backactor		
Location: RAF St Athan				Weather: Sunshine and Showers		
Depth below ground level (m) 0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0	<b>Legend</b>		<b>Depth (m)</b>		<b>DESCRIPTION</b>	
					Firm brown/grey loamy CLAY (grades to brown colour at 0.2m)	
			0.95		Firm/stiff orange/brown CLAY with localised black inclusions (<5mm di). Becoming soft to firm at 1.40m light brown with occasional coarse sub angular gravel of limestone	
			1.8 1.9		Dark grey/blue finely crystalline LIMESTONE in a sparse orange/brown clay matrix	
					<b>END OF TRIAL PIT 1.9 m</b>	
Remarks:					Scale: 1:25	
					Water: Perched at 1.8m	
					Stability: N/A	
					Time trench open:	
Sample:	S1	S2	S3		Logged by: AW	
Depth:	0.5	1.0	1.5			
Type:					Date: 11.02.03	
Test: Shear Vane (N)	3.6, 3.6, 4.2	7.2, 6.4, 6.4	3.0, 1.2, 2.2			

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D.  
approx.

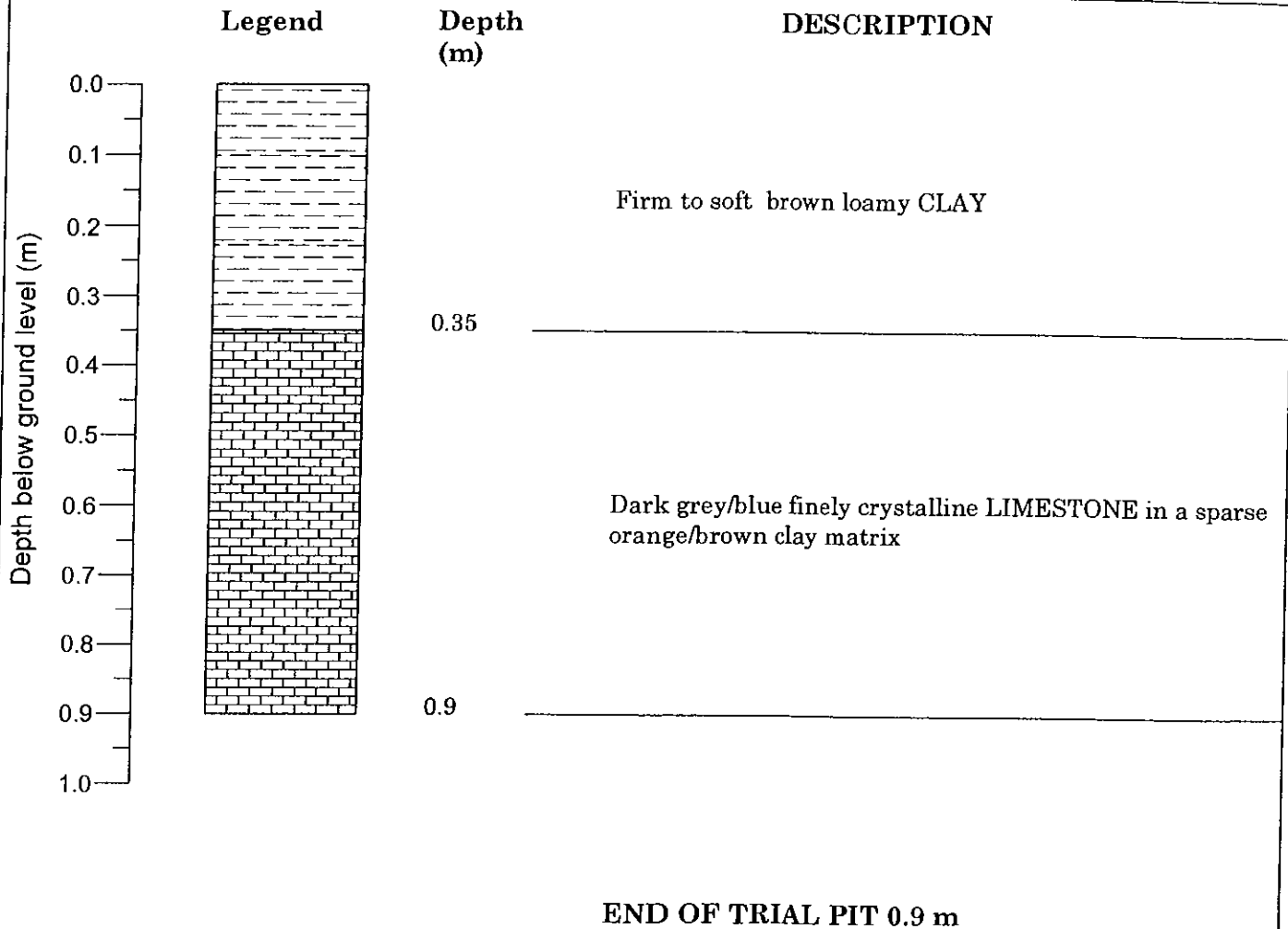
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**Scale: 1:10**

**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

**Sample:**

S1

**Depth:**

0.35

**Type:**

**Test: Shear Vane (N)**

Too Gravelly

**Logged by:** DRC

**Date:** 29.01.03

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D.  
approx.

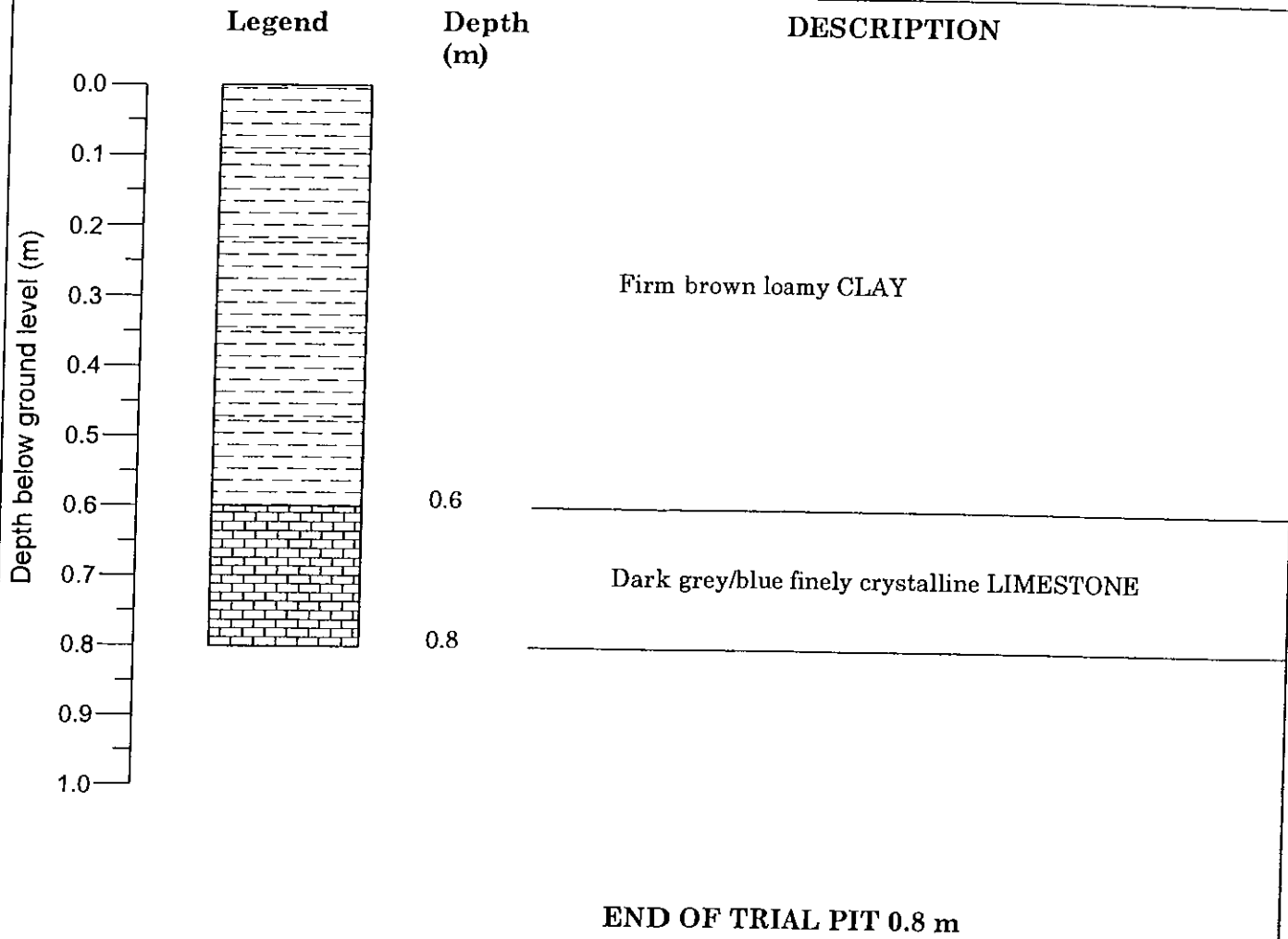
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**Scale: 1:10**

**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

**Sample:**

S1

S2

**Depth:**

0.3

0.7

**Type:**

**Test: Shear Vane (N)**

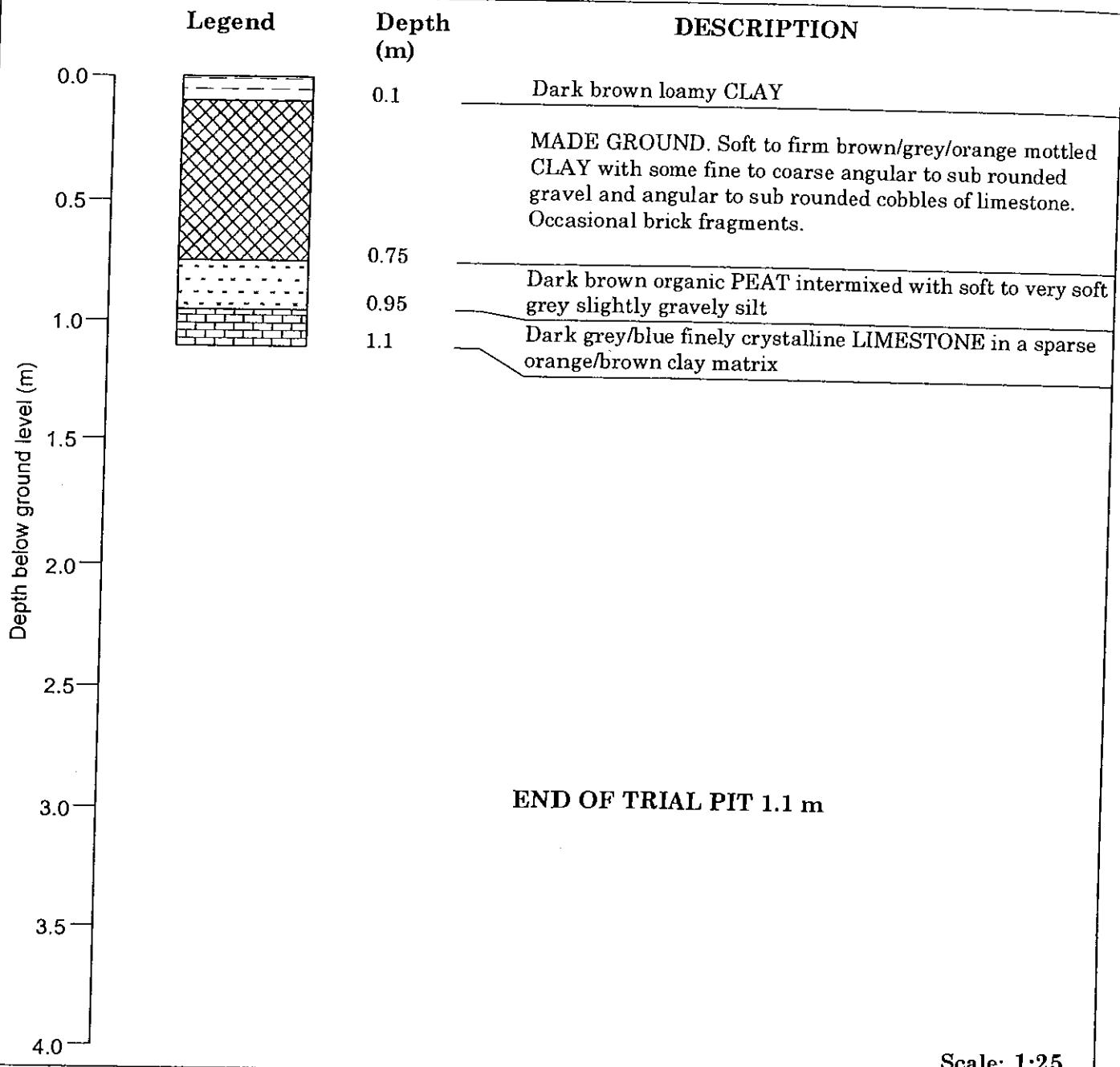
4.2, 4.0, 4.8

-

**Logged by:** AW

**Date:** 11.02.03

<b>ENVIROS</b>	<b>TRIAL PIT LOG</b>	<b>CGCTP 9</b>
Client: Defence Estates	CA No: MD0990066A	Sheet 1 of 1
	Ground Level - m A.O.D. approx.	Grid Ref.:
Project: RAF St Athan Extension Areas		Excavation Method: JCB Backactor
Location: RAF St Athan		Weather: Sunshine and Showers



Remarks:					Water: N/A	
					Stability: N/A	
					Time trench open:	
Sample:	S1	S2	C1			Logged by: DRC
Depth:	0.3	0.8	0.3			
Type:						Date: 11.02.03
Test: Shear Vane (N)	Too Gravelly					

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D.  
approx.

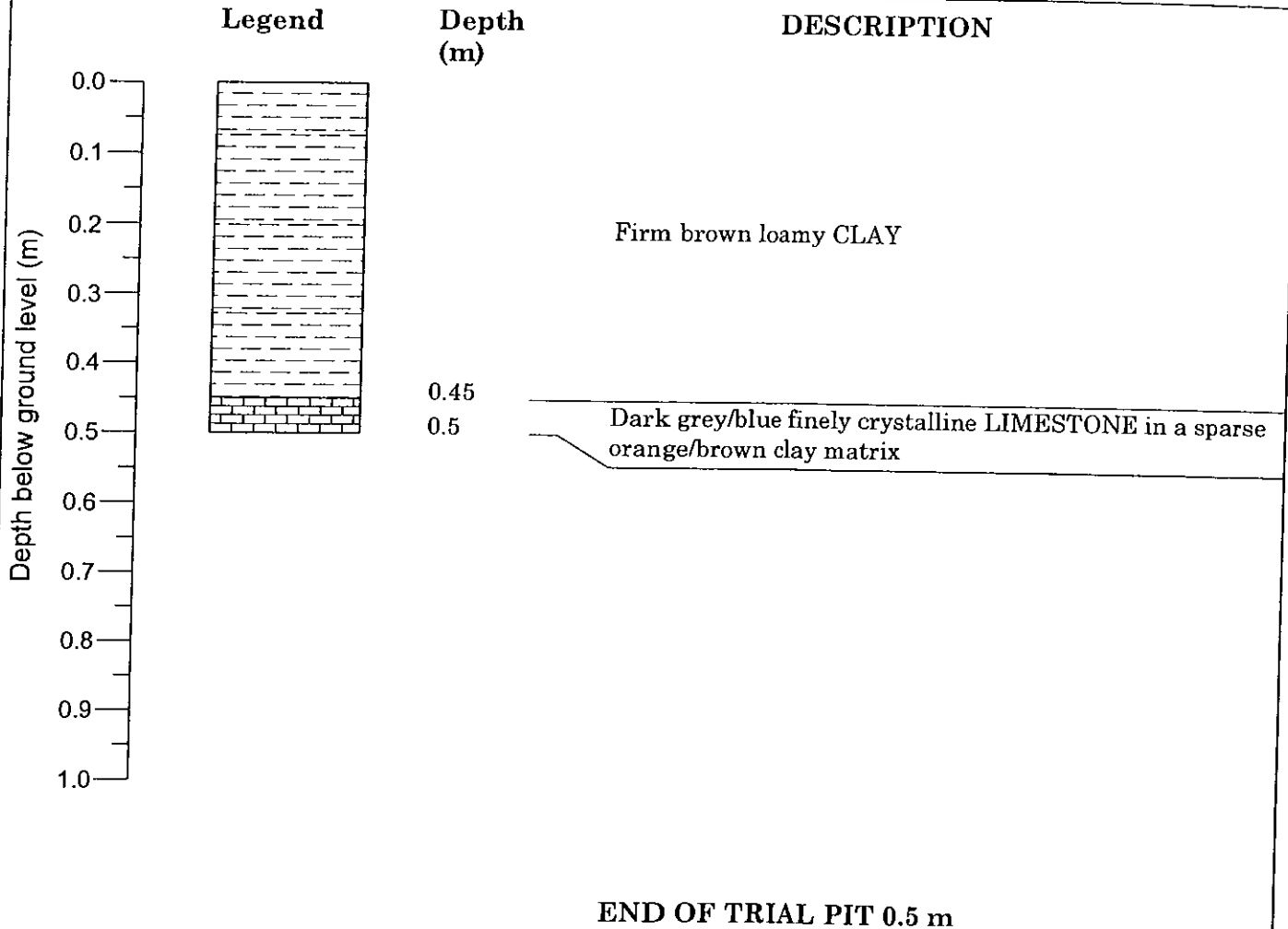
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



Scale: 1:10

**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

<b>Sample:</b>	S1				<b>Logged by:</b> AW
<b>Depth:</b>	0.3				
<b>Type:</b>					<b>Date:</b> 12.02.03
<b>Test: Shear Vane (N)</b>	4.6, 4.0, 4.4				

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D.  
approx.

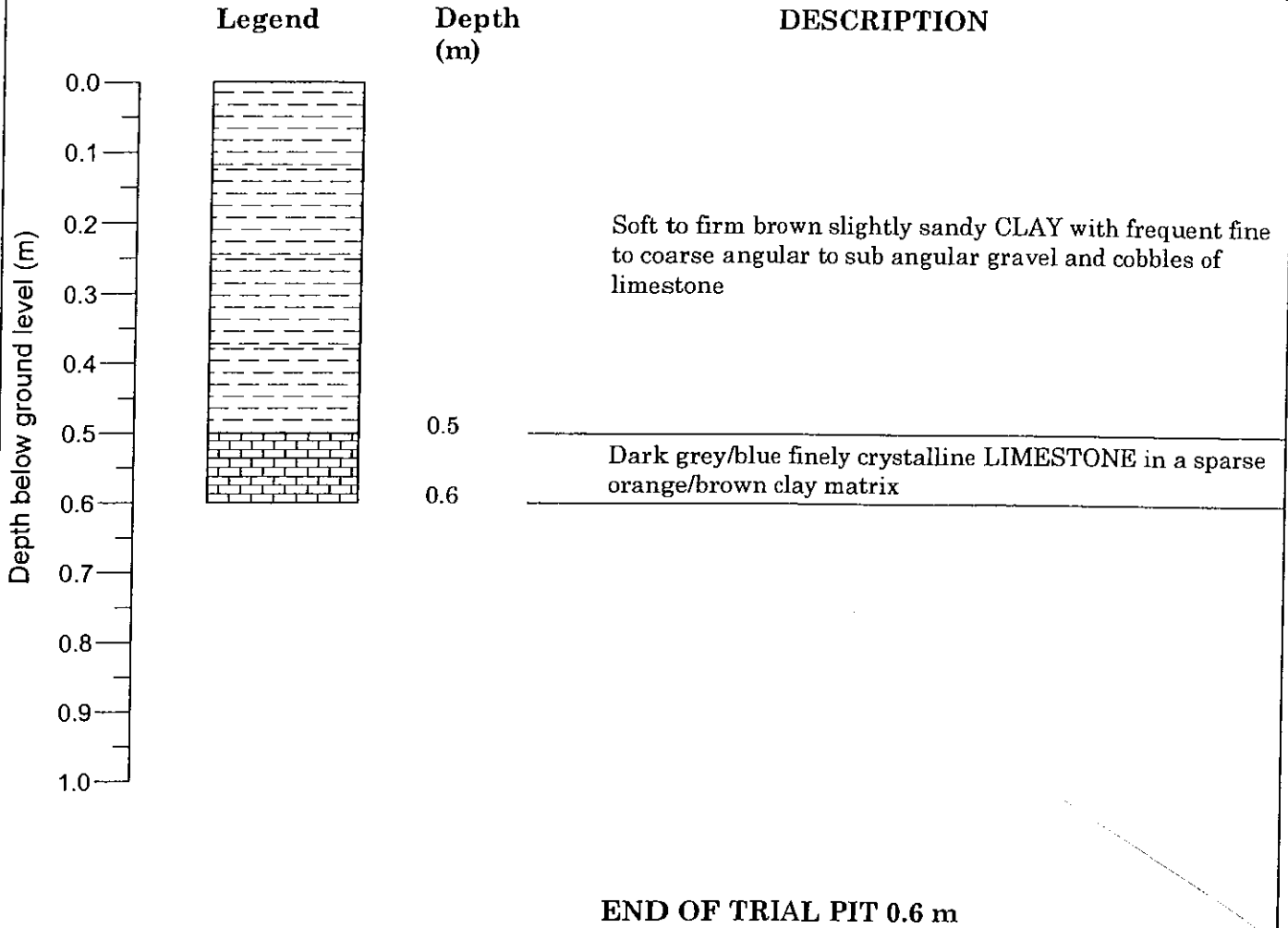
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



Scale: 1:10

**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

<b>Sample:</b>	S1					<b>Logged by:</b> AW
<b>Depth:</b>	0.4					
<b>Type:</b>						<b>Date:</b> 12.02.03
<b>Test: Shear Vane (N)</b>	2.2, 2.2, 2.0					

**Client:** Defence Estates

**CA No:** MD0990066A

**Sheet 1 of 1**

**Ground Level -** m A.O.D. approx.

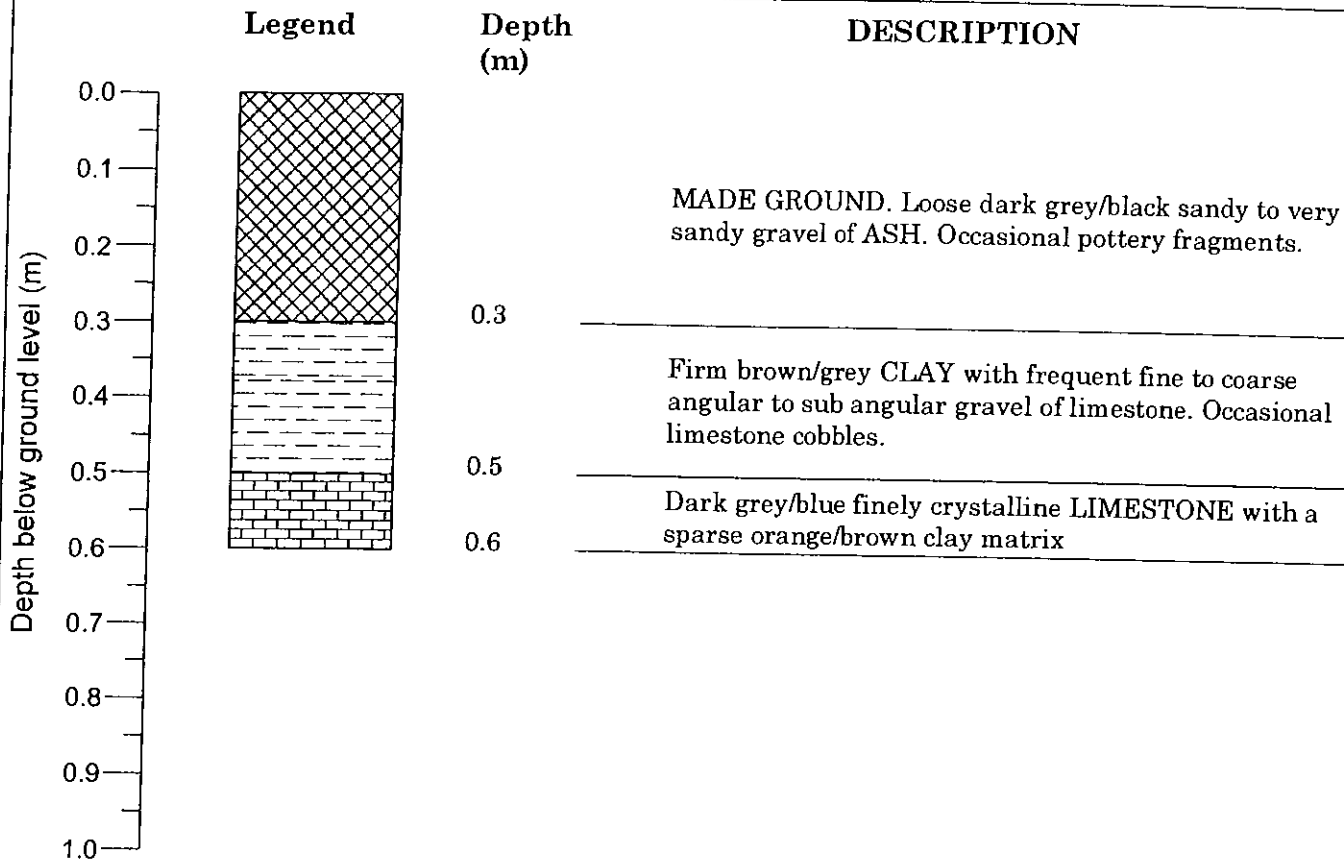
**Grid Ref.:**

**Project:** RAF St Athan Extension Areas

**Excavation Method:** JCB Backactor

**Location:** RAF St Athan

**Weather:** Sunshine and Showers



**END OF TRIAL PIT 0.6 m**

**Scale: 1:10**

**Remarks:**

**Water:** N/A

**Stability:** N/A

**Time trench open:**

**Sample:**

S1

S2

C1

**Depth:**

0.2

0.5

0.3

**Type:**

**Test: Shear Vane (N)**

3.8, 3.6, 4.2

**Logged by:** AW

**Date:** 12.02.03



John Vincent Surveys Ltd

Phoenix Business Park

Lion Way

Swansea Enterprise Park

Swansea SA7 9FZ

Tel: 01792 773003 Fax: 01792 773230

**RAF St. ATHAN**  
**Ground Investigation Schedule**

DATE: MARCH 2003

JOB No. 56/03

<u>CODE</u>	<u>EASTING</u>	<u>NORTHING</u>	<u>HEIGHT</u>
BH1	299492.82	169219.84	41.85
BH2	299446.78	169293.61	42.11
BH3	299487.02	169475.92	43.25
BH4	299551.24	169605.60	44.53
BH5	299749.08	169618.82	45.72
BH6	299749.78	169860.67	46.78
BH7	299744.06	169975.07	49.11
BH8	299588.95	169881.35	47.21
BH9	299467.15	169718.95	46.54
BH10	299222.64	169251.31	42.03
BH11	299170.58	168090.64	48.39
BH12	299285.19	167970.18	47.53
BH13	299054.29	168113.87	48.48
BH14	299162.05	167988.76	47.20
BH15	299289.06	167884.38	47.96
BH16	300170.90	169746.75	45.31
BH17	298334.21	168836.55	41.65
BH18	298288.39	168886.83	44.19
BH19	298236.08	168939.69	45.75
BH20	298263.27	169008.47	46.63
BH21	298198.74	168982.80	46.85
BH22	298550.19	169014.19	39.12
BH23	298516.71	168999.99	40.33
BH24	298554.54	169036.97	40.28

Page 1 of 4

TOPOGRAPHIC and HYDROGRAPHIC SURVEYS  
VOLUMETRIC SURVEYS : GPS SERVICES



MONITORING and DEFORMATION SURVEYS  
DIGITAL MAPPING : SETTING OUT





**RAF St. ATHAN**  
**Ground Investigation Schedule**

DATE: MARCH 2003

JOB No. 56/03

<u>CODE</u>	<u>EASTING</u>	<u>NORTHING</u>	<u>HEIGHT</u>
CBR1	298342.65	169008.34	45.93
CBR2	298461.04	169001.20	43.17
CBR3	298608.10	169014.45	41.24
CBR4	298731.21	169046.68	43.78
CBR5	298855.59	169102.51	43.27
CBR6	299072.18	169296.82	44.44
CBR7	299169.68	169323.50	43.86
CBR8	299293.94	169444.09	44.63
CBR9	299452.50	169581.37	44.75
CBR10	299554.14	169578.24	44.31
CBR11	299679.45	169553.31	44.92
CBR12	299931.36	169510.63	46.76
CBR13	300119.31	169552.72	44.49
CBR14	300266.03	169433.64	42.06
CBR15	299572.60	169369.31	42.93
CBR16	299662.35	169187.06	42.03
CGCTP1	298253.84	169003.33	46.60
CGCTP2	298312.21	169004.30	46.22
CGCTP3	298435.38	169006.34	44.17
CGCTP4	299841.04	169497.17	46.82
CGCTP5	299913.63	169526.87	46.91
CGCTP6	300000.17	169557.17	44.99
CGCTP7	300126.79	169557.27	44.45
CGCTP8	300252.93	169447.84	42.72
CGCTP9	300326.64	169381.14	40.32
CGCTP10	300378.93	169339.19	41.12
CGCTP11	300389.27	169301.43	42.82
CGCTP12	300411.95	169266.92	44.02



**RAF St. ATHAN**  
**Ground Investigation Schedule**

DATE: MARCH 2003

JOB No. 56/03

<u>CODE</u>	<u>EASTING</u>	<u>NORTHING</u>	<u>HEIGHT</u>
TP1	299381.49	169560.55	44.68
TP2	299371.74	169462.67	43.94
TP3	299277.73	169420.96	44.36
TP4	299382.27	169350.51	42.75
TP5	299213.80	169369.70	44.09
TP6	299152.46	169238.62	42.75
TP7	299181.14	169200.48	41.64
TP8	299071.11	169248.12	43.47
TP9	298970.37	169181.10	42.66
TP10	298943.64	169140.25	42.46
TP11	298885.89	169145.65	43.22
TP12	298749.35	169066.09	44.00
TP13	298730.68	169073.95	44.33
TP14	298474.62	168904.70	42.13
TP17	298404.02	168834.66	40.87
TP18	299476.01	169524.40	43.74
TP19	299608.34	169713.75	45.31
TP20	299695.62	169705.79	45.69
TP21	299749.59	169790.38	46.33
TP22	299757.53	170012.46	50.88
TP23	299727.88	170027.82	51.14
TP24	299625.10	169954.23	48.15
TP25	299529.28	169782.05	46.50
TP27	299583.22	169466.76	43.36
TP28	299653.67	169429.44	43.55
TP29	299697.78	169352.49	42.54
TP30	299655.80	169304.78	42.88
TP31	299809.56	169220.51	42.45
TP32	299711.98	169189.52	42.41
TP33	299641.74	169156.54	41.97



**RAF St. ATHAN**  
**Ground Investigation Schedule**

DATE: MARCH 2003

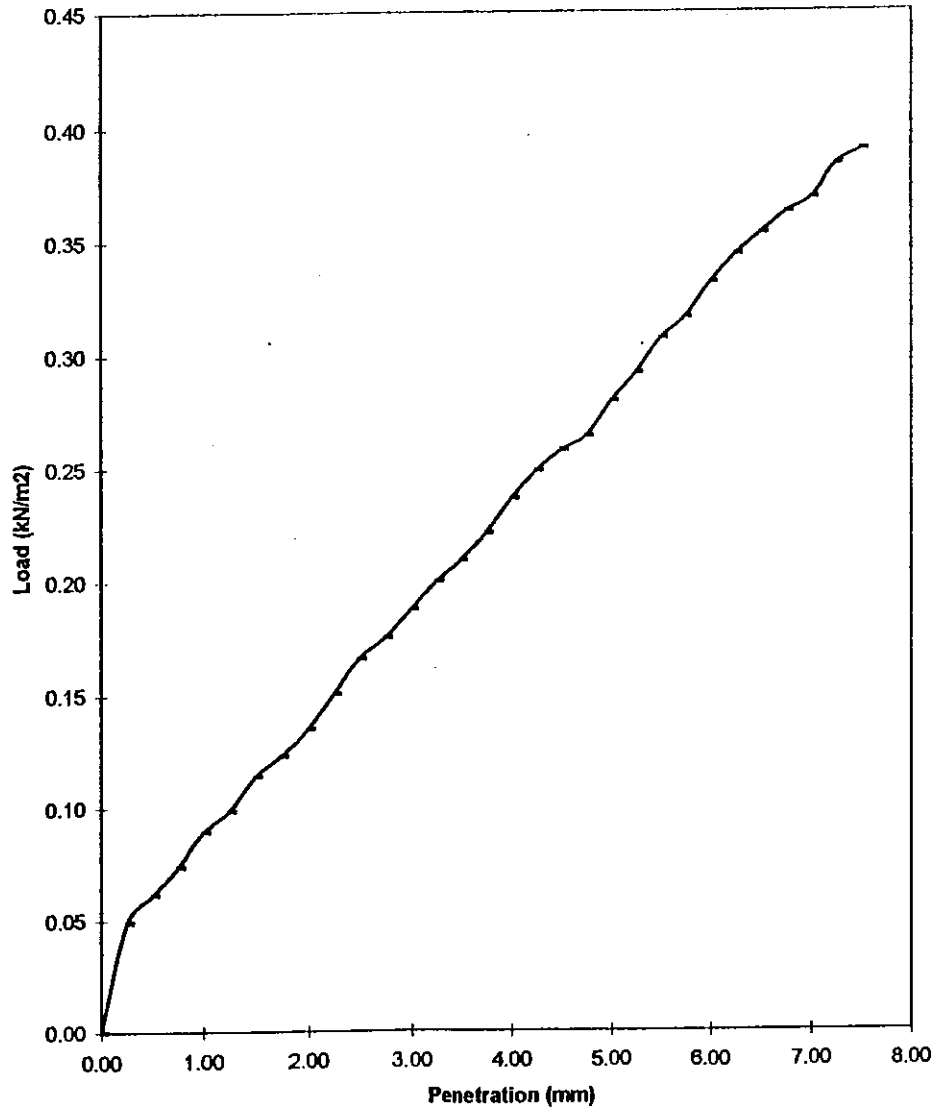
JOB No. 56/03

<u>CODE</u>	<u>EASTING</u>	<u>NORTHING</u>	<u>HEIGHT</u>
TP34	299593.74	169291.75	42.39
TP35	299556.40	169388.67	43.00
TP36	299029.97	168008.46	46.73
TP37	299021.02	167933.99	45.82
TP38	299094.28	167898.55	46.48
TP39	298932.19	167816.94	45.07
TP40	298792.43	167780.27	45.91
TP41	298511.20	167829.19	45.51
TP42	298725.68	167844.71	45.60
TP43	298630.83	167921.36	44.59
TP44	298784.86	167929.18	44.97
TP45	298885.31	167943.87	45.56
TP46	298882.98	167837.56	45.26

# SOUTHERN GROUND TESTING

## CBR FIELD SHEET

PENETRATION (mm)	PR READING (divs)	LOAD (KN)
0.00	0	0.00
0.25	16	0.05
0.50	20	0.06
0.75	24	0.07
1.00	29	0.09
1.25	32	0.10
1.50	37	0.11
1.75	40	0.12
2.00	44	0.14
2.25	49	0.15
2.50	54	0.17
2.75	57	0.17
3.00	61	0.19
3.25	65	0.20
3.50	68	0.21
3.75	72	0.22
4.00	77	0.24
4.25	81	0.25
4.50	84	0.26
4.75	86	0.26
5.00	91	0.28
5.25	95	0.29
5.50	100	0.31
5.75	103	0.32
6.00	108	0.33
6.25	112	0.34
6.50	115	0.35
6.75	118	0.36
7.00	120	0.37
7.25	125	0.38
7.50	127	0.39



Test Depth: 0.30m	Soil Description Soft to firm brown very silty CLAY with occasional rootlets and occasional fine to coarse gravel.	CBR at 2.50mm:	1.25 %
Mass of Split Rings:		CBR at 5.00mm:	1.40 %
PR Factor: 3.07 N/Div		CBR Value:	1.40 %
Moisture Content:		Checked By: NPJ	

REMARKS:

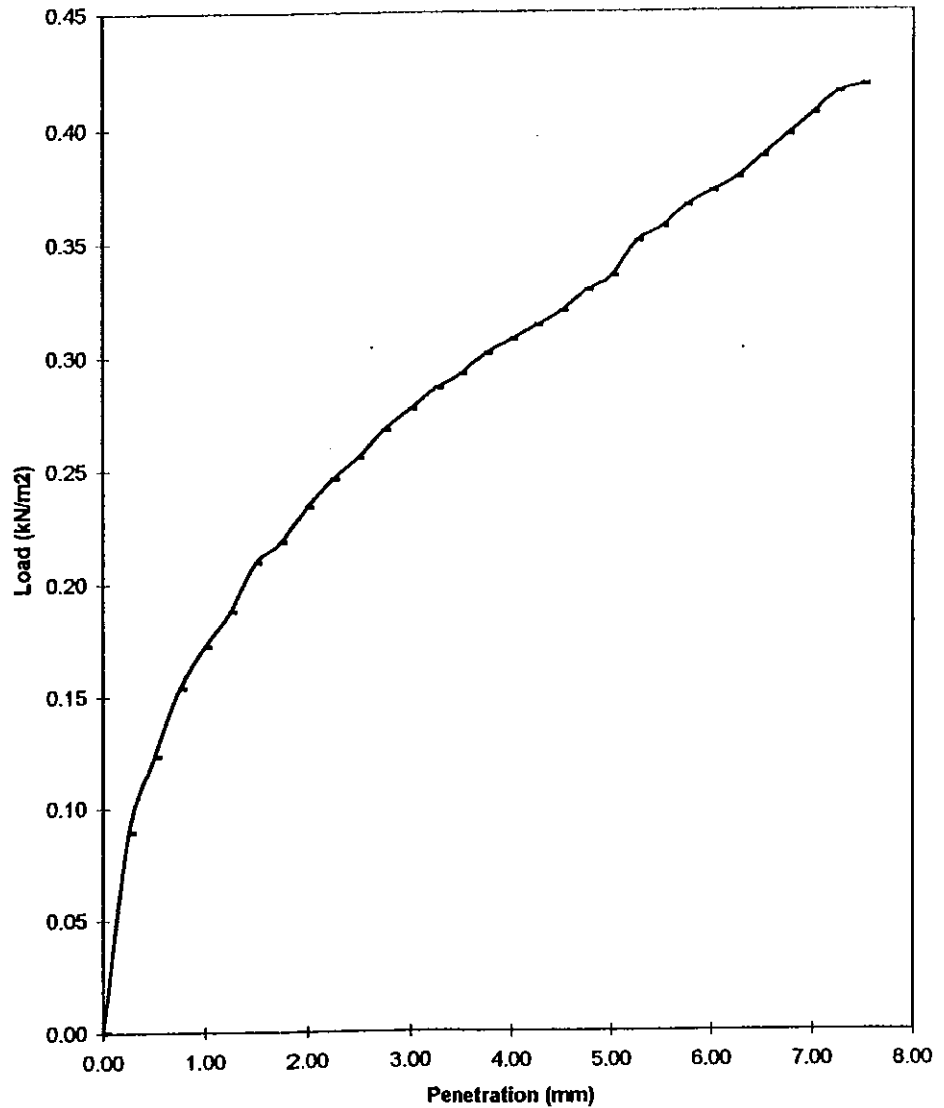
Carried out in accordance with BS1377: Part 9: 1990, Test 4.3

CONTRACT: RAF St. Athan.	DATE: 20.02.03
	TEST REFERENCE: 1

# SOUTHERN GROUND TESTING

## CBR FIELD SHEET

PENETRATION (mm)	PR READING (divs)	LOAD (KN)
0.00	0	0.00
0.25	29	0.09
0.50	40	0.12
0.75	50	0.15
1.00	56	0.17
1.25	61	0.19
1.50	68	0.21
1.75	71	0.22
2.00	76	0.23
2.25	80	0.25
2.50	83	0.25
2.75	87	0.27
3.00	90	0.28
3.25	93	0.29
3.50	95	0.29
3.75	98	0.30
4.00	100	0.31
4.25	102	0.31
4.50	104	0.32
4.75	107	0.33
5.00	109	0.33
5.25	114	0.35
5.50	116	0.36
5.75	119	0.37
6.00	121	0.37
6.25	123	0.38
6.50	126	0.39
6.75	129	0.40
7.00	132	0.41
7.25	135	0.41
7.50	136	0.42



Test Depth: 0.30m
Mass of Split Rings:
PR Factor: 3.07 N/Div
Moisture Content:

Soil Description Soft to firm brown very silty CLAY with occasional rootlets and occasional fine to coarse gravel.

