

**APPENDIX 4**

**SUB SURFACE**SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS  
3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135. Fax (01772) 204907

## Laboratory Test Results

Site : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job  
Number

L1006

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**DETERMINATION OF MOISTURE CONTENT, LIQUID LIMIT AND PLASTIC LIMIT  
AND DERIVATION OF PLASTICITY AND LIQUIDITY INDEX**

Borehole Number	Depth m.	Sample	Percentage Passing 4.25um Sieve	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index %	Liquidity Index	Group Symbol	Description
1	1.0	D	58	31	39	20	19	0.58	CI	Greyish brown, brown and green mottled silty CLAY
1	11.0	D	84	38	41	22	19	0.84	CL	Dark grey and dark brown organic slightly sandy silty CLAY
1	19.5	D	99	34	44	23	21	0.52	CI	Dark grey very silty slightly organic CLAY
1	26.0	D	92	28	31	19	12	0.75	CL	Dark grey slightly sandy very silty thinly laminated CLAY
2	5.5	D	93	28	34	20	14	0.57	CL	Dark grey slightly silty organic CLAY
2	14.0	D	78	41	45	23	22	0.82	CI	Dark grey slightly silty slightly organic CLAY
3	4.0	D	100	31	44	24	20	0.35	CI	Dark brown and grey silty CLAY
3	8.1	D	60	39	37	21	16	1.13	CI	Dark grey and brown slightly sandy very silty organic CLAY
4	1.0	D	78	25	34	20	14	0.36	CL	
4	5.0	D	76	33	44	21	23	0.52	CI	Dark blueish grey organic slightly sandy silty CLAY
5	3.0	D	80	34	41	21	20	0.65	CI	Dark brown silty CLAY
5	17.0	D	67	39	39	20	19	1.00	CI	Dark blueish grey and dark brown very silty organic CLAY
5	23.0	D	82	36	39	21	18	0.83	CI	Dark grey CLAY
6	3.0	D	96	29	36	20	16	0.56	CI	Dark grey CLAY
6	15.0	D	98	35	34	19	15	1.07	CL	Dark grey slightly silty CLAY
7	3.2	D	53	34	42	22	20	0.60	CI	Dark brown silty organic CLAY
7	5.5	D	73	38	43	23	20	0.75	CI	Dark grey sandy silty organic CLAY
7	11.0	D	79	46	45	24	21	1.05	CI	
8	5.0	D	63	36	41	21	20	0.75	CI	Dark blueish grey and dark brown slightly sandy silty organic CLAY
9	1.5	D	93	20	30	17	13	0.23	CL	Dark brown mottled orange silty CLAY with some pockets of coal
9	5.5	D	83	33	40	21	19	0.63	CI	Dark grey silty CLAY
9	14.0	D	52	32	37	18	19	0.74	CI	Dark grey sandy silty organic CLAY
10	5.0	D	88	29	37	21	16	0.50	CI	Dark grey very silty CLAY
10	20.0	D	68	34	33	28	5	1.20	ML	Light grey poorly laminated sandy silty CLAY
11	3.9	D	89	22	30	17	13	0.38	CI	Dark brown silty CLAY
11	8.0	D	61	36	32	20	12	1.33	CL	Dark grey sandy silty organic CLAY
11	16.5	D	86	38	38	18	20	1.00	CI	Dark grey sandy very silty organic CLAY
12	3.0	D	97	25	28	17	11	0.73	CL	Blueish grey and dark grey sandy silty organic CLAY with orangey brown silty sand lenses and numerous root hairs
12	8.0	D	95	35	34	15	19	1.05	CL	Dark grey sandy very silty very organic CLAY
13	3.5	D	88	32	39	20	19	0.63	CI	Dark brown silty CLAY
14	1.9	D	93	29	29	20	9	1.00	CL	Dark orangey brown sandy CLAY

Method of Preparation :

Method of Test :

Remarks :

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Site : GEORGETOWN.

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**DETERMINATION OF MOISTURE CONTENT, LIQUID LIMIT AND PLASTIC LIMIT  
AND DERIVATION OF PLASTICITY AND LIQUIDITY INDEX**

Borehole Number	Depth m.	Sample	Percentage Passing 4.25um Sieve	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index %	Liquidity Index	Group Symbol	Description
14	5.2	D	71	33	35	21	14	0.86	CI	Dark grey and dark brown slightly sandy very silty CLAY
14	11.0	D	47	34	33	20	13	1.08	CL	Dark grey slightly sandy very silty organic CLAY
14	17.0	D	86	49	43	22	21	1.29	CI	Dark brown silty CLAY
5	5.5	D	91	30	40	19	21	0.52	CI	Dark grey slightly sandy silty slightly organic CLAY
16	1.0	D	98	28	29	19	10	0.90	CL	Dark grey and dark brown very sandy silty CLAY with a little fine gravel and numerous root hairs
16	5.8	D	84	36	44	22	22	0.64	CI	Dark grey very silty organic CLAY
17	1.0	D	71	28	39	21	18	0.39	CI	Dark brown silty CLAY
17	4.2	D	80	31	37	19	18	0.67	CI	Dark grey slightly sandy very silty slightly organic CLAY
18	1.0	D	97	25	35	20	15	0.33	CI	Brown slightly silty CLAY with a little fine gravel
18	11.0	D	82	31	33	18	15	0.87	CL	Dark grey sandy silty organic CLAY
18	23.0	D	98	38	47	22	25	0.64	CI	
19	8.1	D	100	28	25	17	8	1.38	CL	Dark grey and dark brown silty CLAY
20	2.0	D	95	29	28	18	10	1.10	CL	Dark grey very sandy silty organic CLAY
20	11.0	D	54	38	43	21	22	0.77	CI	Dark brown silty CLAY

Method of Preparation :

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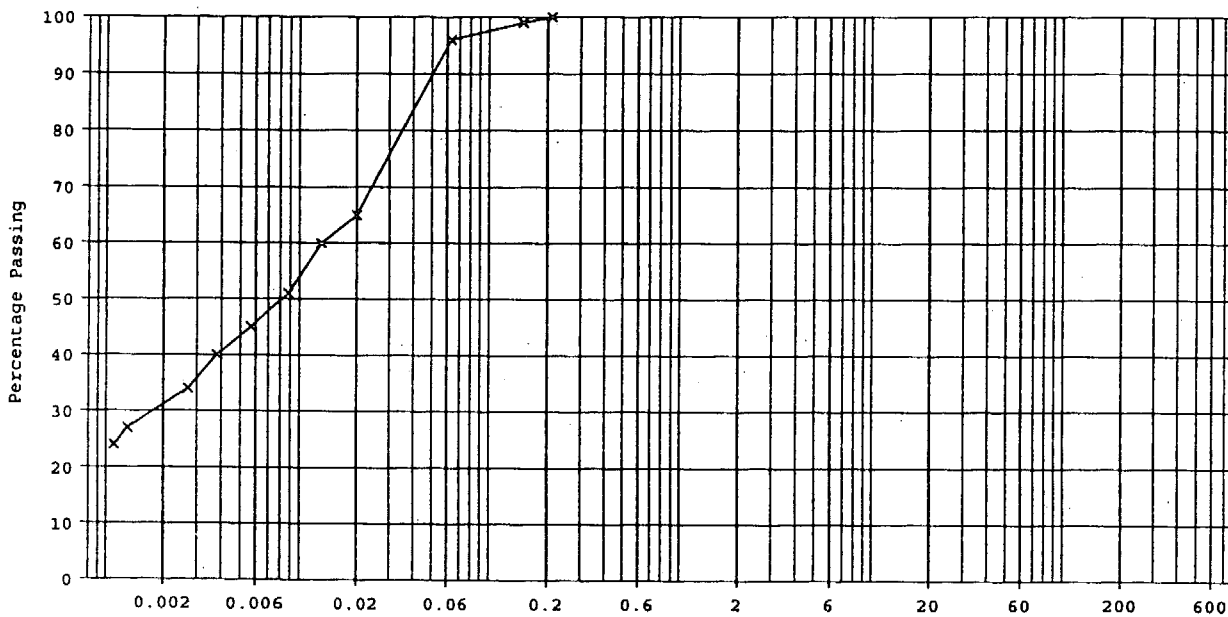
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
3	5.00	D	Dark greyish brown very silty CLAY



Sieve / Particle Size	% Passing
212µm	100.0
150µm	99.0
63µm	96.0
20µm	65.0
13µm	60.0
8.8µm	51.0
5.7µm	45.0
3.8µm	40.0
2.7µm	34.0
1.3µm	27.0
1.1µm	24.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	41.9µm
D60	13.0µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	5.3%
Silt	63.6%
Clay	31.1%

Method of Preparation :

Method of Test :

Remarks :



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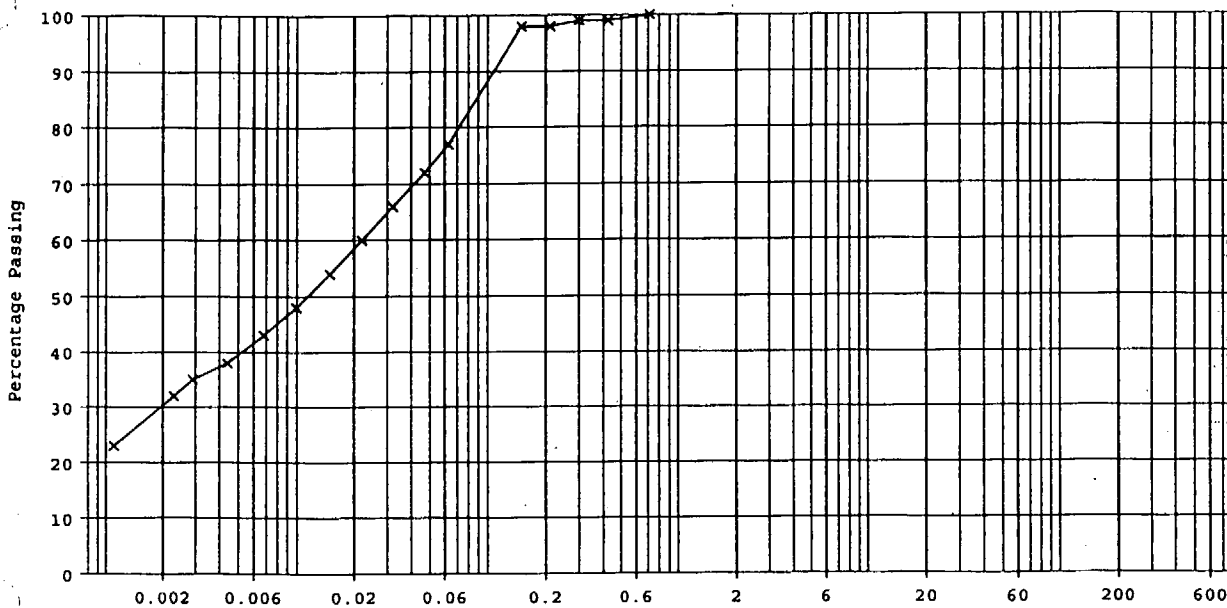
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
5	2.00	D	Brown mottled slightly sandy very silty CLAY



Sieve / Particle Size	% Passing
710µm	100.0
425µm	99.0
300µm	99.0
212µm	98.0
150µm	98.0
63µm	77.0
47µm	72.0
32µm	66.0
22µm	60.0
15µm	54.0
10µm	48.0
6.8µm	43.0
4.4µm	38.0
2.9µm	35.0
2.3µm	32.0
1.1µm	23.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	87.7µm
D60	22.0µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	23.8%
Silt	45.9%
Clay	30.3%

Method of Preparation :