CBR at 2.50mm:	1.92 %
CBR at 5.00mm:	1.68 %
CBR Value:	1.92 %
Checked By:	NPJ

REMARKS:

Carried out in accordance with BS1377: Part 9: 1990, Test 4.3

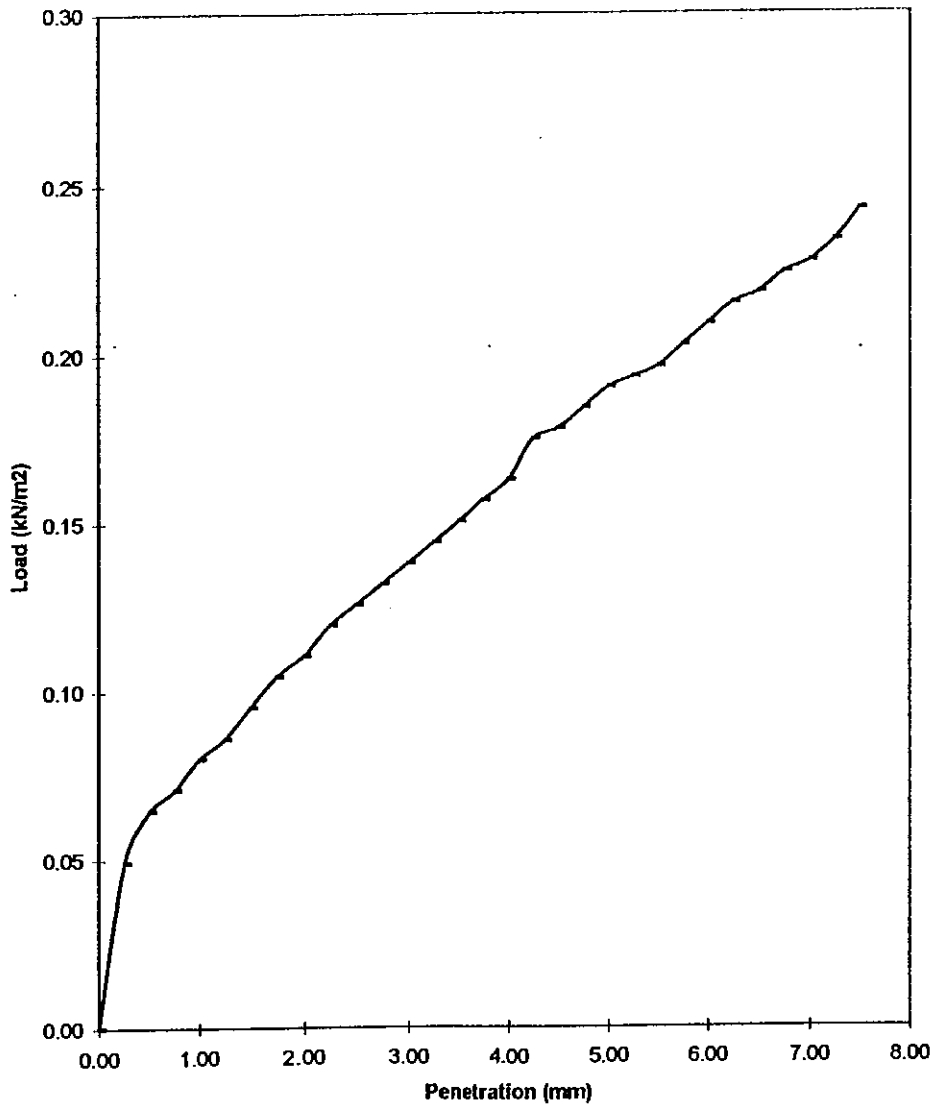
CONTRACT: RAF St. Athan.

DATE: 20.02.03  
TEST REFERENCE: 2

# SOUTHERN GROUND TESTING

## CBR FIELD SHEET

PENETRATION (mm)	PR READING (divs)	LOAD (KN)
0.00	0	0.00
0.25	16	0.05
0.50	21	0.06
0.75	23	0.07
1.00	26	0.08
1.25	28	0.09
1.50	31	0.10
1.75	34	0.10
2.00	36	0.11
2.25	39	0.12
2.50	41	0.13
2.75	43	0.13
3.00	45	0.14
3.25	47	0.14
3.50	49	0.15
3.75	51	0.16
4.00	53	0.16
4.25	57	0.17
4.50	58	0.18
4.75	60	0.18
5.00	62	0.19
5.25	63	0.19
5.50	64	0.20
5.75	66	0.20
6.00	68	0.21
6.25	70	0.21
6.50	71	0.22
6.75	73	0.22
7.00	74	0.23
7.25	76	0.23
7.50	79	0.24



Test Depth: 0.30m
Mass of Split Rings:
PR Factor: 3.07 N/Div
Moisture Content:

Soil Description: Soft brown very silty CLAY with occasional rootlets.

CBR at 2.50mm:	0.95 %
CBR at 5.00mm:	0.95 %
CBR Value:	0.95 %
Checked By:	NPJ

REMARKS:

Carried out in accordance with BS1377: Part 9: 1990, Test 4.3

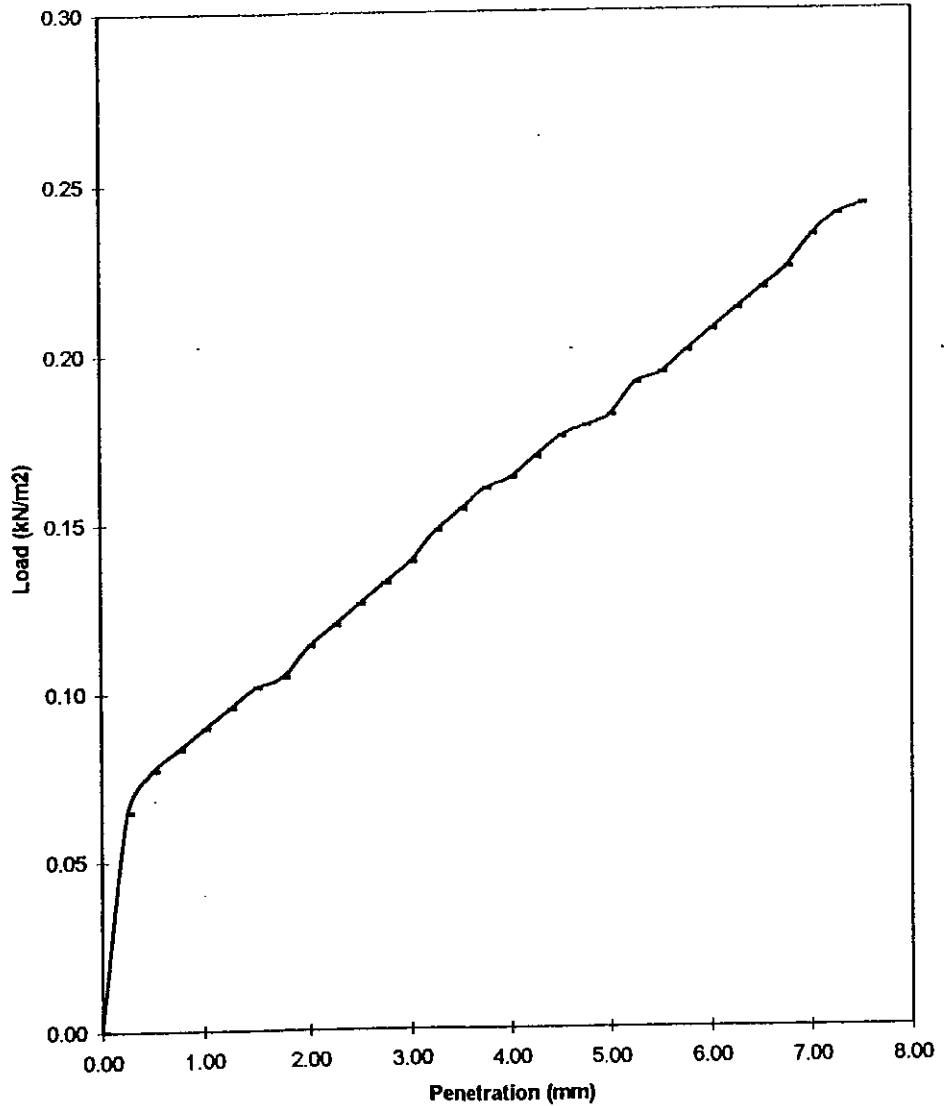
CONTRACT: RAF St. Athan.

DATE: 19.02.03  
TEST REFERENCE: 3

# SOUTHERN GROUND TESTING

## CBR FIELD SHEET

PENETRATION (mm)	PR READING (divs)	LOAD (KN)
0.00	0	0.00
0.25	21	0.06
0.50	25	0.08
0.75	27	0.08
1.00	29	0.09
1.25	31	0.10
1.50	33	0.10
1.75	34	0.10
2.00	37	0.11
2.25	39	0.12
2.50	41	0.13
2.75	43	0.13
3.00	45	0.14
3.25	48	0.15
3.50	50	0.15
3.75	52	0.16
4.00	53	0.16
4.25	55	0.17
4.50	57	0.17
4.75	58	0.18
5.00	59	0.18
5.25	62	0.19
5.50	63	0.19
5.75	65	0.20
6.00	67	0.21
6.25	69	0.21
6.50	71	0.22
6.75	73	0.22
7.00	76	0.23
7.25	78	0.24
7.50	79	0.24



Test Depth: 0.30m
Mass of Split Rings:
PR Factor: 3.07 N/Div
Moisture Content:

Soil Description: Soft brown very silty CLAY with occasional rootlets.

CBR at 2.50mm:	0.95 %
CBR at 5.00mm:	0.91 %
CBR Value:	0.95 %
Checked By:	NPJ

REMARKS:

Carried out in accordance with BS1377: Part 9: 1990, Test 4.3

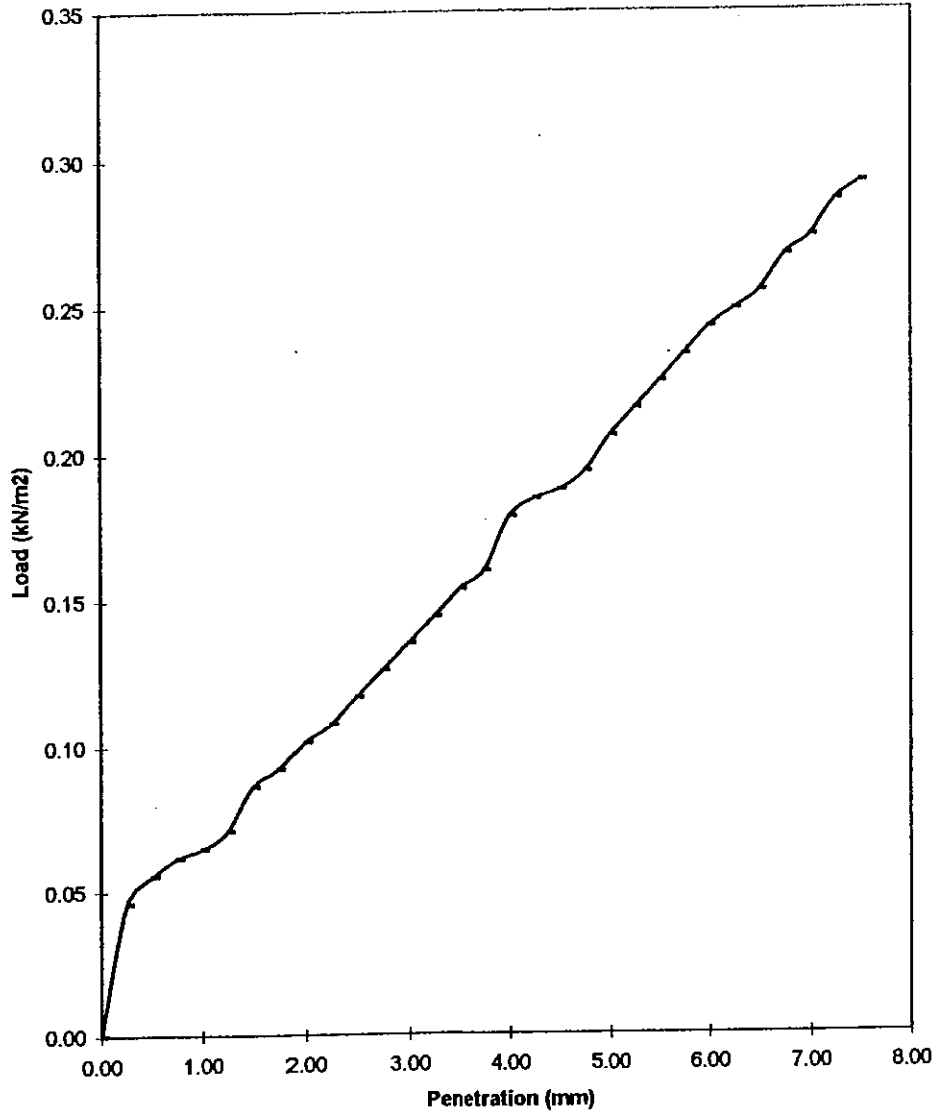
CONTRACT: RAF St. Athan.

DATE: 19.02.03  
TEST REFERENCE: 4

# SOUTHERN GROUND TESTING

## CBR FIELD SHEET

PENETRATION (mm)	PR READING (divs)	LOAD (kN)
0.00	0	0.00
0.25	15	0.05
0.50	18	0.06
0.75	20	0.06
1.00	21	0.06
1.25	23	0.07
1.50	28	0.09
1.75	30	0.09
2.00	33	0.10
2.25	35	0.11
2.50	38	0.12
2.75	41	0.13
3.00	44	0.14
3.25	47	0.14
3.50	50	0.15
3.75	52	0.16
4.00	58	0.18
4.25	60	0.18
4.50	61	0.19
4.75	63	0.19
5.00	67	0.21
5.25	70	0.21
5.50	73	0.22
5.75	76	0.23
6.00	79	0.24
6.25	81	0.25
6.50	83	0.25
6.75	87	0.27
7.00	89	0.27
7.25	93	0.29
7.50	95	0.29



Test Depth: 0.30m	
Mass of Split Rings:	
PR Factor: 3.07 N/Div	
Moisture Content:	

Soil Description: Soft to firm brown very silty CLAY with occasional rootlets.

CBR at 2.50mm:	0.88 %
CBR at 5.00mm:	1.03 %
<b>CBR Value:</b>	<b>1.03 %</b>
Checked By: NPJ	

REMARKS:

Carried out in accordance with BS1377: Part 9: 1990, Test 4.3

CONTRACT: RAF St. Athan.

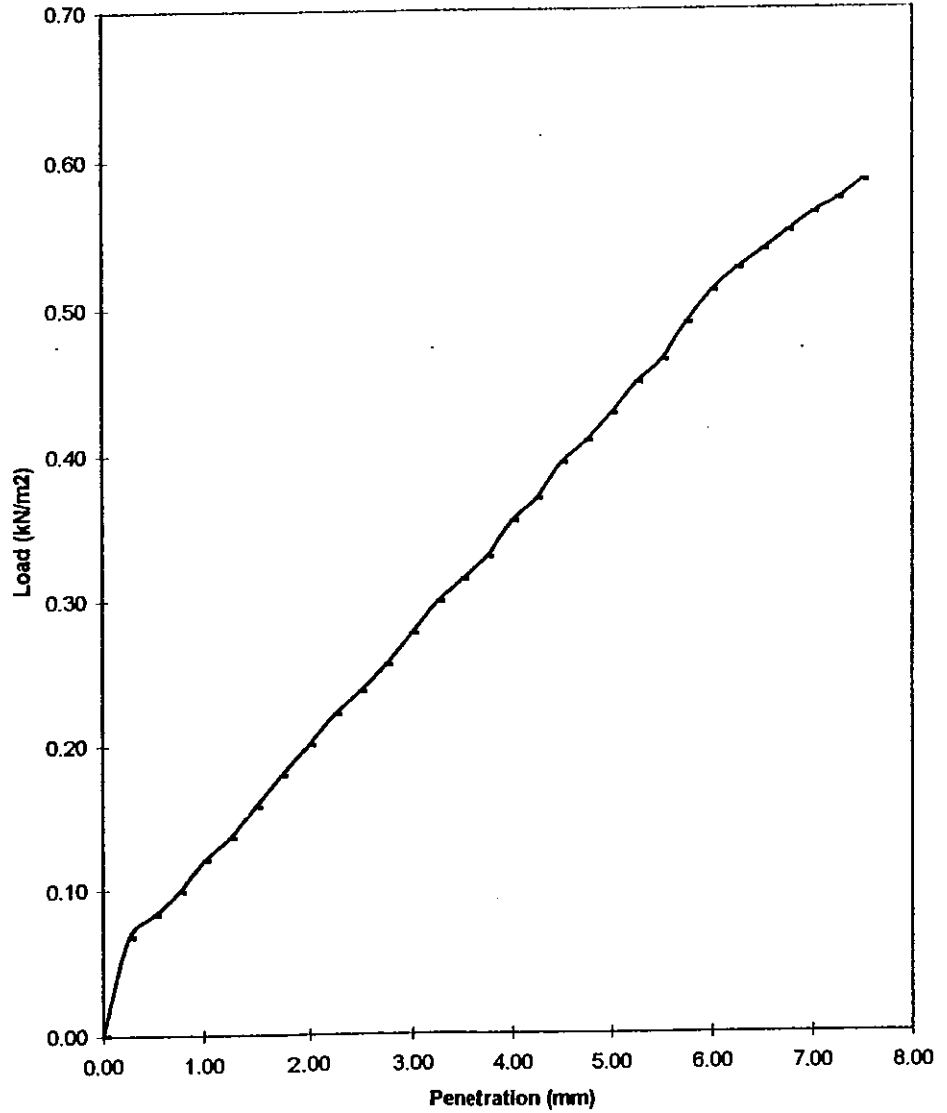
DATE: 19.02.03  
TEST REFERENCE: 5



# SOUTHERN GROUND TESTING

## CBR FIELD SHEET

PENETRATION (mm)	PR READING (divs)	LOAD (KN)
0.00	0	0.00
0.25	22	0.07
0.50	27	0.08
0.75	32	0.10
1.00	39	0.12
1.25	44	0.14
1.50	51	0.16
1.75	58	0.18
2.00	65	0.20
2.25	72	0.22
2.50	77	0.24
2.75	83	0.25
3.00	90	0.28
3.25	97	0.30
3.50	102	0.31
3.75	107	0.33
4.00	115	0.35
4.25	120	0.37
4.50	128	0.39
4.75	133	0.41
5.00	139	0.43
5.25	146	0.45
5.50	151	0.46
5.75	159	0.49
6.00	166	0.51
6.25	171	0.52
6.50	175	0.54
6.75	179	0.55
7.00	183	0.56
7.25	186	0.57
7.50	190	0.58



Test Depth: 0.30m	Soil Description: Firm brown very silty CLAY with occasional rootlets and occasional fine to coarse gravel.	CBR at 2.50mm:	1.79 %
Mass of Split Rings:		CBR at 5.00mm:	2.14 %
PR Factor: 3.07 N/Div		CBR Value:	2.14 %
Moisture Content:		Checked By: NPJ	

REMARKS:

Carried out in accordance with BS1377: Part 9: 1990, Test 4.3

CONTRACT: RAF St. Athan.

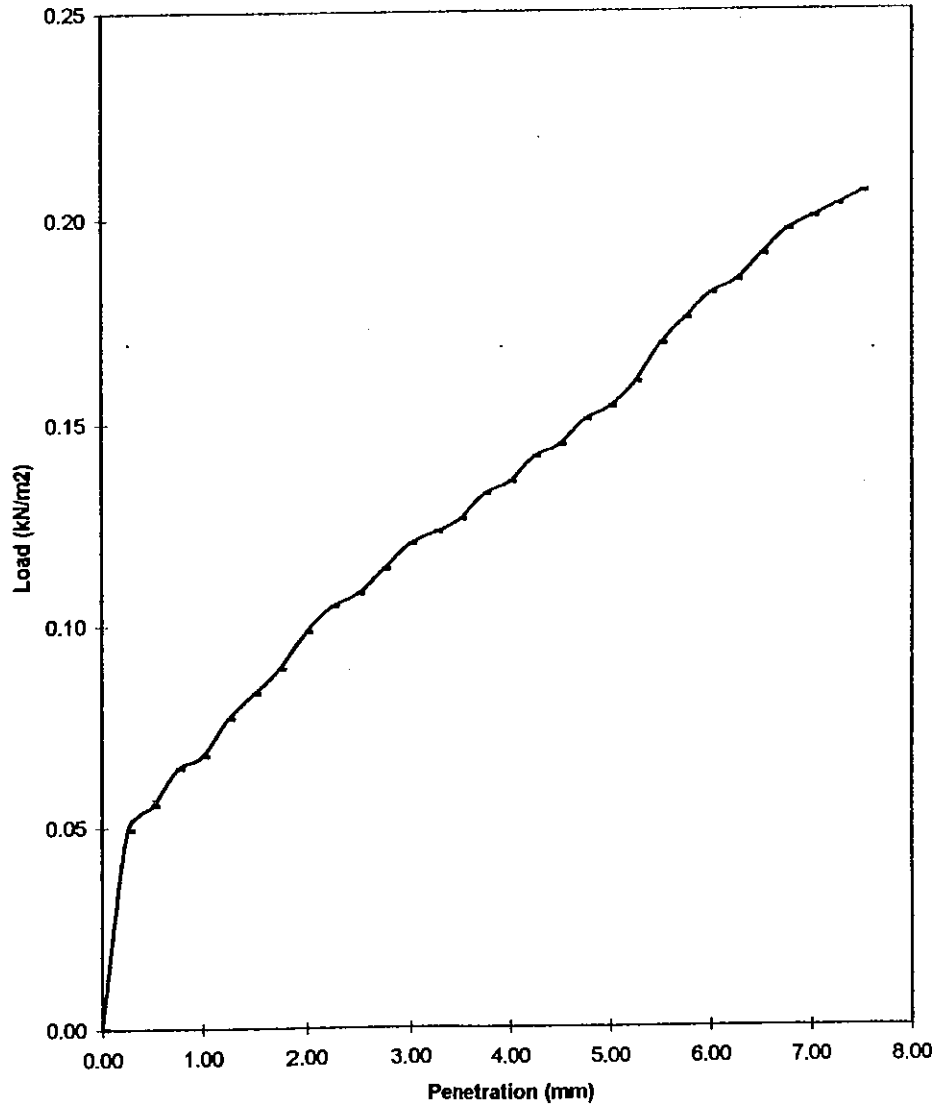
DATE: 19.02.03

TEST REFERENCE: 6

# SOUTHERN GROUND TESTING

## CBR FIELD SHEET

PENETRATION (mm)	PR READING (divs)	LOAD (KN)
0.00	0	0.00
0.25	16	0.05
0.50	18	0.06
0.75	21	0.06
1.00	22	0.07
1.25	25	0.08
1.50	27	0.08
1.75	29	0.09
2.00	32	0.10
2.25	34	0.10
2.50	35	0.11
2.75	37	0.11
3.00	39	0.12
3.25	40	0.12
3.50	41	0.13
3.75	43	0.13
4.00	44	0.14
4.25	46	0.14
4.50	47	0.14
4.75	49	0.15
5.00	50	0.15
5.25	52	0.16
5.50	55	0.17
5.75	57	0.17
6.00	59	0.18
6.25	60	0.18
6.50	62	0.19
6.75	64	0.20
7.00	65	0.20
7.25	66	0.20
7.50	67	0.21



Test Depth: 0.35m	Soil Description: Soft brown very silty CLAY with occasional rootlets and occasional fine to coarse gravel.	CBR at 2.50mm:	0.81 %
Mass of Split Rings:		CBR at 5.00mm:	0.77 %
PR Factor: 3.07 N/Div		<b>CBR Value:</b>	<b>0.81 %</b>
Moisture Content:		Checked By: NPJ	

REMARKS:

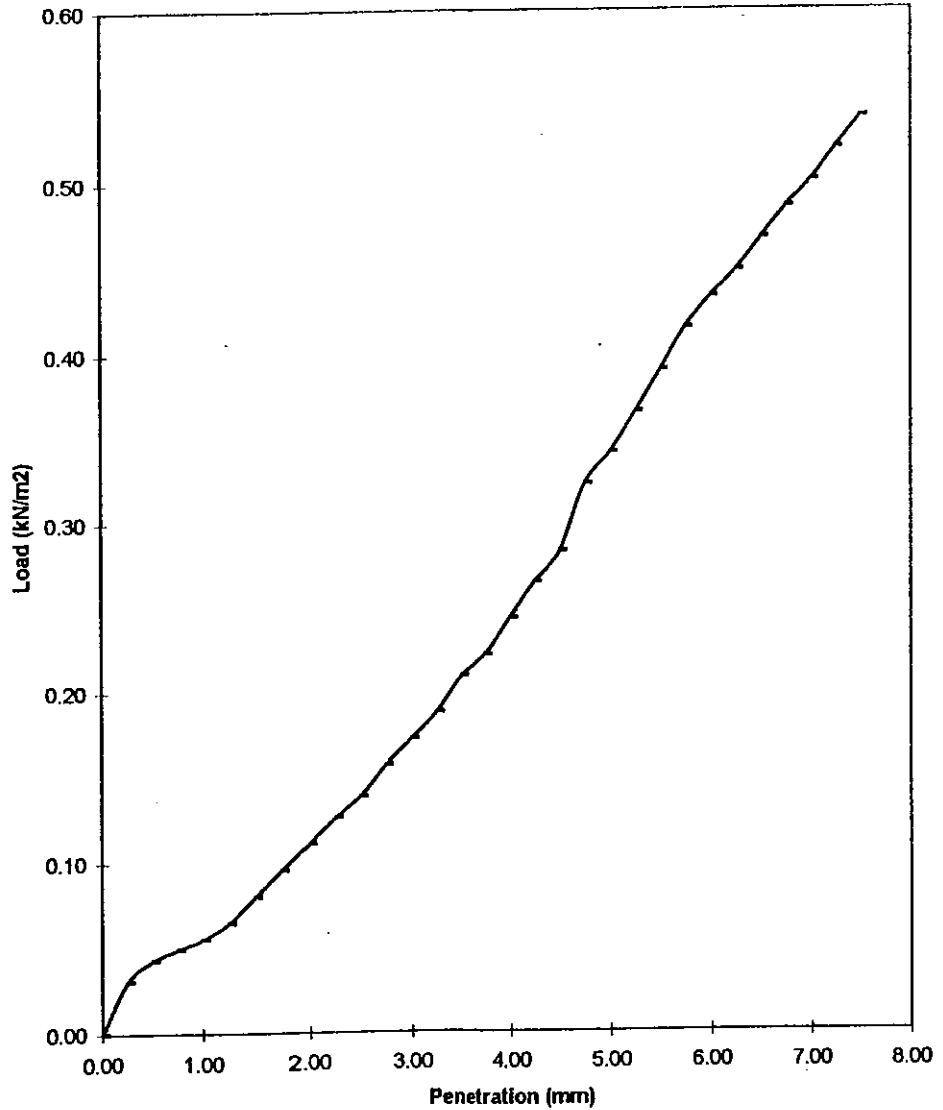
Carried out in accordance with BS1377: Part 9: 1990, Test 4.3

CONTRACT: RAF St. Athan.	DATE: 19.02.03
	TEST REFERENCE: 7

# SOUTHERN GROUND TESTING

## CBR FIELD SHEET

PENETRATION (mm)	PR READING (divs)	LOAD (KN)
0.00	0	0.00
0.25	10	0.03
0.50	14	0.04
0.75	16	0.05
1.00	18	0.06
1.25	21	0.06
1.50	26	0.08
1.75	31	0.10
2.00	36	0.11
2.25	41	0.13
2.50	45	0.14
2.75	51	0.16
3.00	56	0.17
3.25	61	0.19
3.50	68	0.21
3.75	72	0.22
4.00	79	0.24
4.25	86	0.26
4.50	92	0.28
4.75	105	0.32
5.00	111	0.34
5.25	119	0.37
5.50	127	0.39
5.75	135	0.41
6.00	141	0.43
6.25	146	0.45
6.50	152	0.47
6.75	158	0.49
7.00	163	0.50
7.25	169	0.52
7.50	175	0.54



Test Depth: 0.30m
Mass of Split Rings:
PR Factor: 3.07 N/Div
Moisture Content:

Soil Description: Soft brown very silty CLAY with occasional rootlets and occasional fine to coarse gravel.

CBR at 2.50mm:	1.04 %
CBR at 5.00mm:	1.71 %
CBR Value:	1.71 %
Checked By:	NPJ

REMARKS:

Carried out in accordance with BS1377: Part 9: 1990, Test 4.3

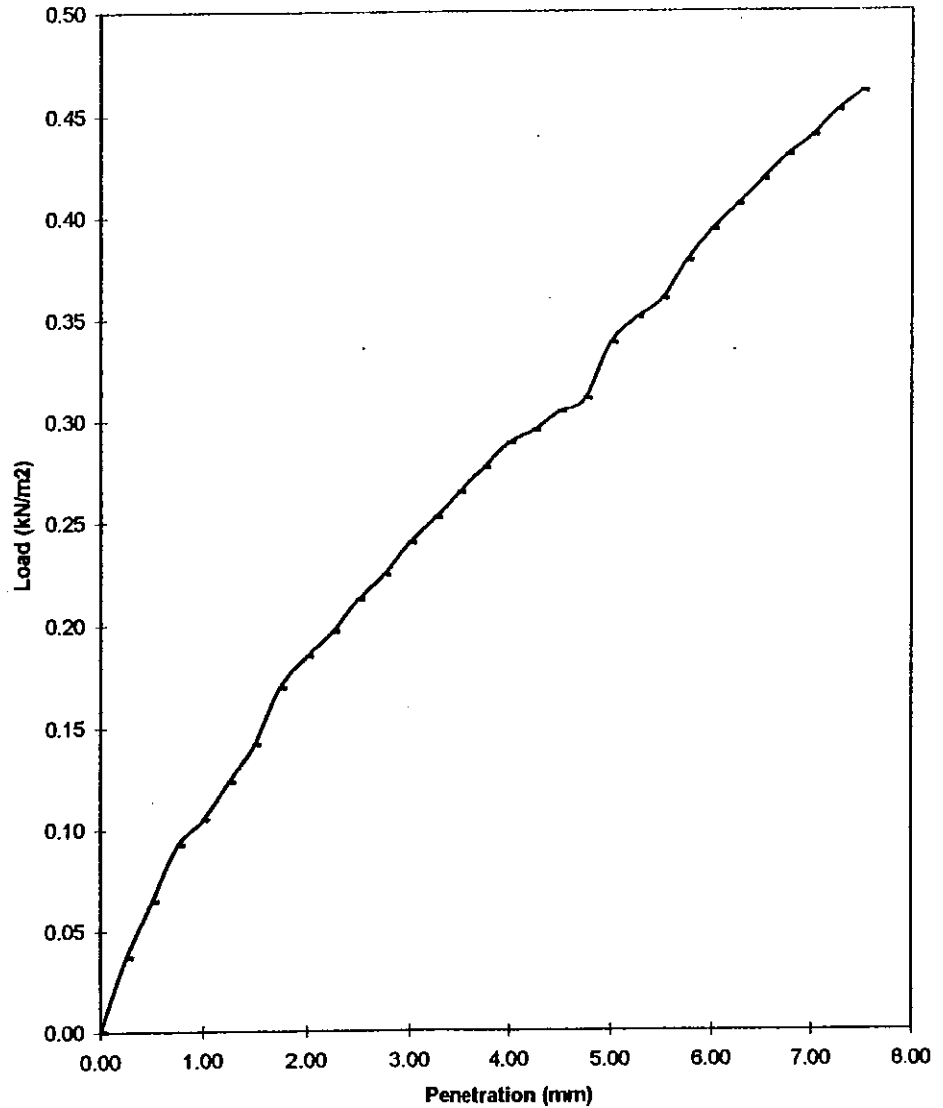
CONTRACT: RAF St. Athan.

DATE: 19.02.03  
TEST REFERENCE: 8

# SOUTHERN GROUND TESTING

## CBR FIELD SHEET

PENETRATION (mm)	PR READING (divs)	LOAD (KN)
0.00	0	0.00
0.25	12	0.04
0.50	21	0.06
0.75	30	0.09
1.00	34	0.10
1.25	40	0.12
1.50	46	0.14
1.75	55	0.17
2.00	60	0.18
2.25	64	0.20
2.50	69	0.21
2.75	73	0.22
3.00	78	0.24
3.25	82	0.25
3.50	86	0.26
3.75	90	0.28
4.00	94	0.29
4.25	96	0.29
4.50	99	0.30
4.75	101	0.31
5.00	110	0.34
5.25	114	0.35
5.50	117	0.36
5.75	123	0.38
6.00	128	0.39
6.25	132	0.41
6.50	136	0.42
6.75	140	0.43
7.00	143	0.44
7.25	147	0.45
7.50	150	0.46



Test Depth: 0.30m	Soil Description: Firm brown very silty CLAY with occasional rootlets and occasional fine to coarse gravel.	CBR at 2.50mm:	1.60 %
Mass of Split Rings:		CBR at 5.00mm:	1.69 %
PR Factor: 3.07 N/Div		CBR Value:	1.69 %
Moisture Content:		Checked By: NPJ	

REMARKS:

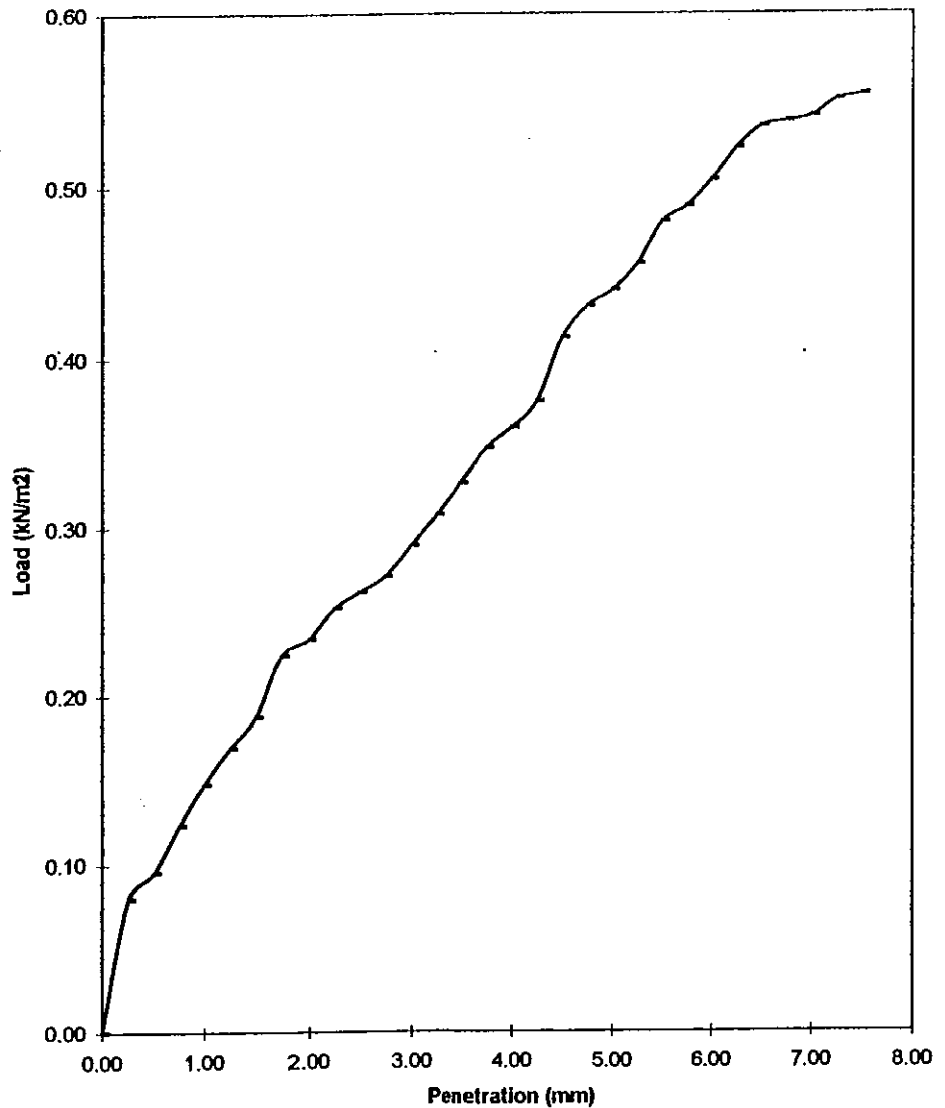
Carried out in accordance with BS1377: Part 9: 1990, Test 4.3

CONTRACT: RAF St. Athan.	DATE: 19.02.03
	TEST REFERENCE: 9

# SOUTHERN GROUND TESTING

## CBR FIELD SHEET

PENETRATION (mm)	PR READING (divs)	LOAD (KN)
0.00	0	0.00
0.25	26	0.08
0.50	31	0.10
0.75	40	0.12
1.00	48	0.15
1.25	55	0.17
1.50	61	0.19
1.75	73	0.22
2.00	76	0.23
2.25	82	0.25
2.50	85	0.26
2.75	88	0.27
3.00	94	0.29
3.25	100	0.31
3.50	106	0.33
3.75	113	0.35
4.00	117	0.36
4.25	122	0.37
4.50	134	0.41
4.75	140	0.43
5.00	143	0.44
5.25	148	0.45
5.50	156	0.48
5.75	159	0.49
6.00	164	0.50
6.25	170	0.52
6.50	174	0.53
6.75	175	0.54
7.00	176	0.54
7.25	179	0.55
7.50	180	0.55



Test Depth: 0.30m	Soil Description: Firm brown very silty CLAY with occasional rootlets and occasional fine to coarse gravel.	CBR at 2.50mm:	1.97 %
Mass of Split Rings:		CBR at 5.00mm:	2.20 %
PR Factor: 3.07 N/Div		CBR Value:	2.20 %
Moisture Content:		Checked By: NPJ	
REMARKS:			

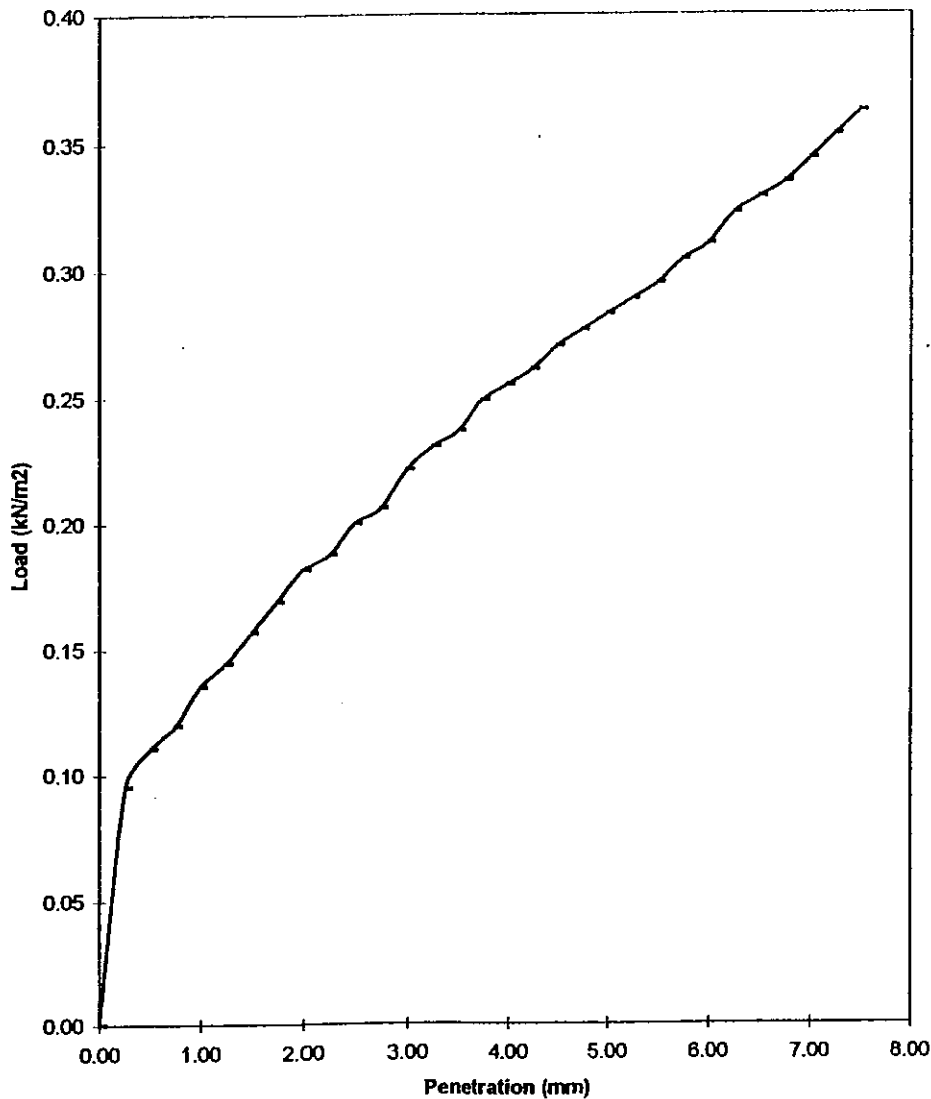
Carried out in accordance with BS1377: Part 9: 1990, Test 4.3

CONTRACT: RAF St. Athan.	DATE: 19.02.03
	TEST REFERENCE: 10

# SOUTHERN GROUND TESTING

## CBR FIELD SHEET

PENETRATION (mm)	PR READING (divs)	LOAD (KN)
0.00	0	0.00
0.25	31	0.10
0.50	36	0.11
0.75	39	0.12
1.00	44	0.14
1.25	47	0.14
1.50	51	0.16
1.75	55	0.17
2.00	59	0.18
2.25	61	0.19
2.50	65	0.20
2.75	67	0.21
3.00	72	0.22
3.25	75	0.23
3.50	77	0.24
3.75	81	0.25
4.00	83	0.25
4.25	85	0.26
4.50	88	0.27
4.75	90	0.28
5.00	92	0.28
5.25	94	0.29
5.50	96	0.29
5.75	99	0.30
6.00	101	0.31
6.25	105	0.32
6.50	107	0.33
6.75	109	0.33
7.00	112	0.34
7.25	115	0.35
7.50	118	0.36



Test Depth: 0.30m	Soil Description: Firm brown very silty CLAY with occasional rootlets and occasional fine to coarse gravel.
Mass of Split Rings:	
PR Factor: 3.07 N/Div	
Moisture Content:	

CBR at 2.50mm:	1.51 %
CBR at 5.00mm:	1.42 %
<b>CBR Value:</b>	<b>1.51 %</b>
Checked By: NPJ	

REMARKS:

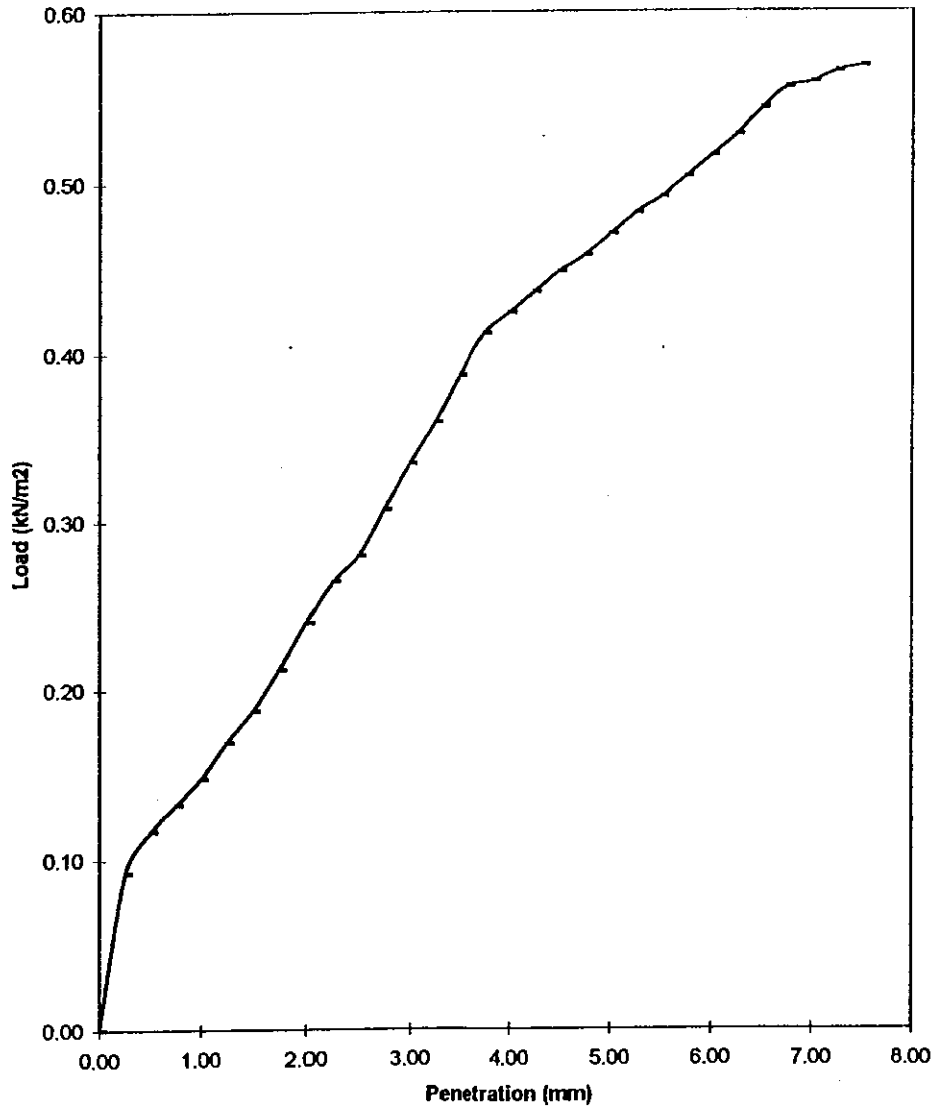
Carried out in accordance with BS1377: Part 9: 1990, Test 4.3

CONTRACT: RAF St. Athan.	DATE: 19.02.03
	TEST REFERENCE: 11

# SOUTHERN GROUND TESTING

## CBR FIELD SHEET

PENETRATION (mm)	PR READING (divs)	LOAD (KN)
0.00	0	0.00
0.25	30	0.09
0.50	38	0.12
0.75	43	0.13
1.00	48	0.15
1.25	55	0.17
1.50	61	0.19
1.75	69	0.21
2.00	78	0.24
2.25	86	0.26
2.50	91	0.28
2.75	100	0.31
3.00	109	0.33
3.25	117	0.36
3.50	126	0.39
3.75	134	0.41
4.00	138	0.42
4.25	142	0.44
4.50	146	0.45
4.75	149	0.46
5.00	153	0.47
5.25	157	0.48
5.50	160	0.49
5.75	164	0.50
6.00	168	0.52
6.25	172	0.53
6.50	177	0.54
6.75	181	0.56
7.00	182	0.56
7.25	184	0.56
7.50	185	0.57



Test Depth: 0.30m	Soil Description Soft to firm brown very silty CLAY with occasional rootlets and occasional fine to coarse gravel.	CBR at 2.50mm: 2.11 %
Mass of Split Rings:		CBR at 5.00mm: 2.35 %
PR Factor: 3.07 N/Div		CBR Value: 2.35 %
Moisture Content:		Checked By: NPJ

REMARKS:

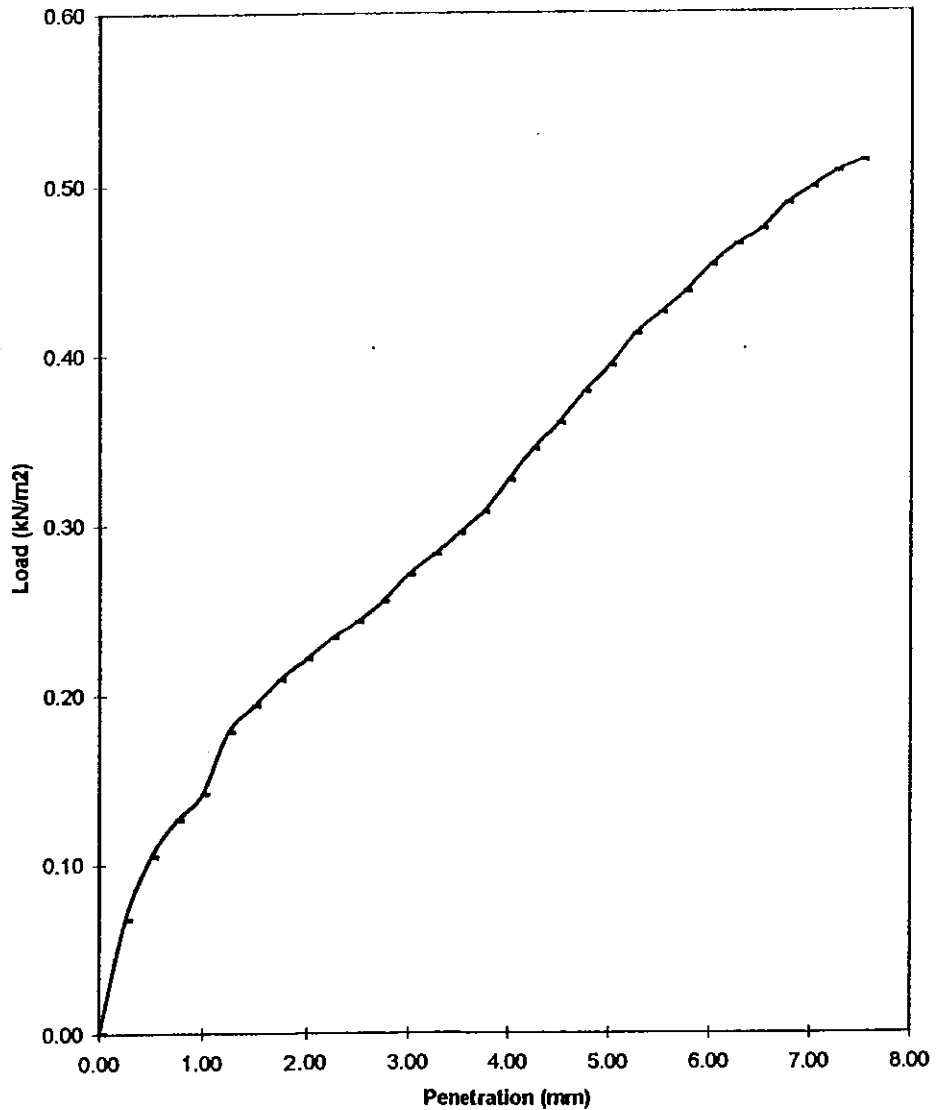
Carried out in accordance with BS1377: Part 9: 1990, Test 4.3

CONTRACT: RAF St. Athan.	DATE: 20.02.03
	TEST REFERENCE: 12

# SOUTHERN GROUND TESTING

## CBR FIELD SHEET

PENETRATION (mm)	PR READING (divs)	LOAD (KN)
0.00	0	0.00
0.25	22	0.07
0.50	34	0.10
0.75	41	0.13
1.00	46	0.14
1.25	58	0.18
1.50	63	0.19
1.75	68	0.21
2.00	72	0.22
2.25	76	0.23
2.50	79	0.24
2.75	83	0.25
3.00	88	0.27
3.25	92	0.28
3.50	96	0.29
3.75	100	0.31
4.00	106	0.33
4.25	112	0.34
4.50	117	0.36
4.75	123	0.38
5.00	128	0.39
5.25	134	0.41
5.50	138	0.42
5.75	142	0.44
6.00	147	0.45
6.25	151	0.46
6.50	154	0.47
6.75	159	0.49
7.00	162	0.50
7.25	165	0.51
7.50	167	0.51



Test Depth: 0.30m	Soil Description Soft to firm brown very silty CLAY with occasional rootlets and occasional fine to coarse gravel.
Mass of Split Rings:	
PR Factor: 3.07 N/Div	
Moisture Content:	

CBR at 2.50mm:	1.83 %
CBR at 5.00mm:	1.97 %
CBR Value:	1.97 %
Checked By:	NPJ

REMARKS:

Carried out in accordance with BS1377: Part 9: 1990, Test 4.3

CONTRACT: RAF St. Athan.

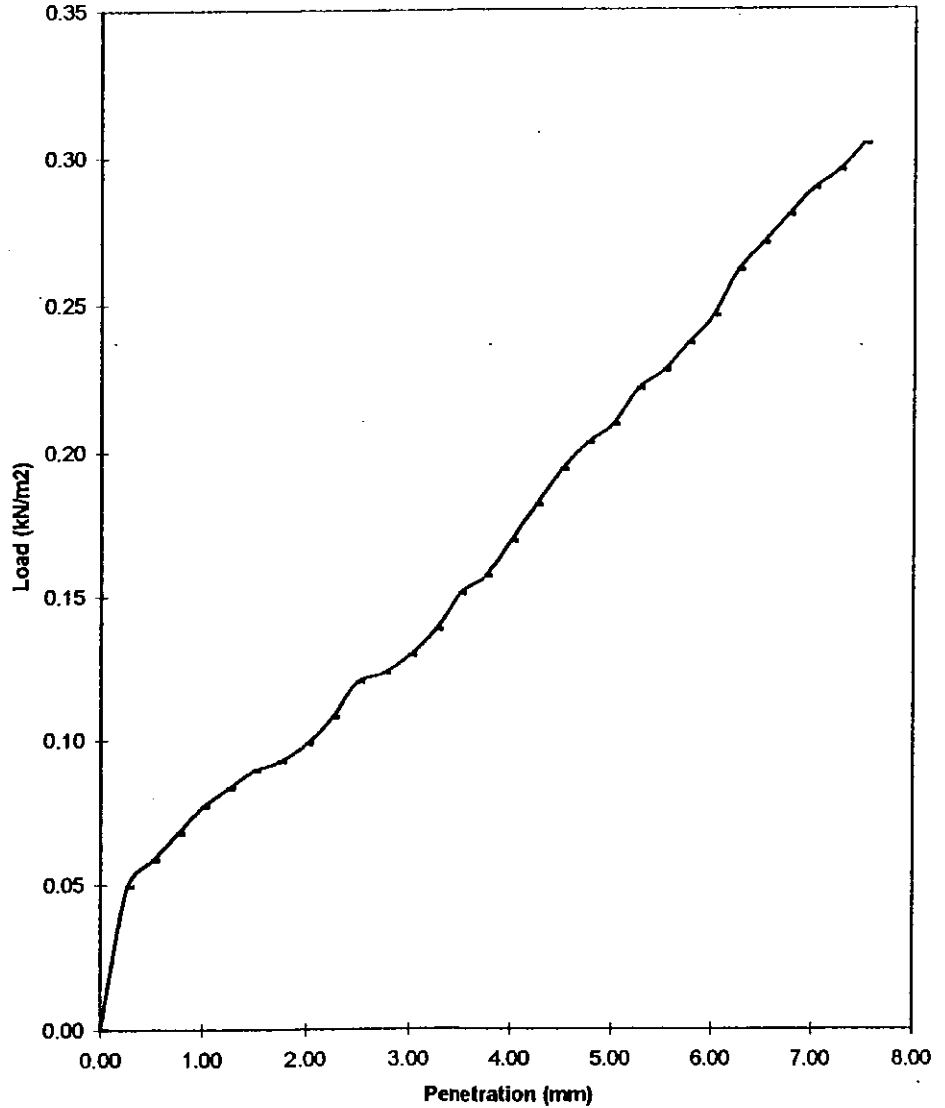
DATE: 20.02.03  
TEST REFERENCE: 13



# SOUTHERN GROUND TESTING

## CBR FIELD SHEET

PENETRATION (mm)	PR READING (divs)	LOAD (KN)
0.00	0	0.00
0.25	16	0.05
0.50	19	0.06
0.75	22	0.07
1.00	25	0.08
1.25	27	0.08
1.50	29	0.09
1.75	30	0.09
2.00	32	0.10
2.25	35	0.11
2.50	39	0.12
2.75	40	0.12
3.00	42	0.13
3.25	45	0.14
3.50	49	0.15
3.75	51	0.16
4.00	55	0.17
4.25	59	0.18
4.50	63	0.19
4.75	66	0.20
5.00	68	0.21
5.25	72	0.22
5.50	74	0.23
5.75	77	0.24
6.00	80	0.25
6.25	85	0.26
6.50	88	0.27
6.75	91	0.28
7.00	94	0.29
7.25	96	0.29
7.50	99	0.30



Test Depth: 0.30m	Soil Description Soft to firm brown very silty CLAY with occasional rootlets and occasional fine to coarse gravel.								
Mass of Split Rings:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">CBR at 2.50mm:</td> <td style="width: 50%;">0.90 %</td> </tr> <tr> <td>CBR at 5.00mm:</td> <td>1.05 %</td> </tr> <tr> <td>CBR Value:</td> <td>1.05 %</td> </tr> <tr> <td colspan="2">Checked By: NPJ</td> </tr> </table>	CBR at 2.50mm:	0.90 %	CBR at 5.00mm:	1.05 %	CBR Value:	1.05 %	Checked By: NPJ	
CBR at 2.50mm:		0.90 %							
CBR at 5.00mm:	1.05 %								
CBR Value:	1.05 %								
Checked By: NPJ									
PR Factor: 3.07 N/Div									
Moisture Content:									

REMARKS:

Carried out in accordance with BS1377: Part 9: 1990, Test 4.3

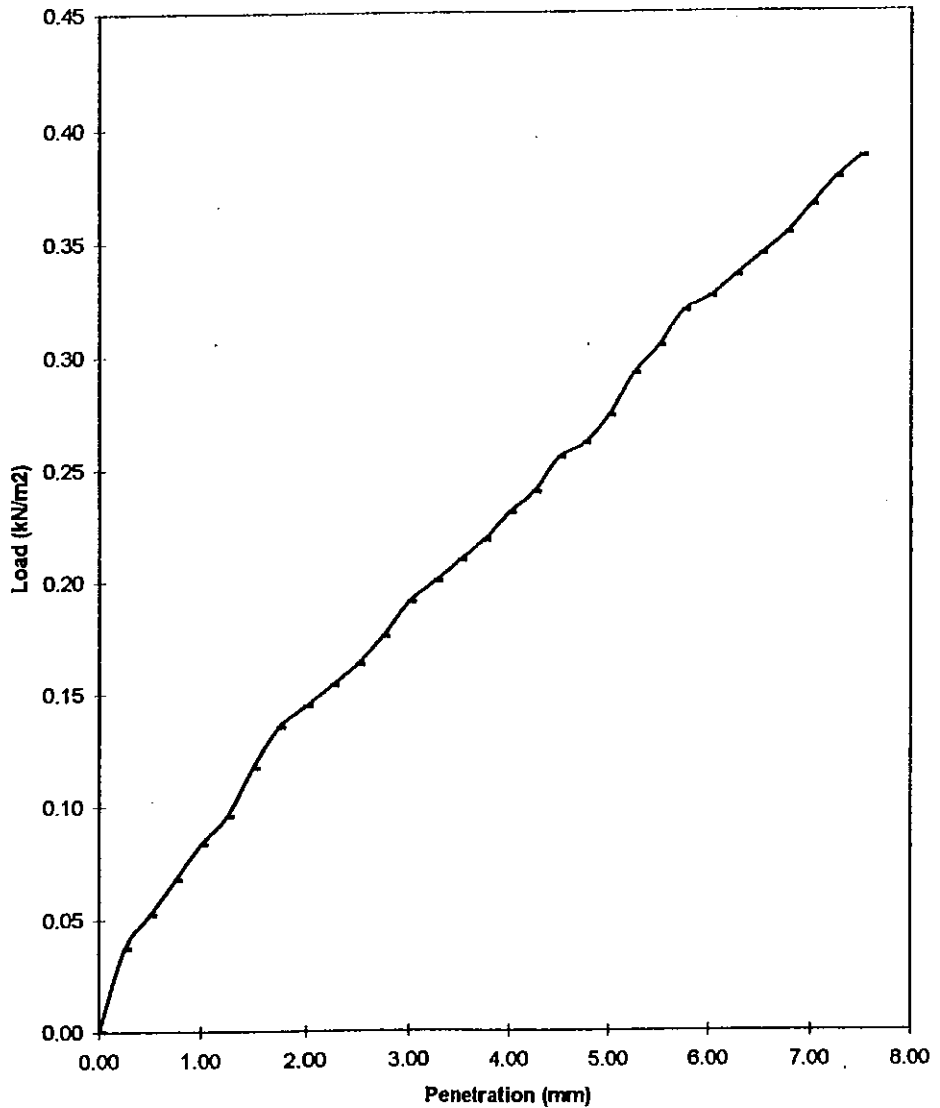
CONTRACT: RAF St. Athan.

DATE: 20.02.03
TEST REFERENCE: 14

# SOUTHERN GROUND TESTING

## CBR FIELD SHEET

PENETRATION (mm)	PR READING (divs)	LOAD (KN)
0.00	0	0.00
0.25	12	0.04
0.50	17	0.05
0.75	22	0.07
1.00	27	0.08
1.25	31	0.10
1.50	38	0.12
1.75	44	0.14
2.00	47	0.14
2.25	50	0.15
2.50	53	0.16
2.75	57	0.17
3.00	62	0.19
3.25	65	0.20
3.50	68	0.21
3.75	71	0.22
4.00	75	0.23
4.25	78	0.24
4.50	83	0.25
4.75	85	0.26
5.00	89	0.27
5.25	95	0.29
5.50	99	0.30
5.75	104	0.32
6.00	106	0.33
6.25	109	0.33
6.50	112	0.34
6.75	115	0.35
7.00	119	0.37
7.25	123	0.38
7.50	126	0.39



Test Depth: 0.30m	Soil Description Soft to firm brown very silty CLAY with occasional rootlets and occasional fine to coarse gravel.
Mass of Split Rings:	
PR Factor: 3.07 N/Div	
Moisture Content:	

CBR at 2.50mm:	1.23 %
CBR at 5.00mm:	1.37 %
<b>CBR Value:</b>	<b>1.37 %</b>
Checked By: NPJ	

REMARKS:

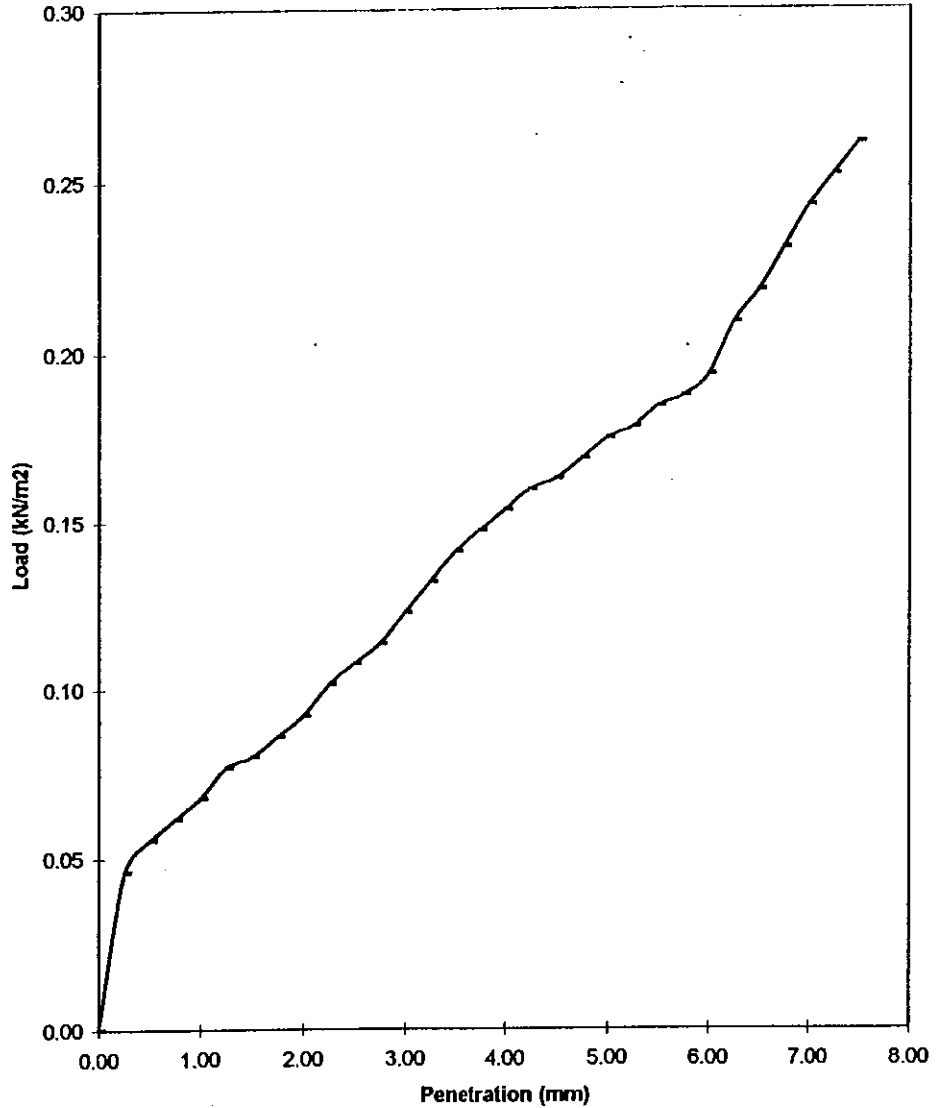
Carried out in accordance with BS1377: Part 9: 1990, Test 4.3

CONTRACT: RAF St. Athan.	DATE: 20.02.03
	TEST REFERENCE: 15

# SOUTHERN GROUND TESTING

## CBR FIELD SHEET

PENETRATION (mm)	PR READING (divs)	LOAD (KN)
0.00	0	0.00
0.25	15	0.05
0.50	18	0.06
0.75	20	0.06
1.00	22	0.07
1.25	25	0.08
1.50	26	0.08
1.75	28	0.09
2.00	30	0.09
2.25	33	0.10
2.50	35	0.11
2.75	37	0.11
3.00	40	0.12
3.25	43	0.13
3.50	46	0.14
3.75	48	0.15
4.00	50	0.15
4.25	52	0.16
4.50	53	0.16
4.75	55	0.17
5.00	57	0.17
5.25	58	0.18
5.50	60	0.18
5.75	61	0.19
6.00	63	0.19
6.25	68	0.21
6.50	71	0.22
6.75	75	0.23
7.00	79	0.24
7.25	82	0.25
7.50	85	0.26



Test Depth: 0.30m
Mass of Split Rings:
PR Factor: 3.07 N/Div
Moisture Content:

Soil Description Soft to firm grey brown CLAY with occasional rootlets and occasional fine to coarse gravel.

CBR at 2.50mm:	0.81 %
CBR at 5.00mm:	0.88 %
CBR Value:	0.88 %
Checked By:	NPJ

REMARKS:

Carried out in accordance with BS1377: Part 9: 1990, Test 4.3

CONTRACT: RAF St. Athan.