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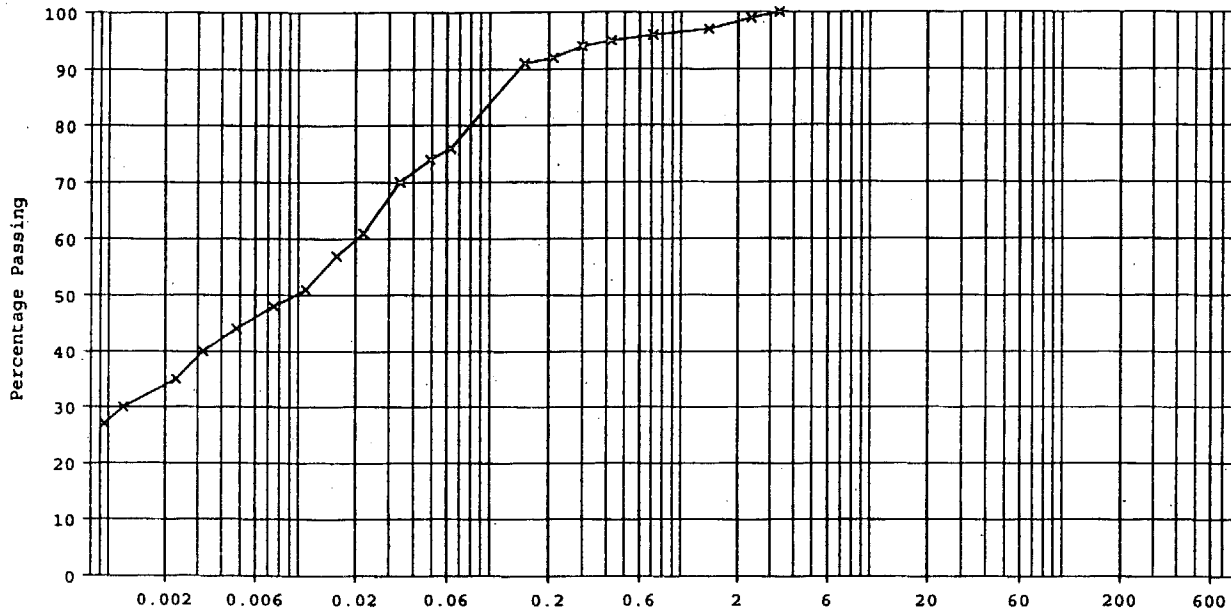
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
6	2.00	D	Greyish brown slightly sandy very silty CLAY with occasional fine gravel



Sieve / Particle Size	% Passing
3.35mm	100.0
2.36mm	99.0
1.4mm	97.0
710µm	96.0
425µm	95.0
300µm	94.0
212µm	92.0
150µm	91.0
63µm	76.0
49µm	74.0
34µm	70.0
22µm	61.0
16µm	57.0
11µm	51.0
7.5µm	48.0
4.8µm	44.0
3.2µm	40.0
2.3µm	35.0
1.2µm	30.0
.95µm	27.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	106.0µm
D60	20.3µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	1.6%
Sand	22.8%
Silt	41.7%
Clay	33.9%

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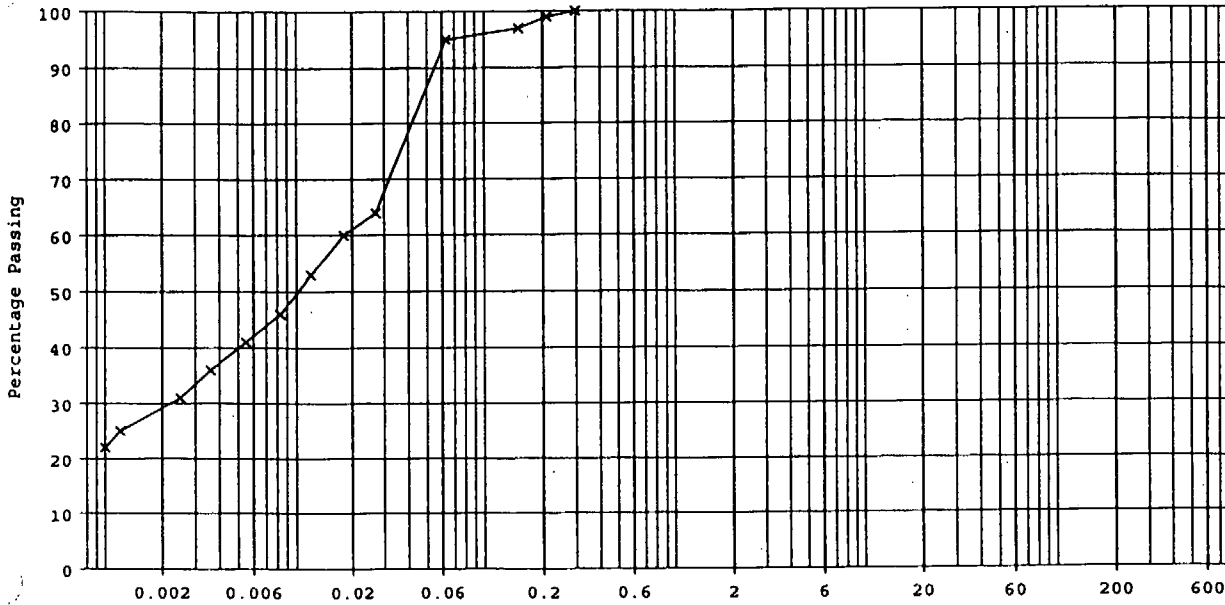
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
6	5.00	D	Dark greyish brown slightly sandy very silty CLAY



Sieve / Particle Size	% Passing
300 µm	100.0
212 µm	99.0
150 µm	97.0
63 µm	95.0
27 µm	64.0
18 µm	60.0
12 µm	53.0
8.3 µm	46.0
5.5 µm	41.0
3.6 µm	36.0
2.5 µm	31.0
1.2 µm	25.0
1 µm	22.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	47.9 µm
D60	18.0 µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	6.8%
Silt	64.0%
Clay	29.2%

Method of Preparation :

Method of Test :

Remarks :



Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

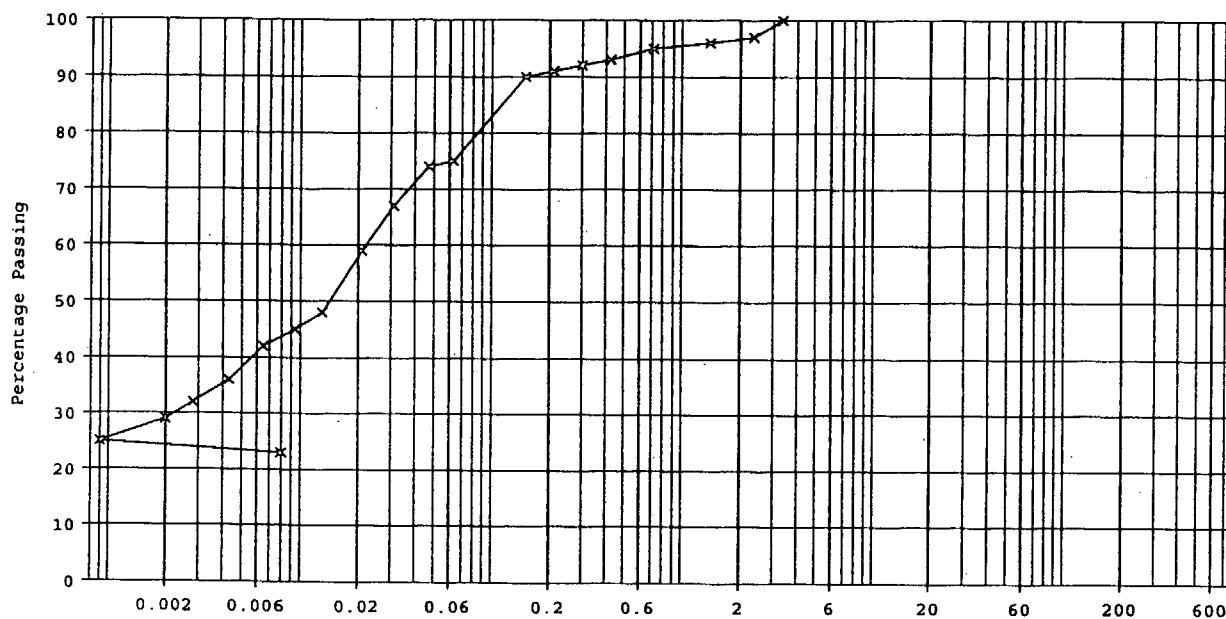
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
7	1.00	D	Brown sandy silty CLAY



Sieve / Particle Size	% Passing
3.35mm	100.0
2.36mm	97.0
1.4mm	96.0
710μm	95.0
425μm	93.0
300μm	92.0
212μm	91.0
150μm	90.0
63μm	75.0
47μm	74.0
31μm	67.0
21μm	59.0
13μm	48.0
9.4μm	45.0
6.5μm	42.0
4.3μm	36.0
2.8μm	32.0
2μm	29.0
.9μm	25.0
8μm	23.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	112.3 μm
D60	22.0 μm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	3.3%
Sand	21.8%
Silt	45.8%
Clay	29.0%

Method of Preparation :

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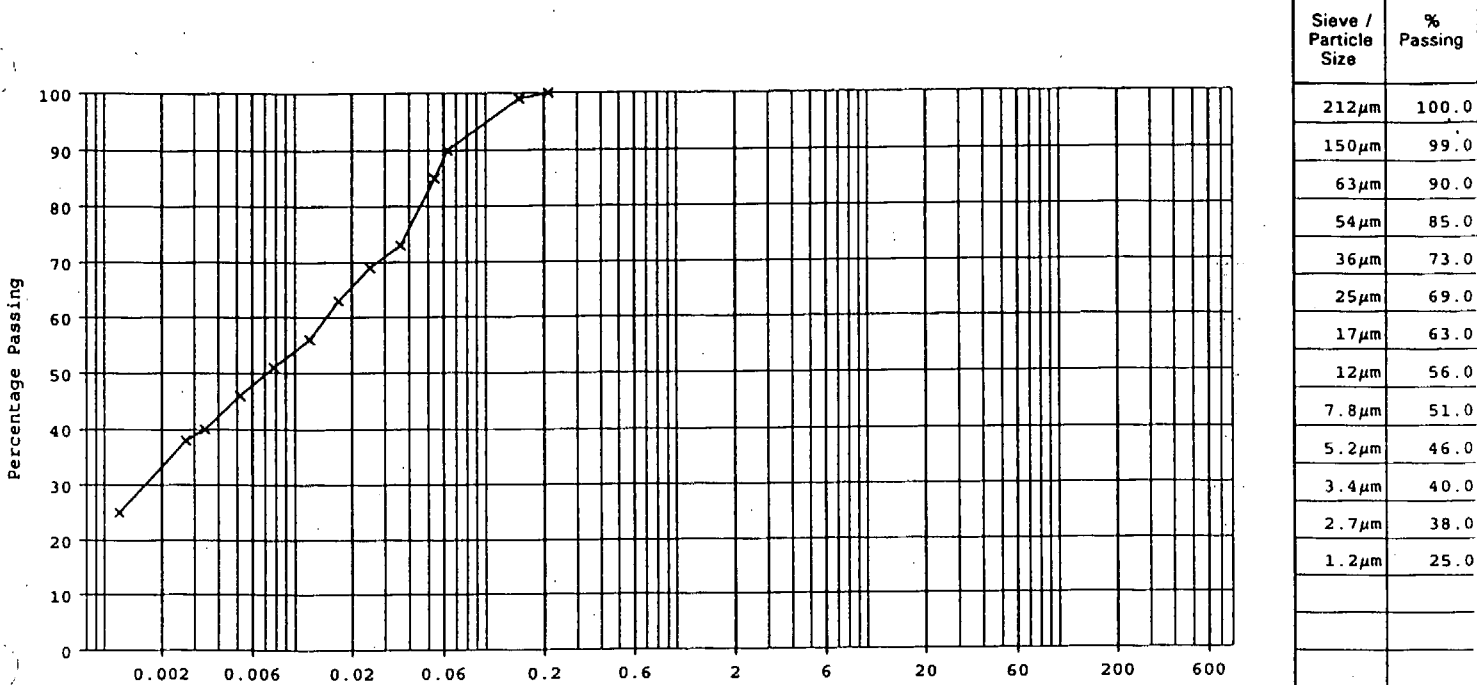
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
8	4.00	D	Dark greyish brown slightly sandy very silty CLAY



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	54.0µm
D60	14.6µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	11.6%
Silt	55.2%
Clay	33.2%

Method of Preparation :

Method of Test :

Remarks :



Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

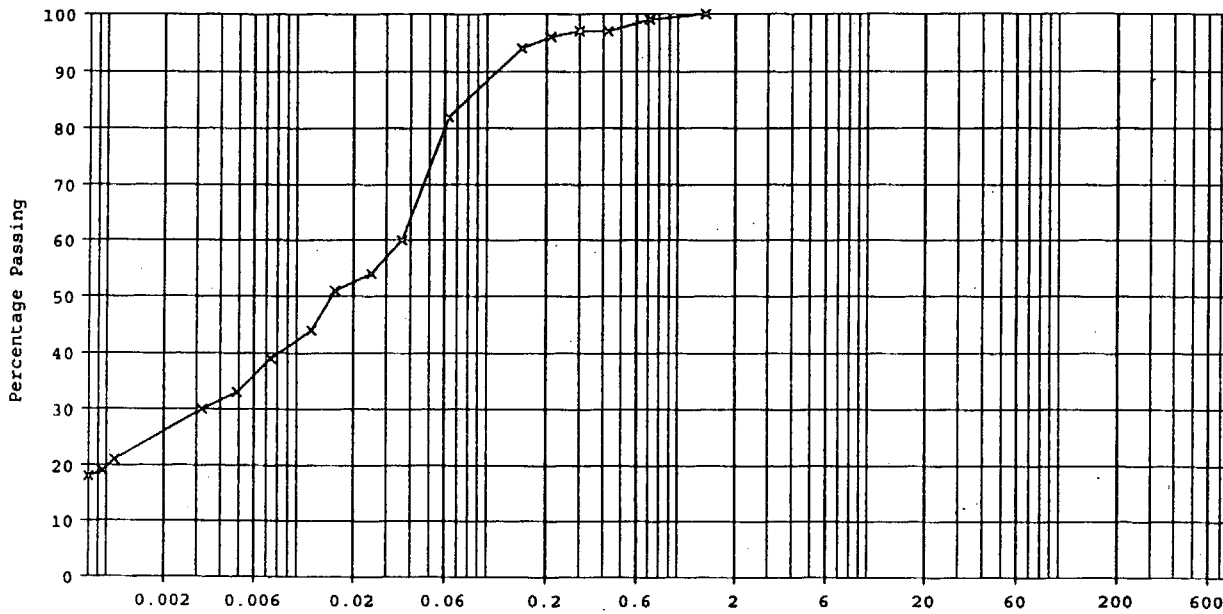
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**DETERMINATION OF PARTICLE SIZE DISTRIBUTION**

Borehole / Trial Pit No.	Depth (m)	Sample	Description
9	3.40	D	Dark brown very silty slightly sandy CLAY



Sieve / Particle Size	% Passing
1.4mm	100.0
710µm	99.0
425µm	97.0
300µm	97.0
212µm	96.0
150µm	94.0
63µm	82.0
36µm	60.0
25µm	54.0
16µm	51.0
12µm	44.0
7.4µm	39.0
4.9µm	33.0
3.2µm	30.0
1.1µm	21.0
.95µm	19.0
.8µm	18.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	78.3µm
D60	36.0µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	19.9%
Silt	54.0%
Clay	26.0%

Method of Preparation :

Method of Test :

Remarks :



Site Name : GEORGETOWN.

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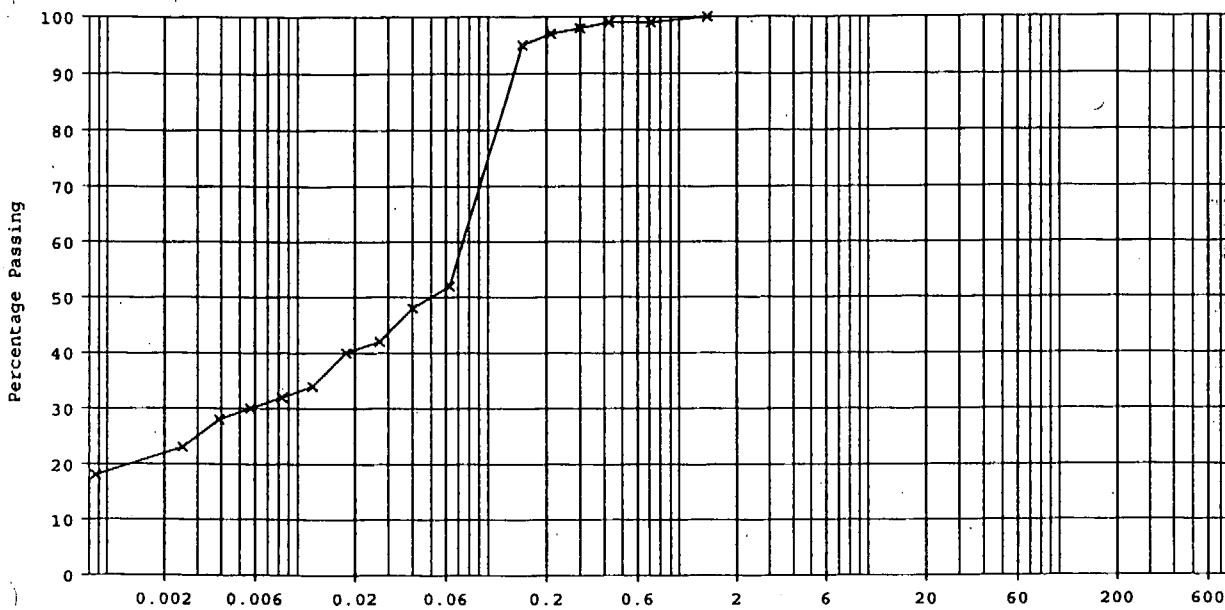
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**DETERMINATION OF PARTICLE SIZE DISTRIBUTION**

Borehole / Trial Pit No.	Depth (m)	Sample	Description
12	3.90	D	Dark brown sandy silty CLAY



Sieve / Particle Size	% Passing
1.4mm	100.0
710µm	99.0
425µm	99.0
300µm	98.0
212µm	97.0
150µm	95.0
63µm	52.0
40µm	48.0
27µm	42.0
18µm	40.0
12µm	34.0
8.3µm	32.0
5.7µm	30.0
3.9µm	28.0
2.5µm	23.0
.87µm	18.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	122.6µm
D60	74.0µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	48.4%
Silt	29.6%
Clay	21.9%

Method of Preparation :

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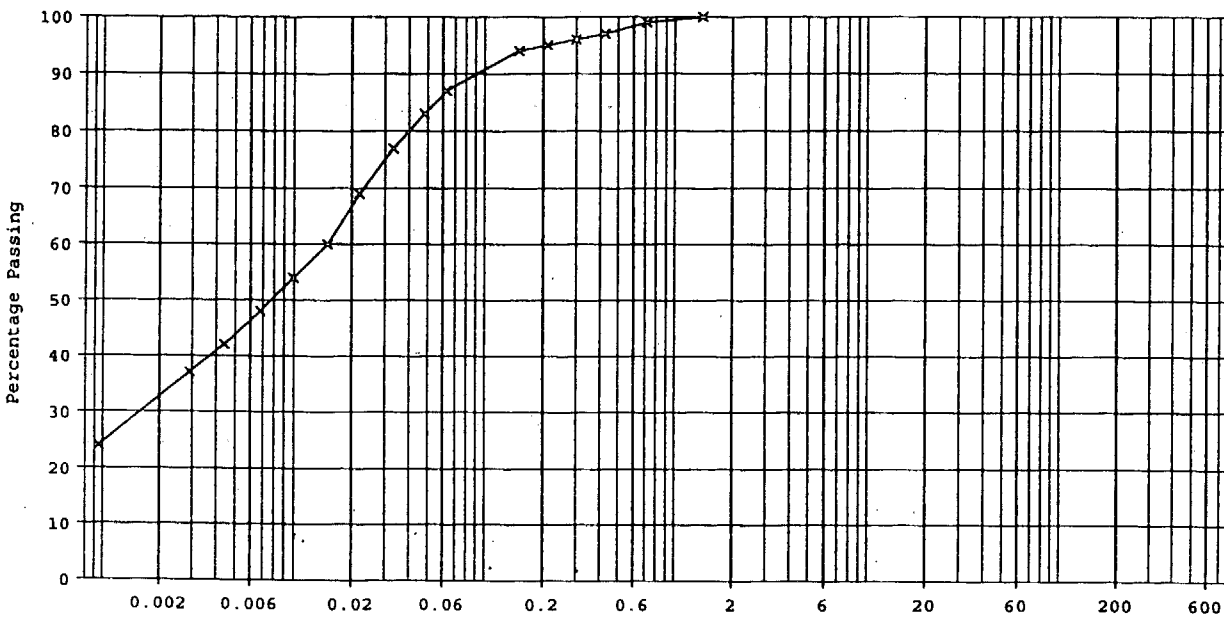
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
13	5.50	D	Dark brown slightly sandy very silty CLAY



Sieve / Particle Size	% Passing
1.4mm	100.0
710µm	99.0
425µm	97.0
300µm	96.0
212µm	95.0
150µm	94.0
63µm	87.0
48µm	83.0
33µm	77.0
22µm	69.0
15µm	60.0
10µm	54.0
6.0µm	48.0
4.4µm	42.0
2.9µm	37.0
.95µm	24.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	55.0µm
D60	15.0µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	13.7%
Silt	53.6%
Clay	32.7%

Method of Preparation :

Method of Test :

Remarks :

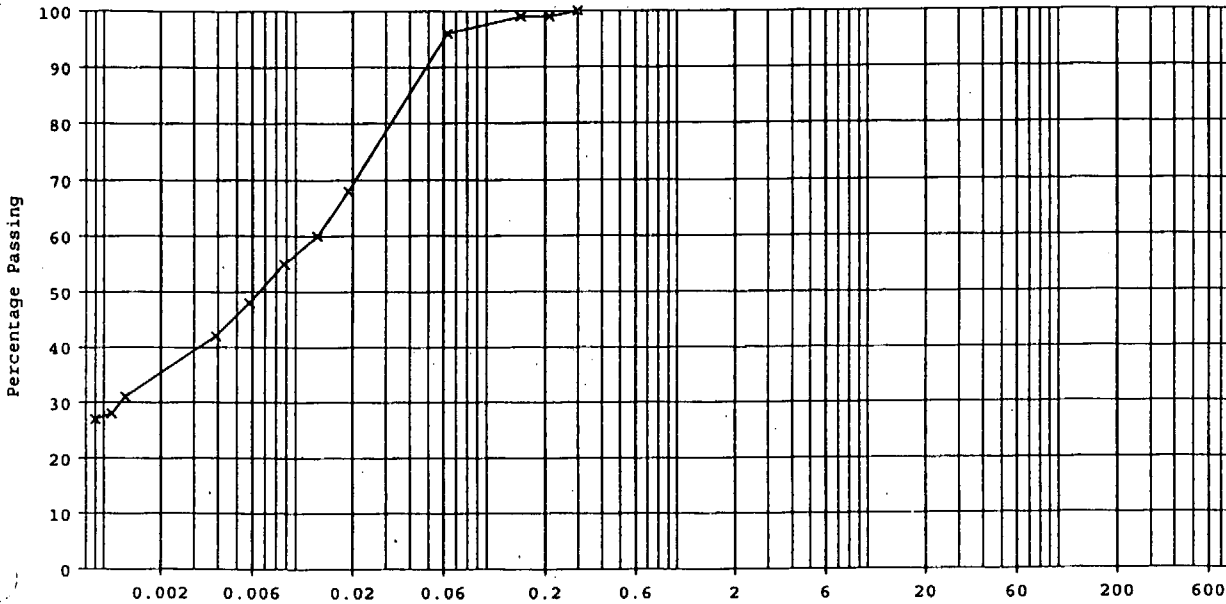


Site Name : GEORGETOWN.  
 Client : ROYAL ORDNANCE.  
 Engineer :

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**DETERMINATION OF PARTICLE SIZE DISTRIBUTION**

Borehole / Trial Pit No.	Depth (m)	Sample	Description
15	8.00	D	Dark brown slightly sandy very silty CLAY



Sieve / Particle Size	% Passing
300µm	100.0
212µm	99.0
212µm	99.0
150µm	99.0
63µm	96.0
19µm	68.0
13µm	60.0
8.8µm	55.0
5.8µm	48.0
3.9µm	42.0
1.3µm	31.0
1.1µm	28.0
.9µm	27.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	39.3µm
D60	13.0µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	5.1%
Silt	59.5%
Clay	35.3%