DATE: 20.02.03  
TEST REFERENCE: 16

Samples				Classification					Strength			Other Tests
Hole	Depth	Type	Description	<425 I <sub>p</sub>	Prep w <sub>L</sub>	w <sub>p</sub>	Water %	γ <sub>b3</sub> Mg/m	Test	σ <sub>3</sub> kPa	C kPa	
CGCTP5	0.40	B	Brown gravelly CLAY									w% / Dry Density Particle Size analysis
CGCTP6	1.50	B	Brown CLAY									Particle Size analysis
CGCTP7	0.40	B	Brown gravelly CLAY with rare cobbles	72 29	425μ 55	Sieve 26	13					Particle Size analysis
TP1	0.50	B	Brown CLAY									Particle Size analysis
TP4	0.30	B	Brown CLAY with rare rootlets									Particle Size analysis
TP5	0.20	B	Brown CLAY		Natural 27	62	35	50				w% / Dry Density Particle Size analysis
TP7	0.30	B	Brown gravelly clay									Particle Size analysis
TP8	0.20	B	Brown slightly gravelly CLAY									Particle Size analysis
TP9	0.10	B	Brown CLAY		Natural 26	66	40	50				w% / Dry Density Particle Size analysis
TP11	0.30	B	Brown CLAY with Mudstone									w% / Dry Density Particle Size analysis
TP13	0.40	B	Brown CLAY		Natural 31	61	30	40				w% / Dry Density Particle Size analysis
TP16	0.40	B	Brown gravelly CLAY									w% / Dry Density
TP17	0.30	B	Brown gravelly CLAY									Particle Size analysis
TP19	0.30	B										Particle Size analysis
TP21	1.00	B	Brown CLAY									w% / Dry Density Particle Size analysis
TP24	0.40	B	Brown CLAY									Particle Size analysis
TP25	0.60	B	Brown CLAY		Natural 27	52	25	39				w% / Dry Density Particle Size analysis
TP26	0.50	B	Orange brown CLAY									Particle Size analysis
TP27	0.50	B	Brown sandy gravelly CLAY									w% / Dry Density Particle Size analysis
TP30	2.00	B	*		Natural 30	50	20	31				w% / Dry Density Particle Size analysis
TP31	0.40	B	Brown grey gravelly CLAY									Particle Size analysis

Remarks

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Laboratory - Results Summary

Project

RAF St Athens  
Apex Drilling Services

Contract

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 Soil Mechanics

Sheet

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Samples				Classification					Strength			Other Tests
Hole	Depth	Type	Description	<425 I <sub>p</sub>	Prep w <sub>L</sub>	w <sub>p</sub>	Water %	γ <sub>b3</sub> Mg/m <sup>3</sup>	Test	σ <sub>3</sub> kPa	C kPa	
TP34	1.00	B	Brown grey CLAY									Particle Size analysis
TP37	0.80	B	Brown CLAY									Particle Size analysis
TP38	0.40	B	Brown CLAY									Particle Size analysis
TP40	0.40	B	Brown CLAY	33	Natural 71	38	38					w% / Dry Density Particle Size analysis
TP42	0.40	B	Brown gravelly CLAY									Particle Size analysis
TP44	0.30	B	Brown CLAY	25	Natural 53	28						w% / Dry Density Particle Size analysis
TP45	0.20	B	Brown CLAY									Particle Size analysis

Remarks

Form 10/2

Laboratory - Results Summary

Project

RAF St Athens  
Apex Drilling Services

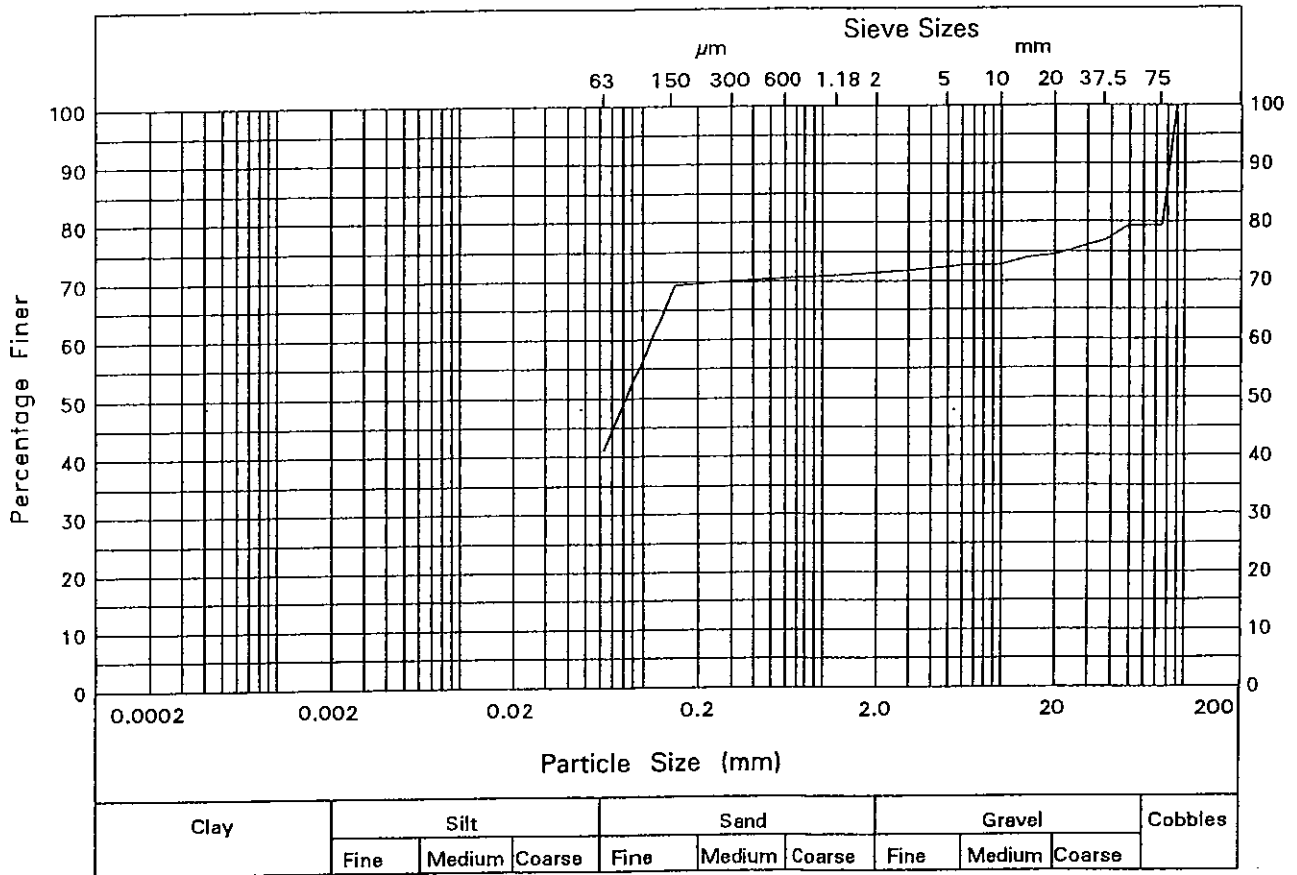
Contract

R3058

 Soil Mechanics

Sheet

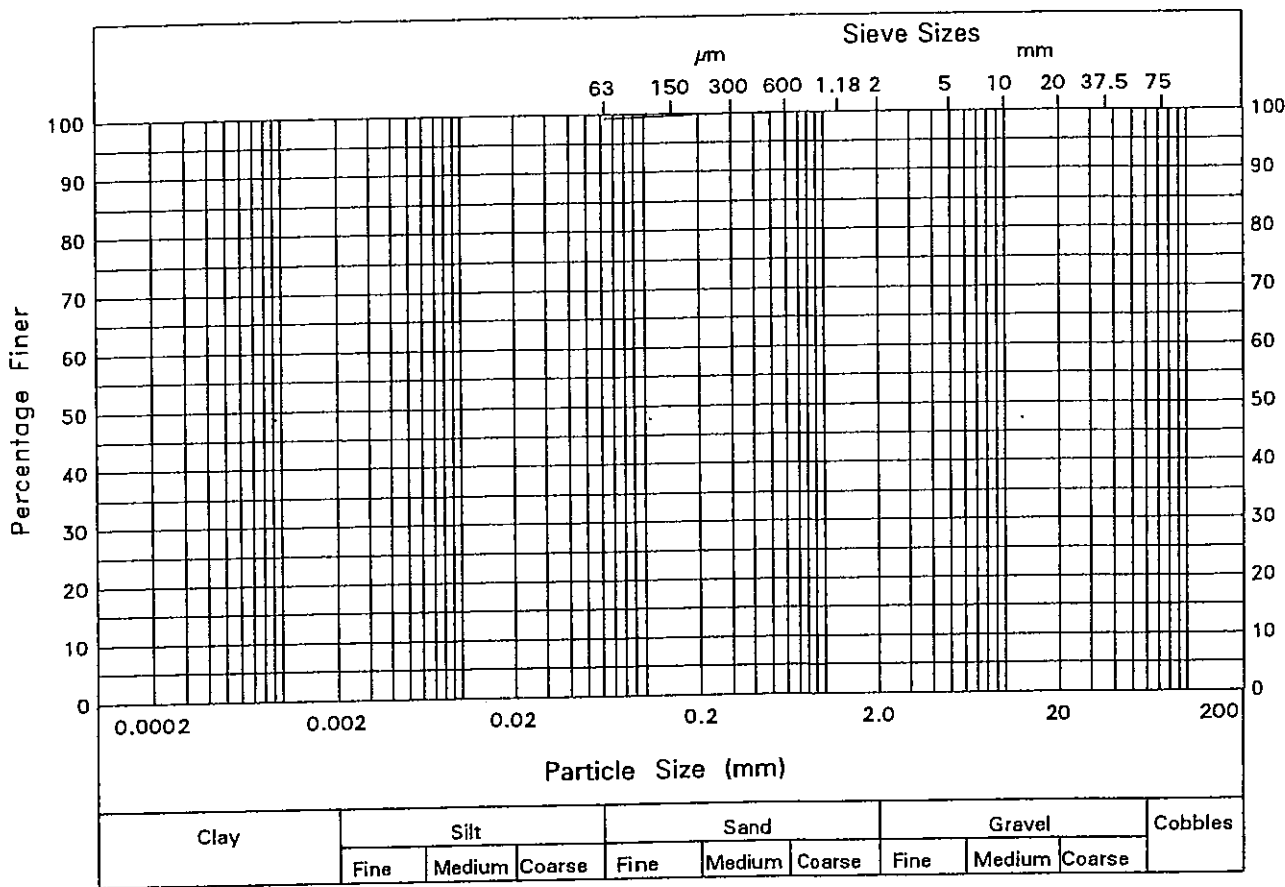
L1/2



Particle Size	% Passing	Particle Size	% Passing
90 mm	100	2 mm	71
75 mm	79	1.18 mm	71
63 mm	79	600 μm	71
50 mm	79	425 μm	70
37.5 mm	77	300 μm	70
28 mm	76	212 μm	70
20 mm	74	150 μm	69
14 mm	74	63 μm	41
10 mm	73		
6.3 mm	73		
5 mm	72		
3.35 mm	72		
<b>Hole</b> CGCTP5	<b>Description</b> Brown gravelly CLAY		
<b>Depth</b> 0.40			
<b>Type</b> B			
<b>Test Performed</b> Wet	<b>Uniformity Coefficient not applicable.</b>		

Form 25/4

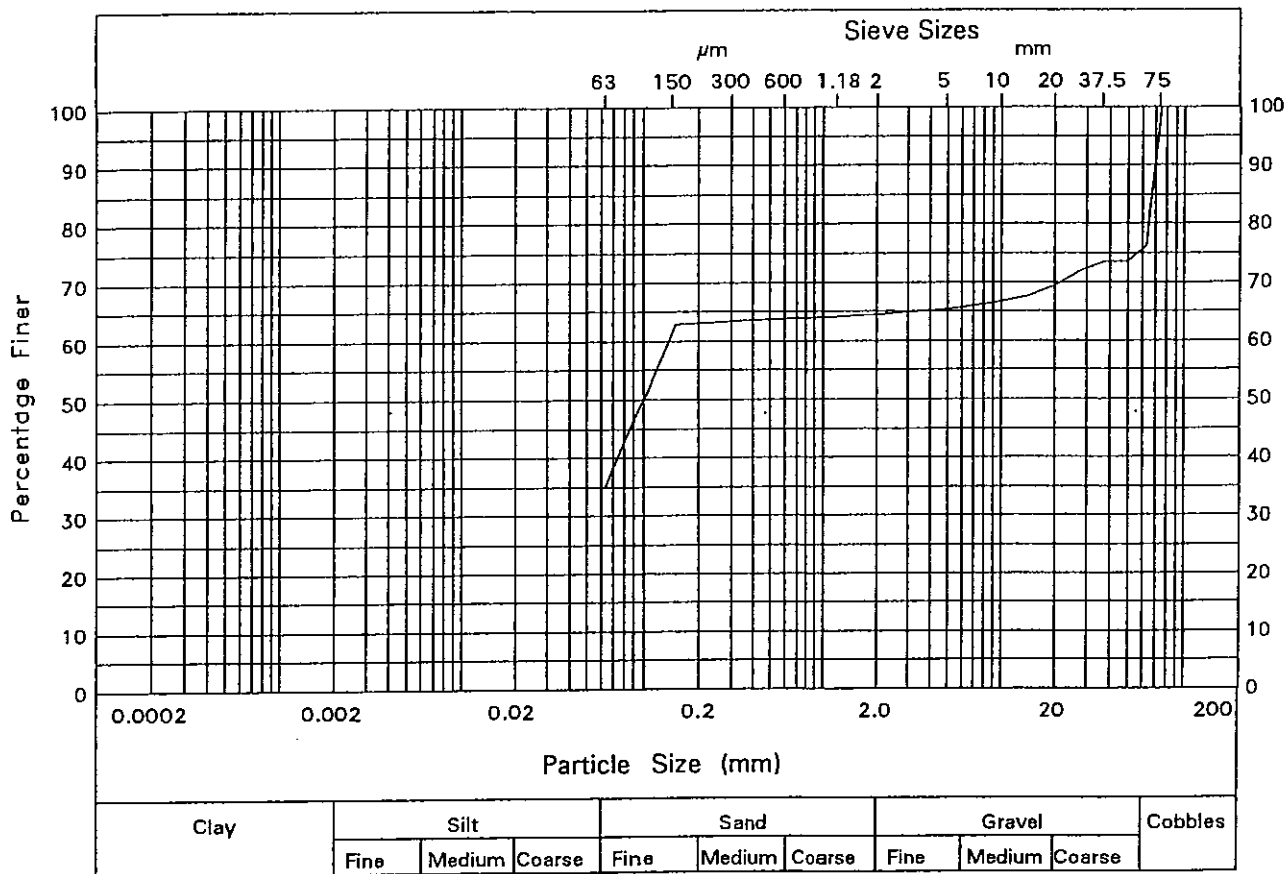
<b>Laboratory - Particle Size Plot</b> <b>Soil Mechanics</b>	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/1



Particle Size	% Passing	Particle Size	% Passing
3.35 mm	100		
2 mm	100		
1.18 mm	100		
600 μm	100		
425 μm	100		
300 μm	100		
212 μm	100		
150 μm	100		
63 μm	99		
<b>Hole</b> CGCTP6	Description Brown CLAY		
<b>Depth</b> 1.50			
<b>Type</b> B			
<b>Test Performed</b> Wet	Uniformity Coefficient not applicable.		

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<b>Laboratory - Particle Size Plot</b> 	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/2



Particle Size	% Passing	Particle Size	% Passing
75 mm	100	1.18 mm	64
63 mm	76	600 μm	64
50 mm	73	425 μm	64
37.5 mm	73	300 μm	63
28 mm	72	212 μm	63
20 mm	69	150 μm	63
14 mm	68	63 μm	35
10 mm	67		
6.3 mm	66		
5 mm	65		
3.35 mm	65		
2 mm	64		

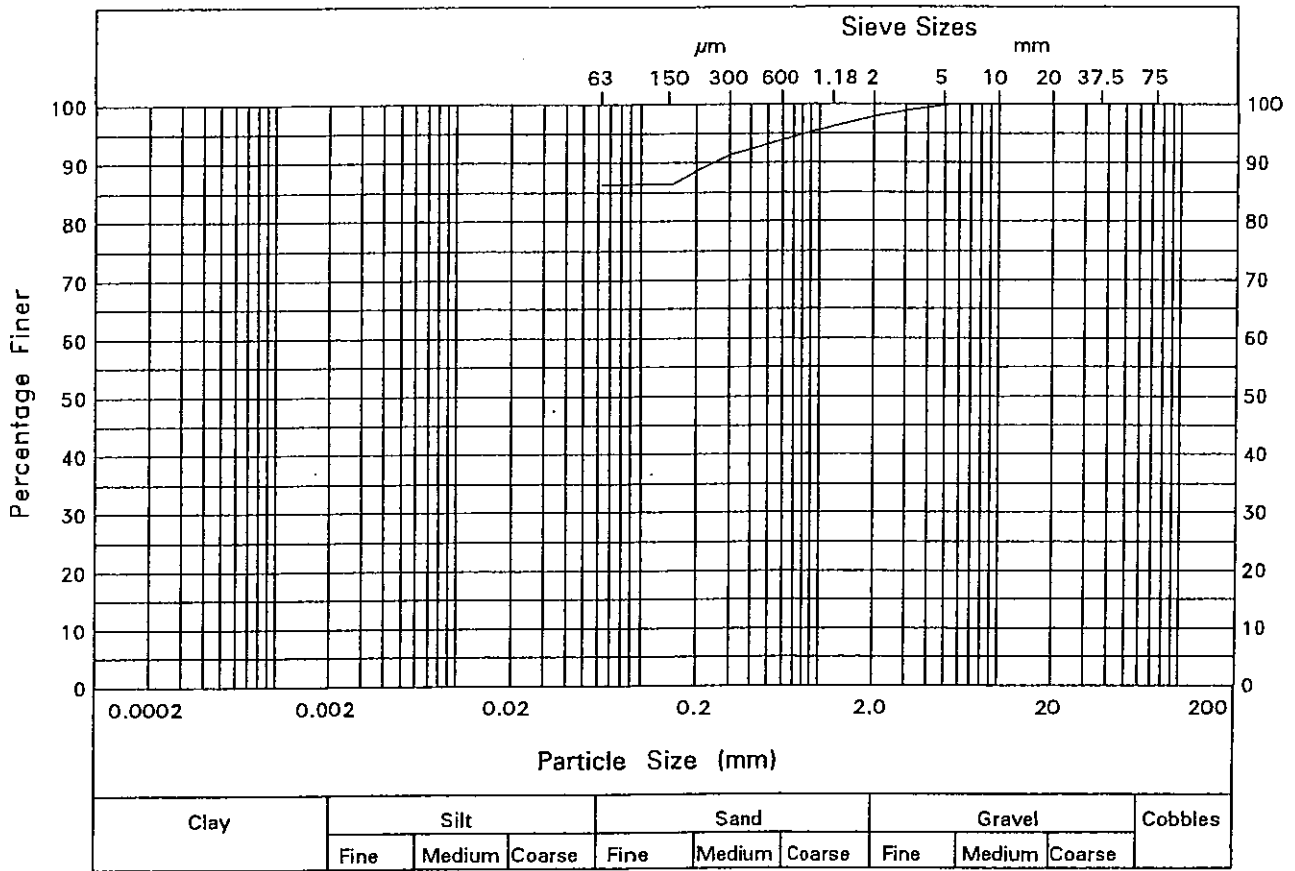
  

<b>Hole</b> CGCTP7	<b>Description</b> Brown gravelly CLAY with rare cobbles
<b>Depth</b> 0.40	
<b>Type</b> B	
<b>Test Performed</b> Wet	Uniformity Coefficient not applicable.

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<b>Laboratory - Particle Size Plot</b> <b>Soil Mechanics</b>	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/3



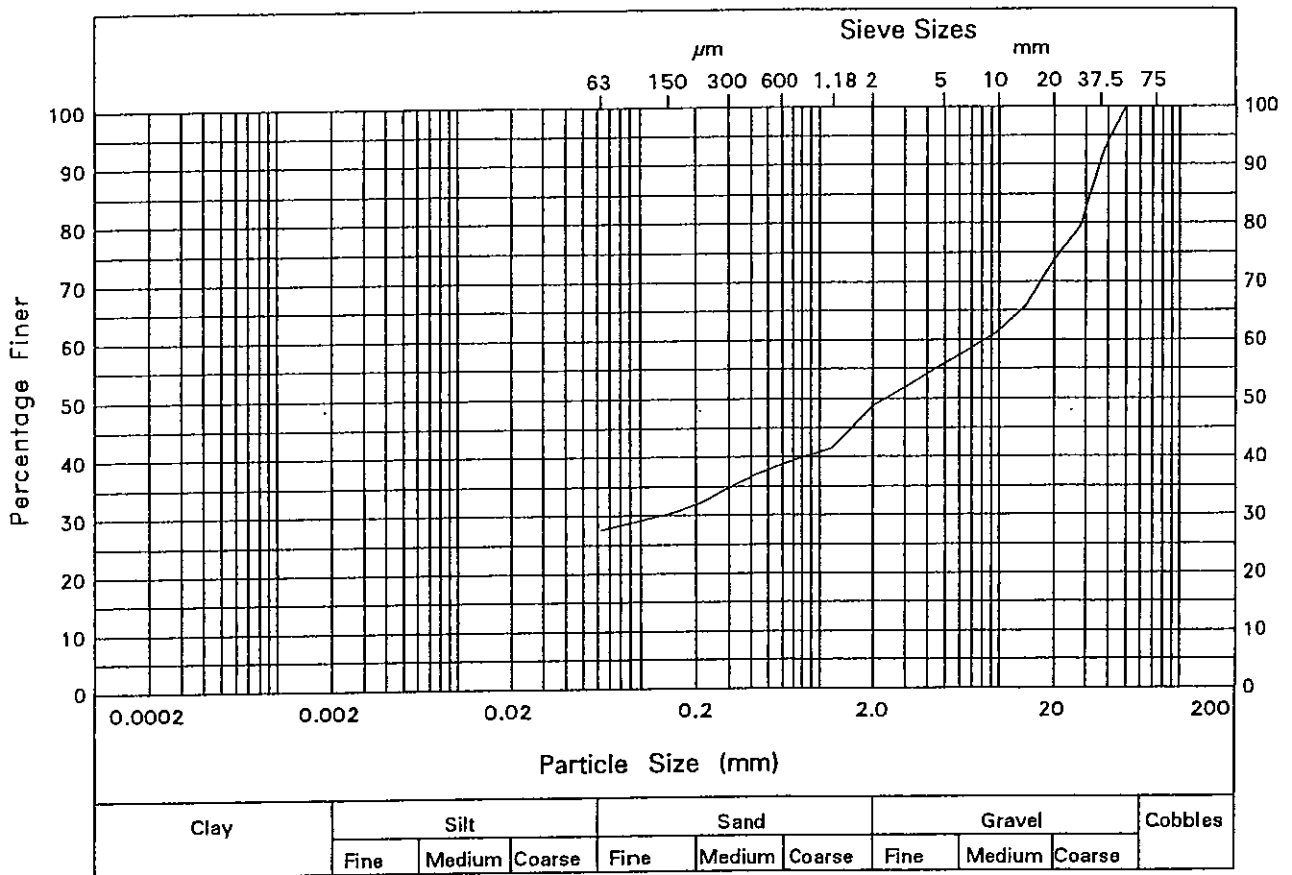


Particle Size	% Passing	Particle Size	% Passing
6.3 mm	100		
5 mm	100		
3.35 mm	99		
2 mm	98		
1.18 mm	96		
600 μm	94		
425 μm	93		
300 μm	91		
212 μm	89		
150 μm	86		
63 μm	86		
<b>Hole</b> TP4	Description Brown CLAY with rare rootlets		
<b>Depth</b> 0.30			
<b>Type</b> B			
<b>Test Performed</b> Wet	Uniformity Coefficient not applicable.		

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<b>Laboratory - Particle Size Plot</b> 	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/5

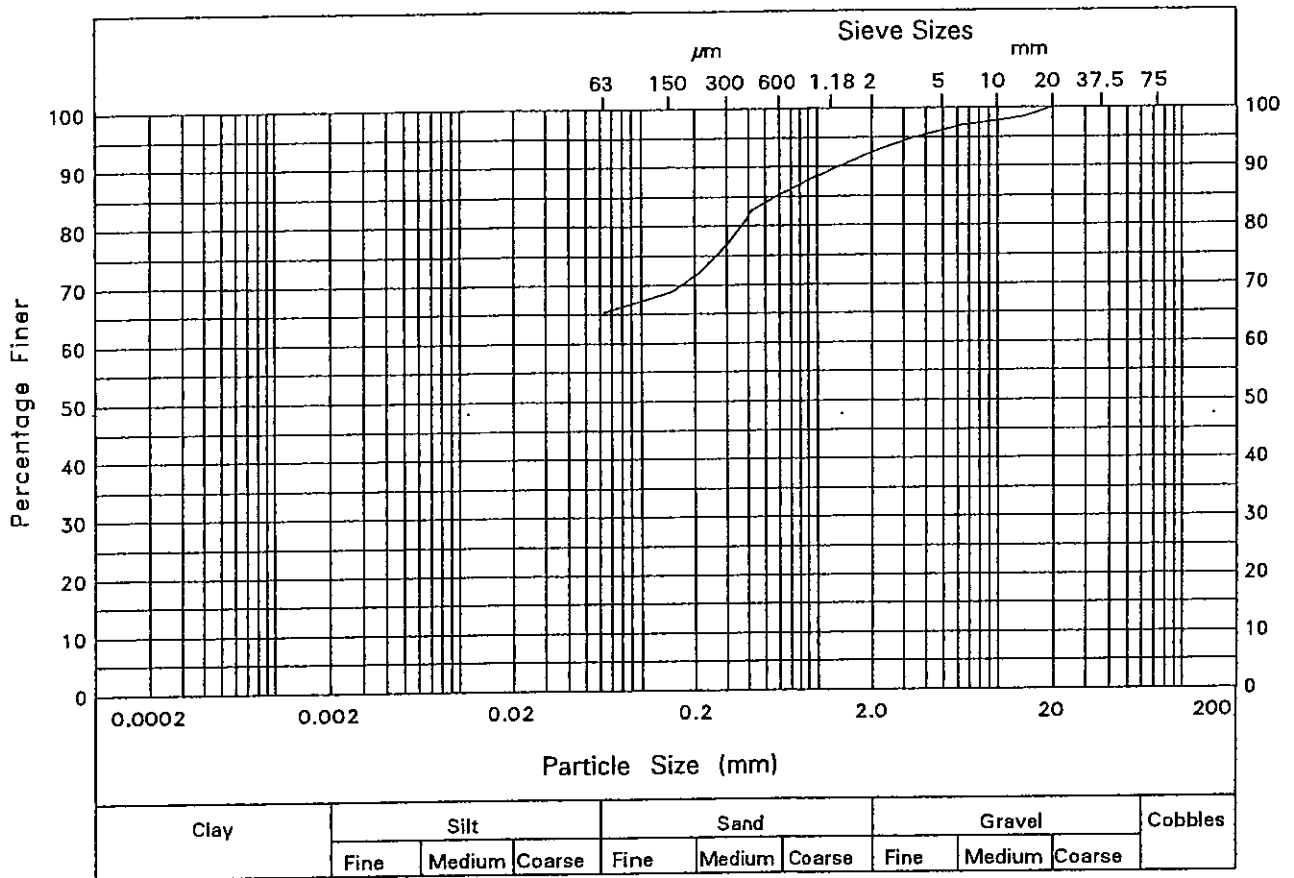




Particle Size	% Passing	Particle Size	% Passing
50 mm	100	425 μm	37
37.5 mm	92	300 μm	35
28 mm	79	212 μm	32
20 mm	74	150 μm	30
14 mm	66	63 μm	28
10 mm	62		
6.3 mm	58		
5 mm	56		
3.35 mm	53		
2 mm	49		
1.18 mm	42		
600 μm	39		
<b>Hole</b> TP7	<b>Description</b> Brown gravelly clay		
<b>Depth</b> 0.30			
<b>Type</b> B			
<b>Test Performed</b> Wet	<b>Uniformity Coefficient not applicable.</b>		

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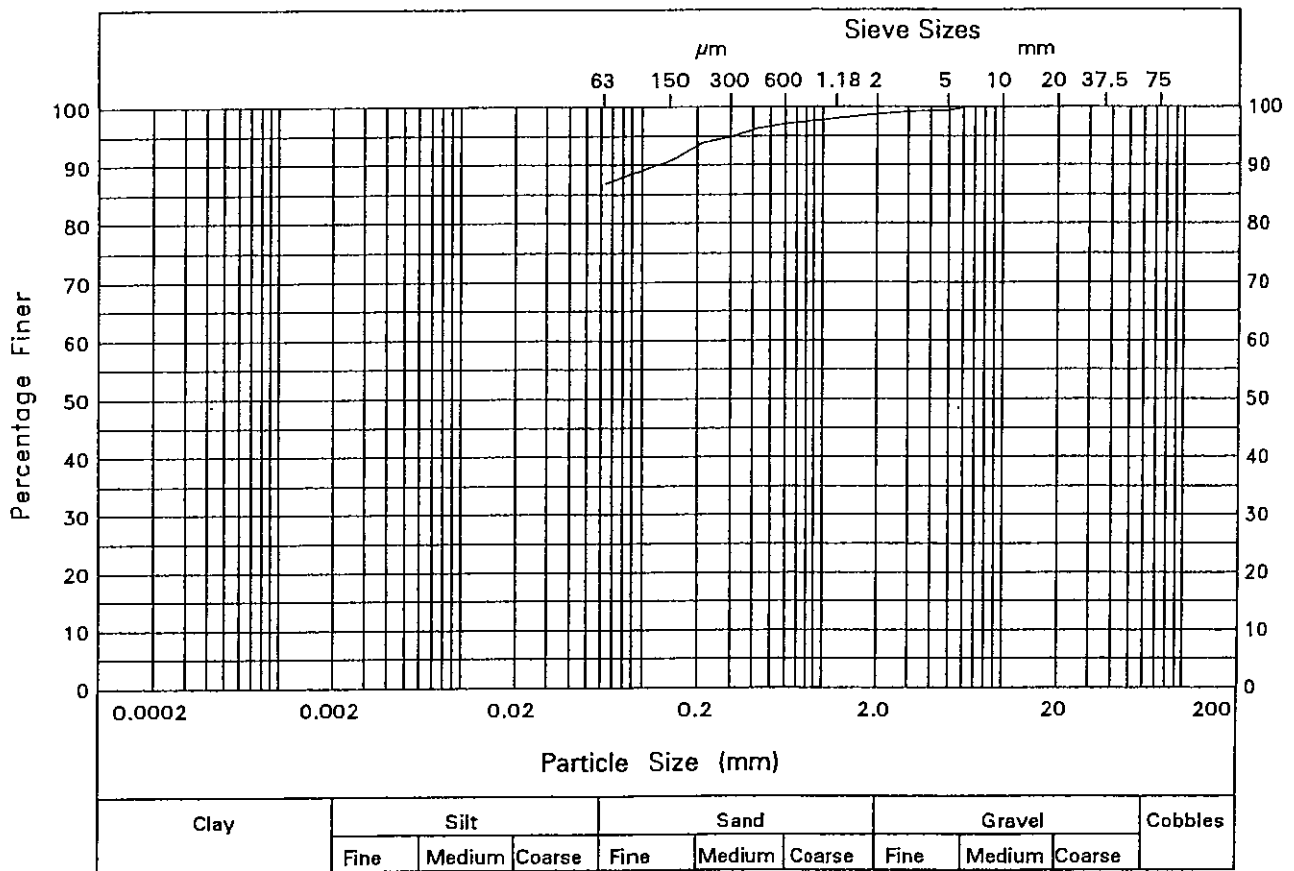
<b>Laboratory - Particle Size Plot</b> <b>Soil Mechanics</b>	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/7



Particle Size	% Passing	Particle Size	% Passing
20 mm	100	150 $\mu\text{m}$	69
14 mm	98	63 $\mu\text{m}$	65
10 mm	98		
6.3 mm	97		
5 mm	96		
3.35 mm	95		
2 mm	92		
1.18 mm	89		
600 $\mu\text{m}$	85		
425 $\mu\text{m}$	83		
300 $\mu\text{m}$	77		
212 $\mu\text{m}$	72		
<b>Hole</b> TP8	<b>Description</b> Brown slightly gravelly CLAY		
<b>Depth</b> 0.20			
<b>Type</b> B			
<b>Test Performed</b> Wet	<b>Uniformity Coefficient not applicable.</b>		

Form 25/4

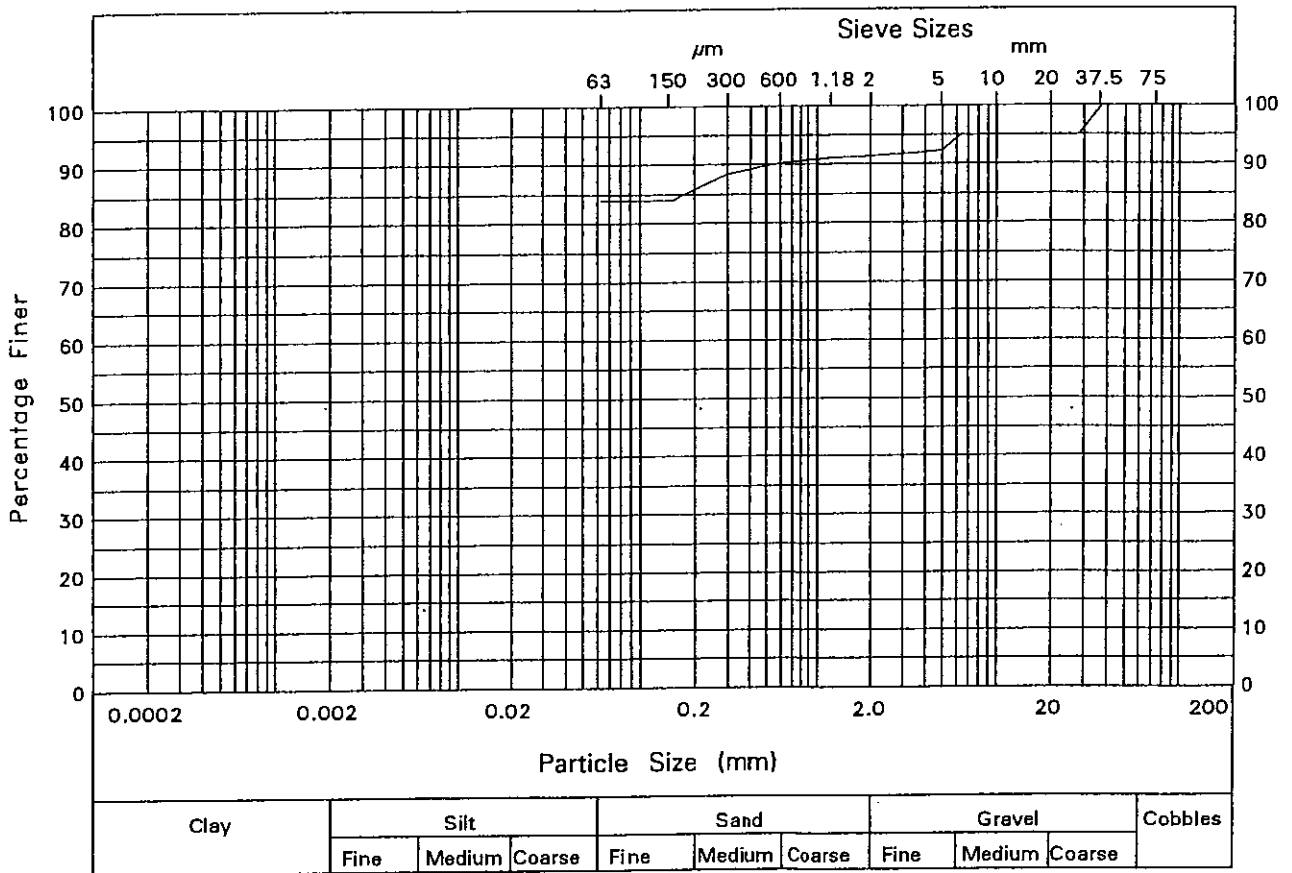
<b>Laboratory - Particle Size Plot</b> <b>Soil Mechanics</b>	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/8



Particle Size	% Passing	Particle Size	% Passing
6.3 mm	100		
5 mm	99		
3.35 mm	99		
2 mm	99		
1.18 mm	98		
600 $\mu\text{m}$	97		
425 $\mu\text{m}$	96		
300 $\mu\text{m}$	95		
212 $\mu\text{m}$	94		
150 $\mu\text{m}$	91		
63 $\mu\text{m}$	87		
<b>Hole</b> TP9	Description Brown CLAY		
<b>Depth</b> 0.10			
<b>Type</b> B			
<b>Test Performed</b> Wet	Uniformity Coefficient not applicable.		

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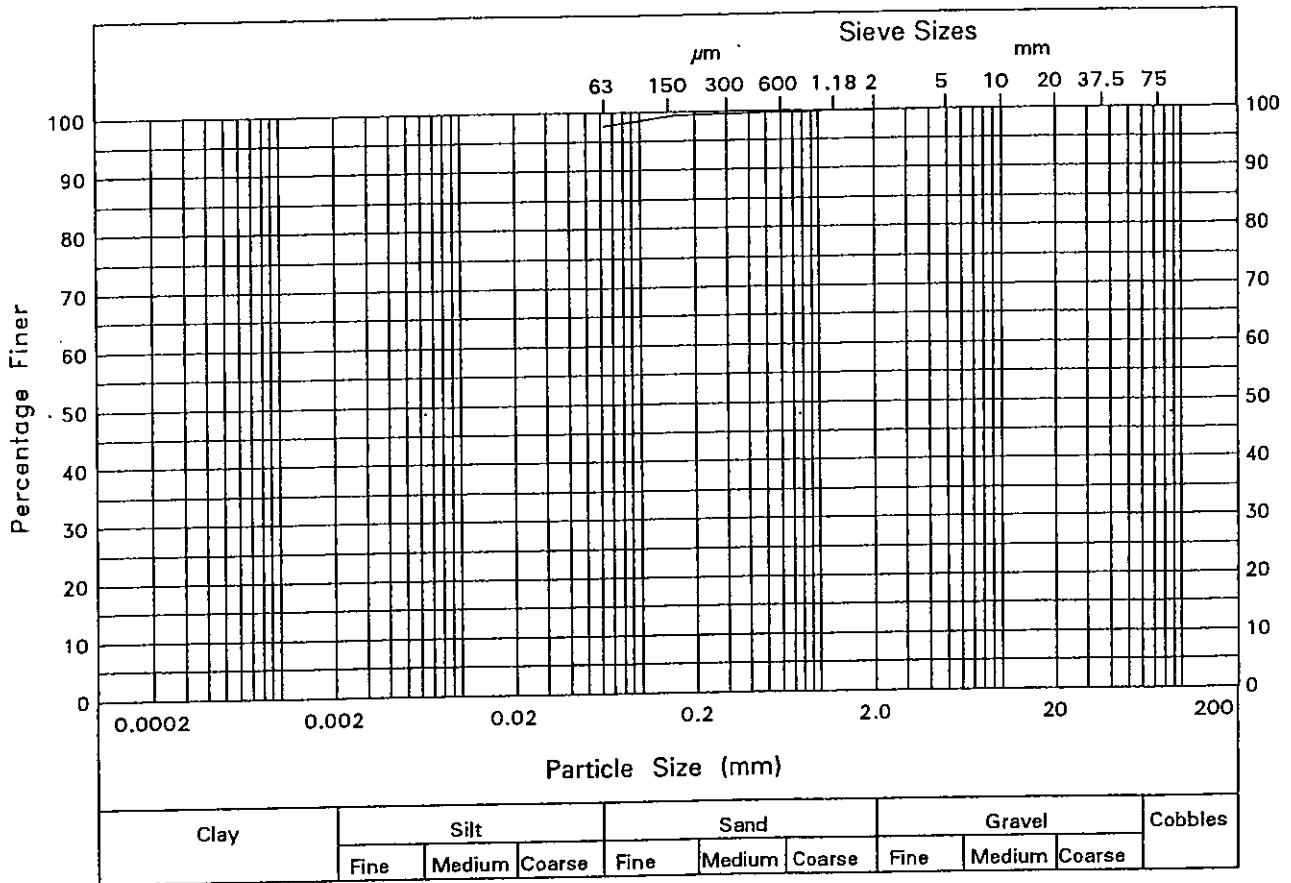
<b>Laboratory - Particle Size Plot</b> 	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/9



Particle Size	% Passing	Particle Size	% Passing
37.5 mm	100	300 μm	88
28 mm	95	212 μm	86
20 mm	95	150 μm	84
14 mm	95	63 μm	84
10 mm	95		
6.3 mm	95		
5 mm	92		
3.35 mm	92		
2 mm	91		
1.18 mm	91		
600 μm	90		
425 μm	89		
<b>Hole</b> TP11	<b>Description</b> Brown CLAY with Mudstone		
<b>Depth</b> 0.30			
<b>Type</b> B			
<b>Test Performed</b> Wet	<b>Uniformity Coefficient not applicable.</b>		

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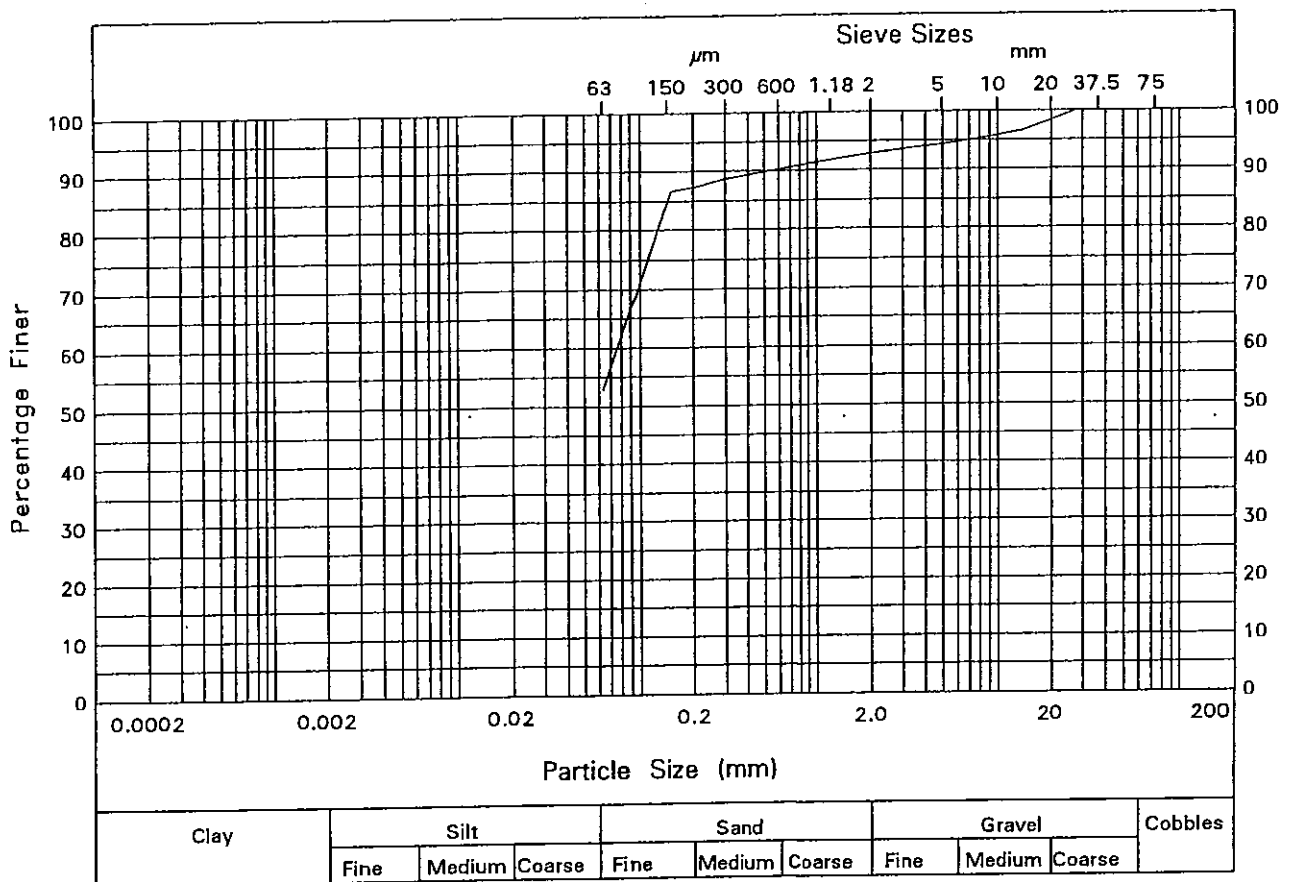
<b>Laboratory - Particle Size Plot</b> 	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/10



Particle Size	% Passing	Particle Size	% Passing
5 mm	100		
3.35 mm	100		
2 mm	100		
1.18 mm	100		
600 μm	100		
425 μm	100		
300 μm	99		
212 μm	99		
150 μm	99		
63 μm	98		
<b>Hole</b> TP13	Description Brown CLAY		
<b>Depth</b> 0.40			
<b>Type</b> B			
<b>Test Performed</b> Wet	Uniformity Coefficient not applicable.		

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<b>Laboratory - Particle Size Plot</b> <b>Soil Mechanics</b>	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/11

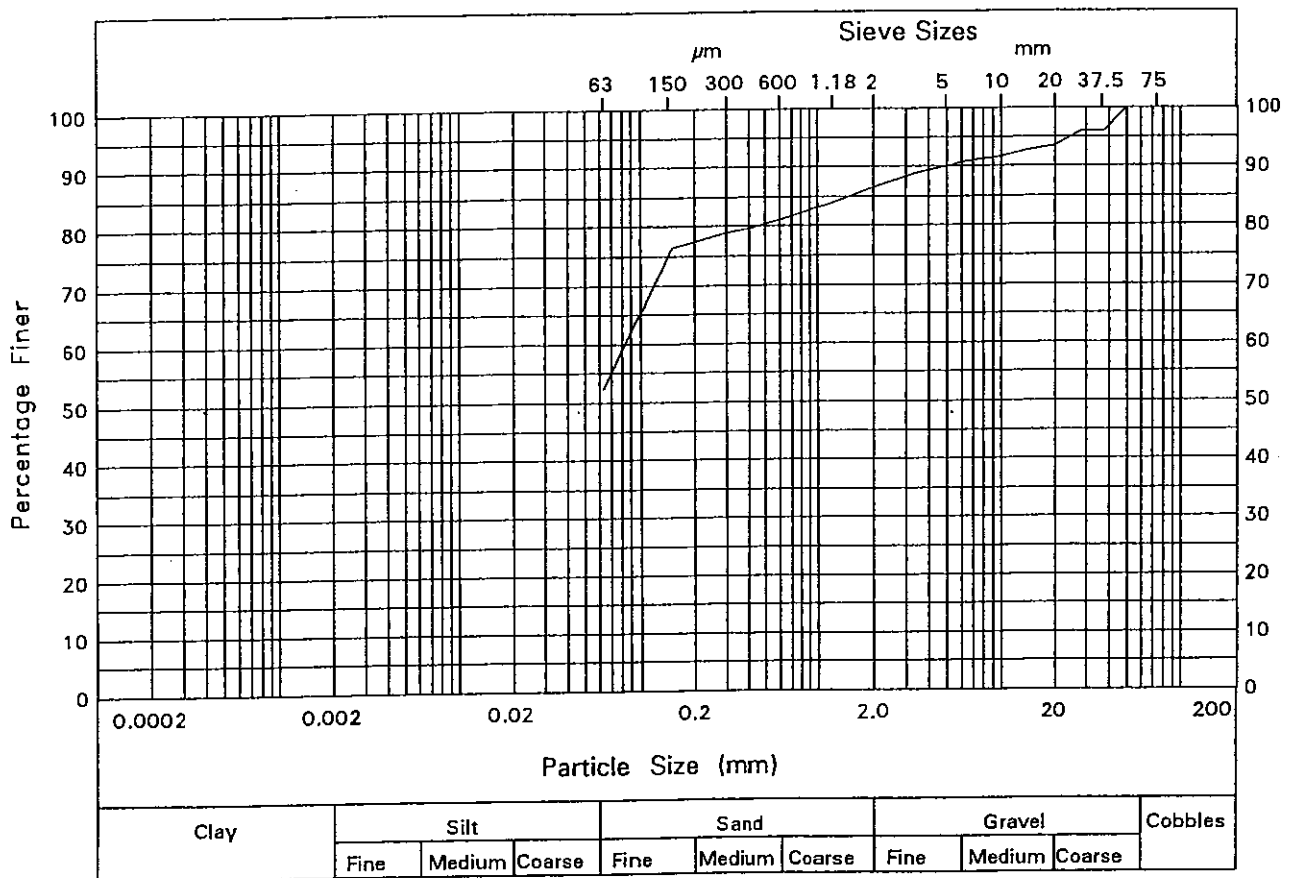


Particle Size	% Passing	Particle Size	% Passing
28 mm	100	212 μm	87
20 mm	98	150 μm	87
14 mm	97	63 μm	53
10 mm	96		
6.3 mm	95		
5 mm	94		
3.35 mm	94		
2 mm	93		
1.18 mm	92		
600 μm	90		
425 μm	89		
300 μm	89		
<b>Hole</b> TP17	<b>Description</b> Brown gravelly CLAY		
<b>Depth</b> 0.30			
<b>Type</b> B			
<b>Test Performed</b> Wet	<b>Uniformity Coefficient not applicable.</b>		

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<b>Laboratory - Particle Size Plot</b> 	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/12

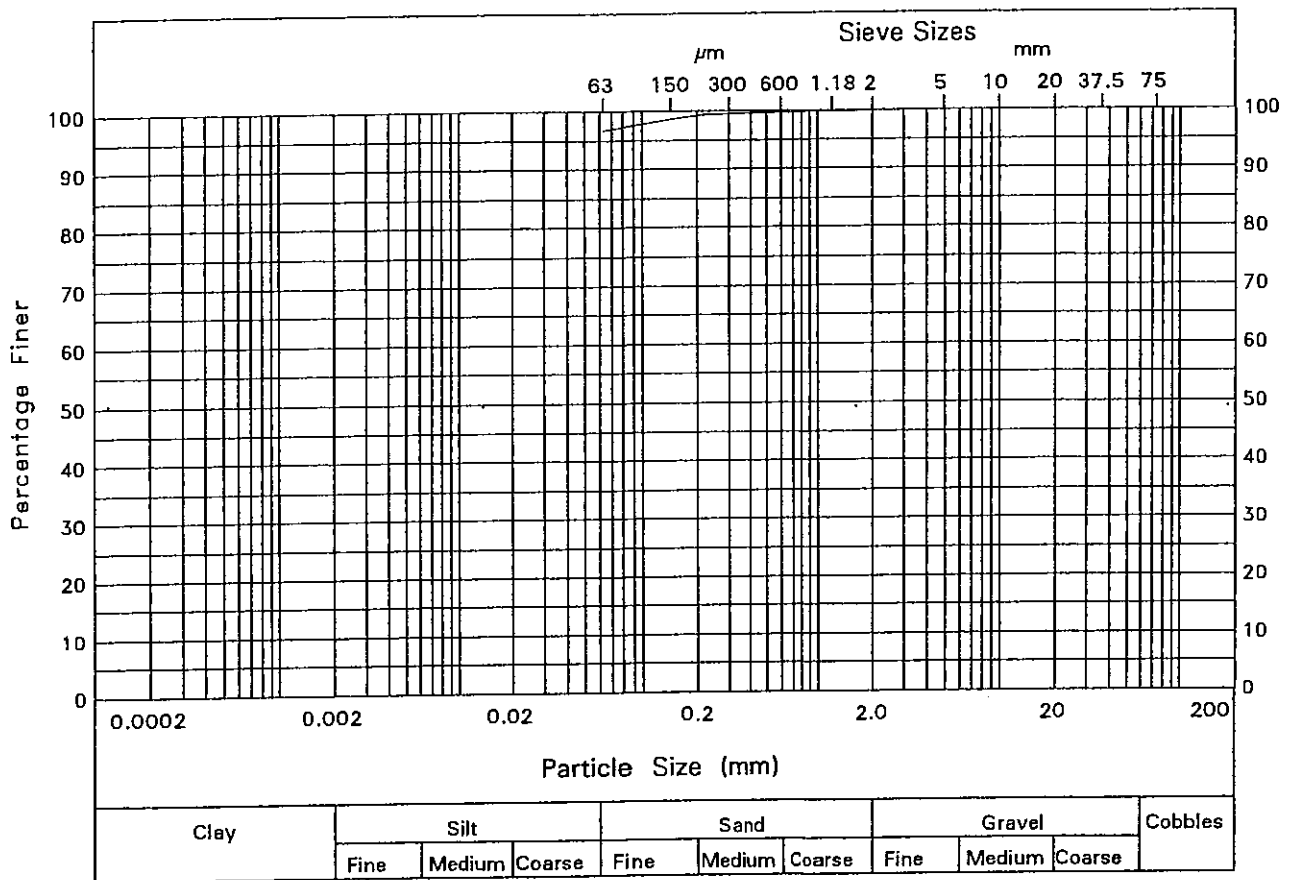




Particle Size	% Passing	Particle Size	% Passing
50 mm	100	425 μm	80
37.5 mm	96	300 μm	79
28 mm	96	212 μm	78
20 mm	93	150 μm	76
14 mm	93	63 μm	52
10 mm	92		
6.3 mm	91		
5 mm	90		
3.35 mm	89		
2 mm	87		
1.18 mm	84		
600 μm	81		
<b>Hole</b> TP19			
<b>Depth</b> 0.30			
<b>Type</b> B			
<b>Test Performed</b> Wet	Uniformity Coefficient not applicable.		

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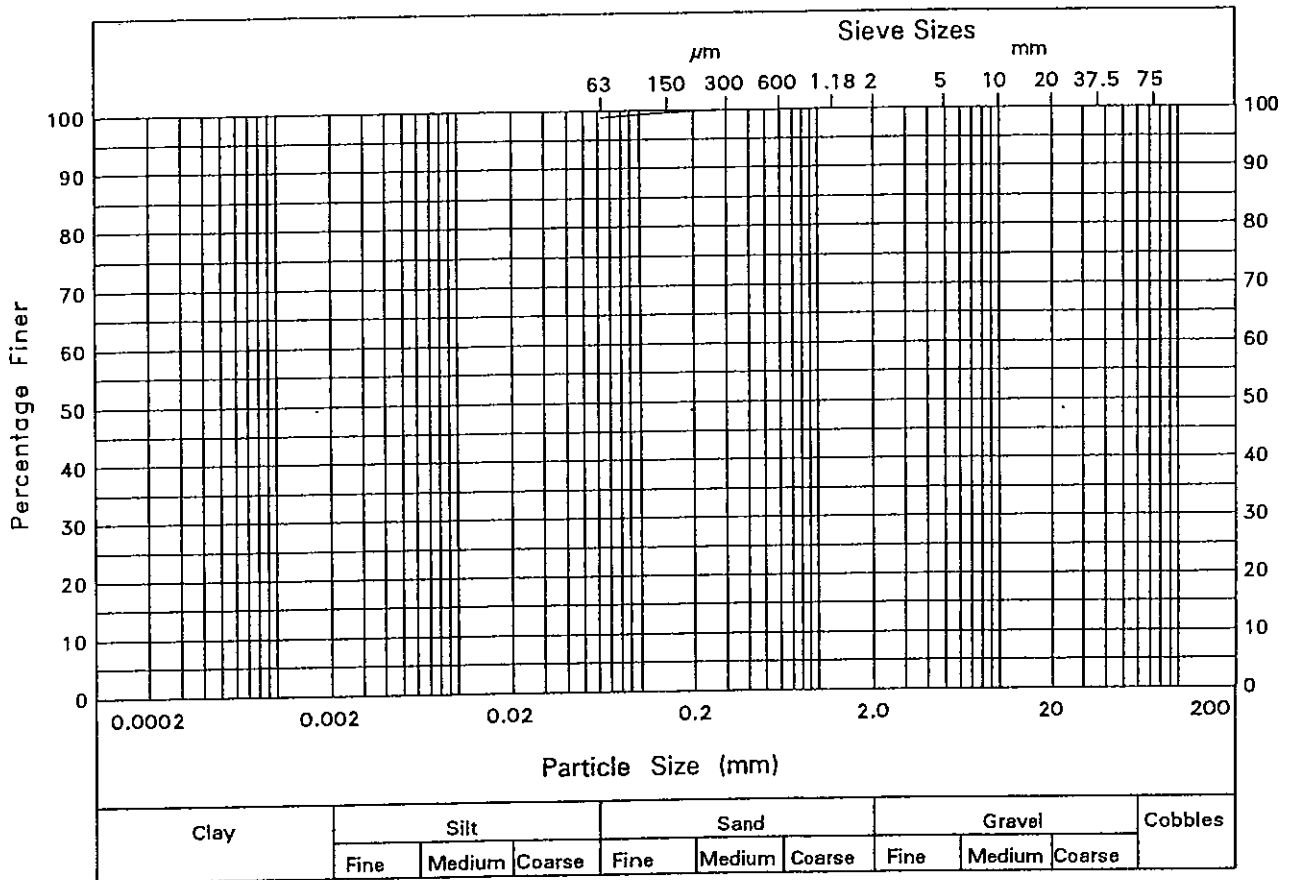
<b>Laboratory - Particle Size Plot</b> 	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/13



Particle Size	% Passing	Particle Size	% Passing
5 mm	100		
3.35 mm	100		
2 mm	100		
1.18 mm	100		
600 μm	100		
425 μm	100		
300 μm	99		
212 μm	99		
150 μm	99		
63 μm	97		
<b>Hole</b> TP1	<b>Description</b> Brown CLAY		
<b>Depth</b> 0.50			
<b>Type</b> B			
<b>Test Performed</b> Wet	<b>Uniformity Coefficient not applicable.</b>		

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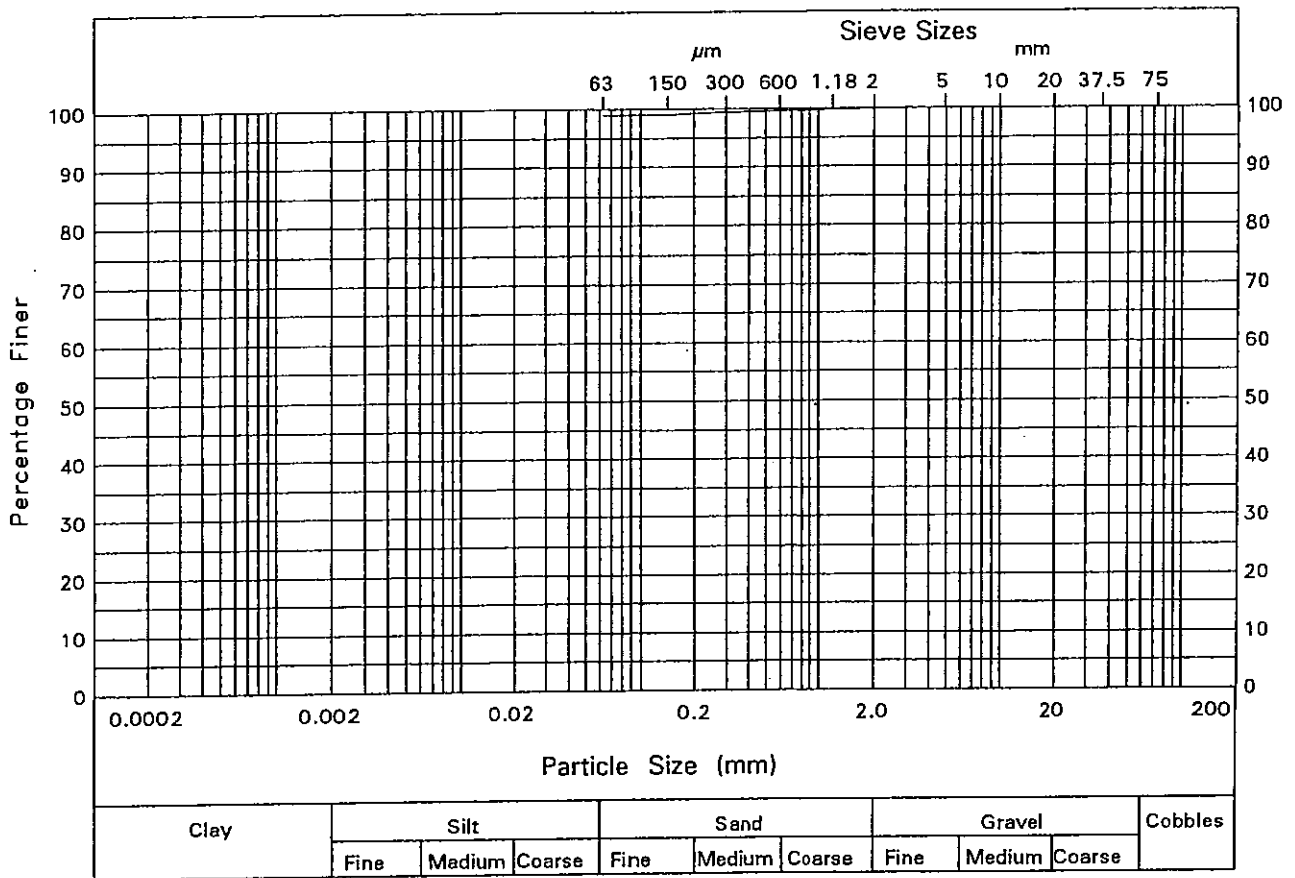
<b>Laboratory - Particle Size Plot</b> 	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/4



Particle Size	% Passing	Particle Size	% Passing
3.35 mm	100		
2 mm	100		
1.18 mm	100		
600 $\mu\text{m}$	100		
425 $\mu\text{m}$	100		
300 $\mu\text{m}$	100		
212 $\mu\text{m}$	100		
150 $\mu\text{m}$	100		
63 $\mu\text{m}$	99		
<b>Hole</b> TP21	Description Brown CLAY		
<b>Depth</b> 1.00			
<b>Type</b> B			
<b>Test Performed</b> Wet	Uniformity Coefficient not applicable.		

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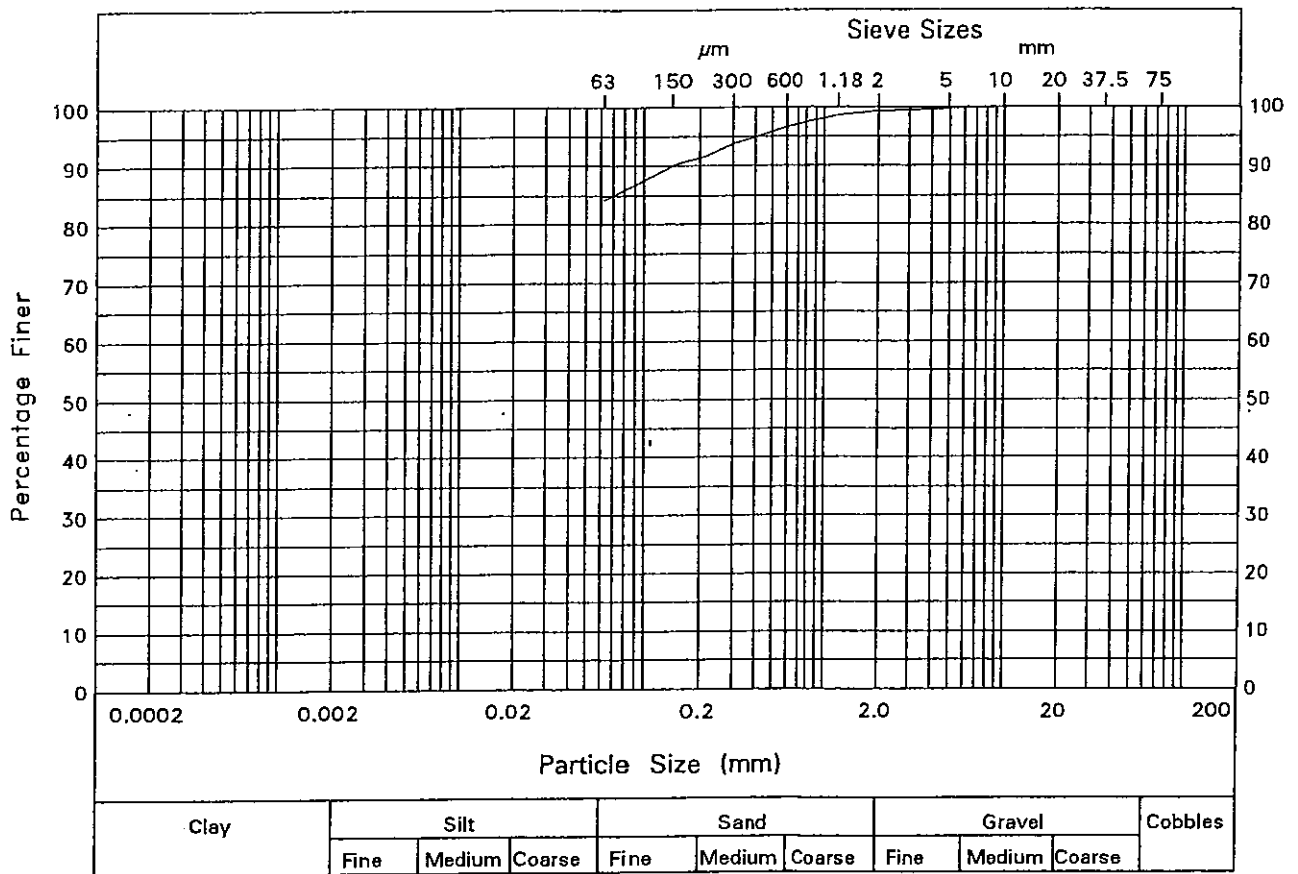
<b>Laboratory - Particle Size Plot</b> 	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/14



Particle Size	% Passing	Particle Size	% Passing
5 mm	100		
3.35 mm	100		
2 mm	100		
1.18 mm	100		
600 μm	100		
425 μm	99		
300 μm	99		
212 μm	99		
150 μm	99		
63 μm	99		
<b>Hole</b> TP24	Description Brown CLAY		
<b>Depth</b> 0.40			
<b>Type</b> B			
<b>Test Performed</b> Wet	Uniformity Coefficient not applicable.		


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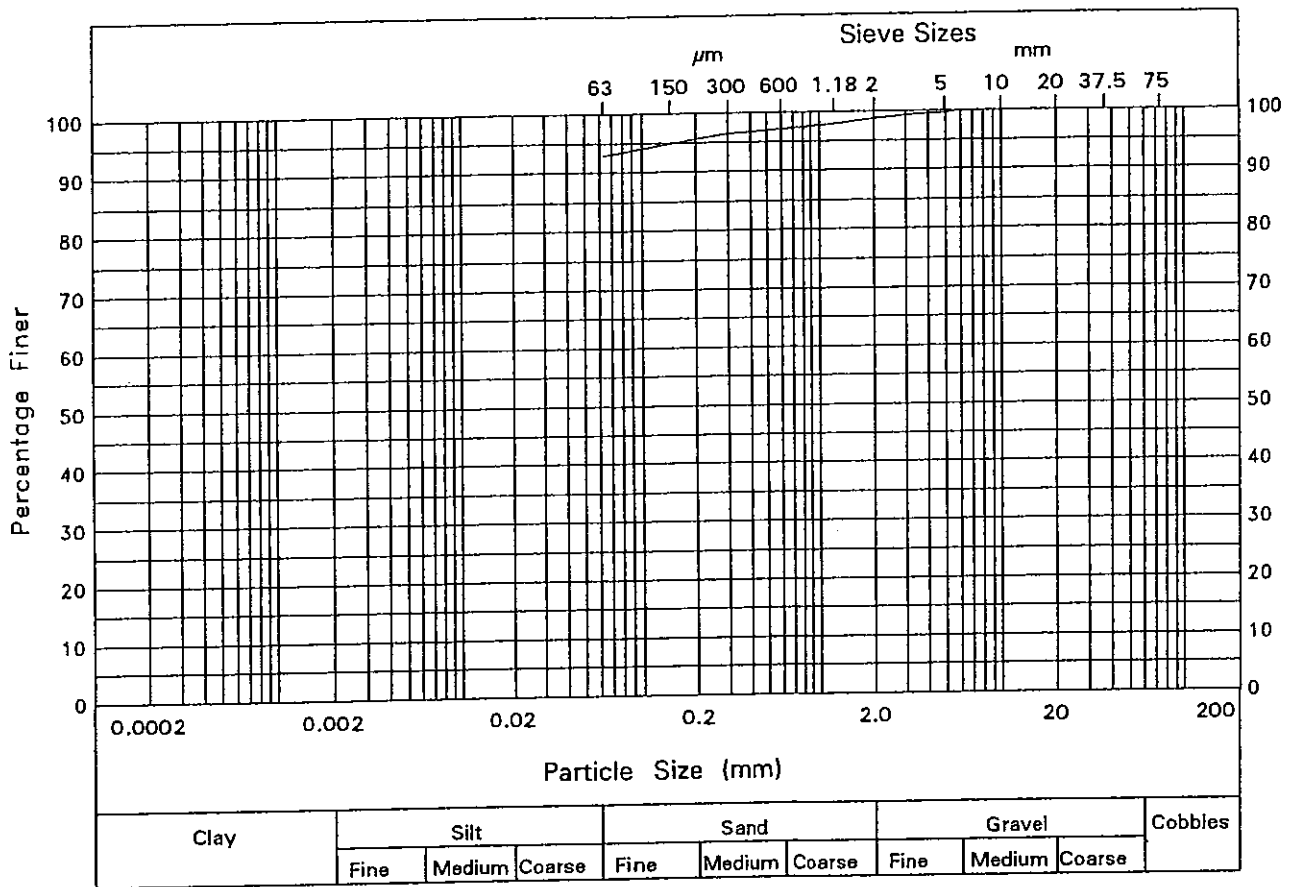
<b>Laboratory - Particle Size Plot</b> 	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/15



Particle Size	% Passing	Particle Size	% Passing
10 mm	100		
6.3 mm	100		
5 mm	100		
3.35 mm	99		
2 mm	99		
1.18 mm	99		
600 μm	97		
425 μm	95		
300 μm	94		
212 μm	92		
150 μm	90		
63 μm	84		
<b>Hole</b> TP25	<b>Description</b> Brown CLAY		
<b>Depth</b> 0.60			
<b>Type</b> B			
<b>Test Performed</b> Wet	<b>Uniformity Coefficient not applicable.</b>		

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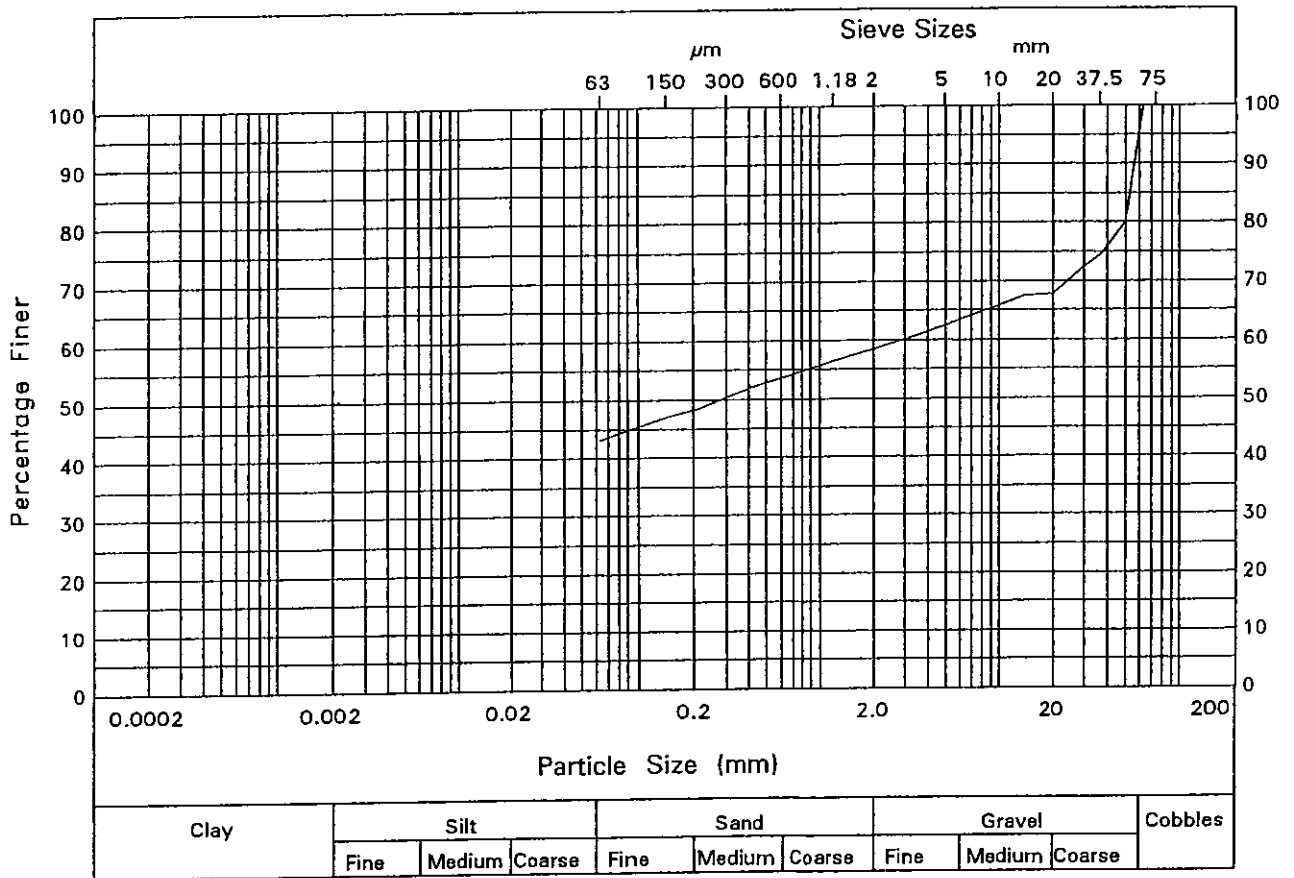
<b>Laboratory - Particle Size Plot</b>  Soil Mechanics	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/16



Particle Size	% Passing	Particle Size	% Passing
6.3 mm	100		
5 mm	100		
3.35 mm	99		
2 mm	99		
1.18 mm	98		
600 μm	97		
425 μm	97		
300 μm	96		
212 μm	96		
150 μm	95		
63 μm	93		
<b>Hole</b> TP26	Description Orange brown CLAY		
<b>Depth</b> 0.50			
<b>Type</b> B			
<b>Test Performed</b> Wet	Uniformity Coefficient not applicable.		