Method of Preparation :  
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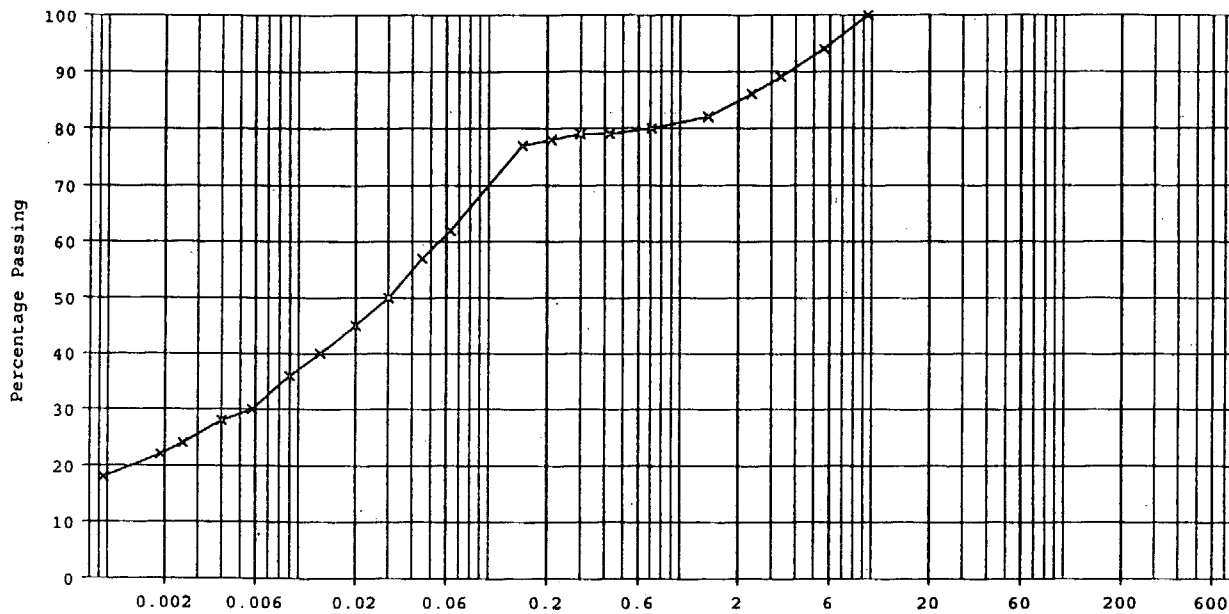
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
16	1.50	D	Dark greyish brown sandy silty CLAY with a little fine gravel



Sieve / Particle Size	% Passing
9.5mm	100.0
5.6mm	94.0
3.35mm	89.0
2.36mm	86.0
1.4mm	82.0
710µm	80.0
425µm	79.0
300µm	79.0
212µm	78.0
150µm	77.0
63µm	62.0
45µm	57.0
30µm	50.0
20µm	45.0
13µm	40.0
9µm	36.0
5.8µm	30.0
4µm	28.0
2.5µm	24.0
1.9µm	22.0
.95µm	18.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	2.1mm
D60	55.1µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	15.3%
Sand	23.5%
Silt	38.9%
Clay	22.4%

Method of Preparation :

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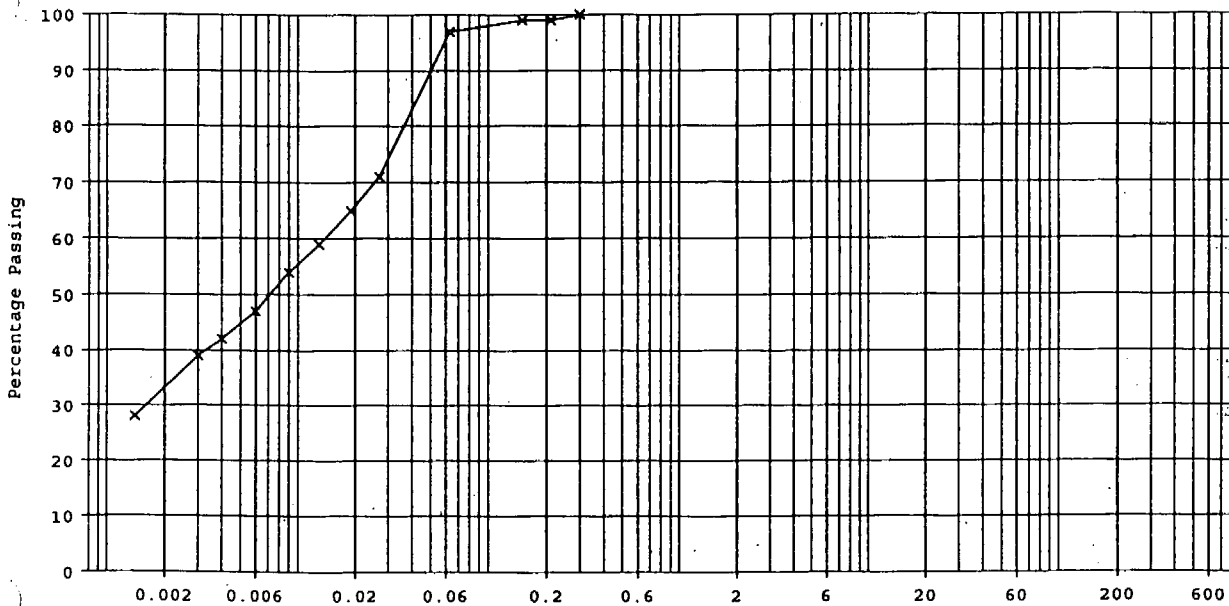
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
16	8.00	D	Dark greyish brown very silty CLAY



Sieve / Particle Size	% Passing
300µm	100.0
212µm	99.0
150µm	99.0
63µm	97.0
27µm	71.0
19µm	65.0
13µm	59.0
9µm	54.0
6µm	47.0
4µm	42.0
3µm	39.0
1.4µm	28.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	42.6µm
D60	13.8µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	4.5%
Silt	62.4%
Clay	33.1%

Method of Preparation :

Method of Test :

Remarks :



Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

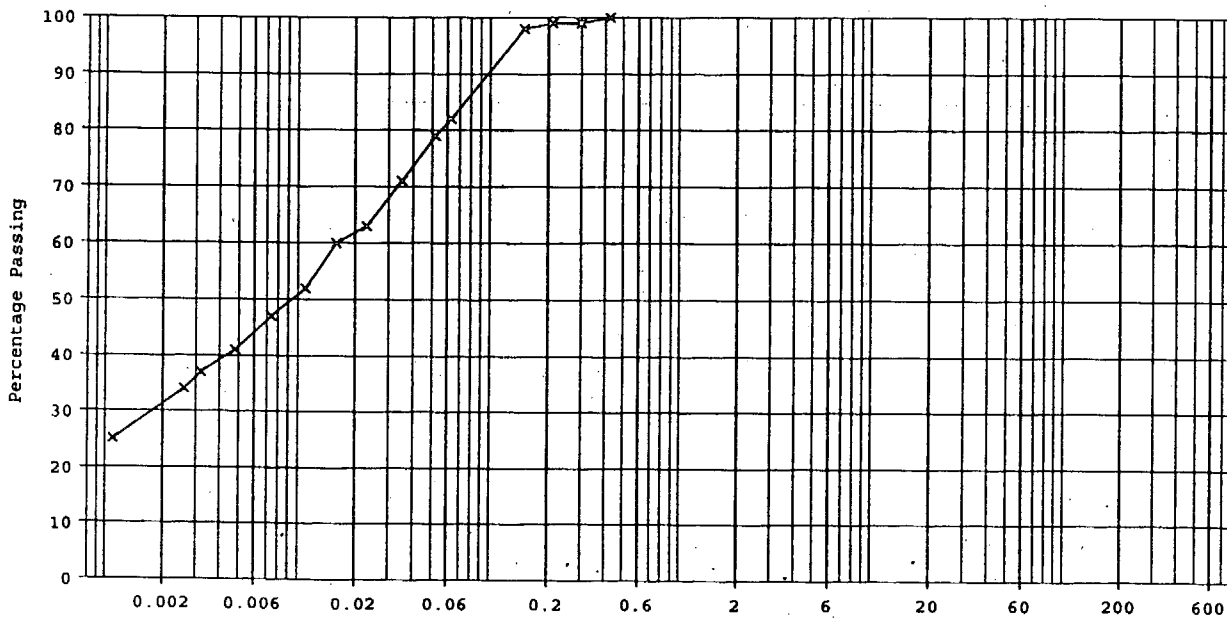
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**DETERMINATION OF PARTICLE SIZE DISTRIBUTION**

Borehole / Trial Pit No.	Depth (m)	Sample	Description
17	2.00	D	Greyish brown slightly sandy very silty CLAY



Sieve / Particle Size	% Passing
425 µm	100.0
300 µm	99.0
212 µm	99.0
150 µm	98.0
63 µm	82.0
52 µm	79.0
35 µm	71.0
23 µm	63.0
16 µm	60.0
11 µm	52.0
7.4 µm	47.0
4.8 µm	41.0
3.2 µm	37.0
2.6 µm	34.0
1.1 µm	25.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	74.1 µm
D60	16.0 µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	18.8%
Silt	50.0%
Clay	31.3%

Method of Preparation :

Method of Test :

Remarks :



Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

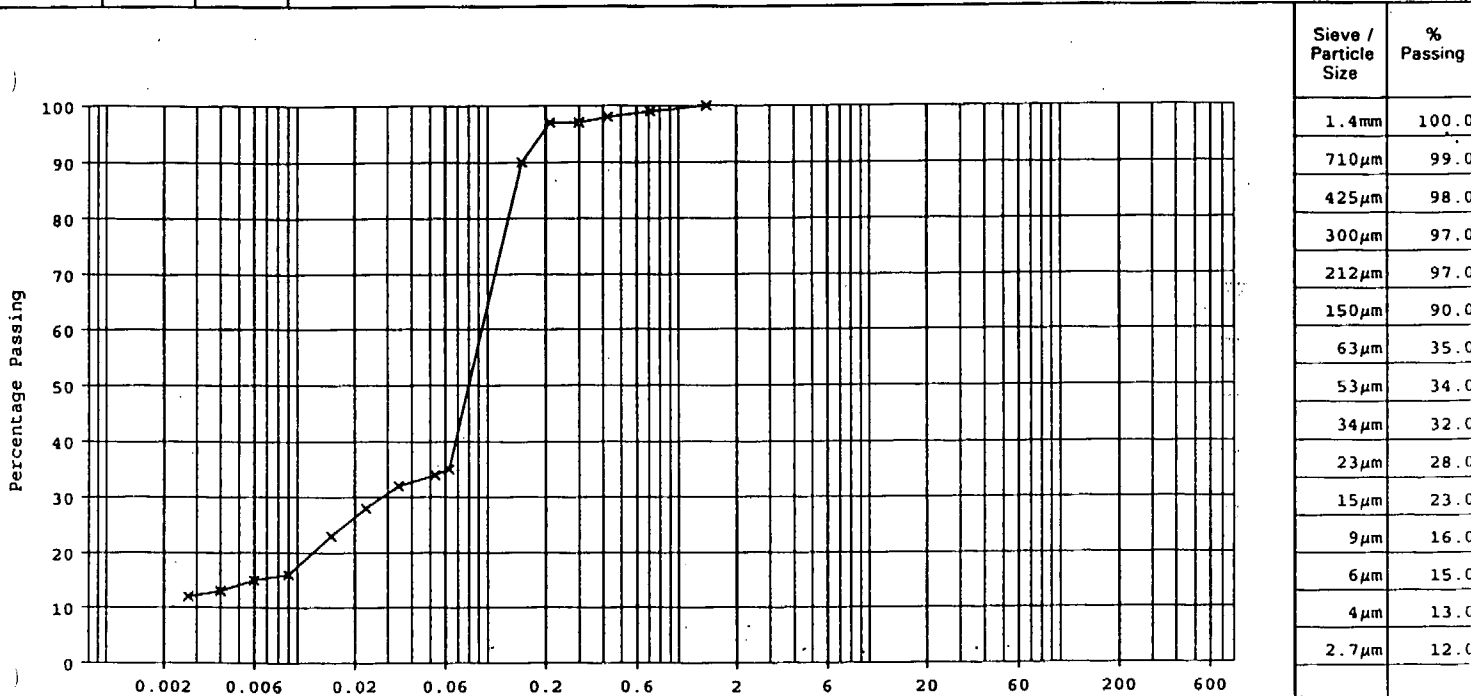
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**DETERMINATION OF PARTICLE SIZE DISTRIBUTION**

Borehole / Trial Pit No.	Depth (m)	Sample	Description
19	3.20	D	Dark grey very silty clayey fine SAND



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	138.6µm
D60	93.5µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	65.3%
Silt	-
Clay	-

Method of Preparation :

Method of Test :

Remarks :



Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

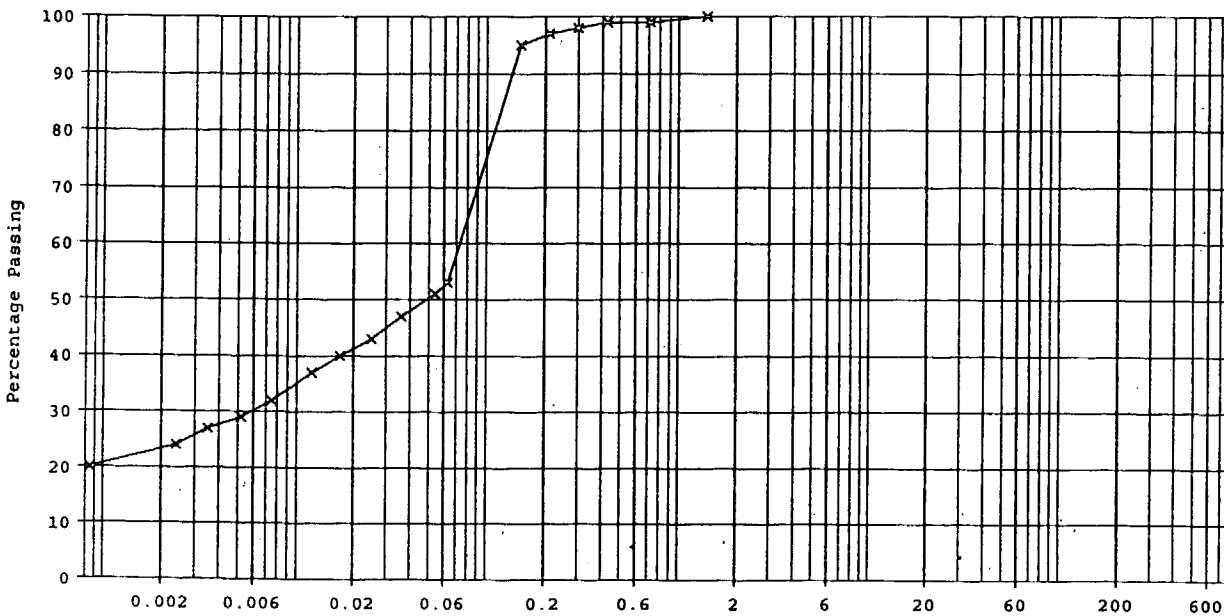
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**DETERMINATION OF PARTICLE SIZE DISTRIBUTION**

Borehole / Trial Pit No.	Depth (m)	Sample	Description
19	5.20	D	Dark brown very sandy silty CLAY



Sieve / Particle Size	% Passing
1.4mm	100.0
710µm	99.0
425µm	99.0
300µm	98.0
212µm	97.0
150µm	95.0
63µm	53.0
54µm	51.0
36µm	47.0
25µm	43.0
17µm	40.0
12µm	37.0
7.5µm	32.0
5.2µm	29.0
3.5µm	27.0
2.4µm	24.0
.85µm	20.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	122.0µm
D60	72.8µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	47.6%
Silt	29.1%
Clay	23.3%

Method of Preparation :

Method of Test :

Remarks :



# SUB SURFACE

SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS  
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## Laboratory Test Results

Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

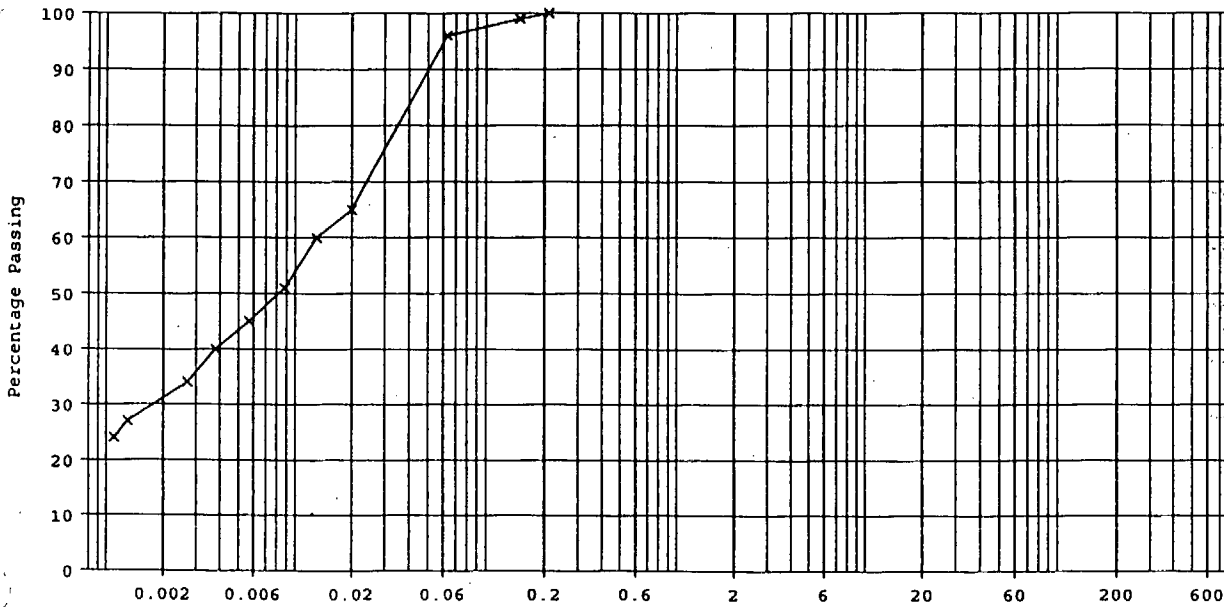
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
3	5.00	D	Dark greyish brown very silty CLAY



Sieve / Particle Size	% Passing
212 µm	100.0
150 µm	99.0
63 µm	96.0
20 µm	65.0
13 µm	60.0
8.8 µm	51.0
5.7 µm	45.0
3.8 µm	40.0
2.7 µm	34.0
1.3 µm	27.0
1.1 µm	24.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	41.9 µm
D60	13.0 µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	5.3%
Silt	63.6%
Clay	31.1%

Method of Preparation :

Method of Test :

Remarks :



# SUB SURFACE

SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS  
3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

## Laboratory Test Results

Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

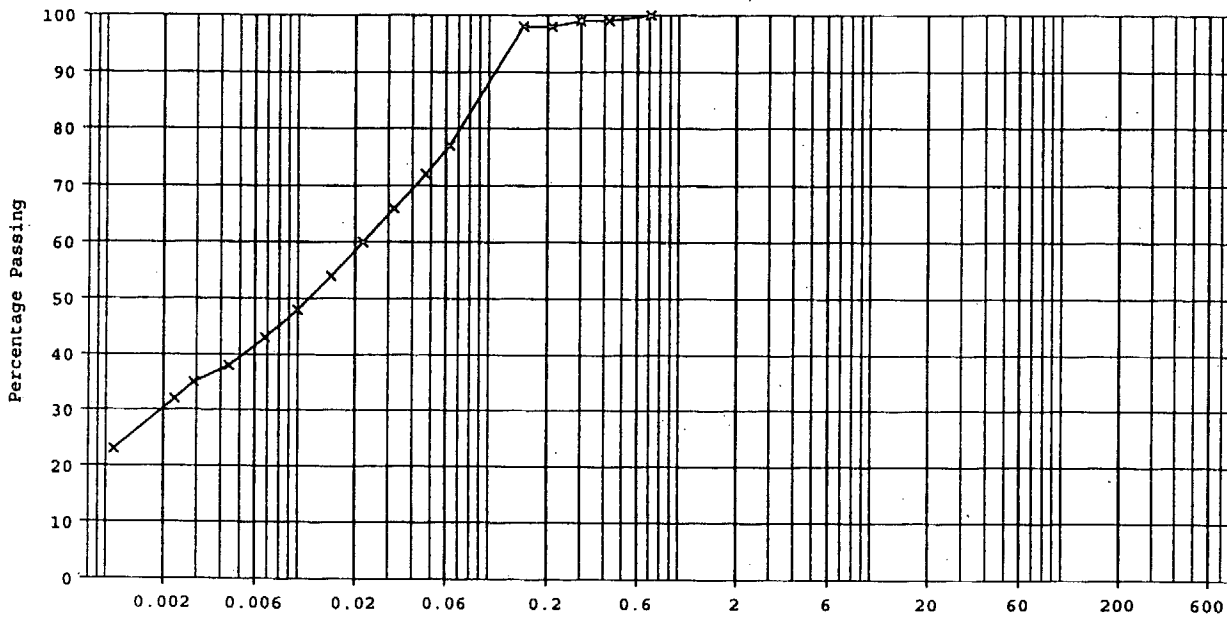
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
5	2.00	D	Brown mottled slightly sandy very silty CLAY



Sieve / Particle Size	% Passing
710µm	100.0
425µm	99.0
300µm	99.0
212µm	98.0
150µm	98.0
63µm	77.0
47µm	72.0
32µm	66.0
22µm	60.0
15µm	54.0
10µm	48.0
6.8µm	43.0
4.4µm	38.0
2.9µm	35.0
2.3µm	32.0
1.1µm	23.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	87.7µm
D60	22.0µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	23.8%
Silt	45.9%
Clay	30.3%

Method of Preparation :

Method of Test :

Remarks :





Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

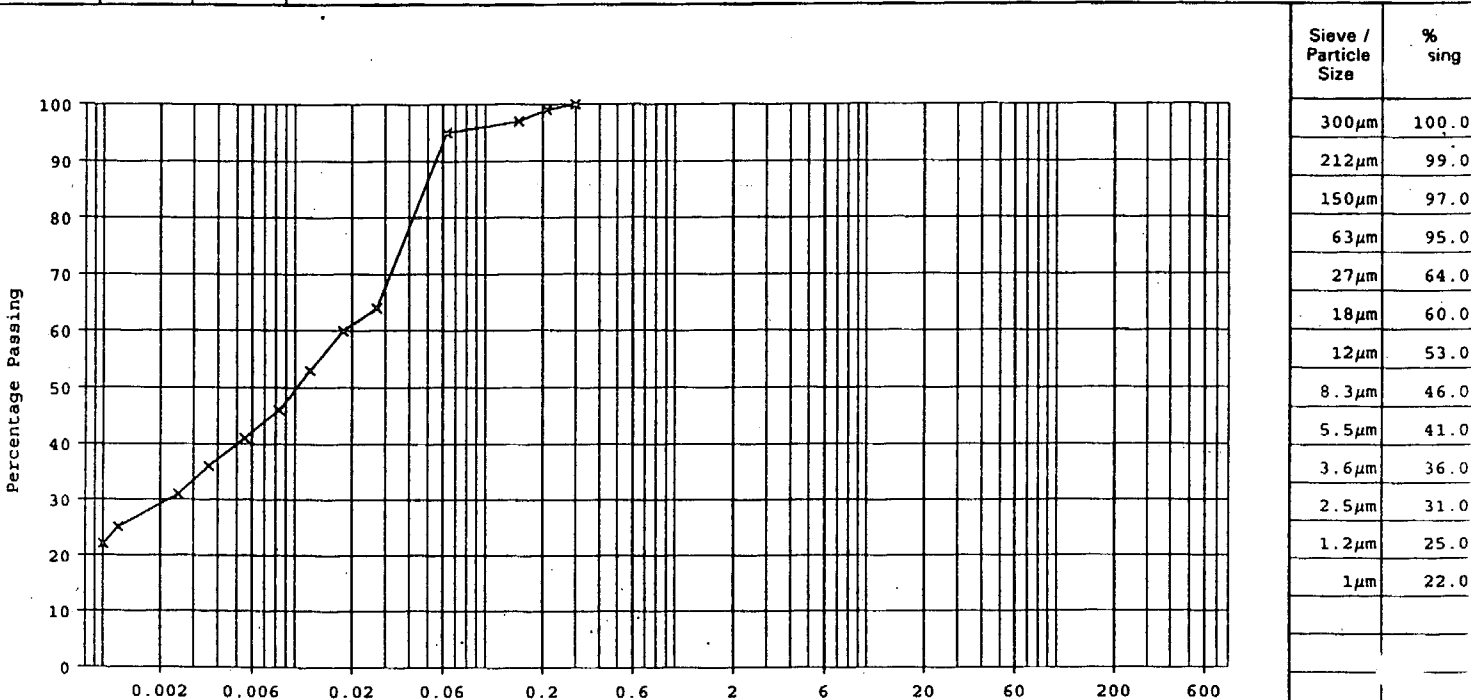
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
6	5.00	D	Dark greyish brown slightly sandy very silty CLAY



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	47.9µm
D60	18.0µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	6.8%
Silt	64.0%
Clay	29.2%

Method of Preparation :

Method of Test :

Remarks :



Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

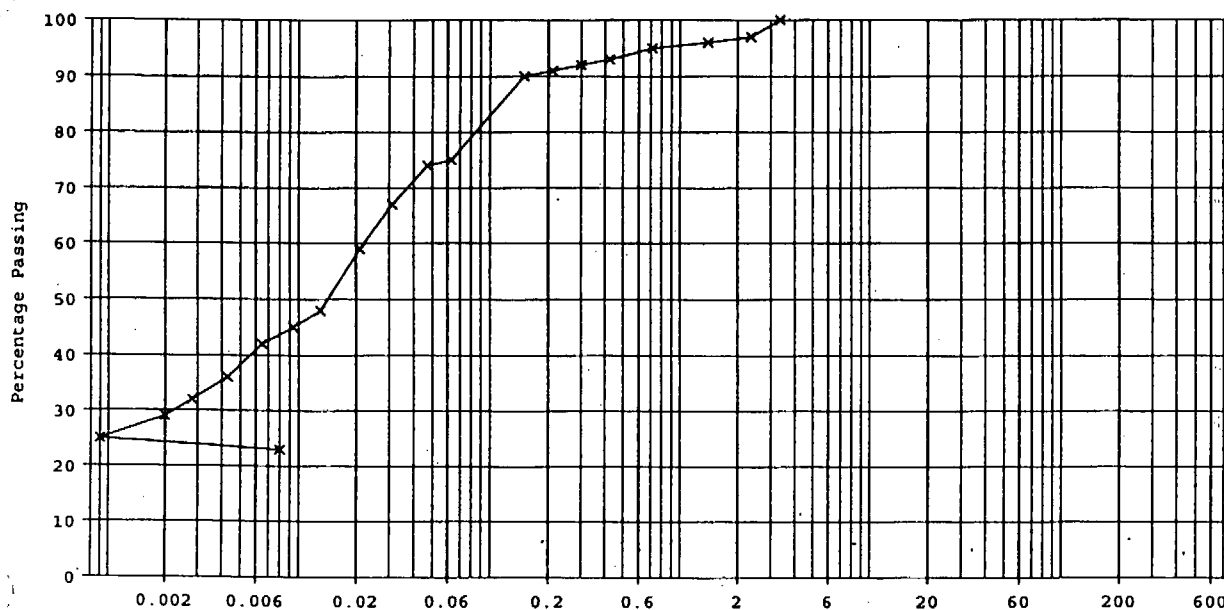
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**DETERMINATION OF PARTICLE SIZE DISTRIBUTION**

Borehole / Trial Pit No.	Depth (m)	Sample	Description
7	1.00	D	Brown sandy silty CLAY



Sieve / Particle Size	% Passing
3.35mm	100.0
2.36mm	97.0
1.4mm	96.0
710µm	95.0
425µm	93.0
300µm	92.0
212µm	91.0
150µm	90.0
63µm	75.0
47µm	74.0
31µm	67.0
21µm	59.0
13µm	48.0
9.4µm	45.0
6.5µm	42.0
4.3µm	36.0
2.8µm	32.0
2µm	29.0
.9µm	25.0
8µm	23.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	112.3µm
D60	22.0µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	3.3%
Sand	21.8%
Silt	45.8%
Clay	29.0%

Method of Preparation :

Method of Test :

Remarks :



# SUB SURFACE

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## Laboratory Test Results

Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

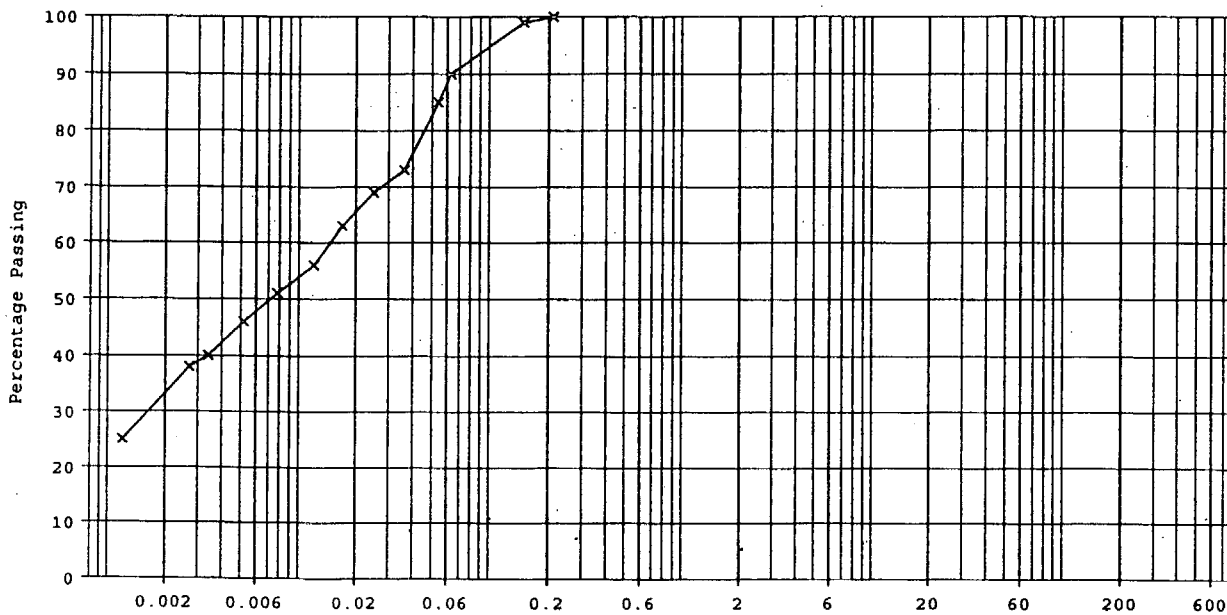
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
8	4.00	D	Dark greyish brown slightly sandy very silty CLAY



Sieve / Particle Size	% Passing
212µm	100.0
150µm	99.0
63µm	90.0
54µm	85.0
36µm	73.0
25µm	69.0
17µm	63.0
12µm	56.0
7.8µm	51.0
5.2µm	46.0
3.4µm	40.0
2.7µm	38.0
1.2µm	25.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	54.0µm
D60	14.6µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	11.6%
Silt	55.2%
Clay	33.2%

Method of Preparation :

Method of Test :

Remarks :





# SUB SURFACE

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## Laboratory Test Results

Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

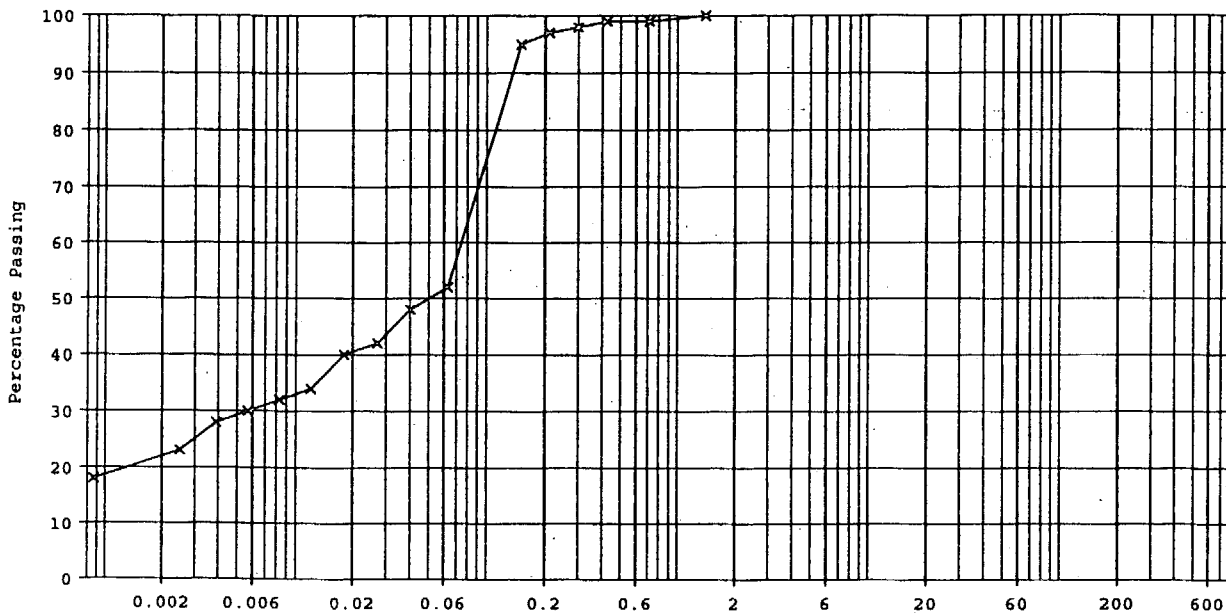
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
12	3.90	D	Dark brown sandy silty CLAY



Sieve / Particle Size	% Passing
1.4mm	100.0
710µm	99.0
425µm	99.0
300µm	98.0
212µm	97.0
150µm	95.0
63µm	52.0
40µm	48.0
27µm	42.0
18µm	40.0
12µm	34.0
8.3µm	32.0
5.7µm	30.0
3.9µm	28.0
2.5µm	23.0
.87µm	18.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	122.6µm
D60	74.0µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	48.4%
Silt	29.6%
Clay	21.9%

Method of Preparation :

Method of Test :

Remarks :



# SUB SURFACE

SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS  
3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

## Laboratory Test Results

Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

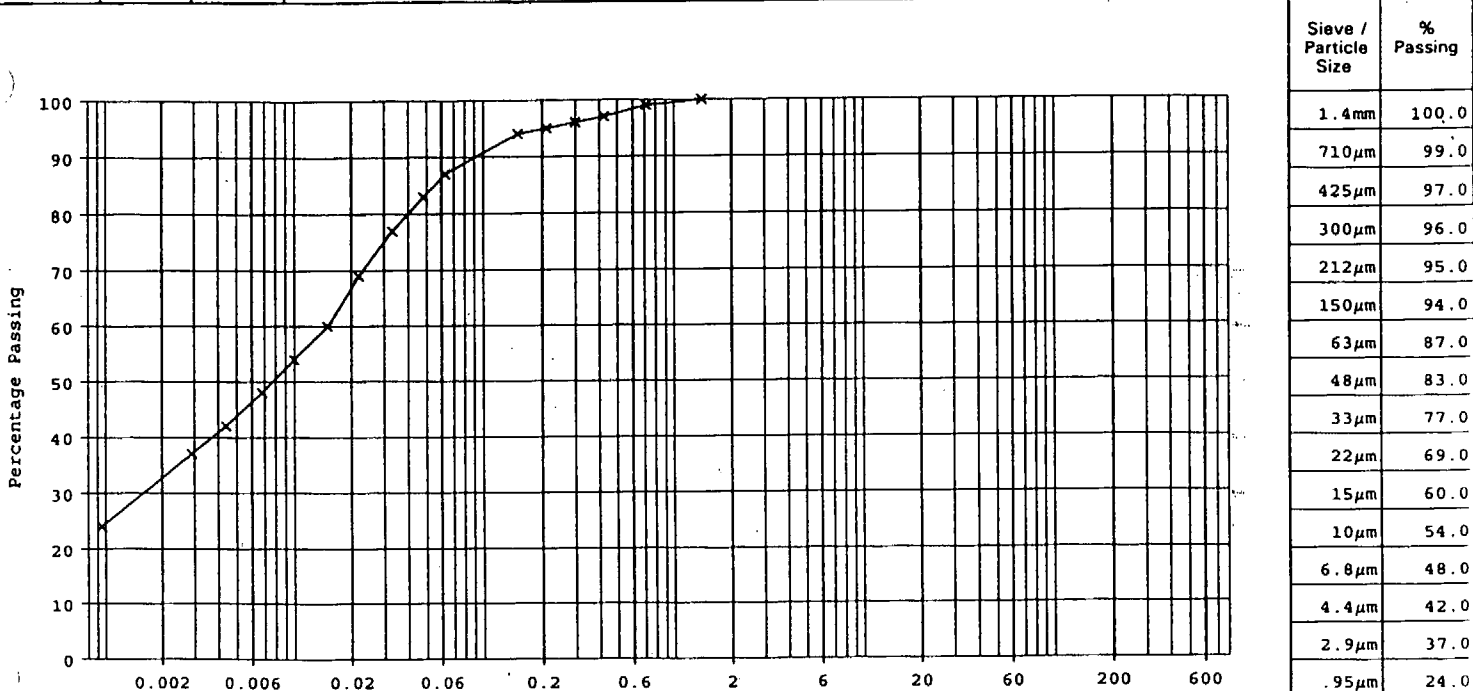
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
13	5.50	D	Dark brown slightly sandy very silty CLAY



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	55.0µm
D60	15.0µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	13.7%
Silt	53.6%
Clay	32.7%

Method of Preparation :

Method of Test :

Remarks :



Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

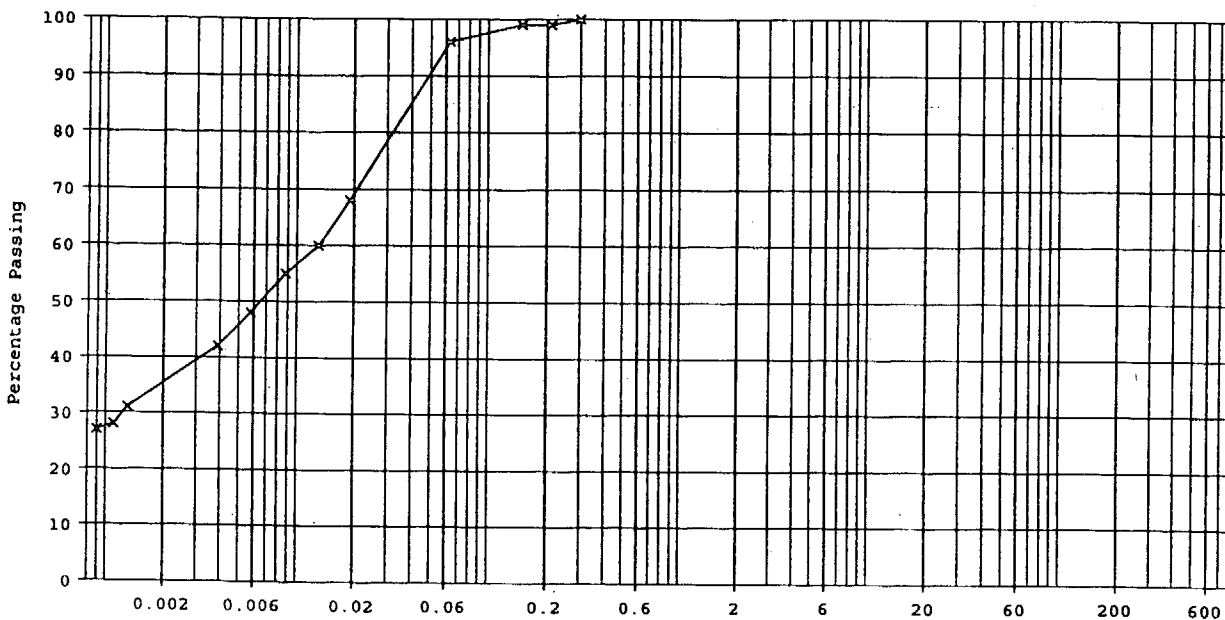
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**DETERMINATION OF PARTICLE SIZE DISTRIBUTION**

Borehole / Trial Pit No.	Depth (m)	Sample	Description
15	8.00	D	Dark brown slightly sandy very silty CLAY



Sieve / Particle Size	% Passing
300µm	100.0
212µm	99.0
212µm	99.0
150µm	99.0
63µm	96.0
19µm	68.0
13µm	60.0
8.8µm	55.0
5.8µm	48.0
3.9µm	42.0
1.3µm	31.0
1.1µm	28.0
.9µm	27.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	39.3µm
D60	13.0µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	5.1%
Silt	59.5%
Clay	35.3%

Method of Preparation :

Method of Test :

Remarks :



Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

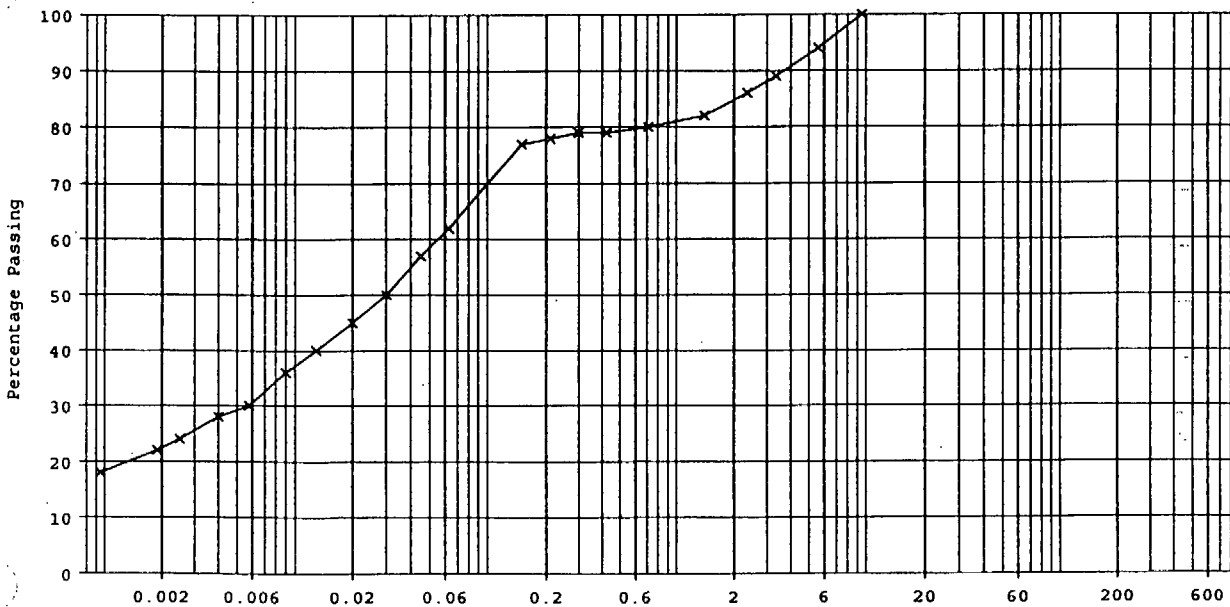
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**DETERMINATION OF PARTICLE SIZE DISTRIBUTION**

Borehole / Trial Pit No.	Depth (m)	Sample	Description
16	1.50	D	Dark greyish brown sandy silty CLAY with a little fine gravel



Sieve / Particle Size	% Passing
9.5mm	100.0
5.6mm	94.0
3.35mm	89.0
2.36mm	86.0
1.4mm	82.0
710µm	80.0
425µm	79.0
300µm	79.0
212µm	78.0
150µm	77.0
63µm	62.0
45µm	57.0
30µm	50.0
20µm	45.0
13µm	40.0
9µm	36.0
5.8µm	30.0
4µm	28.0
2.5µm	24.0
1.9µm	22.0
.95µm	18.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	2.1mm
D60	55.1µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	15.3%
Sand	23.5%
Silt	38.9%
Clay	22.4%

Method of Preparation :

Method of Test :

Remarks :



# SUB SURFACE

SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS  
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## Laboratory Test Results

Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

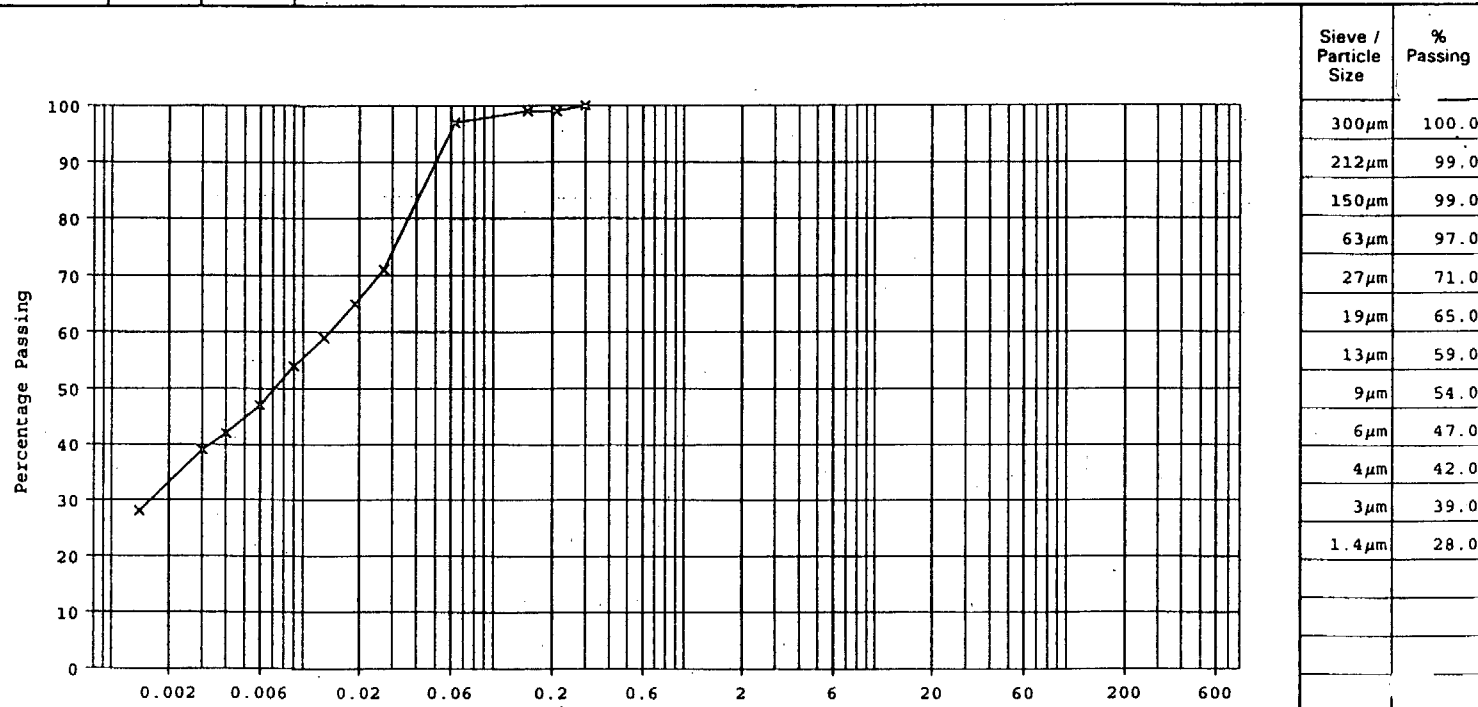
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
16	8.00	D	Dark greyish brown very silty CLAY



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	42.6 µm
D60	13.8 µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	4.5%
Silt	62.4%
Clay	33.1%

Method of Preparation :

Method of Test :

Remarks :



# SUB SURFACE

SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS  
3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

## Laboratory Test Results

Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

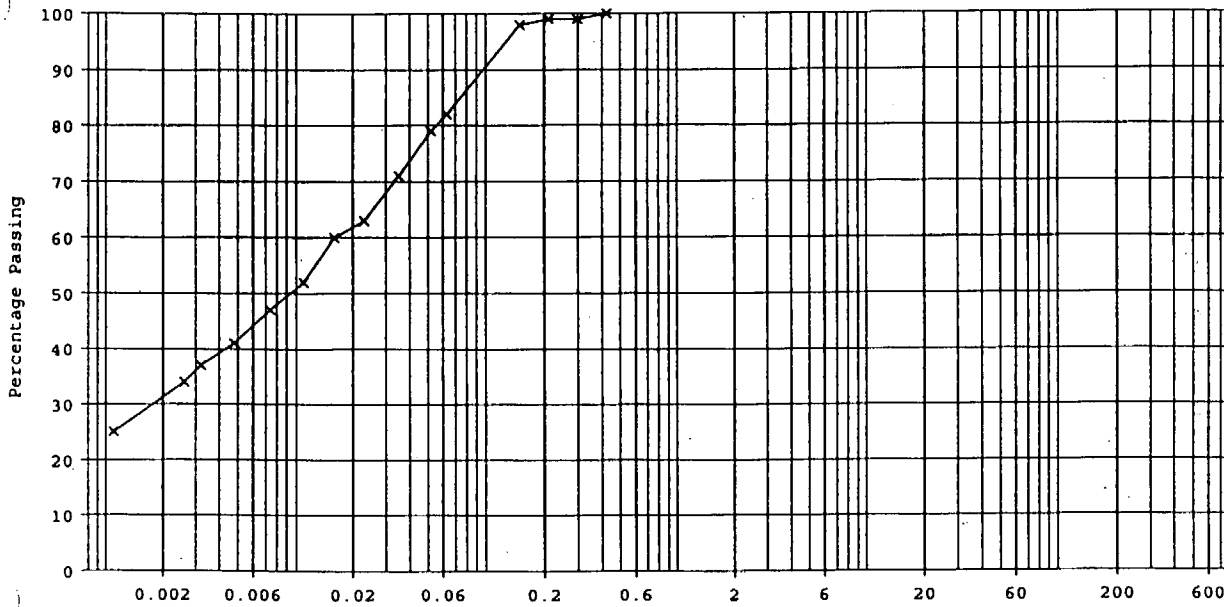
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
17	2.00	D	Greyish brown slightly sandy very silty CLAY



Sieve / Particle Size	% Passing
425µm	100.0
300µm	99.0
212µm	99.0
150µm	98.0
63µm	82.0
52µm	79.0
35µm	71.0
23µm	63.0
16µm	60.0
11µm	52.0
7.4µm	47.0
4.8µm	41.0
3.2µm	37.0
2.6µm	34.0
1.1µm	25.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	74.1µm
D60	16.0µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	18.8%
Silt	50.0%
Clay	31.3%

Method of Preparation :  
 Method of Test :  
 Remarks :



# SUB SURFACE

SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS  
3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

## Laboratory Test Results

Site Name : GEORGETOWN.

Client : ROYAL ORDNANCE.