Form 25/4

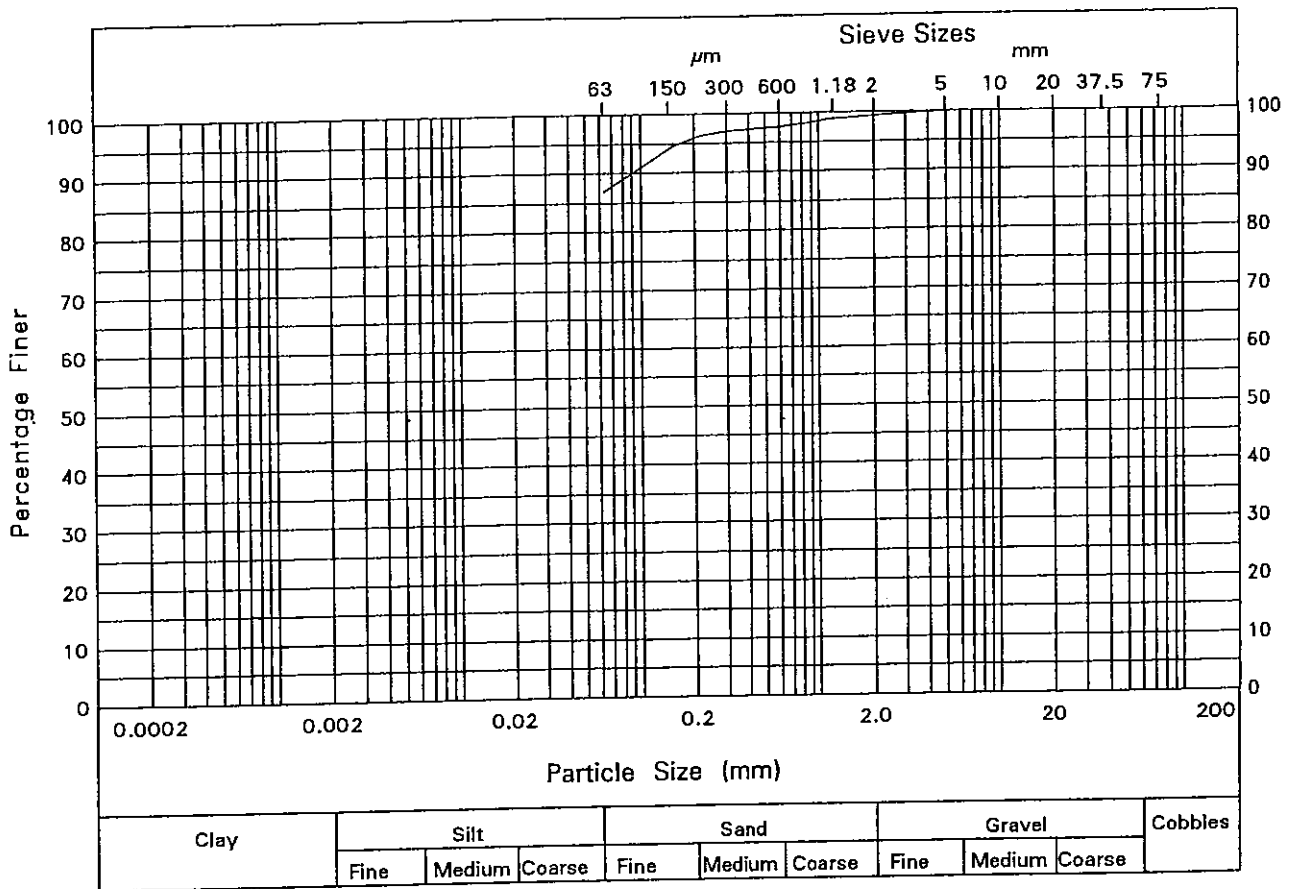
<b>Laboratory - Particle Size Plot</b> 	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/17



Particle Size	% Passing	Particle Size	% Passing
63 mm	100	600 μm	54
50 mm	80	425 μm	52
37.5 mm	75	300 μm	50
28 mm	72	212 μm	48
20 mm	68	150 μm	47
14 mm	67	63 μm	43
10 mm	66		
6.3 mm	64		
5 mm	62		
3.35 mm	61		
2 mm	58		
1.18 mm	56		
<b>Hole</b> TP27	<b>Description</b> Brown sandy gravelly CLAY		
<b>Depth</b> 0.50			
<b>Type</b> B			
<b>Test Performed</b> Wet	<b>Uniformity Coefficient not applicable.</b>		

Form 25/4

<b>Laboratory - Particle Size Plot</b>	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
<b>Φ Soil Mechanics</b>		<b>Sheet</b> L2/18

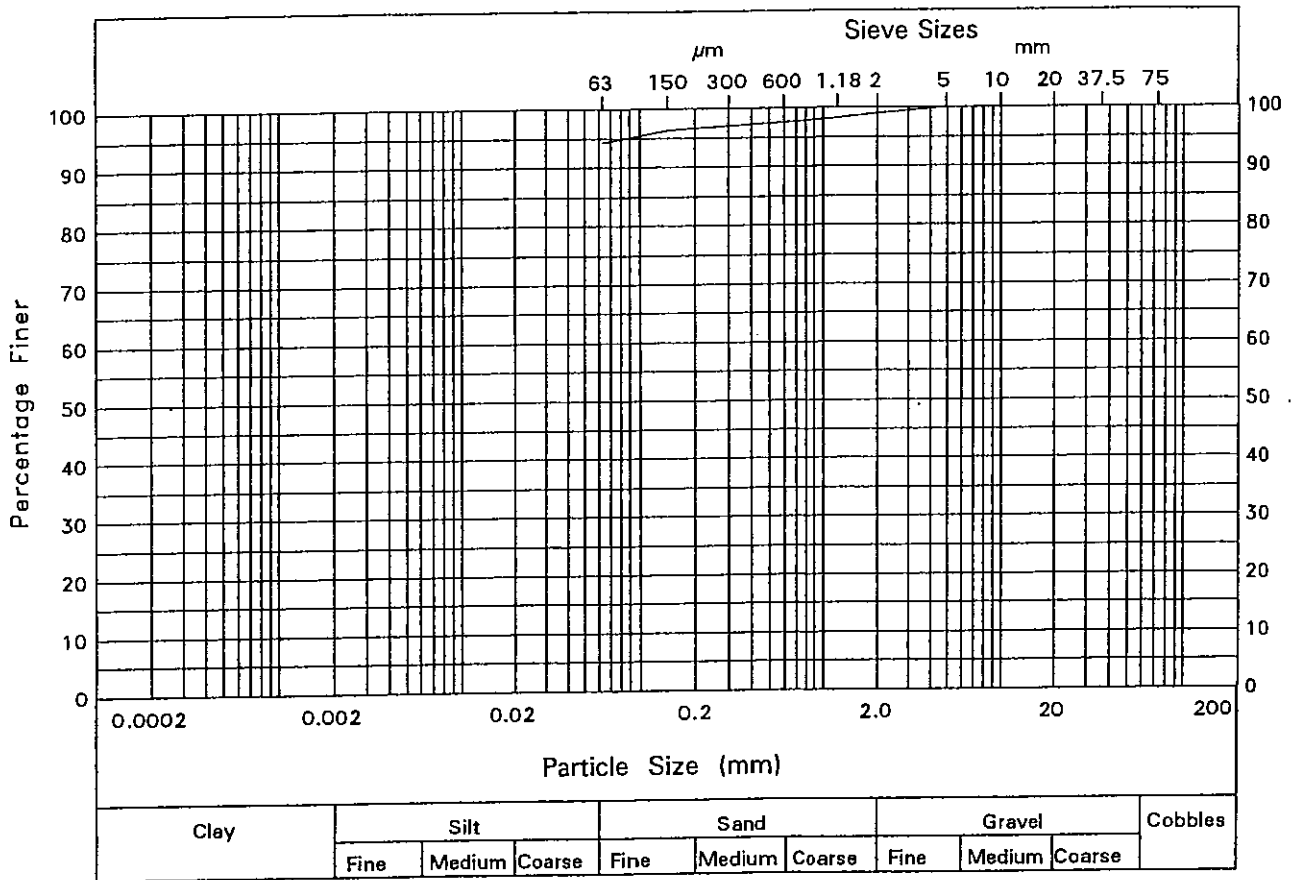


Particle Size	% Passing	Particle Size	% Passing
6.3 mm	100		
5 mm	100		
3.35 mm	100		
2 mm	99		
1.18 mm	99		
600 μm	98		
425 μm	97		
300 μm	97		
212 μm	96		
150 μm	94		
63 μm	87		
<b>Hole</b> TP30	<b>Description</b> *		
<b>Depth</b> 2.00			
<b>Type</b> B			
<b>Test Performed</b> Wet	Uniformity Coefficient not applicable.		

Form 25/4

<b>Laboratory - Particle Size Plot</b> 	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/19

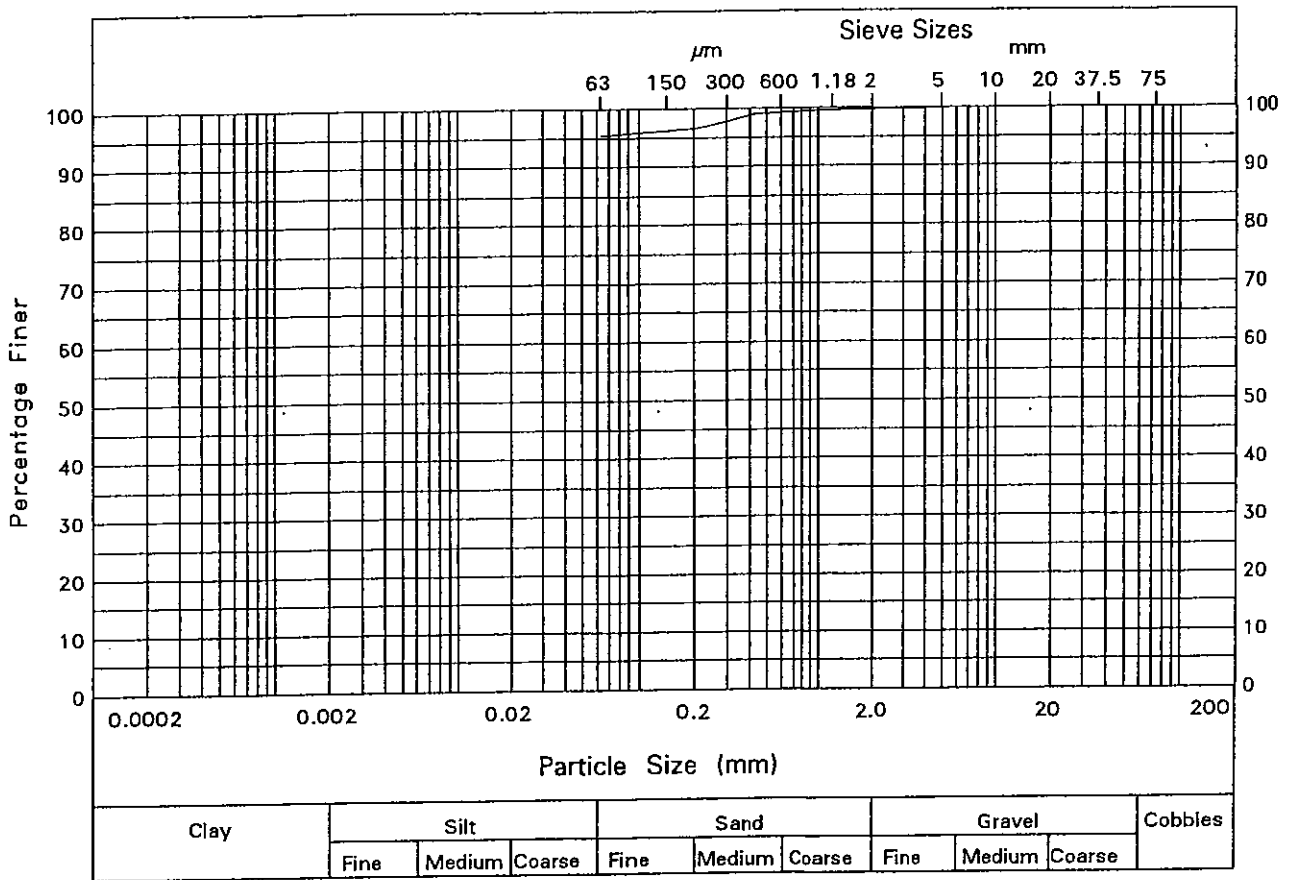




Particle Size	% Passing	Particle Size	% Passing
6.3 mm	100		
5 mm	100		
3.35 mm	100		
2 mm	99		
1.18 mm	98		
600 μm	98		
425 μm	97		
300 μm	97		
212 μm	97		
150 μm	96		
63 μm	94		
<b>Hole</b> TP31	<b>Description</b> Brown grey gravelly CLAY		
<b>Depth</b> 0.40			
<b>Type</b> B			
<b>Test Performed</b> Wet	<b>Uniformity Coefficient not applicable.</b>		

Form 25/4

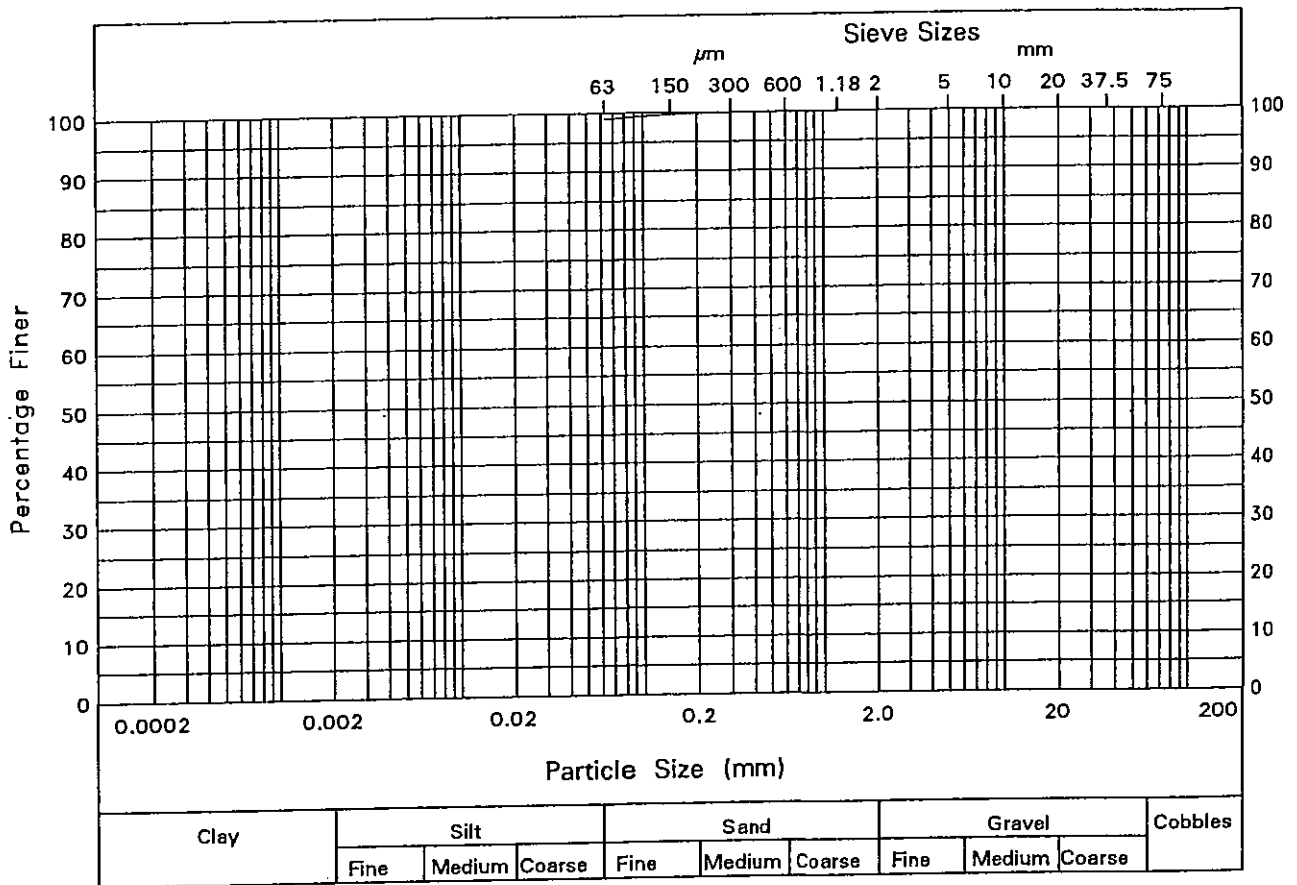
<b>Laboratory - Particle Size Plot</b>  	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/20



Particle Size	% Passing	Particle Size	% Passing
6.3 mm	100		
5 mm	100		
3.35 mm	100		
2 mm	100		
1.18 mm	100		
600 μm	99		
425 μm	99		
300 μm	98		
212 μm	97		
150 μm	96		
63 μm	95		
<b>Hole</b> TP34	Description Brown grey CLAY		
<b>Depth</b> 1.00			
<b>Type</b> B			
<b>Test Performed</b> Wet	Uniformity Coefficient not applicable.		

Form 25/4

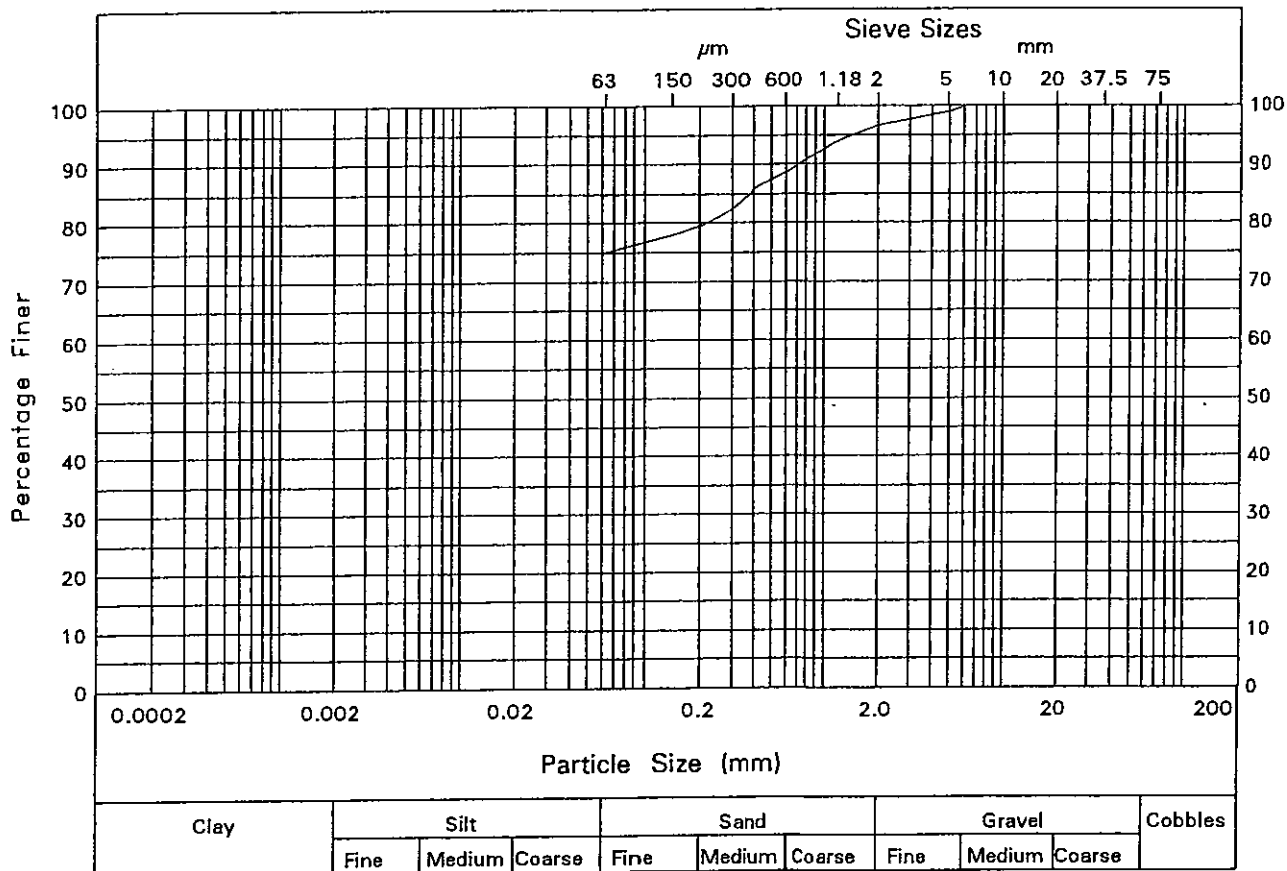
<b>Laboratory - Particle Size Plot</b> 	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/21



Particle Size	% Passing	Particle Size	% Passing
6.3 mm	100		
5 mm	100		
3.35 mm	100		
2 mm	100		
1.18 mm	100		
600 μm	100		
425 μm	100		
300 μm	100		
212 μm	100		
150 μm	100		
63 μm	99		
<b>Hole</b> TP37	<b>Description</b> Brown CLAY		
<b>Depth</b> 0.80			
<b>Type</b> B			
<b>Test Performed</b> Wet	<b>Uniformity Coefficient not applicable.</b>		

Form 25/4

<b>Laboratory - Particle Size Plot</b> 	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/22



Particle Size	% Passing	Particle Size	% Passing
6.3 mm	100		
5 mm	99		
3.35 mm	98		
2 mm	97		
1.18 mm	94		
600 μm	89		
425 μm	86		
300 μm	82		
212 μm	80		
150 μm	78		
63 μm	75		
<b>Hole</b> TP38	<b>Description</b> Brown CLAY		
<b>Depth</b> 0.40			
<b>Type</b> B			
<b>Test Performed</b> Wet	<b>Uniformity Coefficient not applicable.</b>		

Form 25/4

Laboratory - Particle Size Plot

Project

RAF St Athens  
Apex Drilling Services

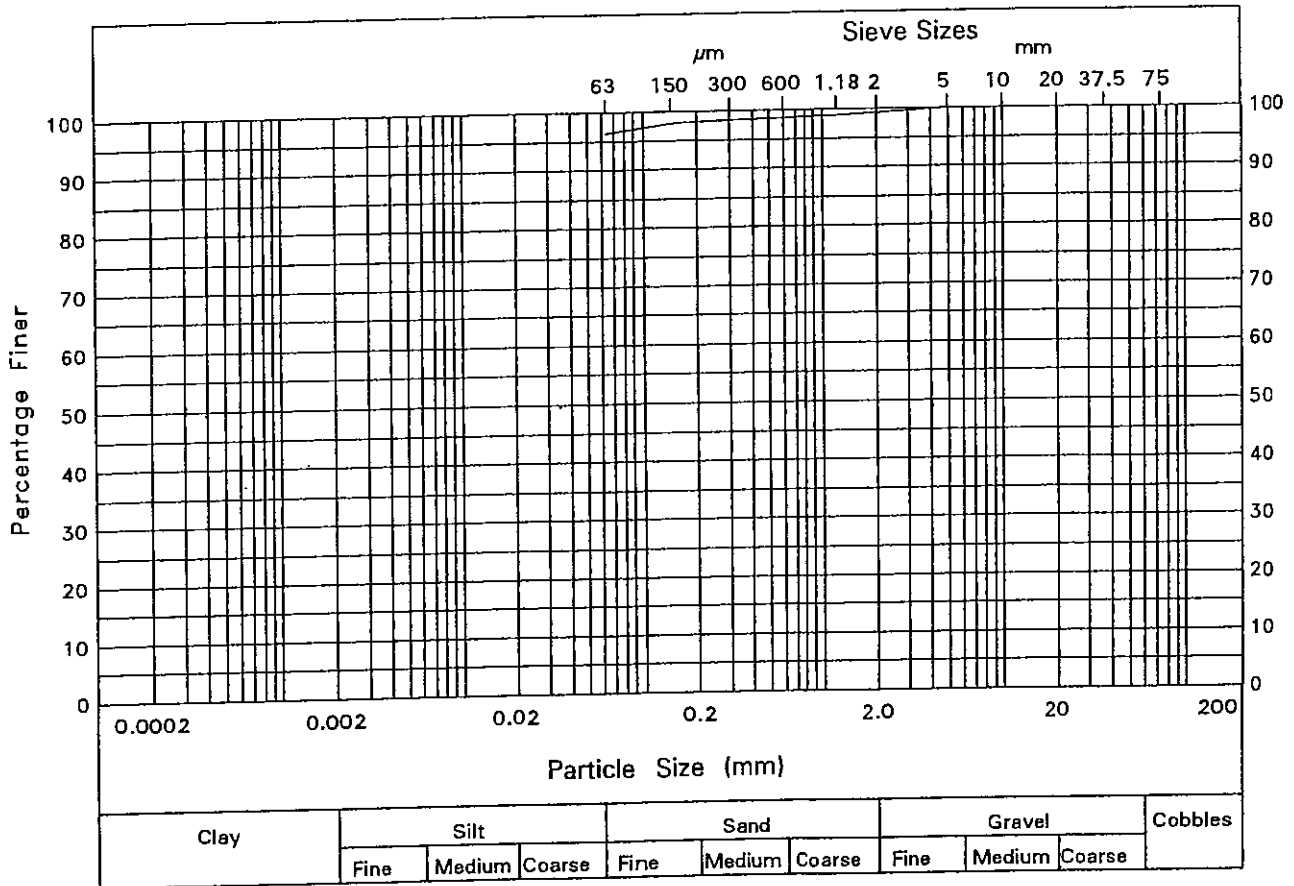
Contract

R3058

 Soil Mechanics

Sheet

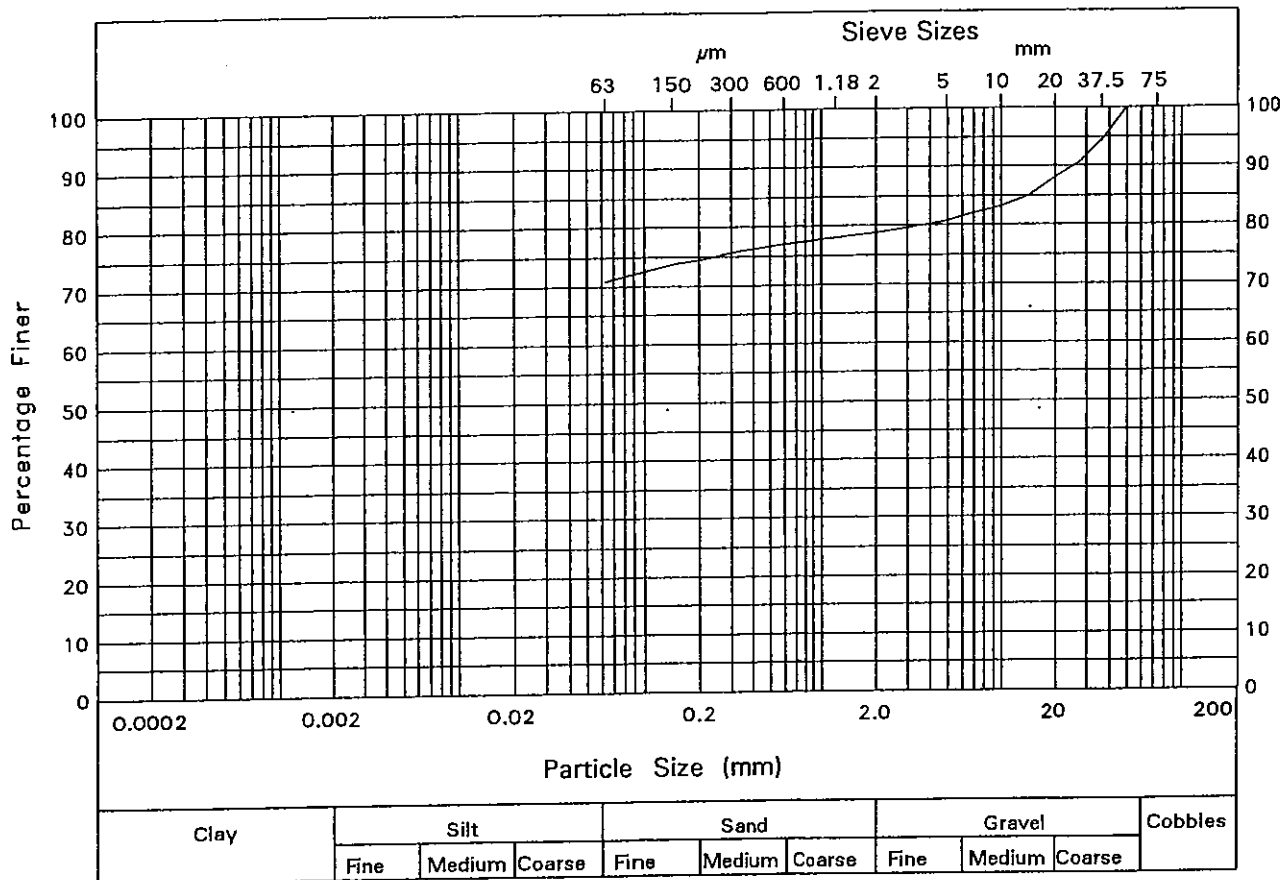
L2/23



Particle Size	% Passing	Particle Size	% Passing
5 mm	100		
3.35 mm	100		
2 mm	99		
1.18 mm	99		
600 $\mu\text{m}$	99		
425 $\mu\text{m}$	98		
300 $\mu\text{m}$	98		
212 $\mu\text{m}$	98		
150 $\mu\text{m}$	98		
63 $\mu\text{m}$	96		
<b>Hole</b> TP40	<b>Description</b> Brown CLAY		
<b>Depth</b> 0.40			
<b>Type</b> B			
<b>Test Performed</b> Wet	<b>Uniformity Coefficient not applicable.</b>		

Form 25/4

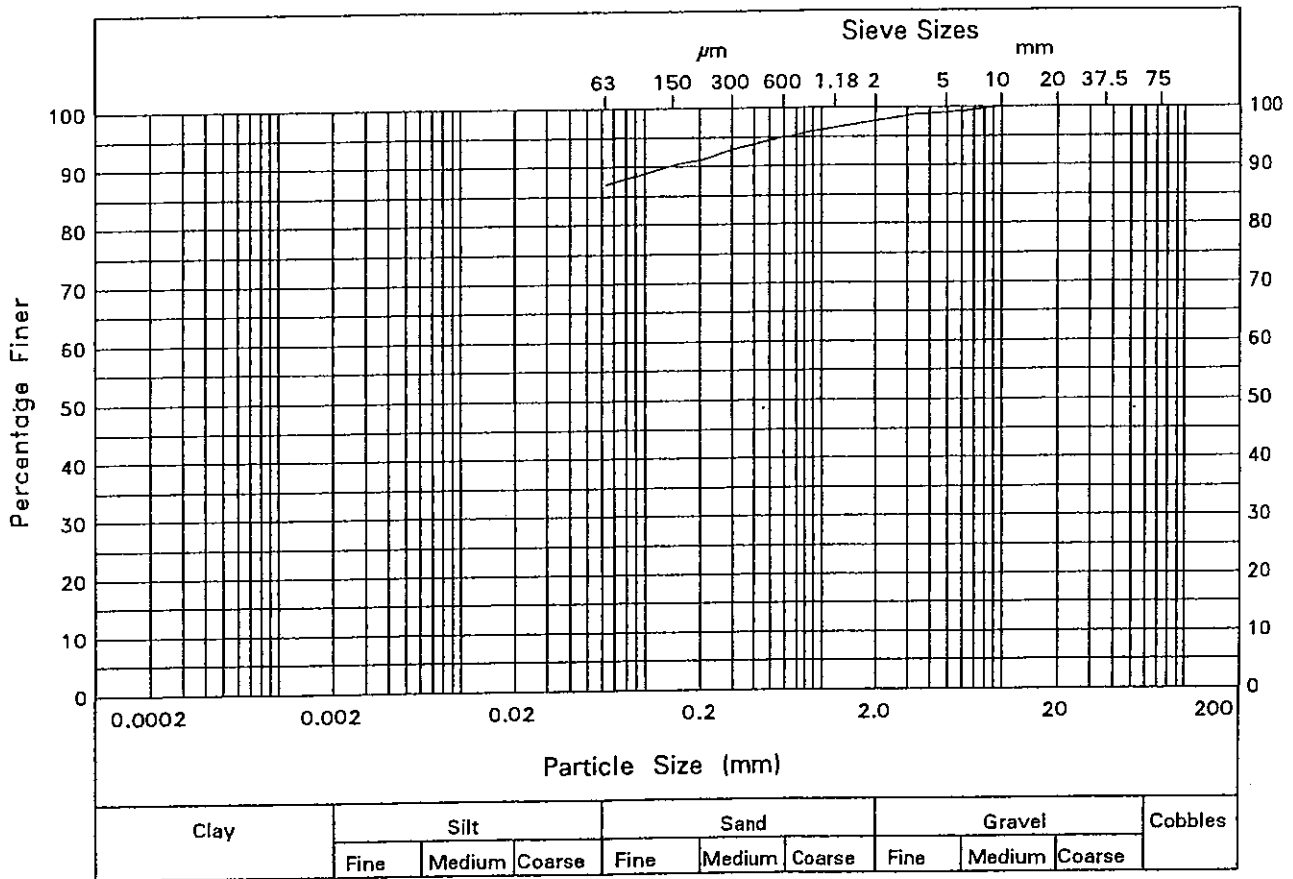
<b>Laboratory - Particle Size Plot</b> 	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/24



Particle Size	% Passing	Particle Size	% Passing
50 mm	100	425 $\mu$ m	76
37.5 mm	95	300 $\mu$ m	76
28 mm	91	212 $\mu$ m	75
20 mm	88	150 $\mu$ m	74
14 mm	85	63 $\mu$ m	71
10 mm	83		
6.3 mm	82		
5 mm	81		
3.35 mm	80		
2 mm	79		
1.18 mm	78		
600 $\mu$ m	77		
<b>Hole</b> TP42	<b>Description</b> Brown gravelly CLAY		
<b>Depth</b> 0.40			
<b>Type</b> 8			
<b>Test Performed</b> Wet	Uniformity Coefficient not applicable.		

Form 25/4

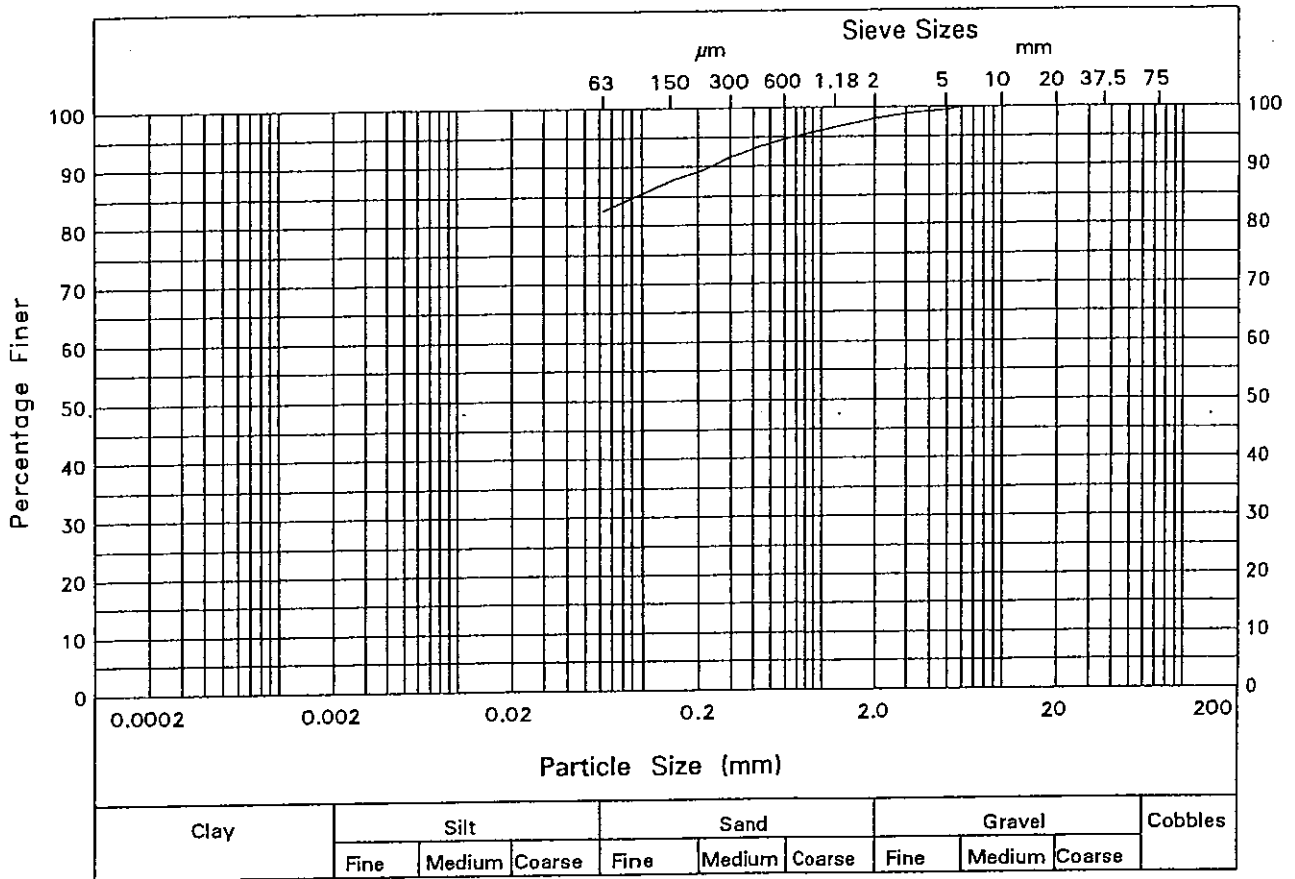
<b>Laboratory - Particle Size Plot</b> 	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/25



Particle Size	% Passing	Particle Size	% Passing
10 mm	100		
6.3 mm	99		
5 mm	99		
3.35 mm	99		
2 mm	98		
1.18 mm	96		
600 μm	95		
425 μm	94		
300 μm	93		
212 μm	91		
150 μm	90		
63 μm	87		
<b>Hole</b> TP44	Description Brown CLAY		
<b>Depth</b> 0.30			
<b>Type</b> B			
<b>Test Performed</b> Wet	Uniformity Coefficient not applicable.		

Form 25/4

<b>Laboratory - Particle Size Plot</b> 	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/26



Particle Size	% Passing	Particle Size	% Passing
6.3 mm	100		
5 mm	99		
3.35 mm	99		
2 mm	98		
1.18 mm	96		
600 $\mu\text{m}$	95		
425 $\mu\text{m}$	93		
300 $\mu\text{m}$	92		
212 $\mu\text{m}$	89		
150 $\mu\text{m}$	88		
63 $\mu\text{m}$	83		
<b>Hole</b> TP45	<b>Description</b> Brown CLAY		
<b>Depth</b> 0.20			
<b>Type</b> B			
<b>Test Performed</b> Wet	<b>Uniformity Coefficient not applicable.</b>		

Form 25/4

<b>Laboratory - Particle Size Plot</b>	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058
		<b>Sheet</b> L2/27
<b>Soil Mechanics</b>		



Samples				CBR							Compaction				
Hole	Depth	Type	Description	Top	Base	Top w%	Base w%	Surch kg.	Nat w%	$\gamma_b$ 3 Mg/m	Type	Opt w%	$\gamma_d$		$\rho_s$
													Max	At Nat w	
CGCTP5	0.40	B	Brown gravelly CLAY								2.5kg	20	1.65		2.65
TP5	0.20	B	Brown CLAY						50		2.5kg	27	1.38		2.65
TP9	0.10	B	Brown CLAY						50		2.5kg	23	1.32		2.65
TP11	0.30	B	Brown CLAY with Mudstone								2.5kg	24	1.54		2.65
TP13	0.40	B	Brown CLAY						40		2.5kg	25	1.42		2.65
TP16	0.40	B	Brown gravelly CLAY								2.5kg	29	1.33		2.65
TP21	1.00	B	Brown CLAY								2.5kg	25	1.40		2.65
TP25	0.60	B	Brown CLAY						39		2.5kg	23	1.49		2.65
TP27	0.50	B	Brown sandy gravelly CLAY								2.5kg	15	1.81		2.65
TP30	2.00	B	*						31		2.5kg	23	1.52		2.65
TP40	0.40	B	Brown CLAY						38		2.5kg	29	1.40		2.65
TP44	0.30	B	Brown CLAY								2.5kg	24	1.46		2.65

Remarks

Form 9/1


Laboratory - CBR/Compaction

Project

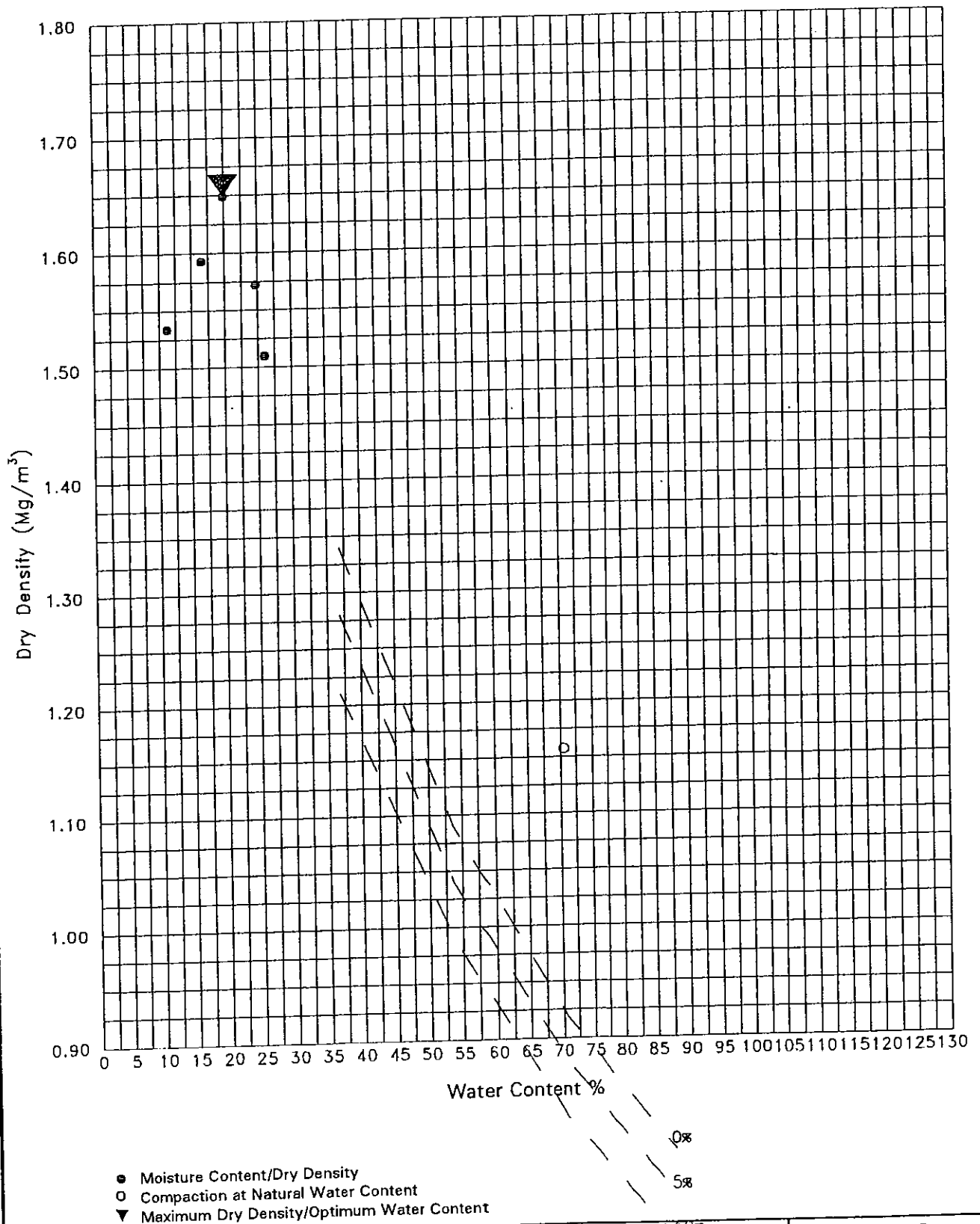
RAF St Athens  
Apex Drilling Services

Contract

R3058

 Soil Mechanics

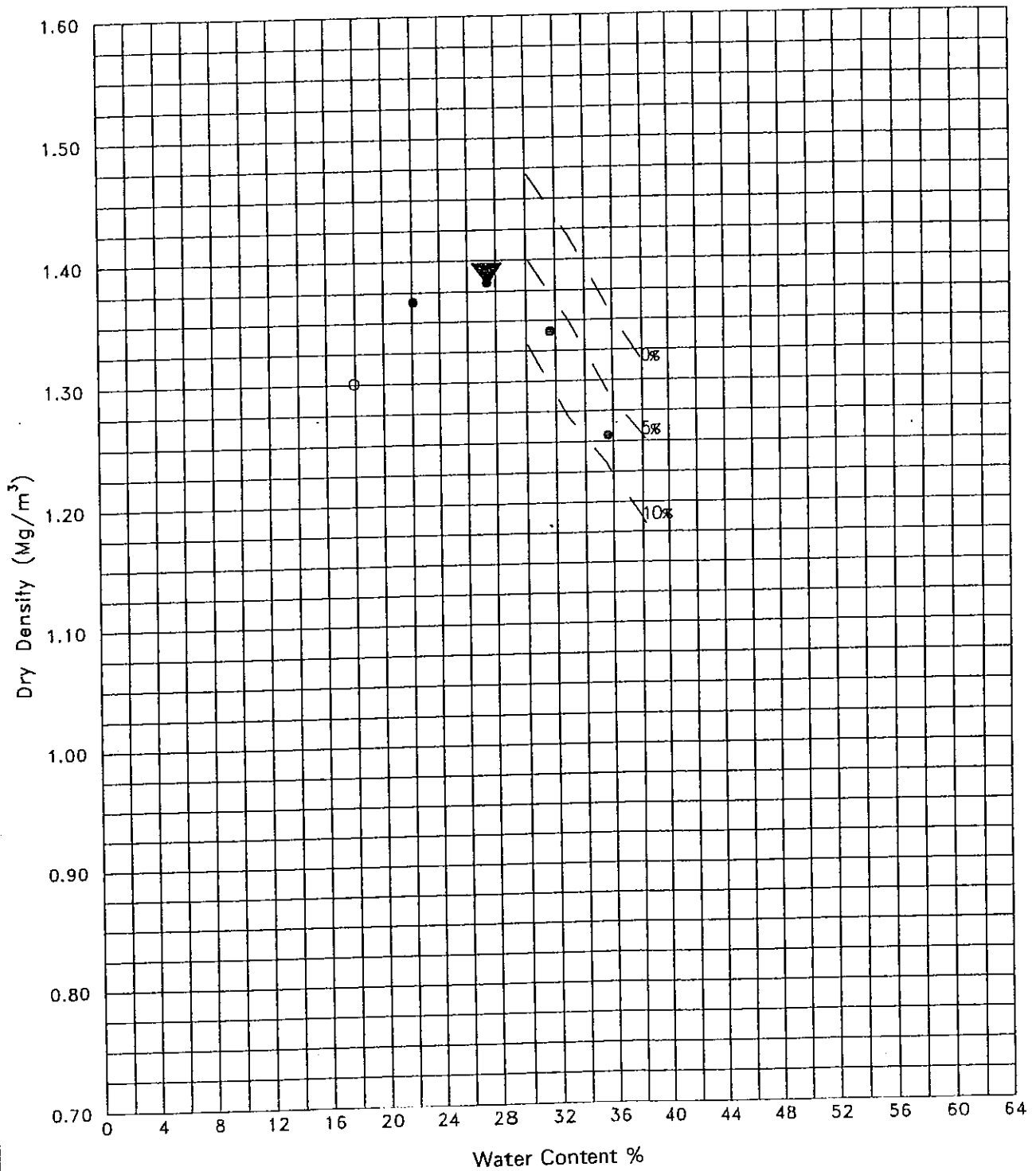
L3/1



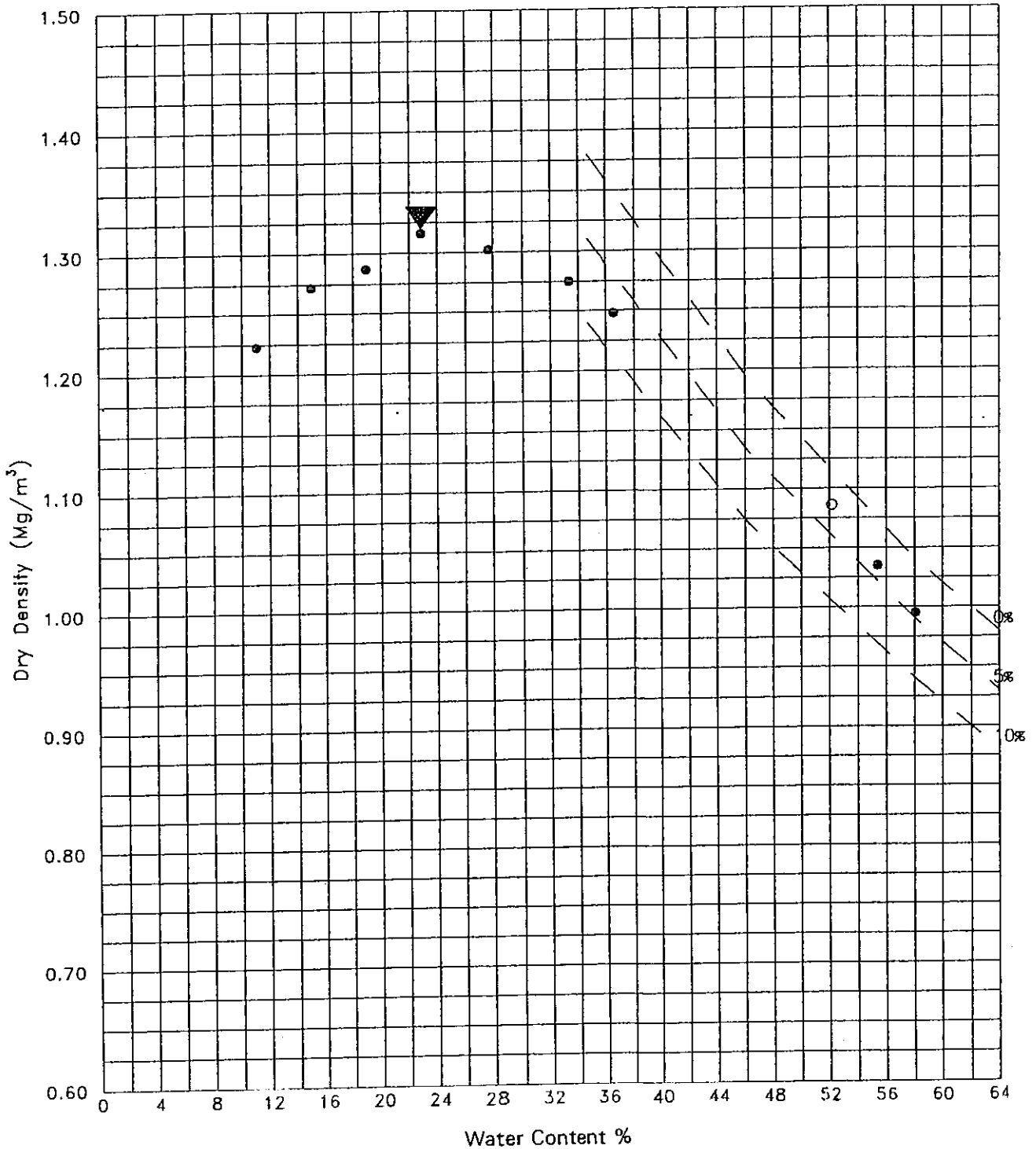
Type of Test/Mould	2.5Kg/CBR	Description Brown gravelly CLAY	Hole	CGCTP5
Particle Density Assumed	2.65 Mg/m <sup>3</sup>		Depth	0.40
Maximum Dry Density	1.65 Mg/m <sup>3</sup>		Type	B
Optimum Water Content	20 %		Form 54/0	
% retained 37.5mm sieve	4			
% retained 20mm sieve	8			

Remarks

Laboratory - Moisture Content/ Dry Density Relationship <b>Φ Soil Mechanics</b>	Project RAF St Athens Apex Drilling Services	Contract R3058 L3a/1
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Type of Test/Mould      2.5Kg/1Ltr Particle Density Assumed    2.65 Mg/m <sup>3</sup> Maximum Dry Density        1.38 Mg/m <sup>3</sup> Optimum Water Content       27 % % retained 37.5mm sieve    0 % retained 20mm sieve      0	Description  Brown CLAY	Hole    TP5 Depth   0.20 Type    B
Remarks		Form 54/0
Laboratory - Moisture Content/ Dry Density Relationship	Project RAF St Athens Apex Drilling Services	Contract R3058
		L3a/2

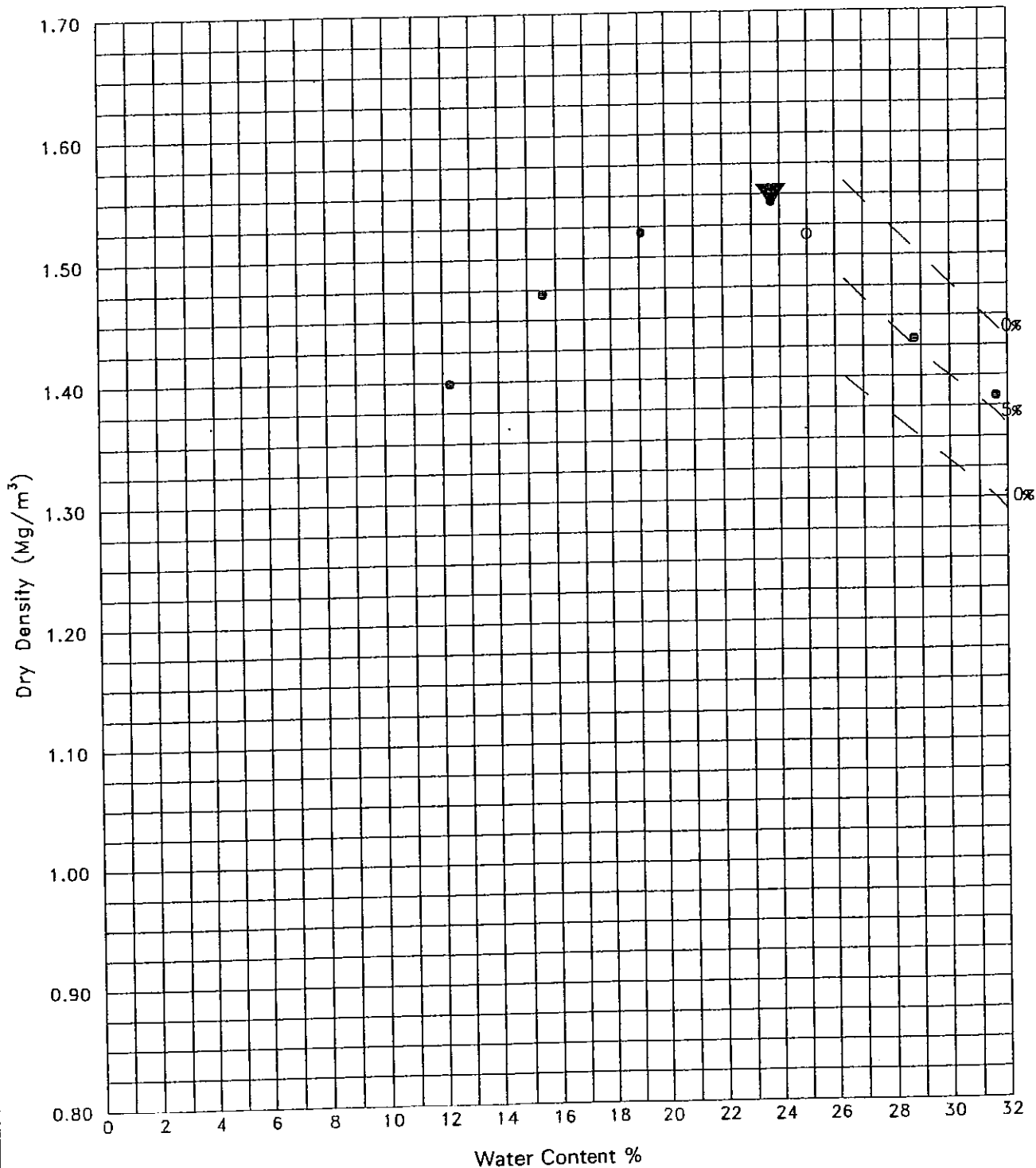


- Moisture Content/Dry Density
- Compaction at Natural Water Content
- ▼ Maximum Dry Density/Optimum Water Content

Type of Test/Mould	2.5Kg/1Ltr	Description Brown CLAY	Hole	TP9
Particle Density Assumed	2.65 Mg/m <sup>3</sup>		Depth	0.10
Maximum Dry Density	1.32 Mg/m <sup>3</sup>		Type	B
Optimum Water Content	23 %		Form 54/0	
% retained 37.5mm sieve	0			
% retained 20mm sieve	0			

Remarks

Laboratory - Moisture Content/ Dry Density Relationship 	Project RAF St Athens Apex Drilling Services	Contract	R3058
			L3a/3

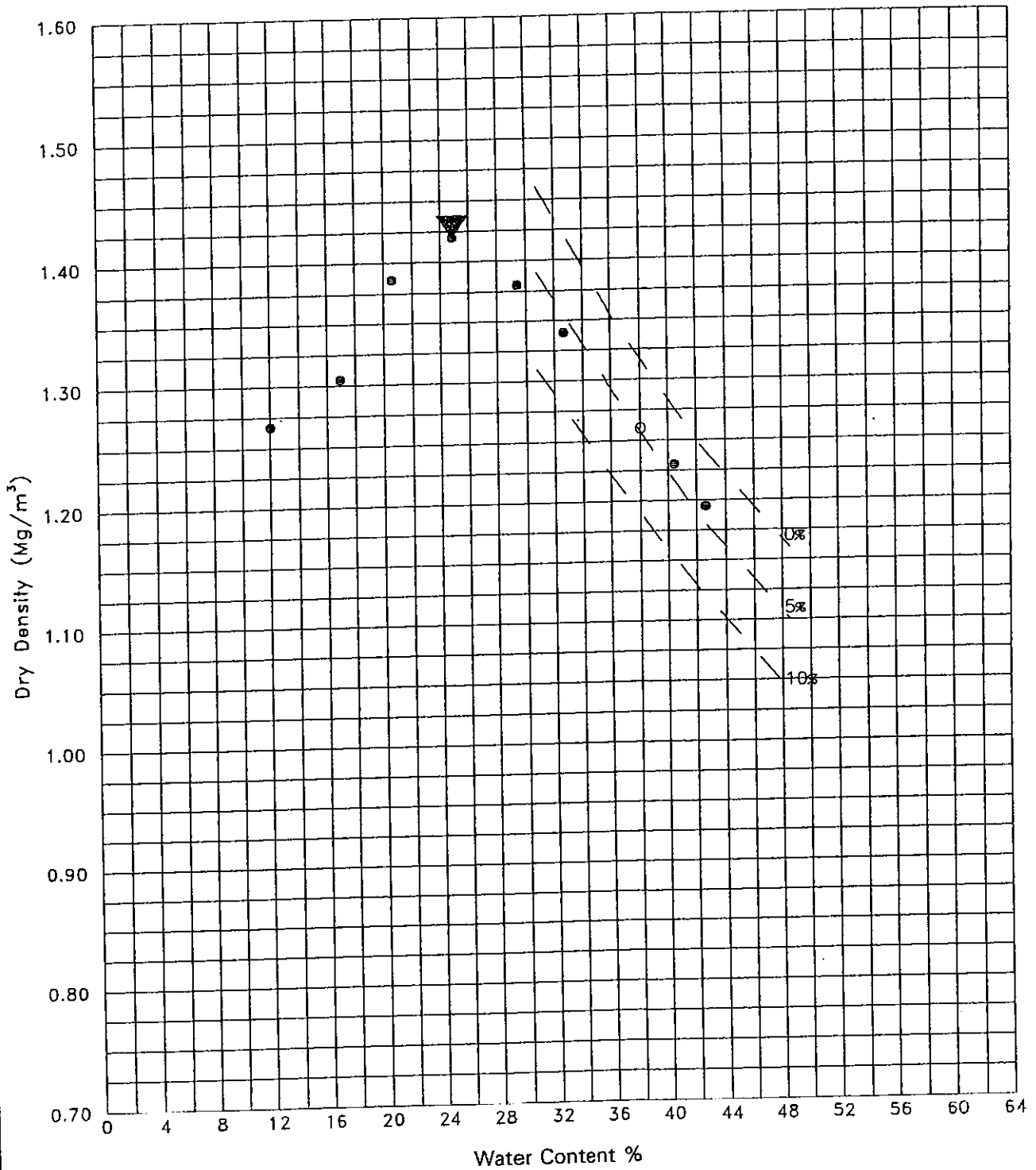


- Moisture Content/Dry Density
- Compaction at Natural Water Content
- ▼ Maximum Dry Density/Optimum Water Content

Type of Test/Mould	2.5Kg/1Ltr	Description Brown CLAY with Mudstone	Hole	TP11
Particle Density Assumed	2.65 Mg/m <sup>3</sup>		Depth	0.30
Maximum Dry Density	1.54 Mg/m <sup>3</sup>		Type	B
Optimum Water Content	24 %		Form 54/0	
% retained 37.5mm sieve	0			
% retained 20mm sieve	0			

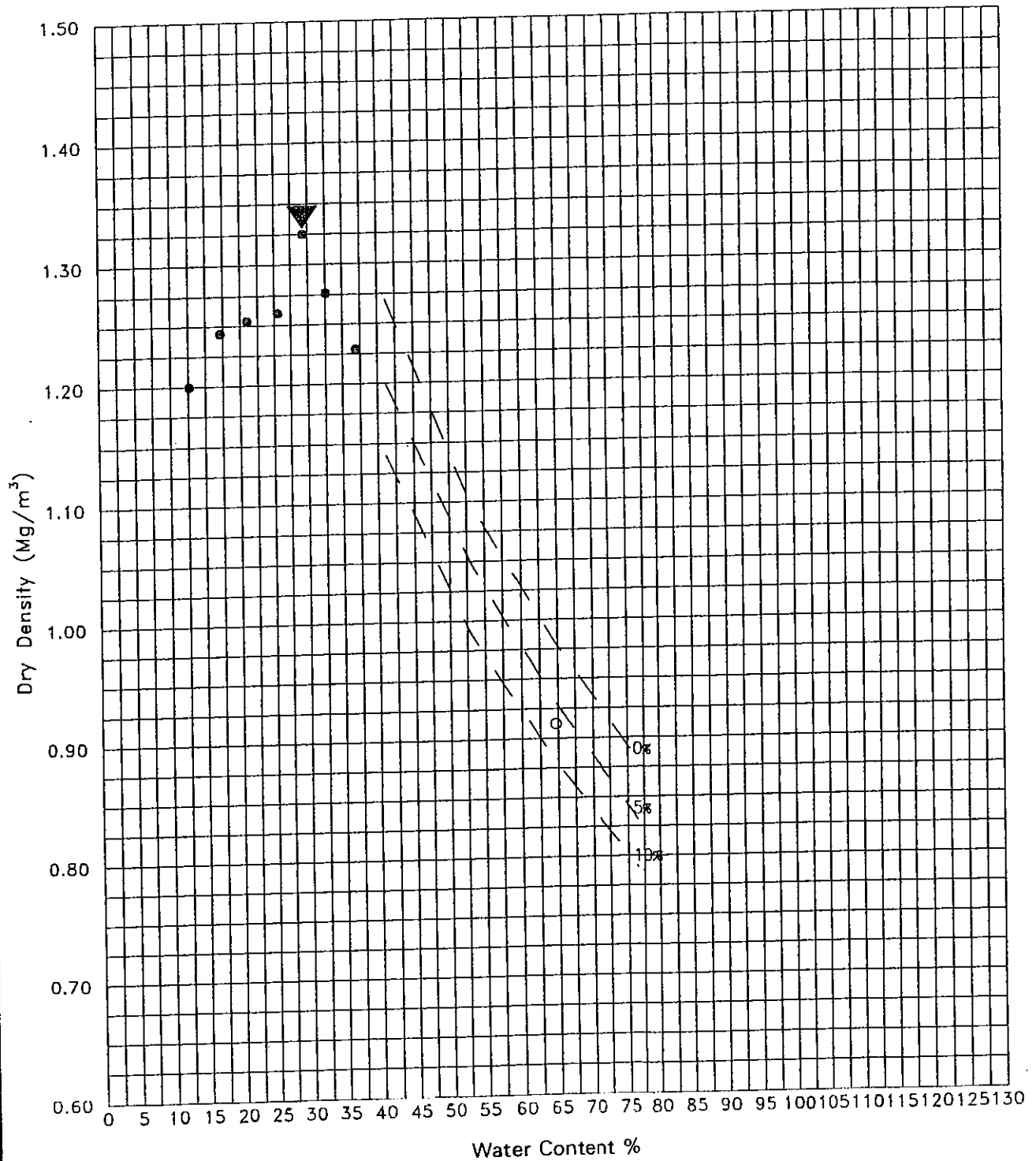
Remarks

Laboratory - Moisture Content/ Dry Density Relationship Soil Mechanics	Project RAF St Athens Apex Drilling Services	Contract	R3058
			L3a/4



- Moisture Content/Dry Density
- Compaction at Natural Water Content
- ▼ Maximum Dry Density/Optimum Water Content

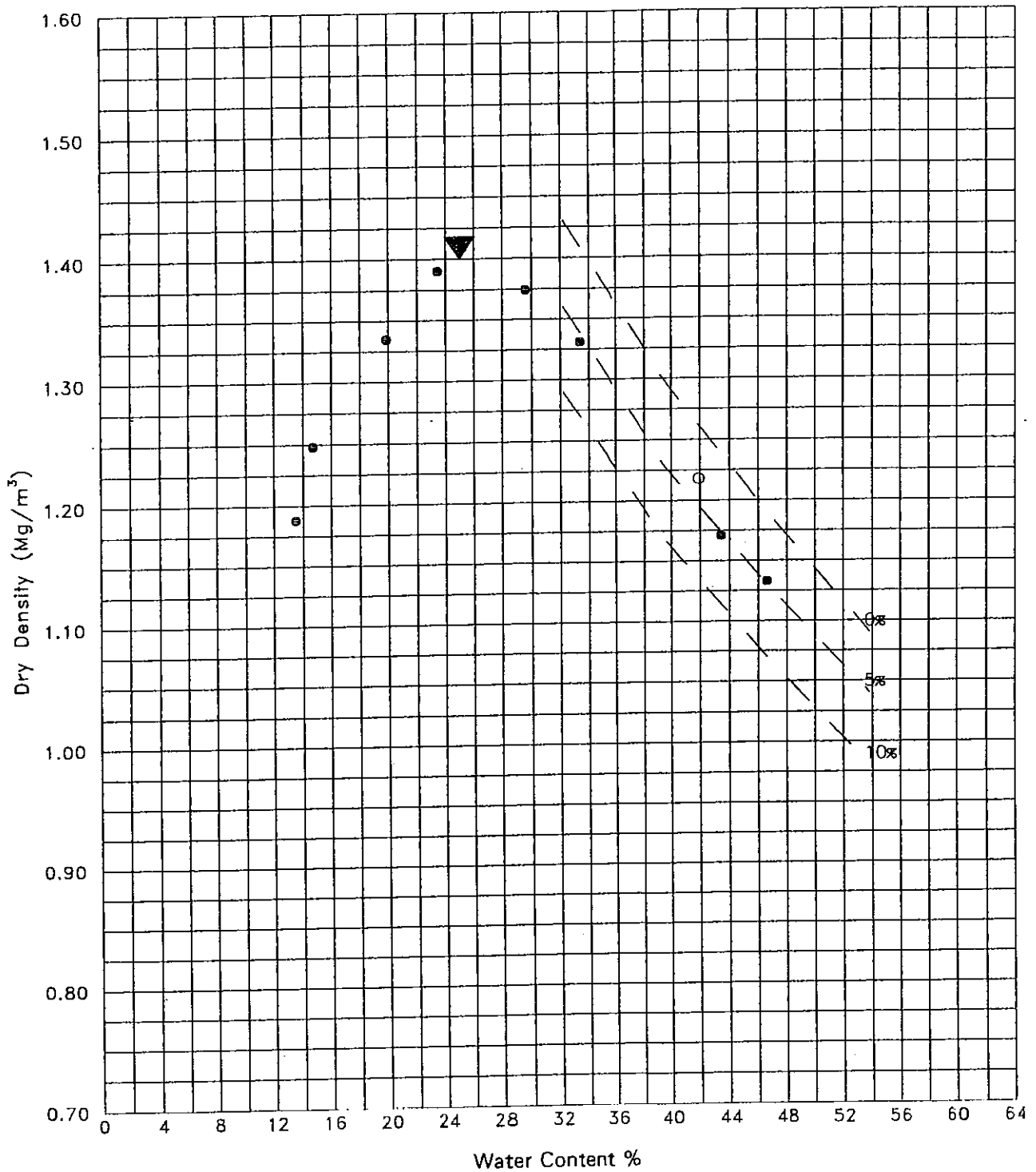
Type of Test/Mould      2.5Kg/1Ltr Particle Density Assumed    2.65 Mg/m <sup>3</sup> Maximum Dry Density        1.42 Mg/m <sup>3</sup> Optimum Water Content      25 % % retained 37.5mm sieve    0 % retained 20mm sieve      0		Description Brown CLAY		Hole    TP13 Depth   0.40 Type    B	
Form 54/0					
Remarks					
Laboratory - Moisture Content/ Dry Density Relationship			Project RAF St Athens Apex Drilling Services		Contract R3058
Soil Mechanics					L3a/5



- Moisture Content/Dry Density
- Compaction at Natural Water Content
- ▼ Maximum Dry Density/Optimum Water Content

Type of Test/Mould	2.5Kg/1Ltr	Description  Brown gravelly CLAY	Hole	TP16
Particle Density Assumed	2.65 Mg/m <sup>3</sup>		Depth	0.40
Maximum Dry Density	1.33 Mg/m <sup>3</sup>		Type	B
Optimum Water Content	29 %		Form 54/O	
% retained 37.5mm sieve	0			
% retained 20mm sieve	7			

Remarks		Project RAF St Athens Apex Drilling Services	Contract	R3058
Laboratory - Moisture Content/ Dry Density Relationship	Φ Soil Mechanics			L3a/6



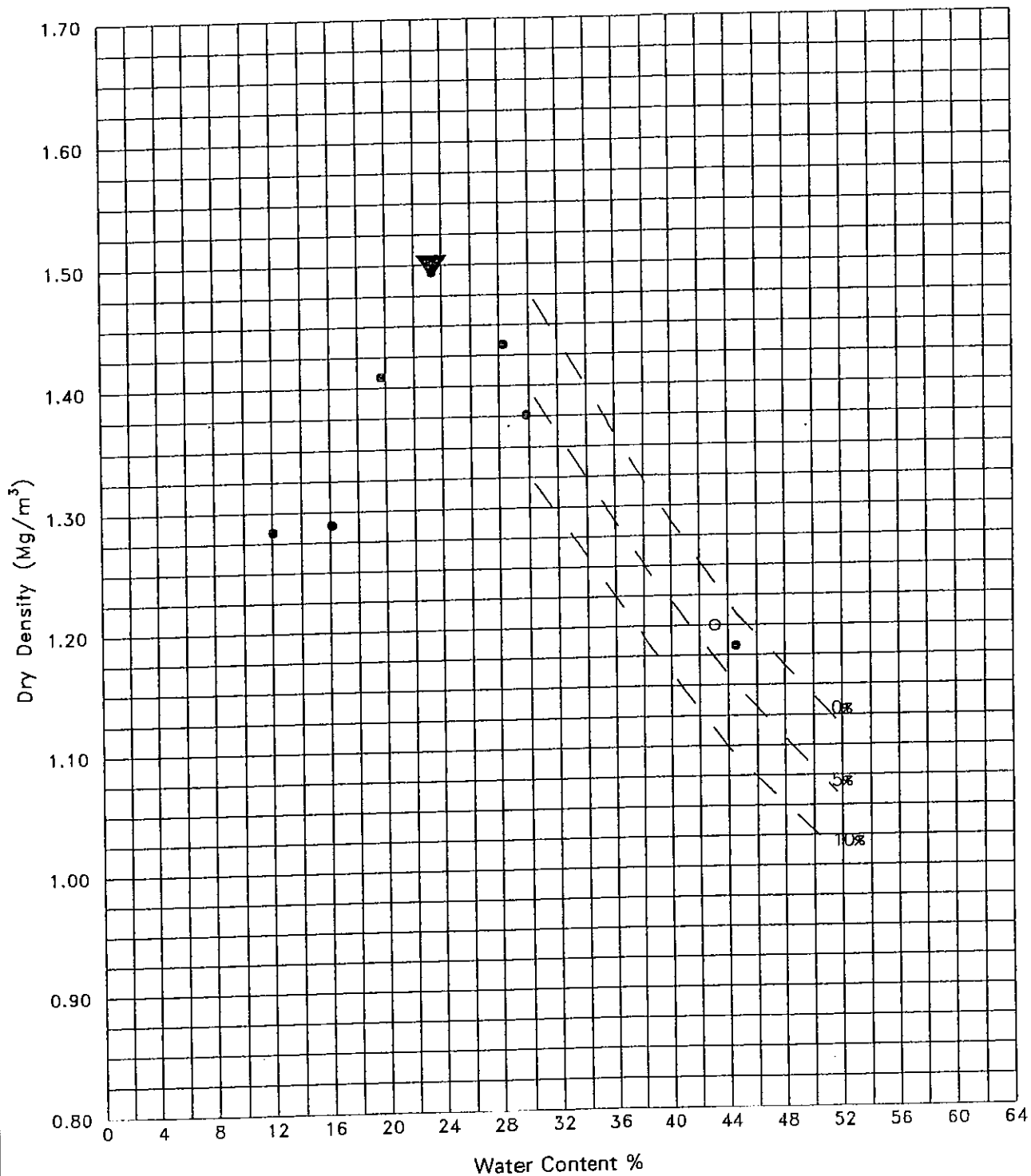
- Moisture Content/Dry Density
- Compaction at Natural Water Content
- ▼ Maximum Dry Density/Optimum Water Content

Type of Test/Mould	2.5Kg/1Ltr	Description Brown CLAY	Hole	TP21
Particle Density Assumed	2.65 Mg/m <sup>3</sup>		Depth	1.00
Maximum Dry Density	1.40 Mg/m <sup>3</sup>		Type	B
Optimum Water Content	25 %		Form 54/0	
% retained 37.5mm sieve	0			
% retained 20mm sieve	0			

Remarks

Laboratory - Moisture Content/ Dry Density Relationship 	Project RAF St Athens Apex Drilling Services	Contract	R3058
			L3a/7





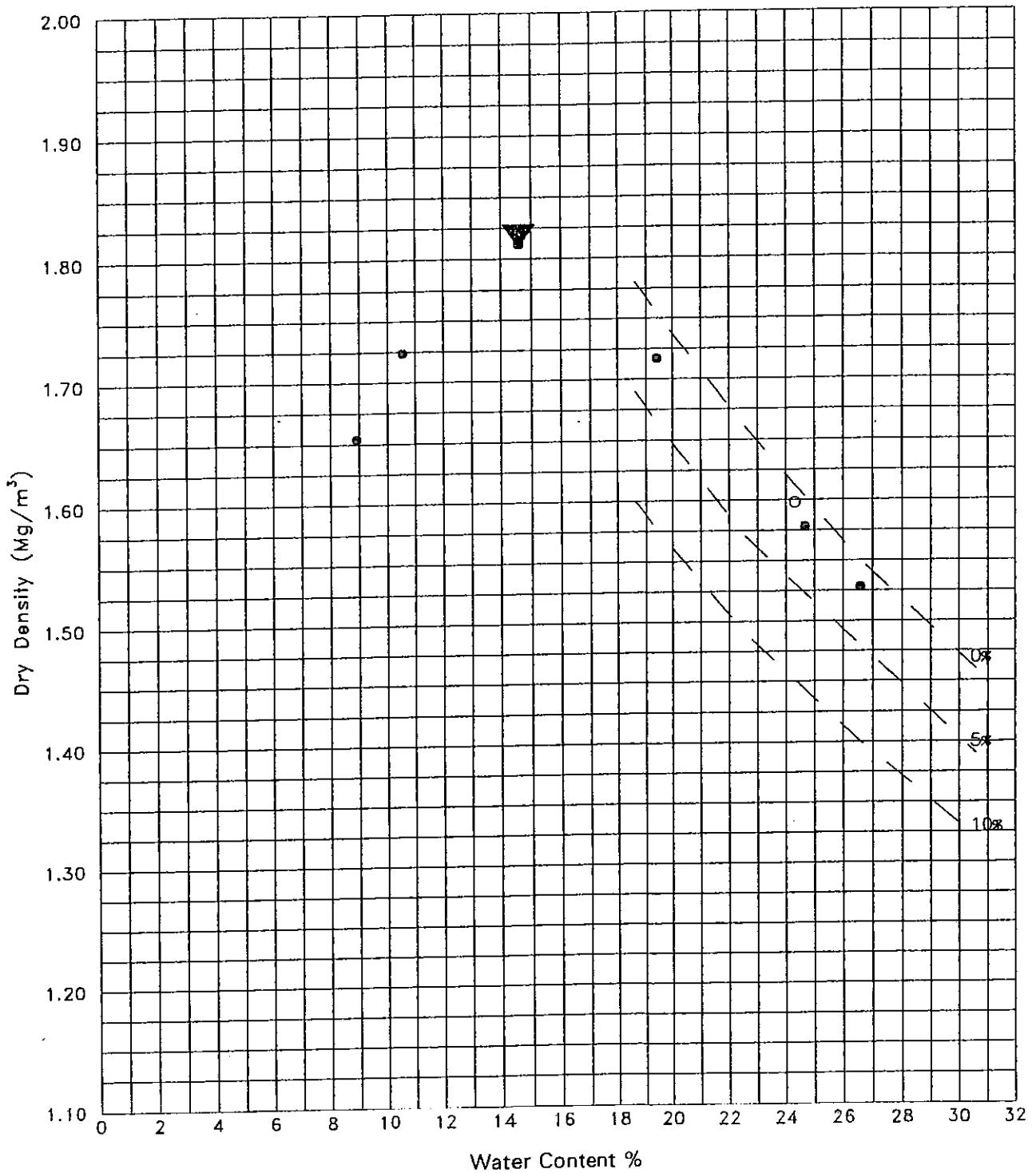
- Moisture Content/Dry Density
- Compaction at Natural Water Content
- ▼ Maximum Dry Density/Optimum Water Content