Engineer :

Job Number

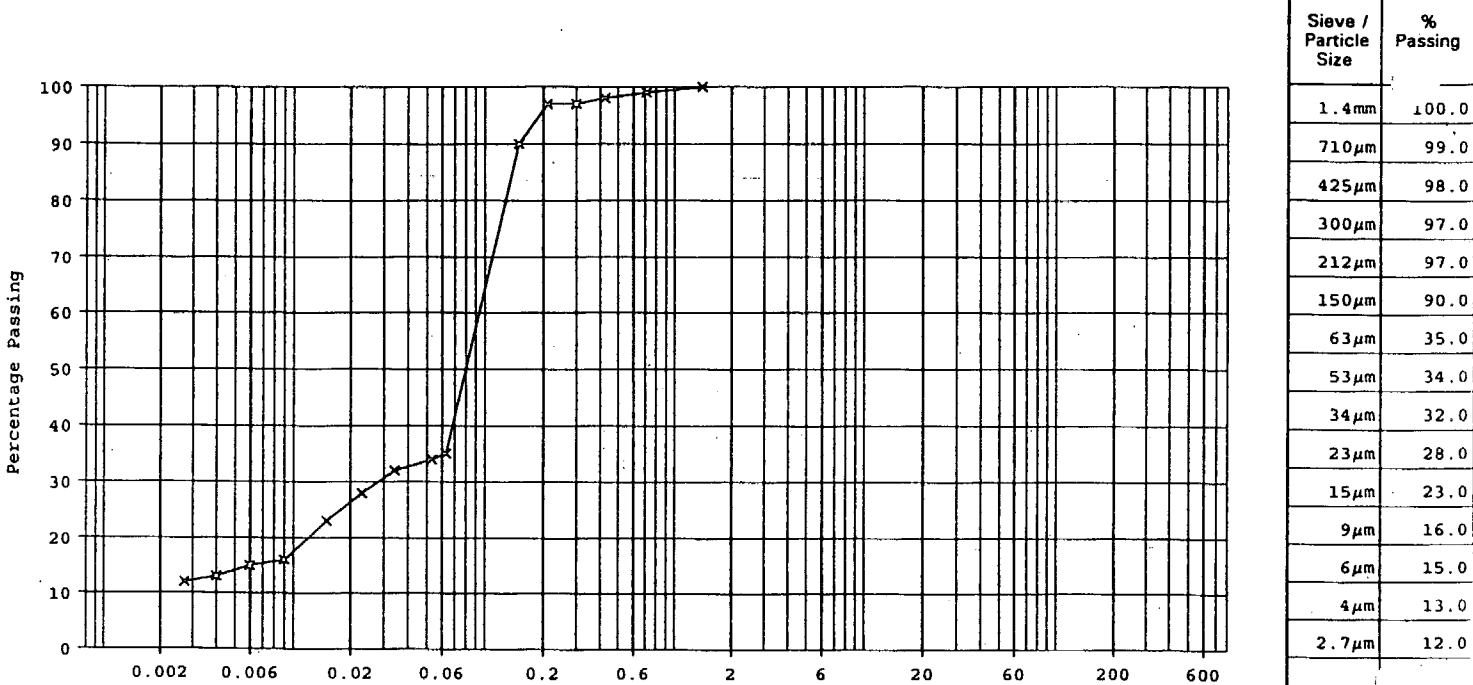
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### DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Trial Pit No.	Depth (m)	Sample	Description
19	3.20	D	Dark grey very silty clayey fine SAND



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	138.6 μm
D60	93.5 μm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	65.3%
Silt	-
Clay	-

Method of Preparation :

Method of Test :

Remarks :

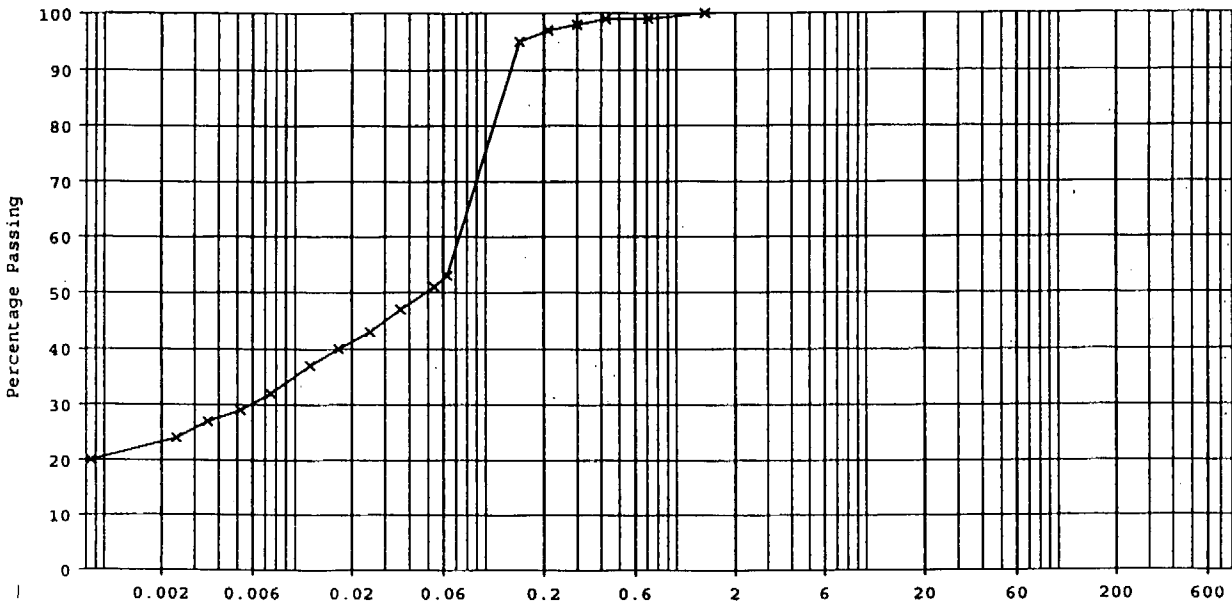


Site Name : GEORGETOWN.  
 Client : ROYAL ORDNANCE.  
 Engineer :

Job Number  
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**DETERMINATION OF PARTICLE SIZE DISTRIBUTION**

Borehole / Trial Pit No.	Depth (m)	Sample	Description
19	5.20	D	Dark brown very sandy silty CLAY



Sieve / Particle Size	% Passing
1.4mm	100.0
710µm	99.0
425µm	99.0
300µm	98.0
212µm	97.0
150µm	95.0
63µm	53.0
54µm	51.0
36µm	47.0
25µm	43.0
17µm	40.0
12µm	37.0
7.5µm	32.0
5.2µm	29.0
3.5µm	27.0
2.4µm	24.0
.85µm	20.0

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Grading Analysis	
D85	122.0µm
D60	72.8µm
D10	-
Uniformity Coefficient	-

Particle Proportions	
Cobbles + Boulders	0.0%
Gravel	0.0%
Sand	47.6%
Silt	29.1%
Clay	23.3%

Method of Preparation :  
 Method of Test :  
 Remarks :



# SUB SURFACE

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## Laboratory Test Results

Site : GEORGETOWN.  
Client : ROYAL ORDNANCE.  
Engineer :

Job Number  
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### DETERMINATION OF MOISTURE CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY AND LIQUIDITY INDEX

Borehole Number	Depth m.	Sample	Percentage Passing 4.25mm Sieve	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index %	Liquidity Index	Group Symbol	Description
1	1.0	D	58	31	39	20	19	0.58	CI	Greyish brown, brown and green mottled silty CLAY
1	11.0	D	84	38	41	22	19	0.84	CL	Dark grey and dark brown organic slightly sandy silty CLAY
1	19.5	D	99	34	44	23	21	0.52	CI	Dark grey very silty slightly organic CLAY
1	26.0	D	92	28	31	19	12	0.75	CL	Dark grey slightly sandy very silty thinly laminated CLAY
	5.5	D	93	28	34	20	14	0.57	CL	Dark grey slightly silty organic CLAY
2	14.0	D	78	41	45	23	22	0.82	CI	Dark grey slightly silty slightly organic CLAY
3	4.0	D	100	31	44	24	20	0.35	CI	Dark brown and grey silty CLAY
3	8.1	D	60	39	37	21	16	1.13	CI	Dark grey and brown slightly sandy very silty organic CLAY
4	1.0	D	78	25	34	20	14	0.36	CL	
4	5.0	D	76	33	44	21	23	0.52	CI	Dark blueish grey organic slightly sandy silty CLAY
5	3.0	D	80	34	41	21	20	0.65	CI	Dark brown silty CLAY
5	17.0	D	67	39	39	20	19	1.00	CI	Dark blueish grey and dark brown very silty organic CLAY
5	23.0	D	82	36	39	21	18	0.83	CI	Dark grey CLAY
6	3.0	D	96	29	36	20	16	0.56	CI	Dark grey CLAY
6	15.0	D	98	35	34	19	15	1.07	CL	Dark grey slightly silty CLAY
7	3.2	D	53	34	42	22	20	0.60	CI	Dark brown silty organic CLAY
7	5.5	D	73	38	43	23	20	0.75	CI	Dark grey sandy silty organic CLAY
7	11.0	D	79	46	45	24	21	1.05	CI	
8	5.0	D	63	36	41	21	20	0.75	CI	Dark blueish grey and dark brown slightly silty organic CLAY
9	1.5	D	93	20	30	17	13	0.23	CL	Dark brown mottled orange silty CLAY with some pockets of coal
9	5.5	D	83	33	40	21	19	0.63	CI	Dark grey silty CLAY
9	14.0	D	52	32	37	18	19	0.74	CI	Dark grey sandy silty organic CLAY
10	5.0	D	88	29	37	21	16	0.50	CI	Dark grey very silty CLAY
10	20.0	D	68	34	33	28	5	1.20	ML	Light grey poorly laminated sandy silty CLAY
11	3.9	D	89	22	30	17	13	0.38	CI	Dark brown silty CLAY
11	8.0	D	61	36	32	20	12	1.33	CL	Dark grey sandy silty organic CLAY
11	16.5	D	86	38	38	18	20	1.00	CI	Dark grey sandy very silty organic CLAY
12	3.0	D	97	25	28	17	11	0.73	CL	Blueish grey and dark grey sandy silty organic CLAY with orangey brown silty sand lenses and numerous root hairs
12	8.0	D	95	35	34	15	19	1.05	CL	Dark grey sandy very silty very organic CLAY
13	3.5	D	88	32	39	20	19	0.63	CI	Dark brown silty CLAY
14	1.9	D	93	29	29	20	9	1.00	CL	Dark orangey brown sandy CLAY

Method of Preparation :

Method of Test :

Remarks :



# SUB SURFACE

SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS  
3 Peel Street, Preston, PR2 2QS. Tel. (01772) 661135 Fax (01772) 204907

## Laboratory Test Results

Site : GEORGETOWN.  
Client : ROYAL ORDNANCE.  
Engineer :

Job Number  
L1006  
Sheet  
2/2

### DETERMINATION OF MOISTURE CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY AND LIQUIDITY INDEX

Borehole Number	Depth m.	Sample	Percentage Passing 4.25um Sieve	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index %	Liquidity Index	Group Symbol	Description
14	5.2	D	71	33	35	21	14	0.86	CI	Dark grey and dark brown slightly sandy very silty CLAY
14	11.0	D	47	34	33	20	13	1.08	CL	Dark grey slightly sandy very silty organic CLAY
14	17.0	D	86	49	43	22	21	1.29	CI	Dark brown silty CLAY
	5.5	D	91	30	40	19	21	0.52	CI	Dark grey slightly sandy silty slightly organic CLAY
16	1.0	D	98	28	29	19	10	0.90	CL	Dark grey and dark brown very sandy silty CLAY with a little fine gravel and numerous root hairs
16	5.8	D	84	36	44	22	22	0.64	CI	Dark grey very silty organic CLAY
17	1.0	D	71	28	39	21	18	0.39	CI	Dark brown silty CLAY
17	4.2	D	80	31	37	19	18	0.67	CI	Dark grey slightly sandy very silty slightly organic CLAY
18	1.0	D	97	25	35	20	15	0.33	CI	Brown slightly silty CLAY with a little fine gravel
18	11.0	D	82	31	33	18	15	0.87	CL	Dark grey sandy silty organic CLAY
18	23.0	D	98	38	47	22	25	0.64	CI	
19	8.1	D	100	28	25	17	8	1.38	CL	Dark grey and dark brown silty CLAY
20	2.0	D	95	29	28	18	10	1.10	CL	Dark grey very sandy silty organic CLAY
20	11.0	D	54	38	43	21	22	0.77	CI	Dark brown silty CLAY

Method of Preparation :

Method of Test :

Remarks :