Type of Test/Mould	2.5Kg/1Ltr	Description Brown CLAY	Hole	TP25	
Particle Density Assumed	2.65 Mg/m <sup>3</sup>		Depth	0.60	
Maximum Dry Density	1.49 Mg/m <sup>3</sup>		Type	B	
Optimum Water Content	23 %		Form 54/O		
% retained 37.5mm sieve	0				
% retained 20mm sieve	0				

Remarks

Laboratory - Moisture Content/ Dry Density Relationship	Project RAF St Athens Apex Drilling Services	Contract	R3058
			L3a/B

Φ Soil Mechanics

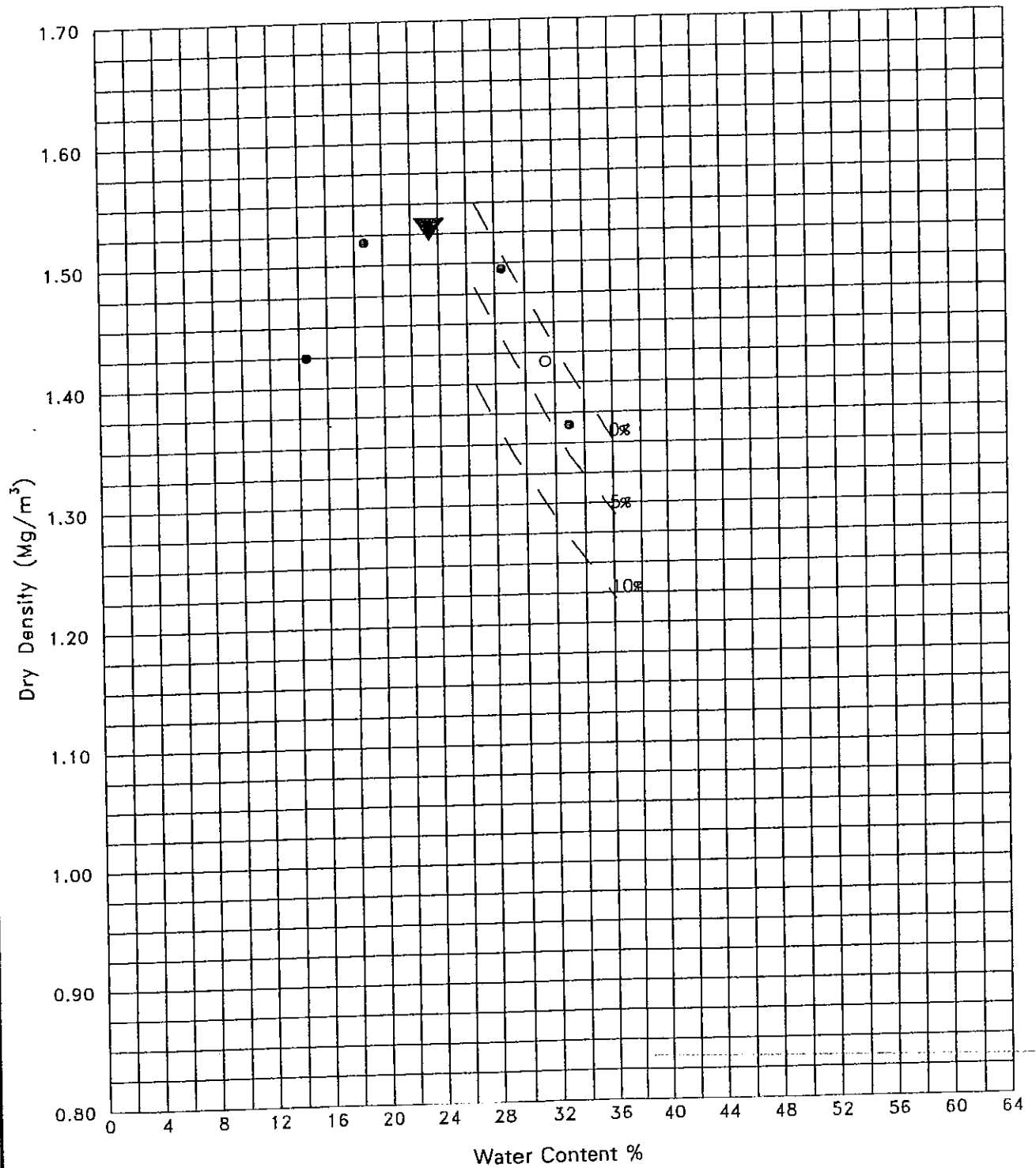


- Moisture Content/Dry Density
- Compaction at Natural Water Content
- ▼ Maximum Dry Density/Optimum Water Content

Type of Test/Mould	2.5Kg/1Ltr	Description <b>Brown sandy gravelly CLAY</b>	Hole	TP27
Particle Density Assumed	2.65 Mg/m <sup>3</sup>		Depth	0.50
Maximum Dry Density	1.81 Mg/m <sup>3</sup>		Type	B
Optimum Water Content	15 %		Form 54/0	
% retained 37.5mm sieve	0			
% retained 20mm sieve	0			

Remarks

Moisture Content/ Laboratory - Dry Density Relationship Soil Mechanics	Project RAF St Athens Apex Drilling Services	Contract	R3058
			L3a/9

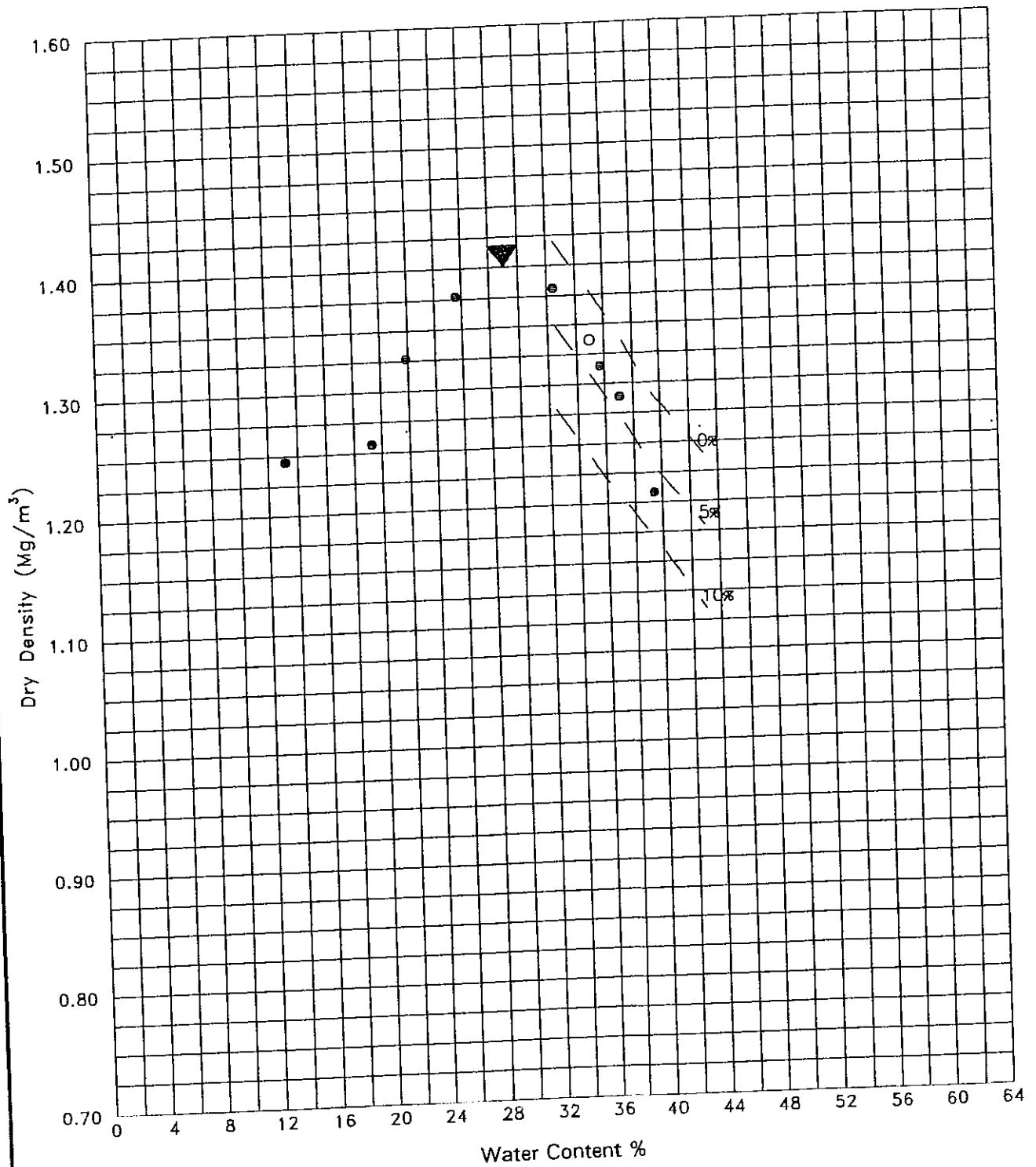


- Moisture Content/Dry Density
- Compaction at Natural Water Content
- ▼ Maximum Dry Density/Optimum Water Content

Type of Test/Mould	2.5Kg/1Ltr	Description *	Hole	TP30
Particle Density Assumed	2.65 Mg/m <sup>3</sup>		Depth	2.00
Maximum Dry Density	1.52 Mg/m <sup>3</sup>		Type	B
Optimum Water Content	23 %		Form 54/0	
% retained 37.5mm sieve	0			
% retained 20mm sieve	0			

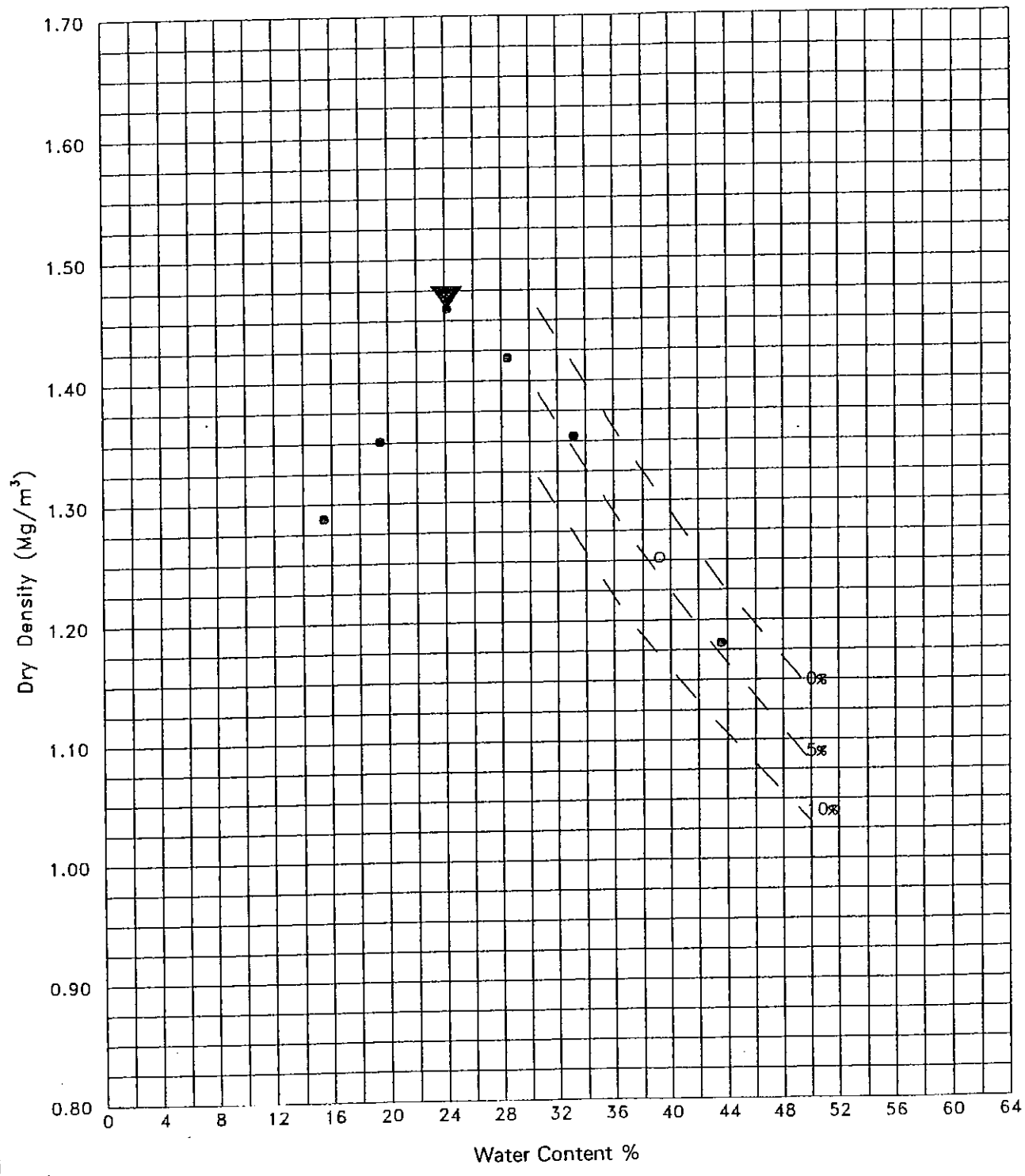
Remarks

Laboratory - Moisture Content/ Dry Density Relationship Soil Mechanics	Project RAF St Athens Apex Drilling Services	Contract	R3058
			L3a/10



- Moisture Content/Dry Density
- Compaction at Natural Water Content
- ▼ Maximum Dry Density/Optimum Water Content

Type of Test/Mould      2.5Kg/1Ltr Particle Density    Assumed    2.65 Mg/m <sup>3</sup> Maximum Dry Density    1.40 Mg/m <sup>3</sup> Optimum Water Content    29 % % retained 37.5mm sieve    0 % retained 20mm sieve    0	Description Brown CLAY	Hole    TP40 Depth    0.40 Type    8	Form 54/O
Remarks			
Laboratory - Moisture Content/ Dry Density Relationship	Project RAF St Athens Apex Drilling Services	Contract R3058 L3a/11	
Soil Mechanics			



- Moisture Content/Dry Density
- Compaction at Natural Water Content
- ▼ Maximum Dry Density/Optimum Water Content




Type of Test/Mould	2.5Kg/1Ltr	Description	Hole	TP44
Particle Density Assumed	2.65 Mg/m <sup>3</sup>	Brown CLAY	Depth	0.30
Maximum Dry Density	1.46 Mg/m <sup>3</sup>		Type	B
Optimum Water Content	24 %		Form 54/O	
% retained 37.5mm sieve	0			
% retained 20mm sieve	0			

**Remarks**

Laboratory - Moisture Content/ Dry Density Relationship	<b>Project</b> RAF St Athens Apex Drilling Services	<b>Contract</b> R3058 L3a/12
<b>Soil Mechanics</b>		



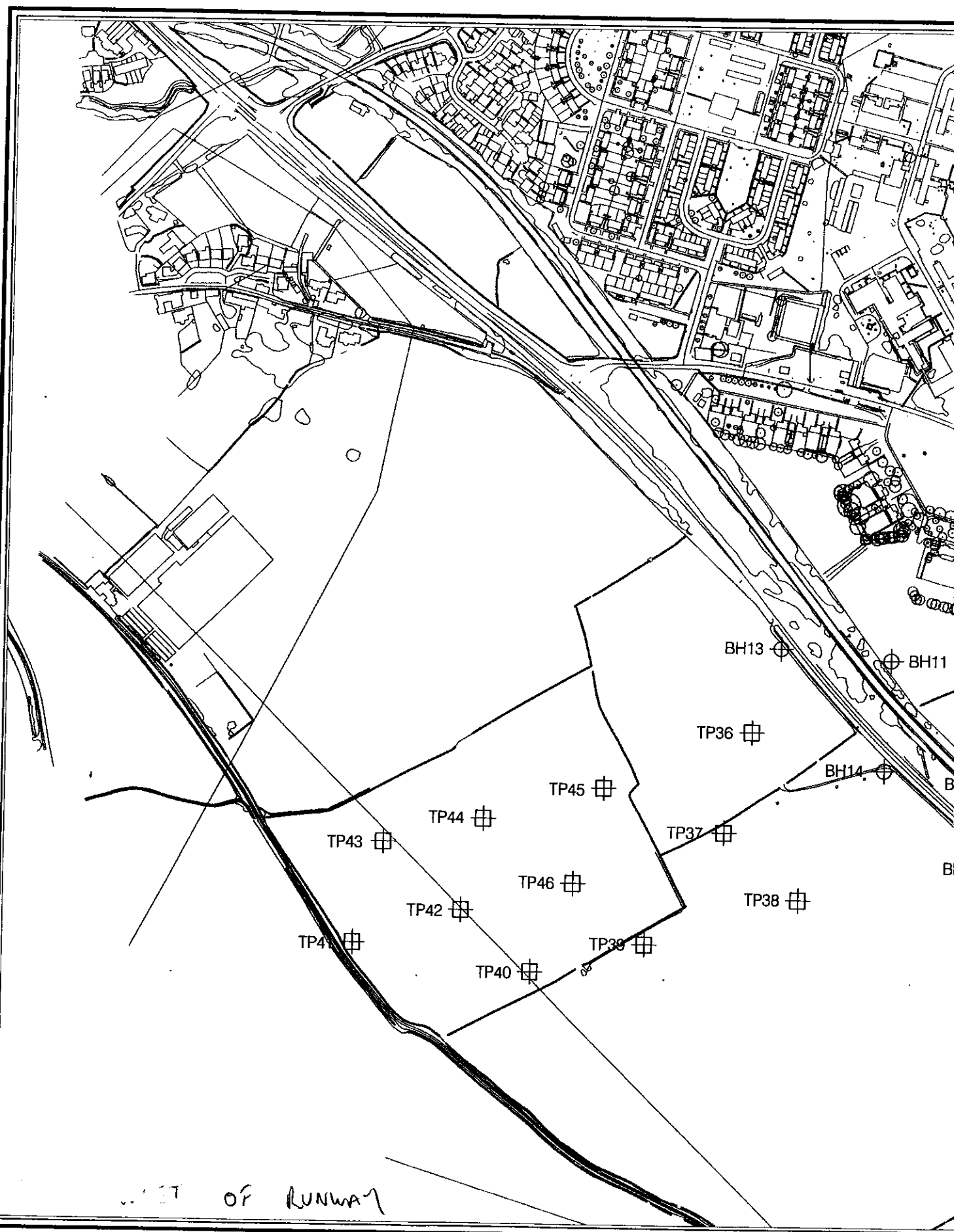
KEY:

-  Trial pit
-  Borehole
-  Groundwater monitoring well





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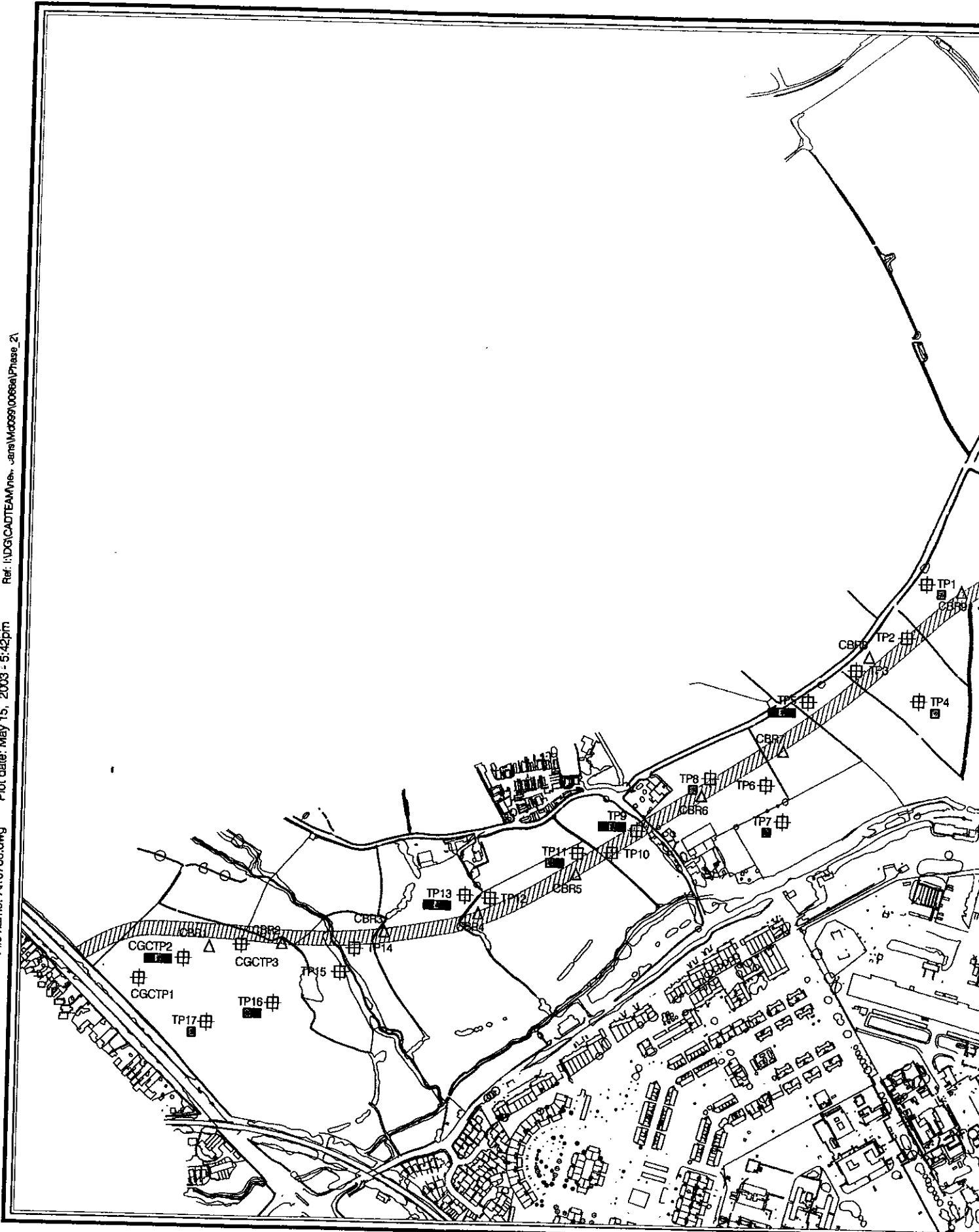
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KEY:

-  Trial pit
-  Groundwater monitoring well

The bottom right corner contains three logos. On the left is the WDA logo, featuring a stylized bird or wing design. In the center is the DE Defence Estates logo, with the text 'DEFENCE ESTATES' and the tagline 'Delivering Estate Solutions in Defence Areas'. On the right is the EnviroS logo, with the word 'ENVIROS' in a bold, sans-serif font and a small 'E' in a square to the right.



KEY:

- |  |                                      |  |                                  |
|--|--------------------------------------|--|----------------------------------|
|  | Trial pit                            |  | Atterberg limit/moisture content |
|  | CBR test                             |  | Compaction with 2.5kg rammer     |
|  | Route of proposed road (approximate) |  | PSD - Particle Size Distribution |

MDA

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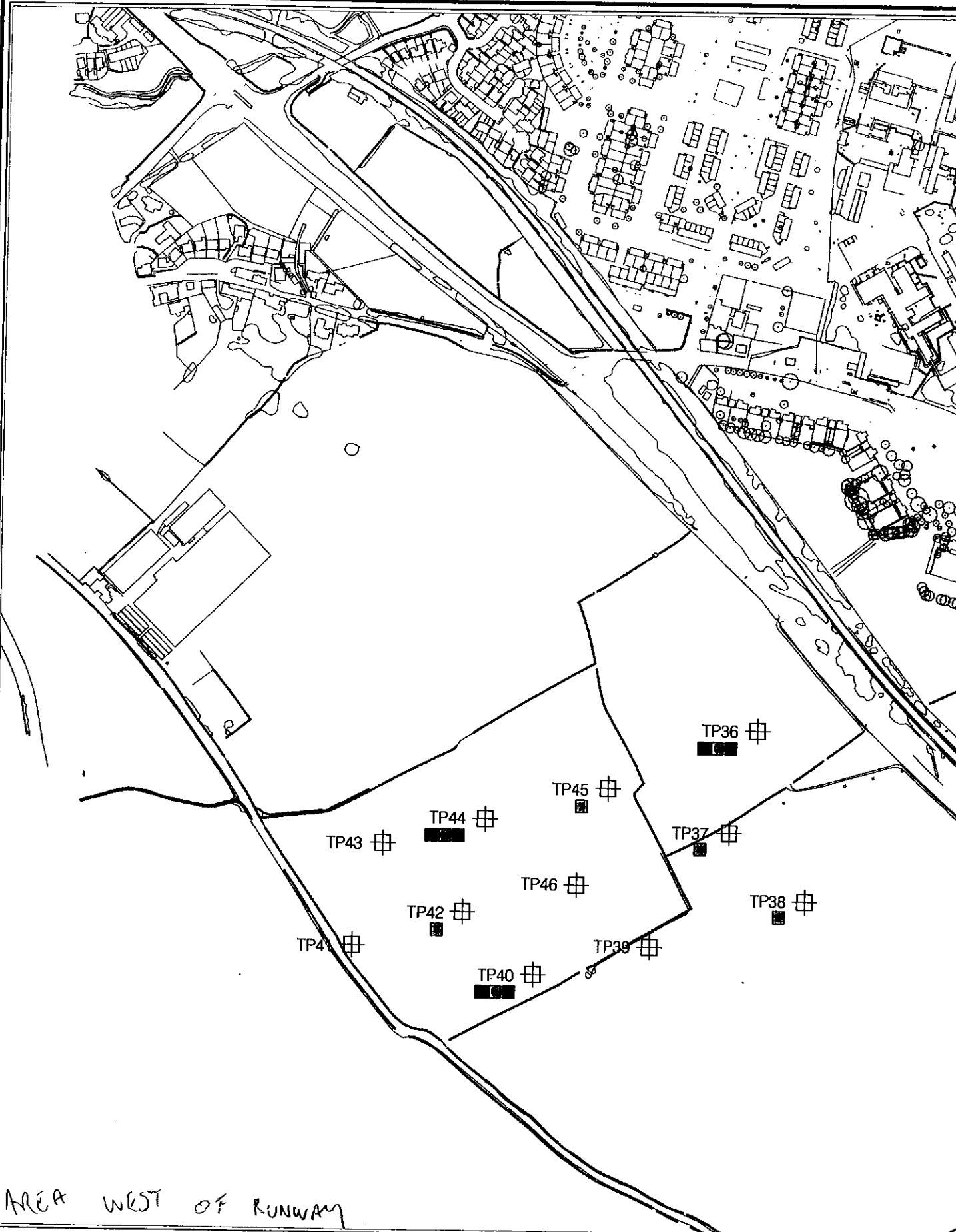
**ENVIROS** E







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AREA WEST OF RUNWAY



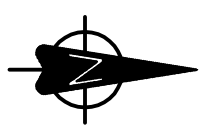
KEY:

-  Trial pit
-  Atterberg limit/moisture content
-  Compaction with 2.5kg rammer
-  PSD - Particle Size Distribution



WDA  
 DE  
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**KEY**  
 PROPOSED NEW ACCESS ROAD ALIGNMENT



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ISSUE	AMENDMENTS	DRAWN	CHKD	DATE



AEROSPACE ST ATHAN

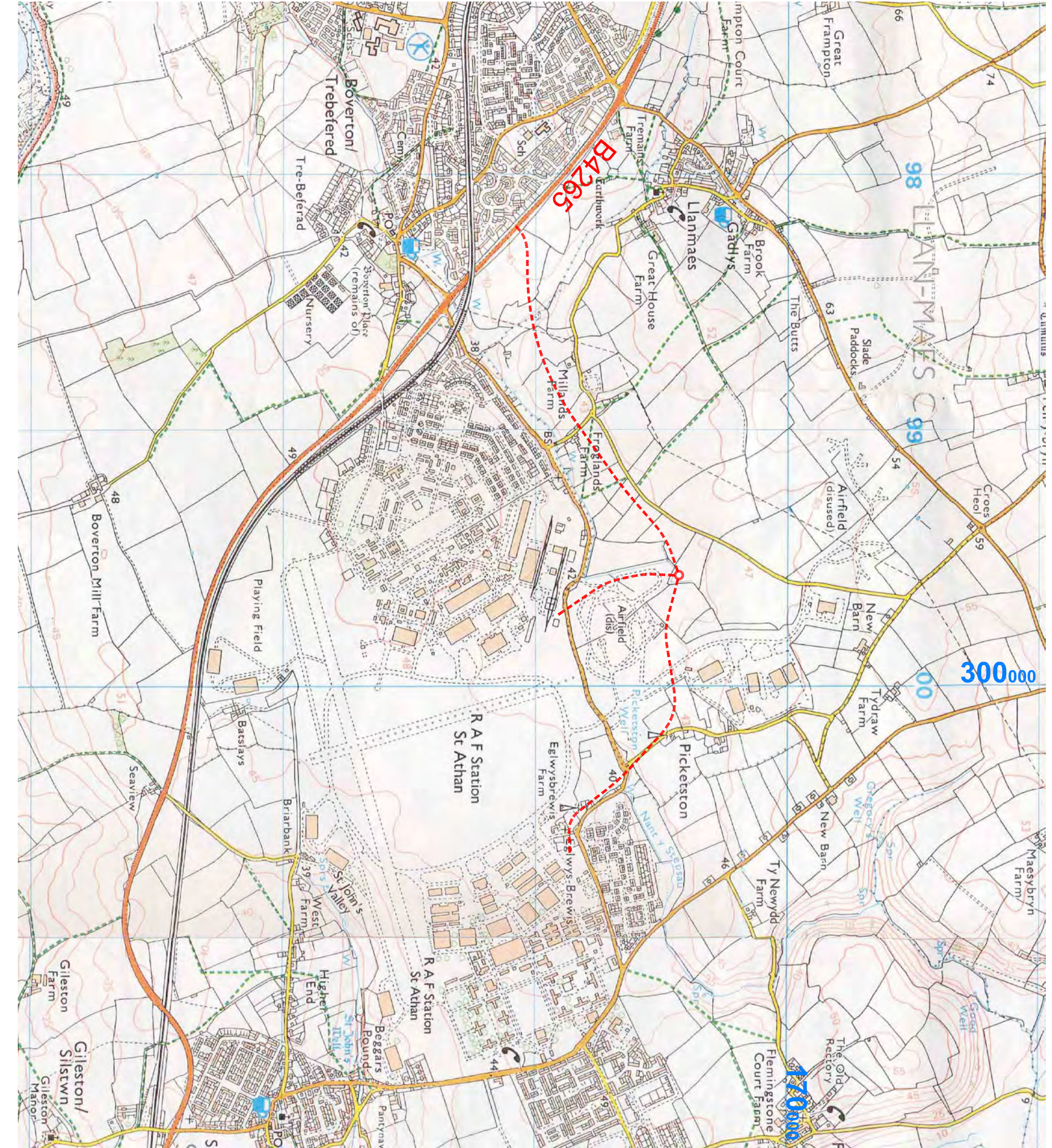
SITE LOCATION PLAN



Ty Gwent Lake View Llanuraman Park  
 Cwmbran South Wales NP4 3HR  
 Tel: 01633 463333 Fax: 01633 463309  
 email: mail@gwent-consultancy.com

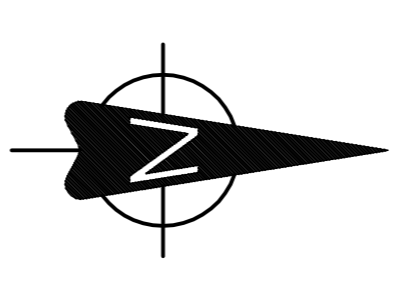
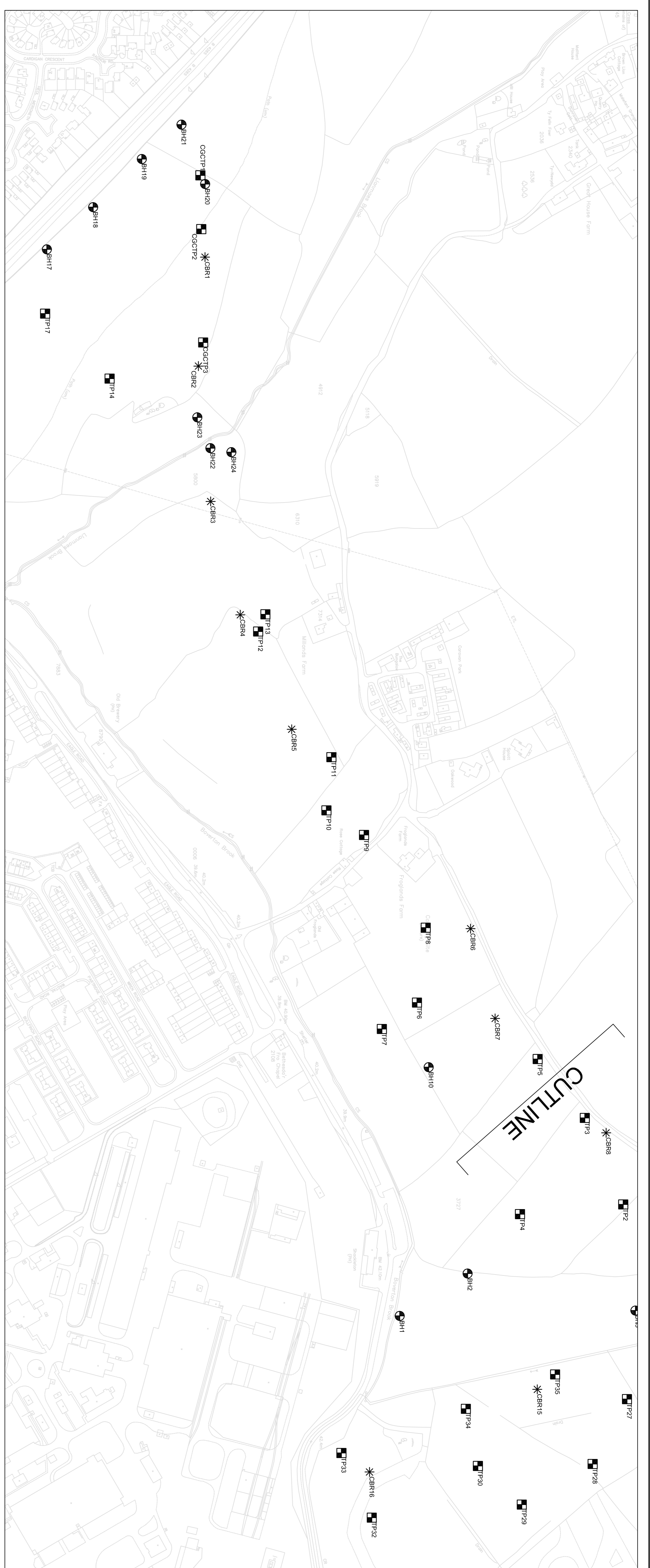


DRAWN	D. J. RAWLINGS	AUGUST 2003	SCALE:
CHECKED			N.T.S.
DRG. No.	75966 / GT / 100	REVISION	-



- KEY**
- SH DENOTES POSITION OF BOREHOLE
  - CBR DENOTES POSITION OF CALIFORNIA BEARING RATIO TEST
  - TP DENOTES POSITION OF TRAIL PIT
  - CGCTP DENOTES POSITION OF TRAIL PIT (CAPITA GWENT CONSULTANCY)

**NOTE**  
 EXPLORATORY HOLE COORDINATES SUPPLIED BY JOHN VINCENT SURVEYS LTD  
 NORTHERN LINK ROAD SHOWN IS OPTION B



ISSUE	AMENDMENTS	DRAWN	CHKD	DATE
-	-	-	-	-



RAF ST. ATHAN

EXPLORATORY HOLE LOCATION PLAN



DRAWN	D.M.G.	JULY 2003	SCALE:
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DRG. No.	75966 / GT / 101	REVISION	REF.